

Town Hall 301 W. Main St. Carrboro, NC 27510



Meeting Agenda Board of Aldermen

Tuesday, November 15, 2016

7:30 PM

Board Chambers - Room 110

A. RESOLUTIONS, PROCLAMATIONS, AND ACKNOWLEDGEMENTS 1. 16-330 Recognition of Lt. Dunn as Hometown Heroes award recipient, Relief Driver Steve Jordan as Firefighter of the Year, and Sergeant David Deshaies as Police Officer of the Year. **PURPOSE:** The purpose is for the Board of Alderman to recognize the Hometown Heroes award recipient, Firefighter of the Year, and Police Officer of the Year. 16-338 2. Proclamation: Carrboro High School Women's Volleyball Team **State Champions** 3. 16-344 Proclamation: Chapel Hill Women's Cross Country 4. <u>16-345</u> Proclamation: Chapel Hill Men's Cross Country 16-346 5. Charges Issued to Members of the Youth Advisory Board В. ANNOUNCEMENT OF UPCOMING MEETINGS C. REQUESTS FROM VISITORS AND SPEAKERS FROM THE FLOOR D. **CONSENT AGENDA** 1. <u>16-342</u> Approval of Previous Meeting Minutes of October 25, 2016 and November 1, 2016 2. 16-332 Request to Make an Appointment to the Recreation and Parks Commission

PURPOSE: The purpose of this item is for the Mayor and Board to consider making an appointment to the Recreation and Parks Commission.

<u>Attachments:</u> <u>Attachment A - Recreation and Parks Commission Appointment</u>

Attachment B - Chair Recomendation Form

Attachment C - Application - Ryan Byars - Recreation and Parks -

Advisory Board Application.pdf

3. <u>16-336</u> Request to Make Appointments to the Planning Board

PURPOSE: The purpose of this item is for the Mayor and Board to consider making appointments to the Planning Board.

<u>Attachments:</u> Attachment A - Planning Board Appointments Resolution

Attachment B - Chair Recomendation Form

Attachment C - Applications - Planning Board

4. 16-341 Notice To Property Owners Prior to Construction Section Pursuant to NCGS 160A-499.4

PURPOSE: Notify property owners of the upcoming construction at Town Commons

E. PUBLIC HEARING

1. <u>16-331</u> Public Hearing on Land Use Ordinance Amendments Relating to Protests to Zoning Map Amendments

PURPOSE: The purpose of this item is for the Board of Aldermen to consider amending the Land Use Ordinance to replace the existing provisions for protest petitions with a new policy for citizen comment.

Attachments: Attachment A-1 - Consistency Resolution for Ordinance Adoption

Attachment A-2 - Consistency Resolution for Ordinance Denial

Attachment B - Draft Ordinance 15-214 0-13-2016

Attachment C - Excerpts-23 ART-XX

Attachment D-comments

F. OTHER MATTERS

1. 16-337 Comprehensive Annual Financial Report (CAFR) for Fiscal Year Ended June 30, 2016

PURPOSE: The purpose of this presentation is for the Town's independent auditor, Dixon Hughes Goodman LLP, to present and deliver to the Board of Aldermen the Comprehensive Annual Financial Report for the fiscal year ended June 30, 2016.

Attachments: Board Resolution of CAFR Acceptance 12-2014

Town of Carrboro 6-30-16 issued fs

2. 16-333 Discussion of Greene Tract

PURPOSE: The purpose of this agenda item is support a Board discussion of the Greene Tract in preparation the November 17th Assembly of Governments meeting.

Attachments: Attachment A: Solid Waste Management Agreement - Town of Carrboro

and Orange County - Chapel Hill - Hillsborough.pdf
Attachment B: Mapping Communitys Future -2016.05.23

Attachment C: Board of Aldermen Meeting Minutes 3-5-13

Attachment D: Board of Commissioners Resolution 10-18-16

3. <u>16-328</u> Community Climate Action Plan Follow Up

PURPOSE: The purpose of this agenda item is to provide a report to the Board on follow up activities from the June 21, 2016 meeting for the draft Community Climate Action Plan.

<u>Attachments:</u> <u>ClimateActionPlanResolution111516</u>

CommunityClimateActionPlan_111116

CommunityClimateActionPlanStaffMemo 110816

4. <u>16-335</u> Presentation of Parking Study Findings and Draft Plan Recommendations

PURPOSE: The purpose of this agenda item is for the Board of Aldermen to receive a presentation from VHB on the parking study findings and draft plan recommendations.

<u>Attachments:</u> Attachment A - Draft Executive Summary

- G. MATTERS BY BOARD MEMBERS
- H. MATTERS BY TOWN MANAGER
- I. MATTERS BY TOWN ATTORNEY
- J. MATTERS BY TOWN CLERK



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Agenda Item Abstract

File Number: 16-330

Agenda Date: 11/15/2016 File Type: Agendas

In Control: Board of Aldermen

Version: 1

TITLE:

Recognition of Lt. Dunn as Hometown Heroes award recipient, Relief Driver Steve Jordan as Firefighter of the Year, and Sergeant David Deshaies as Police Officer of the Year.

PURPOSE: The purpose is for the Board of Alderman to recognize the Hometown Heroes award recipient, Firefighter of the Year, and Police Officer of the Year.

DEPARTMENT: Carrboro Fire-Rescue Department and Carrboro Police Department

CONTACT INFORMATION: Susanna Williams, Fire Chief

919-918-7349

swilliams@townofcarrboro.org <mailto:swilliams@townofcarrboro.org>

Walter Horton, Police Chief 919-918-7408

whorton@townofcarrboro.org <mailto:whorton@townofcarrboro.org>

INFORMATION:

Lt. Ray Dunn

Hometown Heroes Award

Lt. Ray Dunn was nominated by his colleagues at Carrboro Fire-Rescue to be considered for the NC Emergency Chaplains Hometown Heroes award. He was selected by the NC Emergency Chaplains to be a recipient and was awarded this distinction at the Hometown Heroes banquet on Nov. 6. His nomination read as follows:

Lt. Dunn was nominated for his dedication to the department over the years. He has spent countless hours both on and off duty making sure the Carrboro fleet of apparatus stays response ready. He performs preventative maintenance and emergency maintenance on the apparatus, sometimes coming in when he is off duty. He has taken the time to mentor and coach our current driver / mechanic and still makes himself available when needed. Without his knowledge and skills, Carrboro Fire-Rescue would not be what we are today. He models our motto "Exceeding Expectations" and exhibits daily our core values: integrity, dedication, and excellence.

Lt. Dunn's dedication to the department, willingness to keep our apparatus response ready, and always performing his duties with a positive attitude makes him our nomination for hometown hero for Carrboro Fire-

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Rescue.

Relief Driver/Department Chaplain, Steve Jordan

Carrboro Fire-Rescue Firefighter of the Year

The firefighter of the year process for Carrboro Fire-Rescue begins with all personnel being given the opportunity to nominate a colleague. Then a committee reviews the nominations and selects the person to be the Firefighter of the Year for the Department. This person is also honored at the annual Chamber of Commerce Salute to Community Heroes to be held December 8. The selection this year is Relief Driver Steve Jordan.

Steve Jordan is a relief driver for Carrboro Fire-Rescue. He has continuously accepted greater responsibilities and recently was promoted to relief driver. He also serves as department chaplain. Relief Driver Jordan is continuously a very dependable person who always presents a professional demeanor. He represents the department in a positive manner in everything he does. He models the department's core values of integrity, dedication, and excellence and has exceptional work ethics.

In his duties as chaplain, he takes the time to attend funerals and conduct hospital visits for the family of Carrboro Fire-Rescue. During times of emergencies he goes out of his way to reach out to the families affected and offer his assistance as chaplain.

Relief Driver Jordan is committed to safety making sure to operate apparatus in a safe manner so all personnel arrive to calls and return to the station. He takes the time to mentor and coach others, sharing his wealth of knowledge on the fire service and the Carrboro community.

FF Kreplak notes, "Relief Driver/Chaplain Jordan exemplifies the competency that reflects the highest standards of the fire service and regularly demonstrates the ability to lead or follow."

It is with great pride that the Carrboro Fire-Rescue Department nominates Relief Driver / Chaplain Steve Jordan as our Firefighter of the Year 2016.

Sergeant David Deshaies

Carrboro Police Officer of the Year

The officer of the year process for the Carrboro Police Department consists of the command staff identifying the officer deserving of this annual distinction. The officer is noted as the Carrboro Police Officer of the Year and is also honored at the annual Chamber of Commerce Salute to Community Heroes to be held December 8.

Sergeant David Deshaies has been with the Carrboro Police Department for seven years. He started with the

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department in 2009 as a Patrol Officer and has worked on the patrol division, as a school resource officer and as a community services officer. He was promoted to Sergeant in October of this year and is currently assigned to the Community Services Division. Sgt. Deshaies has his Advanced Law Enforcement certification and is a member of the department's Critical Incident Unit. When not on duty, he enjoys spending time with his wife and their extended family. As a Sergeant with the Community Services Division, he develops and oversees a number of programs designed to strengthen ties between the Police Department and the community it serves. Sergeant Deshaies was instrumental in developing Carrboro's Citizen's Police Academy, the Coffee with a Cop initiative, building and maintaining the department's website and numerous other department activities. He is dedicated to creating positive contacts in the community and routinely interacts with citizens online using the department's various social media platforms. Sergeant Deshaies strives daily to further the mission, vision and values of the Town of Carrboro through proactive community policing. For exemplifying the ideals of the Carrboro Police Department and his commitment to deliver compassionate community oriented service, we are proud to recognize Sergeant David Deshaies as the 2016 Carrboro Police Officer of the Year.

FISCAL & STAFF IMPACT: None

RECOMMENDATION: It is recommended that the BoA recognize these personnel as award recipients from their colleagues, the NC Emergency Chaplains, and the Chamber of Commerce.



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Agenda Item Abstract

File Number: 16-332

Agenda Date: 11/15/2016 File Type: Agendas

In Control: Board of Aldermen

Version: 1

TITLE:

Request to Make an Appointment to the Recreation and Parks Commission

PURPOSE: The purpose of this item is for the Mayor and Board to consider making an appointment to the Recreation and Parks Commission.

DEPARTMENT: Town Clerk

CONTACT INFORMATION: Cathy Dorando, 919-918-7309

INFORMATION: Ryan Byars has submitted an application to the Recreation and Parks Commission. The Recreation and Parks Commission chair has requested that the Board of Aldermen make the appointment and provided a recommendation form.

FISCAL IMPACT:N/A

RECOMMENDATION: It is recommended that the Mayor and Board adopt the attached resolution.

A RESOLUTION MAKING AN APPOINTMENT TO THE RECREATION AND PARKS COMMISSION

WHEREAS, Ryan Byars has submitted an application to serve on the Recreation and Parks Commission; and,

WHEREAS, there are two vacant seats on the Recreation and Parks Commission.

NOW, THEREFORE, THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO RESOLVES;

Section 1. The Board of Aldermen hereby appoints the following applicants to the Recreation and Parks Commission:

Seat Designation	Appointee	Term Expiration
In-Town	Ryan Byars	2/2020

Section 2. This resolution shall become effective upon adoption.

To Board Chairs: Please summarize applications as received; contact each applicant for any update one year after last contact; when positions are open, invite each applicant to attend a board meeting prior to making a recommendation.

ADVISORY BOARD NAME: Recreation and Parks Commission

Name: Ryan Byars
Date of application/last contact: 11/02/16
Summary of qualifications:
Hala shown great interest in the work of the Doc & Darks Commission
He's shown great interest in the work of the Rec & Parks Commission
as well as a passion for improving the Carrboro community.
Advisory Deand Chair reconfigured applicants interest in
Advisory Board Chair reconfirmed applicant's interest in
serving by phone or e-mail.
XYesNo (Briefly
explain:)
, ————————————————————————————————————
Applicant attended Advisory Board meeting prior to BOA
review.
X Yes (Date ¹) No (Briefly
_XYes (Date:)No (Briefly explain:)
схріант
Applicant has demonstrated a clear understanding of the time
commitment, roles and responsibilities of serving on the
Advisory Board.
Advisory Board.
V Vaa Na
XYesNo
Briefly explain:
In addition to your comments above, please check other
qualities that the applicant offers that would help the Advisory
Board meet its goals for community representation. Please
The state of the s
note that candidates who do not meet any of these qualities are
still eligible for appointment. Please communicate any urgent
needs and priorities for Advisory Board composition to your
Board of Aldermen Liaison.
Condor divorcity
Gender diversity

To Board Chairs: Please summarize applications as received; contact each applicant for any update one year after last contact; when positions are open, invite each applicant to attend a board meeting prior to making a recommendation.

ADVISORY BOARD	NAME · Recreation	and Parks	Commission	
ADVISONI DOAND	NAME. NEG CALION	andrains	COHIIIIISSIOH	

Racial or ethnic diversity
Age range diversity
Neighborhood/geographic diversity
Occupation, experience or special skills
Previous public service or community involvement
Other:
To Board Chairs: Please summarize applications as received; contact each applicant for any update one year after last contact; when positions are open, invite each applicant to attend a board meeting prior to making a recommendation.
ADVISORY BOARD NAME: Recreation and Parks Commission Applicant(s) recommended at this time (1 per open seat)
Applicant 1: _Ryan Byars Outstanding qualifications: _He's shown great interest in the work of the Rec & Parks Commission as well as a passion for improving the Carrboro community
How applicant compliments current board composition: He will allow us to fill out the membership on the Commission and will provide a voice for residents interested in biking issues. Other comments:

Advisory Board Application

Name	Ryan Byars
Date	9/9/2016
Address1	121 WAVERLY FOREST LN
Address2	Field not completed.
City	CHAPEL HILL
State	NC
Zip	27516
Is this address located within the corporate limits of the Town of Carrboro?	Yes
Telephone	9192606976
Email Address	ryan.j.byars@gmail.com
Date of Birth	10/7/1977
Race	White
Sex	Male
Occupation	Database Administrator
Are you a registered Orange County Voter?	Yes
Length of Residence in Orange County	16 months
Length of Residence in the Town of Carrboro	16 months
I wish to be considered for appointment to the following committee/board(s):	Recreation and Parks Commission

Other (advisory board not listed):	Field not completed.
Advisory Board Preference	Field not completed.
*Employer/Self Employed	OWASA
Number of Years Employed	6.5
* Provide examples of how your are involved in the promotion of travel and tourism in the Town of Carrboro.	n/a
Community Activities/Organizational Memberships	N/A
Experience to Aid You in Working on Advisory Boards	I have 8 years of non-profit experience in San Francisco and 6+ years of local government experience in North Carolina, so fairly well versed with the function of a board in this context. I have am a Certified Government Chief Information Officer from UNC School of Government and currently employed at OWASA.
Reasons You Wish to be Appointed	I have two children under the age of three and would like to ensure that they and other children in the town have fun and rewarding recreational opportunities. I am particularly interested in increasing the diversity of participation for these programs.
Have you ever served on any Town of Carrboro Committee or Board?	No
If yes, which one(s)?	Field not completed.
Are you currently serving on a Town Board or Committee?	No
If yes, are you applying	No

for a third consecutive term?

If yes, please describe how you meet one, or more, of the following exceptions noted below. *Members of the Board of Adjustment, Environmental Advisory Board, Human Services Advisory Commission, and Transportation Advisory Board may be reappointed to successive terms without limitation (Sections 15-29(c), 15-45(c) 3-7(d), 3-24(c))

n/a



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Agenda Item Abstract

File Number: 16-336

Agenda Date: 11/15/2016 File Type: Agendas

In Control: Board of Aldermen

Version: 1

TITLE:

Request to Make Appointments to the Planning Board

PURPOSE: The purpose of this item is for the Mayor and Board to consider making appointments to the Planning Board.

DEPARTMENT: Town Clerk

CONTACT INFORMATION: Cathy Dorando, 919-918-7309

INFORMATION: Rachel Gaylord-Miles and Roberto Rivera have submitted applications for the Planning Board. The Planning Board chair has requested that the Board of Aldermen make the appointments and provided the recommendation forms.

FISCAL IMPACT:N/A

RECOMMENDATION: It is recommended that the Mayor and Board adopt the attached resolution.

A RESOLUTION MAKING APPOINTMENTS TO THE PLANNING BOARD

WHEREAS, Rachel Gaylord-Miles and Roberto Rivera have submitted applications to serve on the Planning Board; and,

WHEREAS, there are two vacant seats on the Planning Board.

NOW, THEREFORE, THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO RESOLVES;

Section 1. The Board of Aldermen hereby appoints the following applicants to the Planning Board:

Seat Designation	Appointee	Term Expiration
In-Town	Rachel Gaylord-Miles	2/2018
In-Town	Roberto Rivera	2/2018

Section 2. This resolution shall become effective upon adoption.

Name: Rachel Gaylord-Miles Date of application/last contact: 7/13/16
Summary of qualifications:
Professional in planning-adjacent occupation (environmental transportation planner)
Advisory Board Chair reconfirmed applicant's interest in serving by phone or e-mail.
_x_YesNo (Briefly explain:)
Applicant attended Advisory Board meeting prior to BOA review.
_x_Yes (Date:)No (Briefly explain:)
Applicant has demonstrated a clear understanding of the time commitment, roles and responsibilities of serving on the Advisory Board.
_xYesNo Briefly explain:
In addition to your comments above, please check other qualities that the applicant offers that would help the Advisory Board meet its goals for community representation. <i>Please note that candidates who do not meet any of these qualities are still eligible for appointment.</i> Please communicate any urgent needs and priorities for Advisory Board composition to your Board of Aldermen Liaison.
_xGender diversity
Racial or ethnic diversity
_xAge range diversity
Neighborhood/geographic diversity
_xOccupation, experience or special skills
Previous public service or community involvement

Other:
Name: Roberto Rivera Date of application/last contact: 7/28/16 Summary of qualifications:
Served as treasurer of HOA
Advisory Board Chair reconfirmed applicant's interest in serving by phone or e-mail.
_xYesNo (Briefly explain:)
Applicant attended Advisory Board meeting prior to BOA review.
_x_Yes (Date:)No (Briefly explain:)
Applicant has demonstrated a clear understanding of the time commitment, roles and responsibilities of serving on the Advisory Board.
_xYesNo Briefly explain:
In addition to your comments above, please check other qualities that the applicant offers that would help the Advisory Board meet its goals for community representation. <i>Please note that candidates who do not meet any of these qualities are still eligible for appointment.</i> Please communicate any urgent needs and priorities for Advisory Board composition to your Board of Aldermen Liaison.
Gender diversity
_xRacial or ethnic diversity
Age range diversity
Neighborhood/geographic diversity
Occupation, experience or special skills

	_xPrevious public service or community involvementOther:
	To Board Chairs: Please summarize applications as received; contact each applicant for any update one year after last contact; when positions are open, invite each applicant to attend a board meeting prior to making a recommendation.
Ĭ	ADVISORY BOARD NAME: Planning Board Applicant(s) recommended at this time (1 per open seat)
	Applicant 1: Rachel Gaylord-Miles

this time (1 per open seat)
Applicant 1: Rachel Gaylord-Miles
Outstanding qualifications:
Employed as a transportation planner. Has frequent contact with engineers,
planning staff, and stakeholders, including DOT.
How applicant compliments current board composition:
Female, young, UNC Alumn
Other comments:
Pleasant and interested in how citizens can influence the planning process. I
think Rachel will be an excellent addition to the board.
Applicant 2: Roberto Rivera
Outstanding qualifications:
Experience as controller and prior service on HOA board
How applicant compliments current board composition:
Latino, interested in community engagement
Other comments:
While Roberto does not have any formal planning experience, when I met

While Roberto does not have any formal planning experience, when I met him he appeared interested to learn about the role the Planning Board plays. He was clear that the Planning Board was his first choice.

Advisory Board Application

Name	Roberto Rivera		
Date	7/28/2016		
Address1	108 Jewell Dr.		
Address2	Field not completed.		
City	Carrboro		
State	NC		
Zip	27516		
Is this address located within the corporate limits of the Town of Carrboro?	Yes		
Telephone	3123501732		
Email Address	r_a_rivera@outlook.com		
Date of Birth	11/20/1974		
Race	Latino		
Sex	Male		
Occupation	Controller		
Are you a registered Orange County Voter?	Yes		
Length of Residence in Orange County	9 months		
Length of Residence in the Town of Carrboro	9 months		
I wish to be considered for appointment to the following committee/board(s):	Board of Adjustment, Human Services Commission, Planning Board		

Other (advisory board not listed):	Field not completed.		
Advisory Board Preference	Planning Board 1		
*Employer/Self Employed	Nestle		
Number of Years Employed	4		
* Provide examples of how you are involved in the promotion of travel and tourism in the Town of Carrboro.	Field not completed.		
Community Activities/Organizational Memberships	North Carolina Association of CPAs		
Experience to Aid You in Working on Advisory Boards	I currently serve as the Controller for a factory that employees 600 people and have plenty of experience working across different departments and with people with different skill sets and perspectives. I also previously served at the Treasurer of a Homeowners association.		
Reasons You Wish to be Appointed	I would like to be involved and contribute to the community in which I live.		
Have you ever served on any Town of Carrboro Committee or Board?	No		
If yes, which one(s)?	Field not completed.		
Are you currently serving on a Town Board or Committee?	No		
If yes, are you applying for a third consecutive term?	No		
If yes, please describe how you meet one, or	N/A		

more, of the following exceptions noted below. *Members of the Board of Adjustment, Environmental Advisory Board, Human Services Advisory Commission, and Transportation Advisory Board may be reappointed to successive terms without limitation (Sections 15-29(c), 15-45(c) 3-7(d), 3-24(c))

Advisory Board Application

Name	Rachel Gaylord-Miles		
Date	7/13/2016		
Address1	124 Fidelity Street		
Address2	Apt 2		
City	Carrboro		
State	NC		
Zip	27510		
Is this address located within the corporate limits of the Town of Carrboro?	Yes		
Telephone	7049951402		
Email Address	rlgaylordmiles@gmail.com		
Date of Birth	5/25/1992		
Race	Caucasian		
Sex	Female		
Occupation	Environmental Transportation Planner		

Are you a registered Orange County Voter?	Yes		
Length of Residence in Orange County	6		
Length of Residence in the Town of Carrboro	2		
I wish to be considered for appointment to the following committee/board(s):	Planning Board		
Other (advisory board not listed):	Field not completed.		
Advisory Board Preference	Field not completed.		
*Employer/Self Employed	WSP Parsons Brinckerhoff		
Number of Years Employed	1		
* Provide examples of how you are involved in the promotion of travel and tourism in the Town of Carrboro.	Field not completed.		
Community Activities/Organizational Memberships	I volunteer with Habitat for Humanity of Orange County. I also participate in Adopt-a-Highway cleanups.		
Experience to Aid You in Working on Advisory Boards	Before my current position, I worked at UNC Chapel Hill in the field of transportation demand management. It was my job to encourage faculty, staff, and students to use alternative forms of transportation. While in this role, I would often interact with the Town of Carrboro, the Town of Chapel Hill, and various transit agencies to plan events and work together towards a common goal of reducing the number of people driving alone. This allowed me to become well versed in working with multiple stakeholders across the Triangle. Having graduated from UNC Chapel Hill in 2014, my studies in the fields of geography and urban planning have allowed me to gain knowledge on		

planning issues, which would aid me in working on the Planning Advisory Board. My current role as a planner has allowed me to gain experience working with municipalities, NCDOT, and other various stakeholders, including the public. I have been able to broaden my understanding of various aspects of urban planning in my current position, including land use planning, environmental documentation, and transportation planning, all which would be beneficial for working on the Planning Advisory Board. Besides my work experience and education, I believe my experience going from a UNC Chapel Hill student in Carrboro to a professional adult would be beneficial. I am able to connect to different groups of citizens based on these experiences and believe that this experience has provided me with great insight about Carrboro and what makes it a desirable place to live, work and play.

Reasons You Wish to be Appointed

Working in Raleigh, I actively choose to live in Carrboro because, simply put, I think it is a great place to live. It provides the forward-thinking, environmental-conscious, and familyfriendly atmosphere that is hard to find. I have no doubt that the atmosphere of Carrboro, which makes it such a desirable place to live, came about due to conscious planning decisions. I want to serve on an advisory board that helps to make these decisions and make Carrboro such a great town.

Have you ever served on
any Town of Carrboro
Committee or Board?

No

Are you currently serving on a Town Board or

If yes, which one(s)?

Field not completed.

Committee?

No

If yes, are you applying for a third consecutive term?

No

If yes, please describe how you meet one, or more, of the following exceptions noted below. *Members of the Board of Adjustment, Environmental Advisory

N/A

Board, Human Services Advisory Commission, and Transportation Advisory Board may be reappointed to successive terms without limitation (Sections 15-29(c), 15-45(c) 3-7(d), 3-24(c))



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Agenda Item Abstract

File Number: 16-341

Agenda Date: 11/15/2016 File Type: Agendas

In Control: Board of Aldermen

Version: 1

TITLE:

Notice To Property Owners Prior to Construction Section Pursuant to NCGS 160A-499.4

PURPOSE: Notify property owners of the upcoming construction at Town Commons

DEPARTMENT: Public Works

CONTACT INFORMATION: JD Freeman - 919-918-7425

INFORMATION: The Town of Carrboro hereby provides notice that Construction for the "Town Commons Improvement" project is scheduled to begin after December 6, 2016 and continue through April 2017. The location of the project is 301 West Main St, Carrboro, NC.

FISCAL & STAFF IMPACT: Town staff will be involved in project management and capital funds are appropriated per Ordinance No. 3/2016-17 in the amount of \$1,070,090 inclusive of design, construction and contingency.

RECOMMENDATION: It is recommended that this notice be accepted.



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Agenda Item Abstract

File Number: 16-331

Agenda Date: 11/15/2016 File Type: Agendas

In Control: Board of Aldermen

Version: 1

TITLE:

Public Hearing on Land Use Ordinance Amendments Relating to Protests to Zoning Map Amendments

PURPOSE: The purpose of this item is for the Board of Aldermen to consider amending the Land Use Ordinance to replace the existing provisions for protest petitions with a new policy for citizen comment.

DEPARTMENT: Planning Department

CONTACT INFORMATION: Christina Moon - 919-918-7325; Patricia McGuire - 919-918-7327; Bob Hornik - 919-929-3905

INFORMATION: At the May 24, 2016 regular meeting, staff presented the Board of Aldermen with information relating to newly adopted state legislation and the potential need to amend certain Land Use Ordinance provisions. One of these bills, HB 201, removed the use of protest petitions to require a three-fourths vote on petitions for change of zoning. The agenda materials related to the report may be found at: =">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&GUID=757A302A-9F28-40A7-81A7-9603FD4F8940&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&GUID=757A302A-9F28-40A7-81A7-9603FD4F8940&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&GUID=757A302A-9F28-40A7-81A7-9603FD4F8940&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&GUID=757A302A-9F28-40A7-81A7-9603FD4F8940&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&GUID=757A302A-9F28-40A7-81A7-9603FD4F8940&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&GUID=757A302A-9F28-40A7-81A7-9603FD4F8940&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&GUID=757A302A-9F28-40A7-81A7-9603FD4F8940&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&GUID=757A302A-9F28-40A7-81A7-9603FD4F8940&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&GUID=757A302A-9F28-40A7-81A7-9603FD4F8940&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&GUID=757A302A-9F28-40A7-81A7-9603FD4F8940&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&Options=&Search>=">https://carrboro.legistar.com/MeetingDetail.aspx?ID=456727&Options=&S

Local governments are permitted to replace the zoning protest petition tool with a provision for written citizen comment, and a draft ordinance has been prepared for that purpose. If adopted, language in the proposed amendment would replace the existing paragraphs under Section 15-326, Protests to Zoning Map Amendments (Attachment C).

The draft ordinance was referred to Orange County and presented to the Planning Board at its November 3, 2016 meeting. Responses are provided (Attachment D).

FISCAL & STAFF IMPACT: Public hearings involve staff and public notice costs associated with advisory board and Board of Aldermen review.

RECOMMENDATION: Staff recommends that the Board of Aldermen consider adoption of the resolution finding consistency (Attachment A-1) and the draft ordinance (Attachment B).

A RESOLUTION ADOPTING A STATEMENT EXPLAINING THE BOARD OF ALDERMEN'S REASONS FOR ADOPTING AN AMENDMENT TO THE TEXT OF THE CARRBORO LAND USE ORDINANCE

Draft Resolution No.

WHEREAS, an amendment to the text of the Carrboro Land Use Ordinance has been proposed, which amendment is described or identified as follows: AN ORDINANCE AMENDING THE CARRBORO LAND USE ORDINANCE PROVISIONS RELATED TO PROTEST PETITIONS

NOW, THEREFORE, the Board of Aldermen of the Town of Carrboro Resolves:

Section 1. The Board concludes that the above described amendment is consistent with Carrboro Vision 2020, particularly the statements under Section 2.0, Development, by retaining an opportunity for community input when making development decisions.

Section 2. The Board further concludes that the above described amendment which will conform the provisions of the Land Use Ordinance, with regard to citizen comments on zoning petitions, to recent changes in state legislation, is in the public interest.

Section 3. This resolution becomes effective upon adoption.

This the 15th day of November 2016.

A RESOLUTION ADOPTING A STATEMENT EXPLAINING THE BOARD OF ALDERMEN'S REASONS FOR REJECTING AN AMENDMENT TO THE TEXT OF THE CARRBORO LAND USE ORDINANCE

Draft Resolution No.

WHEREAS, an amendment to the text of the Carrboro Land Use Ordinance has been proposed, which amendment is described or identified as follows: AN ORDINANCE AMENDING THE CARRBORO LAND USE ORDINANCE PROVISIONS RELATED TO PROTEST PETITIONS

NOW, THEREFORE, the Board of Aldermen of the Town of Carrboro Resolves:

- Section 1. The Board concludes that the above described amendment is not consistent with Town plans and policies.
- Section 2. The Board concludes that its rejection of the above described amendment is reasonable and in the public interest because existing regulations are appropriate.
 - Section 3. This resolution becomes effective upon adoption.

This the 15th day of November 2016.

AN ORDINANCE AMENDING TOWN OF CARRBORO LAND USE ORDINANCE PROVISIONS RELATING TO STREET CONNECTIVY

Draft 10-13-2016

- Section 1. Subparagraph (d) of the Town of Carrboro Land Use Ordinance Section 15-214 is amended to read as follows:
- (d) Whenever connections to anticipated or proposed surrounding streets are required by this section, the street right-of-way shall be extended and the street developed to the property line of the subdivided property (or to the edge of the remaining undeveloped portion of a single tract) at the point where the connection to the anticipated or proposed street is expected. When a street right-of-way terminates at a boundary line in common with Town-owned property, the reservation of right-of-way to allow for future connection shall be sufficient and no connection shall be required unless such connection is required by the Board of Aldermen. In addition, the permitissuing authority may require temporary turnarounds to be constructed at the end of such streets pending their extensions when such turnarounds appear necessary to facilitate the flow of traffic or accommodate emergency vehicles. Notwithstanding the other provisions of this subsection, no temporary dead-end street in excess or 1,000 feet may be created unless no other practicable alternative is available.
- Section 2. All provisions of any Town Ordinance in conflict with this Ordinance are repealed.
- Section 3. This Ordinance shall become effective upon adoption.

ARTICLE XX

AMENDMENTS

Section 15-326 Protests to Zoning Map Amendments (AMENDED 10/24/06).

- (a) If a petition opposing an amendment to the zoning map is filed in accordance with the provisions of this section, then the proposed amendment may be adopted only by a favorable vote of three-fourths of the Board membership. For the purposes of this subsection, vacant positions on the Board and members who are excused from voting shall not be considered "members of the Board" for calculation of the requisite supermajority.
- (b) To trigger the three-fourths vote requirement, the petition must: (AMENDED 11/26/85)
 - (1) Be signed by the owners of either (i) twenty percent (20%) or more of the area included in the proposed change or (ii) five percent (5%) of a 100-foot-wide buffer extending along the entire boundary of each discrete or separate area proposed to be rezoned. A street right-of-way shall not be considered in computing the 100-foot buffer area as long as that street right-of-way is 100 feet wide or less. When less than an entire parcel of land is subject to the proposed zoning map amendment, the 100-foot buffer shall be measured from the property line of that parcel. In the absence of evidence to the contrary, the Town may rely on the Orange County tax listing to determine the "owners" of potentially qualifying areas. (AMENDED 10/24/06)
 - (2) Be in the form of a written petition actually bearing the signatures of the requisite number of property owners and stating that the signers do protest the proposed change or amendment.
 - (3) Be received by the town clerk in sufficient time to allow the town at least two normal working days before the date established for a public hearing on the proposed amendment to determine the sufficiency and accuracy of the petition.
 - (4) Be on a form provided by the town clerk and contain all the information requested on this form.
- (c) A person who has signed a protest petition may withdraw his or her name from the petition at any time prior to the vote on the proposed zoning amendment.

(d) The foregoing provisions concerning protests shall not be applicable to any amendment which initially zones property added to the territorial coverage of this chapter as a result of annexation or otherwise.

TOWN OF CARRBORO



Planning Board

301 West Main Street, Carrboro, North Carolina 27510

RECOMMENDATION

THURSDAY, NOVEMBER 3, 2016

LAND USE ORDINANCE TEXT AMENDMENT RELATING TO PROTESTS TO ZONING MAP AMENDMENTS

Motion was made by Rosser and seconded by Pendergrass that the Planning Boar recommends that the Board of Aldermen approve the draft ordinance.
VOTE: AYES: (5) ABSENT/EXCUSED: (4) NOES: (0) ABSTENTIONS: (0)
Associated Findings
By a unanimous show of hands, the <u>Planning Board</u> membership also indicated that no members have any financial interests that would pose a conflict of interest to the adoption of this amendment.
Motion was made by <u>losser</u> and seconded by <u>Pendergrass</u> that the <u>Manning Bond</u> of the Town of Carrboro finds the proposed text amendment, <u>is</u> consistent with Carrboro Vision 2020, particularly the statements under Section 2.0, Development, by retaining an opportunity for community input when making development decisions.
Furthermore, the Planning Board of the Town of Carrboro finds the proposed text amendment, which will conform the provisions of the Land Use Ordinance, with regard to protest petitions, to recent changes in state legislation, is in the public interest.
VOTE: AYES: (5) ABSENT/EXCUSED: (4) NOES: (6) ABSTENTIONS: (6) Cash Ab A 11/3/2016 (Chair) (Date)

ORANGE COUNTY PLANNING & INSPECTIONS DEPARTMENT Craig N. Benedict, AICP, Director

Administration (919) 245-2575 (919) 644-3002 (FAX) www.orangecountync.gov



P O Box 8181 Hillsborough, North Carolina, 27278



TRANSMITTAL DELIVERED VIA EMAIL

October 17, 2016

Christina Moon, AICP Planning Administrator Town of Carrboro 301 W. Main St. Carrboro, NC 27510

SUBJECT: Joint Planning Review of Proposed Ordinance Amendments

Dear Tina:

Thank you for the opportunity to review the revisions to the following Land Use Ordinance amendments received by us October 14, 2016 and proposed for town public hearing on November 15, 2016:

An Ordinance to Amending the Provisions related to the Protest Petitions.

We have reviewed the amendments and find no inconsistency with the adopted *Joint Planning Area Land Use Plan*.

If you have any questions or need additional information, please let me know.

Sincerely,

Perdita Holtz, AICP

Perdita Holtz

Planning Systems Coordinator



Town of Carrboro

Town Hall 301 W. Main St. Carrboro, NC 27510

Agenda Item Abstract

File Number: 16-337

Agenda Date: 11/15/2016 File Type: Agendas

In Control: Board of Aldermen

Version: 1

TITLE:

Comprehensive Annual Financial Report (CAFR) for Fiscal Year Ended June 30, 2016

PURPOSE: The purpose of this presentation is for the Town's independent auditor, Dixon Hughes Goodman LLP, to present and deliver to the Board of Aldermen the Comprehensive Annual Financial Report for the fiscal year ended June 30, 2016.

DEPARTMENT: Finance

CONTACT INFORMATION: Arche McAdoo, 918-7439

INFORMATION: The Town is required to produce annually a Comprehensive Annual Financial Report that includes financial statements that have been audited by an independent certified public accounting firm. This report is submitted to the North Carolina Local Government Commission (LGC) and presented to the Board of Aldermen each year. The CAFR, along with other financial information, is filed with the Municipal Securities Rulemaking Board as part of the continuing disclosure requirements related to the Town's issuance of \$4.6 million General Obligation Sidewalk and Greenways Bonds, Series 2013.

The Carrboro Tourism Development Authority (CTDA) established by the Board in March 2013 is a public authority under the Local Government Budget and Fiscal Control Act. The CTDA is required to produce its own independent audited financial statements. The accounting rules, however, require that the Town show the CTDA as a "component unit" in Town financial statements.

Attachment B is the required "Communication with Those Charged with Governance" from Dixon Hughes Goodman, which is a normal means of communicating with the Board each year regarding the audit. The opinion of the independent auditors is that they find the financial statements present fairly, in all material respects, the financial position of the Town as of June 30, 2016. No management letter identifying needed operational improvements or material weaknesses in internal controls have been provided by the independent auditors for this audit period.

FISCAL & STAFF IMPACT: None.

RECOMMENDATION: That the Board approve the attached resolution accepting the CAFR for fiscal year ended June 30, 2016.

A RESOLUTION ACCEPTING THE COMPREHENSIVE ANNUAL FINANCIAL REPORT AND INDEPENDENT AUDITOR'S SAS 114 LETTER FOR THE FISCAL YEAR ENDING JUNE 30, 2016

WHEREAS, the Carrboro Board of Aldermen have received the Comprehensive Annual Financial Report including independent auditor's opinion and SAS 114 Letter for fiscal year ending June 30, 2016; and

WHEREAS, the Aldermen were informed by the Town's independent auditors, Dixon Hughes Goodman LLP, that the Town's financial statements are free of material misstatement and that the audit tests conducted by the firm did not uncover any material weaknesses;

NOW THEREFORE, THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO;

Section 1: Accept the Comprehensive Annual Financial Report with independent auditor's opinion and SAS 114 Letter for fiscal year ending June 30, 2016.

Town of Carrboro

Comprehensive Annual Financial Report

Year Ended June 30, 2016
Prepared by Finance Department

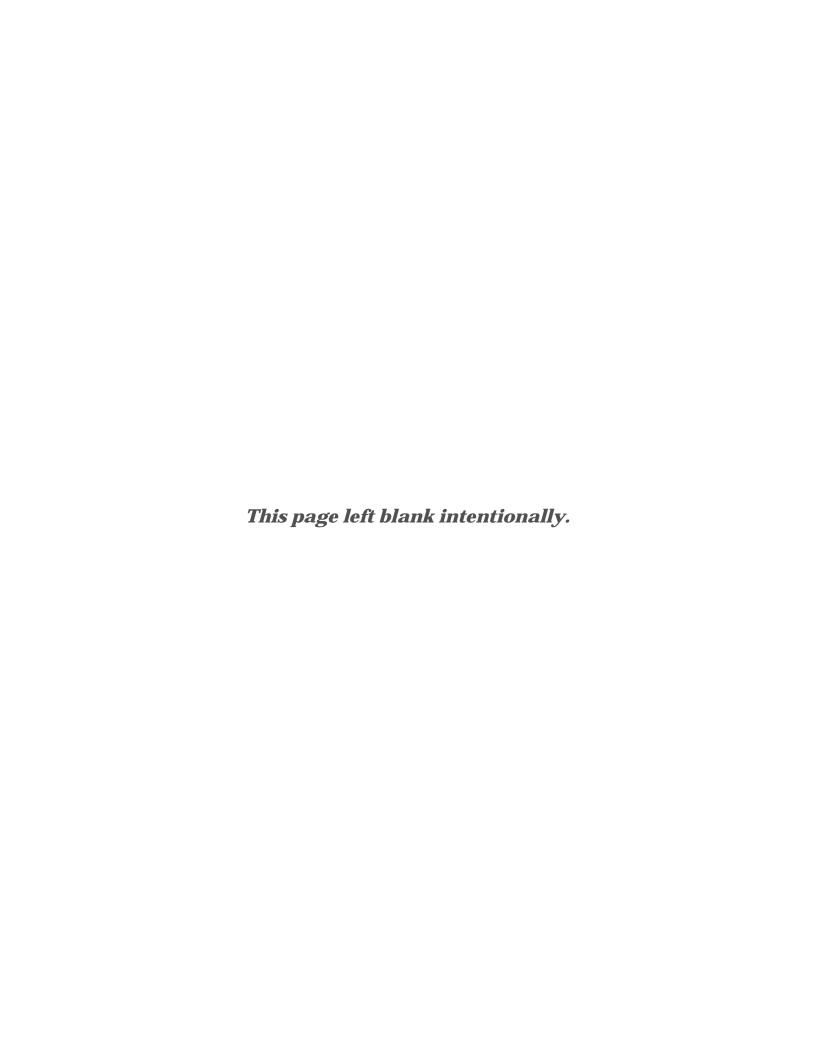


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Town of Carrboro, North Carolina

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Town of Carrboro, North Carolina

Principal Officials

Board of Aldermen

Lydia Lavelle, Mayor
Michelle Johnson, Mayor Pro-Tempore
Sammy Slade
Bethany Chaney
Jacquelyn Gist
Randee Haven-O'Donnell
Damon Seils

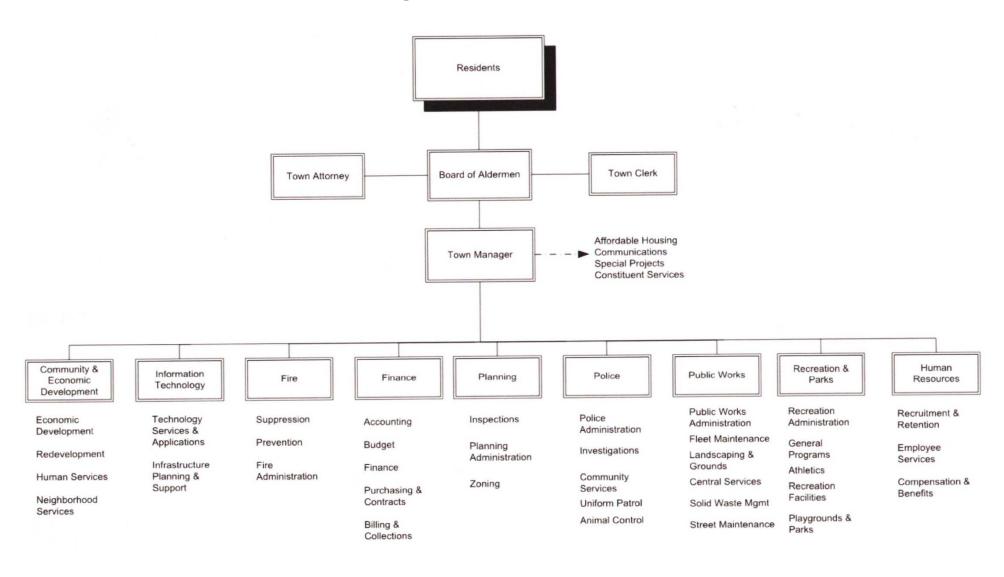
Town Manager

David Andrews

Finance Department

Arche L. McAdoo, Finance Director Donald Coble, Accounting Manager Earlene Hicks, Assistant to the Finance Director Jane Bowden, Accounting Technician Kathleen Nolan, Payroll and Benefits Specialist Sandy Svoboda, Purchasing Officer

Town of Carrboro, North Carolina Organizational Chart



TOWN OF CARRBORO



NORTH CAROLINA WWW.TOWNOFCARRBORO.ORG

October 31, 2016

Honorable Mayor and Members of the Board of Aldermen Town of Carrboro

We are pleased to submit the Comprehensive Annual Financial Report (CAFR) of the Town of Carrboro for the fiscal year ended June 30, 2016 (FY 2015-16). As required by North Carolina General Statutes (NCGS), the CAFR includes financial statements that have been audited by an independent certified public accounting firm. Responsibility for the accuracy of the data, and the completeness and fairness of the presentation, including all disclosures, rests with the Town. To the best of our knowledge and belief, the enclosed data accurately presents the financial position and the results of operations of the Town as measured by the financial activity of its various funds. All disclosures necessary to enable the reader to gain an understanding of the Town's financial activities have been included.

Generally Accepted Accounting Principles (GAAP) requires that management provide a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement the MD&A and should be read in conjunction with it. The Town's MD&A can be found immediately following the report of the independent auditors section. Other documents that are helpful in understanding the Town's budget and financial planning include the Town's annual operating budget and capital improvements plan documents. These documents, along with the annual audit report, are posted on the Town's website at http://www.townofcarrboro.org/250/Financial-Documents.

The Town is a small community located within Orange County in the north central portion of North Carolina. Carrboro is situated next to Chapel Hill and the University of North Carolina, and is near the Research Triangle Park. The area's topography is characterized by rolling hills. The Town, incorporated in 1911, now covers an area of 6.35 square miles and has a population of 20,510. The Town is distinctive in having one of the highest population densities (i.e., number of persons per square mile) of any municipality in North Carolina in the 2010 Census.

The growth of the Town is directly related to the expansion of the University of North Carolina at Chapel Hill and growth in the Research Triangle Park. Enrollment at the University has risen from 8,791 in 1960 to 29,139 in 2013. It is anticipated that expansion will continue to occur in University-related health facilities, such as the University of North Carolina Hospitals, and with the proposed development of the Carolina North campus.

The character of the Town is driven by core values adopted by the Board based on maintaining a sustainable community that is a highly desirable place to live. These priorities are to:

- Diversify revenue stream to maintain ethnic and economic diversity;
- Protect historic neighborhoods and maintain Carrboro's unique identity;
- Improve walkability and public transportation;
- Encourage development that is compact, dense, and appeals to diverse lifestyles and incomes;
- Enhance and sustain quality of life/place issues for everyone.

The support for these strategic priorities is noted by the amounts allocated within the annual operating and capital budgets, and the various awards received by the Town.

The Town commits almost two million dollars annually to provide fare-free transit for Town residents in an effort to reduce reliance on automobiles and to promote public transit, walking, and biking. Carrboro is one of 27 communities in the nation that has been awarded the Silver Level Bicycle-Friendly Community designation by the League of American Bicyclists in recognition of its commitment to providing safe accommodations and facilities for bicyclists, as well as efforts to encourage bicycling for fun, fitness, and transportation. Additionally, the Town has amended its street standards to require bike lanes on all collector roads. According to the latest census, 5.2% of residents in Carrboro bike to work. The community approved a \$4.6 million bond referendum in November 2003 to construct sidewalks and greenways to increase the safety and convenience of walking throughout the Town's neighborhoods, including to schools, bus stops, shopping areas, and recreational facilities.

Governance

The Town has a council/manager form of municipal government. Under the council/manager form of government, the Board of Aldermen performs the legislative functions of the Town: establishing laws and policies. The Board is an elected body and consists of a mayor and six aldermen. The mayor and the aldermen are elected by the voters of the entire town. The mayor is elected to serve a term of two years and the aldermen are elected to serve staggered terms of four years. The mayor acts as the official head of town government and presides at Board meetings. The mayor is a voting member of the Board. Appointments to advisory boards and committees are made by the Board.

The Board appoints a manager who carries out the laws and policies enacted by the Board, and is responsible for managing the Town's employees, finances, and resources. The Board also appoints a Town Clerk to maintain Town records, and appoints an attorney to represent the Board and Town administration in legal matters.

Local governments in North Carolina exist to provide a wide range of basic services on which we all depend: police and fire protection; public works (garbage collection, street resurfacing, fleet maintenance, landscaping, and building and grounds); planning; inspections and zoning; economic and community development; and parks and recreation programming. The major services provided by the Town include all of the services above, but exclude water and sewer services, and tax collections. Certain large costs assumed by the Town are for key services that are contracted with other governmental jurisdictions, such as transit, recycling, and landfill services. The Town also has administrative support units (e.g., personnel, technology, finance, budget, purchasing, etc.) that provide both direct services as well as indirect support services.

Economic condition and outlook

The 2014 median household income is \$51,310. Twenty-four percent of the household earn less than \$25,000 a year. Twenty-five percent of households make between \$25,000 and \$50,000 a year, while 50% make more than \$50,000 a year.

Employment levels in Carrboro reflected national and statewide trends with a change in the unemployment rate from 3.9% in 2013 to 4.7% in 2014, which is well below the state unemployment rate of 5.3%. With the University of North Carolina at Chapel Hill, the University of North Carolina Health Care System, and Research Triangle Park in close proximity to the Town, the local employment base is relatively stable and contributes to the Town's economic state.

The Town relies on a largely residential tax base to provide services. The commercial base is primarily retail with some service-oriented businesses. Major employers within Orange County (those with 450 or more employees) reflect the dominance of the professional services and retail sectors. The Town continues to experience modest growth and is considered to be a desirable place to live and work.

Total long-term liabilities for the Town total \$14.6 million and increased by \$261,792 (1.8%) during fiscal year 2016 primarily due to other post-employment benefit and compensated absences. The Town had debt retirement for this fiscal year with the principal repayment of \$973,069. Additions to debt during 2016 total \$621,180 for vehicles and equipment.

For a more comprehensive analysis of the Town's capital needs and future financing, please consult the Town's Capital Improvements Program available on the Town's website. The potential impact on property tax rates of capital projects will be affected by the timing of the implementation of the proposed projects, availability of other revenue sources, and/or cost savings to fund the projects.

Major Town Initiatives

As noted above, the Board of Aldermen has established strategic priorities for the Town with the ultimate goal of creating and maintaining Carrboro as a sustainable community that is a highly desirable place to live. These strategic priorities are considered long-term goals and some noteworthy accomplishments include:

- The Town has constructed 22 sidewalks covering 7.72 miles, completed construction of the Wilson Park Multi-Use Path. Construction of the Homestead-Chapel Hill High School Multi-Use Path is underway and Rogers Road sidewalk construction is scheduled to begin in 2016. Town residents approved \$4.6 million of general obligation bonds in a referendum in November 2003 to construct sidewalks and greenways throughout the Town to increase the safety and convenience of walking.
- The Town has been awarded a Silver Award by the League of American Bicyclists as a Bicycle-Friendly Community (BFC). The award is presented to communities that are committed to bicycling, provide safe accommodations and facilities for bicyclists, and encourage bicycling for fun, fitness, and transportation. This award is valid through 2016. In 2017 the Town will seek to achieve Gold Level status.
- The Town received a Clean Fuel Advanced Technology Grant from the North Carolina Solar Center at North Carolina State University to assist with the purchase of a hybrid solid waste truck that was acquired in 2015.
- The Town continue to participate in the North Carolina League of Municipalities "Green Challenge,"
 for Greenhouse Gas Emission Inventory and Reduction to reduce the carbon footprint; and to
 assess the Town's energy efficiency through the U.S. Environmental Protection Agency's "Energy
 Star Challenge" that involves reviewing and reducing utility consumption in Town facilities,
 streetlights, and fuel usage.
- The Town has completed construction of the Roberson Street Sewer Project with funds provided by a Community Development Block Grant from the Small Business and Entrepreneurial Program at the North Carolina Department of Commerce. Matching funds for the grant were provided by the Town and Orange County.
- The Government Finance Officers Association (GFOA) Distinguished Budget Presentation Award has been awarded to the Town for its FY 2014-15 budget document. It is the highest form of recognition in governmental budgeting.
- The Town's continued commitment to the environment was rewarded with its national designation as a Tree City USA Town for the 30th year.
- The Town has AAA bond rating from Standard and Poor's and Aa1 bond rating from Moody's.

Financial Information

General Fund Balance

The Board has adopted a policy of maintaining a General Fund unassigned fund balance within a range of 22.5% to 35% of budgeted appropriations. When the General Fund unassigned fund balance exceeds 35%, the Town Manager may set aside an amount in assigned fund balance for transfer to Capital Reserves Fund for specific future capital projects. Should the unassigned fund balance in the General Fund fall below 20%, the policy requires the Town Manager to develop and implement a plan to rebuild the balance to 22.5% within one year.

For the year ended June 30, 2016, the General Fund unassigned fund balance is 53.4% of total General Fund expenditures compared to 46.6% in 2015. This is a reflection of management's conservative approach to revenue projections and the numerous actions taken by management to adapt its operating budget, capital plans and financing to existing and future anticipated and unanticipated financial challenges. The steps taken in this regard include reducing less vital operating expenses, increasing emphasis on economic development activities, and prioritizing capital expenditures.

The Town has AAA bond rating by Standard and Poor's and Aa1 by Moody's. These ratings indicate the Town's extremely strong creditworthiness and ability to meet financial obligations.

Budget Control

As required by North Carolina General Statutes, the Board of Aldermen adopts a budget ordinance prior to the beginning of each fiscal year. All governmental units are required to adopt a balanced budget by July 1 of each year. The budget ordinance adopted by the Board creates a legal limit on spending authorizations at the functional level. Through the use of a requisition encumbrance and purchase order system, the adequacy of available funds are ensured prior to the placement of orders and/or award of contracts.

Public input and review of the budget prior to adoption by the Board is encouraged. The fiscal budget is prepared by the Town Manager for a one-year fiscal cycle beginning July 1 and ending June 30 of the following year. The Town holds two public hearings, one to receive community input prior to presentation of the Manager's recommended budget and a legally mandated one following presentation of the Manager's recommended budget to the Board. Prior to the adoption of an annual budget, the Board may hold budget work sessions on the Manager's recommended budget. The adopted budget document is available at the Town Clerk's office and the Town's website for review.

Internal Controls

In order to provide a reasonable basis for making these representations, a comprehensive internal control framework has been designed in developing and maintaining the Town's accounting system. These internal accounting controls are designed to provide a reasonable, but not absolute, assurance regarding:

- Safeguarding of assets against loss from unauthorized use or disposition;
- Reliability of financial records for preparing financial statements in conformity with accounting principles generally accepted in the United States of America and maintaining accountability of assets;
- Effectiveness and efficiency of operations; and
- Compliance with applicable laws and regulations related to federal and state financial assistance programs.

The concept of reasonable assurance recognizes that the cost of control should not exceed the benefits to be derived, and the evaluation of costs and benefits requires estimates and judgments by management. All internal control evaluations occur within the above framework. We believe that the Town's internal accounting controls reasonably achieve the above objectives and provide reasonable assurance of proper recording of financial transactions.

Other Information

Independent Audit

North Carolina General Statutes Chapter 15, the Local Government Budget and Fiscal Control Act, requires that units of local government have an annual audit by independent certified public accountants. The accounting firm of Dixon Hughes Goodman LLP was selected by the Board and performed this audit. The auditors' report on the basic financial statements, and combining and individual fund statements and other schedules are included in the financial

section of this report. The auditors' reports on internal controls and compliance with applicable laws and regulations are included in the compliance section.

Awards and Acknowledgements

The Government Finance Officers Association of the United States and Canada (GFOA) awarded, for the twelfth consecutive year, a Certificate of Achievement for Excellence in Financial Reporting to the Town of Carrboro for its Comprehensive Annual Financial Report issued for fiscal year 2014-15. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual financial report whose contents conform to GFOA program standards. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current comprehensive annual financial report continues to meet the Certificate of Achievement Program requirements and we will submit our CAFR for the fiscal year ended June 30, 2016 to the GFOA to determine its eligibility for another year. The Certificate Program managed by the GFOA was established in 1945, and is designed to recognize and encourage excellence in financial reporting by state and local governments. Further information about the Certificate Program can be obtained by visiting GFOA's website at: www.gfoa.org. The GFOA reports a growing awareness that the annual financial report should be management's report to its governing body, constituents, oversight bodies, resource providers, investors, and creditors. We agree with this direction and, in keeping with our past practice, have made available a copy of this report to each of you, Town departments, bond-rating agencies, the North Carolina Local Government Commission, and other financial institutions that have expressed an interest in the Town's financial affairs.

Preparation of this report would not have been possible without the hard work and dedication of the Finance Department Staff. Other departments of the Town have contributed directly or indirectly in the preparation of this report, and their cooperation and continued assistance is appreciated.

David L. Andrews, ICMA-CM

Town Manager

Arche L. McAdoo Finance Officer

L Mi-lebor



Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Town of Carrboro North Carolina

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

June 30, 2015

Executive Director/CEO



Independent Auditors' Report

Honorable Mayor, Board of Aldermen, and Town Manager Town of Carrboro Carrboro, North Carolina

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities, the discretely presented component unit, each major fund, and the aggregate remaining fund information of the Town of Carrboro, North Carolina, as of and for the year ended June 30, 2016, and the related notes to the financial statements, which collectively comprise the Town of Carrboro's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in Government Auditing Standards, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. The financial statements of the Carrboro Tourism Development Authority were not audited in accordance with Government Auditing Standards.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.



Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the discretely presented component unit, each major fund, and the aggregate remaining fund information of the Town of Carrboro as of June 30, 2016, and the respective changes in financial position thereof, and the respective budgetary comparison for the General Fund for the year then ended in conformity with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Management's Discussion and Analysis on pages 5 through 13, the Law Enforcement Officers' Special Separation Allowance and Other Postemployment Benefits Schedules of Funding Progress and Schedule of Employer Contributions on pages 57 through 59, and the Local Government Employees' Retirement System Schedules of the Proportionate Share of the Net Pension Liability (Asset) and Contributions on pages 60 and 61, respectively, be presented to supplement the basic financial statements. Such information, although not part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consist of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary and Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Town's basic financial statements. The introductory section, combining and individual nonmajor fund financial statements and budgetary schedules, other schedules and statistical section are presented for purposes of additional analysis, and are not a required part of the basic financial statements.

The combining and individual fund financial statements, budgetary schedules, and the other schedules are the responsibility of management, and were derived from and relate directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the combining and individual fund financial statements, budgetary schedules and other schedules are fairly stated, in all material respects, in relation to the basic financial statements taken as a whole.

The introductory and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide assurance on them.



Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated October 31, 2016 on our consideration of the Town of Carrboro's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance, and the results of that testing, and not to provide an opinion on the internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the Town of Carrboro's internal control over financial reporting and compliance.

High Point, North Carolina October 31, 2016

Dixon Hughes Goodman LLP

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Management's Discussion and Analysis

As management of the Town of Carrboro, we offer readers of the Town of Carrboro's financial statements this narrative overview and analysis of the financial activities of the Town for the fiscal year ended June 30, 2016. We encourage readers to read the information presented here in the Management Discussion and Analysis section in conjunction with the additional information that we have furnished in the Town's financial statements which follow this narrative.

Financial Highlights

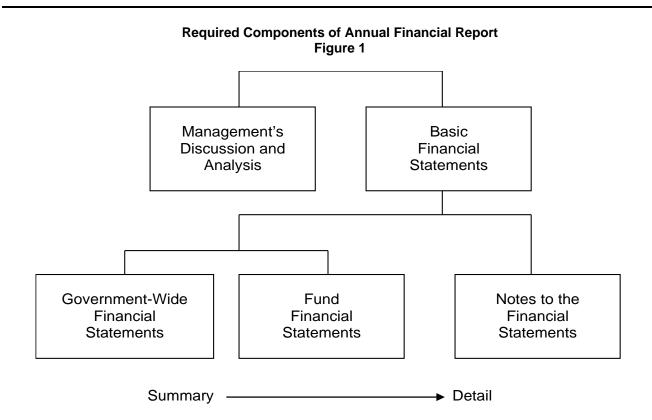
- The assets and deferred outflows of resources of the Town exceeded its liabilities and deferred inflows of resources at the close of the fiscal year by \$38,051,901 (net position).
- Total net position increased approximately 1% from \$37,666,466 at June 30, 2015 due to the sale
 of assets, increase in installment financing for vehicles and equipment, expenditures less than
 budget, and revenues exceeding budget projections.
- At June 30, 2016, the Town's governmental funds had combined ending fund balances of \$21,064,919, an increase of 7.6% or \$1,484,521 in comparison with the prior year. Approximately 50.7% or \$10,681,906 of this total amount is available for spending at the government's discretion (unassigned fund balance).
- At the end of the year unassigned fund balance for the General Fund was \$10,638,014 or 53.4% of total General Fund expenditures of \$19,939,031.
- Long-term debt obligations for the Town increased by 3.4% or \$535,785 from \$15,574,195 at June 30, 2015 to \$16,774,556 at June 30, 2016, primarily due to the increase in other postemployment benefits, law enforcement officers' pension obligation, LGERS net pension liability, and compensated absences.
- The Town of Carrboro maintained its AAA bond rating with Standard and Poor's; and Aa1 by Moody's.

Overview of the Financial Statements

This discussion and analysis are intended to serve as an introduction to Town of Carrboro's basic financial statements. The Town's basic financial statements consist of three components (see Figure 1):

- 1. Government-wide financial statements,
- 2. Fund financial statements, and
- 3. Notes to the financial statements.

The basic financial statements present two different views of the Town through the use of government-wide statements and fund financial statements. In addition to the basic financial statements, this report contains other supplemental information that will enhance the reader's understanding of the financial condition of the Town, including a statistical section.



Basic financial statements

The first two statements in the basic financial statements are the **Government-Wide Financial Statements**. Exhibit 1 presents the Statement of Net Position and Exhibit 2 presents the Statement of Activities. They provide information about the Town's current financial position.

The next statements (Exhibits 3 through 5) are **Fund Financial Statements**. These statements focus on the activities of the individual parts of the Town's government at a more detailed level than the government-wide statements. There are two parts to the Fund Financial Statements: (1) the governmental funds statements and (2) the budgetary comparison statements.

The next section of the basic financial statements is the **notes**. The notes to the financial statements explain in detail some of the data contained in those statements. After the notes, **supplemental information** is provided to show details about the Town's individual funds. Budgetary information required by the General Statutes also can be found in this part of the statements.

Government-wide financial statements

The government-wide financial statements are designed to provide the reader with a broad overview of the Town's finances, similar in format to financial statements of a private-sector business. The statement of net position presents information on all of the Town's assets, liabilities and deferred inflows of resources, with the difference reported as net position. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position of the Town is improving or deteriorating.

Town of Carrboro, North Carolina Management's Discussion and Analysis

The two government-wide statements report the Town's net position and how they have changed. Net position reported on the *statement of net position* is the difference between the Town's total assets and total liabilities and deferred inflows of resources. Measuring net position is one way to gauge the Town's financial condition. The *statement of activities* presents information showing how the Town's net position has changed during the fiscal year.

The government-wide statements contain a category called governmental activities that include most of the Town's basic services such as public safety, public works, parks and recreation, and general government. Property taxes as well as state-collected local revenues including sales tax, electric franchise and state telecommunications monies, finance most of these activities.

The government-wide financial statements are on pages 17 and 18 of this report.

Fund financial statements

The fund financial statements provide a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The Town, like all other governmental entities in North Carolina, uses fund accounting to ensure and reflect compliance with finance-related legal requirements, such as the General Statutes or the Town's budget ordinance. All of the funds of the Town are categorized under governmental funds and can be found beginning on page 20 of this report.

Governmental funds - Governmental funds are used to account for those functions reported as governmental activities in the government-wide financial statements. The Town's basic services are accounted for in governmental funds. These funds focus on how assets can readily be converted into cash flow in and out, and what monies are left at year end that will be available for spending in the next year. Governmental funds are reported using an accounting method called *modified accrual accounting* that provides a short-term spending focus. As a result, the governmental fund financial statements are focused on a detailed, short-term view that helps the reader determine if there are more or less financial resources available to finance the Town's programs. The relationship between government activities (reported in the Statement of Net Position and the Statement of Activities) and governmental funds is described in a reconciliation that is a part of the fund financial statements.

The Town adopts an annual budget for its General Fund, as required by the North Carolina General Statutes. The budget is a legally adopted document that incorporates input from the citizens of the Town, the management of the Town, and the decisions of the Board about which services to provide and how to pay for them. It also authorizes the Town to obtain funds from identified sources to finance these current period activities. The budgetary statement provided for the General Fund demonstrates how well the Town complied with the budget ordinance and whether or not the Town succeeded in providing the services as planned when the budget was adopted. The budgetary comparison statement uses the budgetary basis of accounting and is presented using the same format, language, and classifications as the legal budget document. Exhibit 5 shows four columns: (1) the original budget as adopted by the Board; (2) the final budget as amended by the Board; (3) the actual resources, charges to appropriations, and ending balances in the General Fund; and (4) the difference or variance between the final budget and the actual resources and charges.

Notes to the financial statements - The notes provide additional information that is essential to a full understanding of the data provided in the government-wide and fund financial statements. The notes to the financial statements are on pages 29 through 53 of this report.

Supplementary information - In addition to the basic financial statements and accompanying notes, this report includes certain required supplementary information concerning the Town's progress in funding its obligation to provide pension benefits to its employees. Required supplementary information can be found beginning on page 57 of this report.

Government-wide financial analysis

Town of Carrboro's Net Position Figure 2

	2016	2015
Current and other assets Capital assets Deferred outflows of resources	\$ 23,647,227 33,229,093 526,105	\$ 23,643,833 33,950,942 551,682
Total assets and deferred outflows of resources	57,402,425	58,146,457
Long-term liabilities outstanding Other liabilities Deferred inflows of resources	16,774,556 2,152,373 423,595	14,365,098 3,928,921 2,185,972
Total liabilities and deferred inflows of resources	19,350,524	20,479,991
Net position: Net investment in capital assets Restricted Unrestricted	28,529,962 2,015,396 7,506,543	29,120,308 2,187,718 6,358,440
Total net position	<u>\$ 38,051,901</u>	\$ 37,666,466

As noted earlier, net position may serve over time as one useful indicator of a government's financial condition. The assets and the deferred outflows of resources of the Town exceeded liabilities and deferred inflows of resources by \$38,051,901 as of June 30, 2016. The largest portion of net position (75%) reflects the Town's investment in capital assets (e.g., land, buildings, machinery, equipment, etc.); less any related debt still outstanding that was issued to acquire those items. The Town uses these capital assets to provide services to citizens; consequently, these assets are not available for future spending. Although the Town's investment in its capital assets is reported net of the outstanding related debt, the resources needed to repay that debt must be provided by other sources, since the capital assets cannot be used to liquidate these liabilities. An additional portion (5% or \$2,015,396) of the Town's net position represent resources that are subject to external restrictions on how they may be used. The remaining balance of \$7,506,943 (20%) is unrestricted.

The Town of Carrboro implemented GASB Statement 68 in 2015. With the new reporting change in 2015, the Town allocated its proportionate share of the Local Government Employees' Retirement System's net pension liability, deferred outflows of resources, deferred inflows of resources, and pension expense. Decisions regarding the allocations are made by the administrators of the pension plan, not by the Town of Carrboro's management.

Several particular aspects of the Town's financial operations positively influenced the total unrestricted governmental net position.

- Increased property tax revenues of approximately \$107,798 or 1% due to increase in valuations.
- Revenues from motor vehicle license taxes increased by 2.3% or \$26,503. Fiscal year 2016 was
 the second full year of the new Tax and Tag System implemented by the North Carolina Department
 of Motor Vehicles where tax on a motor vehicle is collected at the time of registration renewal.
- Unrestricted intergovernmental revenues decreased by \$29,410 or 2% due to continuing movement of consumers away from traditional telecommunications and video sales programing.

Town of Carrboro's Changes in Net Position Figure 3

Revenues:	Governmental Activities 2016	Governmental Activities 2015
Program revenues: Charges for services Operating grants and contributions Capital grants and contributions General revenues: Property taxes	\$ 1,645,639 700,263 5,635 11,835,903	\$ 1,742,132 723,767 283,090 11,728,105
Local option sales taxes Other taxes Grant and contributions not restricted to specific programs Other	4,105,283 1,381,093 1,452,221 28,818	3,897,200 1,386,254 1,481,631 52,226
Total revenues	21,154,855	21,294,405
Expenses: General government Public safety Planning Transportation Public works Parks and recreation Economic and physical development Interest on long-term debt	4,487,922 7,051,112 1,374,325 1,540,288 4,205,935 1,741,056 200,798 167,984	4,200,241 6,951,141 1,244,849 1,472,508 4,421,682 1,642,737 90,108 191,916
Total expenses	20,769,420	20,215,182
Increase in net position	385,435	1,079,223
Net position, July 1	37,666,466	37,844,290
Net position, June 30	<u>\$ 38,051,901</u>	<u>\$ 37,666,466</u>

Governmental activities. Governmental activities increased the Town's net position by \$385,435. Key elements of this change are as follows:

- Ad valorem property tax revenue increased slightly by \$107,798 from \$11,728,105 last year to \$11,835,903 this fiscal year, which represents a 1% increase.
- Local sales tax revenues increased by \$208,083 or 5% due to improvements in the local economy.
- Other tax revenues decreased by \$5,161 or less than 1% due to continuing movement of consumers away from traditional telecommunications and video sales programing.
- Revenues from fees and permits increased slightly by 1% from \$1,260,589 in 2015 to \$1,270,187 in 2016.

Town of Carrboro, North Carolina Management's Discussion and Analysis

- Capital grants and contributions decreased by \$277,455 from \$283,090 in 2015 to \$5,635 in 2016 due to completion and closeout of capital projects. Capital grants and contributions revenues vary from year to year depending upon the completion and commencement of various capital projects. Approximately 4.1% or \$649,376 of the fund balance in the General Fund is committed to specific capital projects.
- Operating grants and contributions revenues were \$23,504 less than the \$723,767 in 2015.
- Expenses for total governmental activities increased by \$613,017 from \$20,215,182 in 2015 to \$20,828,199 in 2016.
- Expense for interest on long-term debt decreased by 12.5% from \$191,916 in 2015 to \$167,984 2016.

Governmental Funds. The focus of the Town's governmental funds is to provide information on near-term inflows, outflows, and balances of usable resources. Such information is useful in assessing the Town's financing requirements

The General Fund is the chief operating fund of the Town. At the end of the current fiscal year, unassigned fund balance of the General Fund was \$10,638,014, an increase of 16.6% from \$9,119,966 in 2015. The total general fund balance for 2016 was \$15,715,341, a 7.5% increase over the 2015 amount of \$14,625,430. This increase in fund balance is due primarily to sale of unused major fixed asset, reduction in debt payments, and slight increase in property tax revenues. As a measure of the General Fund's liquidity, it may be useful to compare both unassigned fund balance and total fund balance to total fund expenditures. Unassigned fund balance represents 53.4% of total General Fund expenditures of \$19,939,031. Total fund balance represents 78.8% of total General Fund expenditures.

At June 30, 2016, the governmental funds of the Town of Carrboro reported a combined fund balance of \$21,064,919. The reported combined fund balance of the governmental funds includes a fund balance within the Bond Fund of \$1,590,442 and a fund balance within the Capital Projects Fund of \$2,708,533. These fund balances are either restricted or committed for capital project purposes.

General Fund Budgetary Highlights. During the fiscal year, the Town revised the General Fund budget on several occasions. Generally, these amendments fall into one of three categories: (1) to adjust the estimates that are used to prepare the original budget ordinance once exact information is available; (2) to recognize new funding amounts from external sources, such as federal and state grants; or (3) increase appropriations that become necessary to maintain services. The General Fund budgeted expenditures were increased by \$637,223 (3%) from an original appropriation of \$21,271,647 to a final appropriation of \$21,908,870.

The comparison of revenue and expenditure financial activity with budgeted estimates suggests that the Town budgeted adequately for ongoing operations. Total revenue receipts exceeded budgeted projections by \$945,104.

Revenues from taxes (i.e., property, local option sales, and other) represent 81.6% of the total revenues. Property, sales and other taxes were slightly more than (\$295,278) budget projections. Other taxes which includes the Tax and Tag System for collection of vehicle property taxes at the time of registration renewal were 57.1% above budget projections.

Permits and fees represent 6% of total revenue budget and exceeded budget projections by \$36,785 or 3.0%. Total revenue for permits and fees this year was \$1,270,187 compared to \$1,260,859 in 2015. This is due to a number of approved private developments that began or completed construction last year. Revenues from sales and services, investment, and other exceeded budget projections by \$52,653 or 13.4%.

Town of Carrboro, North Carolina Management's Discussion and Analysis

The unrestricted intergovernmental revenue receipts exceeded budget projections by \$576,627 for electric franchise, piped natural gas, video sales programming, telecommunication, and wine and beer licenses or taxes. These revenues totaled \$1,452,221 for 2016 compared to \$1,481,631 in 2015.

Expenditures, as required by budget ordinance, should not exceed appropriated levels. Total expenditures were \$19,939,031, which was \$1,969,839 less than the final budget of \$21,908,870. All spending by function was in compliance with budgetary requirements.

All expenditures were less than final budget at June 30, 2016, and were 1.7% less than the prior year. Expenditures for general government were 5.8% higher than the prior year. Actual expenditures for public safety and recreation and parks were greater than the prior year, 1% and 2.6%, respectively. Transportation expenditures increased by 4.6% over the prior year due to increased operating costs. Public works expenditures decreased by 20.3% from the prior year due to staff turnover and recruitment to replace employees that retired. Debt service expenditures increased by 13.3% over the prior year due to additional debt, for acquisition of vehicles and equipment.

Capital asset and debt administration

Capital assets. The Town's investment in capital assets for its governmental-type activities as of June 30, 2016 totaled \$33,229,093 (net of accumulated depreciation). These assets include buildings, roads, land, machinery and equipment, and vehicles. Major capital asset transactions during the year include the replacement of police vehicles and solid waste equipment.

Town of Carrboro's Capital Assets (Net of Depreciation) Figure 4

	Governmental Activitie				
	2016	_	2015		
Land	\$ 14,608,393	\$	14,608,393		
Construction-in-progress	569,560		1,440,578		
Buildings and systems	4,783,602		5,091,088		
Improvements other than buildings	871,510		432,632		
Machinery and equipment	1,299,339		1,335,036		
Infrastructure	9,214,446		9,610,249		
Vehicles and motorized equipment	1,882,243		1,432,966		
Total	<u>\$ 33,229,093</u>	\$	33,950,942		

Additional information on the Town's capital assets can be found in on pages 33 and 38 of this report.

Long-term debt. As of June 30, 2016 and 2015, the Town of Carrboro had the following long-term liabilities:

Town of Carrboro's Outstanding Debt Figure 5

	Governmental Activities					
Government obligation bonds		2016		2015		
	\$	3,850,000	\$	4,100,000		
Premium on bonds	·	75,430		80,296		
Installment purchases		3,046,275		3,148,164		
Compensated absences		631,373		617,651		
Other post-employment benefits obligation		8,147,822		7,278,554		
LGERS net pension liability		664,576		-		
Law enforcement officers' net pension obligation		359,080		349,530		
Total	<u>\$</u>	16,774,556	\$	15,574,195		

Total long-term liabilities for the Town increased by \$1,200,361 (7.7%) during fiscal year 2016 primarily due to other post-employment benefit, law enforcement officers' pension obligation, the LGERS net pension liability and compensated absences. The Town had debt retirement for this fiscal year with the principal repayment of \$973,069. Additions to debt during 2016 total \$621,180 for vehicles and equipment.

As mentioned in the financial highlights section of this document, the Town currently holds an AAA bond rating from Standard and Poor's and maintains Aa1 bond rating from Moody's Investor Service. These bond ratings are a clear indication of the Town's sound financial condition.

North Carolina General Statutes limit the amount of general obligation debt that a unit of government can issue to 8% of the total assessed value of taxable property located within that government's boundaries. The legal debt margin for the Town is \$163,952,101. The Town has no general obligation bonds authorized but unissued at June 30, 2016.

Additional information regarding the Town's long-term debt can be found beginning on page 115 of this report.

Economic factors and next year's budget and rates

The following key economic indicators will impact the Town.

- Low unemployment. The Town's low unemployment rate (as reflected in the county-wide Orange County rate) of 4.7% was well below the state average of 5.3% as of February 2015. This trend is expected to continue for the next year.
- Stable property tax base. The Town expects to continue to collect property taxes at a rate in excess of 99%.
- Continued property and sales tax growth is expected to continue into the next fiscal year.
- Sales tax reform legislation enacted or pending in the General Assembly is being closely monitored for any potential adverse impact on local governments.

Budget highlights for the fiscal year ending June 30, 2017

Governmental activities. The Town has approved a General Fund budget in the amount of \$22,032,357 for fiscal year 2017, which is a 2.1% increase over the original adopted fiscal year 2016 budget. As the economy continued to show signs of improvement, it was incumbent upon management to continue its disciplined approach and not become too optimistic in projecting revenues.

The primary focus in preparing the fiscal year 2017 budget was to develop one that:

- Implemented the Board's strategic priorities;
- 2. Managed costs while improving services to citizens;
- 3. Avoided increasing the tax burden for Town residents and local businesses; and,
- 4. Provided salary adjustments for Town employees.

The two largest sources of revenues, property taxes and sales taxes, are projected to increase. Property taxes are projected to increase by less than 1% due to increase in valuations and private developments. The tax rate for real property equals \$.5894 cents per one hundred dollars (0.5894), which remained unchanged from fiscal year 2016.

Sales tax revenues over the past year continue to show signs of recovery and are anticipated to grow by 4% over the 2015-16 level due to an increase in the sale of general retail items (e.g., food, clothing, household goods, etc.). In 2016 the local sales tax was expanded by the North Carolina General Assembly to include certain services which had not been taxed in the past.

The Town continues to scrutinize it operating expenses and seek more effective and productive methods for service delivery. While the overall total of operating expenses in 2017 will be slightly increased, the Town will seek to acquire new software that is obsolete for the Planning Department and Recreation and Parks Department. Additionally, the Town will begin planning for a number of future capital outlays that include: parking management study, storm water management and flooding mitigation, Town comprehensive facilities study, and, technology upgrades for public safety radio equipment.

Capital outlays in the General Fund will decrease by 27.3%, from \$710,930 in 2016 to \$516,589 in 2017. These capital outlays will be primarily for vehicles and equipment purchases. The budget for debt service in 2017 is \$1,220,693 compared to \$1,169,760 in 2016.

Requests for information

This report is designed to provide an overview of the Town's finances for those with an interest in this area. Questions concerning any of the information found in this report or requests for additional information should be directed to the Finance Director, 301 West Main Street, Carrboro North Carolina 27510. Other related financial documents may be reviewed online at the Town's website at: http://www.townofcarrboro.org.

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Basic Financial Statements

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	Primary Government	Component Unit Carrboro		
	Governmental Activities	Tourism Development Authority		
ASSETS				
Current assets:				
Cash and cash equivalents	\$ 20,167,624	\$ 122,929		
Receivables:	077 000			
Taxes receivable, net Accrued interest receivable, property taxes	277,386 39,999	-		
Accounts receivable, net	27,040	3,370		
Due from primary government	27,040	51,991		
Due from other governments	1,685,125	92		
Inventories	7,024	9Z -		
Prepaids	152,161	583		
Restricted cash	1,124,134	-		
Total current assets	23,480,493	178,965		
	_0, .00, .00	,		
Non-current assets:				
Notes receivable	166,734	-		
Capital assets, net of accumulated depreciation	33,229,093			
Total assets	56,876,320	178,965		
DEFERRED OUTFLOWS OF RESOURCES	526,105			
LIADULTICO				
LIABILITIES Current liabilities:				
Accounts payable and accrued liabilities	1,562,985	8,000		
Payable from restricted assets, customer deposits	1,502,909	0,000		
and performance bonds	396,506	_		
Revenues received in advance	86,707	_		
Accrued interest payable	54,184	_		
Due to component unit	51,991	-		
Current portion of long-term liabilities	1,483,090	-		
Total current liabilities	3,635,463	8,000		
Long-term liabilities:				
Net pension liability	664,576			
Due in more than one year	14,626,890	- 2.000		
Total liabilities	18,926,929	8,000		
DEFERRED INFLOWS OF RESOURCES	423,595			
NET POSITION				
Net investment in capital assets	28,529,962	_		
Restricted for:	20,020,002	_		
Stabilization by State Statute	1,937,144	55,453		
Streets	78,252	-		
Unrestricted	7,506,543	115,512		
Total net position	<u>\$ 38,051,901</u>	<u>\$ 170,965</u>		

Program	Revenues
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Functions/Programs Primary government:	Expenses		Charges for Services		Gı	perating rants and ntributions	Capital Grants and Contributions	
Governmental activities:	ф	4 407 000	Φ.	500 400	Φ.	400 400	Φ.	
General government	\$	4,487,922	\$	528,403	\$	122,496	\$	-
Public safety		7,051,112		665,028		2,544		-
Planning		1,374,325		117,590		31,159		-
Transportation		1,540,288		-		494,257		-
Public works		4,205,935		74,644		13,309		5,635
Parks and recreation		1,741,056		259,974		36,498		-
Economic and physical								
development		200,798		-		-		-
Interest on long-term								
debt		167,984						
Total governmental								
activities	\$	20,769,420	\$	1,645,639	\$	700,263	\$	5,635
Component unit:								
Tourism Development								
Authority	\$	135,995	\$	-	\$		\$	
Total component unit	\$	135,995	\$		\$		\$	

General revenues:

Taxes:

Property taxes, levied for general purposes

Local option sales taxes

Other taxes

Unrestricted intergovernmental revenues

Unrestricted investment earnings

Payments from Town of Carrboro

Total general revenues

Change in net position

Net position, beginning

Net position, ending

Net Revenue (Expense) and Changes in Net Position						
Primary Government	Component Unit					
Governmental Activities	Carrboro Tourism Development Authority					
\$ (3,837,023) (6,383,540) (1,225,576) (1,046,031) (4,112,347) (1,444,584) (200,798) (167,984)	\$ - - - - - -					
(18,417,883)						
- _	(135,995)					
-	(135,995)					
11,835,903 4,105,283 1,381,093 1,452,221 28,818	- - - - 177,534					
18,803,318	177,534					
385,435	41,539					
37,666,466	129,426					
\$ 38,051,901	\$ 170,965					

Town of Carrboro, North Carolina Balance Sheet Governmental Funds June 30, 2016

					Ма	jor Funds					
	General Fund		Revolving eral Fund Loan Fund			Bond Fund		Capital Projects Fund		Grants Administration Fund	
ASSETS Cash and cash equivalents	\$	14,749,029	\$	493,234	\$	1,623,198	\$	2,724,473	\$	64,213	
Taxes receivable, net	Φ	277,386	Φ	493,234	Φ	1,023,196	Φ	2,724,473	Φ	04,213	
Accounts receivable, net		27,040		-		<u>-</u>		-		-	
Due from other governments		1,662,936		_		22,189					
Notes receivable, net		1,002,930		69,768		22,109		_		_	
Inventories		7,024		-		_		_		_	
Prepaid items		152,161		_		_		_		_	
Restricted cash		1,124,134									
Total assets	\$	17,999,710	\$	563,002	\$	1,645,387	\$	2,724,473	\$	64,213	
LIABILITIES											
Accounts payable and											
accrued liabilities	\$	1,471,779	\$	-	\$	54,945	\$	15,940	\$	20,321	
Payable from restricted											
assets, customer deposits											
and performance bonds		396,506		-		-		-		-	
Revenues received in advance		86,707		-		-		-		-	
Due to component unit		51,991				-		-		-	
Total liabilities		2,006,983		-		54,945		15,940		20,321	
DEFERRED INFLOWS OF											
RESOURCES		277,386		69,768		-		-		-	
FUND BALANCES											
Nonspendable:											
Inventories		7,024		-		-		-		-	
Prepaid items		152,161		-		-		-		-	
Restricted:											
Stabilization by state		4 044 055				00.400					
statute		1,914,955		-		22,189		-		-	
Powell Bill (streets) Capital equipment		78,252 649,376		-		-		-		-	
Capital equipment Capital projects		U+3,370 -		-		1,568,253		-		-	
Committed:						1,000,200					
Economic development		_		493,234		_		_		_	
Capital projects		_		-		_		2,708,533		_	
Affordable housing		_		-		_		_,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		_	
Energy efficiency		-		-		-		-		_	
Assigned:											
Subsequent year's											
expenditures		275,559		-		-		-		-	
Capital projects		2,000,000		-		-		-		-	
Unassigned		10,638,014		-		-				43,892	
Total fund balances		15,715,341		493,234		1,590,442		2,708,533		43,892	
Total liabilities, deferred											
inflows of resources	_										
and fund balances	\$	17,999,710	\$	563,002	\$	1,645,387	\$	2,724,473	\$	64,213	

N	onmajor Funds	Total Governmental Funds
\$	513,477	\$ 20,167,624
Ψ	-	277,386
	_	27,040
	-	1,685,125
	96,966	166,734
	-	7,024
	-	152,161
		1,124,134
\$	610,443	\$ 23,607,228
\$	-	\$ 1,562,985
	_	396,506
	-	86,707
	<u>-</u> _	51,991
	_	2,098,189
	96,966	444,120
	-	7,024
	-	152,161
	-	1,937,144
	-	78,252
	-	649,376
	-	1,568,253
	110,670	603,904
	-	2,708,533
	331,744	331,744
	71,063	71,063
	-	275,559
	-	2,000,000
		10,681,906
	513,477	21,064,919
\$	610,443	\$ 23,607,228

	Total Governmenta Funds	
Amounts reported for governmental activities in the Statement of Net Position (Exhibit 1) are different because:		
Total fund balances - governmental funds	\$	21,064,919
Capital assets used in governmental activities are not financial resources and therefore not reported in the funds.		33,229,093
Other long-term assets (accrued interest receivable from taxes) are not available to pay for current period expenditures and therefore are inflows of resources in the funds.		39,999
Deferred outflows of resources related to pensions are not reported in the fund statements.		526,105
Liabilities for earned revenues are considered deferred inflows of resources in fund statements.		444,120
Some liabilities, including long-term obligations, are not due and payable in the current period, and therefore are not reported in the funds.		(16,109,980)
Deferred inflows of resources related to pensions are not reported in the fund statements.		(423,595)
Net pension liability		(664,576)
Other long-term liabilities (accrued interest) are not due and payable in the current period, and therefore are not reported in the funds.		(54,184)
Net position of governmental activities	\$	38,051,901

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Town of Carrboro, North Carolina Statement of Revenues, Expenditures and Changes in Fund Balances Governmental Funds Year Ended June 30, 2016

			Major Funds		
	General Fund	Revolving Loan Fund	Bond Fund	Capital Projects Fund	Grants Administration
Revenues:					
Ad valorem taxes	\$ 11,829,436	\$ -	\$ -	\$ -	\$ -
Local option sales taxes	4,105,283	-	-	-	<u>-</u>
Other taxes and licenses	1,381,093	_	_	_	_
Unrestricted intergovernmental	1,452,221	_	_	_	_
Restricted intergovernmental	651,211	_	_	_	_
Permits and fees	1,270,187	_	_	_	_
Sales and services	263,444	_	_	_	_
Investment earnings	20,278	2,941	3,224	_	_
Other	161,060	38,434	5,224	5,635	_
Total revenues	21,134,213	41,375	3,224	5,635	
Expenditures:					
General government	4,353,526	_	-	_	_
Public safety	6,216,871	_	_	_	_
Planning	1,333,903	_	_	_	_
Transportation	1,540,288	_	_	_	_
Public works	3,134,390	_	_	_	_
Economic and	0,104,000				
physical development	_	_	_	_	18,257
Parks and recreation	1,529,332	_	_	_	10,237
Capital outlay	666,423	_	108,608	635,416	_
Debt service:	000,423		100,000	033,410	
Principal	973,069				
	913,009	-	-	-	-
Interest and other	101 220				
charges	191,229		108,608	COF 44C	18,257
Total expenditures	19,939,031		100,000	635,416	10,237
Excess of revenues					
over (under)	4 405 400	44.075	(405.004)	(000 704)	(40.057)
expenditures	1,195,182	41,375	(105,384)	(629,781)	(18,257)
Other financing sources (uses):	000 500			4.075.044	
Transfers from other funds	208,526	-	-	1,275,841	(04.504)
Transfers to other funds	(1,426,264)	-	-	(350,215)	(31,581)
Sale of capital assets	491,287	-	-	-	-
Installment purchase					
obligations issued	621,180			<u> </u>	<u> </u>
Total other financing					
sources (uses)	(105,271)		-	925,626	(31,581)
Net change in fund					
balances	1,089,911	41,375	(105,384)	295,845	(49,838)
Fund balances,					
beginning of year	14,625,430	451,859	1,695,826	2,412,688	93,730
Fund balances,					
end of year	\$ 15,715,341	\$ 493,234	\$ 1,590,442	\$ 2,708,533	\$ 43,892

Nonmajor Funds	Total Governmental Funds
\$	\$ 11,829,436 4,105,283 1,381,093 1,452,221 651,211 1,270,187 263,444 28,817 218,561 21,200,253
- - - - 126,887 -	4,353,526 6,216,871 1,333,903 1,540,288 3,134,390 145,144 1,529,332 1,410,447
-	973,069
126,887	191,229 20,828,199
(111,081)	372,054
323,693 - - -	1,808,060 (1,808,060) 491,287 621,180
323,693	1,112,467
212,612	1,484,521
300,865	19,580,398
\$ 513,477	\$ 21,064,919

Reconciliation of the Governmental Funds Statement

of Revenues, Expenditures and Changes in Fund Balances to the Statement of Activities:		
Total net change in fund balances - governmental funds		\$ 1,484,521
Amounts reported for governmental activities in the statement of activities are different because:		
Governmental funds report capital outlays as expenditures. However, in the statement of activities, the cost of those assets is allocated over their estimated useful lives and reported as depreciation expense. This is the amount by which capital outlays exceeded depreciation in the current period. Capital outlay expenditures which were capitalized Depreciation expense for governmental assets	1,410,447 (1,589,573)	(179,126)
Cost of capital asset disposed of during the year, not recognized on modified accrual basis. Proceeds on disposal of fixed assets under modified accrual basis	(491,287)	, , ,
Loss on sale of fixed assets recognized under full accrual basis	(51,436)	(542,723)
Contributions to the pension plan in the current fiscal year are not included on the Statement of Activities.		526,105
Revenues in the statement of activities that do not provide current financial resources are not reported as revenues in the funds.		
Change in accrued interest receivable, property taxes Change in deferred revenues, property taxes Change in deferred revenues	(10,167) 16,632 (56,081)	(49,616)
The issuance of long-term debt provides current financial resources to governmental funds, while the repayment of the principal of long-term debt consumes the current financial resources of governmental funds. Neither transaction has any effect on net position. Also, governmental funds report the effect of issuance costs, premiums, discounts and similar items when debt is first issued, whereas these amounts are deferred and amortized in the Statement of Activities. This amount is the net effect of these differences in the treatment of long-term debt and related items.		
New installment purchase obligations issued Principal payments on long-term debt	(621,180) 973,069	351,889

Some expenses reported in the statement of activities do not		
require the use of current financial resources, and therefore		
are not reported as expenditures in governmental funds.		
Amortization of bond premiums	\$ 4,866	
Pension expense	(336,324)	
Change in accrued interest payable on long-term debt	18,379	
Change in compensated absences	(13,718)	
Change in net pension obligation	(9,550)	
Change in other postemployment benefits	 (869,268)	\$ (1,205,615)
Total changes in net position of governmental activities		\$ 385,435

				Variance with Final Budget	
		Amounts	Actual	Positive	
	Original	<u>Final</u>	Amounts	(Negative)	
5					
Revenues	Ф 40 04E 470	Ф 40 04E 470	Ф 44 000 40C	ф (40C 004)	
Ad valorem taxes	\$ 12,315,470	\$ 12,315,470	\$ 11,829,436	\$ (486,034)	
Local option sales taxes	3,825,686	3,825,686	4,105,283	279,597	
Other taxes and licenses Unrestricted intergovernmental	879,378 875,594	879,378 875,594	1,381,093 1,452,221	501,715 576,627	
Restricted intergovernmental	611,750	667,450	651,211	(16,239)	
Permits and fees	1,233,402	1,233,402	1,270,187	36,785	
Sales and services	263,789	263,789	263,444	(345)	
Investment earnings	1,078	1,078	20,278	19,200	
Other revenues	93,703	127,262	161,060	33,798	
Total revenues	20,099,850	20,189,109	21,134,213	945,104	
	· · · · · · · · · · · · · · · · · · ·				
Expenditures					
Current:					
General government	4,432,862	4,699,425	4,394,844	304,581	
Public safety	6,442,063	6,874,602	6,467,931	406,671	
Planning	1,350,247	1,465,483	1,333,903	131,580	
Transportation	1,540,288	1,540,288	1,540,288	-	
Public works	4,172,185	4,321,122	3,502,529	818,593	
Parks and recreation	1,638,233	1,691,561	1,535,238	156,323	
General services	526,009	146,629	-	146,629	
Debt service	1,169,760	1,169,760	1,164,298	5,462	
Total expenditures	21,271,647	21,908,870	19,939,031	1,969,839	
Excess of revenues over					
(under) expenditures	(1,171,797)	(1,719,761)	1,195,182	2,914,943	
(under) expenditures	(1,171,737)	(1,713,701)	1,133,102	2,314,343	
Other financing sources (uses)					
Transfers from other funds	176,945	208,526	208,526	-	
Transfers to other funds	(301,000)	(1,426,264)	(1,426,264)	-	
Sale of capital assets	49,756	49,756	491,287	441,531	
Installment purchase obligation					
issued	621,180	621,180	621,180		
Total other financing					
sources (uses)	546,881	(546,802)	(105,271)	441,531	
Evenes of revenues and					
Excess of revenues and					
other financing sources over (under) expenditures					
and other financing uses	(624,916)	(2,266,563)	1,089,911	3,356,474	
and other infancing uses	(024,910)	(2,200,303)	1,009,911	3,350,474	
Fund balance appropriated	624,916	2,266,563	<u> </u>	(2,266,563)	
Net change in fund balance	\$ -	\$ -	1,089,911	\$ 1,089,911	
Fund balance, beginning of year			14,625,430		
Fund balance, end of year			<u>\$ 15,715,341</u>		
•					

Notes to Financial Statements

1. Summary of Significant Accounting Policies

The accounting policies of the Town of Carrboro (the "Town") and its discretely presented component unit conform to generally accepted accounting principles as applicable to governments. The following is a summary of the more significant accounting policies:

A. Reporting entity

The Town, a political subdivision of Orange County, is governed by an elected mayor and a six-member Board of Aldermen. As required by generally accepted accounting principles, these financial statements present the Town and its component unit, a legally separate entity for which the Town is financially accountable. The discretely presented component unit presented below is reported in a separate column in the Town's financial statements in order to emphasize that it is legally separate from the Town.

Carrboro Tourism Development Authority

Effective March 1, 2013, a 3% hotel and motel room occupancy tax was established by the Board. As part of establishing this tax, the Town formed the Carrboro Tourism Development Authority ("CTDA") which is a public authority under the Local Government Budget and Fiscal Control Act. The members of the CTDA are appointed by the Town's Board of Aldermen. The CTDA receives revenue through the occupancy tax, which is levied and collected by the Town and remitted to the CTDA net of administration fees on a quarterly basis. The CTDA shall use at least two-thirds of the funds remitted to promote travel and tourism in the Town, and shall use the remainder for tourism-related expenditures. The CTDA, which has a June 30 year end, is presented as if it were a proprietary fund (discrete presentation). Requests for complete financial statements for the CTDA may be directed to the Finance Officer, c/o Carrboro Tourism Development Authority, 301 West Main Street, Carrboro, North Carolina 27510.

B. Basis of presentation

Government-wide statements: The statement of net position and the statement of activities display information about the primary government and its component unit. These statements include the financial activities of the overall government. Eliminations have been made to minimize the double counting of internal activities. Governmental activities generally are financed through taxes, intergovernmental revenues, and other non-exchange transactions.

The statement of activities presents a comparison between direct expenses and program revenues for each function of the Town's governmental activities. Direct expenses are those that are specifically associated with a program or function and, therefore, are clearly identifiable to a particular function. Indirect expense allocations that have been made in the funds have been reversed for the statement of activities. Program revenues include (a) fees and charges paid by the recipients of goods or services offered by the programs, and (b) grants and contributions that are restricted to meeting the operational or capital requirements of a particular program. Revenues that are not classified as program revenues, including all taxes, are presented as general revenues.

Fund financial statements: The fund financial statements provide information about the Town's funds. The emphasis of fund financial statements is on major governmental funds, each displayed in a separate column. All remaining governmental funds are aggregated and reported as non-major funds.

The Town reports the following major governmental funds:

General Fund. The General Fund is the general operating fund of the Town. It is used to account for all financial resources except those required to be accounted for in another fund. The primary revenue sources are ad valorem taxes, state and federal grants, and various other taxes and licenses. The primary expenditures are for public safety, streets and maintenance, sanitation, and general government services.

Revolving Loan Fund. The Revolving Loan Fund is used to account for loans made to various local businesses. The primary revenue source consists of principal and interest repayments made on these loans. The Town has elected to report this fund as major.

Bond Fund. The Bond Fund accounts for the financial resources to be used for the acquisition or construction of greenways and sidewalks. The Town has elected to report this fund as major.

Capital Projects Fund. The Capital Projects Fund accounts for the financial resources to be used for the acquisition or construction of major capital facilities. Additionally, the Town has legally adopted a Capital Reserve Fund and Payment in Lieu Reserve Fund. The Capital Reserve Fund and Payment in Lieu Reserve Fund are consolidated in the Capital Projects Fund. The budgetary comparisons for the Capital Reserve Fund has been included in the supplemental information. The Capital Reserve Fund accounts for resources to be used for future major capital purchases or projects. The Payment in Lieu Reserve Fund accounts for payments received from developers in lieu of providing on-site recreational areas and open spaces. The funds are held in reserve for use in one of four geographically defined quadrants of the Town (where the residential development is located) for use in acquisition and development of recreational facilities present or future. The Payment in Lieu Reserve Fund had no activity in the current year.

Grants Administration Fund. The Grants Administration Fund was established to account for grant funds that are restricted for a particular project.

The Town reports the following non-major governmental funds:

Affordable Housing Fund. The Affordable Housing Fund was established to advance the Town of Carrboro's goal of increasing the stock of affordable, safe and decent housing within the Town and its planning jurisdiction.

Energy Efficiency Revolving Loan Fund. The Energy Efficiency Revolving Loan Fund was established to advance the Town of Carrboro's goal of increasing energy efficiency in buildings within the Town in cooperation with the Southeast Energy Efficiency Alliance.

Business Loan Fund. The Business Loan Fund was established to attract locally owned sustainable business enterprises that are environmentally and socially responsible. The business must be located within the town limits of Carrboro and business owners must reside in Orange County.

C. Measurement focus and basis of accounting

In accordance with North Carolina General Statutes, all funds of the Town are maintained during the year using the modified accrual basis of accounting.

Government-wide statements. The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded at the time liabilities are incurred, regardless of when the related cash flows take place. Non-exchange transactions, in which the Town gives (or receives) value without directly receiving (or giving) equal value in exchange, include property taxes, grants and donations. On an accrual basis, revenue from property taxes is recognized in the fiscal year for which the taxes are levied. Revenue from grants and donations is recognized in the fiscal year in which all eligibility requirements have been satisfied.

Amounts reported as program revenues include (1) charges to customers or applicants for goods, services, or privileges provided; (2) operating grants and contributions; and (3) capital grants and contributions, including special assessments. Internally dedicated resources are reported as general revenues rather than as program revenues. Likewise, general revenues include all taxes.

Governmental fund financial statements. Governmental funds are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Under this method, revenues are recognized when measurable and available. Expenditures are recorded when the related fund liability is incurred, except for principal and interest on long-term debt, claims and judgments, and compensated absences, which are recognized as expenditures to the extent they have matured. General capital asset acquisitions are reported as expenditures in governmental funds. Proceeds of long-term debt and acquisitions under installment purchase agreements are reported as other financing sources.

The Town considers all revenues available if they are collected within 90 days after year end, except for property taxes. Ad valorem taxes receivable are not accrued as revenue because the amount is not susceptible to accrual. At June 30, taxes receivable for property other than motor vehicles are materially past due and are not considered to be an available resource to finance the operations of the current year. Also, as of September 1, 2013, state law altered the procedures for the assessment and collection of property taxes on registered motor vehicles in North Carolina. Effective with this change in the law, the state of North Carolina is responsible for the billing and collecting of the property taxes on registered motor vehicles on behalf of all municipalities and special tax districts. Property taxes are due when vehicles are registered. The billed taxes are applicable to the fiscal year in which they are received. Uncollected taxes that were billed in periods prior to September 1, 2013 and for limited registration plates are shown as a receivable in these financial statements, and are offset by deferred inflows of resources.

Sales taxes and certain intergovernmental revenues, such as beer and wine tax, collected and held by the State at year end on behalf of the Town are recognized as revenue. Sales taxes are considered a shared revenue for the Town of Kernersville because the tax is levied by Orange County and then remitted to and distributed by the State. Most intergovernmental revenues and sales and services are not susceptible to accrual because they are not measurable until received in cash. All taxes, including those dedicated for specific purposes are reported as general revenues rather than program revenues. Grant revenues which are unearned at year end are recorded as deferred inflows of resources. Under the terms of grant agreements, the Town funds certain programs by a combination of specific cost-reimbursement grants, categorical block grants, and general revenues. Thus, when program expenses are incurred, there are both restricted and unrestricted net position available to finance the program. It is the Town's policy to first apply cost-reimbursement grant resources to such programs, followed by categorical block grants, and then by general revenues.

D. Budgetary data

The Town's budgets are adopted as required by the North Carolina General Statutes. An annual budget is adopted for the General Fund. All annual appropriations lapse at the fiscal year end. Project ordinances are adopted for the Revolving Loan Fund, the Bond Fund, the Capital Projects Fund, the Grants Administration Fund, the Affordable Housing Fund, the Energy Efficiency Revolving Loan Fund, and the Business Loan Fund. All budgets are prepared using the modified accrual basis of accounting.

Expenditures may not legally exceed appropriations at the functional level for all annually budgeted funds and at the project level for multi-year funds. The Finance Officer is authorized to approve intradepartmental transfer requests between appropriation units and between departmental programs within the limits of the approved departmental budget. In the Capital Projects Fund, the Town Manager is allowed to transfer funds under \$10,000 between line items as long as transfers are within the overall project budget. All amendments must be approved by the governing board and the Board must adopt an interim budget that covers that time until the annual ordinance can be adopted.

E. Assets, liabilities, deferred outflows/inflows of resources, and fund equity

Deposits and investments

All deposits of the Town and the CTDA are made in Board-designated official depositories and are secured as required by state law [G. S. 159-31]. The Town and the CTDA may designate as an official depository any bank or savings association whose principal office is located in North Carolina. Also, the Town and the CTDA may establish time deposit accounts such as NOW and SuperNOW accounts, money market accounts, and certificates of deposit.

State law [G. S. 159-30(c)] authorizes the Town and the CTDA to invest in obligations of the United States or obligations fully guaranteed both as to principal and interest by the United States; obligations of the state of North Carolina; bonds and notes of any North Carolina local government or public authority; obligations of certain non-guaranteed federal agencies; certain high quality issues of commercial paper and bankers' acceptances; and the North Carolina Capital Management Trust (NCCMT).

The Town's and the CTDA's investments are reported at fair value. The NCCMIT- Cash Portfolio, a SEC-registered (2a-7) external investment pool, is measured at amortized cost, which is the NCCMT's share price. The NCCMIT-Term Portfolio's securities are valued at fair value.

Cash and cash equivalents

The Town pools money from several funds to facilitate disbursement and investment, and to maximize investment income. Therefore, all cash and investments are essentially demand deposits, and are considered cash and cash equivalents.

Restricted assets

The unexpended proceeds from installment purchase agreements in the amount of \$649,376 are classified as restricted cash because their use is completely restricted to the purpose for which the installment purchase agreements were issued. Credit deposits in the amount of \$396,506 are considered a liability and classified as restricted cash. The Town requires builders/contractors to pay a credit deposit when, due to circumstances beyond their control, there is uncompleted work on a construction project and the builder/contractor needs to have the Planning Department issue a Certificate of Occupancy for the property. Once the Town has ensured that the work has been satisfactorily completed, the credit deposit funds are released. Powell Bill funds in the amount of \$78,252 are also classified as restricted cash because they can be expended only for the purposes outlined in G.S. 136-41.1 through 136-41.4.

Ad valorem taxes receivable

In accordance with state law [G. S. 105-347 and G. S. 159-13(a)], the Town levies ad valorem taxes on property other than motor vehicles on July 1st, the beginning of the fiscal year. The taxes are due on September 1st (lien date); however, interest does not accrue until the following January 6th. These taxes are based on the assessed values as of January 1, 2015. As allowed by state law, the Town has established a schedule of discounts that apply to taxes that are paid prior to the due date. In the Town's General Fund, ad valorem tax revenues are reported net of such discounts.

Allowances for doubtful accounts

All receivables that historically experience uncollectible accounts are shown net of an allowance for doubtful accounts. This amount is estimated by analyzing the percentage of receivables written off in prior years.

Inventory and prepaid items

The inventory of the Town is valued at cost (first-in, first-out), which approximates market. The Town's General Fund inventory consists of expendable supplies that are recorded initially in inventory accounts and charged as expenditures when used rather than when purchased.

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded using the consumption method as prepaid items in both government-wide and fund financial statements, and expensed as the items are used.

Capital assets

Capital assets, which include property, equipment, and infrastructure assets (e.g., roads, bridges, sidewalks, and similar items), are reported in the applicable governmental columns in the government-wide financial statements. Capital assets are defined by the government as assets with an initial individual cost of more than a certain amount and an estimated useful life in excess of two years.

Minimum capitalization costs are as follows:

	 Cost
Land	\$ 1
Buildings and improvements	20,000
Vehicles, furniture and equipment	5,000
Infrastructure	100,000

Such assets are recorded at historical cost or estimated historical cost if purchased or constructed. Donated capital assets received prior to June 15, 2015 are recorded at their estimated fair value at the date of donation. Donated capital assets received after June 15, 2015 are recorded at acquisition cost. The cost of normal maintenance and repairs that do not add to the value of the asset or materially extend assets' lives are not capitalized.

Capital assets are depreciated using the straight-line method over their estimated useful lives:

	<u> Useful Life</u>
Land improvements and infrastructure	20 to 40 years
Furniture, fixtures, equipment, heavy equipment, and vehicles	5 to 10 years
Computer equipment and software	3 years

Deferred outflows/inflows of resources

In addition to assets, the statement of financial position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *Deferred Outflows of Resources*, represents a consumption of net position that applies to a future period and so will not be recognized as an expense or expenditure until then. The Town has one item that meets this criterion, contributions made to the pension plan in the 2016 fiscal year. In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *Deferred Inflows of Resources*, represents an acquisition of net position that applies to a future period and so will not be recognized as revenue until then. The Town has several items that meet the criterion for this category: property taxes receivable and notes receivable which are net of allowance, as well as deferrals of pension expense that result from the implementation of GASB Statement 68.

Long-term obligations

In the government-wide financial statements, long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities statement of net position. Bond premiums are deferred and amortized over the life of the bonds using the straight-line method that approximates the effective interest method. Bonds payable are reported net of applicable bond premiums or discount. Bond issuance costs, except for prepaid insurance costs, are expensed in the reporting period in which they are incurred. Prepaid insurance costs are expensed over the life of the debt.

In the fund financial statements, governmental fund types recognize bond premiums, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuance are reported as other financing sources. Issuance costs, whether or not held from the actual debt proceeds received, are reported as debt service expenditures.

Compensated absences

The vacation policy of the Town provides for the accumulation of annual vacation leave without any applicable maximum until December 31 of each calendar year. However, if an employee separates from service, payment for accumulated annual vacation leaves shall not exceed 240 hours (14 duty days for shift fire personnel). On December 31 of each calendar year, any employee with more than 240 hours (14 duty days for shift fire personnel) of accumulated leave shall have the excess accumulation converted to sick leave so that only 240 hours (14 duty days for shift fire personnel) are carried forward to January 1 of the next calendar year. The Town has assumed a first-in, first-out method of using accumulated compensated time. The portion of that time that is estimated to be used in the next fiscal year has been designated as a current liability in the government-wide financial statements.

The Town's sick leave policy provides for an unlimited accumulation of earned sick leave. Sick leave does not vest, but any unused sick leave accumulated at the time of retirement may be used in the determination of length of service for retirement benefit purposes. Since the Town has no obligation for the accumulated sick leave until it is actually taken, no accrual for sick leave has been made.

Net position/fund balances

Net position. Net position in government-wide financial statements is classified as net investment in capital assets, restricted, and unrestricted. Restricted net position represents constraints on resources that are either externally imposed by creditors, grantors, contributors, or laws or regulations of other governments, or imposed by law through state statute.

Fund balances. In the governmental fund financial statements, fund balance is composed of five classifications designed to disclose the hierarchy of constraints placed on how fund balance can be spent.

The governmental fund types classify fund balances as follows:

Non-spendable fund balance - This classification includes amounts that cannot be spent because they are either (a) not in spendable form, or (b) legally or contractually required to be maintained intact.

Inventories - portion of fund balance that is <u>not</u> an available resource because it represents the year-end balance of ending inventories, which are not spendable resources.

Prepaid items - charges entered into accounts for benefits not yet received and are regularly recurring costs of operations such as unexpired insurance premiums. They are recognized as an asset when paid and recognized as an expenditure when incurred.

Restricted fund balance - This classification includes amounts that are restricted to specific purposes externally imposed by creditors or imposed by law.

Restricted for stabilization by state statute - portion of fund balance that is restricted by state statute [G.S. 159-8(a)].

Restricted for streets - Powell Bill portion of fund balance that is restricted by revenue source for street construction and maintenance expenditures. This amount represents that balance of the total unexpended Powell Bill funds.

Restricted for capital equipment - portion of fund balance that represents unspent debt proceeds that are restricted for the purchase of certain equipment.

Restricted for capital projects - portion of fund balance that represents unspent debt proceeds that are restricted for the construction of certain capital projects.

Committed fund balance - This classification includes the portion of fund balance that can only be used for specific purposes imposed by majority vote by quorum of the Town's governing body - the Board of Aldermen (highest level of decision-making authority). The governing body can, by adoption of an ordinance prior to the end of the fiscal year, commit fund balance. Once adopted, the limitation imposed by the ordinance remains in place until a similar action is taken (the adoption of another ordinance) to remove or revise the limitation.

Economic development - portion of fund balance committed by the Board for economic development through the use of loans to various businesses.

Capital projects - portion of fund balance committed by the Board for completion of capital projects.

Affordable housing - portion of fund balance committed by the Board for providing safe and decent housing within the Town.

Energy efficiency - portion of fund balance committed by the Board for the goal of increasing energy efficiency in buildings within the Town.

Assigned fund balance - This classification includes the portion of fund balance that the Town intends to use for specific purposes.

Subsequent year's expenditures - portion of fund balance that is appropriated in the next year's budget that is not already classified in restricted or committed. The governing body approves the appropriation; however, the budget ordinance authorizes the manager to modify the appropriations by resource or appropriation within funds up to \$100,000.

Capital projects - portion of fund balance assigned by Town management for future capital projects.

Unassigned Fund Balance - This classification includes the portion of fund balance that has not been restricted, committed, or assigned to specific purposes or other funds. The general fund is the only fund that may report a positive unassigned fund balance amount.

The Town has a revenue-spending policy that provides policy for programs with multiple revenue sources. The Town will use resources in the following hierarchy: bond proceeds, federal funds, state funds, local non-Town funds, Town funds. For purposes of fund balance classification, expenditures are to be spent from restricted fund balance first, followed in order by committed fund balance, assigned fund balance and, finally, unassigned fund balance. The Town has the authority to deviate from this policy if it is in the best interest of the Town.

The Board has adopted a policy of maintaining an unassigned fund balance within a range of 22.5% to 35% of budgeted appropriations. This policy also provides for the transfer of funds to Capital Projects when the unassigned fund balance exceeds 35%.

Pensions

For purposes of measuring the net pension asset, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Local Governmental Employees' Retirement System (LGERS) and additions to/deductions from LGERS' fiduciary net position have been determined on the same basis as they are reported by LGERS. For this purpose, plan member contributions are recognized in the period in which the contributions are due. The Town's employer contributions are recognized when due and the Town has a legal requirement to provide the contributions. Benefits and refunds are recognized when due and payable in accordance with the terms of LGERS. Investments are reported at fair value.

2. Detail Notes on All Funds

A. Assets

Deposits

All the deposits of the Town are either insured or collateralized by using one of two methods. Under the Dedicated Method, all deposits that exceed the federal depository insurance coverage level are collateralized with securities held by the Town's agent in the Town's name. Under the Pooling Method, which is a collateral pool, all uninsured deposits are collateralized with securities held by the State Treasurer's agent in the name of the State Treasurer. Since the State Treasurer is acting in a fiduciary capacity for the Town, these deposits are considered to be held by the Town's agent in the Town's name. The amount of the pledged collateral is based on an approved averaging method for noninterest-bearing deposits and the actual current balance for interest-bearing deposits. Depositories using the Pooling Method report to the State Treasurer the adequacy of their pooled collateral covering uninsured deposits. The State Treasurer does not confirm this information with the Town or the escrow agent. Because of the inability to measure the exact amounts of collateral pledged for the Town under the Pooling Method, the potential exists for under collateralization, and this risk may increase in periods of high cash flows. However, the State Treasurer of North Carolina enforces strict standards of financial stability for each depository that collateralizes public deposits under the Pooling Method. The Town has no formal policy regarding custodial risks for deposits, but relies on the State Treasurer to enforce standards of minimum capitalization for all pooling method financial institutions and to monitor them for compliance. The Town complies with the provisions of G.S. 159-31 when designating official depositories and verifying that deposits are properly secured.

At June 30, 2016, the Town's deposits had a carrying amount of \$8,721,791 and a bank balance of \$9,023,699. Of the bank balance, \$250,000 was covered by federal depository insurance and the remainder was covered by collateral under the pooling method. The carrying amount of deposits for the CTDA was \$122,929 and the bank balance was \$124,104. All of the bank balance was covered by federal depository insurance. At June 30, 2016, the Town's petty cash fund totaled \$298.

Investments

At June 30, 2016, the Town had \$12,569,669 invested with the North Carolina Capital Management Trust Cash Portfolio, which carried a credit rating of AAAm by Standard and Poor's. The Town has no policy regarding credit risk

Receivables

(a) Due from other governments

Amounts due from other governments consist of the following:

	 Other		County	_	State	 Total
General fund: Local option sales tax Sales tax refunds Utilities franchise, piped natural gas,	\$ -	\$	30,400	\$	1,131,730 53,420	\$ 1,131,730 83,820
telecommunications, and video sales programming Solid waste disposal tax City of Durham planning grant	- - 17,808		- - -		297,481 3,296	297,481 3,296 17,808
NCVTS tag and tax proceeds	17,808	_	30,400		128,801 1,614,728	 128,801 1,662,936

	Other	County	State	Total
Bond fund: Grant reimbursements	\$ <u>-</u>	\$ <u>-</u>	\$ 22,18 <u>9</u>	<u>\$ 22,189</u>
Total	<u>\$ 17,808</u>	\$ 30,400	<u>\$ 1,636,917</u>	<u>\$ 1,685,125</u>

(b) Notes receivable

The Revolving Loan Fund was established for the purpose of making loans to numerous local businesses. As of June 30, 2016, the Revolving Loan Fund notes receivable balance was \$69,768, net of a \$70,000 allowance.

The following is a summary of notes receivable of the Revolving Loan Fund at June 30, 2016:

	Interest <u>Rate</u>	<u>Balance</u>		
Alphabet Soup Bryan's Guitar Art in a Pickle The Beehive Carrboro Creative Coworking Carrboro Citizen	6.00 3.00 2.00 3.00 2.00 2.00	\$	11,681 50,613 34,363 5,828 26,434 10,849	
Less allowance			139,768 (70,000)	
Total		\$	69,768	

The Energy Efficiency Revolving Loan Fund was created to advance the Town's goal of increasing energy efficiency in buildings within the Town in cooperation with Southeast Energy Efficiency Alliance. As of June 30, 2016, the Energy Efficiency Revolving Loan Fund notes receivable balance was \$67,907.

The Affordable Housing Fund was created to advance the Town's goal of increasing the stock of affordable, safe and decent housing within the Town and its planning jurisdiction. As of June 30, 2016, the Affordable Housing Fund notes receivable balance was \$24,331.

The Business Loan Fund was established to attract locally owned sustainable business enterprises that are environmentally and socially responsible. The business must be located within the town limits of Carrboro and business owners must reside in Orange County. As of June 30, 2016, the Business Loan Fund notes receivable balance was \$4,728.

Receivables - allowance for doubtful accounts

The Town provides, as an allowance for uncollectible accounts, a percentage of its receivables which it does not expect to collect based on historical collection rates.

The amounts presented in Exhibit 3, the governmental funds balance sheet, are net of the following allowances for doubtful accounts:

General fund: Property taxes

\$ 82,933

Capital assets

Capital asset activity for the year ended June 30, 2016 was as follows:

	Beginning Balances	Increases	<u>Decreases</u>	Ending Balances
Governmental activities: Capital assets not being depreciated: Land	\$ 14,608,393	\$ -	\$ -	\$ 14,608,393
Construction-in-progress	1,440,578	744,026	(1,615,044)	569,560
Total capital assets not being depreciated	16,048,971	744,026	(1,615,044)	15,177,953
Capital assets being depreciated:				
Buildings and improvements	8,723,340	481,990	(567,966)	8,637,364
Land improvements	660,251	466,773	-	1,127,024
Infrastructure	12,102,607	27,485	-	12,130,092
Equipment and heavy equipment	4,632,559	381,972	-	5,014,531
Vehicles	5,744,201	923,245	-	6,667,446
Total capital assets being depreciated	31,862,958	2,281,467	<u>(567,966</u>)	33,576,457
Less accumulated depreciation for:				
Buildings and improvements	3,632,252	246,753	(25,243)	3,853,762
Land improvements	227,619	27,895	-	255,514
Infrastructure	2,492,358	423,288	-	2,915,646
Equipment and heavy equipment	3,297,523	417,670	-	3,715,192
Vehicles	4,311,235	473,967	_	4,785,203
Total accumulated depreciation	13,960,987	\$ 1,589,573	\$ (25,243)	15,525,317
Total capital assets being depreciated, net	17,901,971			18,051,140
Governmental activity capital assets, net	\$ 33,950,942			\$ 33,229,093

Depreciation expense was charged to functions/programs of the primary government as follows:

General government	\$ 50,293
Public safety	480,786
Planning	1,144
Public works	896,069
Parks and recreation	 161,281
Total depreciation expense	\$ 1,589,573

B. Liabilities

Accounts payable and accrued liabilities

Accounts payable and accrued liabilities at the government-wide level at June 30, 2016 were as follows:

		/endors	7	Salaries d Benefits	 Total
Governmental activities: General Other governmental	\$	956,008 91,206	\$	515,771 <u>-</u>	\$ 1,471,779 91,206
Total governmental activities	<u>\$</u>	1,047,214	\$	515,771	\$ 1,562,985

Pension plan obligations

(a) Local Governmental Employees' Retirement System

Plan description. The Town is a participating employer in the statewide Local Governmental Employees' Retirement System (LGERS), a cost-sharing, multiple-employer defined benefit pension plan administered by the state of North Carolina. LGERS membership is comprised of general employees and local law enforcement officers (LEOs) or participating local governmental entities. Article 3 of G.S. Chapter 128 assigns the authority to establish and amend benefit provisions to the North Carolina General Assembly. Management of the plan is vested in the LGERS Board of Trustees, which consists of 13 members – nine appointed by the Governor, one appointed by the State Senate, one appointed by the State House of Representatives, and the State Treasurer and State Superintendent, who serve as ex-officio members. The Local Governmental Employees' Retirement System is included in the Comprehensive Annual Financial Report (CAFR) for the state of North Carolina. The State's CAFR includes financial statements and required supplementary information for LGERS. That report may be obtained by writing to the Office of the State Controller, 1410 Mail Service Center, Raleigh, North Carolina 27699-1410, by calling (919) 981-5454, or at www.osc.nc.gov.

Benefits provided. LGERS provides retirement and survivor benefits. Retirement benefits are determined as 1.85% of the member's average final compensation times the member's years of creditable service. A member's average final compensation is calculated as the average of a member's four highest consecutive years of compensation. Plan members are eligible to retire with full benefits at age 65 with five years of creditable service, at age 60 with 25 years of creditable service, or at any age with 30 years of creditable service. Plan members are eligible to retire with partial retirement benefits at age 50 with 20 years of creditable service or at age 60 with five years of creditable service (age 55 for firefighters). Survivor benefits are available to eligible beneficiaries of members who die while in active service or within 180 days of their last day of service and who have either completed 20 years of creditable service regardless of age (15 years of creditable service for firefighters and rescue squad members who are killed in the line of duty) or have completed five years of service and have reached age 60. Eligible beneficiaries may elect to receive a monthly Survivor's Alternate Benefit for life or a return of the member's contributions. The plan does not provide for automatic post-retirement benefit increases. Increases are contingent upon actuarial gains of the plan.

LGERS plan members who are LEOs are eligible to retire with full retirement benefits at age 55 with five years of creditable service as an officer, or at any age with 30 years of creditable service. LEO plan members are eligible to retire with partial retirement benefits at age 50 with 15 years of creditable service as an officer. Survivor benefits are available to eligible beneficiaries of LEO members who die while in active service or within 180 days of their last day of service and who also have either completed 20 years of creditable service regardless of age, or have completed 15 years of service as a LEO and have reached age 50, or have completed five years of creditable service as a LEO and have reached age 55, or have completed 15 years of creditable service as a LEO if killed in the line of duty. Eligible beneficiaries may elect to receive a monthly Survivor's Alternate Benefit for life or a return of the member's contributions.

Contributions. Contribution provisions are established by General Statute 128-30 and may be amended only by the North Carolina General Assembly. Town of Carrboro employees are required to contribute 6% of their compensation. Employer contributions are actuarially determined and set annually by the LGERS Board of Trustees. The Town's contractually required contribution rate for the year ended June 30, 2016, was 7.15% of compensation for law enforcement officers and 6.75% for general employees and firefighters, actuarially determined as an amount that, when combined with employee contributions, is expected to finance the costs of benefits earned by employees during the year. Contributions to the pension plan from the Town were \$526,105 for the year ended June 30, 2016.

Refunds of contributions. Town employees who have terminated services as a contributing member of LGERS, may file an application for a refund of their contributions. By state law, refunds to members with at least five years of service include 4% interest. State law requires a 60 day waiting period after service termination before the refund may be paid. The acceptance of a refund payment cancels the individual's right to employer contributions or any other benefit provided by LGERS.

Pension liabilities, pension expense, and deferred outflows of resources and deferred inflows of resources related to pensions

At June 30, 2016, the Town reported a liability of \$664,576 for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2016. The total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of December 31, 2014. The total pension liability was then rolled forward to the measurement date of June 30, 2015 utilizing update procedures incorporating the actuarial assumptions. The Town's proportion of the net pension liability was based on a projection of the Town's long-term share of future payroll covered by the pension plan, relative to the projected future payroll covered by the pension plan of all participating LGERS employers, actuarially determined. At June 30, 2015, the Town's proportion was 0.148%, which was a decrease of 0.002% from its proportion measured as of June 30, 2014.

For the year ended June 30, 2016, the Town recognized expense of \$338,946. At June 30, 2016, the Town reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Ou	eferred tflows of sources	In	Deferred of the sources
Differences between expected and actual experience	\$	-	\$	156,212
Net difference between projected and actual earnings on pension plan investments Changes in proportion and differences between Town contributions		-		189,201
and proportionate share of contributions Town contributions subsequent to the measurement date		- 526,105		78,182 <u>-</u>
Total	\$	526,105	\$	423,595

\$526,105 reported as deferred outflows of resources related to pensions resulting from Town contributions subsequent to the measurement date will be recognized as an increase of the net pension asset in the year ended June 30, 2017. Other amounts reported as deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended 		
2017	\$ (24.	2,840)
2018		2,840)
2019		2,513)
2020		4,598
2021		· -
Thereafter		
Total	\$ (42)	3,595)

Actuarial assumptions. The total pension liability in the December 31, 2014 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation 3.0 percent

Salary increases 4.25 to 8.55 percent, including inflation and productivity factor

Investment rate of return 7.25 percent, net of pension plan investment expense, including inflation

The plan currently uses mortality tables that vary by age, gender, employee group (i.e., general, law enforcement officer) and health status (i.e., disabled and healthy). The current mortality rates are based on published tables and based on studies that cover significant portions of the U.S. population. The healthy mortality rates also contain a provision to reflect future mortality improvements.

The actuarial assumptions used in the December 31, 2014 valuation were based on the results of an actuarial experience study for the period January 1, 2005 through December 31, 2009.

Future ad hoc COLA amounts are not considered to be substantively automatic and are therefore not included in the measurement.

The projected long-term investment returns and inflation assumptions are developed through review of current and historical capital markets data, sell-side investment research, consultant whitepapers, and historical performance of investment strategies. Fixed income return projections reflect current yields across the U.S. Treasury yield curve and market expectations of forward yields projected and interpolated for multiple tenors and over multiple year horizons. Global public equity return projections are established through analysis of the equity risk premium and the fixed income return projections. Other asset categories and strategies' return projections reflect the foregoing and historical data analysis. These projections are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target allocation and best estimates of arithmetic real rates of return for each major asset class as of June 30, 2015 are summarized in the following table:

	Target Allocation	Long-Term Expected Real Rate of <u>Return</u>
Fixed income	29.0%	2.2%
Global equity	42.0%	5.8%
Real estate	8.0%	5.2%
Alternatives	8.0%	9.8%
Credit	7.0%	6.8%
Inflation protection	6.0%	3.4%
Total	100.0%	

The information above is based on 30-year expectations developed with the consulting actuary for the 2014 asset, liability and investment policy study for the North Carolina Retirement Systems, including LGERS. The long-term nominal rates of return underlying the real rates of return are arithmetic annualized figures. The real rates of return are calculated from nominal rates by multiplicatively subtracting a long-term inflation assumption of 3.00%. All rates of return and inflation are annualized.

Discount rate. The discount rate used to measure the total pension liability was 7.25%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rate and that contributions from employers will be made at statutorily required rates, actuarially determined. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of the current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Town's proportionate share of the net pension liability to changes in the discount rate. The following presents the Town's proportionate share of the net pension liability calculated using the discount rate of 7.25 percent, as well as what the Town's proportionate share of the net pension asset or net pension liability would be if it were calculated using a discount rate that is one percentage point lower (6.25 percent) or one percentage point higher (8.25 percent) than the current rate:

	1%	Discount	1%
	Decrease	Rate	Increase
	(6.25%)	(7.25%)	(8.25%)
Town's proportionate share of the net pension liability (asset)	<u>\$ 4,634,167</u>	<u>\$ 664,576</u>	\$ (2,679,720)

Pension plan fiduciary net position. Detailed information about the pension plan's fiduciary net position is available in the separately issued Comprehensive Annual Financial Report (CAFR) for the State of North Carolina.

(b) Law Enforcement Officers' Special Separation Allowance

(i) Plan description

The Town administers a public employee retirement system (the "Separation Allowance"), a single-employer defined benefit pension plan that provides retirement benefits to the Town's qualified sworn law enforcement officers. The Separation Allowance is equal to 0.85% of the annual equivalent of the base rate of compensation most recently applicable to the officer for each year of creditable service. The retirement benefits are not subject to any increases in salary or retirement allowances that may be authorized by the General Assembly. Article 12D of G.S. Chapter 143 assigns the authority to establish and amend benefit provisions to the North Carolina General Assembly.

All full-time law enforcement officers of the Town are covered by the Separation Allowance. At December 31, 2015, the Separation Allowance's membership consisted of:

	_
Terminated plan members entitled to, but not yet receiving benefits	_
Active plan members	39
Total	46

A separate report was not issued for the plan.

(ii) Summary of significant accounting policies:

Basis of accounting. The Town has chosen to fund the Separation Allowance on a pay-as-you-go basis. Pension expenditures are made from the General Fund, which is maintained on the modified accrual basis of accounting. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

The Separation Allowance has no assets accumulated in a trust that meets the following criteria which are outlined in GASB Statements 67 and 68:

- contributions to the pension plan an earnings on those contributions are irrevocable
- pension plan assets are dedicated to providing benefits to plan members
- pension plan assets are legally protected from the creditors or employers, nonemployer contributing entities, the plan administrator, and plan members.

Method used to value investments. No funds are set aside to pay benefits and administration costs. These expenditures are paid as they come due.

(iii) Contributions:

The Town is required by Article 12D of G. S. Chapter 143 to provide these retirement benefits and has chosen to fund the benefit payments on a pay-as-you-go basis through appropriations made in the General Fund operating budget. The Town's obligation to contribute to this plan is established and may be amended by the North Carolina General Assembly. There were no contributions made by employees.

The annual required contribution for the current year was determined as part of the December 31, 2015 actuarial valuation using the projected unit credit actuarial cost method. The actuarial assumptions included (a) a 3.57% investment rate of return (net of administrative expenses) and (b) projected salary increases ranging from 3.5% to 7.35% per year. Both (a) and (b) included an inflation component of 3.0%. The assumptions did not include postemployment benefit increases.

Annual pension cost and net pension obligation: The Town's annual pension cost and net pension obligation to the Separation Allowance for the current year were as follows:

Annual required contribution Interest on net pension obligation Adjustment to annual required contribution	\$ 149,852 17,476 (30,715)
Annual pension cost Contributions made	 136,613 (127,063)
Increase in net pension obligation Net pension obligation, beginning of year	 9,550 349,530
Net pension obligation, end of year	\$ 359,080

Three-Year Trend Information

Fiscal Year Ended	Pe	nnual ension t (APC)	Percentage of APC Contributed	_	Net Pension bligation
6/30/2014 6/30/2015	\$	98,517 132,235	139.80% 98.87%	\$	348,032 349,530
6/30/2016		136,613	93.01%		359,080

(iv) Funded status and funding process

As of December 31, 2015, the most recent actuarial valuation date, the plan was not funded. The actuarial accrued liability for benefits and the unfunded actuarial accrued liability (UAAL) was \$1,548,384. The covered payroll (annual payroll of active employees covered by the plan) was \$2,134,068, and the ratio of the UAAL to the covered payroll was 72.56%.

The schedule of funding progress, presented as required supplementary information following the notes to the financial statements, presents multi-year trend information about whether the actuarial value of plan assets are increasing or decreasing over time relative to the actuarial accrued liability for benefits.

(c) Supplemental Retirement Income Plan

Plan description. The Town contributes to the Supplemental Retirement Income Plan (Plan), a defined contribution pension plan administered by the Department of State Treasurer and a Board of Trustees. The Plan provides retirement benefits to law enforcement officers employed by the Town. Article 5 of G.S. Chapter 135 assigns the

authority to establish and amend benefit provisions to the North Carolina General Assembly. The Supplemental Retirement Income Plan for Law Enforcement Officers is included in the Comprehensive Annual Financial Report (CAFR) for the state of North Carolina. The State's CAFR includes the pension trust fund financial statements for the Internal Revenue Code Section 401(k) plan that includes the Supplemental Retirement Income Plan for Law Enforcement Officers. That report may be obtained by writing to the Office of the State Controller, 1410 Mail Service Center, Raleigh, North Carolina 27699-1410, or by calling (919) 981-5454.

Funding policy. Article 12E of G.S. Chapter 143 requires the Town to contribute each month an amount equal to 5% of each law enforcement officer's salary, and all amounts contributed are vested immediately. The Town has also elected to contribute each month an amount equal to 3% of each participating general employee's salary. Also, the participants may make voluntary contributions to the Plan. Contributions for the year ended June 30, 2016 were \$534,725, which consisted of \$265,253 from the Town and \$269,472 from the employees.

Additionally, the Town has elected to include all permanent, full-time employees under this plan.

(d) Other post-employment benefits (OPEB)

Plan description. In addition to providing pension benefits, the Town administers a single-employer defined benefit Healthcare Benefits Plan (the HCB Plan). As of July 1, 2007, this plan provides postemployment healthcare benefits to retirees of the Town, provided they participate in the North Carolina Local Governmental Employees' Retirement System and have at least ten years of creditable service with the Town. The Town pays a percentage of the insurance premium paid to private insurers based on the table below. Employees have the option of purchasing dependent coverage at the Town's group rates. Employees hired on or after July 1, 2007 who retire with a minimum of ten years of creditable service also have the option of purchasing coverage for themselves and dependents at the Town's group rate. For those employees, the Town pays a percentage of the stipend based on the table below. The stipend is based on the Employee Only insurance premium as of July 1, 2007 (\$417.46) and increases based on changes in the consumer price index. Employees hired on or after July 1, 2007 who retire with less than ten years of service are not eligible for postemployment coverage. Retirees who qualify for coverage receive the same benefits as active employees. Coverage for all retirees who are eligible for Medicare will be transferred to a Medicare Supplemental plan after qualifying for Medicare. The Board of Aldermen may amend the benefit provisions. A separate report was not issued for the plan.

Retired Employee's	Date Hired		
Years of Creditable Service	Pre-July 1, 2008	on or After July 1, 2008	
Less than 10 years	Not eligible for coverage	Not eligible for coverage	
10 to 14 years	50%	50%	
15 to 19 years	25%	75%	
20 years and up	0%	100%	

Membership of the HCB Plan consisted of the following at December 31, 2014, the date of the latest actuarial valuation:

	General Employees	Law Enforcement Officers
Retirees and dependents receiving benefits Terminated plan members entitled to but not yet receiving benefits Active plan members	20 - 109	11 - <u>36</u>
Total	129	47

Funding policy. The Town pays the full cost of coverage for the healthcare benefits paid to qualified retirees. Also, retirees who have their dependents covered at the time of retirement may continue to cover dependents if they elect to pay the premiums. Currently, 31 retirees are eligible for post-retirement health benefits. For the fiscal year ended June 30, 2016, the Town made payments for post-retirement health premiums of \$235,606. The Town has chosen to fund the healthcare benefits on a pay-as-you-go basis.

The current annual required contribution (ARC) rate is 18.3% of annual covered payroll. For the current year, the Town contributed \$235,606, or 3.3% of annual covered payroll. The Town obtains healthcare coverage through private insurers. The Town's required contributions, under a Town resolution, for employees not engaged in law enforcement and for law enforcement officers represented 13.7% and 4.6% of covered payroll, respectively. There were no contributions made by employees, except for dependent coverage in the amount of \$41,339. The Town's obligation to contribute to HCB Plan is established and may be amended by the Town's Board.

Summary of significant accounting policies. Postemployment expenditures are made from the General Fund, which is maintained on the modified accrual basis of accounting. No funds are set aside to pay benefits and administration costs. These expenditures are paid as they come due.

Annual OPEB cost and net OPEB obligation. The Town's annual OPEB cost (expense) is calculated based on the ARC of the employer, an amount actuarially determined in accordance with the parameters of GASB Statement 45. The ARC represents a level of funding that, if paid on an ongoing basis, is projected to cover normal cost each year and amortize any unfunded actuarial liabilities (or funding excess) over a period not to exceed 30 years. The following table shows the components of the Town's annual OPEB cost for the year, the amount actually contributed to the plan, and changes in the Town's net OPEB obligation for the healthcare benefits:

Annual required contribution Interest on net OPEB obligation Adjustment to annual required contribution	\$ 1,319,139 248,754 (463,019)
Annual OPEB cost Contributions made	1,104,874 (235,606)
Increase in net OPEB obligation Net OPEB obligation, beginning of year	869,268 7,278,554
Net OPEB obligation, end of year	\$ 8,147,822

The Town's annual OPEB cost, the percentage of annual OPEB cost contributed to the plan, and the net OPEB obligation as of June 30, 2016 were as follows:

Year Ended June 30	Annual OPEB Cost	Net OPEB Obligation		
2016	\$ 1,104,874	21.32%	\$ 8,147,822	
2015	1,330,255	20.34%	7,278,554	
2014	1,438,939	14.24%	6,218,861	

Funded status and funding progress. As of December 31, 2014, the most recent actuarial valuation date, the plan was not funded. The actuarial accrued liability for benefits and, thus, the unfunded actuarial accrued liability (UAAL) was \$13,447,467. The covered payroll (annual payroll of active employees covered by the plan) was \$7,207,710, and the ratio of the UAAL to the covered payroll was 186.6%. Actuarial valuations of an ongoing plan involve estimates of the value of reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment, mortality, and healthcare trends.

Amounts are determined regarding the funded status of the plan and the annual required contributions of the employer are subject to continual revision as actual results are compared with past expectations, and new estimates are made about the future. The schedule of funding progress, presented as required supplementary information following the notes to the financial statements, presents multi-year trend information about whether the actuarial value of plan assets is increasing or decreasing over time relative to the actuarial accrued liabilities for benefits.

Actuarial methods and assumptions. Projections of benefits for financial reporting purposes are based on the substantive plan (the plan as understood by the employer and the plan members), and include the types of benefits provided at the time of each valuation and the historical pattern of sharing of benefit costs between the employer and plan members at that point. The actuarial methods and assumptions used include techniques that are designed to reduce the effects of short-term volatility in actuarial accrued liabilities and the actuarial value assets, consistent with the long-term perspective of the calculations.

In the December 31, 2014 actuarial valuation, the projected unit credit actuarial cost method was used. The actuarial assumptions included a 4.00% investment rate of return (net of administrative expenses), which is the expected long-term investment returns on the employer's own investments calculated based on the funded level of the plan at the valuation date, and an annual medical cost trend increase of 7.50% to 5.00% annually. The investment rate included a 3.00% inflation assumption. The actuarial value of assets, if any, was determined using techniques that spread the effects of short-term volatility in the market value of investments over a five-year period. The UAAL is being amortized as a level percentage of projected payroll on an open basis. The remaining amortization period at December 31, 2014, was 30 years.

Other employment benefits

The Town has elected to provide death benefits to local law enforcement employees through the Death Benefit Plan for members of the Local Governmental Employees' Retirement System (Death Benefit Plan), a multiple-employer, State-administered, cost-sharing plan funded on a one-year term cost basis. The beneficiaries of those local law enforcement employees who die in active service after one year of contributing membership in the System, or who die within 180 days after retirement or termination of service, and have at least one year of contributing membership service in the System at the time of death, are eligible for death benefits. Lump-sum death benefit payments to beneficiaries are equal to the employee's 12 highest months' salary in a row during the 24 months prior to the employee's death, but the benefit may not exceed \$50,000 or be less than \$25,000. Because all death benefit payments are made from the Death Benefit Plan and not by the Town, the Town does not determine the number of eligible participants. The Town has no liability beyond the payment of monthly contributions. The contributions to the Death Benefit Plan cannot be separated between the postemployment benefit amount and the other benefit amount. The Town considers these contributions to be immaterial.

The Town provides additional group term life insurance through American United Life Insurance Company. The death benefit provided by the Town is \$15,000. Employees may purchase additional supplemental insurance. The supplemental amounts are available in increments of \$25,000, \$50,000, or \$75,000. The premiums for the supplemental insurance are deducted from payroll on an after-tax basis.

Deferred outflows and inflows of resources

Deferred outflows of resources is comprised solely of contributions to the pension plan in the current fiscal year in the amount of \$526,105.

Deferred inflows of resources at year end is comprised of the following:

	Unavailable <u>Revenues</u>		
Taxes receivable, net (General Fund)	\$	277,386	
Notes receivable, net (Revolving Loan Fund)		69,768	
Notes receivable, net (Nonmajor funds)		96,963	
Differences between expected and actual experience Net difference between projects and actual		156,213	
earnings on pension plan investments Changes in proportion and difference between employer		189,202	
contributions and proportionate share of contributions		78,180	

Risk management

The Town is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The Town participates in three self-funded risk financing pools administered by the North Carolina League of Municipalities. Through these pools, the Town obtains general liability of \$2 million per occurrence and auto liability coverage of \$1 million per occurrence, property coverage up to the total insurance values of the property policy, workers' compensation coverage up to statutory limits, and employee health coverage. The pools are reinsured through commercial carriers for claims in excess of retentions as selected by the Board of Trustees each year. Specific information on the limits of the reinsurance, excess and stop loss policies purchased by the Board of Trustees can be obtained by contacting Risk Management Services Department of the NC League of Municipalities. The pools are audited by certified public accountants, and the audited financial statements are available to the Town upon request.

The Town carries commercial coverage for police liability and public officials' liability. There have been no significant reductions in insurance coverage in the prior year, and settled claims have not exceeded coverage in any of the past three fiscal years. The Town does not carry flood insurance.

In accordance with G.S. 159-29, the Town's employees who have access to \$100 or more at any given time of the Town's funds are performance bonded through a commercial surety bond. The Finance Officer is bonded for \$50,000. The remaining employees who have access to funds are bonded for \$10,000 per occurrence.

Long-term obligations

(a) General obligation indebtedness

The Town's general obligation bonds serviced by the governmental funds were issued to provide long-term financing for the construction of sidewalks and greenways utilized in the operations of the Bond Fund. These bonds were issued to refinance the previous Bond Anticipation Notes acquired for the same purpose. All general obligation bonds are collateralized by the full faith, credit, and taxing power of the Town.

Bonds payable at June 30, 2016, is comprised of the following individual issue:

General obligation bonds

\$4,600,000 Sidewalk and Greenway Series 2013 Bonds, requiring principal payment on February 1 each year in the amount of \$250,000 with a final principal payment of \$100,000 due upon maturity (February 1, 2032); interest payments are due August 1 and February 1 each year. Interest rates vary between 2.0% and 3.5% over the life of the loan. The bonds contain certain redemption provisions that grant the Town the option to redeem the bonds in whole or in \$5,000 increments prior to the maturity date, but not before February 1, 2024, provided advanced notice is given.

3,850,000

Annual debt service requirements to maturity for long-term obligation are as follows:

Year Ending	Year Ending Government					
June 30		rincipal	I	Interest		
2017	\$	250,000	\$	90,000		
2018	•	250,000	,	82,500		
2019		250,000		77,500		
2020		250,000		72,500		
2021		250,000		67,500		
2022 - 2026		1,250,000		260,625		
2027 - 2031		1,250,000		119,000		
2032		100,000		3,500		
	<u>\$</u>	3,850,000	\$	773,125		

(b) Installment purchase agreements - equipment - General Fund

The Town has installment purchase agreements for the purchase and/or improvement of personal property including vehicles and equipment. The installment purchase notes payable at June 30, 2016, are as follows:

The financing contract requires an annual level payment of \$81,636 due June 21, including interest of 1.37%. The financing institution holds a security interest in all or a portion of the property purchased or improved. Payments are due beginning June 21, 2013, and annually thereafter, with a final payment of all outstanding principal and accrued and unpaid interest due on June 21, 2017.

The financing contract requires an annual level payment of \$102,286 due June 30, including interest of 1.26%. The financing institution holds a security interest in all or a portion of the property purchased or improved. Payments are due beginning June 30, 2014, and annually thereafter, with a final payment of all outstanding principal and accrued and unpaid interest due on June 30, 2018.

\$ 80,173

200,758

The financing contract requires an annual level payment of \$147,235 due June 11, including interest of 1.33%. The financing institution holds a security interest in all or a portion of the property purchased or improved. Payments are due beginning June 11, 2015, and annually thereafter, with a final payment of all outstanding principal and accrued and unpaid interest due on June 11, 2019.

\$ 430,211

The financing contract requires an annual level payment of \$127,714 due June 27, including interest of 1.40%. The financing institution holds a security interest in all or a portion of the property purchased or improved. Payments are due beginning June 27, 2016, and annually thereafter, with a final payment of all outstanding principal and accrued and unpaid interest due on June 27, 2020.

493,467

Total <u>\$ 1,204,609</u>

Annual debt service payments of the installment purchases as of June 30, 2016 are as follows:

Year Ending	Governmental Activities				
June 30	<u></u>	rincipal	lr	nterest	
2017	\$	442,241	\$	16,269	
2018		366,902		10,334	
2019		269,515		5,435	
2020		125 <u>,951</u>		1,763	
Total	\$	1,204,609	\$	33,801	

(c) Installment purchase agreement - improvements - General Fund

The Town has installment purchase agreement for improvements. The installment purchase note payable at June 30, 2016, is as follows:

Installment purchase agreement to finance the construction of the fire substation. The financing contract requires semi-annual payments of \$108,333 due July 15 and January 15, plus interest at 4.07%. Payments are due annually beginning July 15, 2009, and annually thereafter, with a final payment of all outstanding principal and accrued and unpaid interest due on July 15, 2024. The financing institution holds a first lien security interest on the property and first priority security interest in any and all fixtures used in connection with the operation of the property.

1,841,666

Annual debt service payments of the installment purchase as of June 30, 2016 are as follows:

Year Ending	Governmental Activities				
June 30	<u></u>	Principal		Interest	
2017	\$	216,667	\$	72,751	
2018		216,667		63,933	
2019		216,667		55,115	

Year Ending		Governmen	tal Acti	vities
June 30	<u>Principal</u>		Interest	
2020	\$	216,667	\$	46,296
2021		216,667		37,478
2022 - 2024		758,331		61,728
Total	\$	1,841,666	\$	337,301

(d) Changes in long-term debt obligations

	_ <u>J</u>	Balance uly 1, 2015	<u>lı</u>	ncreases_		Decreases_	<u>Ju</u>	Balance ne 30, 2016	P	Current Portion of Balance
Governmental activities:										
General obligation - bonds	\$	4,100,000	\$	-	\$	(250,000)	\$	3,850,000	\$	250,000
Premium on bond Installment purchases -		80,296		-		(4,866)		75,430		4,866
improvements		2,058,333		_		(216,667)		1,841,666		216,667
Installment purchases -		2,000,000				(210,007)		1,041,000		210,007
equipment		1,089,831		621,180		(506,402)		1,204,609		442,605
Compensated absences		617,651		582,674		(568,952)		631,373		568,952
Other postemployment										
benefits		7,278,554		1,104,874		(235,606)		8,147,822		-
Net pension liability (LGERS)		-		664,576		-		664,576		-
Net pension obligation		349,530		136,613	_	(127,063)		359,080		<u>-</u>
Total long-term obligations	\$	15,574,195	\$	3,109,917	\$	(1,909,556)	\$	16,774,556	\$	1,483,090

Compensated absences, net pension obligation and other post-employment benefits have typically been liquidated in the General Fund.

The Town's legal debt margin at June 30, 2016 was \$163,952,101.

B. Interfund balances and activity

Transfers to/from other funds

Transfers to/from other funds at June 30, 2016 consist of the following:

From the General Fund to the Capital Projects Fund in the amounts of (1) \$180,000 to support Century Center HVAC system, (2) \$150,000 to support MLK Park construction, (3) \$156,880 to support the Anderson Park Pavilion, and (4) \$230,000 to support Planning Permitting software, (5) \$91,000 to support Police Body-Worn Cameras project, (6) \$273,000 to support Public Safety Radios, (7) \$155,000 to support the Rogers Road Conduit project.	\$ 1,235,880
From the Capital Projects Fund to the General Fund to transfer unspent funds upon the completion of multiple capital projects during the fiscal year.	434,309
From the Capital Reserve Fund to the Capital Projects Fund to transfer unspent funds upon completion of the Weaver Street project.	173,270
From the Grants Administration Fund to the General Fund to transfer unspent funds on the Roberson Street project.	31,581

From the General Fund to the Affordable Housing Fund support future housing programs.	\$ 323,693
From the General Fund to the Capital Reserve Fund to support street resurfacing.	301,000
From the Capital Reserve Fund to the General Fund to support debt servicing of the fire station construction.	 176,945
	\$ 2,676,678

Transfers are used to move unrestricted revenues to finance various programs that the government must account for in other funds in accordance with budgetary authorizations, including amounts providing matching funds for various grant programs.

C. Net investment in capital assets

Capital assets	\$ 33,229,093
Less: related debt	(0.050.000)
General obligation bonds	(3,850,000)
Premium on bond issuance	(75,430)
Installment purchases - improvements	(1,841,666)
Installment purchases - equipment	(1,204,609)
Add: unexpended debt proceeds	 2,272,574
Net investment in capital assets	\$ 28,529,962

D. Fund balance

The following schedule provides management and citizens with the information on the portion of General Fund balance that is available for appropriation:

Total fund balance - General Fund	\$ 15,715,341
Less:	
Inventories	(7,024)
Prepaid items	(152,161)
Stabilization by state statute	(1,914,955)
Capital equipment	(649,376)
Powell Bill (streets)	(78,252)
Appropriated fund balance in subsequent fiscal year's budget	(275,559)
Capital projects	 (2,000,000)
Unassigned fund balance	10,638,014
Working capital/fund balance policy	 4,957,280
Remaining fund balance	\$ 5,680,734

The outstanding encumbrances are amounts needed to pay any commitments related to purchase orders and contracts that remain unperformed at year end.

General Fund \$ 224,979

3. Summary Disclosure of Significant Contingencies

A. Federal and state-assisted programs

The Town has received proceeds from several federal and state grants. Periodic audits of these grants are required and certain costs may be questioned as to not being appropriate expenditures under the grant agreements. Such audits could result in the refund of grant monies to the grantor agencies. Management believes that any required refunds will be immaterial. No provision has been made in the accompanying financial statements for the refund of grant monies.

B. Employment security benefits

The Town has elected to pay the direct cost of employment security benefits in lieu of unemployment payroll taxes. A liability for such payments could accrue in the period following the discharge of an employee. The Town made no payments for employment security benefits during the current fiscal year.

C. Claims and contingent liabilities

The Town is at times involved in various claims and legal actions arising in the ordinary course of business. In the opinion of management, the ultimate resolution of these matters will not have a material adverse effect on the Town's financial position or results of operations.

4. Related-Party Transactions

The Town collected occupancy tax proceeds in the amount of \$183,025. Of this amount, 3%, or \$5,491, was withheld as administration fees in the General Fund for the collection of the tax, with the remaining \$177,534 due to the CTDA. Amounts are remitted from the Town to the CTDA on a quarterly basis during the following month after the quarter end; therefore, there exists a payable to the CTDA (component unit) and a receivable from the Town (primary government) for the fourth quarter (April through June) collections to be remitted in the amount of \$51,991.

5. Future Expected Annual Cell Tower Revenue

The Town entered into contractual arrangements with four wireless communication service providers. The lease contracts have staggering maturity dates.

The Town has allowed these providers to have equipment on the Town-owned cell towers and has allowed service provider equipment on the Town's site. The lessee is responsible for keeping in full force and effect a comprehensive general liability insurance policy of at least \$2,000,000 from any one occurrence in respect to bodily injury (including death) and damage to property. The lessee agrees that no part of the equipment, building or improvements constructed, erected or placed by the lessee on the tower or site shall be considered as being affixed or part of the tower or site, and will be removed by the lessee upon termination of the contractual agreement.

The expected annual cell tower revenues for which contracts are in place as of June 30, 2016 are as follows:

2017 2018 2019 2020 2021	\$ 143,491 121,434 77,847 34,500 34,500
2022	 34,500
	\$ 446.272

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Required Supplementary Financial Data

This section contains additional information required by generally accepted accounting principles.

- Schedule of Funding Progress for the Law Enforcement Officers' Special Separation Allowance
- Notes to the Required Schedules for the Law Enforcement Officers' Special Separation Allowance
- Schedule of Funding Progress for Other Postemployment Benefits
- Schedule of Employer Contributions for Other Postemployment Benefits
- Schedule of the Proportionate Share of Net Pension Asset for Local Government Employees' Retirement System
- Schedule of Contributions to Local Government Employees' Retirement System
- Notes to the Required Schedules for Other Postemployment Benefits

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Town of Carrboro, North Carolina Law Enforcement Officers' Special Separation Allowance Required Supplementary Information Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Projected Unit Credit (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a)/c)
12/31/2006	\$ -	\$ 534,900	\$ 534,900	0.00%	\$ 1,752,714	30.52%
12/31/2007	-	557,745	557,745	0.00%	1,718,362	32.46%
12/31/2008	-	654,656	654,656	0.00%	1,848,527	35.42%
12/31/2009	-	889,339	889,339	0.00%	1,965,368	45.25%
12/31/2010	-	901,763	901,763	0.00%	1,893,173	47.63%
12/31/2011	-	1,117,731	1,117,731	0.00%	1,764,435	63.35%
12/31/2012	-	1,099,249	1,099,249	0.00%	1,894,654	58.02%
12/31/2013	-	1,254,013	1,254,013	0.00%	1,775,157	70.64%
12/31/2014	-	1,236,987	1,236,987	0.00%	1,861,205	66.46%
12/31/2015	-	1,548,384	1,548,384	0.00%	2,134,068	72.56%

Town of Carrboro, North Carolina Other Postemployment Benefits Required Supplementary Information Schedule of Funding Progress

Actuarial Valuation Date	Valuation Assets		Actuarial Accrued Liability (AAL) - Unfunded Projected Unit AAL Credit (UAAL) (b) (b - a)		Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a)/c)	
12/31/2008	\$ -	\$ 13,138,991	\$ 13,138,991	0.00%	\$ 7,108,351	184.84%	
12/31/2011	-	13,603,239	13,603,239	0.00%	7,223,608	188.32%	
12/31/2014	-	13,447,467	13,447,467	0.00%	7,207,710	186.57%	

Year Ended June 30	Annual Required Contribution	Percentage Contributed
2014	\$ 1,425,359	14.38%
2015	1,319,139	20.51%
2016	1,319,139	17.86%

Notes to the Required Schedules

The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation date	December 31, 2014
Actuarial cost method	Projected unit credit
Amortization method	Level percent of pay open
Remaining amortization period	30 years
Asset valuation method	Market value
Actuarial assumptions: Investment rate of return Medical cost trend rate: Pre-Medicare trend rate Post-Medicare trend rate Year of ultimate trend rate Includes inflation at	4.00% 7.5% - 5.0% 5.5% - 5.0% 2020 3.00%

Town of Carrboro, North Carolina Schedule of the Proportionate Share of the Net Pension Liability (Asset) Local Government Employees' Retirement System Required Supplementary Information Last Three Fiscal Years*

	2016		2015		2014	
Carrboro's proportion of the net pension liability (asset) (%)		0.1481%		0.1496%		0.1490%
Carrboro's proportion of the net pension liability (asset) (\$)	\$	664,576	\$	(882,438)	\$	1,796,023
Carrboro's covered-employee payroll		7,711,880		7,606,585		7,396,688
Carrboro's proportionate share of the net pension liability (asset) as a percentage of its covered-employee payroll		8.62%		-11.60%		24.28%
Plan fiduciary net position as a percentage of the total pension liability		98.09%		102.64%		94.35%

^{*} The amounts presented for each fiscal year were determined as of the prior fiscal year ending June 30.

Town of Carrboro, North Carolina Schedule of Contributions Local Government Employees' Retirement System Required Supplementary Information Last Three Fiscal Years

	2016		2015		2014	
Contractually required contribution	\$	526,105	\$	551,682	\$	538,976
Contributions in relation to the contractually required contribution		526,105		551,682		538,976
Contribution deficiency (excess)						
Carrboro's covered employee payroll	\$	7,721,032	\$	7,711,880	\$	7,606,585
Contributions as a percentage of covered employee payroll		6.81%		7.15%		7.09%

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Supplementary Information

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Revenues Ad valorem taxes: Taxes \$ 12,291,230 \$ 11,793,646 \$ (497,584) Penalties and interest 24,240 35,790 11,550 Total 12,315,470 11,829,436 (486,034) Local option sales taxes: Article 39, 1% 1,209,881 1,372,600 162,719 Article 39, 1% 971,828 1,000,777 28,949 Article 40, ½% 609,093 688,823 79,730 Article 44, ½% 737 2,586 1,849 City hold harmless 1,034,147 1,040,497 6,350 Total 3,825,686 4,105,283 279,597 Other taxes and licenses: Room occupancy tax 142,845 183,025 40,180 Motor vehicle license fees, net of refunds and collection fees 735,575 1,195,877 460,302 Privilege licenses 958 2,191 1,233 Total 879,378 1,381,093 501,715 Unity franchise tax 446,891 975,682 528,791 <t< th=""><th></th><th>Final Budget</th><th>Actual</th><th colspan="2">Variance Positive (Negative)</th></t<>		Final Budget	Actual	Variance Positive (Negative)	
Taxes \$ 12,291,230 \$ 11,793,646 \$ (497,584) Penalties and interest 24,240 35,790 11,550 Total 12,315,470 11,829,436 (486,034) Local option sales taxes: 4 11,209,881 1,372,600 162,719 Article 40, %% 971,828 1,000,777 28,949 Article 44, %% 609,093 688,823 79,730 Article 44, %% 737 2,556 1,849 City hold harmless 1,034,147 1,040,497 6,350 Total 3,825,686 4,105,283 279,597 Other taxes and licenses: 8 1,034,147 1,040,497 6,350 Total 3,825,686 4,105,283 279,597 Other taxes and licenses: 8 2,191 1,233 Room occupancy tax 142,845 183,025 40,180 Motor vehicle licenses fees, net of refunds and collection fees 735,575 1,195,877 460,302 Privilege licenses 958 2,191 1,233 Total	Revenues				
Penalties and interest Total 24,240 35,790 11,550 Total 12,315,470 11,829,436 (486,034) Local option sales taxes: 31,209,881 1,372,600 162,719 Article 39, 1% 12,209,881 1,000,777 28,949 Article 42, ½% 609,093 688,823 79,730 Article 44, ½% 737 2,586 1,849 City hold harmless 1,034,147 1,004,0497 6,550 Total 3,825,686 4,105,283 279,597 Other taxes and licenses: Room occupancy tax 142,845 183,025 40,180 Motor vehicle license fees, net of refunds and collection fees 735,575 1,195,877 460,302 Privilege licenses 958 2,191 1,233 Total 879,378 1,381,093 501,715 Unrestricted intergovernmental: NC DOT reimbursement - 5,910 5,910 Utility franchise tax 446,891 975,682 528,791 Piped natural gas tax <t< td=""><td>Ad valorem taxes:</td><td></td><td></td><td></td></t<>	Ad valorem taxes:				
Total 12,315,470 11,829,436 (486,034)		, , ,		, , ,	
Article 39, 1% 1,209,881 1,372,600 162,719 Article 40, ½% 971,828 1,000,777 28,949 Article 42, ½% 609,093 688,823 79,730 Article 44, ½% 737 2,586 1,849 City hold harmless 1,034,147 1,040,497 6,350 Total 3,825,686 4,105,283 279,597 Other taxes and licenses: Room occupancy tax 142,845 183,025 40,180 Motor vehicle license fees, net of refunds and collection fees 958 2,191 1,233 Total 879,378 1,381,093 501,715 Unrestricted intergovernmental: NC DOT reimbursement - 5,910 5,910 Utility franchise tax 446,891 975,682 528,791 Piped natural gas tax 34,152 43,040 8,888 Video sales programming tax 57,871 83,404 25,533 Telecommunications sales tax 187,766 184,133 (3,633) Direct-to-home satellite sales tax 86,914 69,724 810 Beer and wine tax 80,000 90,328 10,328 Total 875,594 1,452,221 576,627 Restricted intergovernmental: Powell Bill 499,163 494,257 (4,906) Solid waste disposal tax distribution 11,973 13,309 1,336 Planning work grant 46,467 31,159 (15,308) NC risk management agency grant - 1,500 1,500 Strowd Roses Grant-Music festival 10,514 600 (9,914) ABC Board grant U.S. Department of Justice block grant 27,193 35,898 8,705					
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Article 39, 1% 1,209,881 1,372,600 162,719 Article 40, ½% 971,828 1,000,777 28,949 Article 42, ½% 609,093 688,823 79,730 Article 44, ½% 737 2,586 1,849 City hold harmless 1,034,147 1,040,497 6,350 Total 3,825,686 4,105,283 279,597 Other taxes and licenses: Room occupancy tax 142,845 183,025 40,180 Motor vehicle license fees, net of refunds and collection fees 735,575 1,195,877 460,302 Privilege licenses 958 2,191 1,233 Total 879,378 1,381,093 501,715 Unrestricted intergovernmental: 2 5,910 5,910 Unilly franchise tax 446,891 975,682 528,791 Piped natural gas tax 34,152 43,040 8,888 Video sales programming tax 57,871 83,404 25,533 Direct-to-home satellite sales tax 68,914 69,724 810 Beer and wi	Local option sales taxes:				
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Article 42, ½% 609,093 688,823 79,730 Article 44, ½% 737 2,586 1,849 City hold harmless 1,034,147 1,040,497 6,350 Total 3,825,686 4,105,283 279,597 Other taxes and licenses: Room occupancy tax 142,845 183,025 40,180 Motor vehicle license fees, net of refunds and collection fees 735,575 1,195,877 460,302 Privilege licenses 958 2,191 1,233 Total 879,378 1,381,093 501,715 Unrestricted intergovernmental: NC DOT reimbursement - 5,910 5,910 Utility franchise tax 446,891 975,682 528,791 Piped natural gas tax 34,152 43,040 8,888 Video sales programming tax 57,871 83,404 25,533 Telecommunications sales tax 187,766 184,133 (3,633) Direct-to-home satellite sales tax 68,914 69,724 810 Beer and wine tax	· · · · · · · · · · · · · · · · · · ·				
Article 44, ½% 737 2,586 1,849 City hold harmless 1,034,147 1,040,497 6,350 Total 3,825,686 4,105,283 279,597 Other taxes and licenses: Room occupancy tax 142,845 183,025 40,180 Motor vehicle license fees, net of refunds and collection fees 735,575 1,195,877 460,302 Privilege licenses 958 2,191 1,233 Total 879,378 1,381,093 501,715 Unrestricted intergovernmental: NC DOT reimbursement - 5,910 5,910 Utility franchise tax 446,891 975,682 528,791 Piped natural gas tax 34,152 43,040 8,888 Video sales programming tax 57,871 83,404 25,533 Telecommunications sales tax 187,766 184,133 (3,633) Direct-to-home satellite sales tax 68,914 69,724 810 Beer and wine tax 80,000 90,328 10,328 Total 875	· · · · · · · · · · · · · · · · · · ·				
Total 3,825,686 4,105,283 279,597 Other taxes and licenses: Room occupancy tax 142,845 183,025 40,180 Motor vehicle license fees, net of refunds and collection fees 735,575 1,195,877 460,302 Privilege licenses 958 2,191 1,233 Total 879,378 1,381,093 501,715 Unrestricted intergovernmental: NC DOT reimbursement - 5,910 5,910 Utility franchise tax 446,891 975,682 528,791 Piped natural gas tax 34,152 43,040 8,888 Video sales programming tax 57,871 83,404 25,533 Telecommunications sales tax 187,766 184,133 (3,633) Direct-to-home satellite sales tax 68,914 69,724 810 Beer and wine tax 80,000 90,328 10,328 Total 875,594 1,452,221 576,627 Restricted intergovernmental: Powell Bill 499,163 494,257 (4,906)	Article 44, 1/2%	737	2,586	1,849	
Other taxes and licenses: Room occupancy tax 142,845 183,025 40,180 Motor vehicle license fees, net of refunds and collection fees 735,575 1,195,877 460,302 Privilege licenses 958 2,191 1,233 Total 879,378 1,381,093 501,715 Unrestricted intergovernmental: NC DOT reimbursement - 5,910 5,910 Utility franchise tax 446,891 975,682 528,791 Piped natural gas tax 34,152 43,040 8,888 Video sales programming tax 57,871 83,404 25,533 Telecommunications sales tax 187,766 184,133 (3,633) Direct-to-home satellite sales tax 68,914 69,724 810 Beer and wine tax 80,000 90,328 10,328 Total 875,594 1,452,221 576,627 Restricted intergovernmental: Powell Bill 499,163 494,257 (4,906) Solid waste disposal tax distribution 11,973 <t< td=""><td>City hold harmless</td><td>1,034,147</td><td>1,040,497</td><td>6,350</td></t<>	City hold harmless	1,034,147	1,040,497	6,350	
Room occupancy tax 142,845 183,025 40,180 Motor vehicle license fees, net of refunds and collection fees 735,575 1,195,877 460,302 Privilege licenses 958 2,191 1,233 Total 879,378 1,381,093 501,715 Unrestricted intergovernmental: - 5,910 5,910 NC DOT reimbursement - 5,910 5,910 Utility franchise tax 446,891 975,682 528,791 Piped natural gas tax 34,152 43,040 8,888 Video sales programming tax 57,871 83,404 25,533 Telecommunications sales tax 187,766 184,133 (3,633) Direct-to-home satellite sales tax 68,914 69,724 810 Beer and wine tax 80,000 90,328 10,328 Total 875,594 1,452,221 576,627 Restricted intergovernmental: 499,163 494,257 (4,906) Solid waste disposal tax distribution 11,973 13,309 1,336 Planning work	Total	3,825,686	4,105,283	279,597	
Room occupancy tax 142,845 183,025 40,180 Motor vehicle license fees, net of refunds and collection fees 735,575 1,195,877 460,302 Privilege licenses 958 2,191 1,233 Total 879,378 1,381,093 501,715 Unrestricted intergovernmental: - 5,910 5,910 NC DOT reimbursement - 5,910 5,910 Utility franchise tax 446,891 975,682 528,791 Piped natural gas tax 34,152 43,040 8,888 Video sales programming tax 57,871 83,404 25,533 Telecommunications sales tax 187,766 184,133 (3,633) Direct-to-home satellite sales tax 68,914 69,724 810 Beer and wine tax 80,000 90,328 10,328 Total 875,594 1,452,221 576,627 Restricted intergovernmental: 499,163 494,257 (4,906) Solid waste disposal tax distribution 11,973 13,309 1,336 Planning work	Other tayes and licenses				
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of refunds and collection fees 735,575 1,195,877 460,302 Privilege licenses 958 2,191 1,233 Total 879,378 1,381,093 501,715 Unrestricted intergovernmental: NC DOT reimbursement - 5,910 5,910 Utility franchise tax 446,891 975,682 528,791 Piped natural gas tax 34,152 43,040 8,888 Video sales programming tax 57,871 83,404 25,533 Telecommunications sales tax 187,766 184,133 (3,633) Direct-to-home satellite sales tax 68,914 69,724 810 Beer and wine tax 80,000 90,328 10,328 Total 875,594 1,452,221 576,627 Restricted intergovernmental: Powell Bill 499,163 494,257 (4,906) Solid waste disposal tax distribution 11,973 13,309 1,336 Planning work grant 46,467 31,159 (15,308) NC risk management agency grant		142,040	103,023	40,100	
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U.S. Department of Justice block grant 3,039 2,544 (495) Recreation municipal supplement 27,193 35,898 8,705					
Recreation municipal supplement 27,193 35,898 8,705	• • • • • • • • • • • • • • • • • • • •				
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	Total	667,450	651,211	(16,239)	

Fees and permits: \$ 540,270 \$ 527,741 \$ (12,529) Fire district fees 4,828 2,072 (2,756) Building permits 74,544 68,395 (6,149) Electrical permits 78,707 67,082 (11,625) Mechanical permits 66,017 67,359 1,342 Plumbing permits 49,630 46,453 (3,177) Refuse collection fees 66,735 68,119 1,384 Development review 33,169 53,241 20,072 Engineering fees 18,190 31,054 12,864 Technical review 14,130 33,295 19,165 Tower fees 134,033 140,694 6,656 Parking and animal violations 8,742 8,819 77 School resource officer contract fees 110,852 126,396 15,544 Recrycling fees 7,359 6,525 6334 Miscellaneous fees 26,191 22,942 (3,249) Total 263,789 263,444 (345) <		Final Budget		 Actual		Variance Positive (Negative)	
Fire permitting fees 4,828 2,072 (2,756) Building permits 74,544 68,395 (6,149) Electrical permits 78,707 67,082 (11,625) Mechanical permits 66,017 67,359 1,342 Plumbing permits 49,630 46,453 (3,177) Refuse collection fees 66,735 68,119 1,384 Development review 33,169 53,241 20,072 Engineering fees 18,190 31,054 12,864 Technical review 14,130 33,295 19,165 Tower fees 134,038 140,694 6,656 Parking and animal violations 8,742 8,819 77 School resource officer contract fees 110,852 126,396 15,544 Recycling fees 7,359 6,525 (834) Miscellaneous fees 26,191 22,942 (3,249) Total 1,233,402 1,270,187 36,785 Sales and services: Recreation fees 180,054 183,119							
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Mechanical permits 66,017 67,359 1,342 Plumbing permits 49,630 46,453 (3,177) Refuse collection fees 66,735 68,119 1,384 Development review 33,169 53,241 20,072 Engineering fees 18,190 31,054 12,864 Technical review 14,130 33,295 19,165 Tower fees 134,038 140,694 6,656 Parking and animal violations 8,742 8,819 77 School resource officer contract fees 110,852 126,396 15,544 Recycling fees 7,359 6,525 (834) Miscellaneous fees 26,191 22,942 (3,249) Total 1,233,402 1,270,187 36,785 Sales and services: Recreation fees 180,054 183,119 3,065 Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345)			•			, ,	
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Development review 33,169 53,241 20,072 Engineering fees 18,190 31,054 12,864 Technical review 14,130 33,295 19,165 Tower fees 134,038 140,694 6,656 Parking and animal violations 8,742 8,819 77 School resource officer contract fees 110,852 126,396 15,544 Recycling fees 7,359 6,525 (834) Miscellaneous fees 26,191 22,942 (3,249) Total 1,233,402 1,270,187 36,785 Sales and services: Recreation fees 180,054 183,119 3,065 Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: 1 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20)	- .		•			, ,	
Engineering fees 18,190 31,054 12,864 Technical review 14,130 33,295 19,165 Tower fees 134,038 140,694 6,656 Parking and animal violations 8,742 8,819 77 School resource officer contract fees 110,852 126,396 15,544 Recycling fees 7,359 6,525 (834) Miscellaneous fees 26,191 22,942 (3,249) Total 1,233,402 1,270,187 36,785 Sales and services: Recreation fees 180,054 183,119 3,065 Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: 1,078 20,278 19,200 Other revenues: 2 2,189,30 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,4			•				
Technical review 14,130 33,295 19,165 Tower fees 134,038 140,694 6,656 Parking and animal violations 8,742 8,819 77 School resource officer contract fees 110,852 126,396 15,544 Recycling fees 7,359 6,525 (834) Miscellaneous fees 26,191 22,942 (3,249) Total 1,233,402 1,270,187 36,785 Sales and services: Recreation fees 180,054 183,119 3,065 Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: Interest on investments 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262	•		•				
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Parking and animal violations 8,742 8,819 77 School resource officer contract fees 110,852 126,396 15,544 Recycling fees 7,359 6,525 (834) Miscellaneous fees 26,191 22,942 (3,249) Total 1,233,402 1,270,187 36,785 Sales and services: Recreation fees 180,054 183,119 3,065 Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: 40,052 21,134,213 9			•				
School resource officer contract fees 110,852 126,396 15,544 Recycling fees 7,359 6,525 (834) Miscellaneous fees 26,191 22,942 (3,249) Total 1,233,402 1,270,187 36,785 Sales and services: 8 8 180,054 183,119 3,065 Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: Interest on investments 1,078 20,278 19,200 Other revenues: 8 20,278 19,200 Other revenues: 8 20,278 19,200 Other revenues: 9 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures 20,189,109 21,134,213			•			6,656	
Recycling fees 7,359 6,525 (834) Miscellaneous fees 26,191 22,942 (3,249) Total 1,233,402 1,270,187 36,785 Sales and services: Recreation fees 180,054 183,119 3,065 Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: Interest on investments 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Total revenues 20,189,109 21,134,213 945,104 Expenditures 26,200 20,189,109 21,134,213 945,104 Expenditures 107,080 105,227 1,853 Operations 252,100 227,1			•	•			
Miscellaneous fees 26,191 22,942 (3,249) Total 1,233,402 1,270,187 36,785 Sales and services: Recreation fees 180,054 183,119 3,065 Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: Interest on investments 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: Mayor and Board of Aldermen: 20,189,109 21,134,213 945,104 Expenditures General government: 107,080 105,227 1,853 Operations <t< td=""><td></td><td></td><td>•</td><td></td><td></td><td>·</td></t<>			•			·	
Total 1,233,402 1,270,187 36,785 Sales and services: 8 180,054 183,119 3,065 Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: 1,078 20,278 19,200 Other revenues: 8 20,278 19,200 Other revenues: 8 20,278 19,200 Other revenues: 8 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: Mayor and Board of Aldermen: 20,189,109 21,134,213 945,104 Expenditures General government: 107,080 105,227 1,853 Operations 252,100 227,180 <t< td=""><td>· •</td><td></td><td>•</td><td>•</td><td></td><td>, ,</td></t<>	· •		•	•		, ,	
Sales and services: Recreation fees 180,054 183,119 3,065 Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: Interest on investments 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: Mayor and Board of Aldermen: Personnel services 107,080 105,227 1,853 Operations 252,100 227,180 24,920				 			
Recreation fees 180,054 183,119 3,065 Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: Interest on investments 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: Wayor and Board of Aldermen: 8 107,080 105,227 1,853 Operations 252,100 227,180 24,920	Total		1,233,402	 1,270,187		36,785	
Recreation fees 180,054 183,119 3,065 Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: Interest on investments 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: Wayor and Board of Aldermen: 8 107,080 105,227 1,853 Operations 252,100 227,180 24,920	Sales and services:						
Town Center fees 77,881 76,855 (1,026) Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: Interest on investments 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: Wayor and Board of Aldermen: Use of the color of th			180.054	183.119		3.065	
Miscellaneous 5,854 3,470 (2,384) Total 263,789 263,444 (345) Investment earnings: Interest on investments 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: 20,189,109 21,134,213 945,104 Expenditures General government: Mayor and Board of Aldermen: 107,080 105,227 1,853 Operations 252,100 227,180 24,920			·				
Total 263,789 263,444 (345) Investment earnings: Interest on investments 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: Mayor and Board of Aldermen: Personnel services 20,189,109 21,134,213 945,104 Expenditures General government: Mayor and Board of Aldermen: Personnel services 107,080 105,227 1,853 Operations 252,100 227,180 24,920			·			, ,	
Interest on investments 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: Mayor and Board of Aldermen: Personnel services 107,080 105,227 1,853 Operations 252,100 227,180 24,920							
Interest on investments 1,078 20,278 19,200 Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: Mayor and Board of Aldermen: Personnel services 107,080 105,227 1,853 Operations 252,100 227,180 24,920	Investment cornings						
Other revenues: Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: 49,052 161,060 33,798 Mayor and Board of Aldermen: 40,189,109 21,134,213 945,104 Personnel services 107,080 105,227 1,853 Operations 252,100 227,180 24,920	<u> </u>		1 078	20 278		19 200	
Rental income 3,590 3,570 (20) Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: Wayor and Board of Aldermen: 40,052 101,060 105,227 1,853 Operations 252,100 227,180 24,920	interest on investments	-	1,070	 20,210		19,200	
Donations 70,650 49,052 (21,598) Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: 49,052 101,060 33,798 Mayor and Board of Aldermen: 49,052 101,060 105,217 1,853 Operations 252,100 227,180 24,920							
Miscellaneous 53,022 108,438 55,416 Total 127,262 161,060 33,798 Expenditures General government: Wayor and Board of Aldermen: 945,104 Personnel services 107,080 105,227 1,853 Operations 252,100 227,180 24,920			•	•		, ,	
Total 127,262 161,060 33,798 Total revenues 20,189,109 21,134,213 945,104 Expenditures General government: Wayor and Board of Aldermen: 70,080 105,227 1,853 Operations 252,100 227,180 24,920			·			, ,	
Total revenues 20,189,109 21,134,213 945,104 Expenditures General government: Mayor and Board of Aldermen: Personnel services 107,080 105,227 1,853 Operations 252,100 227,180 24,920				 			
Expenditures General government: Mayor and Board of Aldermen: Personnel services 107,080 105,227 1,853 Operations 252,100 227,180 24,920	Total		127,262	 161,060		33,798	
General government: Mayor and Board of Aldermen: Personnel services 107,080 105,227 1,853 Operations 252,100 227,180 24,920	Total revenues		20,189,109	 21,134,213		945,104	
Mayor and Board of Aldermen: 107,080 105,227 1,853 Personnel services 252,100 227,180 24,920							
Personnel services 107,080 105,227 1,853 Operations 252,100 227,180 24,920							
Operations <u>252,100</u> <u>227,180</u> <u>24,920</u>			107,080	105,227		1,853	
·			•				
	Total						

	Final Budget	<u> Actual</u>	Variance Positive (Negative)
Advisory boards:			
Operations	\$ 30,829	\$ 9,765	\$ 21,064
Total	30,829	9,765	21,064
Governmental support:			
Operations	448,515	493,677	(45,162)
Total	448,515	493,677	(45,162)
Town Manager:			
Personnel services	333,917	328,245	5,672
Operations	60,114	32,163	27,951
Total	394,031	360,408	33,623
Economic and community development:			
Personnel services	127,836	128,844	(1,008)
Operations	169,416	162,444	6,972
Total	297,252	291,288	5,964
Town Clerk:			
Personnel services	115,419	114,059	1,360
Operations	19,400	15,933	3,467
Total	134,819	129,992	4,827
Management services:			
Personnel services	545,318	541,267	4,051
Operations	535,179	484,907	50,272
Total	1,080,497	1,026,174	54,323
Personnel:			
Personnel services	471,664	382,131	89,533
Operations	76,386	74,348	2,038
Total	548,050	456,479	91,571
Information technology:			
Personnel services	273,812	271,873	1,939
Operations	1,068,690	981,463	87,227
Capital outlay	63,750	41,318	22,432
Total	1,406,252	1,294,654	111,598
Total general government	4,699,425	4,394,844	304,581

	Final Budget	Actual	Variance Positive (Negative)	
Public safety:				
Police department				
Personnel services	\$ 3,077,667	\$ 3,033,861	\$ 43,806	
Operations	620,170	406,801	213,369	
Capital outlay	267,293_	251,060	16,233	
Total	3,965,130	3,691,722	273,408	
Fire department:				
Personnel services	2,574,023	2,543,309	30,714	
Operations	335,449	232,900	102,549	
Total	2,909,472	2,776,209	133,263	
Total public safety	6,874,602	6,467,931	406,671	
Total public safety	0,074,002	0,407,931	400,071	
Planning:				
Personnel services	1,109,232	1,095,461	13,771	
Operations	356,251	238,442	117,809	
Total planning	1,465,483	1,333,903	131,580	
Transportation:				
Operations	1,540,288	1,540,288		
Total transportation	1,540,288	1,540,288		
Public works:				
Public works department:				
Personnel services	1,952,472	1,661,550	290,922	
Operations	1,866,451	1,472,840	393,611	
Capital outlay	502,199	368,139	134,060	
Total public works	4,321,122	3,502,529	818,593	
Parks and recreation:				
Recreation department:				
Personnel services	1,184,902	1,147,496	37,406	
Operations	500,753	381,836	118,917	
Capital outlay	5,906	5,906	<u> </u>	
Total parks and recreation	1,691,561	1,535,238	156,323	
I		, ,	,	

	Final Budget	Actual	Variance Positive (Negative)	
General services: Operations	\$ 146,629	\$ -	\$ 146,629	
Total general services	146,629		146,629	
Debt service: Principal retirement Interest and fees	973,069 196,691	973,069 191,229	- 5,462	
Total debt service	1,169,760	1,164,298	5,462	
Total expenditures	21,908,870	19,939,031	1,969,839	
Revenues over (under) expenditures	(1,719,761)	1,195,182	2,914,943	
Other financing sources (uses): Transfers from other funds: From Capital Reserve Fund From Grant Administration Fund Transfers to other funds: To Affordable Housing Fund To Capital Projects Fund To Capital Reserve Fund Sale of capital assets Installment purchase obligations issued	176,945 31,581 (323,693) (801,571) (301,000) 49,756 621,180	176,945 31,581 (323,693) (801,571) (301,000) 491,287 621,180	- - - - 441,531	
Total other financing uses	(546,802)	(105,271)	441,531	
Revenues and other financing sources over (under) expenditures and other financing uses	(2,266,563)	1,089,911	3,356,474	
Appropriated fund balance	2,266,563	_ _	(2,266,563)	
Net change in fund balance	\$ -	1,089,911	\$ 1,089,911	
Fund balance, beginning of year		14,625,430		
Fund balance, end of year		\$ 15,715,341		

Town of Carrboro, North Carolina Schedule of Revenues, Expenditures and Changes in Fund Balance Project Authorization and Actual Revolving Loan Fund From Project Inception and for the Year Ended June 30, 2016

			Variance			
	Project Authorization	Prior Years	Current Year	Closed Loans	Total to Date	Positive (Negative)
Revenues						
Investment earnings:						
Interest on investments	\$ 232,018	\$ 232,018	\$ -	\$ -	\$ 232,018	\$ -
Interest repayments	592,436	589,495	2,941	<u>-</u>	592,436	
Total investment						
earnings	824,454	821,513	2,941	-	824,454	
Revolving loan repayments:						
Alphabet Soup	48,000	32,696	3,624	-	36,320	(11,680)
Bryan's Guitar	90,000	39,387	-	-	39,387	(50,613)
Art in a Pickle	105,000	64,803	5,834	=	70,637	(34,363)
Carrboro Coworking	90,000	57,964	5,602	=	63,566	(26,434)
The Beehive	50,000	37,422	6,751	-	44,173	(5,827)
The Carrboro Citizen	50,000	32,787	6,364	-	39,151	(10,849)
PTA Thrift Store	25,000	14,741	10,259		25,000	
Total revolving						
loan payments	458,000	279,800	38,434	-	318,234	(139,766)
Total revenues	1,282,454	1,101,313	41,375		1,142,688	(139,766)
Expenditures						
General government:						
Contractual services	16,679	11,433	-	=	11,433	5,246
Miscellaneous	10,000	6,021			6,021	3,979
Total general						
government	26,679	17,454		-	17,454	9,225
Economic and physical						
development:						
Alphabet Soup	48,000	48,000	-	-	48,000	-
Bryan's Guitar	90,000	90,000	-	-	90,000	-
Art in a Pickle	105,000	105,000	-	-	105,000	-
Carrboro Coworking	90,000	90,000	-	-	90,000	-
Original Ornament	-	70,000	-	(70,000)	-	-
The Beehive	50,000	50,000	-	-	50,000	-
The Carrboro Citizen	50,000	50,000	-	=	50,000	-
PTA Thrift Store	25,000	25,000	-	-	25,000	-
Bad debts	70,000			70,000	70,000	
Total economic						
and physical						
development	528,000	528,000	-		528,000	
Total expenditures	554,679	545,454			545,454	9,225
Revenues over						,,
expenditures	727,775	555,859	41,375		597,234	(130,541)

Town of Carrboro, North Carolina Schedule of Revenues, Expenditures and Changes in Fund Balance Project Authorization and Actual Revolving Loan Fund From Project Inception and for the Year Ended June 30, 2016

		Actual					
	Project Authorization	Prior Years	Current Year	Closed Loans	Total to Date	Variance Positive (Negative)	
Other financing sources (uses) Transfers from (to) other funds:							
From General Fund	\$ 80,000	\$ 80,000	\$ -	\$ -	\$ 80,000	\$ -	
To Energy Efficiency Fund To General Fund	(45,000) (139,000)	(45,000) (139,000)	<u>-</u>	<u> </u>	(45,000) (139,000)	<u>-</u>	
Total other financing uses	(104,000)	(104,000)	<u> </u>		(104,000)		
Revenues and other financing sources over expenditures and other financing uses	623,775	451,859	41,375	-	493,234	(130,541)	
Appropriated to fund balance	(623,775)	-	-	-	-	623,775	
Net change in fund balance	\$ -	\$ 451,859	41,375	\$ <u>-</u>	\$ 493,234	\$ 493,234	
Fund balance, beginning of year			451,859				
Fund balance, end of year			\$ 493,234				

Town of Carrboro, North Carolina Schedule of Revenues, Expenditures and Changes in Fund Balance Project Authorization and Actual Bond Fund From Project Inception and for the Year Ended June 30, 2016

		Actual							
	Project	Prior	Current	Closed Out	Total	Positive			
	Authorization	Years	Year	Projects	to Date	(Negative)			
Revenues									
General revenues:									
Federal STP-DA funds	\$ 3,323,027	\$ 697,790	\$ -	\$ -	\$ 697,790	\$ (2,625,237)			
Safe Routes to School									
Grant	293,641	293,641	-	=	293,641	-			
NCDENR Grant	75,000	75,000	-	=	75,000	=			
Bolin Creek Co-Housing	88,644	88,644	-	=	88,644	-			
Payment in lieu	48,046	-	-	=	-	(48,046)			
Donations	2,100	2,100	-	-	2,100	-			
Interest earnings	140,757	128,259	3,224	-	131,483	(9,274)			
Miscellaneous	7,863	7,863			7,863				
Total revenues	3,979,078	1,293,297	3,224		1,296,521	(2,682,557)			
Expenditures									
Capital outlay:									
General expenditures									
(non-project)	602,893	60,316	70,000	=	130,316	472,577			
Morgan Creek Greenway	1,521,471	320,296	23,189	=	343,485	1,177,986			
Bolin Creek Greenway	1,253,130	223,957	(52,235)	=	171,722	1,081,408			
Phase 1B Bond Sidewalks	1,257,900	1,210,784	=	=	1,210,784	47,116			
Davie Street Sidewalk	294,014	316,018	=	=	316,018	(22,004)			
Rogers Road Sidewalk	1,371,658	99,936	67,654	=	167,590	1,204,068			
Jones Creek Greenway	420,000	=	=	=	=	420,000			
Completed projects	2,161,935	2,161,935			2,161,935				
Total capital outlay	8,883,001	4,393,242	108,608		4,501,850	4,381,151			
Debt service:									
Bond issuance costs	-	33,860	-	-	33,860	(33,860)			
Interest and other charges	-	19,353	-	-	19,353	(19,353)			
Total debt service		53,213			53,213	(53,213)			
Total expenditures	8,883,001	4,446,455	108,608		4,555,063	4,327,938			
Revenues over (under)									
expenditures	(4,903,923)	(3,153,158)	(105,384)		(3,258,542)	1,645,381			

Town of Carrboro, North Carolina Schedule of Revenues, Expenditures and Changes in Fund Balance Project Authorization and Actual Bond Fund From Project Inception and for the Year Ended June 30, 2016

	Actual							Variance			
	Project horization	Prior Years		Current Year		Closed Out Projects		Total to Date		Positive (Negative)	
Other financing sources Transfers from other funds:											
From General Fund	\$ 12,700	\$	12,700	\$	-	\$	-	\$	12,700	\$	-
From Capital Reserve Fund	143,823		143,823		-		-		143,823		-
General obligation bonds											
issued	4,747,400		4,600,000		-		-		4,600,000		(147,400)
Premium on bond issuance	 -		92,461		=_		-		92,461		92,461
Total other financing sources	4,903,923		4,848,984		-				4,848,984		(54,939)
Net change in fund balance	\$ <u>-</u>	\$	1,695,826		(105,384)	\$		\$	1,590,442	\$	1,590,442
Fund balance, beginning of year					1,695,826						
Fund balance, end of year				\$	1,590,442						

Town of Carrboro, North Carolina Schedule of Revenues, Expenditures and Changes in Fund Balance Project Authorizaton and Actual Capital Projects Fund From Project Inception and for the Year Ended June 30, 2016

			Act	ual		Variance
	Project Authorization	Prior Years	Current Year	Closed Out Projects	Total to Date	Positive (Negative)
Revenues						
General revenues:						
Federal STP-DA funds	\$ 30,000	\$ 14,820	\$ -	\$ -	\$ 14,820	\$ (15,180)
OWASA reimbursement	-	399,039	-	(399,039)	-	-
Interest earnings	22,232	32,714	-	-	32,714	10,482
Donations	20,000	14,500	5,635	-	20,135	135
Miscellaneous		5,439			5,439	5,439
Total revenues	72,232	466,512	5,635	(399,039)	73,108	876
Expenditures						
Capital outlay:						
Fire Substation #2 project	3,417,795	3,398,457	-	=	3,398,457	19,338
Fire Substation #2 fiber						
optics	283,156	283,156	-	=	283,156	-
Weaver Street						
reconstruction	-	1,358,739	-	(1,358,739)	-	-
Public Works facility	767,000	756,486	-	=	756,486	10,514
Bicycle loop detectors	57,500	18,525	-	=	18,525	38,975
Rogers Road remediation	900,000	-	-	=	-	900,000
Rogers Road conduit	155,000	-	-	=	-	155,000
S. Greensboro Street	601,395	601,395	-	=	601,395	-
Fleet Feet office condo	567,966	567,966	-	=	567,966	=
Storm water management	80,000	=	=	=	=	80,000
Anderson Park bathroom						
renovation	248,286	4,580	243,706	-	248,286	-
Anderson Park MP field						
renovation	181,400	87,460	93,939	-	181,399	1
Anderson Park field						
lighting	140,000	430	139,570	-	140,000	-
Smith Level Road	62,562	-	-	-	-	62,562
Wilson Park tennis court	125,322	125,322	-	-	125,322	-
LED street lights	100,000	-	-	-	-	100,000
Town Commons						
improvements	107,300	-	13,000	-	13,000	94,300
MLK park design	150,000	-	-	=	-	150,000
Police body worn cameras	91,000	-	-	=	-	91,000
Public safety radio upgrades	273,000	=	=	=	=	273,000
Planning permtting software	230,000	=	=	=	=	230,000
Anderson Park pavilion	156,880	=	142,261	=	142,261	14,619
Century Center HVAC	180,000		2,940		2,940	177,060
Total capital outlay	8,875,562	7,202,516	635,416	(1,358,739)	6,479,193	2,396,369
Debt service:						
Principal retirement	1,461,248	1,467,188	-	=	1,467,188	(5,940)
Interest and other charges	38,752	32,175			32,175	6,577
Total debt service	1,500,000	1,499,363			1,499,363	637

Town of Carrboro, North Carolina Schedule of Revenues, Expenditures and Changes in Fund Balance Project Authorizaton and Actual Capital Projects Fund From Project Inception and for the Year Ended June 30, 2016

	Actual Variance								
	Project	Prior		Current	CI	osed Out	Total	Pos	itive
	Authorization	<u>Years</u>		Year		Projects	to Date	(Neg	ative)
Revenues under expenditures	\$ (10,303,330)	\$ (8,235,367)	\$	(629,781)	\$	959,700	\$ (7,905,448)	\$ 2,3	897,882
Other financing sources									
(uses)									
Transfers from (to) other									
funds:	6 050 000	E E70 272		004 574		(400 420)	6 400 444		(60.014)
From General Fund From Capital Reserve	6,252,328	5,570,273		801,571		(188,430)	6,183,414		(68,914)
Fund	80,557	739,969		173,270		(771,270)	141,969		61,412
To General Fund	(20,000)	(20,000)		-, -		-	(20,000)		-
To Capital Reserve Fund	(26,555)	(26,555)		-		-	(26,555)		-
Installment purchase									
obligations issued	4,017,000	4,017,000		-			4,017,000		
Total other financing sources	10,303,330	10,280,687		974,841		(959,700)	10,295,828		(7,502)
3001003	10,303,330	10,200,007		374,041		(333,700)	10,233,020		(1,502)
Net change in fund									
balance	\$ -	\$ 2,045,320		345,060	\$	-	\$ 2,390,380	\$ 2,3	90,380
Fund balance,									
beginning of year				2,045,320					
bogining of year				2,0 10,020					
Fund balance,									
end of year				2,390,380					
Amounts reported for Revenue,	Expenditures and ch	anges in							
Fund Balance are different for the	•	-							
due to consolidation of the Capi	-								
Payment in Lieu Reserve Fund									
Transfers in - Capital Reserv				301,000					
Transfers out - Capital Rese Fund balance, beginning (Ca				(350,215) 217,588					
Fund balance, beginning (Pa				149,780					
2.1. 2.1. 2. 2. 2. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	.,	,		0,. 00					
Fund balance, ending (0	Consolidated Capital								
Projects Fund)			\$	2,708,533					

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	 Final Budget	 Actual	Variance Positive (Negative)		
Transfers from (to) other funds: From General Fund To General Fund To Capital Projects Fund	\$ 301,000 (176,945)	301,000 (176,945) (173,270)	\$	- - (173,270)	
Total other financing sources	124,055	(49,215)		(173,270)	
Fund balance appropriated	 (124,055)	 		124,055	
Net change in fund balance	\$ 	(49,215)	\$	(49,215)	
Fund balance, beginning of year		 217,588			
Fund balance, end of year		\$ 168,373			

Town of Carrboro, North Carolina Schedule of Revenues, Expenditures and Changes in Fund Balance Project Authorization and Actual Grants Administration Fund From Project Inception and for the Year Ended June 30, 2016

			Actual				
		Project		Prior		Current	
	Aut	horization		Years		Year	
Barrana							
Revenues							
U.S. Department of Commerce:							
Community Development Block	ф	474 700	Φ.	474 700	Φ.		
Grant (CDBG)	\$	171,700	\$	171,700	\$	-	
Southeast Energy Efficiency Alliance		303,597		302,742		-	
U.S. Department of Transportation:							
Safe route to school (non-infrastructure)		10,004		10,004		-	
N.C. Department of Environment and							
Natural Resources:							
Curbside recycling carts grant		75,000		75,000		-	
N.C. State University Solar Center:							
Clean Fuel Advanced Technology grant		97,297		97,297		-	
Orange County:							
Roberson Street sewer grant		38,244		38,244		-	
Roberson Street sewer grant program income		7,000		7,000		-	
Curbside recycling carts inter-local agreement		186,684		186,684		-	
Transportation demand management		-		491		-	
Orange County Arts Commission Grant		-		1,500		-	
Strowd Roses Grant		9,800		9,800		-	
Investment earnings		-		20		_	
Total revenues		899,326		900,482		-	

	Act	Variance			
Closed		Total to Date	Positive (Negative)		
110,0		 to Date	(146	gative	
\$	-	\$ 171,700	\$	-	
	-	302,742		(855)	
	-	10,004		-	
	-	75,000		-	
	-	97,297		-	
	-	38,244		-	
	-	7,000		-	
	-	186,684		-	
	-	491		491	
	-	1,500		1,500	
	-	9,800		-	
		 20		20	
	-	900,482		1,156	

Town of Carrboro, North Carolina Schedule of Revenues, Expenditures and Changes in Fund Balance Project Authorization and Actual Grants Administration Fund From Project Inception and for the Year Ended June 30, 2016

			Actual					
	Proje	ct		Prior	C	Current		
	Authoriz	ation		Years	<u>Year</u>			
Expenditures								
Southeast Energy Efficiency Alliance	\$ 228	3,370	\$	228,370	\$	-		
Safe route to school (non-infrastructure)	•	0,004	•	10,004	*	_		
Curbside rollout carts		1,685		243,428		18,257		
Roberson Street sewer project		4,701		254,701		-		
Orange County Arts		9,800		7,064		_		
Capital outlay:		-,		,				
Solid waste vehicle	40	1,898		401,898		_		
Total expenditures		6,458		1,145,465		18,257		
Revenue over (under) expenditures	(307	7,132)		(244,983)		(18,257)		
Other financing sources (uses)								
Transfer to the Energy Efficiency Fund	(83	3,128)		(83,128)		-		
Transfer to the General Fund	(3	1,581)		-		(31,581)		
Transfer from the Capital Reserve Fund	29	9,950		29,950		-		
Transfer from the General Fund	39	1,891		391,891				
Total other financing sources (uses)	307	7,132		338,713		(31,581)		
Net change in fund balance	\$		\$	93,730		(49,838)		
Fund balance, beginning of year						93,730		
Fund balance, end of year					\$	43,892		

	Acti		Variance					
Close	d Out		Total	Positive				
Proje	ects	1	to Date	(N	(Negative)			
			_					
\$	-	\$	228,370	\$	-			
	-		10,004		-			
	-		261,685		-			
	-		254,701		-			
	-		7,064		42,736			
	-		401,898		-			
			1,163,722		42,736			
			(263,240)		43,892			
	-		(83,128)		-			
	-		(31,581)		-			
	-		29,950		-			
-			391,891					
			307,132					
\$	_	\$	43,892	\$	43,892			

	Affordable Housing Fund		Energy Efficiency Revolving Loan Fund		_	usiness oan Fund	Total Nonmajor Governmental Funds	
Assets Cash and investments Notes receivable	\$	331,744 24,331	\$	71,063 67,907	\$	110,670 4,728	\$	513,477 96,966
Total assets	\$	356,075	\$	138,970	\$	115,398	\$	610,443
Deferred inflows of resources	\$	24,331	\$	67,907	\$	4,728	\$	96,966
Fund balances Committed: Affordable housing Economic development Energy efficiency		331,744 - -		- - 71,063		- 110,670 -		331,744 110,670 71,063
Total fund balances		331,744		71,063		110,670		513,477
Total deferred inflows of resources and fund balances	\$	356,075	\$	138,970	\$	115,398	<u>\$</u>	610,443

Town of Carrboro, North Carolina Combining Statement of Revenues, Expenditures and Changes in Fund Balance Nonmajor Governmental Funds Year Ended June 30, 2016

	Affordable Housing Fund	Energy Efficiency Revolving Loan Fund	Business Loan Fund	Total Nonmajor Governmental Funds		
Revenues Loan repayments Interest earnings	\$ - -	\$ 9,335 2,201	\$ 4,097 173	\$ 13,432 2,374		
Total revenues		11,536	4,270	15,806		
Expenditures Economic and physical development	126,887			126,887		
Total expenditures	126,887			126,887		
Revenues over (under) expenditures	(126,887)	11,536	4,270	(111,081)		
Other financing sources Transfer from General Fund	323,693		-	323,693		
Total other financing sources	323,693			323,693		
Net change in fund balance	196,806	11,536	4,270	212,612		
Fund balance, beginning of year	134,938	59,527	106,400	300,865		
Fund balance, end of year	\$ 331,744	\$ 71,063	\$ 110,670	\$ 513,477		

Town of Carrboro, North Carolina Schedule of Revenues, Expenditures and Changes in Fund Balance Project Authorization and Actual Affordable Housing Fund From Project Inception and for the Year Ended June 30, 2016

		Variance					
	Project	Prior	Actual Current	Total	Positive		
	Authorization	Years	Year	to Date	(Negative)		
Revenues							
Payment in lieu	\$ -	\$ 96,501	\$ -	\$ 96,501	\$ 96,501		
Donations	Ψ	2,750	Ψ -	2,750	2,750		
Interest earned	-	420	-	420	420		
Total revenues	-	99,671		99,671	99,671		
Expenditures							
Deferred loan expense	45,250	45,213	-	45,213	37		
Emergency home repairs							
grant	6,020	2,520	3,500	6,020	-		
Human services grants	33,600	-	33,600	33,600	-		
Community home trust	64,000	-	64,000	64,000	-		
Home consortium match	10,525	=	9,719	9,719	806		
Partnership to end							
homelessness	16,068	-	16,068	16,068	-		
Center for community self-help	55,000				55,000		
Total expenditures	230,463	47,733	126,887	174,620	55,843		
Revenues over							
(under) expenditures	(230,463)	51,938	(126,887)	(74,949)	155,514		
(under) experiantires	(230,403)	31,930	(120,007)	(14,949)	155,514		
Other financing sources							
Transfers from other funds:							
From General Fund	396,693	73,000	323,693	396,693	=		
From Business Loan							
Fund	10,000	10,000	-	10,000	-		
Total other							
financing sources	406,693	83,000	323,693	406,693	<u>-</u> _		
Fund balance appropriated	(176,230)				(176,230)		
Net change in							
fund balance	<u> </u>	\$ 134,938	196,806	\$ 331,744	\$ 331,744		
Fund balance,							
beginning of year			134,938				
Fund holosos							
Fund balance, end of year			\$ 331,744				
ond or your			Ψ 001,1 44				

Town of Carrboro, North Carolina Schedule of Revenues, Expenditures and Changes in Fund Balance Project Authorization and Actual Energy Efficiency Revolving Loan Fund From Project Inception and for the Year Ended June 30, 2016

			Variance			
	Project Authorization	Prior Years	Actual Current Year	Total to Date	Positive (Negative)	
	Authorization	<u> </u>	<u> </u>	to Date	(Negative)	
Revenues						
Interest repayments	\$ -	\$ 8,644	\$ 2,201	\$ 10,845	\$ 10,845	
Revolving loan repayments:						
The Arts Center	28,128	5,043	2,590	7,633	(20,495)	
Dispute Settlement Center	35,000	12,124	2,729	14,853	(20,147)	
LB Bradley Properties	7,000	2,079	947	3,026	(3,974)	
Sophie Piesse Architect	7,000	2,011	672	2,683	(4,317)	
Surplus Sid's	30,000	8,626	2,397	11,023	(18,977)	
Total revolving loan						
payments	107,128	29,883	9,335	39,218	(67,910)	
Total revenues	107,128	38,527	11,536	50,063	(57,065)	
Expenditures						
Economic and physical						
development:	00.400	00.400		00.400		
The Arts Center	28,128	28,128	-	28,128	-	
Dispute Settlement Center	35,000	35,000	-	35,000	-	
LB Bradley Properties	7,000	7,000	-	7,000	-	
Sophie Piesse Architect Surplus Sid's	7,000 30,000	7,000 30,000	-	7,000 30,000	-	
Total expenditures	107,128	107,128		107,128		
rotal expericitures	107,128	107,120		107,120		
Revenues over						
(under) expenditures		(68,601)	11,536	(57,065)	(57,065)	
Other financing sources						
Transfer from Grant Fund	83,128	83,128	-	83,128	-	
Transfer from Revolving						
Loan Fund	45,000	45,000		45,000		
Total other financing						
sources	128,128	128,128		128,128		
Fund balance appropriated	(128,128)				128,128	
Net change in fund						
balance	\$ -	\$ 59,527	\$ 11,536	\$ 71,063	\$ 71,063	
Fund balance,						
beginning of year			59,527			
Fund balance,						
end of year			\$ 71,063			

Town of Carrboro, North Carolina Schedule of Revenues, Expenditures and Changes in Fund Balance Project Authorization and Actual Business Loan Fund From Project Inception and for the Year Ended June 30, 2016

			Variance			
	Project Authorization	Prior Years	Current Year	Total to Date	Positive (Negative)	
Revenues Interest repayments	\$ -	\$ 225	\$ 173	\$ 398	\$ 398_	
Revolving loan repayments: Surplus Sid's	12,000	3,175	4,097	7,272	(4,728)	
Total revenues	12,000	3,400	4,270	7,670	(4,330)	
Expenditures Economic and physical development: Surplus Sid's	12,000	12,000		12,000		
·	12,000	12,000		12,000		
Revenues (under) expenditures		(8,600)	4,270	(4,330)	(4,330)	
Other financing sources (uses)						
Transfer from General Fund Transfer to Affordable	125,000	125,000	-	125,000	-	
Housing	(10,000)	(10,000)		(10,000)		
Total other financing sources (uses)	115,000	115,000	-	115,000	-	
Revenues and other financing sources over (under)						
expenditures	115,000	106,400	4,270	110,670	(4,330)	
Fund balance appropriated	(115,000)				115,000	
Net change in fund balance	\$ -	\$ 106,400	4,270	\$ 110,670	\$ 110,670	
Fund balance, beginning of year			106,400			
Fund balance, end of year			\$ 110,670			

Additional Financial Data

This section contains additional information on property taxes.

- Schedule of Ad Valorem Taxes Receivable
- Analysis of Current Tax Levy

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Fiscal Year	E	collected Balance le 30, 2015	9			Collections and Credits		Uncollected Balance June 30, 2016	
2015 - 2016	\$	-	\$	13,083,098	\$	12,989,241	\$	93,857	
2014 - 2015		82,552		-		48,543	•	34,009	
2013 - 2014		58,545		-		13,943		44,602	
2012 - 2013		63,526		-		6,682		56,844	
2011 - 2012		43,125		-		5,593		37,532	
2010 - 2011		27,822		-		2,346		25,476	
2009 - 2010		21,034		-		305		20,729	
2008 - 2009		18,441		-		211		18,230	
2007 - 2008		18,669		-		131		18,538	
2006 - 2007		17,701		-		7,199		10,502	
2005 - 2006		10,844				10,844			
	\$	362,259	\$	13,083,098	\$	13,085,038		360,319	
Less: allowance for u General Fund	incollec	tible accounts:						(82,933)	
Ad valorem taxes receivables - net						\$	277,386		
Reconciliation with revenues: Ad valorem taxes - General Fund Motor vehicle license fees - General Fund						\$	11,829,436 1,195,877		
Total revenues							13,025,313		
Reconciling items:									
Releases and adjus	stments	;						48,881	
Amounts written off for tax year 2005-2006 per statute of limitations								10,844	
		•	•					,	
							\$	13,085,038	

						Total	Levy	
	Town-Wide				Property Excluding Registered		Registered	
	Property Valuation**	Rate	Total Levy*		Motor Vehicles		Motor Vehicles	
Original levy: Property taxed at current year's rate	\$ 2,135,604,701	0.5894	\$	12,587,254	\$	11,588,170	\$	999,084
Penalties and interest	-			6,424		6,424		-
Total property valuation	\$ 2,135,604,701			12,593,678		11,594,594		999,084
Vehicle tag fees				489,420		<u>-</u>		489,420
Total gross levy				13,083,098		11,594,594		1,488,504
Uncollected taxes at June 30, 2016				93,857		90,655		3,202
Current year's taxes collected			\$	12,989,241	\$	11,503,939	\$	1,485,302
Current levy collection percentage				99.28%		99.22%		99.78%

^{*} Total adjusted levy includes discoveries and abatements.

^{**} Property tax valuation prior to the discoveries and abatements.

Statistical Section

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Statistical Section

This part of the Town of Carrboro's comprehensive annual financial report presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary information says about the Town's overall financial health.

	Page
Financial Trends Information	95
These schedules contain trend information intended to help the reader understand how the City's financial position has changed over time.	
Revenue Capacity Information	107
These schedules contain information to help the reader assess the Town's most significant local revenue sources, primarily property taxes.	
Debt Capacity Information	115
These schedules present information to help the reader assess the affordability of the Town's current levels of outstanding debt and the Town's ability to issue additional debt in the future.	
Demographic and Economic Information	122
These schedules offer demographic and economic indicators to help the reader understand the environment within which the Town's financial activities take place.	
Operating Information	127
These schedules contain service and infrastructure data to help the reader understand how the information in the Town's financial report relates to the services the Town provides and the activities it performs.	

Sources: Unless otherwise noted, the information in these schedules is derived from the comprehensive annual financial reports for the relevant year.

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Financial Trends Information

Town of Carrboro Net Position by Component Last Ten Fiscal Years (Accrual Basis of Accounting)

	 2007	 2008	 2009	 2010
Governmental activities: Net investment in capital assets Restricted Unrestricted	\$ 18,647,239 - 11,347,696	\$ 20,377,789 - 12,151,591	\$ 22,845,981 - 12,531,183	\$ 23,811,827 - 12,296,387
Total governmental activities net position	\$ 29,994,935	\$ 32,529,380	\$ 35,377,164	\$ 36,108,214

 2011	 2012	 2013	 2014	 2015	 2016
\$ 22,800,027 2,625,784 10,977,854	\$ 24,803,167 1,877,720 10,311,263	\$ 25,869,273 1,902,041 9,735,451	\$ 28,835,361 1,918,028 7,090,901	\$ 29,120,308 2,187,718 6,358,440	\$ 28,529,962 2,015,396 7,506,543
\$ 36,403,665	\$ 36,992,150	\$ 37,506,765	\$ 37,844,290	\$ 37,666,466	\$ 38,051,901

	2007	2008	 2009	2010
Expenses				
Governmental activities:				
General government	\$ 2,828,685	\$ 3,027,301	\$ 3,099,916	\$ 3,139,849
Public safety	5,098,641	5,088,188	5,565,460	6,087,506
Planning	1,112,435	1,195,300	1,124,240	1,399,817
Transportation	962,714	970,617	1,033,837	1,032,835
Public works	3,296,515	3,469,934	3,582,740	3,614,262
Parks and recreation	1,212,610	1,248,818	1,383,873	1,833,715
Economic and community				
development	37,850	231,808	413,790	50,543
Interest on long-term debt	 222,372	 284,025	 265,285	 327,037
Total governmental				
activities expenses	 14,771,822	 15,515,991	 16,469,141	 17,485,564
Total primary government				
expenses	 14,771,822	 15,515,991	 16,469,141	 17,485,564
Program revenues				
Governmental activities:				
Charges for services:				
General government	\$ 97,751	\$ 150,508	\$ 134,473	\$ 134,344
Planning	529,742	608,682	570,840	577,392
Public safety	446,710	286,029	274,697	384,667
Public works	110,746	74,539	97,516	85,779
Parks and recreation	284,621	305,231	226,141	256,639
Operating grants and				
contributions	1,008,712	847,507	1,370,387	786,375
Capital grants and contributions	 196,115	 391,468	 1,054,333	 236,894
Total governmental				
activities program revenues	 2,674,397	 2,663,964	 3,728,387	 2,462,090
Total primary government				
program revenues	2,674,397	 2,663,964	 3,728,387	 2,462,090
Net expense				
Governmental activities	 (12,097,425)	 (12,852,027)	 (12,740,754)	(15,023,474)
Total primary government				
net expenses	\$ (12,097,425)	\$ (12,852,027)	\$ (12,740,754)	\$ (15,023,474)

 2011	 2012	 2013	 2014	 2015	 2016
\$ 3,355,221 6,757,198 1,232,157 1,184,975 3,929,320 1,498,043	\$ 3,493,073 6,835,304 1,162,777 1,058,859 4,252,251 1,516,336	\$ 3,978,378 6,778,893 1,107,377 1,286,714 4,072,606 1,453,991	\$ 4,571,146 6,925,676 1,153,138 1,396,423 4,035,886 1,553,686	\$ 4,200,241 6,951,141 1,244,849 1,472,508 4,421,682 1,642,737	\$ 4,487,922 7,051,112 1,374,325 1,540,288 4,205,935 1,741,056
 185,874 292,766	 275,681 301,772	170,695 186,898	 623,220 211,082	90,108 191,916	200,798 167,984
 18,435,554	 18,896,053	 19,035,552	 20,470,257	20,215,182	20,769,420
 18,435,554	18,896,053	 19,035,552	 20,470,257	 20,215,182	 20,769,420
\$ 128,530 573,316 286,847 115,107 254,933	\$ 344,239 551,792 483,956 126,495 260,225	\$ 546,583 572,542 120,171 82,458 259,168	\$ 531,812 655,664 65,823 107,622 279,499	\$ 652,862 675,682 73,311 70,249 270,028	\$ 528,403 665,028 117,590 74,644 259,974
 791,842 647,514	 871,613 406,518	 320,304 954,131	 707,636 865,182	 723,767 283,090	700,263 5,635
 2,798,089	 3,044,838	 2,855,357	 3,213,238	 2,748,989	 2,351,537
2,798,089	3,044,838	 2,855,357	3,213,238	2,748,989	2,351,537
(15,637,465)	(15,851,215)	 (16,180,195)	(17,257,019)	(17,466,193)	(18,417,883)
\$ (15,637,465)	\$ (15,851,215)	\$ (16,180,195)	\$ (17,257,019)	\$ (17,466,193)	\$ (18,417,883)

Town of Carrboro Changes in Net Position Last Ten Fiscal Years (Accrual Basis of Accounting)

	 2007	 2008	 2009	 2010
General revenues and other				
changes in net assets Governmental activities:				
Taxes Unrestricted intergovernmental	\$ 13,503,535	\$ 13,799,533	\$ 14,432,869	\$ 14,834,736
revenues Miscellaneous and unrestricted	691,784	874,786	943,578	870,613
investment earnings	 534,953	 712,153	 212,091	 49,175
Total governmental				
activities	 14,730,272	 15,386,472	 15,588,538	 15,754,524
Total primary government	\$ 14,730,272	\$ 15,386,472	\$ 15,588,538	\$ 15,754,524
Change in net position				
Governmental activities	\$ 2,632,847	\$ 2,534,445	\$ 2,847,784	\$ 731,050

Table 2 (4 pages)

2011	 2012	2013	 2014	2015	 2016
\$ 14,917,776	\$ 15,445,629	\$ 15,695,931	\$ 16,599,061	\$ 17,011,559	\$ 17,322,279
951,820	946,091	952,397	982,040	1,481,631	1,452,221
63,320	47,980	46,482	13,443	52,226	28,818
15,932,916	16,439,700	16,694,810	17,594,544	18,545,416	18,803,318
\$ 15,932,916	\$ 16,439,700	\$ 16,694,810	\$ 17,594,544	\$ 18,545,416	\$ 18,803,318
\$ 295,451	\$ 588,485	\$ 514,615	\$ 337,525	\$ 1,079,223	\$ 385,435

Town of Carrboro Fund Balances Governmental Funds Last Ten Fiscal Years (Accrual Basis of Accounting)

	 2007	 2008	 2009	 2010
General fund:				
Reserved	\$ 2,049,578	\$ 3,265,631	\$ 1,482,537	\$ 2,062,813
Unreserved, designated	1,120,725	2,544,847	1,081,717	933,608
Unreserved, undesignated	7,116,388	6,956,301	8,563,125	9,950,620
Nonspendable	N/A	N/A	N/A	N/A
Restricted	N/A	N/A	N/A	N/A
Committed	N/A	N/A	N/A	N/A
Assigned	N/A	N/A	N/A	N/A
Unassigned	 N/A	 N/A	 N/A	 N/A
Total general fund	 10,286,691	12,766,779	 11,127,379	12,947,041
All other governmental funds:				
Reserved	249,183	144,013	94,281	-
Unreserved, reported in:				
Special revenue funds	1,687,061	1,350,616	(118,563)	(436,507)
Capital projects funds	(1,163,714)	(1,334,116)	716,763	2,464,956
Nonspendable	N/A	N/A	N/A	N/A
Restricted	N/A	N/A	N/A	N/A
Committed	N/A	N/A	N/A	N/A
Assigned	N/A	N/A	N/A	N/A
Unassigned	 N/A	N/A	 N/A	 N/A
Total all other				
governmental funds	 772,530	 160,513	 692,481	 2,028,449
Total, all governmental				
funds	\$ 11,059,221	\$ 12,927,292	\$ 11,819,860	\$ 14,975,490

N/A - Not applicable prior to and subsequent to the implementation of GASB Statement No. 54.

2011	 2012	 2013	 2014	 2015		2016
N/A	N/A	N/A	N/A	N/A		N/A
N/A	N/A	N/A	N/A	N/A		N/A
N/A	N/A	N/A	N/A	N/A		N/A
\$ 213,743	\$ 403,022	\$ 98,336	\$ 294,643	\$ 92,212	\$	159,185
2,459,812	2,527,603	2,549,652	2,397,759	2,788,336		2,642,583
N/A	-	-	-	-		-
2,712,163	2,787,316	2,866,048	3,084,075	2,624,916		2,275,559
8,354,128	 9,804,868	 7,296,945	 7,988,424	 9,119,966		10,638,014
13,739,846	 15,522,809	 12,810,981	 13,764,901	 14,625,430		15,715,341
N/A	N/A	N/A	N/A	N/A		N/A
N/A	N/A	N/A	N/A	N/A		N/A
N/A	N/A	N/A	N/A	N/A		N/A
-	-	-	-	-		4 500 440
1,414,404	1,076,370	791,699	2,453,964	1,890,936		1,590,442
2,369,833	1,404,374	4,652,528	2,225,168	3,105,843		3,715,244
(2,466,051)	 (2,606,994)	 (37,048)	 (40,731)	 (41,811)		43,892
1,318,186	(126,250)	5,407,179	4,638,401	4,954,968		5,349,578
1,510,100	 (120,230)	 J,+01,119	 4,030,401	 +,304,300		3,343,376
\$ 15,058,032	\$ 15,396,559	\$ 18,218,160	\$ 18,403,302	\$ 19,580,398	\$	21,064,919

Town of Carrboro Changes in Fund Balances Governmental Funds Last Ten Fiscal Years (Modified Accrual Basis of Accounting)

		2007		2008		2009		2010
Bevenues								,
Revenues Ad valorem taxes	\$	0.672.941	\$	10 0/1 552	\$	10 924 121	Ф	11,213,669
	Ф	9,672,841	Ф	10,041,553	Ф	10,824,131	\$	
Local option sales taxes		3,353,665		3,382,770		3,137,836		3,039,931
Other taxes and licenses		420,065		355,295		428,654		508,344
Unrestricted intergovernmental		691,784		874,786		947,801		875,129
Restricted intergovernmental		1,039,979		778,193		903,072		731,165
Permits and fees		1,223,918		1,074,762		1,062,027		1,175,313
Sales and services		276,599		270,543		260,829		256,639
Investment earnings		534,956		525,462		201,829		49,174
Other		209,087		487,963		189,840		148,927
Total revenues		17,422,894		17,791,327		17,956,019		17,998,291
Expenditures								
General government		3,003,404		3,222,136		3,029,383		2,980,135
Public Safety		5,555,899		5,144,593		5,279,145		5,397,502
Planning		1,110,467		1,179,139		1,110,797		1,098,192
Transportation		962,714		970,617		1,033,837		1,032,835
Public Works		3,776,477		3,642,698		3,004,354		2,958,684
Parks and recreation		1,211,738		1,208,191		1,207,492		1,243,416
Economic and community		, , ,		,, -		, - , -		, -, -
development		_		_		413,790		47,825
Capital outlay		739,123		863,924		2,556,751		2,474,729
Debt service		. 55, 5		000,02		_,000,.0.		_,,0
Interest		206,475		259,935		326,311		263,461
Principal		1,046,466		1,100,962		1,101,591		1,214,257
Total expenditures		17,612,763	-	17,592,195		19,063,451		18,711,036
_ ,	·							
Excess of revenues over		(400.000)		100 100		(4.407.400)		(7.10.7.15)
(under) expenditures		(189,869)		199,132		(1,107,432)		(712,745)
Other financing sources (uses)								
Proceeds from borrowing		1,134,188		1,668,939		-		3,867,955
Premium on borrowing		-		-		-		-
Sale of capital assets		-		-		-		-
Transfers in		310,000		1,321,914		(1,634,299)		975,923
Transfers out		(310,000)		(1,321,914)		1,634,299		(975,923)
Total other financing				,				,
sources		1,134,188		1,668,939		-		3,867,955
Not abanga in fund								
Net change in fund balances	\$	944,319	\$	1,868,071	\$	(1,107,432)	\$	3,155,210
		<u> </u>		,		<u> </u>		,
Capital outlay included in expenditures above	\$	739,123	\$	863,924	\$	2,556,751	\$	2,474,729
experientares above	Ψ	700,120	Ψ	000,027	Ψ	2,000,701	Ψ	2,117,120
Debt service as a percentage		7.40/		0.40/		0.70/		0.40/
of noncapital expenditures		7.4%		8.1%		8.7%		9.1%

	2011		2012	 2013	 2014	 2015		2016
\$	11,386,243	\$	11,708,787	\$ 11,754,299	\$ 11,792,234	\$ 11,771,793	\$	11,829,436
·	3,113,356	·	3,308,060	3,427,678	3,567,123	3,897,200	•	4,105,283
	438,229		449,628	461,054	1,316,876	1,386,254		1,381,093
	951,820		946,091	952,397	982,040	1,481,631		1,452,221
	1,075,884		1,095,408	1,179,461	1,487,840	949,579		651,211
	1,090,101		1,308,544	1,255,930	1,249,319	1,260,859		1,270,187
	254,934		260,225	261,373	283,611	274,350		263,444
	63,320		47,980	25,954	11,757	10,477		28,818
	539,189		266,206	135,078	 207,671	 400,617		218,561
	18,913,076		19,390,929	19,453,224	 20,898,471	 21,432,760		21,200,254
	3,162,592		3,350,244	3,345,195	3,964,409	4,093,908		4,353,526
	5,624,076		5,795,546	5,736,675	6,019,294	6,265,547		6,216,871
	1,132,203		1,045,854	1,088,802	1,150,603	1,203,990		1,333,903
	1,032,825		1,032,825	1,286,714	1,396,423	1,472,508		1,540,288
	3,100,603		3,397,396	3,385,065	3,260,291	3,481,463		3,134,390
	1,237,163		1,274,082	170,695	1,378,862	1,444,752		1,529,332
	132,826		275,681	1,276,064	623,220	20,108		145,144
	2,373,015		1,840,865	2,717,113	2,132,488	1,888,948		1,410,447
	1,217,736		292,041	2,503,013	226,334	202,907		191,229
	293,894		1,068,046	232,596	1,066,150	946,047		973,069
	19,306,933		19,372,580	 21,741,932	 21,218,074	 21,020,178		20,828,199
	(393,857)		18,349	(2,288,708)	(319,603)	412,582		372,055
	476,399		298,850	4,997,320	498,822	717,102		621,180
	-		-	92,461	- - 000	47 440		404 207
	- 		21,328	20,528	5,923	47,412		491,287
	531,428		-	4,424,133	1,850,165	881,518		1,808,060
	(531,428)			 (4,424,133)	 (1,850,165)	 (881,518)		(1,808,060)
	476,399		320,178	 5,110,309	504,745	 764,514		1,112,467
\$	82,542	\$	338,527	\$ 2,821,601	\$ 185,142	\$ 1,177,096	\$	1,484,522
\$	2,373,015	\$	1,840,865	\$ 2,717,113	\$ 2,132,488	\$ 1,888,948	\$	1,410,447
	8.9%		7.8%	 14.4%	 6.8%	 6.0%		6.0%

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Revenue Capacity Information

Town of Carrboro Program Revenues by Function/Program Governmental Funds Last Ten Fiscal Years (Accrual Basis of Accounting)

Function/Program	2007		2008		2009		2010	
Governmental activities:								
General Government	\$	124,752	\$	288,116	\$	251,669	\$	148,995
Public Safety		609,234		620,852		800,903		700,807
Planning		540,057		325,666		381,452		427,535
Public Works and								
Transportation		1,132,819		816,891		1,661,709		828,263
Economic and Physical								
Development		-		244,243		337,894		42,179
Parks and Recreation		339,541		368,196		296,123		314,311
Total primary government	\$	2,746,403	\$	2,663,964	\$	3,729,750	\$	2,462,090

 2011		2012		2013		2014		2015		2016	
\$ 221,913	\$	250,719	\$	714,449	\$	958,976	\$	767,303	\$	650,899	
755,276		644,867		916,576		813,257		677,124		667,572	
299,022		521,028		141,086		83,602		120,607		148,749	
1,212,175		1,150,348		710,883		984,621		860,795		587,845	
-		181,753		74,926		47,585		17,234		_	
 309,703		296,123		297,437		325,197		305,926		296,472	
\$ 2,798,089	\$	3,044,838	\$	2,855,357	\$	3,213,238	\$	2,748,989	\$	2,351,537	

Fiscal Year	Prop	Property Taxes				
2007	\$	9,672,841				
	Ψ					
2008		10,041,553				
2009		10,824,131				
2010		11,213,669				
2011		11,386,243				
2012		11,708,787				
2013		11,754,299				
2014		11,792,234				
2015		11,771,793				
2016		11,829,436				
Change						
2007 - 2016		22.3%				

^a This table presents the Town's most significant own source of revenues. All other taxes and revenues are either comparatively insignificant or levied by another governmental entity besides the Town of Carrboro.

Fiscal Year Ended June 30,	Tax Year	Real Property	 Personal Property	 ublic Service Companies	_	Total Taxable Assessed Value	Direct Tax Rate (\$100 of Assessed Value)	Estimated Actual Taxable Value	Taxable Assessed Value as Percentage of Actual Taxable Value
2007	2006	\$ 1,462,675,049	\$ 120,737,680	\$ 13,425,570	\$	1,596,838,299	0.6244	\$ 1,596,838,299	100%
2008	2007	1,400,382,686	124,823,950	13,379,348		1,538,585,984	0.6537	1,538,585,984	100%
2009	2008	1,445,628,863	121,818,472	14,519,342		1,581,966,677	0.6863	1,581,966,677	100%
2010	2009	1,784,120,826	116,231,101	15,520,866		1,915,872,793	0.5894	1,915,872,793	100%
2011	2010	1,808,720,407	116,141,072	14,264,582		1,939,126,061	0.5894	1,939,126,061	100%
2012	2011	1,833,640,649	124,209,262	14,927,885		1,972,777,796	0.5894	1,972,777,796	100%
2013	2012	1,840,579,388	147,215,525	15,377,555		2,003,172,468	0.5894	2,003,172,468	100%
2014	2013	1,879,514,863	193,640,289	15,358,935		2,088,514,087	0.5894	2,088,514,087	100%
2015	2014	1,902,400,670	197,002,419	14,499,872		2,113,902,961	0.5894	2,113,902,961	100%
2016	2015	1,932,854,388	185,701,586	17,048,727		2,135,604,701	0.5894	2,135,604,701	100%

Source: Orange County, North Carolina, Tax Assessor.

Note: Property in the Town of Carrboro is assessed and collected by Orange County, North Carolina.

	Direct Rate	Overlapping Rate
Fiscal Year	Town of Carrboro	Orange County
2007	0.6244	0.9030
2008	0.6537	0.9500
2009	0.6863	0.9980
2010	0.5894	0.8580
2011	0.5894	0.8580
2012	0.5894	0.8580
2013	0.5894	0.8580
2014	0.5894	0.8580
2015	0.5894	0.8780
2016	0.5894	0.8780

Source: Orange County, North Carolina, Tax Assessor.

Note: The Town of Carrboro charges a single direct rate for property taxes

Town of Carrboro Property Tax Levies and Collections Last Ten Fiscal Years

Table 9

Fiscal Year		Ta	axes Levied	Collected wi Fiscal Year of		Col	lections in	Total Collection	ns to Date	Οι	utstanding
Ended June 30,	Tax Year	for the Fiscal Year		Amount	Percentage of Levy	Subsequent Years		Amount	Percentage of Levy	Delinquent Taxes	
2007	2006	\$	9,892,881	9,784,087	98.90%	\$	98,292	\$ 9,882,379	99.89%	\$	10,502
2008	2007		10,303,874	10,177,986	98.78%		107,350	10,285,336	99.82%		18,538
2009	2008		11,167,691	11,014,097	98.62%		135,364	11,149,461	99.84%		18,230
2010	2009		11,686,026	11,470,312	98.15%		194,985	11,665,297	99.82%		20,729
2011	2010		11,792,820	11,578,630	98.18%		188,714	11,767,344	99.78%		25,476
2012	2011		11,999,523	11,790,705	98.26%		171,286	11,961,991	99.69%		37,532
2013	2012		12,184,632	11,937,142	97.97%		190,646	12,127,788	99.53%		56,844
2014	2013		12,868,792	12,741,993	99.01%		82,197	12,824,190	99.65%		44,602
2015	2014		12,970,309	12,887,757	99.36%		48,543	12,936,300	99.74%		34,009
2016	2015		13,083,098	12,989,241	99.28%		-	12,989,241	99.28%		93,857

		2016			2007	
Taxpayer	 2015 Taxable Assessed Value	Rank	Percentage of Total Town Taxable Assessed Value	2006 Taxable Assessed Value	Rank	Percentage of Total Town Taxable Assessed Value
Autumn Woods LLC	\$ 20,543,656	1	0.96%	\$ 16,751,118	2	1.22%
Tarheel Lodging II LLC	16,500,561	2	0.77%			
Carr Mill Mall Limited, Partnership	16,417,310	3	0.77%	14,689,917	5	1.07%
Landmark at Chelsea Commons LP	16,102,293	4	0.75%			
GS Villages of Chapel Hill, LLC	15,977,359	5	0.75%	16,053,377	3	1.17%
Westdale Poplar Place LP	14,699,900	6	0.69%			
RP Barnes LLC	14,215,453	7	0.67%			
Carrboro Shopping Center I LLC	13,223,400	8	0.62%	11,555,777	6	0.84%
*Collins Crossing Terraces LLC	11,798,404	9	0.55%			
188 Claremont LLC	10,717,579	10	0.50%			
Vac Limited Partnership	-		-	26,899,561	1	1.96%
Crit NC III,LLC	-		-	15,875,154	4	1.16%
Fairfield Popular Place LP	-		-	10,689,577	7	0.78%
CAJF Associates LLC	-		-	10,263,710	8	0.75%
Sheryl Mar Co. LLC	-		-	8,731,591	10	0.62%
Zell Samuel Trustee	 <u> </u>			 9,602,502	9	0.64%
Total	\$ 150,195,915		7.03%	\$ 141,112,284		10.21%

Source: Orange County Tax Assessor Office.

Debt Capacity Information

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			C	Governmen	tal Act	ivities					
Fiscal Year	General Obligation Bonds		Premium On Bonds		Installment Purchase Agreements		Bond Anticipation Notes Payable		Total Primary Government		 Per Capita
2007	\$	229,822	\$	-	\$	4,710,738	\$	2,590,000	\$	7,530,560	\$ 413.77
2008		127,964		-		5,380,571		2,590,000		8,098,535	435.15
2009		26,107		-		4,380,836		2,590,000		6,996,944	359.20
2010		-		-		7,060,641		2,590,000		9,650,641	485.18
2011		-		-		6,319,304		2,590,000		8,909,304	454.97
2012		-		-		5,405,219		2,590,000		7,995,219	408.29
2013		4,600,000		90,028		3,444,437		-		8,134,465	415.41
2014		4,350,000		85,162		3,127,109		-		7,562,271	383.83
2015		4,100,000		80,296		3,148,164		-		7,328,460	349.24
2016		3,850,000		75,430		3,046,275		-		6,971,705	332.24

Note: Details regarding the Town's outstanding debt can be found in the notes to the financial statements.

		neral Bonded	Debt O	utstanding		Actual	Percentage of Actual		
Fiscal Year	General Obligation Bonds			Total		Taxable Value of Property	Taxable Value of Property	Per Capita	
2007	\$	229,822	\$	229,822	\$	1,596,838,299	0.014%	\$	12.63
2008		127,964		127,964		1,538,585,984	0.008%		6.88
2009		26,107		26,107		1,581,966,677	0.002%		1.34
2010		-		-		1,915,872,793	0.000%		-
2011		-		-		1,939,126,061	0.000%		-
2012		-		-		1,972,777,796	0.000%		-
2013		4,600,000		4,600,000		2,003,172,468	0.230%		234.91
2014		4,350,000		4,350,000		2,088,514,087	0.208%		220.79
2015		4,100,000		4,100,000		2,113,902,961	0.194%		195.39
2016		3,850,000		3,850,000		2,135,604,701	0.180%		183.47

Town of Carrboro	Oı	Total itstanding	Percentage Applicable to Town	Amount Applicable to Town		
General Obligation Debt Town of Carrboro's direct debt	\$	6,896,275	100.00%	\$	6,896,275	
Overlapping (Bonded) Debt - Orange County Overlapping debt - Orange County	2	214,322,108	13.69%		29,340,697	
Total direct and overlapping debt				\$	36,236,972	

Sources:

Budgeted revenues used to estimate applicable percentages. Debt outstanding provided by Orange County, NC Finance Dept.

Town of Carrboro Legal Debt Margin Information Governmental Funds Last Ten Fiscal Years

	2007	2008	2009	2010
Debt limit	\$ 127,517,242	\$ 123,086,879	\$ 126,557,334	\$ 153,269,823
Total net debt applicable to limit	4,940,559	5,508,535	4,406,943	7,060,641
Legal debt margin	\$ 122,576,683	\$ 117,578,344	\$ 122,150,391	\$ 146,209,182
Total net debt applicable to the limit as a percentage of debt limit	3.87%	4.48%	3.48%	4.61%

Note: Under State Finance law, the Town's outstanding general obligation debt should not exceed 8% of total assessed property.

Table 14

2011	2012		2013	2014	 2015		2016
\$ 155,130,085	\$ 152,417,005	\$	160,253,797	\$ 167,081,127	\$ 169,112,237	\$	170,848,376
6,319,304	5,405,219		8,044,437	7,477,109	 7,248,164		6,896,275
\$ 148,810,781	\$ 147,011,786	\$	152,209,360	\$ 159,604,018	\$ 161,864,073	\$	163,952,101
 4.07%	 3.55%	_	5.02%	 4.48%	 4.29%	<u></u>	4.04%

perty value.

Demographic and Economic Information

Year	Population	Per Capita Personal Income	Median Age	Chapel Hill and Carrboro Schools Public School Enrollment	Carrboro Schools Only Public School Enrollment	Unemployment Rate
2007	18,200	\$ 39,380	28.1	11,389	535	3.9%
2008	18,611	39,380	28.1	11,630	1,140	4.6%
2009	19,479	39,380	28.1	11,618	1,591	7.0%
2010	19,891	39,380	28.1	11,657	1,611	6.4%
2011	19,582	32,198	30.1	11,892	1,663	7.2%
2012	19,582	32,198	30.1	11,885	1,449	6.5%
2013	19,582	32,198	30.1	12,094	1,490	5.7%
2014	19,702	32,198	30.1	12,353	1,490	4.2%
2015	20,984	32,198	30.1	12,353	1,490	3.9%
2016	20,984	32,198	30.1	12,076	1,321	4.7%

Notes:

Orange County unemployment rate is used.

Population for 2011- 2016 is based on last actual value calculated in 2010 from the U.S. Census Bureau.

Per capita personal income is based on last actual value calculated in 2010 from the U.S. Census Bureau for Orange County. Information for Carrboro was not available.

Median age is estimated from the 2000 and 2010 Census of Population.

Public school enrollment is based on information from the Chapel Hill-Carrboro Schools FY 2015 CAFR.

Schools that have a Carrboro mailing address are included in this demographic, which are Carrboro Elementary and Carrboro High School. Carrboro High School opened in 2007.

Employer	Average Number of Employees	Percentage of Total Town Employment	
Town of Carrboro	229	1	1.96%
Chapel Hill-Carrboro City Schools	216	2	1.85%
Kaplan College	160	3	1.37%
Orange Water & Sewer Authority	119	4	1.02%
Food Lion	112	5	0.96%
Harris Teeter	94	6	0.80%
Weaver Street Market	75	7	0.64%
Piedmont Health Services	69	8	0.60%
Tyler's Restaurant & Tap Room	50	9	0.43%
Acme Food	46_	10	0.39%
Total	1,170		10.02%

Source:

Orange County Economic Development Commission, average number of employees 3rd quarter 2012 from Employment Security Commission.

Note:

Orange County Economic Development Commission is no longer operational, and reliable information for 2015 is not readily available. However, historically there has been little change in the principal employers for the Town.

2007								
Employer	Average Number of Employees	Percentage of Total Town Employment						
Piedmont Health Services, Inc.	210	1	1.91%					
Harris Teeter	200	2	1.82%					
Weaver Street Market	195	3	1.77%					
Orange Water and Sewer	150	4	1.36%					
Town of Carrboro	147	5	1.34%					
UNC Hospitals Fiscal Service	129	6	1.17%					
McDougle Middle School	99	7	0.90%					
Elmo's Diner	90	8	0.82%					
Carrboro Elementary School	89	9	0.81%					
Food Lion	59_	10	0.54%					
	1,368		12.44%					

Town of Carrboro Full-Time Equivalent City Government Employees by Function/Program Last Ten Fiscal Years

Table 17

Function/Program	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
General government:										
Mayor and Board of Aldermen	-	-	-	-	-	-	-	-	-	-
Town manager	2	2	2	2	4	5	5	5.0	6.0	6.0
Economic development	1	1	1	1	1	2	2	1.5	1.5	1.5
Town clerk	1	1	1	1	1	1	1	1.5	1.5	1.5
Management services	8	8	8	8	6	7	7	6.5	6.5	6.0
Human Resources	2	2	2	2	2	2	2	2.0	1.5	2.0
Public safety:										
Police	41	42	42	44	44	42	41	41.0	41.0	42.0
Fire	33	36	36	36	36	37	37	36.5	36.5	37.0
Planning	14	14	14	14	14	14	14	14.0	13.5	13.5
Public works	36	36	36	36	36	34	35	35.0	35.0	36.0
Parks and recreation	10	11_	11_	11	11	13	13	12.5	12.5	13.0
Total	148	153	153	155	155	155	155	156	155.5	158.5

Source: Annual operating budget

Operating Information

Town of Carrboro Operating Indicators by Function/Program Last Ten Fiscal Years

	2007			2008		2009		2010	
General government:									
Revolving loan inquiries		39		42		40		50	
Small business counseling									
referrals		32		45		40		29	
Privilege licenses issued		925		917		1,115		1,253	
Public safety:		0_0		• • • • • • • • • • • • • • • • • • • •		.,		.,_55	
Police:									
Major crimes		1,275		972		814		750	
Criminal arrests		713		881		881		830	
Motor vehicle accidents		540		466		573		494	
Narcotics arrests		56		107		132		204	
Fire:		00		107		102		201	
Fire and EMS responses		1,397		1,480		1,576		1,530	
Inspections		633		486		955		998	
Planning:		033		+00		955		330	
Annexations		2		1		_		_	
Zoning permits		129		119		66		89	
Building permits for new		123		119		00		09	
residential		71		55		54		77	
Building permits for new		7 1		55		54		11	
commercial		1		7		3		78	
		'		,		3		70	
Value of building permits issued	\$	34,883,581	\$	15,634,025	\$	15,313,066	\$	29,410,835	
Public works:	φ	34,003,301	φ	15,034,025	φ	15,515,000	φ	29,410,033	
		37		39		39		39	
Paved streets maintained (miles)		31		39		39		39	
Unpaved streets maintained		2		2		2		2	
(miles)		2		2		2		2	
Paved bikeways maintained		4		4		4		1	
(miles)		1		1		1		1	
Litter collection (hours		400		400		400		405	
annually)		400		400		400		425	
Residential refuse collection		0.044		0.050		0.400		0.705	
(tons annually)		2,611		3,250		3,483		3,765	
Multi-family & commercial		0.504		4.070		4.440		0.005	
refuse collection		3,521		4,379		4,146		2,865	
Bus shelters maintained		20		20		20		22	
Parks and recreation:									
Athletic activities offered		54		46		61		48	
Athletic activity participants		2,442		2,904		3,229		2,760	
Athletic activity hours		1,000		1,003		1,111		952	
Other activities offered		255		276		333		284	
Other activity participants		25,015		25,111		27,517		26,122	
Century Center rentals (a)		1,957		2,211		418		139	
Park rentals (a)		856		1,008		234		203	

Sources: Town departments

Notes: N/A - Information was not collected/available. (a) One rental contract can be for more than one event.

Table 18

2016	2015	2014	2013	2012	2011
!	6	6	6	5	50
1:	10 301	10 720	12 1,203	10 948	40 1,158
	301	720	1,203	940	1,136
52 ⁻	472	625	599	746	716
550	665	829	1,082	830	767
540	453	490	476	476	479
9:	169	243	105	150	157
2,22	2,231	1,520	1,517	1,406	1,392
1,050	646	1,090	1,070	1,045	1,006
7:	-	-	-	1 86	- 88
7.	87	90	89	86	88
6	66	60	92	92	50
!	4	12	11	6	4
13,021,29	\$ 14,424,416	\$ 18,000,000	\$ 18,978,343	\$ 30,184,969	\$ 18,883,628
40	46	44	44	42	42
;	2	2	2	2	2
	1	1	1	1	1
38	428	400	390	405	425
2,13	2,754	3,666	4,277	3,971	3,645
4,69	3,713	2,823	2,534	3,595	3,098
23	23	23	23	23	23
4:	46	44	48	48	50
2,53	2,726	2,533	2,872	2,763	2,909
97	1,079	885	878	882	934
358	392	405	393	364	263
22,79	34,988	32,252	31,667	30,056	17,476
	34,988 109 135			30,056 105 201	

Town of Carrboro Capital Asset Statistics by Function/Program Last Ten Fiscal Years

Table 19

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Function/Program										
Public safety:										
Police stations	1	1	1	1	1	1	1	1	1	1
Patrol units	41	43	42	42	43	43	43	43	43	43
Fire stations	1	1	1	1	2	2	2	2	2	2
Fire trucks	5	5	6	6	6	6	6	6	6	6
Public works:										
Refuse collection trucks	8	7	7	7	7	7	7	7	7	7
Replacement refuse										
collection trucks	1	1	1	1	1	1	1	1	1	1
Streets (miles)	38.70	38.79	39.35	39.35	43.27	43.27	43.27	43.27	43.27	43.27
Bike paths (miles)	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32	3.32
Streetlights	869	962	968	968	986	986	986	986	986	986
Parks and recreation:										
Parkland (acres)	112	112	112	112	112	112	112	112	112	112
Parks (quantity)	10	10	10	10	10	10	10	10	10	10
Hiking trails	5	5	6	6	6	6	6	6	6	6
Dog parks	1	1	1	1	1	1	1	1	1	1
Soccer fields	1	1	1	1	1	1	1	1	1	1
Baseball/softball fields	6	6	6	6	6	6	6	6	6	6
Basketball courts	4	4	4	4	4	4	4	4	4	4
Tennis courts	6	6	6	6	6	6	6	6	6	6
Volleyball courts	2	2	2	2	2	2	2	2	2	2
Multi-purpose fields	3	3	3	3	3	3	3	3	3	3
Fishing ponds	1	1	1	1	1	1	1	1	1	1
Playgrounds	7	7	8	8	8	8	8	8	8	8
Picnic shelters	5	4	4	4	5	5	5	5	5	5

Sources: Town Departments

Compliance Section

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Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing* Standards

Independent Auditors' Report

Honorable Mayor and Members of the Board of Aldermen Town of Carrboro, North Carolina

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the accompanying financial statements of the governmental activities, the discretely presented component unit, each major fund, and the aggregate remaining fund information of the Town of Carrboro, North Carolina, as of and for the year ended June 30, 2016, and the related notes to the financial statements, which collectively comprise the Town of Carrboro's basic financial statements, and have issued our report thereon dated October 31, 2016.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Town of Carrboro's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Town's internal control. Accordingly, we do not express an opinion on the effectiveness of the Town's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect and correct misstatements on a timely basis. A material weakness is a deficiency or combination of deficiencies in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented or detected and corrected on a timely basis. A significant deficiency is a deficiency or a combination of deficiencies in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.



Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Town's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

High Point, North Carolina October 31, 2016

Dixon Hughes Goodman LLP



Town of Carrboro

Town Hall 301 W. Main St. Carrboro, NC 27510

Agenda Item Abstract

File Number: 16-333

Agenda Date: 11/15/2016 File Type: Agendas

In Control: Board of Aldermen

Version: 1

TITLE:

Discussion of Greene Tract

PURPOSE: The purpose of this agenda item is support a Board discussion of the Greene Tract in preparation the November 17th Assembly of Governments meeting.

DEPARTMENT: Planning

CONTACT INFORMATION: Patricia McGuire - 919-918-7327, pmcguire@townofcarrboro.org

<mailto:pmcguire@townofcarrboro.org>

INFORMATION:

The Greene Tract, an approximately 164-acre parcel, was purchased jointly by Orange County and the Towns of Chapel Hill and Carrboro in 1984 for use as a potential future landfill. In 1999, an interlocal agreement was enacted that transferred ownership of approximately 104 acres to joint ownership and left the remaining 60 acres as an asset of the Solid Waste Fund following the decision to pursue other options for solid waste management when the Eubanks Road landfill was closed. The interlocal agreement for solid waste management outlined the manner in which the owners would decide on the disposition of the property held in joint ownership (*Attachment A*).

Over the past two years, engineering design and outreach activities for the Rogers Road sewer construction project have been ongoing. In addition, planning activities for the area and for the Greene Tract have been underway. A discussion item on the Greene Tract, including mention of the staff technical and environmental scan of the property, and an information item on the recently completed *Mapping Our Community's Future* effort (*Attachment B*), are included on the agenda for the Assembly of Governments meeting (November 17th).

The Board of Aldermen has discussed the disposition of the Greene tract on a number of occasions starting in December 2001. More recently, the Board of Aldermen discussed the property in March 2013 related to the work of the Historic Rogers Road Neighborhood Task Force and adopted an updated resolution; related

Agenda Date: 11/15/2016 File Type: Agendas

In Control: Board of Aldermen

Version: 1

materials may be reviewed at the following links:

- Agenda materials, including background information shiftps://carrboro.legistar.com/LegislationDetail.aspx?ID=1306854&GUID=DC9C53FB-B73D-4327-
 <a href="mailto:shiftps://carrboro.legistar.com/LegislationDetail.aspx?ID=1306854&GUID=DC9C53FB-B73D-4327-
 <a href="mailto:shiftps://carrboro.legistar.com/LegislationDetail.aspx?ID=1306854&GUID=DC9C53FB-B73D-4327-
 <a href="mailto:shiftps://carrboro.legistar.com/LegislationDetail.aspx?ID=1306854&GUID=DC9C53FB-B73D-4327-
 <a href="mailto:shiftps://carrboro.legislationDetail.aspx?ID=1306854&GUID=DC9C53FB-B73D-4327-
 <a href="mailto:shiftps://carrboro.legislationDetail.aspx?ID=1306854&GUID=DC9C53FB-B73D-4327-
 <a href="mailto:shiftps://carrboro.legislationDetail.aspx?ID=1306854&GUID=DC9C53FB-B73D-4327-
 <a href="mailto:shiftps://carrboro.legislationDetail.aspx?ID=1306854&GUID=DC9C53FB-B73D-4327-
 shiftps://carrboro.legislationDetail.aspx
 shiftps://carrboro.legislationDetail.aspx
 shiftps://carrboro.legislation.gov
 <a href="mailto:shiftps://carrboro.leg
- Minutes Attachment C (see pages 8-9)

The Orange County Board of County Commissioners has discussed the Greene Tract on two occasions this fall, September 8th and October 18th:

- September 8 agenda materials, including background information-http://server3.co.orange.nc.us:8088/weblink8/0/doc/42513/Page1.aspx
- October 18 agenda materials http://server3.co.orange.nc.us:8088/weblink8/0/doc/43264/Page1.aspx

On October 18th, the Board of County Commissioners adopted a resolution to designate the 60 acres north of the Greene Tract as a 'headwaters preserve' (*Attachment D*) for use as publicly-accessible open space and to specify related actions. During the October 27 meeting of staff working together on the Rogers Road sewer project, Town of Chapel Hill staff noted that the Greene Tract was mentioned during the Chapel Hill Council's October 19th worksession on housing and community development.

This discussion was scheduled for November 1st and postponed until November 15th due to consideration of other agenda topics. The discussion will allow all members of the Board of Aldermen to review background materials related to the Greene Tract and revise and/or clarify the Town's wishes related to disposition of the Greene Tract in advance of the November 17th Assembly of Governments meeting.

FISCAL IMPACT:

Any fiscal impact will vary based on specified follow-up actions.

RECOMMENDATION:

The staff recommends that the Board of Aldermen consider and discuss the materials and identify any action and/or comments in relation to upcoming Assembly of Governments meeting.

Agreement for Solid Waste Management

To establish a comprehensive approach to solid waste management issues, and in consideration of the promises made to one another in this Agreement, Orange County and the Towns of Carrboro, Chapel Hill and Hillsborough hereby agree as follows:

1. The County will assume solid waste management responsibility as follows:

Operate the System. The County will operate the System for the benefit of the County, the Towns and the persons and organizations within their jurisdictions. The County will establish and enforce reasonable rules and regulations governing the operation and use of the System, operate the System in an efficient and economical manner and maintain the properties constituting the System in good repair and in sound operating condition.

Provide solid waste disposal facilities. The County will provide System Management Facilities suitable for the disposition of Solid Waste by the County, the Towns and the persons and organizations within their jurisdictions. The existing landfill, as well as any successor System Management Facility, will be designated to accept solid waste generated exclusively by residents, businesses and institutions located in Orange County and that portion of Chapel Hill located within Durham County, North Carolina.

<u>Determine policy.</u> The County will have the ongoing authority and responsibility in its discretion (1) to administer and operate the System in accordance with the Solid Waste Management Plan and Policies and (2) to determine and modify the Solid Waste Management Plan and Policies from time to time. The Parties affirm on the date of this Agreement their commitment to the solid waste reduction goals set out in the Integrated Solid Waste Management Plan. The County agrees to consult with the other Parties and the Advisory Board, frequently and consistently, to determine their views on the Solid Waste Management Plan and Policies and possible changes thereto.

<u>Take on employees.</u> All of the System Employees will be transferred to the County and become County employees subject to the supervision of the County Manager in the same fashion as other County employees.

The Parties acknowledge that it is an important objective of this Agreement that the current total compensation package for System Employees be maintained at a substantially equivalent level through their transfer to the County, although the combination of salary and benefits for any employee may change. The Parties recognize that all components of compensation to System Employees after the transfer will be subject to changes in salaries and benefits in the same fashion as

other County employees. The County and Chapel Hill will develop a detailed schedule comparing the total pre-transfer and post-transfer compensation for each System Employee. Chapel Hill will send a copy of the completed schedule to Carrboro.

Acquire System assets. The County will acquire all right, title and interest to all Existing System Assets. Title to the Greene Tract, however, shall not be conveyed to the County pursuant to this paragraph; Part 5 is and shall be the only portion of this Agreement affecting the state of the title to the Greene Tract.

Assume System liabilities. The County will assume all liabilities, including environmental liabilities, related to the ownership of the System, including, to the extent permitted by law, all liabilities related to the ownership of Existing System Assets which have accrued or which may accrue prior to the Transfer Date.

The Parties, however, shall retain their individual liability, if any, under environmental laws and otherwise, related to their respective use of the System both before and after the Transfer Date (as, for example, any liability arising from their delivering, or causing to be delivered, Solid Waste to System Management Facilities). The Parties acknowledge that the County's assumption of liabilities as described in the preceding paragraph shall not limit, and is not intended to limit, the ability of any governmental authority to impose, or to seek to impose, environmental or other liability directly on a Party (as, for example, any liability accruing to the current owners of the Existing System Assets as a result of their status as owners prior to the Transfer Date). The County will not assume, and by this Agreement does not assume, any indebtedness of Carrboro or Chapel Hill.

Acquire property. The County shall acquire real and personal property as it deems appropriate for System purposes. There shall be no restrictions on the County's acquisition of additional acreage at the existing landfill. The County states its current intention not to acquire, and its recommendation that future County Governing Boards not acquire, any of the properties known as the Blackwood and Nunn properties for System purposes.

Provide for compliance with law. The County will comply, or cause there to be compliance, with all applicable laws, orders, rules, regulations and requirements of any governmental authority relating to the System. The County will also be generally responsible for solid waste reporting, planning, regulatory compliance and similar matters. Nothing in this Agreement, however, shall prevent the County from contesting in good faith the applicability or validity of any such law or other requirement, so long as the County's failure to comply with the same during the period of such contest will not materially impair the System's operation or revenue-producing capability.

Make reports. The County will make, or cause to be made, any reports or audits relating to the System as may be required by law. The County, as often as may reasonably be requested, will furnish such other information as the County may have reasonably available concerning the System or its operation as the Advisory Board or any Party may reasonably request. The County, which the Parties have designated as a local lead agency, and the Towns will cooperate in preparing and submitting any reports or solid waste plans that a Party may be required to file with governmental authorities, such as the State's Division of Waste Management.

Approve budget. The County will approve the 1999-2000 System operating budget together with Chapel Hill.

Effective date. The County will assume solid waste management responsibility the day following the effective date of the zoning of the property described in Exhibit E which makes solid waste management uses, not including burial of mixed solid waste or construction and demolition waste, a permitted use under the Chapel Hill Development Code/Ordinance, as provided in Part 5 of this Agreement, so long as that date is at least 180 days after the execution and delivery of this Agreement by the current owners of the System and so long as the Greene Tract Owners have agreed on the boundaries of the property described in Exhibit E. The date the County assumes solid waste management responsibility is the effective date of this Agreement. Provided, however, the effective date of this Agreement will be January 1, 2000 so long as this Agreement is executed by and delivered to the current owners of the System on or before September 7, 1999, the zoning change described above and in Part 5 of this Agreement is adopted by the Town of Chapel Hill on or before January 1, 2000 and is effective on or before January 1, 2000 and the Greene Tract Owners have, on or before January 1, 2000, agreed on the boundaries of the property described in Exhibit E. The Parties shall take actions provided for in this Agreement, or which may otherwise be necessary or appropriate, in a timely fashion to permit the County's assumption of solid waste responsibility on the effective date.

2. The Parties will deliver Solid Waste and County Recyclables to the System.

The County and the Towns all agree to deliver, or cause to be delivered, to System Management Facilities for disposal or processing, respectively, all Solid Waste and County Recyclables under their respective control. This delivery obligation includes (without limitation) all Solid Waste and County Recyclables collected by any Party's employees, Solid waste collection contractors, solid waste collection licensees or solid waste collection franchisees. There is no such obligation to deliver Other Recyclables. All Solid Waste and County Recyclables delivered to System Management Facilities, or to County employees, solid waste collection contractors, solid waste collection licensees or solid waste collection franchisees, or properly placed in a designated container at a convenience center, will be County property upon such delivery.

The County will have the right to refuse to accept for disposal at System Management Facilities any material or substance which the County reasonably determines is barred from such disposal by the Solid Waste Management Plan and Policies, by any applicable law or regulation or by the restrictions of any permit. Notwithstanding the provisions of the previous paragraph, the County shall in no event be deemed the owner of any such barred substance without its express consent.

If at any time a material that previously qualified as Other Recyclables begins to be processed by the County for recycling and therefore becomes County Recyclables, then any Party theretofore processing such material as Other Recyclables shall begin to process such material as County Recyclables upon the expiration of any contract for disposal of the material as Other Recyclables that may be in effect at the time of the material's change in status.

3. Solid waste collection and transportation decisions will remain each Party's prerogative.

The Parties in all events retain the right to determine their own systems and procedures for the collection of Solid Waste and related matters, provided that such systems and procedures shall be reasonably designed to be consistent and compatible with the appropriate Solid Waste Management Plan and Policies.

4. The County will operate the System as an enterprise operation, and will have discretion to set rates, fees and charges.

The Parties agree that the long-term success of the arrangement for solid waste management provided for in this Agreement requires that the Parties remain committed partners. The Parties agree that their goal of reducing solid waste must be achieved in a manner that guards the economic viability of the System's current and future operations. At the same time, the Parties acknowledge that the County is not expected to use its general funds to underwrite overall solid waste management activities. Therefore, the County, the Towns and the persons and organizations within their jurisdictions all must bear appropriate proportional shares of the costs of providing for current and future operations of the solid waste management enterprise. The Parties agree that the County, as part of its responsibility for solid waste management, must retain broad flexibility to implement and adjust rates, fees and other charges, as provided below, in order to generate sufficient resources through the System to carry out the requirements of the Solid Waste Management Plan and Policies. Parties agree that the County is ultimately responsible for balancing the available resources and the demands on the System, and that the County must therefore have sufficient authority to adjust either the resources or the System demands, or both, to achieve the balance. Part 1 of this Agreement provides for the County's authority over the Solid Waste Management Plan and Policies. This Part 4 provides for the County's authority over the available resources.

System will be operated as an enterprise fund. The County will segregate for accounting purposes all the System's accounts, moneys and investments. The County will provide for the System's assets, liabilities and results of operations to be presented in the County's annual audit as a separate enterprise fund, in accordance with generally accepted accounting principles. The County will annually adopt a separate budget for the System in accordance with the County's usual budgetary process. The County will keep accurate records and accounts of all items of costs and of all expenditures relating to the System, and of the System Revenues collected and the application of System Revenues. Such records and accounts will be open to any Party's inspection at any reasonable time upon reasonable notice.

System will be operated on a self-supporting basis. The County will establish and maintain a system of rates, fees and charges for the use of, and for the services provided by, the System which is reasonably designed to pay in full all the costs (and only the costs) of carrying out the County's responsibilities under this Agreement and the Solid Waste Management Plan and Policies, including, without limitation, (1) costs of disposing of Solid Waste, (2) costs of collecting, processing and disposing of County Recyclables, (3) to the extent permitted by law, costs of providing public benefits determined to be provided pursuant to Part 6, and (4) costs of solid waste reduction activities. Subject only to the specific limitations set forth in this Agreement, the County may revise any rates, fees and charges at any time and as often as it shall deem appropriate.

Limitations on Material Financial Changes. Notwithstanding any other provision of this Agreement, the County shall not put into effect any Material Financial Change unless the County first obtains the consent of all Parties. It will be each Town's obligation to determine whether any change or proposed change to the Solid Waste Management Plan and Policies is a Material Financial Change with respect to such Town within ten Business Days of receiving notice of the change or proposed change, and to notify the County within five additional Business Days if the Town determines that such change or proposed change is a Material Financial Change. The provisions of this paragraph are independent of the further provisions of this Part 4 concerning rates, fees and charges.

Mixed Solid Waste Tipping Fee. (1) The County may increase the Mixed Solid Waste Tipping Fee from time to time in its discretion with at least 30 days' notice of the increase to all other Parties. The County may not, however, increase the Mixed Solid Waste Tipping Fee during or at the beginning of any Fiscal Year to a fee that exceeds the Mixed Solid Waste Tipping Fee in effect at the end of the preceding Fiscal Year by more than 10%, without the prior consent of all the other Parties. Further, the Parties intend and agree that the County shall endeavor to adjust the Mixed Solid Waste Tipping Fee only annually, with changes becoming effective only at the beginning of a Fiscal Year.

- (2) The County may decrease the Mixed Solid Waste Tipping Fee from time to time in its discretion, without prior notice to or action by any other Party. The County will promptly notify the other Parties of any decrease in the Mixed Solid Waste Tipping Fee.
- Governmental Fees. (1) If the County determines that it is or may be advisable to create and impose any Governmental Fee, then the County will give at least 30 days' notice of the proposed Governmental Fee to the other Parties. A Governmental Fee may then be imposed only if the creation and imposition of such Governmental Fee is subsequently approved by the County and at least one other of the largest two (by population) local government Parties. A new Governmental Fee will take effect at the end of the notice period or, if later, the date of the last Governing Body approval necessary for it to take effect.
- (2) The County may increase any individual Governmental Fee from time to time in its discretion with at least 30 days' notice of the increase to all other Parties. The County may not, however, increase any individual Governmental Fee during or at the beginning of any Fiscal Year to a fee that exceeds the fee in effect at the end of the preceding Fiscal Year by more than 10%, without the prior consent of all the other Parties. The Parties intend and agree that the County shall endeavor to adjust any and all Governmental Fees only annually, with changes becoming effective only at the beginning of a Fiscal Year.
- (3) The County may decrease any Governmental Fee from time to time in its discretion, without prior notice to or action by any other Party. The County will promptly notify the other Parties of any decrease in any Governmental Fee.
- Other fees. (1) This section applies to rates, fees or charges that the County may create or change, other than the Mixed Solid Waste Tipping Fee and Governmental Fees. This section applies to any County proposal to create, increase or decrease an availability fee. This section does not apply to any proposal to impose or change any special district tax related to the System; instead, the generally applicable law shall govern any such proposal. The Parties note that North Carolina law currently requires a Town's consent to include any area within that Town's jurisdiction within a special taxing district, but that the County controls the rate of any special district tax in its discretion.
- (2) If the County determines that it is or may be advisable to create, increase or decrease any rate, fee or charge covered by this section, then the County will give at least 30 days' notice of the proposed change to the other Parties, and the County will request that the Advisory Board consider the proposed change. If the Advisory Board recommends that the change be approved, then the change may take effect if the County subsequently approves it. If the Advisory Board recommends that the change not be approved, then the change may take effect only if the County and at least one other Party subsequently

approve the change. A change will take effect at the end of the notice period or, if later, the date of the last Governing Body approval necessary for it to take effect.

(3) Notwithstanding any other provision of this Agreement, the County may at any time, and from time to time in its discretion, create, increase or decrease any minor fees for the disposal of certain classes of Solid Waste (such as fees for the disposal of yard waste or clean wood waste) and minor charges for the sale of goods (such as, for example, mulch, scrap tires, or clean wood waste). A fee or charge shall be considered "minor" for the purposes of this paragraph if the fee or charge produced less than 1% of the System's total revenue for the last preceding Fiscal Year for which audited financial statements are available.

Time limit on fee change approvals. Any approvals given by a Party, pursuant to the approval requirements of this Part 4, to the imposition or increase of any fee will be of no further effect after 90 days from the date of the action granting approval (or after such shorter or longer period as may be made part of the action granting approval), if the imposition or increase so approved has not by such time received all approvals required for its effectiveness.

Use of System Revenues only for System: no requirement that County use general funds for System purposes. The County will use System Revenues solely to carry out the Solid Waste Management Plan and Policies and solely for the benefit of the System, including (1) to pay costs of disposing of Solid Waste, (2) to pay costs of collecting, processing and disposing of Recyclables, (3) to the extent permitted by law, to pay costs of providing public benefits determined to be provided pursuant to Part 6, and (4) to pay costs of solid waste reduction activities. The County will not use System Revenues to pay costs of collecting Solid Waste in unincorporated areas of the County. The County will in no event be required to use assets or funds other than those of the System to fulfill its obligations under this Agreement other than its obligations under Part 2.

Reservation of County's rights. Notwithstanding any provision of the Solid Waste Management Plan and Policies or this Agreement to the contrary, the County will in all events be entitled to operate the System and all its facilities, and may adjust any and all rates, fees and charges, as it may in its reasonable discretion deem reasonably necessary (1) to comply with any requirements of any applicable law or regulation or any court order, administrative decree or similar order of any judicial or regulatory authority, (2) to comply with the requirements of any contracts, instruments or other agreements at any time securing Outstanding System Debt, or (3) to pay costs of remediating any adverse environmental conditions at any time existing with respect to the System.

5. The Greene Tract will remain a landfill asset. Sixty acres of the Greene Tract will be reserved for solid waste management purposes, and the three owners will work together to determine the ultimate use of the remainder.

The Parties agree that the Greene Tract remains a landfill asset.

Chapel Hill, Carrboro and the County (the "Greene Tract Owners") will transfer to the County title to that portion of the Greene Tract described on Exhibit E, which contains approximately sixty acres. The County may use the property described on Exhibit E for System purposes. The County states its current intention not to bury mixed solid waste or construction and demolition waste on any portion of the Greene Tract. The County states its recommendation to future County Governing Boards that the County make no such burial.

The deed to this property will include a restriction prohibiting the use of the property described on Exhibit E for burying mixed solid waste or construction and demolition waste. This restriction becomes effective at the same time that the zoning change described in the next paragraph is effective; and it will remain effective so long as zoning remains effective which allows solid waste management uses, other than burial of mixed solid waste or construction and demolition waste, as permitted uses as described in the next paragraph.

Chapel Hill agrees to commence, and states its current intent to complete, the process to make solid waste management uses not including burial of mixed solid waste or construction and demolition waste, but expressly including, but not limited to, a solid waste transfer facility and a materials recovery facility, uses of the Exhibit E property "permitted" uses under The Chapel Hill Development Code/Ordinance, subject only to staff level site plan and similar reviews and not subject to special use or similar processes. Chapel Hill agrees to provide the other Parties with a plan, including a planned schedule of reviews and approvals, to process the zoning change described in this paragraph.

The Parties agree that nothing that they have agreed to herein constitutes an agreement on the part of Chapel Hill to zone the Exhibit E property in a particular way. It is instead, an agreement that if the Exhibit E property is zoned a particular way one event will follow and if the Exhibit E property is not zoned in a particular way another event will follow.

The Greene Tract Owners agree to bargain together in good faith and with all due diligence, and to use their respective best efforts, to determine an ultimate use or disposition of the remainder of the Greene Tract as soon as possible and in any event by December 31, 2001, or two years after the effective date, whichever is later. During this "bargaining period," no Greene Tract Owner shall make any use of the remaining portion of the Greene Tract without the consent of the other Greene Tract Owners.

The Greene Tract Owners agree that among the issues to be addressed in the bargaining process are (1) the specific future uses, or ranges of use, to be made of the remainder of the Greene Tract (including issues of devoting different portions to different uses, devoting portions to public uses and the possibility of making portions available for sale or private use), and (2) whether to impose specific use restrictions, either through deed restrictions or through governmental regulation. The Greene Tract Owners agree that during the "bargaining period" each should provide opportunity for public comment on possible or proposed uses or dispositions.

During the "bargaining period," no Greene Tract Owner shall (1) file any legal action or proceeding to force any sale or division of the Greene Tract, or (2) enter into any agreement to sell, mortgage or otherwise transfer all or any part of its ownership interest in the Greene Tract, in either case without the consent of the other Greene Tract Owners. To the extent permitted by law, Chapel Hill agrees not to initiate any proceeding to rezone any portion of the Greene Tract during the "bargaining period," without the consent of the other Greene Tract Owners. Execution and delivery of this Agreement by the Greene Tract Owners constitutes consent of the Greene Tract Owners for Chapel Hill to rezone the Exhibit E property as described in this Part 5. Chapel Hill states its current intent to accommodate any agreed-upon future uses or range of uses of the remainder of the Greene Tract in its Development Code/Ordinances and states its recommendation to future Chapel Hill Governing Boards to the same effect.

After the "bargaining period" is completed, namely, the day after the last day of the bargaining period, no Greene Tract Owner shall (1) file any legal action or proceeding to force any sale or division of the Greene Tract, or (2) enter into any agreement to sell, mortgage or otherwise transfer all or any part of its ownership interest in the Greene Tract, in either case without giving the other Greene Tract Owners at least 60 days' prior notice of such filing or entering into an agreement. In addition, after the "bargaining period" is completed, any Greene Tract Owner may give 60 days' prior notice of an election to be no longer bound by the above restrictions pertaining to the uses of and whether to impose use restrictions on the remainder of the Greene Tract, and such election shall be effective at the end of the notice period.

The Parties agree that any non System use of any portion of the remainder of the Greene Tract or any disposition of any portion of the remainder of the Greene Tract shall result in payment to the County of the Reimbursement Amount for deposit in the System enterprise fund.

6. The County will finance community benefits from System funds to the extent legally permissible.

The Parties will cooperate to provide public benefits to the community of residents and property owners in the neighborhood of the existing landfill.

The Parties note the expected forthcoming report of the Landfill Community Benefits Committee that has been studying the question of community benefits. Upon the release of the report, each Party shall provide for its Governing Board to discuss the working group's proposal for community benefits, and shall provide for such legal and other staff analysis of the proposed list as it may deem appropriate (especially including legal analysis concerning the use of System funds to pay the costs of such benefits). After each Party has completed its own analysis, the Parties shall work together, diligently and in good faith, to reach an agreement as to community benefits to be provided. The process of determining community benefits shall continue to include participation by persons belonging to the relevant community. Final determinations of the public benefits to be provided, the sources of financing and the mechanisms for providing the benefits, however, shall be made only by further agreement of all the Parties.

The Parties state their preference that benefits be financed from System funds to the extent permitted by law. To the extent permitted by law and by generally accepted accounting principles, to the extent determined by the Parties and notwithstanding any other provision of this Agreement, the costs of providing public benefits as described in this Part 6 may be treated as an expense of the System and may be paid from System Revenues.

The public benefits contemplated by this Section are to be considered as separate and distinct from any compensation determined to be owed for any "taking" of an interest in property as determined by State or federal law.

7. The parties will establish an advisory board.

The Parties hereby establish the Orange County Solid Waste Management Advisory Board to advise the County's Governing Board on matters related to the System and the Solid Waste Management Plan and Policies. The Advisory Board shall meet for the first time not later than November 1, 1999, on the call of the members appointed by the County.

The Parties will continue to work through the existing Landfill Owners' Group ("LOG") on matters of solid waste management policy and operations until the Advisory Board begins to meet. The LOG shall continue to operate by consensus, but the Parties intend that the LOG shall make no recommendations for major financial commitments until it dissolves or is replaced by the Advisory Board.

Each Party shall appoint two members to the Advisory Board. Exhibit C sets forth details concerning the Advisory Board's responsibilities and the procedures that it shall follow, and also sets forth the Parties' agreement as to the appointment and terms of office of Advisory Board members.

If at any time the University of North Carolina agrees to comply with the provisions of Part 2 with respect to its facilities and operations in Orange County, then the Parties agree that the University, through its President, shall be entitled to appoint to the Advisory Board one voting member, having one vote. Any initial University member shall serve for a term ending on the third June 30 following the member's appointment, and any succeeding University member shall serve for a three-year term (with there being no limits on the reappointment of University members). The limitations in Exhibit C excluding employees of Parties from serving on the Advisory Board do not apply to the University or University members. The Parties agree to enter into a supplement or amendment to this agreement to include provisions reasonably necessary or appropriate to provide for the University's participation on the Advisory Board in such circumstances.

[Exhibit A contains certain definitions that apply to this Agreement. Exhibit B contains certain additional provisions of this Agreement.]

[The remainder of this page has been left blank intentionally.]

IN WITNESS WHEREOF, each of the Parties has caused this Agreement to be executed in its corporate name by its duly authorized officers.

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Commissioner	CS CORPORATED TO	Commissioners
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Town Clerk		Mayor
ATTEST:		TOWN OF CHAPEL HILL, NORTH CAROLINA
ATTEST		CHAPEL HILL, NORTH CAROLINA
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STATE OF NORTH CAROLINA; ORANGE COUNTY
I, a Notary Public of such County and State, certify that Wice M. Under and State, described and Charles personally came before me this day and acknowledged that they are the Chair and Cherk, respectively, of the Board of Commissioners of Orange County, North Carolina, and that by authority duly given and as the act of Orange County, North Carolina, the foregoing instrument was signed in the County's name by such Chair, sealed with its corporate seal and attested by such Clerk.
WITNESS my hand and official stamp or seal, this 29 day of September
1999. [SEAL]
Vathleen C Baker Notary Public
My commission expires: 10-3-03
STATE OF NORTH CAROLINA; ORANGE COUNTY
I, a Notary Public of such County and State, certify that Mand Sarah C. Williams personally came before me this day and acknowledged that they are the Mayor and Town Clerk, respectively, of the Town of Carrboro, North Carolina, and that by authority of the Powins name by such Mayor, sealed with its corporate seal and attested to sent such Clerk. WITHER Mand and official stamp or seal, this 5th day of April .
My commission expires: 11 08 2000
STATE OF NORTH CAROLINA; ORANGE COUNTY
A Notary Public of such County and State, certify that not and personally came before me this day and acknowledged that they are the Mayor and Town Clerk, respectively, of the Town of Chapel Hill, North Carolina, and that by authority duly given and as the act of such Town, the foregoing instrument was signed in Mayor, sealed with its corporate seal and attested the Sack Town Clerk.
SEAL PUBLIC ON Notary Public

STATE OF NORTH CAROLINA; ORANGE COUNTY

I, a Notary Public of such County and State, certify that Horace N. Johnson and Downer Ambrists/ personally came before me this day and acknowledged that they are the Mayor and Town Clerk, respectively, of the Town of Hillsborough, North Carolina, and that by authority duly given and as the act of such Town, the foregoing instrument was signed in the Town's name by such Mayor, sealed with its corporate seal and

witness my hand and official stamp or seal, this 12th day of April, 1999.

[SEAL]

My commission expires: 7-10-04

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Exhibit A - Definitions

For all purposes of this Agreement, the following terms have the following meanings, unless the context clearly indicates otherwise.

"Advisory Board" means the Orange County Solid Waste Management Advisory Board created pursuant to Part 7.

"Agreement" means this Agreement for Solid Waste Management, as it may be duly amended and supplemented from time to time.

"Business Day" means any day other than a day on which national banks are required or authorized to close.

"Carrboro" means the Town of Carrboro, North Carolina.

"Chapel Hill" means the Town of Chapel Hill, North Carolina.

"County" means Orange County, North Carolina.

"County Manager" means the County's chief administrative officer.

"County Recyclables" means all materials processed by the County for recycling and not disposed of at System Management Facilities, as the same may be established and amended from time to time under the Solid Waste Management Plan and Policies.

"Existing System Assets" means all System assets as of the Transfer Date, including, without limitation, the existing landfill, all other land and buildings, all equipment, including rolling stock, all licenses, permits and other governmental authorizations, all contracts, all customer records, all bank and other business records, and all cash and investments, including the capital reserve account currently maintained by Chapel Hill on behalf of the Landfill Owners' Group.

"Fiscal Year" means the County's fiscal year beginning July 1, or such other fiscal year as the County may lawfully establish.

"Governing Board" means, for any Party, its governing board of elected officials, as such governing board may be constituted from time to time.

"Governmental Fee" will mean any fee related to activities of the System that is imposed directly and solely on the Parties themselves, other than the Mixed Solid Waste Tipping Fee. A possible example of such a fee could be a fee imposed by the County on all the Parties related to the County's providing of processing for County Recyclables through the System.

"Greene Tract" means the parcel of land comprising approximately 169 acres lying south of Eubanks Road described in Plat Book 14, Page 143 and Plat Book 15, Page 138, Orange County Registry, as more specifically described in Exhibit D.

"Hillsborough" means the Town of Hillsborough, North Carolina.

"Integrated Solid Waste Management Plan" means the report submitted pursuant to law to State authorities that described the long-term plan for solid waste management, which the County, as designated lead agency, filed on behalf of the County and the Towns. The Parties have approved this Plan and adopted its framework by resolutions adopted (a) by Carrboro on June 24, 1997, (b) by Chapel Hill on June 9, 1997, (c) by Hillsborough on June 17, 1997, and (d) by the County on June 30, 1997.

"Material Financial Change" means a change, or series of related changes, made by the County to the Solid Waste Management Plan and Policies that, in the determination of any Town (provided that the Advisory Board must verify such determination if so requested by the County), would have the effect of increasing by more than 15% the direct monetary cost to such Town of all its solid waste management activities (such as solid waste collection), when comparing (a) the expected cost of such activities for the first full Fiscal Year following the effective date of the change or changes in question to (b) the total cost for the Fiscal Year most recently completed prior to the effective date.

"Mixed Solid Waste Tipping Fee" means the fee of that name assessed for disposing mixed solid waste at the existing landfill, any successor to that fee, or any other fee assessed for the use of System Management Facilities related to the disposition of Solid Waste (such as a fee imposed for the use of a transfer station or materials recovery facility).

"Other Recyclables" means materials which would otherwise constitute Solid Waste, but which are to be delivered to some other entity and processed for recycling. For any material to constitute Other Recyclables, however, the entity to which the material is to be delivered must represent that such materials are intended to be processed for use in new products. Material will not constitute Other Recyclables, for example, if the entity to which it is to be delivered intends to re-deliver the material to some other disposal facility (such as a landfill or incinerator), whether or not such material is intended to be subject to further processing before disposal.

"Parties" means, collectively, the County and the Towns, and "Party" means any one of them individually.

"Reimbursement Amount" means, (1) in the case of disposition to a North Carolina local government that is also a Party, so long as that government devotes the transferred portion to public purposes, (a) \$608,823, being the original purchase price of the Greene Tract, multiplied (b) by a fraction, the numerator of which is the number of whole acres of the Greene Tract being disposed and the denominator of which is 169, plus (c) uncompounded interest on the product of (a) and (b) at the annual rate of 6.00% from March 30, 1984, to the effective date of any disposition, and (2) in the case of any other disposition, the greater of either (a) the Reimbursement Amount to a North Carolina local government that is also a Party, or (b) the net proceeds of a sale after the costs of the sale are paid.

"Solid Waste" means all materials accepted by the County for disposal at System Management Facilities, as the same may be established and amended from time to time under the Solid Waste Management Plan and Policies (subject to the provisions of Part 2 which authorize the County to refuse to accept for disposal any material or substance which the County reasonably determines is barred from such disposal by any applicable law or regulation or the restrictions of any permit), other than County Recyclables.

"Solid Waste Management Plan and Policies" means, the combination of (a) the Integrated Solid Waste Management Plan, and all future modifications of that Plan, which is the report submitted pursuant to law to State authorities describing the long-term plan for solid waste management, which the County, as designated lead agency, files on behalf of the County and the Towns, and (b) the Solid Waste Management Policies, which are, collectively, all policies related to the System and coordinated solid waste management for the County, the towns and the persons and organizations in their jurisdictions, as the same may exist from time to time (including all such policies in effect as of the date of this Agreement). The term "Solid Waste Management Plan and Policies" thereby encompasses all policy choices, as in effect from time to time, related to the management and operation of the System.

"State" means the State of North Carolina.

"System" means all assets, including both real and personal property, used from time to time in the conduct of the functions of collecting and processing County Recyclables, reducing solid waste, disposing of Solid Waste and mulching, composting and re-using Solid Waste, and includes both (a) the Existing System Assets and (b) all moneys and investments related to such functions.

"System Debt" means all obligations for payments of principal and interest with respect to borrowed money incurred or assumed by the County in connection with the ownership or operation of the System, without regard to the form of the transaction, and specifically including leases or similar financing agreements which are required to be capitalized in accordance with generally accepted accounting principles. System Debt is "Outstanding" at all times after it is issued or contracted until it is paid.

"System Employees" means employees of Chapel Hill directly engaged in carrying out System business (but expressly not including employees of Chapel Hill's sanitation department).

"System Management Facilities" means those assets of the System used to provide (a) final disposal of solid waste, including construction and demolition waste, such as landfills, or (b) any other handling or processing of materials placed in the custody of the System, such as transfer stations, materials recovery facilities or facilities for cleaning, sorting or other processing of recyclable material.

"System Revenues" means all amounts derived by the County from the imposition of rates, fees and charges for the use of, and for the services furnished by, the System.

"Towns" means, collectively, Carrboro, Chapel Hill and Hillsborough.

"Transfer Date" means the effective date.

Exhibit B -Additional Provisions

<u>Amendments.</u> This Agreement may be modified or amended only by written amendments that are approved and signed on behalf of all the Parties.

Notices.

- (a) All notices or other communications required or permitted by this Agreement must be in writing.
- (b) Any notice or other communication will be deemed given (i) on the date delivered by hand or (ii) on the date it is received by mail, as evidenced by the date shown on a United States mail registered mail receipt, in any case addressed as follows:

If to the County, as follows:

If to Carrboro, as
follows:

Orange County
Attn: County
Manager
200 South Cameron
St.
Hillsborough, NC
27278

Town of Carrboro
Attn: Town
Manager
301 West Main
St.
Carrboro, NC
27510

If to Chapel Hill, as follows:

If to Hillsborough, as follows:

Town of Chapel Hill Attn: Town Manager 306 North Columbia St. Chapel Hill, NC 27516 Town of
Hillsborough
Attn: Town Manager
137 North Churton
St.
Hillsborough, NC
27278

- (c) Any Party may designate a different address for communications by notice given under this Section to each other Party.
- (d) Whenever in this Agreement the giving of notice is required, the giving of such notice may be waived in writing by the Party entitled to receive such notice, and in any such case the giving or receipt of such notice will not be a condition precedent to the validity of any action taken in reliance upon such waiver. When this Agreement requires that

notice be given to more than one Party, the effective date of the notice will be the last date on which notice is deemed given to any required Party.

No Third-Party Beneficiaries. Nothing expressed or implied in this Agreement will give any person other than the Parties any rights to enforce any provision of this Agreement. There are no intended third-party beneficiaries of this Agreement.

<u>Survival of Covenants.</u> All covenants, representations and warranties made by the Parties in this Agreement shall survive the delivery of this Agreement.

<u>Severability.</u> If any provision of this Agreement shall be held invalid or unenforceable by any court of competent jurisdiction, such holding shall not invalidate or render unenforceable any other provision of this Agreement.

<u>Entire Contract.</u> This Agreement, including the Exhibits, constitutes the entire agreement between the Parties with respect to its subject matter.

<u>Counterparts.</u> This Agreement may be signed in several counterparts, including separate counterparts. Each will be an original, but all of them together constitute the same instrument.

Recordable Form. As this Agreement limits the Parties' rights to dispose of their respective ownership interests in the Greene Tract, any Party may cause this Agreement to be filed in the real property records in the office of the Register of Deeds of Orange County.

<u>Withdrawal</u>. Any Party may withdraw from this Agreement (and thereby cease to be a Party to this Agreement) upon notice given to all the other Parties and subject to the following additional provisions:

- (a) A withdrawal may be effective only upon the beginning of a Fiscal Year. A Town may withdraw only with at least one year's notice. The County may withdraw only with at least two years' notice.
- (b) No withdrawal will relieve a Party of its obligations under Part 2 so long as there is System Debt Outstanding; provided, however, that System Debt first issued or contracted after the date a Party gives notice of withdrawal will be disregarded for the purposes of this paragraph.
- (c) No withdrawal will relieve any Party of its individual liability, if any, under environmental laws or otherwise, related to its respective use or ownership of the System which may accrue or which has accrued prior to the effective date of such Party's withdrawal.

Actions by a Party. Any references to approvals or other actions by any Party will be deemed to be references to actions taken by the Party's Governing Board or taken pursuant to express, specific direction given by the Party's Governing Board.

Agreed-Upon Procedures. The terms, conditions and procedures for transferring employees and assets to the County as provided for by Part 1, and for transferring the property described on Exhibit E to the County as provided for by Part 5, in all cases shall be as agreed upon by the County, Carrboro and Chapel Hill.

<u>Effective Date</u>; <u>Term.</u> This Agreement shall take effect as provided in Part 1. This Agreement will continue in effect so long as there are at least two Parties to the Agreement.

Exhibit C - Regarding the Advisory Board

<u>Responsibilities.</u> The Advisory Board's responsibilities shall include the following:

- (a) To recommend programs, policies, expansions and reductions of services, and other matters related to the operation of the System;
- (b) To suggest amendments to the Solid Waste Management Plan and Policies;
- (c) To provide advice to the County Manager for use in the County Manager's developing the proposed annual budget for the System, to review the budget for the System as proposed by the County Manager to the County's Governing Board, and to provide recommendations to the County's Governing Board for the approval or amendment of the proposed budget;
- (d) To receive and interpret for the County public input concerning the System and the Solid Waste Management Plan and Policies;
- (e) To further such mission and goals for the System as the County may adopt from time to time;
- (f) To provide promptly to the County's Governing Body a recommendation concerning any proposal for a change to rates, fees and charges forwarded to the Advisory Board pursuant to this Agreement; and
- (g) Such other matters as any Governing Board or the County Manager may request.
- Members; Terms. (a) Each Governing Board will appoint two members to the Advisory Board as soon as practicable after the date of the execution and delivery of this Agreement. Each Party will notify all the other Parties of its appointments within ten Business Days after making such appointments.
- (b) Advisory Board members will serve staggered three-year terms. To provide for the staggered terms of the members, the initial appointments by the Parties will be for the following terms:

	Member A	<u>Member B</u>
County	2 years	3 years
Carrboro	2 years	3 years
Chapel Hill	1 year	3 years
Hillsborough	1 year	2 years

- (c) The first year of the term of each initial member of the Advisory Board shall be deemed to expire on June 30, 2000. Thereafter, each year of the term of an Advisory Board member will run from July 1 through the subsequent June 30, but each member shall continue to serve until such member's successor has been duly appointed and qualified for office.
- (d) Each Party may select and appoint Advisory Board members in its discretion, except that no employee of a Party may be appointed as an Advisory Board member. This Agreement in no way requires that any member be an elected official of the appointing Party. Any elected official of a Party appointed to the Advisory Board will be deemed to be serving on the Advisory Board as a part of the individual's duties of office, and will not be considered to be serving in a separate office. Any elected official of a Party appointed to the Advisory Board will cease to be a member of the Advisory Board upon such individual's cessation of service as an elected official of such Party (whether or not such member's successor will be been appointed and qualified for office), but such Party may reappoint such individual to the Advisory Board. Each member of the Advisory Board (including elected officials) serves at the pleasure of the appointing Party, and may be removed at any time by the appointing Party, with or without cause.
- (e) The Governing Board that appointed the person who vacated the Advisory Board seat will fill any vacancy on the Advisory Board. In the case of a vacancy created during the term of a member, the appointment to fill the vacancy will be made for the remaining portion of the term in order to preserve the staggered-term pattern.

<u>Procedures.</u> The Advisory Board may adopt its own rules of procedure not inconsistent with the provisions of this Agreement and not inconsistent with the policies and procedures governing the various boards and commissions of the Governing Board of the County as those policies and procedures exist now and as they may be amended from time to time by resolution of the Governing Board of the County. The Advisory Board's proposed rules and procedures shall be presented to the Governing Board of the County for review and shall not be effective until approved by the Governing Board of the County, but the Advisory Board's procedures shall include the following provisions:

(a) Each member of the Advisory Board will have one vote, except that in the event of the absence of a member, the other member appointed by the same Party as the absent member will be entitled to cast two votes. Any University member appointed pursuant to Part 7 shall have only one vote, and that vote shall not be cast in the member's absence.

- (b) A number of affirmative votes equal to a majority of the authorized number of Advisory Board members will be necessary to take any action.
- (c) The Advisory Board's presiding officer will vote as a member of the Advisory Board, but will have no additional or tie-breaking vote.
- (d) Representatives of a Party that has given notice of its withdrawal from this Agreement will have no vote on any matters that will affect the System beyond the effective date of such Party's withdrawal, and as to any such matters such members will not be deemed to be within the authorized number of Advisory Board members for the purposes of subsection (b) above.

Exhibit D - Legal Description of the Greene Tract

Exhibit E - <u>Legal Description of the Portion of the Greene Tract</u>

<u>To Be Devoted to Solid Waste Management Purposes</u>

Agreement to Amend the Agreement for Solid Waste Management

Orange County and the Towns of Carrboro, Chapel Hill and Hillsborough hereby agree to amend the "Agreement for Solid Waste Management."

1. By deleting the paragraph identified as "Acquire property." in Part 1 and replacing it with the following:

Acquire property. The County shall acquire real and personal property as it deems appropriate for System purposes. There shall be no restrictions on the County's additional acquisition of acreage at the landfill. The Parties acknowledge and support the County's position that as operator of solid waste operations, it may, despite diligent efforts to explore alternatives, settle upon the area on and proximate to the existing closed landfill site on Eubanks Road as the location for additional solid waste facilities. The County states its current intention not to acquire, and its recommendation that future County Governing Boards not acquire, any of the properties known as the Blackwood and Nunn properties for System purposes.

2. By deleting the paragraph identified as "Effective date." in Part 1 and replacing it with the following:

Effective date. The County will assume solid waste management responsibility on the first day of the second Orange County employee pay period that follows the last completed of the following two events: (1) the approval by the governing board of and the execution of the Agreement to Amend the Agreement for Solid Waste Management by the current owners of the System; (2) Agreement on the boundaries of the property described in Exhibit E by the Greene Tract Owners. The date the County assumes solid waste management responsibility is the effective date of this Agreement. The Parties shall take actions provided for in this Agreement, or which may otherwise be necessary or appropriate, in a timely fashion to permit the County's assumption of solid waste responsibility on the effective date.

- 3. By deleting Part 5 and replacing it with the following:
 - 5. The Greene Tract will remain a landfill asset. Sixty acres of the Greene Tract will be reserved for System

purposes, and the three owners will work together to determine the ultimate use of the remainder.

The Parties agree that the Greene Tract remains a landfill asset.

Chapel Hill, Carrboro and the County (the "Greene Tract Owners") will transfer to the County title to that portion of the Greene Tract described on Exhibit E, which contains approximately sixty acres. The County may use the property described on Exhibit E for System purposes. The County states its current intention not to bury mixed solid waste or construction and demolition waste on any portion of the Greene Tract. The County states its recommendation to future County Governing Boards that the County make no such burial. The deed to this property will include a restriction prohibiting the use of the property described on Exhibit E for burying mixed solid waste or construction and demolition waste.

The Greene Tract Owners agree to bargain together in good faith and with all due diligence, and to use their respective best efforts, to determine an ultimate use or disposition of the remainder of the Greene Tract as soon as possible and in any event by December 31, 2001, or two years after the effective date, whichever is later. During this "bargaining period," no Greene Tract Owner shall make any use of the remaining portion of the Greene Tract without the consent of the other Greene Tract Owners.

The Greene Tract Owners agree that among the issues to be addressed in the bargaining process are (1) the specific future uses, or ranges of use, to be made of the remainder of the Greene Tract (including issues devoting different portions to different uses, devoting portions to public uses and the possibility of making portions available for sale or private use), and whether to impose specific use restrictions, through deed restrictions orthrough governmental regulation. The Greene Tract Owners agree that during the "bargaining period" each should provide opportunity for public comment on possible or proposed dispositions.

During the "bargaining period," no Greene Tract Owner shall (1) file any legal action or proceeding to force any sale or division of the Greene Tract, or (2) enter into any agreement to sell, mortgage or otherwise transfer all or any part of its ownership interest in the Greene Tract,

in either case without the consent of the other Greene Tract Owners. To the extent permitted by law, Chapel Hill agrees not to initiate any proceeding to rezone any portion of the Greene Tract during the "bargaining period," without the consent of the other Greene Tract Owners. Chapel Hill states its current intent to accommodate any agreed-upon future uses or range of uses of the remainder of the Greene Tract in its Development Code/Ordinances and states its recommendation to future Chapel Hill Governing Boards to the same effect.

After the "bargaining period" is completed, namely, the day after the last day of the bargaining period, no Greene Tract Owner shall (1) file any legal action or proceeding to force any sale or division of the Greene Tract, or (2) enter into any agreement to sell, mortgage or otherwise transfer all or any part of its ownership interest in the Greene Tract, in either case without giving the other Greene Tract Owners at least 60 days' prior notice of such filing or entering into an agreement. In addition, after the "bargaining period" is completed, any Greene Tract Owner may give 60 days' prior notice of election to be no longer bound by the restrictions pertaining to the uses of and whether to impose use restrictions on the remainder of the Greene Tract, and such election shall be effective at the end of the notice period.

The Parties agree that any non System use of any portion of the remainder of the Greene Tract or any disposition of any portion of the remainder of the Greene Tract shall result in payment to the County of the Reimbursement Amount for deposit in the System enterprise fund.

- 4. By replacing the date in the first paragraph of Part 7 with the following: "one month after the effective date of this Agreement."
- 5. By amending subsection (c) of the "Members; Terms" provision of Exhibit C to the Agreement to read as follows:
 - (c) The first year of the term of each initial member of the Advisory Board shall be deemed to expire on June 30, 2001. Thereafter, each year of the term of an Advisory Board member will run from July 1 through the subsequent June 30, but each member shall continue to serve until such member's successor has been duly appointed and qualified for office.

IN WITNESS WHEREOF, Orange County has caused this Agreement to Amend the Agreement for Solid Waste Management to be executed in its corporate name by its duly authorized officers.

3-/4-2000 Date Approved by Governing Board

ATTEST:

Clerk, Board of Commissioners

By: // Chair, Board of Commissioners

ANGE COUNTY, NORTH CAROLINA

STATE OF NORTH CAROLINA; ORANGE COUNTY

I, a Notary Public of such County and State, certify that MISC Carry Jr, and Clerk, During County came before me this day and acknowledged that they are the Chair and Clerk, respectively, of the Board of Commissioners of Orange County, North Carolina, and that by authority duly given and as the act of Orange County, North Carolina, the foregoing instrument was signed in the County's name by such Chair, sealed with its corporate seal and attested by such Clerk.

WITNESS my hand and official stamp or seal, this 24 day of March, [SEAL]

Notary Public

My commission expires: 12-19-03



IN WITNESS WHEREOF, the Town of Carrboro has caused this Agreement to Amend the Agreement for Solid Waste Management to be executed in its corporate name by its duly authorized officers.

ATTEST:

(SEAL)

Town Clerk

3-28-2000

Date Approved by Governing Board

ATTEST:

(SEAL)

Town OF CARRBORO, NORTH CAROLINA

Mayor

STATE OF NORTH CAROLINA; ORANGE COUNTY

I, a Notary Public of such County and State, certify that Midae Na some and State of Such C. Williams personally came before me this day and acknowledged that they are the Mayor and Town Clerk, respectively, of the Town of Carrboro, North Carolina, and that by authority duly given and as the act of such Town, the foregoing instrument was signed in the Town's name by such Mayor, sealed with its corporate seal and attested by such Town Clerk.

WITNESS my hand and official stamp or seal, this 5th day of April 2000 [SEAL]

11/08/2000 Public

My commission expires:

IN WITNESS WHEREOF, the Town of Chapel Hill has caused Agreement to Amend the Agreement for Solid Waste this Management to be executed in its corporate name by its duly authorized officers.

> 3-27-00
> Date Approved by Governing Board

ATTEST:

OF CHAPEL HILL, NORTH CAROLINA

STATE OF NORTH CAROLINA; ORAN

NOTARY

II, a Notary Public of such County and State, certify that Assembly Came before me this day and acknowledged that they are the was significant. In the comporate seal and attest with its corporate seal and attest with Town Town Town Town of the Town of Chapel Hill, North Carolina, and that by authority given and as the act of such Town, the foregoing instrument was significant. In the corporate seal and attest with the corporate seal and the corporate seal

s my hand and official stamp or seal, this 5th day of april,

My commission expires: 0

IN WITNESS WHEREOF, the Town of Hillsborough has caused this Agreement to Amend the Agreement for Solid Waste Management to be executed in its corporate name by its duly authorized officers.

*DY-10-2000*Date Approved by

Governing Board

ATTEST:	(SEAL)	TOWN	OF	HILLSBOROUGH,	NORTH	CAROLINA
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Mown Clerk				Ø layor	•	

STATE OF NORTH CAROLINA; ORANGE COUNTY

I, a Notary Public of such County and State, certify that Horse H. Johnson and Down Armbristor personally came before me this day and acknowledged that they are the Mayor and Town Clerk, respectively, of the Town of Hillsborough, North Carolina, and that by authority duly given and as the act of such Town, the foregoing instrument was signed in the Town's name by such Mayor, sealed with its corporate seal and attested by such Town Clerk.

WITNESS my hand and official stamp or seal, this 12 day of 4pril, [SEAL]

Meurs Jule Notary Public

My commission expires: 7-10-04

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Rogers Road: *Mapping our Community's Future*

MAY 2016

The compilation of an intensive 9 month planning effort with community stakeholders to create a shared vision for Rogers Road development for the next 10 years & beyond

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Executive Summary

In July, 2015, Orange County and the Towns of Chapel Hill & Carrboro requested that the Jackson Center and RENA (Rogers-Eubanks Neighborhood Association) partner to facilitate a proactive community planning effort in the Rogers-Eubanks Neighborhood as sewer design and implementation makes progress.

Partners proceeded to collaborate following the "Community-First" organizing model, which involves community members as principal actors in assessing and determining the course of future planning. Extensive collaboration and consultation led to four goals for future development: **retain** long-term residents, **connect** us with each other and the larger community, **preserve** diversity for the future, and **respect** the natural environment. These in turn yielded a refined sense of charge and detailed recommendations. The collaborating partners are confident that the plans reflect a uniquely inclusive and informed process.

This document was created to be a guiding and a working reference for invested community members and government partners in dialogue about next steps and specific plans. Key to its success is the following set of principles, elaborated at the end of the document:

- → Follow the four stipulated priorities for future development
- → Ensure accountability for collaborative action
- → Maintain open and consistent communication
- → Support community-first planning



Primary Partners and Collaborators

RENA

In 2007, the socially cohesive and culturally rich Rogers-Eubanks community founded the Rogers Eubanks Neighborhood Association (RENA) to formalize a long-term ad hoc community alliance and movement. As a community organizing group, RENA needed a place to gather to provide a location for sharing of community resources and development programs. RENA organized social justice, service, and faith-based organizations in Orange County to form the Coalition to End Environmental Racism (CEER). This group works to create community-driven events, which bring residents of the impacted communities together for the education of the wider community (citizens and local government officials) about critical issues of environmental health and justice. RENA also seeks and strongly values partnerships with local universities, and has been engaged in four projects with partners at the Gillings School of Global Public Health at the University of North Carolina at Chapel Hill (UNC). RENA has successfully organized the neighborhood in victories to close the landfill, secure a community center, provide services for all neighborhood children, and secure water and sewer for the Historic Rogers Road community, among many other successes and victories.

Robert Campbell, David Caldwell, Larry Caldwell, Rose Caldwell, and Jasmine McClain are the lead RENA members on this planning effort.

The Jackson Center

The Jackson Center is a public history and community development center located at the gateway to the historic Northside of Chapel Hill, North Carolina. The mission of the Jackson Center is to honor, renew, and build community in the Northside and Pine Knolls neighborhoods of Chapel Hill/Carrboro. We want to make sure that the histories we hear, and the values and visions on which they are built, make a difference in communities now and for generations to come. Our work is rooted in oral history listening and realized along three primary lines of creative community development: organizing and advocacy for livable neighborhoods, youth and education, and celebration and connection. In 2011, the Jackson Center organized a coalition of dozens of organizations and hundreds of residents in an effort that led to the passage of a historic moratorium on development and community plan for Northside. This plan dramatically changed zoning and increased support for neighborhood efforts. Between 2012-2015, the Jackson Center played a critical role in planning efforts that led to UNC's \$3 million land bank loan to Self Help Credit Union, which is helping to create dozens of affordable housing units and facilitating neighbors' control over land decisions. The Jackson Center has partnered with RENA, Orange County, Chapel Hill, and Carrboro on community engagement and planning efforts from 2014-2016.

Hudson Vaughan and George Barrett are the lead Jackson Center staff on this project. Stephanie Barnes-Simms, a community planner and Executive Vice President of Self Help, serves as technical assistance to the Jackson Center on this project.

Tim Stallmann

Tim Stallmann is a freelance cartographer based in Durham, NC. His work focuses on using maps as tools to build community power around racial, economic and environmental justice. Tim has worked with the Jackson Center since its founding, and has also participated in the 2014 community survey project that produced *Historic and Vibrant Rogers Road*. His maps and his collaborations with the Counter-Cartographies Collective, of which he is a founding member, have been widely published and exhibited. Tim holds a Masters degrees in Mathematics and Geography from Duke University & UNC-CH, respectively. In addition to consulting, he also teaches map-making at the Center for Documentary Studies at Duke University. For more of his work, see www.tim-maps.com.

Community Unity Board

The Community Unity Board is a group of neighborhood leaders from all across the Rogers Road neighborhood. The Board was originally formed in 2013-2014 to bring together residents of all of the sub-neighborhoods of Rogers-Eubanks in ongoing dialogue and partnership. RENA & the Jackson Center re-initiated this board for this specific planning effort, inviting residents from various sub-neighborhoods to take a stake in Rogers Road's future and to be in ongoing dialogue with their neighbors. This group of nearly 20 residents, most of whom have been actively engaged in ongoing community efforts in Rogers Road, took part in 9 intensive meetings over the course of the last seven months and several additional consulting sessions and interviews.

Background and Process

For the last 9 months, a core of neighborhood residents and other key stakeholders have gathered for *intensive* dialogue about our hopes and fears for our community, the strengths and struggles of our history, and the diverse visions we have for the future of the Historic Rogers Road Community. We initially planned to participate in four intensive meetings over four months. In order to reach a variety of stakeholders and ensure sufficient discussion depth, we adapted this strategy to nine sessions focused on creating, reviewing, and strategizing together.



Neighbors in a discussion about land control and conservation.

Many of the primary stakeholders have participated in planning efforts for decades. Throughout the process in Rogers Road, we faced a great challenge together: the collective feeling and reality among constituents - that planning efforts in Rogers Road have consistently fallen short on implementation. We discussed questions like: What is the point of this effort? Will the three governments respect our visions and actually help us achieve them? Will sewer really happen or is this process a trick to focus us on development instead? Will this just become another plan

shelved for people to reference in their articles about the struggles of Rogers Road?

While some of these questions remain, our dialogue about these questions led us to clarify our common understanding and our group's charge for moving forward. Our focus and group charge for the effort was to work together to create:

- A collective answer to the question of what would we like to see from any future development in the form of a crisp list of easy to explain priorities that we can remember.
- A map of our vision for future development/improvements. We are working on being able to describe both what we want and where we would like to see it happen
- A specific action plan that describes how we achieve our aspirations, including specific action steps, with "gives and gets," or realistic trade-offs, for neighbors, local governments, and developers

We used the model of Community-First Planning that that the Jackson Center developed for use in the ongoing Northside Neighborhood Initiative. This model is built on an intensive set of communication and organizing tools that bring neighbors and other stakeholders into active and realistic planning discussions focused on change that enhances community and regional goals. Unlike external, top-down, or selective representative processes, Community-First Planning features broad-based participation developed on the ground in direct communication with residents and stakeholders, "reverse-consultancy" leadership (funding for on-site existing community leaders as primary consultants), and a direction-setting group that remains accountable to community interests. Accordingly, RENA and the Jackson Center worked for

several months to identify major stakeholders, sub-neighborhood representatives, and neighbors who could bring an array of visions and opinions into dialogue with one another. We ultimately invited 19 people to participate in ongoing meetings together and asked them to take the ongoing questions back into their sub-neighborhoods to more intensively reach stakeholders who may not attend. We then conducted over a dozen additional interviews to incorporate perspectives of residents who were not able

to be part of the stakeholder team. Because of Rogers Road's long history of neighborhood leadership and action, our process engages the strengths and struggles of history first and continually. Creative communication strategies are a central part of our work: we find ways to reach people the ways they best receive contact. We develop clear "gives and gets" strategy framework. We believe that discussing the benefits and challenges openly is the best way for communities to mobilize for movement forward, and we believe in building this infrastructure in a way that it can be utilized well beyond our active role.



Neighbors workshopping summary recommendations at an early meeting.

This is not the first effort at a plan for the Rogers Road neighborhood. As mentioned above, the neighborhood

has long experienced marginalization from the political and planning process. Conventional decision-making has been for and about neighbors rather than with and by neighbors. We entered into this process well aware of the history of racial exclusion, and always with the nagging fear that the results of our efforts would be more of the same exclusion. In spite of that fear, we were willing to complete this Community-First planning effort because of the following:

- The assurance that sewer infrastructure would continue to move forward for Historic Rogers Road residents, and that a community effort was an important step in preparation for development speculation that might result with this new infrastructure
- The understanding that this effort would help guide future conversations about land use planning and development approvals, especially in the Greene Tract and on the Chapel Hill side of the neighborhood, given the recent change to an ETJ and concerns about future zoning decisions in Chapel Hill without prior input
- The desire to "get ahead" of the rising development pressure, given the growing concern in the neighborhood about what is happening all around the fringes of Rogers Road, especially the significant rise of new subdivision and townhouse developments on Homestead and Eubanks Rd
- The hope that we could create a guiding document together that would be immediately useful for us as residents and community partners

Part of how we approach planning is to engage differences and to value a diversity of community opinions, not to try to get rid of it or find absolute consensus. The materials and recommendations in this document do not "represent" all of Rogers Road. This process has engaged a wonderfully diverse set of neighbors in ongoing dialogue and sought to create a document that elaborates on shared visions; it includes differences and nuances that have enriched the discussions.

Summary Recommendations

These summary recommendations were created through a review of historical documents and processes and several Community Unity Board meetings. Once the Unity Board established a draft, this list of priorities was shared widely for feedback and revision: with their sub-neighborhoods, on the community listsery, through the community newspaper, and in individual interviews. The following is the result:

"We want development that we are a part of, not the victim of." -David Caldwell

We want development that...

Retains families who have lived here for decades/generations



- Supports owners in maintaining their homes and mitigating rising cost of living
- Creates economic opportunity for people living here
- Provides opportunities and services for elders to age in place/in the neighborhood

Connects us with each other and the larger community



- Improves bus service & roads, pathways, and sidewalks to connect us to key places and to one another
- Ensures new development opens to and connects with the existing community, avoiding internal fragmentation
- Promotes intercultural connection and multi-culturalism

Preserves socioeconomic & cultural diversity for the future



- Prioritizes the creation of diverse affordable home options
- Expands the community center and provides additional services for neighborhood children
- Ensures access to essential social and retail services
- Provides space for smaller local businesses to start-up and serve the local community

Respects the physical/natural character of the neighborhood



- Balances land conservation with density to reduce suburban sprawl
- Minimizes disruption to the natural landscape & opens environment to people's use and enjoyment
- Promotes design that fits into the character and fabric of the existing community
- Honors history and contributions of neighborhood in tangible ways

Detailed Recommendations

This section, organized into four guiding principles, provides specific suggestions and recommendations on ways that the Towns & County, neighborhood residents, and any future developers can realize the goals identified by Rogers Road residents.



Retain families who have lived here for decades/generations



Connect us with each other and the larger community

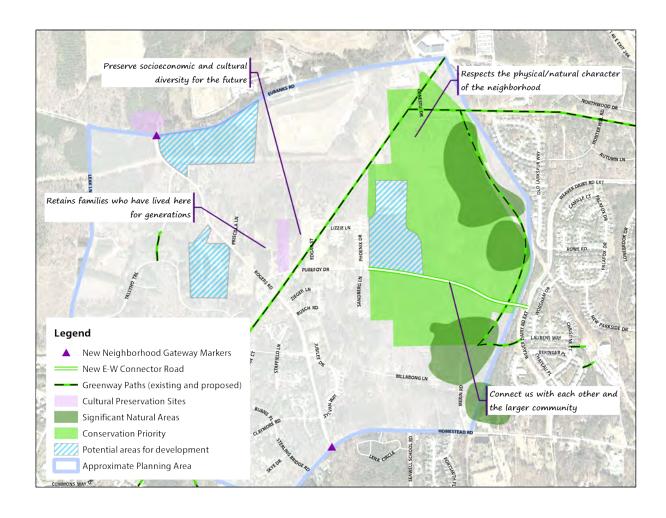


Preserve socioeconomic and cultural diversity for the future



Respect the physical/natural character of the neighborhood

Overview Map





Retain families who have lived here for decades/generations

Support
homeowners in
maintaining their
homes and
mitigating rising
cost of living

Develop and fund home repair programs, especially to improve in-home accessibility for long-time residents. In the 2014 survey of the Historic 86 parcels, over 65% of households in the Historic Rogers Road area reported a need for some home repair support, including but not limited to: essential repairs of leaking roofs, broken HVAC systems, \$500 utility bills due to a lack of weatherization, and increasingly inaccessible houses for those who are aging and disabled. Given the scope of need, Rogers Road would be a great focus area for a targeted home repair effort by an organization like Habitat or Rebuilding Together, with support from the County and/or Towns. This effort should be proactive and utilize RENA's existing database of home repair needs.

The County and Towns should create a unified fund for home repairs in Rogers Road so that neighbors' ability to get repairs is not dependent on where the house is located within the neighborhood. Currently, Rogers Road is split between Carrboro and Chapel Hill's ETJ, leaving the community in the middle of CDBG and other funding efforts. The County could take the lead to host a unified fund to address the challenge of the multiple jurisdictions.

Strengthen community organizing infrastructure by supporting the Rogers Road Community Center, especially to increase volunteer networks and provide sustainable presence in neighborhood. The Rogers Road Community Center has been a hub of action, but it needs regular operating support to continue to thrive.

Create property tax mitigation program for long-term neighbors to offset rising taxes as result of development. Durham is currently working on a proposal to offset the rise in taxes for elderly, low-income residents over a period of time due to rising property values. Given the potential of development speculation, a similar program should be implemented to limit the drastic increase in taxes that could result from development pressure, both for elderly low-income residents and their heirs. The County could also lead a proactive effort to ensure residents who qualify for the Homestead Exemption have this important tax exemption.

Support efforts to prevent land loss. Across the country, historically African American communities are losing land at a rapidly accelerating pace through investor speculation, heirs' property complications, and policies of exclusion. We are already beginning to partner with the Black Family Land Trust, Conservation Trust, and Center for Civil Rights to assist us, protecting land rights and use for future generations.

Create economic opportunity for people living here

Utilize existing skills and leadership of residents. We, residents of Rogers Road, have a vast array of skills and experience: in engineering, business and non-profit management, construction, nursing, elder care, and more. Any jobs created through building and development should utilize existing skills and leadership of residents.

Provide opportunity for community business ownership and management in new business spaces, especially any on publicly-owned land. Not all of us are interested in area retail, but all support the idea that, if there were to be any small, mixed use spaces, these spaces should be designed and structured in a way that provide true accessibility for community ownership and management.

Consider updating zoning and signage restrictions to give more flexibility to community-owned businesses. Current zoning allows for some home-based businesses but restricts signage. Zoning and signage regulations should reflect the benefit that small, community-owned commercial spaces can bring to the neighborhood.

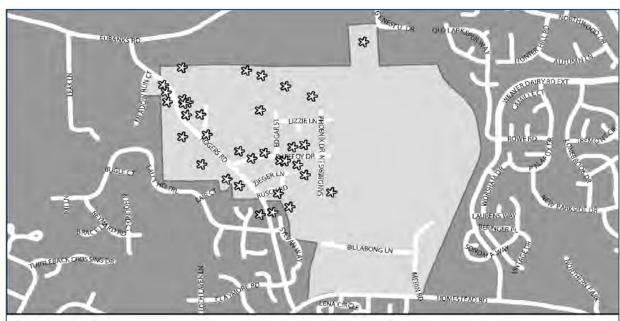
Provide

opportunities and
services for elders
to age in place/in
the neighborhood

Pursue a proactive effort for public-private partnership with model senior living, especially with Piedmont Health. Senior housing, independent but supportive, is a huge priority. The partner would need to be a provider/developer committed to serving neighborhood residents and affordable spaces, not simply high-end senior needs.

Ensure zoning allows for elder development or services that increase livability and accessibility of these long-term neighbors. This is the one form of housing that residents, even those that were wary of any increase in density, were interested in finding a way to support.

Support location of a community-health facility in the community. St. Paul's Village already has a proposed community-health center planned in partnership with Piedmont. Increased support from the governments to make this possible in the near future would be beneficial to all parties.



Legend

¥ Long-term residents (>30 years)

Development Do's	Development Don'ts
Senior housing: single story, primarily independent units (see design feel document); additional safety and accessibility needed if more than one story Community-commercial spaces near senior housing Housing for veterans and homes accessible to people with disabilities Co-housing model for shared services among community Community-health clinic Requirement of community benefits agreement for new development that includes tangible ways the new development will support neighborhood retention strategies	Development that will significantly raise area taxes without creating a tax mitigation plan in advance Development of new affordable units without significant investment in the repair of existing homes



Connect¹ us with each other and the larger community

Improve bus service & to one another

Build a new road into the Greene tract from the East, preferably one roads, pathways, and that utilizes existing pathways or clearings. New development on the tract sidewalks to connect - even just for recreational use - will increase traffic into the neighborhood, us to key places and largely from the MLK Boulevard corridor. Purefoy Drive is not suited to handling through-traffic into the Greene tract at this level, nor should it be. Expanding this road without connection to the other side would endanger the neighborhood patterns, safety, and feel. The best design for a new road would connect Purefoy Drive on the West with Weaver Dairy Extension on the East, a route that passes through Town and County-owned land exclusively (except for the railroad crossing). An alternate route would be a North-South connector from Eubanks into the Greene tract.

> Improve bus service to the neighborhood that connects with Timberlyne and employment centers. Chapel Hill Transit is already taking some steps in this direction, following on the heels of organizing by RENA and Justice United. The routes could still be improved to connect to essential retail services and employment centers.

> Add bus shelters at the bus stops along Rogers Road. Currently, young children and elderly neighbors stand by the curb signs without any shelter from the rain or a bench to rest upon. Adding attractive bus shelters would improve safety, increase ridership, and improve aesthetics of Rogers Road. This should be an immediate action in the near future.

> Create greenway and walking path improvements throughout the neighborhood. Residents recommended using existing utility easements as walking paths. These would ideally be unpaved and minimally improved to retain the rural feel of the neighborhood, but officially designating these as paths and adding signage would increase recreational opportunities for residents as well as aiding privacy since folks who are walking through the neighborhood would use walking paths rather than cutting through residential lots. Ideally, greenway improvements would allow pedestrian access - on walking paths or sidewalks the

¹ Connectivity: Connection is often limited to physical infrastructure. A new subdivision is sometimes considered "connected" if it ties into the main road and has access to Weaver Dairy, for example. The term here means more integration of spaces: connection that is physical, social, and cultural. Connectivity prioritizes historic Rogers Road residents and requires integration of new development into the existing fabric of the community.

whole way – from the neighborhood to Timberlyne and the MLK Boulevard area. Easements and existing pathways on Greene Tract should be made into walking trails or greenways that provide a walking loop through natural areas accessible to neighbors.

Improve sidewalks. Complete sidewalks on both sides of Rogers Road – this would improve walking access to bus stops and the community center and help keep children out of the road. Additional sidewalks should be networked with greenways to provide full range of connections through the neighborhood.

Increase traffic enforcement in the neighborhood. The blinking speed sign works well on Rogers Road but there is still a need for more police presence and speed reduction mechanisms on Rogers and Purefoy.

Consider adding traffic lights at the intersections of Rogers Road and Merin Road with Homestead Road. These intersections are difficult left-turns that are part of the daily commute of residents. Traffic lights or other measures to improve traffic flow would help safety and convenience. The Merin Road and Homestead intersection, unfortunately, presents some difficulties because of the railroad tracks immediately adjacent; we recognize that a traffic light may not be feasible there.

Ensure new development opens to and connects with the existing community, avoiding internal fragmentation

Require that new development have clear physical integration with existing neighborhood, increasing connection instead of segmenting it. The physical integration of Phoenix Place was a good example of this. The new Burch Kove development is a development that does NOT promote this kind of integration.

Ensure that any new development does not build walls/barriers; limit culs-de-sac where connection is possible. Rogers Road is a diverse and inclusive community, and we believe structures have the power to connect or divide us. Several years ago, there was a proposal to redevelop one of the large heirs property into a subdivision with a wall surrounding it and a set of culs-de-sac for the center of the development. This kind of exclusion should not be possible in future development.

Development should show clear integration with the existing fabric of the community and indicate ways it will enhance social connectivity. In our meetings, we discussed the problems of the social integration of Winmore and how residents of the affordable housing development within it are limited in their use of common facilities and do not feel connected or

welcome in the high-end space. Any new development in Rogers Road should be fully integrated and not create exclusive benefits for its own residents but instead contribute to community improvements and accessible recreation spaces.

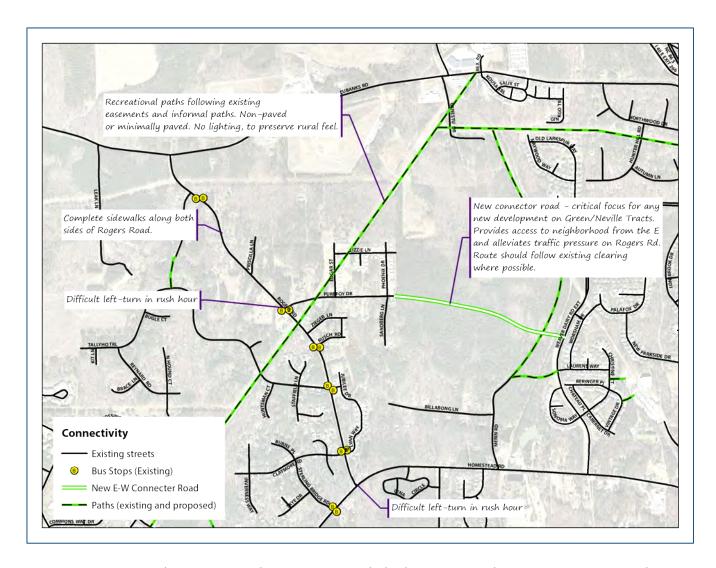
culturalism

Promote intercultural Increase space for community gatherings and support intercultural connection and multi- festivals and community events. We have always been a community of celebration. As our community has grown, we have continued to find ways to extend our festivals and community events to all who reside in Rogers Road and have a stake in its future.

> Add multi-lingual sign welcoming people to the neighborhood in the many languages of our community. Our community is one of the most ethnically diverse in the whole County. Signage should reflect and support this diversity in the major languages of our community. This should be an immediate action item, integrated with the building of neighborhood gateways.

> Provide opportunities for multicultural businesses in any community-commercial spaces. This would take proactive engagement with the diverse groups of people who call Rogers Road home and would help make any such businesses successful.

> Provide educational opportunities about the community's history. RENA has partnered with UNC to document our oral histories. These efforts can be expanded, sustained, and given space to be brought into dialogue with the broader community.



In our meetings, residents associated connectivity with both positive and negative aspects. Road connectivity, done poorly, could come with the cost of increased traffic, and detract from the rural feel of Rogers Road, which is one of the assets all neighbors valued. One resident, in a mapping activity, drew a bicyclist riding down Eubanks Road and "biking right on past our neighborhood;" this illustration showcased the desire of many residents' to keep the community feel of the neighborhood rather than add numbers of new outsiders using the land for recreation. For the most part, residents framed connectivity improvements as an if-then situation: if there were new development on the Greene tract area, then new road connections would be necessary so that Rogers Road doesn't become overburdened.

Development Do's	Development Don'ts
"When government builds something, there must be egress and access."-Mr. Stroud.	Retail along Purefoy Dr without a road connection east.
Extension of Purefoy Dr. into Greene Tract, connecting to Weaver Dairy Extension	Development that would require the widening of Purefoy Drive.
Extension of services. Ex. Buses	Development without expansion of road through Greene Tract. Fear of development if Purefoy remains
Trails on existing pathways.	the only point of access.
Access to green spaces and nature, adding trails and greenways	GATES or WALLS! Fear of a closed community! Development should NOT make the original residents feel unwelcome in their own neighborhood.
	_



Preserve socioeconomic and cultural diversity for the future

Prioritize the creation of quality affordable homes

Maintain the level of socio-economic diversity of the existing community within any new residential buildings. This would require a higher percentage of affordable units than currently required for affordability (upwards of 25%). It would also necessitate a significant percentage of units accessible to households below 50% AMI.

Create affordable homes² for families. These homes should be accessible to 50% AMI, primarily with 3 br/2bth, and integrated with any market homes

Require median home price on a development to be accessible to the median income of the community. To maintain the socio-economic diversity, new development must provide a similar mix of housing accessible to a range of residents

Provide co-housing options for working class and elderly, with shared common spaces to decrease costs. Most co-housing models are primarily aimed for middle-upper income households, but the model could be for shared common spaces and modest density in Rogers Road should be primarily in the service of the elderly and working class

Consider requiring a community impact or racial equity impact study as part of the evaluation process for new development in the neighborhood. Development decisions should consider what impact the new development will have on the community as a whole.

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² Affordable Homes: There is a difference between affordable housing and affordable homes, and "homes" is used purposefully here. Affordable homes necessitate a certain quality, wholeness, and connection with the community around them. Rogers Road has been home to generations of residents (indeed, over 80% of residents have historic ties to the community). Whatever new housing is built in the neighborhood must be suited for families (3 bedroom, 2 bath as the primary model, with a smaller model for elder housing) and also be integrated into the fabric of the existing community. A next generation of residents should want to live in these homes. Also, the standards for affordability used in new development should further the existing socio-economic diversity in the neighborhood (including a significant percentage of households earning below 50% AMI) — which will necessitate more careful and creative approaches than the standard 60-80% AMI metric.

Expand community center and provide additional services for neighborhood children

Add a wing to the community center or additional space in new school or other development to provide space as community grows.

If new development is approved, it should contribute significantly to the growth of shared community spaces, either financially or by creating spaces accessible to all. The development of a new school should also have to provide significant community space and benefits.

Increase services for children that serve both neighborhood children and provide job opportunities for residents. There is a great need for affordable daycares and spaces of recreation for high school age children. We have also heard talk for years of the possibility of a neighborhood school. Any actual proposal for a school should be planned in close dialogue with us and other neighbors, in order to address concerns about impact, equity, and connection to the community. Any services should utilize the wealth of educational leadership and teaching experience in the neighborhood.

Provide public park and recreation space. Currently, the only outdoor park is located within the Habitat community and is not a public space. This park should be made more accessible; additional land in the Greene Tract should also be preserved for public park use.

Ensure access to essential social and retail services, with a priority on community-commercial³

Provide distinctive areas within walking distance that can serve community commercial. Many of us would love to be able to walk to get essentials. Our maps show a few distinctive spaces accessible to the community in which this kind of commercial may be appropriate if economically viable.

Partner with agencies that have a track record in managing and operating community-based commercial. Who owns and manages any commercial will be critical to its success. If any retail is included on the Greene Tract, then the governments should be careful in partnering with trusted partners and maintaining some control over these spaces, consistent with community development principles.

³ **Community Commercial:** While there are a range of opinions about the presence of retail and commercial generally in the neighborhood, there was strong support for the existence of modest, community commercial spaces that allow for small, local businesses to serve the community. Examples given have included hair salons and barbershops, small ethnic restaurants, hardware store outposts, community health clinics, small outdoor markets, and kiosk-size spaces for short-term use (such as flower shops) to support entrepreneurship. We use the phrasing "community commercial" here to highlight that the goal is to serve the neighborhood, provide employment opportunities, and ensure that affordable commercial space is available long in the future. Meeting those goals will likely necessitate a different model from traditional commercial retail, either involving a nonprofit developer, subsidies, or both.

Create an economic development strategy that encourages the recruitment of businesses that will provide access to essentials. We discussed the desire for beauty salons and barbershops, ethnic restaurants, convenient stores, and small hardware stores. A strategy should promote and enable the right kind of community-connected economic development for the location, traffic flow, and population.

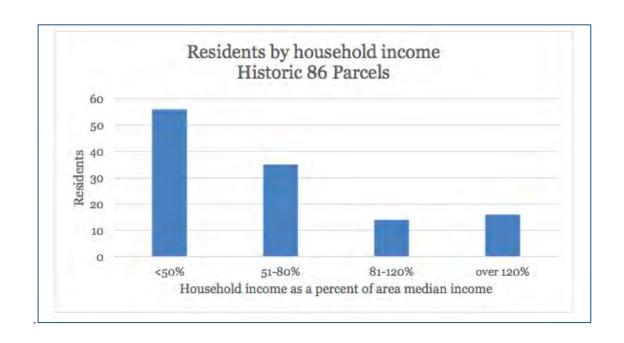
Provide connections to job training and living wage jobs. Our young people have endless potential. New development, especially on the Greene Tract, should provide a diverse set of job trainings and living wage jobs that will help strengthen our community

Provide space for smaller local businesses to start-up and serve the neighborhood

Create smaller and more affordable business spaces, to keep costs lower and provide diverse opportunities. One example of this would be to allow for market-style kiosks for people to rent for shorter-term leases. Another example would be to create 4-6 small retail shops together on the right corridors. Smaller individualized business spaces allow for a more affordable entry needed for many local businesses to succeed.

Provide special zoning for small community-based businesses and a wider range of home-based businesses. Current zoning does not allow for small, community-based businesses and limits home-based businesses significantly. We have marked locations in which this might be viable on the included maps.

Ease signage regulations for churches and community-based businesses to have visible signage. The signage restrictions in Chapel Hill and Carrboro make it difficult for home-based businesses and churches to have decent signage.



Development Do's	Development Don'ts
Community commercial. Limit to 3-4 shops. Ex. Barbershops, Beauty supplies, family owned business. Affordable Homes: Workforce, teachers, early career, and seniors. Affordability defined as who can access housing. Daycares, parks, and community center expansion: spaces for neighborhood children Diversity of housing: not one housing type. Variety in design. Connects to the variety of housing that exists within the neighborhood. Single-family style for affordable housing	Development catered to one demographic Large-scale commercial. Big businesses (Supercenters) a consistent fear. Ex. Timberlyne borders on being too large for this community; Walmart/Target are way too large. Development that provides destination retail or attracts large amounts of people from outside of the community (would add too much traffic). Gathering space with only one point of access



Respect the history and physical/natural character of the neighborhood

Balance land conservation⁴ with modest density to reduce suburban sprawl Respect identified areas of land conservation through conservation easements and other appropriate protections. Currently, areas with a priority of conservation are not formally protected. Conservation easements for large parts of the Greene Tract and for heirs property (where owners desire them) could help achieve some of the long-term hopes of maintaining large portions of the natural surroundings.

Designate specific areas for modest density, to increase diversity of opportunity. We do not want the suburban sprawl taking place on the fringes of Rogers Road. Designated areas for modest density, crafted carefully, could increase diversity of opportunity & affordability, limit land disturbance, and support the mixed community so many of us desire.

Minimize disruption to natural landscape & opens environment to people's use and enjoyment

Maintain a wooded buffer on the eastern edge of the Sandberg Lane portion of the neighborhood. Residents along this gravel road have long enjoyed the privacy that comes from their sparsely-developed neighborhood, and any new development in the Greene Tract should not infringe on that.

Ensure that large parts (80%) of the Greene tract are permanently preserved as open, natural, space. We, and many other community members, have long used the Greene tract for recreation, education, enjoyment and even as a food supply. This vacant land is a unique opportunity for residents, working with local government and groups such as the Black Family Land Trust and the Conservation

⁴ **Conservation:** The undeveloped land in Rogers Road is not vacant: to the contrary it has a wealth of value for residents of Rogers Road and surrounding communities. For generations this land has played an important role as a site for recreation, for gathering food, and for contemplation. Conservation on the tract should acknowledge and build on this cultural value without disturbing the rural feel of the area – not creating a sectioned-off or walled-off part of the community, but keeping large portions of these lands open for enjoyment and connection to the natural world, while protecting this special environment. Promoting "development that we are a part of, not the victim of" means honoring, preserving and amplifying the cultural and natural assets held by the Rogers Road community. This community aim is detailed under the rubric of conservation. However, as the glossary discusses, conservation in this context has a much broader meaning than the strictly environmental preservation, which has often been a strong consideration in planning decisions for Chapel Hill, Carrboro and Orange County.

Trust for North Carolina to devise an innovative conservation plan which centers the value of the land to the area's Black residents. Already, residents have identified a few areas for special conservation priority, which are sketched on the map, but more fieldwork is needed to specifically identify their boundaries.

Limit how much clearing of land is possible. Some developments have limited the clear cutting of land and ensured a large portion of existing trees remain. This would be our preference. Additionally, some development possible in the Greene Tract could be shifted north to the Neville Tract to utilize existing cleared land and allow for increased conservation of woodlands and wetlands.

Honor history⁵ and contributions of neighborhood in tangible ways

Add gateway markers on the northern and southern ends of Rogers Road to honor the neighborhood and celebrate those intersections as entrances to a culturally significant, historically African-American neighborhood. Some of Orange County's most well-known brick and rock masons are connected to the Historic Rogers Road community. These and other legacies should be honored.

Marked as cultural preservation sites in previous planning efforts, these historic areas have still been overlooked. The graves of enslaved Africans are sacred sites and need to be identified and honored with markers and continued preservation. If these graves cannot be found, a memorial should be created in their honor. These efforts should include neighborhood leadership throughout the entire process: both in deciding how to identify and research these sites in a culturally sensitive way and in deciding how best to honor them. St. Paul's church is exploring some ways to do this with respect to sites on land they own.

Add signage that identifies this as "Historic Rogers Road" and Integrate community-specific historical markers throughout the neighborhood. Rogers Road community has a rich history, which is rooted in place, but often not immediately visible to passersby or visitors to the neighborhood. Marking this history can be a way of preserving it for the future.

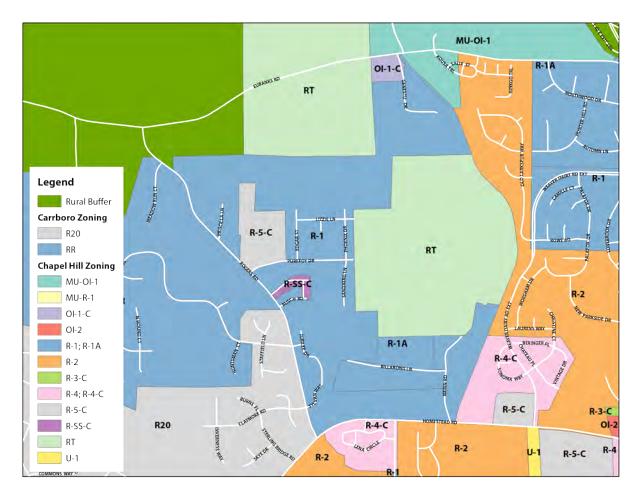
⁵ **Honors history:** Honoring history in tangible ways refers to more than just physical markers, signage, and history exhibits, although these are important. It also means that any development must show alignment with community goals and be something historic Rogers Road residents take pride in.

Preserves diversity: To continue to promote and ensure the existing diversity into the future; to further the remarkable socioeconomic and cultural diversity that is already present in Rogers Road.

Development Do's	Development Dont's	
"Preservation means leaving it the way it is, but making it also accessible to the public." - Carl Purefoy	Businesses that interfere with surrounding homeowners. Fear of strangers invading property.	
Gradual Process. Integrated design.	Development that destroys community feel.	
Greene Tract: High priority for preservation. Dense development - not too much. Infuse with existing characteristics of natural environment.	Removal of the historic community & existing street names. Fear that new development will seek to wipe out historical names.	
Development on Neville Tract instead of southwest area of Greene Tract. Utilize the existing clearing on the Neville Tract to preserve more wetland and forest	Block flow of streams and water run-off. Fear of flood areas during intense rainstorms.	
Development accompanied by buffers.	Removal of significant woods in the Greene Tract	
Development consistent with historic vision and existing neighborhood character (including height, diversity of building materials & types)	Large multi-story housing developments. This takes away from the family feel. (ex. Greenbridge) Mini-mansions	
Community Markers: Historical markers. Preservation of slave graves. Cherry Orchard.	Large amounts of artificial lights Suburban sprawl. (Burch Kove, Homestead).	
Requirement of community impact study for any major development before approval	3+ floors for housing	
Privacy: "Being able to go out in your bathrobe without being watched"- Ms. Reid		

Tools for Action

A. Zoning

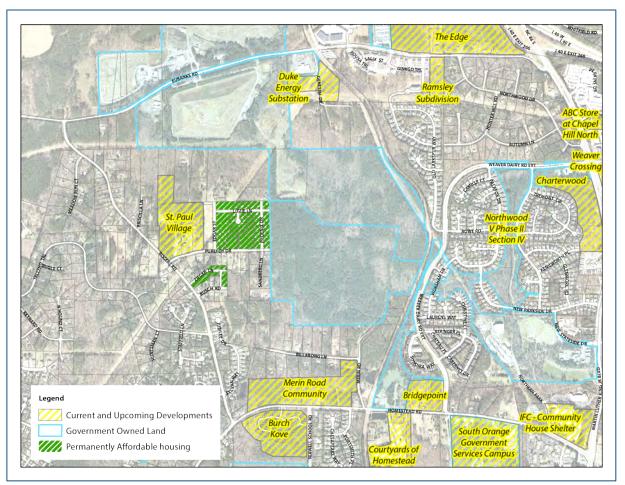


As the map above shows, the Rogers Road neighborhood is mostly zoned Chapel Hill R-1/R-1A or Carrboro RR, zoning classes which allow up to 3 units per acre and lot sizes as low as 17,000 square feet. This existing zoning allows development-by-right of a kind that is potentially inappropriate for the community. The upcoming Merin Road development on the neighborhood's outskirts – which conforms with the density of R-1 but has lower lot sizes – matches pretty well with what residents described as one of their worst fears for new development in the neighborhood (the others being mini-mansions and monolithic mixed-use developments like Greenbridge or Meadowmont). Residential areas should be zoned in a way which imposes more specific limits than R-1 or RR on both square footage and density, (perhaps a minimum lot size of 30,000 square feet) by default, but which increases neighborhood input throughout the development review process and allows for exceptions with the neighborhood's approval. On the Chapel Hill side, this could potentially be done through a Neighborhood Conservation District.

The Greene Tract is currently zoned in a way (RT) which would allow for development matching residents worst fears — in this case an expanded landfill (albeit with a special use permit requirement). Conservation of the Greene Tract will likely need to take place through conservation easements rather than zoning.

B. Land Use

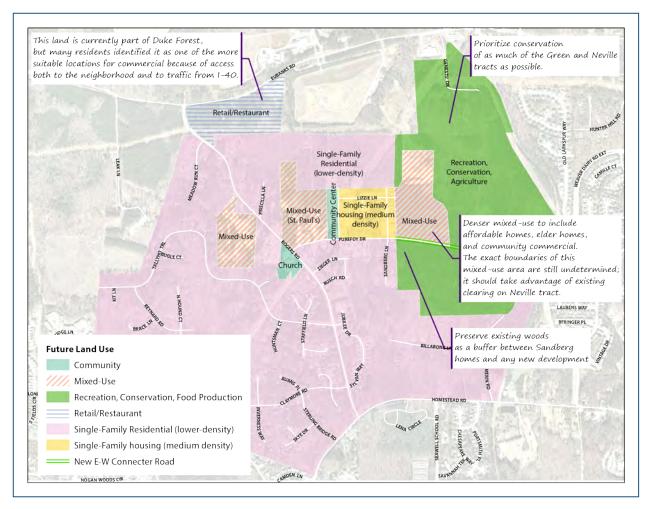
The Rogers Road neighborhood is already surrounded by new development (see map below), and the development pressure will only increase once OWASA finishes providing sewer service. Therefore, one of the main charges of our discussion was identifying place-based desires for future development and land use in the neighborhood. Some of these are discussed in more detail in the Do's and Don'ts section of the report.



It is important to highlight that discussions about future land use and development in the Rogers Road area take place in the context of intense development pressure. In many of our discussions about development, residents framed their comments in terms like "if we have to have new development, then" The unfortunate history of Rogers Road is largely a history of development decisions being made for

rather than by the neighborhood's residents, and that legacy makes it hard to have real visionary conversations about what residents want. Probably the most important land use and zoning priority for Rogers Road is not any specific use or zoning class, but strengthening neighborhood decision-making and voice in any new development.

This map highlights future land use classes identified by residents for different areas of the neighborhood, described below in more detail.



Low-density residential

Historically, most of the neighborhood has been low-density single-family residential — lot sizes of 1 acre and above, with most houses below 2,000 square feet. More important than specific lot size, building size and density requirements, however, is that any new residential development in the historic neighborhood preserves the "neighborhood feel." This means:

 New homes which are affordable for homeowners and/or renters with incomes as low as 40 -60% of AMI

- Individually-built homes which face the neighborhood and integrate into the existing landscape (rather than subdivisions or pocket neighborhoods)
- Houses which are open to the community, not fenced off

Mixed Use (Greene Tract)

Some residents are opposed to any development on the Greene Tract, whereas others see it as an opportunity for new building which serves the needs of the neighborhoods. In this report, we've identified an area on the western side of the tract, neighboring the existing Phoenix Place development, as the best area for development if the tract is to be developed at all. The Phoenix Place Habitat development, with lot sizes between 7,000 and 7,500 square feet, is the most-densely developed area in the neighborhood, and residents identified that density as about the maximum appropriate density for Greene Tract development as well. Those residents who did support development supported somewhat denser mixed-use development here, incorporating neighborhood commercial, senior housing, affordable housing, and new community spaces to serve neighborhood teenagers and/or seniors.

Mixed Use (Buddha, LLC land west of Rogers Road)

This was another area which was less-controversially identified as a potential site for denser mixed-use development. In contrast to the Greene Tract, where a village center feel would be more appropriate, residents preferred a shopping plaza-style development here, which could incorporate small retail establishments serving the neighborhood (examples include a convenience store, hardware store, barber shop or beauty salon) as well as offices and potentially a police or fire substation. Another option for this area would be a senior housing development.

C. Design Feel

We used dozens of examples of each development type mentioned in the strategies above from cities and towns around the country, and Unity Board members responded to the "fit" of these examples for Rogers Road. These photographic examples were not meant as development proposals or to get a clear architectural design but to try to understand general vision and feel of what residents meant when discussing "senior housing," "mixed-use," and "modest-density affordable housing." The following few pages show highlighted examples from these discussions.

Senior Housing

Residents expressed the desire to prioritize senior housing throughout the discussions of any future development, particularly affordable, independent units for seniors who hope to age within the community. We showed a set of photographs of a range of senior housing developments across the country, asking which felt like it fit most into the "fabric" of Rogers Road.

A few common themes among the examples that residents thought had the best "fit": they were single story, independent units that could be attached but opened to the existing community. Several people mentioned the Town of Chapel Hill's senior housing on South Roberson or Habitat's senior housing duplexes on Rusch Road as positive examples locally of senior housing of the right scale and design.

Generally considered to "fit"



This example was the most popular, partly because residents overwhelmingly support single-story senior housing. Residents liked the scale, individual units for seniors, small yards and stoops. Some thought it looked too much like public housing, though, and thought a true fit would be better designed

Mixed responses



This photograph had a mixture of responses. Those who liked it mostly commented on the design and scale. Most who did not commented on the institutional look and inward facing courtyard that did not seem to fit in with Rogers Road rural feel.

Absolute "NO!"



Pictures like this one that were multi-story nursing or assisted living facilities were not considered a fit, mostly because of the scale, the institutional look, and the feeling that it didn't fit as well with the rural feel and independent living most seniors here want to see promoted in the community.

Higher Density Residential with Significant Affordable Component

Affordable homes are an important component of any future development in Rogers Road. But how these are designed, integrated into and connected to the community is critical. Participants responded to photographs of a mixture of mid to higher density residential development that included all or significant percentages of affordable housing as defined by HUD. Discussion about these responses made the following clear:

- Residents are interested in affordable homes, not just affordable housing, and preferred the scale of existing Habitat homes or the photograph on the top below best (1 to 1.5 stories were by far most popular) because they were "family-friendly"
- Any increase in density must still fit into the fabric, and most photographs of planned developments do not fit into the natural feel of the neighborhood
- Most participants did not like the "apartment" feel, and preferred either detached homes or carefully integrated single-story attached units

Generally considered to "fit"

The photograph of a co-housing development to the right received the most positive "feel" of the more than dozen photographs (just over 60%), mostly because of the scale and better integration of natural surroundings.



Mixed responses





Half of participants thought the example developments above could fit into the existing community. It seemed this was due more to the right scale of development rather than the actual design, as many commented on the desire for more unique units with more privacy.

Absolute "NO!"

Pictures like the ones below and to the right received unanimous "no," again, mostly because of the scale. The examples on the top were considered too suburban and the one on the bottom was considered too urban and institutional.







Mixed Use and Retail

Many participants, though not all, welcomed the idea of Community Commercial/Retail on a few specific sites if economically feasible. While participants expressed a range of opinions on whether this could work, most were interested in the possibility of small-scale retail spaces that were walkable. We explored the meaning of this with a range of photographs of commercial and mixed use. Common themes: 1) No more than 2 stories, 2) 4-6 shops max, 3) integrated into the design fabric of the community

More than 50% considered a "fit"

The photos below received just a bit more than half of respondents who felt like these examples could fit in, mostly because of the scale and the integration into residential community life.





Mixed responses

Around 50% found the structures in the photos below could fit in. Comments on the left photograph suggested that the retail spaces were small enough to include a range of options but many did not like the "strip-mall" feel of the parking. The right photo was one of the only mixed-use that did not receive overwhelming "no", likely because of the smaller scale.





Absolute "NO!"

Pictures like the below received unanimous dislike: too urban, too large, or too suburban.





Principles for Future Action

Support a community owned process that the community is "a part of, not the victim of."

A. Follow the stipulated priorities for future development

The priorities identified in this report should be considered the platform for development in Rogers Road. Rather than a step-by-step guide to development, this planning process established a guiding list of crisp and clear priorities for the future.

B. Ensure accountability

One of the main concerns we heard throughout the process was "Even if we do all this work, how are we going to ensure that the powers that be (local governments and developers) will listen?". Decades of broken promises and countless, so-called community processes have left an accountability gap between the residents of Rogers Road and the Towns and County. Rebuilding trust will come through sustained efforts to increase accountability.

As resident Marian Peppers puts it, "Tell the town to fix it. Just fix it."

C. Maintain open and consistent communication

During our process, we learned about a concurrent meeting among campaigning county commissioners regarding future development of the Greene Tract. Neither RENA leaders nor residents were asked for input; their perspectives were not engaged in discussion. This is the kind of failure of coordinated communication processes that leads to breakdown. To ensure planning that is effective for all concerned, residents of Rogers Road should be involved in all related conversations out of the gate. The absence of community members builds further distrust between residents and local municipalities. Conversations involving decision-making bodies would aid in building a bridge of trust between local municipalities and Rogers Road residents, with the ultimate goal of "win-win." Any future action should reflect direct and immediate integration of perspectives of RENA leaders and residents.

D. Support Community-First Planning

Community-First planning came through honest and tense dialogue with the long term and historic residents or Rogers Road. The community is dynamic, with diverse opinions that work to create complicated plans. At the end of the process, we could not say with one voice, for example, "Rogers Road wants a small scale commercial development to happen in the Greene Tract." The process did not, at this stage, produce consensus but it did engage points of view that may otherwise have been buried under external assumptions about "the" community's point of view.

Often, even community-oriented developers justify taking action without more input by saying that community members are tired of more meetings, or don't have time for process. This is simply not the case in the Rogers Road neighborhood. Given appropriate planning for availability and direct communication strategies, residents tirelessly showed up to meeting after meeting, and have been doing so for over 30 years. Needs and desires in the neighborhood are highly contextual, and change over time. This document is testament to the value of inclusive, honest, ongoing dialogue. However, it represents a starting point only for a development process that must continue to engage residents in determining the future of the Historic Rogers Road Neighborhood.

Rogers Road has the necessary resources for effective Community-First planning. The Community Unity Board is expanding. Members have consistently brought over 20 residents to community meetings, and organized in-home conversations with the neighbors on their street. RENA has produced a monthly Baja Newsletter via the work of the RENA interns. Neighbors have been able to articulate their diverse place-based hopes for various potential spaces for development.

The Town of Chapel Hill, the Town of Carrboro, and Orange County have a unique opportunity to proceed on development planning in coordination with residents that will meet municipal, county, and community goals and set a model for development that is directly responsive not only to the history but to the vision of its constituents.

Appendices

Appendix A. List of Unity Board Members/Participants

David Bellin* (Tallyho) Tim Peppers* (Rogers Rd)

David Caldwell* (RENA, Rogers Road) Carl Purefoy, Sr.* (Purefoy Dr)

Larry Caldwell* (RENA intern, Rusch Rd) Karen Reid* (Sandberg Ln)

Rose Caldwell* (RENA, Rogers Road)

Jimmy Rogers* (Edgar/Purefoy)

Robert Campbell* (RENA, Purefoy Dr.)

Nancy Rogers* (Edgar/Purefoy)

Sally Council* (Billabong neighborhood) Shirley Sharpe* (Rogers Road)

Rev. Lisa Fischbeck (Church of the Advocate)

Jeannie Stroud* (Rogers Road)

Jasmine McClain* (RENA intern, Rogers Rd)

Laura Wenzel* (Tallyho neighborhood)

Rev. Thomas Nixon (St. Paul's)

Bishop Ila McMillan* (Faith Tabernacle)

Marion Peppers* (Phoenix Place)

List of Additional Participants/Interviewees/Neighborhood Consultants

Larry Reid* (Sandberg)

Lillie Brown* (Rogers Road)

Linda Allen (Rogers Road)

Beverly Ferreiro* (Billabong)

Malwood Revels* (Sandberg) Georgia Revels* (Sandberg)

Quiana Phillips* (Phoenix Pl)

Leander Stroud* (Rogers Rd)

Ebi Joelin * (Billabong) Courtney Gray* (Purefoy)

Burnice Hackney (St. Paul) Tracy Kulhman* (Tallyho)

^{*}indicates a neighborhood resident

List of Facilitators

Stephane Barnes-Simms (Jackson Center) George Barrett (Jackson Center)

Tim Stallmann (Jackson Center) Hudson Vaughan (Jackson Center)

RENA leaders already mentioned also helped facilitate*

List of Additional Panelists/Guests:

Mayme Webb-Bledsoe, Duke Durham Partnership Ebonie Alexander, Black Family Landtrust

Melanie Allen, NC Conservation Trust

Appendix B. Glossary of Terms

Affordable Homes

There is a difference between affordable housing and affordable homes, and "homes" is used purposefully here. Affordable homes necessitate a certain quality, wholeness, and connection with the community around them. Rogers Road has been home to generations of residents (indeed, over 80% of residents have historic ties to the community). Whatever new housing is built in the neighborhood must be suited for families (3 bedroom, 2 bath as the primary model, with a smaller model for elder housing) and also be integrated into the fabric of the existing community, ideally attracting and retaining subsequent generations of historic Rogers Road residents. Also, the standards for affordability used in new development should further the existing socio-economic diversity in the neighborhood (including a significant percentage of households earning below 50% AMI) — which will necessitate more careful and creative approaches than the standard 60-80% AMI metric.

Community Commercial

While there are a range of opinions about the presence of retail and commercial generally in the neighborhood, there was strong support for the existence of modest, community commercial spaces that allow for small, local businesses to serve the community. Examples given have included hair salons and barbershops, small ethnic restaurants, hardware store outposts & maker spaces, community health clinics, small outdoor markets, and kiosk-size spaces for short-term use (such as flower shops) to support entrepreneurship. We use the phrasing "community commercial" here to highlight that the goal is to serve the neighborhood, provide employment opportunities, and ensure that affordable commercial space is available long in the future. Meeting those goals will likely necessitate a different model from traditional commercial retail, either involving a nonprofit developer, subsidies, or both.

Connectivity

Connection, in the planning world, is often limited to physical infrastructure. A new subdivision is sometimes considered "connected" if it ties into the main road and has access to Weaver Dairy, for example. The term here means more integration of spaces: connection that is physical, social, and cultural. Connectivity prioritizes historic Rogers Road residents and requires integration of new development into the existing fabric of the community.

Conservation

The undeveloped land in Rogers Road is not vacant; to the contrary it has a wealth of value for residents of Rogers Road and surrounding communities. For generations this land has played an important role as a site for recreation, for fruit orchards, and for contemplation. Conservation on the tract should acknowledge and build on this cultural value without disturbing the rural feel of the area — not creating a sectioned-off or walled-off part of the community, but keeping large portions of these lands open for enjoyment and connection to the natural world, while protecting this special environment.

Honors history

Honoring history in tangible ways refers to more than just physical markers, signage, and history exhibits, although these are important. It also means that any development must show alignment with community goals and be something historic Rogers Road residents take pride in.

Preserves diversity

To continue to promote and ensure the existing diversity into the future; to further the remarkable socioeconomic and cultural diversity that is already present in Rogers Road.

Appendix C: Timeline

Timeline of Community Planning Work	
Pre-process interviews and review: In the first month, RENA and the Jackson Center worked together to review past plans, including the Small Area Plan & the various Task Force reports. We devised questions for the planning departments and key stakeholders and completed several small group interviews, to better understand what the gaps were in previous efforts and what common priorities and themes had been identified as starting points for community discussion. We identified leaders from the sub-neighborhoods and other major stakeholders to invite to the Unity Board, and sent out invitations. Unity Board members include neighbors from sub-neighborhoods including Historic Rogers Road, Billabong, TallyHo, Meadow Run, Phoenix Place, Rusch Rd, and Sandberg areas, and leaders from St. Paul, Church of the Advocate, and Faith Tabernacle.	August 15- September 30
Unity Board Meeting 1: The group reviewed the proposed process and charge. We shared visions for the future of Rogers Road 10 years from now and began discussing priorities identified from past planning efforts and what had changed since that time. We had dialogue about the struggle of past processes to move toward implementation and began discussing sets of questions to help this effort move forward comprehensively.	October 8
Unity Board Meeting 2: The group developed a draft of priorities for future development based on the themes from the shared visions and from the previous plans. Three small groups participated in a rotation activity into categories of past priorities, updating them, challenging them, and mapping vision into strategy.	October 22
Unity Board Meeting 3: The group began to geographically map answers to questions set forth from the priorities for future development that began to elaborate on the "what" and "where."	November 7
Unity Board Meeting 4: The group critiqued the existing work to date, finalized the priorities for any future development, and worked on mapping questions related to the priorities.	November 22

	,
Unity Board Meeting 5: We identified the major parcels of undeveloped land or large tracts with the most likelihood of future development. The group explored hopes and fears specifically for those identified parcels and how it connected with the overall visions for the neighborhood.	January 16
Interviews Round 1: We developed a set of questions for individuals to respond particularly with their hopes and fears related to large undeveloped tracts of land and conducted interviews with participants of the Unity Board.	Jan. 16- Feb. 11
Unity Board Meeting 6: We reviewed all work to date and focused on the points in which there were the most differences in the interviews. We created an outreach plan and an approach to begin moving toward a final strategy document.	February 11
Interviews Round 2: We interviewed additional neighbors from subneighborhoods with the questions focused on major areas of undeveloped land and the design feel document, to make sure these conversations were taking place more broadly.	Feb. 11-March 15
Community Panel Discussion: Tools & Strategies. Four organizations - Black Family Land Trust, NC Conservation Trust, The Duke-Durham Partnership, and RENA discussed models and tools historically African American communities have used to influence land use and development; what experiences from across the state might assist Rogers Road in the preservation of its diversity; and what strategies might be used to pursue the priorities laid out by community members. Over 30 neighbors attended.	March 15
Unity Board Meeting 7: We met to review the final draft of the document. Residents gave feedback page by page. At the end of the meeting, residents in attendance decided unanimously to move forward with the document pending suggested changes.	April 26
Unity Board Review: The final draft was distributed to all primary participants for one last round of edits. RENA and the Jackson Center incorporated suggestions and finalized the document.	April 26-May 20





Preserving the Future of Rogers Rd Panel Discussion

- ✓ What models and tools have historically African American communities used to influence land use and development in their communities?
- ✓ What experiences from across the state might assist Rogers Road in the preservation of our diverse neighborhood?
- ✓ What strategies might we use to limit suburban sprawl happening around us?

Come join this discussion in which leaders from across the state of North Carolina will share their experience and engage in a dialogue with neighbors as we work to preserve the future of Rogers Road.

Panelists:

- Ebonie Alexander, Executive Director: Black Family Land Trust
- Mayme Webb-Bledsoe, Neighborhood Coordinator: Duke-Durham Partnership
- Melanie Allen, Diversity Program Director: Conservation Trust for North Carolina
- Minister Robert Campbell, NAACP President & Rogers Road Community Leader

March 15th at 6 pm, RENA Community Center

Refreshments will be served.

RENA Community Center: 101 Edgar Street, Chapel Hill, NC 27516

919-918-2822

References

Final Report. Rogers Road Small Area Plan Task Force, 2008.

Historic and Vibrant Rogers Road. Rogers-Eubanks Neighborhood Association and Marian Cheek Jackson Center, 2012.

Rogers Road. Emily Eidenier Pearce in collaboration with Rogers-Eubanks Neighborhood Association, 2008.

Present:

Mayor Mark Chilton, Alderman Jacquelyn Gist, Alderman Michelle Johnson, Alderman Lydia Lavelle and Alderman Sammy Slade

Absent:

Alderman Randee Haven-O'Donnell

Also present: Town Manager David Andrews, Town Attorney Mike Brough, Town Clerk Catherine Wilson

A. REQUESTS FROM VISITORS AND SPEAKERS FROM THE FLOOR

Katherine Dydak, a current urban planning graduate student at UNC, invited the Board to attend the Smart Math of Mixed Use Development event on March 21, 2013 at 6:30 p.m. The parking lot is available for parking after 5:30 p.m. Alderman Gist asked that the item be placed on the Town's website and sent to the Town Clerk for distribution to the Town's advisory boards.

Alderman Lavelle requested that the Town receive a copy of the presentation if it is recorded.

B. RESOLUTIONS AND PROCLAMATIONS

EARTH HOUR PROCLAMATION

Mayor Chilton proclaimed March 23rd, 2013, 8:30 pm as "Earth Hour" in Carrboro.

A RESOLUTION IN SUPPORT OF THE UNITING AMERICAN FAMILIES ACT (HR 519/S 296) AND THE INCLUSION OF LGBT FAMILIES IN COMPREHENSIVE IMMIGRATION REFORM

A motion was made by Alderman Lavelle, seconded by Alderman Gist, that this resolution be approved.

Resolution in Support of the Uniting American Families Act (HR 519/S 296) and the Inclusion of LGBT Families in Comprehensive Immigration Reform

WHEREAS, a driving goal under U.S. immigration law is family unification and the ability of families and individuals to reside legally in the U.S., engaging fully in our country's rich civil traditions and form of government; and,

WHEREAS, the Town of Carrboro celebrates and respects all immigrant groups and all families, including gay and lesbian families; and,

WHEREAS, current U.S. immigration law discriminates against a U.S. citizen or lawful permanent resident and his or her foreign-born partner by not allowing the sponsorship of the foreign partner for immigration benefits, although an opposite-sex couple would have the right to do so; and,

WHEREAS, this form of discrimination and unfair treatment under the law has devastating and life-altering consequences for same-sex partners; and,

WHEREAS, the inability to sponsor a same-sex partner leaves the couple with the following limited options: choosing to remain in a costly long-distance international relationship; choosing to live abroad in the foreign partner's country, if allowable; seeking a visa, independent of the partnership, for the foreign-born partner, creating a limited duration of legal stay; choosing to allow the foreign-born partner to remain undocumented or allow a visa to lapse, creating daily uncertainty and fear of deportation; or terminating the relationship; and,

WHEREAS, the limited legal options for same-sex partners to keep their relationship unified exacts an enormous emotional, financial, and mental toll, disproportionate to opposite-sex couples in bi-national relationships; and,

WHEREAS, beyond the personal challenges to same-sex couples, the Town of Carrboro and the entire country risk a great loss of talent should the foreign partner and/or the U.S. citizen or lawful permanent resident be forced to depart the U.S. to keep the relationship whole in another country; and,

WHEREAS, currently pending in the U.S. Congress is the Uniting American Families Act (H.R. 519/S.296), reintroduced by Representative Jerrold Nadler (D-NY-10) and Senator Patrick Leahy (D-VT). The purpose of this bill is "to amend the Immigration and Nationality Act to eliminate discrimination in the immigration laws by permitting permanent partners of United States citizens and lawful permanent residents to obtain lawful permanent resident status in the same manner as spouses of citizens and lawful permanent residents and to penalize immigration fraud in connection with permanent partnerships"; and,

WHEREAS, the Uniting American Families Act would allow same-sex relationships to be treated no differently from opposite sex relationships and all legal requirements of qualifying under the statute and proving the good faith nature of their relationship would remain; and,

WHEREAS, the Uniting American Families Act would bring U.S. immigration law in line with the 31 other countries that already recognize same sex partnerships for immigration purposes, including Australia, Austria, Belgium, Brazil, Canada, Czech Republic, Denmark, Finland, France, Germany, Iceland, Ireland, Israel, the Netherlands, New Zealand, Norway, Portugal, South Africa, Spain, Sweden, Switzerland, and the United Kingdom; and,

WHEREAS, the Town of Carrboro fully supports the measures of Congress to allow gay and lesbian partners to access immigration benefits in an equal and fair manner, equivalent to opposite sex partners who currently enjoy such legal rights;

NOW THEREFORE BE IT RESOLVED that we, the members of the Carrboro Board of Aldermen, do hereby express our strong support for the passage of the Uniting American Families Act, and its inclusion in comprehensive immigration reform legislation, or other laws that will end discrimination for

bi-national same-sex partners under the immigration laws and will allow gay and lesbian residents of the State of North Carolina fair and equal access to immigration benefits through their permanent partnerships.

BE IT FURTHER RESOLVED that copies of this resolution be prepared and sent to U.S. Senator Kay Hagan; U.S. Senator Richard Burr, U.S. Representative David Price; Speaker of the House of Representatives John Boehner; Leader of the Senate Harry Reid, and Vice-President of the U.S. and President of the U.S. Senate Joseph Biden.

The motion carried by the following vote:

Aye: - Mayor Chilton, Alderman Gist, Alderman Johnson, Alderman Lavelle and Alderman Slade

C. <u>CHARGES ISSUED</u>

The Town Clerk issued charges to the following recent advisory board appointees:

- 1. Paul Daughtry
- 2. Will McInerny
- 3. Steven Canady
- 4.Gabe Riven
- 5. Andrea Tanner

D. CONSENT AGENDA

APPROVAL OF PREVIOUS MEETING MINUTES

The purpose of this item was to adopt the previous meeting minutes for February 19th and February 26th, 2013.

A motion was made by Alderman Slade, seconded by Alderman Lavelle, that the minutes be approved. The motion carried by the following vote:

Aye: Mayor Chilton, Alderman Gist, Alderman Johnson, Alderman Lavelle and Alderman Slade

REQUEST TO MAKE AN APPOINTMENT TO THE RECREATION AND PARKS

The purpose of this item was for the Mayor and Board to consider making an appointment to the Recreation and Parks Commission.

A motion was made by Alderman Slade, seconded by Alderman Lavelle, that this Resolution be approved.

A RESOLUTION MAKING AN APPOINTMENT TO THE RECREATION AND PARKS COMMISSION

WHEREAS, three at-large seats on the Recreation and Parks Commission have expiring terms.

NOW, THEREFORE, THE BOARD OF ALDERMEN OF THE TOWN OF CARRBORO RESOLVES:

Section 1. The Board of Aldermen hereby appoints the following applicants and recommended representatives to the Recreation and Parks Commission:

Seat Designation	Appointee	Term Expiration
Out-of-Town	Eric Allman	2/1/2016

Section 2. This resolution shall become effective upon adoption.

The motion carried by the following vote:

Aye: Mayor Chilton, Alderman Gist, Alderman Johnson, Alderman Lavelle and Alderman Slade

RECOGNITION OF RECEIPT OF DISTINGUISHED BUDGET PRESENTATION AWARD FROM GOVERNMENT FINANCE OFFICERS ASSOCIATION (GFOA)

The purpose of this item was for the Board of Aldermen to consider the attached resolution recognizing the Town's receipt of the Distinguished Budget Presentation Award from the Government Finance Officers Association (GFOA) for the FY12-13 Budget.

A motion was made by Alderman Lavelle, seconded by Alderman Johnson, that this resolution be approved.

A RESOLUTION RECOGNIZING RECEIPT OF THE DISTINGUISHED BUDGET PRESENTATION AWARD FROM GOVERNMENT FINANCE OFFICERS ASSOCIATION (GFOA)

WHEREAS, The Government Finance Officers Association (GFOA) has notified the Town that the FY12-13 Budget has received the Distinguished Budget Presentation Award; and

WHEREAS, this award reflects the commitment of the Board of Aldermen and Town staff to meeting the highest principles in governmental budgeting; and

WHEREAS, in order to receive this award, the Town had to satisfy nationally recognized guidelines for effective budget presentation, including an assessment of how the Town's budget serves as a policy document, a financial plan, an operations guide and a communications device; and

WHEREAS, The Town's budget was rated proficient in all four broad categories and the fourteen (14) criteria within those categories; and

WHEREAS, Carrboro is one of 1,328 entities in the country to receive this award during this rating period, and one of 26 municipalities in North Carolina; and

WHEREAS, This is the 10th year in a row the Town has received this award.

NOW THEREFORE BE IT RESOLVED that the Board of Aldermen hereby recognizes the receipt of the Distinguished Budget Presentation Award and thanks Town Staff, particularly the Management Services Department, for their efforts.

The motion carried by the following vote:

Mayor Chilton, Alderman Gist, Alderman Johnson, Alderman Lavelle and Alderman Slade

REQUEST TO SET THE PUBLIC HEARING FOR THE SHELTON STATION CONDITIONAL USE PERMIT REQUEST

Belmont Sayre, LLC as represented by Coulter, Jewell and Thames, submitted an application for the construction of a mixed-use commercial/residential development located adjacent to and including 402 N. Greensboro Street. The Conditional Use Permit, if approved, would allow the creation of a four story multi-family residential building with 94 dwelling units and a two-story, 22,706 square foot of commercial building with associated infrastructure. The applicants requested that the Board set the public hearing date for the conditional use permit request on March 21st, 2013.

Alderman Gist requested that the applicant be informed that the Board desires to see good neighbor issues fully addressed at the time of the public hearing.

A motion was made by Alderman Gist, seconded by Alderman Lavelle, that this resolution be approved.

A RESOLUTION CALLING A PUBLIC HEARING ON THE PROPOSED SHELTON STATION CONDITIONAL USE PERMIT REQUEST

WHEREAS, the Carrboro Board of Aldermen seeks to provide ample opportunities for the public to comment on proposed projects; and

WHEREAS, an application has been received for a Conditional Use Permit authorizing a commercial/residential mixed-use development on the N. Greensboro Street parcels identified by Orange County PINs 9778877556, 9778877448, 9778879369 & 9778970512.

NOW, THEREFORE BE IT RESOLVED by the Carrboro Board of Aldermen that the Aldermen call a public hearing on March 21st, 2013 to discuss the proposed Shelton Station CUP project.

The motion carried by the following vote:

Ayes: Mayor Chilton, Alderman Gist, Alderman Johnson, Alderman Lavelle and Alderman Slade

408 LLOYD STREET SEWER EASEMENT GRANTING FOR 308 BROAD STREET SEWER SERVICE

Mr. Clarence Payne, owner of the property at 307 Broad Street (PIN 9778975675), as represented by Wayne Hadler, attorney, requested that the Town grant a 10' private sewer lateral easement across Town property located at 408 Lloyd Street (PIN 9778974626) to provide access to OWASA sewer services.

A motion was made by Alderman Slade, seconded by Alderman Lavelle, that this resolution be approved.

RESOLUTION OF THE TOWN OF CARRBORO BOARD OF ALDERMEN AUTHORIZING THE GRANTING OF A 10' PRIVATE SEWER EASEMENT ON THE TOWN-OWNED PROPERTY AT 408 LLOYD STREET TO THE OWNER OF THE PROPERTY AT 307 BROAD STREET

WHEREAS, the Town of Carrboro is the owner of the real property known as 408 Lloyd Street in Carrboro (Orange County PIN 9778974626); and

WHEREAS, the Town has become aware that a residence located on an adjoining parcel, 307 Broad Street (Orange County PIN 9778975675) does not have direct access to OWASA sewer services; and

WHEREAS, the owner of the adjoining parcel has requested that the Town grant them an easement to access the OWASA sewer service located on the Town property; and

NOW, THEREFORE, be it resolved by the Town of Carrboro Board of Aldermen that: The Town Board of Aldermen authorizes the granting of a sewer service easement per the intent of the plat and profile prepared by Freehold Land Surveys, Inc. and dated October 23, 2012 subject to the following condition;

•That prior to recording of the easement plat that the previously approved recombination of the 408 and 410 Lloyd Street properties is recorded.

The motion carried by the following vote:

Mayor Chilton, Alderman Gist, Alderman Johnson, Alderman Lavelle and Alderman Slade

E. <u>OTHER MATTERS</u>

<u>UPDATE ON THE WATCH FOR ME NC PEDESTRIAN AND BICYCLE SAFETY</u> <u>CAMPAIGN</u>

The Board received an update on Watch for Me NC, a regional pedestrian safety campaign led by the NCDOT Division of Bicycle and Pedestrian Transportation, and considered a resolution establishing

Town participation in year two of the campaign, which will focus on both pedestrian and bicyclist safety.

Jeff Brubaker, the Town's Transportation Planner, made the presentation to the Board.

Alderman Gist stated that she also wants to see an effort on educating bikers and pedestrians on their responsibilities.

A motion was made by Alderman Gist, seconded by Alderman Johnson, that this resolution be approved.

A RESOLUTION SUPPORTING THE PARTICIPATION IN THE WATCH FOR ME NC PEDESTRIAN/BICYCLE SAFETY CAMPAIGN IN COOPERATION WITH THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

WHEREAS, *Carrboro Vision 2020* states that the "safe and adequate flow of bus, auto, bicycle and pedestrian traffic within and around Carrboro is essential" (Policy 4.0); and

WHEREAS, the Comprehensive Bicycle Transportation Plan recommends, among other educational and enforcement activities, developing bicycle safety educational materials, enforcing unsafe behavior, producing education messages in distributions and media, and developing training sessions for local law enforcement (Ch. 4); and

WHEREAS, the Safe Routes to School Action Plan recommends starting a comprehensive motorist/pedestrian/bicyclist safety campaign (Ch. 5); and

WHEREAS, the Town of Carrboro recognizes the importance of educating pedestrians, bicyclists and drivers on how to share the road safely; and

WHEREAS, the North Carolina Department of Transportation is leading a pedestrian and bicycle safety campaign for the Triangle region, known as Watch for Me NC; and

WHEREAS, the North Carolina Department of Transportation is seeking commitment from Triangle-Area communities for involvement in the Watch for Me NC 2013 campaign; and

WHEREAS, the Watch for Me NC campaign would provide safety education for pedestrians, cyclists and drivers through various strategies; and provide training to officers to support enforcement activities and provide information for campaign evaluation.

NOW THEREFORE BE IT RESOLVED by the Carrboro Board of Aldermen that the Board of Aldermen pledges, in cooperation with the North Carolina Department of Transportation, to participate in the 2013 Watch for Me NC campaign.

BE IT FURTHER RESOLVED that the Planning Department, Police Department, and other departments if directed by the Town Manager, are directed to coordinate with staff from other municipalities and stakeholders involved in the Watch for Me NC campaign as necessary to ensure successful participation.

The motion carried by the following vote:

Aye: Mayor Chilton, Alderman Gist, Alderman Johnson, Alderman Lavelle and Alderman Slade

DISCUSSION OF GREENE TRACT/ROGERS ROAD

The purpose of this agenda item was for a Board discussion of the Greene Tract in relation to the work of the Historic Rogers Road Neighborhood Task Force.

Trish McGuire, the Town's Planning Director, made the presentation to the Board.

A motion was made by Alderman Johnson, seconded by Alderman Slade, that this resolution be approved.

A RESOLUTION SPECIFYING BOARD OF ALDERMEN COMMENTS REGARDING DISPOSITION OF THE GREENE TRACT

WHEREAS, the Board of Aldermen participated in Historic Rogers Road Neighborhood Task Force Meetings and discussion of the Greene Tract at the December 6, 2012 Assembly of Governments; and

WHEREAS, the Board of Aldermen has previously adopted resolutions regarding the disposition of the Greene Tract; and

WHEREAS, possible alternative uses have been raised in discussions of the proposed utility district for the Rogers Road area and in relation to the Chapel Hill Small Area Plan for the Rogers Road area.

NOW, THEREFORE BE IT RESOLVED that the Board of Aldermen specifies the following comments regarding uses of the Greene Tract

- 1. The Board of Aldermen is not interested in selling the Greene Tract in its entirety and supports open space and affordable housing uses, as desired and appropriate, with slight adjustments to the acreages previously specified in their 2002 resolution (85.9 open space/ 18.1 affordable housing) to allow for a public school site.
- 2. The Board stated their desire to see on the order of 60+ affordable housing units.
- 3. The Board supports conservation easements on open space areas.
- 4. The Board stated that some additional area should be reserved along the railroad right-of-way to accommodate future expansion of the rail corridor.
- 5.The Affordable Housing Taskforce should follow-up with professional community development corporation representatives to discuss the possibility of affordable housing and mixed use together.

The motion carried by the following vote:

Aye: Mayor Chilton, Alderman Gist, Alderman Johnson, Alderman Lavelle and Alderman Slade

UPDATE ON THE TOWN'S SOLID WASTE OPERATIONS AND REQUEST TO AUTHORIZE THE TOWN MANAGER TO ENTER INTO AN AGREEMENT FOR A SOLID WASTE TRANSFER STATION

The purpose of this agenda item was to update the Board of Aldermen on the selection of a disposal site for municipal solid waste as a result of the Orange County Landfill closing on June 30, 2013.

A motion was made by Alderman Lavelle, seconded by Alderman Johnson, that this resolutoin be approved.

A RESOLUTION ACCEPTING THE TOWN'S SOLID WASTE OPERATIONS AND AUTHORIZING THE TOWN MANAGER TO EXECUTE AN AGREEMENT FOR A SOLID WASTE TRANSFER STATION

Section 1. The Board of Aldermen hereby accepts the town staff report updating the Board of Aldermen about proposed changes to the Town's solid waste operations in response to the closing of the Orange County Landfill on June 30, 2013.

Section 2. The Board of Aldermen hereby authorizes the Town Manager to negotiate and execute an agreement with Waste Industries for use of a Solid Waste Transfer Station; and execute amendments to or modifications of the contract, if necessary or appropriate, provided that such amendments or modifications are consistent with the general intent and purpose for which the contract is made.

Section 3. This resolution shall become effective upon adoption.

The motion carried by the following vote:

Aye: Mayor Chilton, Alderman Gist, Alderman Johnson, Alderman Lavelle and Alderman Slade

ROSSBURN WAY TRAFFIC CALMING REQUEST FOLLOW-UP REPORT

A follow-up report on traffic calming on Rossburn Way was presented to the Board of Aldermen.

A motion was made by Alderman Lavelle, seconded by Alderman Slade, that this resolution be approved.

A RESOLUTION RELATING TO TRAFFIC CALMING MEASURES ON ROSSBURN WAY

WHEREAS, the Board of Aldermen adopted the Residential Traffic Management Plan (RTMP) in June of 1996 to provide "a process for identifying and addressing existing problems related to speeding, excessive volumes, and safety on town-maintained residential streets"; and,

WHEREAS, a valid traffic calming petition, in accordance with the RTMP, was received from residents of the Kent Woodlands neighborhood in November 2010; and,

WHEREAS, a traffic evaluation was completed, and the Transportation Advisory Board made a recommendation, both of which were presented to the Board of Aldermen on October 18, 2011; and,

WHEREAS, at this meeting, the Board of Aldermen adopted a resolution recommending Stage 1 traffic calming measures and directed that research on potential Stage 2 measures be completed and presented to the Transportation Advisory Board, Town of Chapel Hill, and neighborhood residents; and,

WHEREAS, the Transportation Advisory Board has reviewed the aforementioned Stage 2 research and options; received feedback from neighbors; and made a recommendation to the Board of Aldermen; and,

WHEREAS, enforcement and education have been implemented with Town staff, working with neighborhood residents;

NOW, THEREFORE BE IT RESOLVED by the Carrboro Board of Aldermen that the Board receives the traffic calming report on Rossburn Way.

BE IT FURTHER RESOLVED that:

- 1. That Stage 1 traffic calming measures continue to be pursued as necessary.
- 2. That the following Transportation Advisory Board recommendations be included:
 - The Transportation Advisory Board recommends to the Board of Aldermen that the Stage 1 measures continue to be implemented;
 - 2. The TAB recommends that the Town communicate with the Police Department about conducting speed enforcement operations in the neighborhood between the times of 4:00 and 6:00 P.M., which is when the problem seems to be its worst;
 - The TAB has suggested to the neighbors that the license plate numbers of
 offenders be reported to the Police Department and that they ask the Police
 Department to follow up on those as anonymous reports;
 - The TAB has suggested that the neighbors invite the Police Department to speak at a neighborhood function about the speeding problem in the neighborhood;
 - After these actions have been done, the Town should evaluate speeds on that stretch of road

The motion carried by the following vote:

Aye: Mayor Chilton, Alderman Gist, Alderman Johnson, Alderman Lavelle, and Alderman Slade

REQUEST TO SET PUBLIC HEARING FOR MAJOR MODIFICATION TO THE CLAREMONT SOUTH PLANNED UNIT DEVELOPMENT CONDITIONAL USE PERMIT

Parker Louis, LLC submitted an application for a Major Modification to the Claremont South Planned

Unit Development Conditional Use Permit for the properties addressed as 1001 Homestead Road. Prior to reaching a decision on these requests, the Board of Aldermen must receive public input.

At the request of the applicant, this item was tabled.

H. MATTERS BY TOWN ATTORNEY

CLOSED SESSION - ATTORNEY CLIENT PRIVILEGE

MOTION WAS MADE BY ALDERMAN GIST AND SECONDED BY ALDERMAN JOHNSON TO ENTER INTO CLOSED SESSION. VOTE: AFFIRMATIVE ALL

ADJOURNMENT

MOTION WAS MADE BY ALDERMAN GIST AND SECONDED BY ALDERMAN LAVELLE TO ADJOURN THE MEETING AT 11:48PM. VOTE: AFFIRMATIVE ALL

ORANGE COUNTY BOARD OF COMMISSIONERS

RESOLUTION

To Designate and Create the "Headwaters Nature Preserve"

WHEREAS, Orange County owns 60 acres of land south of Eubanks Road, west of Purefoy Drive, north of Homestead Road and west of the North Carolina Railroad on the north side of Chapel Hill; and

WHEREAS, the location of this property makes it conducive for public open space and low impact recreation – including trails, picnic tables and wildlife viewing areas – for the surrounding neighborhoods and the Rogers-Eubanks community; and

WHEREAS, the Orange County Board of County Commissioners of March, 2000 – citing the natural resources present on site - expressed an intention to keep this 60 acres of land undisturbed; and

WHEREAS, a 2002 master plan for the adjoining 104-acre Greene Tract reflected open space as an important and contiguous future land use, and recent planning efforts for the Greene Tract continue to show open space and low-impact recreation as a recommended part of the mix of future uses; and

WHEREAS, the Orange County Board of County Commissioners adopted an FY 2016-17 budget that included funds to reimburse the Solid Waste Enterprise Fund for this property; and

WHEREAS, on September 8, 2016 the Board expressed a desire to move forward with designation of the 60-acre suite for open space and low-impact recreation.

NOW, THEREFORE, BE IT RESOLVED:

That the Orange County Board of County Commissioners hereby designates this 60-acre property as the "Headwater Nature Preserve' and take the following actions:

- 1. That this 60-acre property be assigned for use as publicly-accessible open space and low-impact recreation, with such usage to begin as soon as practical.
- 2. That this land be enrolled in the County's Lands Legacy Program, to be protected and conserved for this designated purposes.
- 3. That the County Manager and staff be directed to develop a plan for implementation.

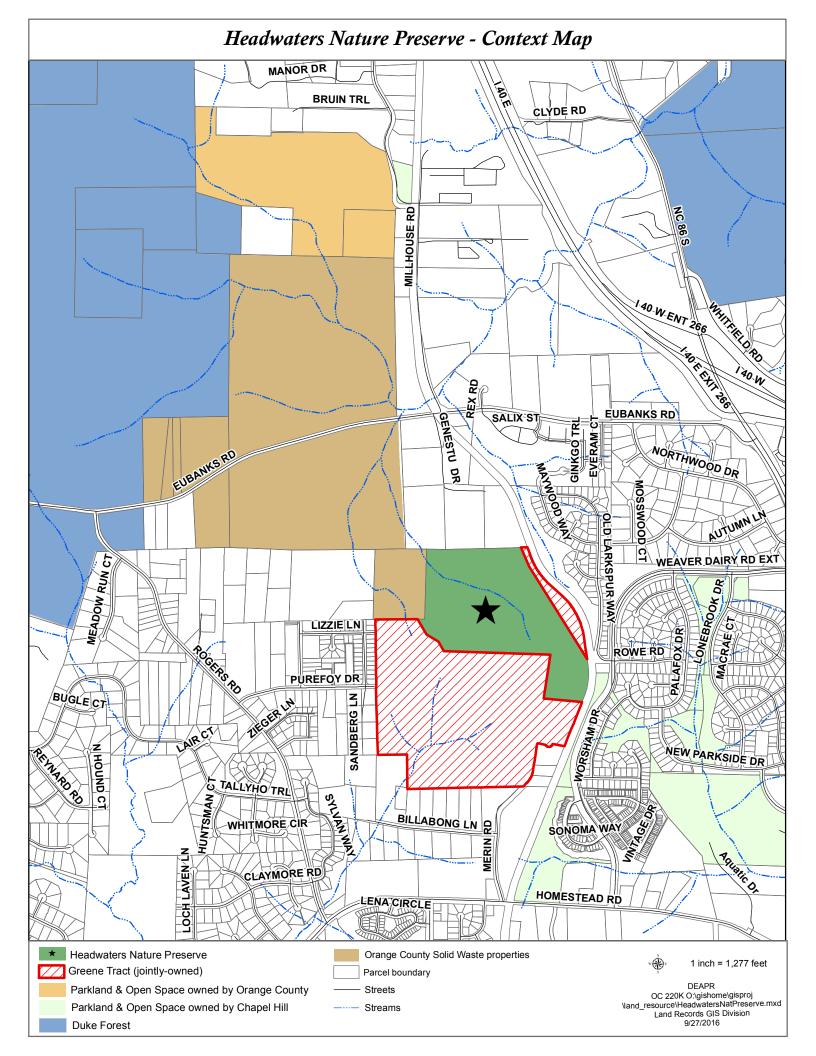
This the 18th Day of October 2016.

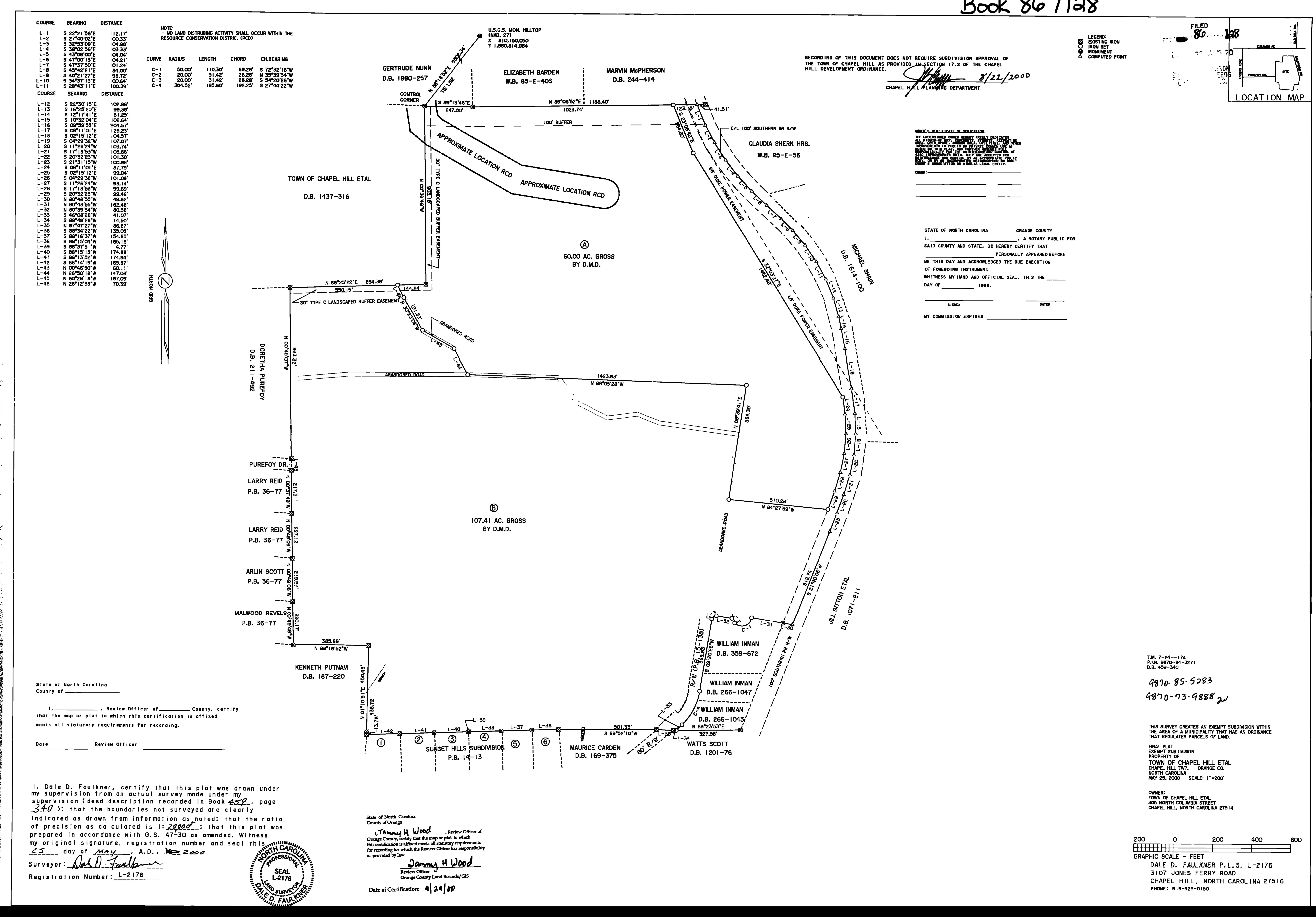


Earl McKee, Chair

Orange County Board of Commissioners

Mikee.







Town of Carrboro

Town Hall 301 W. Main St. Carrboro, NC 27510

Agenda Item Abstract

File Number: 16-328

Agenda Date: 11/15/2016 File Type: Agendas

In Control: Board of Aldermen

Version: 1

TITLE:

Community Climate Action Plan Follow Up

PURPOSE: The purpose of this agenda item is to provide a report to the Board on follow up activities

from the June 21, 2016 meeting for the draft Community Climate Action Plan.

DEPARTMENT: Planning

CONTACT INFORMATION: Patricia McGuire - 919-918-7327; Randy Dodd - 919-918-7326;

Christina Moon - 919 918- 7325

INFORMATION: On April 26th, 2016, the Board held a Public Hearing on a draft Community Climate Action Plan. In May and June, additional outreach was pursued that indicated general support for the plans recommendation along with support for adding a recommendation that endorses a plant-based diet. At the June 21st meeting, the Board directed staff to prepare the final plan incorporating possible changes including edits to incorporate Board of Aldermen review comments, plant-based diet information submitted as part of public input, and edits to incorporate other public input received. The Board also directed staff to meet with the Task Force to review edits prior to presentation of the final version to the Board of Aldermen, and to report on climate action benefits and implementation timing considerations.

Subsequently, staff has prepared the edits at the direction of the Board and coordinated language for a new recommendation on plant-based diets with Lindsay Paydon and Katherine Kershaw. To address other public input received, staff recommend that the public input summary prepared for the June 21 meeting be included as a new appendix in the draft plan. Staff shared draft edits to the plan with the Task Force and met with the Task Force on November 7th. Staff have also prepared a memo on the benefits of the plan and timing considerations for implementation.

Note that a placeholder is included in the draft plan for Transportation Recommendation #6. This item will be provided to the Board via email as soon as it is finalized. It will also be made available to the public and printed for the Board's seats on Tuesday night.

FISCAL & STAFF IMPACT: There are no costs associated with receiving this report. There will be a fiscal and staff impact with plan implementation. The extent of the impact will depend on prioritization of the plan's recommendations and implementation details to be determined. Additional study will be needed to consider potential funding sources and determine potential impacts on the tax rate.

Agenda Date: 11/15/2016 File Type: Agendas

In Control: Board of Aldermen

Version: 1

RECOMMENDATION: A resolution has been provided (Attachment A) for the Board of Aldermen to

accept the plan.

ATTACHMENT A

A RESOLUTION REGARDING THE COMMUNITY CLIMATE ACTION PLAN

WHEREAS, a temporary Energy and Climate Action Task Force was formed in 2014 to present community climate action planning recommendations; and

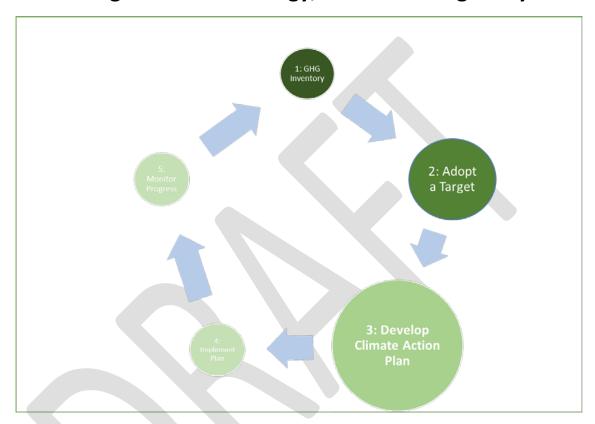
WHEREAS, the Task Force has presented drafts of a Community Climate Action Plan to the Board of Aldermen; and

WHEREAS, a Public Hearing to receive input on the draft plan was held on April 26th, and additional outreach and follow up actions have been pursued.

NOW THEREFORE BE IT RESOLVED by the Carrboro Board of Aldermen that the Aldermen accepts the updated Community Climate Action Plan.

Community Climate Action Plan

Reducing Greenhouse Gas Emissions, Saving Energy, Generating Renewable Energy, and Enhancing Ecosystems



Town of Carrboro, North Carolina

November 11, 2016

BOARD OF ALDERMEN

LYDIA LAVELLE, MAYOR

BETHANY CHANEY

JACQUELYN GIST

RANDEE HAVEN-O'DONNELL

DAMON SEILS
SAMMY SLADE

With support from the Carrboro Energy and Climate Action Task Force:

Carolyn Buckner, Jeff Herrick, Kathy Kaufman, Jeanette O'Connor, Rob Pinder

Acknowledgments

The Carrboro Planning Board, Environmental Advisory Board, and Transportation Advisory Board for sponsoring the Fall Forum series on Energy and Climate Action held at the Carrboro ArtsCenter in 2014 and their review of a draft of this plan.

The Carrboro Board of Aldermen for adopting a proactive climate protection resolution, and feedback on a draft of this plan.

Those who have worked to develop and support previous greenhouse house gas inventories for Carrboro and Orange County.

The many people and organizations in the community involved in climate action work.

<u>Lindsay Paydon and Katherine Kershaw for input into drafting of food/dietary related recommendations.</u>

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Executive Summary

In 2009, the Carrboro Board of Aldermen passed a resolution committing the Town to take steps to reduce emissions of greenhouse gases that are causing global climate change. In doing so, and through work leading up to the resolution with other Orange County governments, the Town joined a group of more than 1000 cities, towns and metropolises around the world who are taking part in the Cities for Climate Protection Campaign. The campaign follows a 'Five Milestone' process that includes a greenhouse gas (GHG) emissions inventory, establishment of an emissions reduction target, development and implementation of an action plan to reduce emissions, and monitoring of emissions reductions measures.

This document expands on previous efforts, with an emphasis on completion of the second milestone – further articulation of a reduction target, and the third milestone – the drafting of a Local Climate Action Plan. In 2014, Carrboro developed a plan focusing on the Town's municipal operations. This plan is a companion and follow up to that effort with an emphasis on measures that the broader community is asked to take in order to achieve GHG reduction targets. The recommendations offered are intended to reduce greenhouse gas emissions, while raising the community's awareness of and involvement in solutions to global climate change and a post-carbon energy future, adaptation to changes and enhancement of ecosystem resilience.

A significant recommendation of this report is for the Town and community to adopt a goal of a 50% reduction in greenhouse gas emissions by 2025, as supported by a broad community campaign. Additional recommendations are provided around the themes of community integration, energy efficiency of buildings, transportation, renewable energy, and ecosystem protection and restoration. Measures outlined in the Plan to reduce greenhouse gas emissions not only contribute to overall climate change mitigation, but can also provide the community with many local benefits such as financial savings through energy efficiency, the creation of new jobs, improved air quality and public health, and a healthier forest and streams.

The degree to which the broad campaign advocated for in this plan takes off will depend on many factors. The following direction is suggested to build momentum: 1) focused attention is needed to more rapidly reduce energy use in buildings; 2) the Town needs to devote more resources towards implementing the plan, starting with creating a Sustainability Coordinator position; 3) similarly, the efforts underway to increase transit, bicycling and pedestrian modes of travel as well as vanpooling, carpooling, and carsharing need to gain even more traction; 4) innovative efforts are needed to support residents with limited opportunities for renewable energy; 5) grass roots efforts and new partnerships need to be fostered; 6) the paradigm for local environmental/ecosystem protection and restoration needs to expand to consider the stress of climate change; and 7) last not but not least, individuals, businesses, and in effect the entire community need to take the recommendations in this report to heart.

Introduction

"Recognizing that all human economic activity is a subset of nature's economy and must not degrade its vitality is the starting point for systemic transformation of the energy system."

There is widespread scientific agreement that the increasing quantity of greenhouse gases (GHGs) in the atmosphere is causing temperatures to rise and increasing the frequency and severity of extreme weather events, and that human activities are the primary cause.² The accumulation of greenhouse gases is a major threat to the climate stability of the earth. Arguably, no other issue threatens our planet with such dramatic, far-reaching impacts, and no other issue is so clearly a worldwide problem. The world's leading scientists predict that, in the absence of radical societal change, global average temperature will rise from 2.7 to 11 degrees F. within our children's lifetimes. Already, effects of climate change are being seen, from melting of the Arctic permafrost, to the disappearance of glaciers worldwide, to rising sea levels around islands and other low-lying areas, and the acidification of oceans. Erratic weather and extreme events such as droughts, floods, heat waves, avalanches and hurricanes are becoming more common.

The primary cause of global climate change is the burning of fossil fuels such as petroleum, coal, and natural gas. These activities release gases such as carbon dioxide and methane that accumulate in the atmosphere and trap the sun's heat, thereby warming the earth – the so-called "greenhouse effect". The greenhouse effect is essential for life on earth, but rapidly increasing levels of greenhouse gases during the past 200 years are now destabilizing the climate. Average global temperature have already risen an unprecedented 1-2 degrees F during this period, and the impacts of emissions that have already occurred will take decades to cycle through ecosystems. Carbon dioxide concentrations in the atmosphere have reached their highest level in 160,000 years, and are rising at a rate 500 times higher than ever before in history.

Richard Heinberg, Senior Fellow of the Post Carbon Institute regarded as one of the world's foremost energy and climate action experts, says this: "The most important thing to understand about the energy transition is that it's not optional. Delay would be fatal. It's time to make a plan—however sketchy, however challenging—and run with it, revising it as we go." ³

In Carrboro, the effects of climate change over the next century are likely to be significant. They may include the migration of hardwood forests northward to cooler areas. We will have to cope with hotter summers and more frequent floods, droughts, and intense storms, with more money diverted to repair damage from these events. Our local ecosystems could experience a broad range of negative trends and losses, and ecological diversity will likely decline. All of the careful planning, stewardship of beautiful

¹ <u>The Energy Reader: Overdevelopment and the Delusion of Endless Growth,</u> Tom Butler, Daniel Lerch, and George Wuerthner, eds. (Healdsburg, CA: Watershed Media, 2012)

² http://www.townofcarrboro.org/DocumentCenter/Home/View/1213

³ http://www.yesmagazine.org/issues/life-after-oil/100-renewable-energy-what-we-can-do-in-10-years-20160222

natural places, promotion of biodiversity, and other crucial work at the local level will be rendered meaningless if we cannot stave off the worst consequences of climate change. As members of the world community, we will have to deal with challenges involving food security, human health, and scarce resources. Humanity is beginning to respond to the unprecedented transition from the industrial era to the era that is to follow. Local governments and communities can address the challenge and opportunity of the transition and specifically reducing greenhouse gases in a number of creative ways.

The 2014 Orange County State of the Environment⁴ report provides a similar message:

"A report focused on Orange County alone also risks underemphasizing global climate change, the most pressing environmental threat we face. Our use of fossil fuels here, whenever we start a car engine or run our air conditioners, adds to the accumulation of carbon in the atmosphere that is rapidly destabilizing our climate. In 2012, leading climate activist and writer Bill McKibben summarized how close we are to reaching the limits of our carbon budget: Scientists estimate that humans can pour roughly 565 more gigatons of carbon dioxide into the atmosphere by midcentury and still have some reasonable hope of staying below two degrees [Celsius] increase in global temperature. ("Reasonable," in this case, means four chances in five, or somewhat worse odds than playing Russian roulette with a six-shooter)....Reaching or surpassing that two degree rise in average global temperatures risks catastrophic consequences for our ability to grow food, maintain access to drinking water, and generally perpetuate human civilization as we now know it."

Beyond Doom and Gloom

What we're for is leaving behind the current energy economy, which is wasteful, polluting, and centralized; assumes perpetual growth; and is anchored by nonrenewable fuels. We envision a bold leap toward a future energy economy that fosters beauty and health; that is resilient because it emphasizes renewable, community-scale energy generation; that supports durable economies, not growth; and that is informed by nature's wisdom.⁵

The previous section presents a stark, sobering, and ominous picture and one that we all need to acknowledge and recognize. However, only laying out the danger associated with climate change neglects humanity's capacity, ingenuity, and adaptability. It also can be counterproductive by effectively triggering a "fight and flight" response, or being received as a judgment for denial and lack of action. The reality of climate change also presents tremendous opportunity for transition to living in a more satisfying, resilient, and connected community that is less reliant on fossil fuels. ⁶ In addition, some measures are often necessary and/or more effective at the municipal/community level than at other levels. This plan is intended to inspire this community and others to accelerate and ramp up efforts, and begin to make significant reductions in the level of climate-changing gases now being produced.

http://www.orangecountync.gov/document_center/DEAPR/2014_SOE_complete_report.pdf

⁵ <u>The Energy Reader: Overdevelopment and the Delusion of Endless Growth</u>, Tom Butler, Daniel Lerch, and George Wuerthner, eds. (Healdsburg, CA: Watershed Media, 2012)

 $^{^{6} \, \}underline{\text{http://www.wri.org/news/2014/10/release-new-analysis-highlights-opportunities-economic-gains-climate-action-united} \\$

The Cities for Climate Protection Campaign and the Five Milestone Process

The Cities for Climate Protection (CCP) campaign is a global project led by the International Council for Local Environmental Initiatives (ICLEI), a membership association of local governments dedicated to addressing global environmental problems through local action. The CCP was established by ICLEI in 1993 at an international summit of municipal leaders. The CCP has engaged many municipal governments in North Carolina, the U.S and abroad in a worldwide effort to slow the earth's warming. The CCP campaign follows a 'Five Milestone' process (Figure 1).

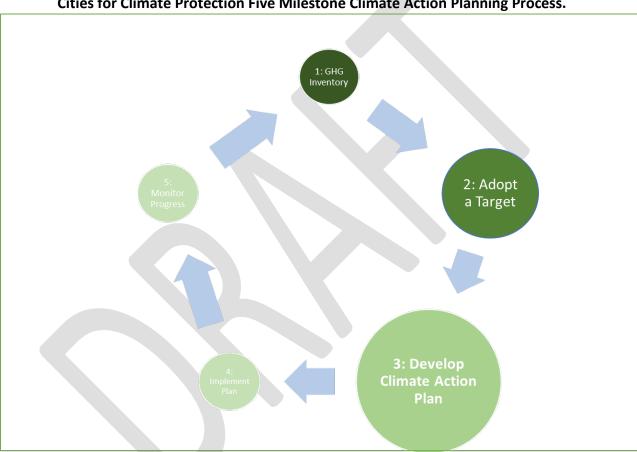


Figure 1:
Cities for Climate Protection Five Milestone Climate Action Planning Process.

The size of each circle indicates the relative emphasis in this plan. The darkness indicates the amount of attention already given to each milestone based on work in Carrboro over the past decade, as discussed in the text.

The Greenhouse Gas Emissions Inventory⁷

Carrboro collaborated with other jurisdictions in Orange County and ICLEI to complete the first county-wide Greenhouse Gas Emissions Inventory for the baseline year of 2005. In 2011, a UNC Capstone Team completed a community scale inventory specifically for Carrboro based on data for 2009. Every year beginning in 2012, the Town has updated the municipal operations inventory, and in 2015, a second UNC Capstone Team updated the community inventory based on data for 2012 and assisted the Town in entering the inventory data into the ClearPath software which will help the Town with future climate action planning steps. These inventories help establish a baseline and guide the community to develop and implement strategies to mitigate emissions by understanding the sources and quantity of emissions. They also provide a means to monitor changes over time.

Establishing Emissions Reductions Goals

The county-wide inventory included an initial attempt to identify potential goals in terms of "tiers" of "least aggressive" to "most aggressive" climate action strategies. In 2009, the Board of Aldermen passed a resolution resolving that the Town "will seek, and will facilitate the community at large, to cut CO_2 emissions by its proportion of the amount which is required to stabilize the climate back to <350 ppm of CO_2 ..., and asks staff to evaluate how to achieve this target for municipal operations and the community". ⁸ As part of municipal inventories, annual reduction goals of 2-7% have been discussed and the 2014 plan set a goal of a reduction in emissions from municipal operations on the order of 5-10% within a 2 year time frame. Other notable climate goals are listed in the table below. ⁹ In its Clean Power Plan to reduce carbon dioxide emissions in the power sector, EPA has set a unique target emissions rate for each state to achieve by 2030. 8 states are asked to reduce emissions by 41%-50%, 24 states are asked to reduce emissions by 31%-40%, and the remainder of the states are asked to reduce emissions by 30% or less. 8 large US cities have signed on to the Carbon Neutrality Alliance.

⁷ More information on previous inventories is available on the Town's website: http://www.townofcarrboro.org/271/Greenhouse-Gas-Inventories

⁸ 1990 is when global CO₂ concentrations first surpassed 350 ppm. To date, Carrboro emissions have not been estimated for 1990. Town staff have asked those providing support with completing emissions inventories to attempt to estimate emissions for 1990. The uncertainties due to the lack of data and difficulty deriving credible assumptions have proven too great to complete this task. It is certainly hypothetically possible to "backcast" emissions. For example, some factors could lead to lower per capita emissions such as industry/technology standards (e.g. more efficient vehicles, buildings, and appliances), more availability of transit and bicycle and pedestrian infrastructure, economic factors leading to changing behavior (e.g., fuel costs), and growing awareness and concern. Other factors could lead to higher per capita emissions, such as suburbanization, less affordable housing locally, and social/cultural norms and consumer choices with higher footprints (e.g., larger vehicles and homes and less active lifestyles and more emphasis on comfort and convenience) leading to more single occupancy vehicle trips, vehicle miles traveled (this has been documented) and use of fossil fuels. Assumptions could also be derived from national/international reports, however the bias that could be introduced is uncertain.

⁹ Appendix 2 outlines a hypothetical example of a "typical" American household becoming carbon neutral in 10 years.

Table 1: Examples of Climate Action Goals

Scale	Entity	Reduction Goal	Date
National/Countries	United States	26 - 28% of 2005	2025
	Department of	30% reduction in energy use; 20% of energy	2020
	Defense	from renewable sources	
	China	20% of energy from non-fossil sources	2030
States	California	40%	2030
Cities	Seattle	Net zero/climate neutral (community)	2050
	Asheville	80% from 2011 (4%/year; municipal)	2030
	Chapel Hill	60% of 2006 ¹⁰	2050
	Durham	30% (community) 50% (municipal) of 2005	2030
	Boulder, CO ¹¹	80% (community)	2050
Businesses	Weaver Street Market	Net zero via efficiency, rooftop solar,	2020
		purchased green power	
Utilities	OWASA (2015 draft)	35%/5% reduction in purchased	2020
		electricity/natural gas (2020 vs. 2010)	
		Pursue biogas to energy and renewable	
		energy projects	
Universities	UNC	Net zero/climate neutral	2050
	Warren Wilson	80% of 2007/8	2020
	College		

One purpose of this Plan is to provide a new recommendation on a community scale emissions reduction goal. Climate action goals can be framed in a variety of ways to best meet a particular entity's needs and values. The Energy and Climate Action Task Force has recommended that Carrboro's Climate Action Goal: meaningfully reduce greenhouse gas emissions at a time scale that is urgent; encourage growth and shared prosperity; and be able to be measured and certified. With these criteria in mind, the Task Force has recommended this Carrboro Climate Action Goal:

It is recommended that Carrboro adopt the goal of a 50% reduction in per capita greenhouse gas emissions by 2025. We recommend a goal to cut the carbon footprint in half over the next 10 years for the entire community, Town operations, the buildings and transportation "sectors", and ultimately each resident and business.

¹⁰ Reduction is on a per capita basis. Interim goals are 5 percent by 2010, 10 percent by 2015, 20 percent by 2030, 30 percent by 2040; 45 percent by 2045, and 60 percent by 2050.

¹¹ Appendix 1 provides more information on the leadership Boulder is providing with local climate action.

This goal is a meaningful reduction in carbon/greenhouse gas pollution that is consistent with the scientific recommendations calling for the large emission reductions needed to reduce the risk of dangerous climate change. It is both ambitious and achievable with the support of the Town and community. It is framed in per-capita terms to recognize that Carrboro continues to attract new residents and businesses and to make it easy for any individual, business, or organization to measure and demonstrate their progress toward the goal. Investments in energy efficiency and renewable energy offer very favorable returns and substantial reductions in energy costs. This can power a virtuous cycle, where more energy costs are reduced and more income is available for local consumers and businesses.

It is possible that many people will sense that the goal is too ambitious: too much change too quickly. Richard Heinberg recently concluded that, globally, we can achieve at least a 40 percent reduction in carbon emissions in 10 to 20 years." While there are challenges (e.g., dropping petroleum prices, technology advances allowing for new extraction practices), there are also external factors that will help, most notably a rising global awareness and conviction. Solar power is accelerating; fuel economy standards will likely continue to reduce gasoline use. The proliferation of more energy efficient lighting, appliances and heating/cooling equipment is already reducing household energy use, and transportation options with smaller emissions footprints are expanding.¹²

The Local Climate Action Plan

The U.S. Department of Energy has developed a "Guide to Community Strategic Energy Planning" that identifies two types of planning efforts: one focusing on the government operations and one focusing on the community at large. The former: includes a focus on government buildings, facilities, infrastructure, and transportation; concentrates on activities for which the government has direct influence – e.g., personnel, planning, and budgeting – which means tighter control over implementation. The latter (community-wide plan) is a broader plan to address activities that: expands the focus to include energy saving activities across the jurisdiction (residential, commercial, industrial, transportation, and other sectors) of the broader community; recognizes that, while local government actions can greatly influence, energize, and leverage effective activities in the broader community, the government has less direct control over these activities in comparison to a government-only plan. This plan focuses on the community-wide plan.

¹² Appendix 2 provides a hypothetical example of how a household can become carbon neutral in 10 years. Appendix 3 presents a discussion of how to approach this goal from a social and psychological perspective.



The measures recommended below provide the basis for the first comprehensive community scale climate action plan specifically for Carrboro. They are a companion to measures presented in the 2014 plan that focused on municipal operations. Other local governments and agencies and UNC continue to be engaged in similar locally relevant efforts ^{13,14,15}. To emphasize, the Task Force has recommended that the Town pursue a two-part climate action strategy. Strategy 1 is to provide leadership by following through with the recommendations outlined in the 2014 report. The Town of Carrboro efforts to reduce emissions sets an example for residents, businesses, and institutions. Strategy 2 is to further develop a community based initiative as detailed in this document and guided by the recommended Carrboro Climate Action Goal in tandem with a goal to protect and restore local ecosystems. Details for how to pursue these broader goals is provided in the following sections, starting with the critical element of the mobilization of the Carrboro community in support of the goals of this plan.

Community Integration

"Local" climate action planning has important but limited influence within a personal to global continuum (Table 1). The collective choices, behaviors, norms, requirements, and plans and agreements at lesser and greater social scales than that of a town of ~20k people arguably have greater influence on GHG than the municipal/community scale. A very large share of the GHG footprint in the community occurs because of the collective impact of private decisions made by residents and businesses for which the Town has very limited involvement and oversight, and also within a global social context and the constraints of state, federal, and international laws, regulations, agreements and corporate (large scale) decisions. In terms of other levels of organization and governance and how they interact with community scale climate action planning, the following are important (and in some cases unique) points in Carrboro and indicate the Town's interdependence with many other entities in pursuing climate action planning:

¹³ http://www.townofchapelhill.org/town-hall/departments-services/planning-and-sustainability/sustainability

¹⁴ http://www.owasa.org/energy-management

¹⁵ https://climate.unc.edu/GreenhouseGasInventory

- 1) The Chapel Hill-Carrboro City School system and OWASA both have separate policy, fiscal, and administrative processes from the Town, and therefore, different boards and staff. They also have larger emissions, facilities and operating budgets than Carrboro has, and therefore, an ability to have a greater influence on emissions reductions;
- 2) Transit is a public service that has the ability to significantly mitigate emissions. Chapel Hill Transit is a cooperative effort between Carrboro, Chapel Hill and UNC; GoTriangle is a multicounty/regional transit authority serving over a million people;
- 3) Currently, Carrboro on its own has very limited influence on larger electricity and natural gas utilities. Duke Energy provides electrical service to over 90% of Carrboro. Carrboro is also served by Piedmont Electric Membership Cooperative, which buys its electricity from Duke for resale. PSNC is the local natural gas provider. This is in contrast to local governments operating municipal utilities.
- 4) Carrboro's largest emissions sector is buildings, with most building emissions being residential, and most of the residential building sector being non-owner occupied. Oversight by the North Carolina Utilities Commission, management by the above utilities, and regulation by building codes (which are established at state/federal levels) are strong non-market/public sector drivers that influence emissions from buildings. Landowner and landlord management and decisions are strong private sector drivers. Social/cultural norms influence both public and private sectors.
- 5) The Town has very limited oversight of Homeowners Associations (HOAs) (less in fact than the state of North Carolina). Carrboro did recently update regulations to limit new HOAs ability to constrain an individual homeowner's desire to pursue sustainability measures.

Table 1: Local Climate Action Planning is One Layer in a Continuum 16

Organizational Scale	General Scale	Climate Action
Examples	(population)	"Primary Domain" Examples
Personal	1 person	Personal choices (e.g., dietary, housing, transportation, vocation, financial, consumer)
Household/family	~2-10 people	"Home economics" (e.g., housing, transportation, landscaping/gardening, financial, consumer)
Neighborhoods, small	~10-100	Small organization organizing, management, fossil fuel
businesses, clubs,	people	divestment
nonprofits, congregations		
Schools, co-ops, larger clubs,	~100-1000	Business/organization planning and management; fossil
businesses, congregations,	people	fuel divestment
corporations		

¹⁶ This table does not fully address continuums of access to capital and decision making authority, nor to sociological and cultural dimensions; all add complexity. The point of this table is to illustrate that climate action transcends all scales, and to help define the "space" in which community scale climate action planning occurs.

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Small towns, colleges, co-	~1k-10k	Sustainability plans; land use and transportation; local
ops	people	living economy; fossil fuel divestment
Towns, small utilities,	~10k-100k	Local climate action plans; land use and transportation;
universities	people	local living economy; fossil fuel divestment
Cities, medium utilities,	~100k-1M	Local climate action plans; land use, transit/transportation;
counties	people	local living economy; fossil fuel divestment
Regions, states, large	~1M-10M	Transit/transportation/utility policy and regulation; State
utilities/utility commissions	people	law; Building Code; fossil fuel divestment
Nations, international	~>10M	Climate summits/agreements; carbon pricing; IPCC;
	people	building code; federal laws; trade agreements;
		multinational corporate policy; fossil fuel divestment

- 6) At a municipal scale, Carrboro's "primary domain" or area of most effective focus for local climate action planning could be in partnership with organizations and entities operating at a similar scale. Similarly, for work in the community, it is important to establish initiatives and measures that work at the appropriate scale, and to bridge gaps across the different scales.
- 7) The community sector accounts for 93% of greenhouse gas emissions within Carrboro; the remaining 7% comes from local government operations. Significant community buy-in in every aspect of this plan is essential for emissions reduction and climate change mitigation.

Recommendations are offered in this section that focus on grassroots/neighborhood scale efforts and enhanced Town and community capacity for supporting a variety of climate actions. The recommendations are integrative in that they apply to all of the other recommendations provided, and are focused on community enhancement and participation.

<u>Community Integration Recommendation #1: Create Grass Roots Partnerships</u> <u>to Engage Community</u>

Create new Grass Roots Partnerships and Engage Community to be a Part of the Solution

Widespread community participation is needed to meet the emissions reduction and climate change mitigation goals of this plan. Carrboro is fortunate to have many local groups already involved in environmental outreach and climate action. In addition, many successful models for community engagement in climate action can be adapted and used here. While these are mostly grassroots efforts, leadership is needed to coordinate, adapt, promote, and sustain efforts over the long term.

Implementation Opportunities	Many local and other groups are involved in environmental outreach and/or climate action. These include but are not limited to Transition Streets, Pete Streets, NW Earth Institute community action courses, the Solarize Carrboro model, Awakening the Dreamer Symposiums and Game Changer Intensive, K-12 Sustainability Curriculums (Chapel Hill-Carrboro City Schools is currently developing a local version), Grey to Green Initiatives, HEAT (Heat Energy Assessment Technologies), Meatless Monday Communities, Backyard Wildlife Habitat Certification Programs, and Incentive Programs. Carrboro can adapt and use programs with proven track records for community engagement.
Implementation Challenges	 Who will bring partners together? Who will recruit and train community facilitators? How can diverse populations be reached? Who will modify programs if needed? How will engagement/momentum be sustained considering the relatively transient population? (59% of Carrboro's residential properties are rentals).
Resources Needed (human and material)	 Money for education and promotion materials. Leadership ideally from a nonprofit, along with Town staff. Support such as technical assistance and loans or grants for low-income households, stakeholder incentives, etc.
Leadership	Grassroots but will need a leader or nonprofit organization to adapt, promote, and sustain efforts. A town sustainability coordinator would be ideal.
Partners	Pickards Mountain Eco-Institute, Chapel Hill-Carrboro City Schools (including District Sustainability Group and Student Environmental Groups), UNC Sustainability Program, Orange County Solid Waste Program, NC Cooperative Extension Service, Chapel Hill Sustainability Officer and Committee, Transition Carrboro- Chapel Hill, NC Botanical Gardens, Carrboro Greenspace, Carrboro Bike Coalition, Solarize Carrboro, Carrboro Farmers Market, Irvin Learning Farm and Nature Center, NC Sierra Club, Friends of Bolin Creek, Morgan Valley Alliance, Home Builders Association of Durham, Orange, and Chatham, Neighborhood Homeowners Associations, Faith Based Environmental Groups, Carrboro Farmers Market, Carrboro Business Alliance, businesses, utility providers, Homeowner associations, former Pete Street participants and more
Fit with Items	Every section of this Action Plan
Time Frame	This can move forward as soon as leadership is identified. The time frame for a Sustainability Coordinator on board is a key factor.
Next Step(s)	 Identify partners; Bring partners together and choose programs; Modify programs for Carrboro if needed; Work with partners to recruit and train diverse group of facilitators. Pilot program in facilitator's neighborhoods Debrief with pilot neighborhoods and modify programs as needed. Install neighborhood and/or town wide dashboard to show progress, and build a climate change action oriented community.
Evaluation Criteria	People reached. Energy saved. Forest and soil protected or gained.

<u>Community Integration Recommendation #2: Expand Public Partnerships to More Explicitly Consider Climate Action</u>

Pursuing Carrboro's Climate Action Goals Will Require Expansion of Current Partnerships and Creation of New Partnerships.

As a small town with limited capacity and jurisdiction and many existing partnerships, it makes sense for Carrboro to work cooperatively with a variety of partners to pursue Carrboro's Climate Action goals. In some cases, it may be possible to emphasize these goals through existing partnerships, and in other cases, it could make sense to create a new partnership. Collaborating with other local public sector partners has particular appeal. Examples of opportunities through both existing and new partnerships are discussed below and elsewhere in this report and summarized in the table.

Developing a partnership for improved energy efficiency of buildings is a special challenge. Carrboro and Chapel Hill, with support from federal stimulus funding and the Southeast Energy Efficiency Alliance, put considerable effort towards creating an energy efficiency alliance between 2010 and 2013 that has not come to fruition. Progress on this in the absence of clear interest and initiative from utility providers and partners may be difficult. In the short term, less ambitious efforts such as focusing on commercial and municipal buildings and focusing on other recommendations provided in this plan may be preferable to attempting to create an alliance. Local staff working on sustainability initiatives have recently begun to more specifically explore collaborative possibilities; it's likely some new recommendation(s) will emerge.

Implementation Opportunities	Existing and new partnerships could support improved building energy efficiency, transportation, renewable energy, community scale composting, and environmental community goals. Examples of existing partnerships include Chapel Hill Transit/Partners Committee, OWASA, Chapel Hill-Carrboro City Schools, Orange County Solid Waste/Solid Waste Advisory Group, GoTriangle, Durham/Chapel Hill/Carrboro Metropolitan Planning Organization. Examples of new partnership opportunities include: creating a building energy efficiency alliance; expanding car/bike/ride sharing and transit services; partnership at the nexus of water supply and wastewater/energy; stormwater utility across municipal boundaries; county/regional scale sustainability partnership (either
	general or more focused, e.g., on public buildings and/or renewable energy installations); downtown geothermal partnership.
Implementation Challenges	Attempt through WISE program to create Regional Energy Alliance was unsuccessful and indicates general challenges in working in buildings sector Unclear as to interest from others in partnering Town has limited capacity to investigate and work with local partners to pursue these programs on its own. New funding may be needed in some cases
Resources Needed (human and material)	Staffing and funding
Anticipated Cost	Cost of additional staffing/contracting to coordinate
Leadership	Board of Aldermen; staff managers; staff
Partners (selected)	Chapel Hill-Carrboro City Schools, UNC Sustainability Program, Orange County Solid Waste Program, Chapel Hill Sustainability Committee, OWASA, NC Botanical Gardens
Fit with Items	Many of the other recommendations depending on details
Time Frame	Exploration can begin immediately. Some partnerships will take longer to develop.
Next Step(s)	Staff and Board of Aldermen to consider in operating budget development and community champions to self-identify
Evaluation Criteria	Track adoption of efficiency measures incentivized by programs facilitated/supported by the Town.

<u>Community Integration Recommendation #3: Create Green Neighborhood Program</u>

Create Participatory Green Neighborhood Budgeting Program to Reduce Carbon Emissions, Build Community, Save Money and Reallocate Savings to New Green Project Initiatives

It is proposed that Carrboro create a new program that will identify projects to offer neighborhoods that will save the Town money and make the neighborhood's proportion of saved monies available to them to reallocate to new green project initiatives through a participatory democracy process.

T	
Implementation • Opportunities	Enlists and engages neighborhoods in efforts to reduce CO ₂ emissions in community-at-large
•	Builds community within neighborhoods
	Neighborhood based economic development opportunities may spin-off
	Possibility of creating a community scale "dashboard" that tracks energy
	use/emissions/savings
	· · · · · · · · · · · · · · · · · · ·
•	Recycling and composting successes translate into savings associated with
	less frequent trash pick-ups
•	Composting reduces trash headed for the landfill = cost savings + reduced methane gas
	Neighborhood competitions awards program
	Can boost initiatives such as Solarize; Energy Efficiency / Pete Street; Street
	Lights off for Climate t Project
Implementation •	Identification of mechanism for Town to allocate saved funds to
Challenges	neighborhoods
Chancinges	Development of participatory democracy process and criteria for new
	green project initiatives
	Marketing for participation of neighborhoods
	Availability for multi-family complexes?
Decaywas Mandad	
Resources Needed •	Full time person managing neighborhood portfolios and facilitating
(human and material)	neighborhood efforts
•	Common spaces per neighborhood (i.e. for centralized neighborhood
	composting, solar panels, etc.)
•	Educational campaign on opportunities for greening ones neighborhood
Anticipated Cost •	Cost of full time person in charge of managing program
•	Marketing
Leadership Ne	eighborhood leaders
Partners •	Homeowner associations
•	Next Climate
•	Former Pete Street participants?
•	Town staff
•	Businesses
	Local building supply companies
	Solar installers
	Weatherization installers

	Local nurseries	
	Local landscapers	
	Non-profits	
	Orange County Solid Waste Management – composting	
Time Frame	Will depend on identification of leadership	
Fit with Items	Many of the other recommendations	
Next Step(s)	 Presentations laying out town's CO₂ responsibilities as measured through social equity lens and the urgency of CO₂ reduction per the latest science Town-wide initial presentation followed by Presentations to neighborhoods that want to engage in green neighborhoods initiative Create process for developing further program ideas and mechanism for neighborhoods to initiate Set neighborhood CO₂ reduction goals in line with town's at large goal Town recognizes savings achieved through existing green initiative successes and allocates these for neighborhoods to use proportional to neighborhood's impact in making the savings. (recurring) Identify further potential programs and their contributions to reducing CO₂ for the neighborhood (ongoing) Develop neighborhood green participatory democracy process and criteria for new green project initiatives Develop way for town to allocate funds Support and facilitate neighborhoods participation Awards program for neighborhoods achieving biggest reductions per energy sector (Trash, Transportation, Housing) 	
	4. On-street parking park and ride permits?	
Evaluation Criteria	People reached. Energy saved. \$ reallocated.	

<u>Community Integration Recommendation #4: Integrate Climate Action with</u> <u>Local Living Economy</u>

Integrate Climate Action Implementation Opportunities identified in this Plan into the Update of the Local Living Economy Task Force Report

From 1990 to 2008 the rise in emissions from goods produced in developing countries but consumed in industrialized countries was six times greater than the emissions savings of industrialized countries. The international transportation of goods is not formally attributed to any nation and countries are not responsible for pollution produced by the manufacturing of goods that are shipped to their shores; those are attributed to the country where the goods were produced.

The Carrboro Local Living Economy Task Force Report enumerates many reasons why support of locally owned businesses is vital, including that locally owned businesses have less environmental impact. This recommendation identifies some of the means by which both locally owned businesses and a habitable climate can be simultaneously and further supported.

Integrate implementation opportunities into the update of the Local Living
Economy Task Force report:
1) Include climate change mitigation in local living economy/locally owned
marketing messaging
2) Encourage light manufacturing zone in Carrboro,
3) Set-up PACE program for commercial buildings to implement renewable
energy.
Time is running out to mitigate climate change!
New Town Sustainability Coordinator
Cost of hiring staff
Town of Carrboro
Carrboro Business Alliance,
Town businesses
Carrboro Economic Sustainability Commission,
Carrboro Economic Development department,
Carrboro Business Alliance,
County ¼ cent sales tax economic development monies
Some steps can be pursued immediately, others will take longer
Local Living Economy Task Force report and update,
Implementation of locally owned first campaign,
Downtown geothermal heating district
Commercial energy improvement revolving loan fund
Further develop each identified implementation opportunity
The locally owned economy campaign is understood as also being a climate
change mitigation strategy by the Carrboro community

Community Integration Recommendation #5: Expand Capacity

Expand Capacity to Pursue Community Sustainability Initiatives

Expanded capacity and prioritization and integration of climate action into community life are needed to implement this plan. A strong recommendation of this plan is that the Town hire a Sustainability Coordinator charged with helping implement the plan. The above recommendations (1-4) along with additional recommendations in the sections that follow in this plan will also support expanded community capacity. An online resource hub could also be created.

Implementation	Additional capacity/initiative could facilitate non-profit/ business partnerships
Opportunities	to improve energy efficiency in the community, publicly recognize successes,
	and more effectively pursue grants. A community grant program could be
	initiated.
Implementation	Currently, Town has limited capacity to investigate and work with local
Challenges	partners to pursue these programs.
	Ability of community advocates to organize
	Community organizing requires dedicated volunteers; not clear if sufficient
	interest exists
	Funding to help residents interested in retrofits
	• Staff capacity is currently limited to support a new advisory board/task
	force
Resources Needed	Additional community volunteers and staff capacity
(human and material)	
Anticipated Cost	Cost of staff and any operating budget.
Leadership	Board of Aldermen, Town staff, and community volunteers
Partners	None specific to this recommendation
Time Frame	As soon as possible
Fit with Items	Many of the other recommendations
Next Step(s)	Staff and Board of Aldermen to consider in development of operating budget
	and community champions to self-identify
Evaluation Criteria	Track adoption of measures facilitated/supported by the Town.

<u>Community Integration Recommendation #6: Facilitate Low Cost Financing for Energy Efficiency and Renewable Energy Projects</u>

Pursue Alternative/Long Term/Low Cost Financing Approaches

Energy efficiency and renewable energy projects often require low cost/long term financing to be attractive since a short simple payback time can be hard to achieve; savings are realized over longer time frames. Two specific new financing approaches are suggested. The first is to utilize Qualified Energy Conservation Bonds (QECB), which may provide Carrboro and partners with access to low-cost financing

that help projects become financially viable. The second is to make this low-cost financing available for community projects using a revolving loan fund or Property Assessed Clean Energy (PACE) financing.

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Implementation Opportunities	Many of the recommendations listed in this report require low-cost financing. For example, QECBs could provide seed funding for
	efficiency improvements to public buildings
	a revolving loan fund for community projects
	 Property assessed clean energy (PACE), a program where the loan is paid using assessments on the property tax bill
	low cost financing for home energy efficiency projects for community members who have difficulty qualifying for traditional financing
Implementation Challenges	 Reluctance to take on debt Clarity about how to use the complex QECB mechanism to obtain state/federal approval Capacity and expertise to issue bonds Community financing via PACE or a revolving loan fund can have low community participation because (i) onerous loan application process requiring a lengthy municipal approval process, and (ii) maximum loan amounts that are set too low to fund an entire project with one loan.
Resources Needed	 Bond issuance process can be lengthy and the Town would need expertise Would be coordinated with other programs that need financing
Anticipated Cost	The cost of low interest debt financing
Leadership	While QECBs have been used in municipalities outside of NC, within North Carolina these bonds have been limited to agricultural programs. There would be some learning required by the Town to get the bonds issued. Also, a PACE program has not yet been implemented by any NC municipality.
Partners	NC Clean Tech Center, UNC Environmental Finance Center, other local governments
Fit with Items	Many recommendations could benefit from low-cost financing
Time Frame	Exploration could begin immediately. For a higher probability of moving forward, either a Sustainability Coordinator or championing by the county or another entity will likely be needed.
Next Step(s)	Identify and/or recruit nonprofit organization/local champion to: Identify project/revolving loan fund that could benefit from QECB Pursue bond issuing process
Evaluation Criteria	Life cycle costs and net present value

<u>Community Integration Recommendation #7: Integrate Climate Action and Social/Equity Initiatives</u>

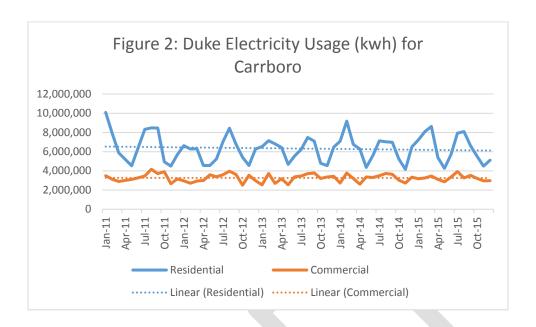
Low income households spend 24% of their income on energy costs. To make housing affordable, we must do more than just lower mortgage payments/rent. We also need to take a look at how to lower utility bills. The installation cost of solar has dropped precipitously in recent years and more and more middle and upper class households are taking advantage of this opportunity to both use clean energy and save money. However, the switch to solar is made easier by income tax credits and access to financing. Both of these are often not available for lower income/wealth households. The mechanisms to make energy more affordable are federal grants, community programs, and Town initiatives/ordinances.

Implementation Grants: In July 2015, the federal government announced increased grant Opportunities and loan guarantee funding for solar installations on "federally assisted housing". This includes HUD's rental housing portfolio (Public Housing, Multifamily Assisted) and USDA's Rural Development Multifamily Programs, as well as rental housing supported through the Low Income Housing Tax Credit (LIHTC). More information is available at the HUD exchange webpage: www.hudexchange.info Community programs: Community programs have worked to improve energy efficiency and renewable energy access for low-income communities. One example is *Grid Alternatives*, a non-profit that develops solar for low-income, single family homes by deploying donated materials and simultaneously running a training program to complete the installation. The result is lower energy costs and a more skilled workforce. Another example is Grid Free NC, a solar company in Chatham County that has partnered with Habitat for Humanity to develop solar for low income families. Town initiatives/ordinances: When assessing affordability, include the utility costs. Town-led initiatives that improve affordability and livability are preferred over bare-minimum construction. Efficiency improvements with little monetary benefit are not be preferred. For new development or substantial retrofits, the Town could offer leniency on other requirements in exchange for improvements to energy efficiency. For example, the Town could offer a density bonus or fewer required parking spaces in exchange for meeting a higher standard of energy efficiency. Implementation Requirements and construction standards seek to improve the safety and Challenges longevity of buildings. However, such requirements should be crafted with care, as increases in cost of construction or delays in the approval process can make housing less affordable. Federal grants only cover a small portion of affordable housing units. **Resources Needed** Grant applications development Facilitating community programs through seed or matching funding

Anticipated Cost	Variable, depending on Town commitment
Leadership	Town staff and community programs
Partners	Federal government, community programs, Triangle Green Building Council
Fit with Items	Works to address both affordable housing and climate change mitigation
Time Frame	Coordination with affordable housing focused efforts can be explored immediately. Significant traction is a long term proposition.
Next Step(s)	 Identify relevant federal grants Develop partnerships with community programs Investigate legal authority and cost-benefit analysis for Town ordinances
Evaluation Criteria	life cycle costs and net present value

Building Energy Efficiency Measures

Residential and commercial buildings are the largest emissions sectors in Carrboro, accounting for 2/3 of all emissions. Duke Energy has been able to provide monthly electricity use data specifically for Carrboro beginning in January, 2011 through the end of 2015, broken out by residential and commercial accounts. An analysis of this data (Figure 2) indicates that residential electricity use declined by about 1% per annum during this time, while population increased by about 2% per annum. Commercial use remained very stable. The residential use also has a sharp seasonal pattern, with winter and summer peaks presumably associated with heating and cooling loads. This improved energy efficiency trend will need to be accelerated by 2-3 times to meet the 50% reduction by 2025 goal. Any ability to determine how representative the trend is of years prior to 2011 would also be beneficial to the monitoring of overall progress, but is difficult because of the lack of data.



Energy performance rating and auditing can inform interested parties on the overall energy efficiency of the building and provide transparency for market based decisions about property sales and rentals. By influencing a property's appeal to future renters and buyers, ratings can serve as an incentive for building owners to improve energy efficiency. This approach is being tested in cities such as Seattle, WA, Portland, OR, and Austin, TX. A website tracking different jurisdictions efforts for policies, improvements, and benchmarking in energy efficiency can be found at http://www.buildingrating.org/jurisdictions.

It is recommended that efforts be pursued so that the results of an energy audit and/or an energy performance rating (including one year of utility bills) are made available at the point of building sale or lease. This could be in the form of a written document and/or a numerical score such as a HERS rating or other recognized format. The information provided could include potential/recommended energy efficiency improvement measures. Carrboro would need to acquire statutory authority from the State to make this a requirement. For new buildings and improvements requiring a building permit, pending the granting of a request for statutory authority, the Town could implement a section of the Building Code¹⁷ with additional energy efficiency requirements that the Town does not currently have authority to implement. Alternatively, the Town could look into partnering with the Triangle Green Building Council to develop an optional checklist of efficiency performance/measures that, if implemented, would lead to special designation and public recognition.

Most Carrboro residents rent their homes; 33% of homes are owner occupied, compared to 59% renter occupied (the remaining 8% of homes are vacant)¹⁸. While some reductions can be achieved via low

¹⁷ At the December 14, 2010 NC Building Code Council meeting, a 15% residential efficiency part of the code was not approved, instead this code was considered to be voluntary and included as Appendix 4 to the 2012 NC Energy Conservation Code. The Carrboro Board of Aldermen is seeking statutory authority to pilot making Appendix 4 mandatory. This request has not made it out of committee with the NC Legislature.

¹⁸ UNC Capstone Team, 2015. 2012 Greenhouse Gas Emission Inventory for the Town of Carrboro, NC. http://nc-carrboro.civicplus.com/DocumentCenter/Home/View/2788

cost/no cost approaches, to achieve substantial (>10%) GHG reductions, retrofitting or including energy efficiency improvements during rehab work is typically necessary. For many rental properties, renters pay the utility bills and as a result, building owners/landlords may have little or no financial incentive to pursue this work. Conversely, renters have no financial incentive to make capital investments in a property they do not own. Accordingly, there is an underinvestment in energy efficiency improvements in rental units. Without aligning the landlord's costs for retrofits and the renter's benefit in lower energy bills, it will be difficult to voluntarily achieve GHG reductions in rental units. Addressing this issue requires engagement of a diverse set of stakeholders: affordable housing advocates, renters, landlords, new development planners, and energy efficiency contractors. It is recommended that the Town commission a Task Force to bring forward policy recommendations for how to align landlord and renter interests towards achieving energy efficiency in rental units. The Town could also create a voluntary registry or certification program that landlords could include in the advertisements of their properties. This could be in the form of a certification or a points system. Information on how other jurisdictions have approached energy efficiency improvements in buildings is available through the links in these footnotes. (Portland, Seattle, WA¹⁹, Berkeley, CA²⁰, Austin, TX^{21,22})

Buildings Recommendation #1: 50% Challenge

Reduce Emissions Attributed to Carrboro Buildings by 50% by 2025

It is proposed that local leaders announce an emissions reduction challenge to reduce community-wide emissions by 50% by 2025. The challenge could include a component focused on buildings emissions in Carrboro.

Implementation	Reduced electricity and gas use from more efficient building envelopes,
Opportunities	appliances, HVAC systems, lighting. Healthier buildings; older buildings brought
	up to code; utility cost savings for building owners/occupants. More efficient
	buildings result in cost savings and support the green building sector. If the

¹⁹ "Seattle City Council Climate Action Plan Resolution Summary." Emerald Cities Collaborative. Accessed March 16, 2015. http://emeraldcities.org/cities/seattle/resources/summary-of-seattle-city-council-climate-action-plan-resolution.

²⁰ "Berkeley Climate Action Plan: Tracking Our Progress - Building Energy Use." City of Berkeley. April 14, 2014. Accessed March 16, 2015. http://www.ci.berkeley.ca.us/uploadedFiles/Planning_and_Development/Level_3_- Energy and Sustainable Development/Green Building and Energy Certification CAP.pdf.

²¹ "Energy Conservation Audit and Disclosure Ordinance." Austin Energy. Accessed March 18, 2015. http://austinenergy.com/wps/portal/ae/programs/ecad-ordinance/energy-conservation-audit-and-disclosure-ordinance/!ut/p/a1/jZAxT8MwFIR S4eMjo0rwGUzpgqhlEykIUvlJq-

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²² A website tracking different jurisdictions efforts for transparency in energy efficiency, specifically in their buildings, can be found at http://www.buildingrating.org/jurisdictions. BuildingRating.org provides a way to view and compare policies that are being implemented to improve and benchmark building energy efficiency.

	private sector becomes engaged, the downtown area of Carrboro and Chapel Hill could evolve into a recognized "2030 District" 23
Implementation Challenges	"Cost, complexity, inertia". High percentage of non-owner occupied buildings; financial challenges especially for lower income residents and renters.
Resources Needed (human and material)	A nonprofit organization to become a community champion. Neighborhood and business champions and grassroots/community organizing, outreach, and education. Broad support from community leaders, utilities, financiers, and contractors. Potentially, fiscal support for nonprofit and organizing/coordination support from Board and staff
Anticipated Cost	Time and potentially salary involved in organizing
Leadership	Potential leaders include: existing and/or new nonprofit(s); the Carrboro Business Alliance; Chamber of Commerce; Triangle Green Building Council
Partners	 Potential partners include: existing and/or new nonprofit(s); the Carrboro Business Alliance; Chamber of Commerce; Triangle Green Building Council. Several programs have been developed in North Carolina to lower the barriers to energy efficiency adoption within a community. The NC Banker's Association pools banks for the financing of low income tax credit apartment complexes. They are interested in partnering with nonprofits to start a small loan pool for energy retrofits.²⁴ System Vision program, which partners Advanced Energy Corp, the Self-Help Credit Union, and the NC Housing Finance Authority to finance green home construction/retrofits.²⁵ Transition Streets and Pete Street programs.²⁶ The State Energy Office and Cooperative Extension Service ran the E-Conservation Home Energy Improvements program, which expired in July, 2015. If it is not renewed, it is recommended that Carrboro discuss partnering with Chapel Hill, Orange County, and perhaps others to run a similar program. The State Energy Office has been pursuing this for several years and is a valuable resource for learning what works.
Time Frame	It is recommended that local leaders do this immediately.
Fit with Items	Renewable energy and transportation challenges

²³ http://www.2030districts.org/

²⁴ Contact is Michelle Lampert shellielampert@gmail.com

²⁵ http://www.nchfa.com/nonprofits/HPsystemvision.aspx

²⁶ In 2013 Carrboro and Chapel Hill contracted with Clean Energy Durham to pilot their "Pete Street" neighbor-to-neighbor energy retrofit program. The approach trains neighborhood volunteers who lead neighborhood workshops where small groups of resident learn simple energy savings projects and behaviors. Clean Energy Durham has recently closed.

Next Step(s)	Local elected officials/community leaders collaborate to initiate challenge
Evaluation Criteria	Reductions in energy use/GHG emissions from buildings. Updated community energy use/emissions inventories for 2016 and 2020

Buildings Recommendation #2: Energy Audit/Performance Rating

For Existing Buildings, an Energy Audit and/or Building Energy Performance Rating, Including Utility Bills from Past Year, Could be Conducted at Point of Sale or Lease.

An energy audit is a service that involves inspecting and analyzing energy use, efficiency, and conservation. Different types of audits can be pursued, from simple "walk through" audits to more involved audits that can use equipment (such as blower doors and infrared cameras). A building performance rating is the result of an analysis that rates a building on a standardized scale for buildings of the same type. For example, for homes, the Home Energy Rating System (HERS) is a national recognized rating system. EPA's Energy Star program similarly has created a system for rating and benchmarking different categories of buildings. The purpose of this recommendation is to create a level playing field using recognized standards of information about energy use and efficiency for people in the housing market.

Implementation	· Healthier buildings (better air handling and moisture control)
Opportunities	Lower carbon emissions.
	· Lower utility bills for occupants.
	Provides a service to those looking to buy or rent and reaches a
	demographic not reached with many incentive based efforts
	· Addresses the unique situation in Carrboro with a high percentage of non-
	owner occupied buildings
	· Heat loss audits could be automated for a neighborhood using thermal IR
	imagery
	·The Town's Energy Efficiency Revolving Loan Fund is available for
	recommended improvements to commercial buildings.
	· Can potentially support businesses performing energy ratings/audits
Implementation	· The Town does not have the authority to make this a requirement and
Challenges	would need special enabling legislation if this were to be a regulatory
	program.
	Some building owners, especially those with less efficient buildings, will
	likely not be in favor of this for reasons of "over regulation" and/or the
	potential market implications.
Resources Needed	Effort associated with outreach and education and crafting the details with
(human and material)	stakeholders as well as monitoring for compliance.
Anticipated Cost	Significant costs are not anticipated but would need to be determined as
	part of implementation
Leadership	Board of Aldermen for policy direction, with support from the Economic
	Sustainability Commission, Town staff

Partners	Business Alliance, Chamber of Commerce, Board of Realtors, Triangle Green
	Building Council
Time Frame	Exploration could begin immediately. For a higher probability of moving
	forward, a champion will likely be needed.
Fit with Items	Rental Task Force; Rental Registry/Certification
Next Step(s)	To be determined
Evaluation Criteria	Reductions in metered utility energy usage and costs.

Buildings Recommendation #3: Demonstrate/Pursue Energy Performance Beyond Minimum Requirements for New Development

For New Developments and/or Individual New Buildings or Major Retrofits, Pursue Compliance with Voluntary Section of Building Code, or Request Specific Energy Performance Rating/Measures as Part of Land Use and/or Building Permit.

In 2010, a 15% residential efficiency part of the building code was not approved by the NC Building Council, instead this code was considered to be voluntary and included as Appendix 4 to the 2012 NC Energy Conservation Code. The Carrboro Board of Aldermen is seeking statutory authority to pilot making Appendix 4 mandatory. Other approaches could be followed to pursue energy efficiency in new buildings beyond the current minimum code requirements.

Implementation	Healthier buildings (better air handling and moisture control)
Opportunities	Lower carbon emissions. Lower utility bills for occupants.
Implementation	Additional Town staff time.
Challenges	Statutory authority, or voluntary compliance from developers/builders
Resources Needed	Town staff to expand Building Code implementation and/or work with
(human and material)	Triangle Green Building Council to develop checklist and form of
	recognition.
Anticipated Cost	No significant cost anticipated
Leadership	Town staff, potentially with support from Planning Board
Partners	Triangle Green Building Council
Time Frame	Exploration could begin immediately. Identifying a champion will likely be
	needed.
Fit with Items	Pursuing 50% reduction
Next Step(s)	TBD
Evaluation Criteria	Number of buildings affected. Reductions in metered utility energy usage
	and energy intensity (energy use per square foot)

Buildings Recommendation #4: Create Rental Property Task Force and Process

Create a Task Force to Pursue a Facilitative Process to Achieve Greenhouse Gas (GHG) Reductions in Rental Units

Most emissions in Carrboro come from buildings, a very high percentage of buildings are for housing and about two-thirds of housing in Carrboro is rental property. For progress towards Carrboro's Climate Action Goal, it is imperative that emissions reductions efforts address rental property. It is recommended that the Town commission a Task Force to bring forward policy recommendations for how to align landlord and renter interests towards improved energy efficiency in rental units. (This Task Force could be the same as identified below for renewable energy.)

Implementation Opportunities Implementation Challenges There is little precedent; organizing and coordinating will require significant effort. Many rental property owners are not local. Owners and renters financial incentives are not necessarily well aligned The Town could partner with an outside organization to facilitate this Task Force. Anticipated Cost Leadership Town staff for giving the group a well-defined mission and keeping the group on track Partners Work with organization that facilitates stakeholder groups Time Frame Time frame to set up a Task Force depends on Board priority and staff/community capacity. Operating the resulting program would be a long term endeavor. Fit with Items So% reduction challenge; Rental Registry; Renewable Energy Task Force 1. Develop Task Force charge 2. Identify relevant stakeholders needed to agree to process in order to make impactful change 3. Identify outside organization to facilitate Task Force 4. Commission Task Force Evaluation Criteria Savings from lower energy bills could be put towards other projects. Keep energy dollars local. Reduces greenhouse gas emissions.		
Implementation Challenges • There is little precedent; organizing and coordinating will require significant effort. • Many rental property owners are not local. • Owners and renters financial incentives are not necessarily well aligned Resources Needed (human and material) The Town could partner with an outside organization to facilitate this Task Force. Anticipated Cost Leadership Town staff for giving the group a well-defined mission and keeping the group on track Partners Work with organization that facilitates stakeholder groups Time Frame Time frame to set up a Task Force depends on Board priority and staff/community capacity. Operating the resulting program would be a long term endeavor. Fit with Items 50% reduction challenge; Rental Registry; Renewable Energy Task Force 1. Develop Task Force charge 2. Identify relevant stakeholders needed to agree to process in order to make impactful change 3. Identify outside organization to facilitate Task Force Evaluation Criteria Savings from lower energy bills could be put towards other projects.	Implementation	Energy efficiency reduces waste and saves money in the long term
Staff time and/or contract support to help facilitate Task Force Leadership Time Frame Time frame to set up a Task Force depends on Board priority and staff/community capacity. Operating the resulting program would be a long term endeavor. Fit with Items Next Step(s) Significant effort. Many rental property owners are not local. Owners and renters financial incentives are not necessarily well aligned The Town could partner with an outside organization to facilitate Task Force Town staff for giving the group a well-defined mission and keeping the group on track Partners Work with organization that facilitates stakeholder groups Time frame to set up a Task Force depends on Board priority and staff/community capacity. Operating the resulting program would be a long term endeavor. Fit with Items 50% reduction challenge; Rental Registry; Renewable Energy Task Force 1. Develop Task Force charge 2. Identify relevant stakeholders needed to agree to process in order to make impactful change 3. Identify outside organization to facilitate Task Force 4. Commission Task Force Evaluation Criteria Savings from lower energy bills could be put towards other projects.	Opportunities	Energy efficiency retrofits create local jobs
 Many rental property owners are not local. Owners and renters financial incentives are not necessarily well aligned Resources Needed (human and material) Anticipated Cost Leadership Town staff for giving the group a well-defined mission and keeping the group on track Partners Work with organization that facilitates stakeholder groups Time Frame Time frame to set up a Task Force depends on Board priority and staff/community capacity. Operating the resulting program would be a long term endeavor. Fit with Items Develop Task Force charge Identify relevant stakeholders needed to agree to process in order to make impactful change Identify outside organization to facilitate Task Force Commission Task Force Evaluation Criteria Savings from lower energy bills could be put towards other projects. 	Implementation	There is little precedent; organizing and coordinating will require
Partners Work with organization that facilitates stakeholder groups Time Frame Time frame to set up a Task Force depends on Board priority and staff/community capacity. Operating the resulting program would be a long term endeavor. Fit with Items Sow reduction challenge; Rental Registry; Renewable Energy Task Force Identify relevant stakeholders needed to agree to process in order to make impactful change 3. Identify outside organization to facilitate Task Force Evaluation Criteria Sowings from lower energy bills could be put towards other projects.	Challenges	significant effort.
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Partners Work with organization that facilitates stakeholder groups Time Frame Time frame to set up a Task Force depends on Board priority and staff/community capacity. Operating the resulting program would be a long term endeavor. Fit with Items 50% reduction challenge; Rental Registry; Renewable Energy Task Force Next Step(s) 1. Develop Task Force charge 2. Identify relevant stakeholders needed to agree to process in order to make impactful change 3. Identify outside organization to facilitate Task Force 4. Commission Task Force Evaluation Criteria Savings from lower energy bills could be put towards other projects.	Leadership	Town staff for giving the group a well-defined mission and keeping the
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staff/community capacity. Operating the resulting program would be a long term endeavor. Fit with Items 50% reduction challenge; Rental Registry; Renewable Energy Task Force Next Step(s) 1. Develop Task Force charge 2. Identify relevant stakeholders needed to agree to process in order to make impactful change 3. Identify outside organization to facilitate Task Force 4. Commission Task Force Evaluation Criteria Savings from lower energy bills could be put towards other projects.	Partners	Work with organization that facilitates stakeholder groups
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4. Commission Task Force Evaluation Criteria Savings from lower energy bills could be put towards other projects.		make impactful change
Evaluation Criteria Savings from lower energy bills could be put towards other projects.		3. Identify outside organization to facilitate Task Force
		4. Commission Task Force
	Evaluation Criteria	Savings from lower energy bills could be put towards other projects.

Buildings Recommendation #5: Create Rental Property Registry/Certification

Create a Certificate Program or Registry for the Energy Performance of Rental Housing

The basis for this recommendation is identical for the above building recommendations. The essence of this recommendation is that, as part of making rental properties more energy efficient, a program be created that makes it easy for those in the rental market to find energy efficient rental listings.

· Lower residential carbon emissions.
· Lower utility bills for tenants.
· Provides a service to those looking to rent and reaches a demographic
not reached with many incentive based efforts
· Addresses the unique situation in Carrboro with a high percentage of
non-owner occupied housing
· The Town could potentially support performing energy ratings/audits
· The Town does not have the authority to make this a requirement.
· The effectiveness of this program would be dependent on widespread
adoption by Carrboro landlords.
· It may require outreach to the landlords and research on the how to
best communicate a potential rating system.
Town staff, or another entity, could run the program and set the
program requirements.
Costs would be primarily associated with staff time and marketing.
Board of Aldermen for policy direction, Town staff
Triangle Green Building Council, potentially others
Time frame to set up depends on Board priority and staff/community
capacity. Operating it would be a long term endeavor.
Other buildings recommendations, especially the energy
audit/performance rating
Outreach to determine interest and feasibility
outreach to determine interest and reasibility

Transportation Measures

Reducing emissions from transportation in Carrboro will rely on a coordinated, multifaceted effort involving infrastructure improvements, additional transit service, land use changes, outreach and engagement to affect transportation mode choices, and participation broadly with partners and across the community.

Availability of local bicycling and pedestrian infrastructure is strongly associated with overall levels of biking and walking, especially with trips to work, school, or shopping.²⁷ In September 2010, the League of American Bicyclists recognized Carrboro as a Bicycle Friendly Community at the "Silver" level. There is an aspiration to achieve the "Gold" level during the next review cycle. The Town has the support of the Carrboro Bike Coalition, Chapel Hill Carrboro City Schools and other Safe Routes to Schools partners, a high level of ridership relative to other jurisdictions, and comprehensive bicycling and greenway plans. In order to get even more people out of their cars and onto their feet and bikes, Carrboro must keep working on the gaps, continue to connect neighborhoods to schools, and expand bicycle and pedestrian infrastructure to connect all areas of Carrboro to downtown, surrounding greenways, and bike routes. Improvements such as signals and pavement markings can increase convenience and perceptions of safety, and provide official, visible recognition that bicyclists are legitimate users of the road.

Carrboro (and Chapel Hill and UNC) have sponsored Chapel Hill Transit for several decades, the only fare free transit system and the highest per capita use system in North Carolina. In combination with regional transit provided by GoTriangle, transit options, along with publically and privately supported rideshare/carpooling/vanpooling/car sharing options continue to increase. Nevertheless, for many users and trips, transit and other alternatives to single occupancy vehicle use is a difficult option because of the relative convenience and comparative time relative to single occupancy motor vehicle use. A number of initiatives are in place to help promote and expand use of alternatives to single occupancy vehicle use; suggestions for further pursuing these initiatives are provided. A final recommendation is to reduce vehicle idling in school loading zones.

²⁷ A Seattle study found that adults living within a half-mile of a bike path were 20 percent more likely to bicycle at least once a week. A Portland study found that cyclists went the furthest out of their way to use off-street bike paths, followed by bicycle boulevards (low speed streets that have been "optimized" for bicycle traffic) suggesting a general preference for facilities protected from motor vehicle traffic.

Transportation Recommendation #1: 50% Challenge

Reduce Greenhouse Gas Emissions from Motor Vehicle Use by 50% by 2025.

It is proposed that local leaders announce an emissions reduction challenge to reduce community-wide emissions by 50% by 2025. The challenge could include a component focused on transportation/motor vehicle emissions in Carrboro.

Implementation	• Requirements and market for more fuel efficient/lower emission vehicles
Opportunities	and pedestrian and bicycle infrastructure and transit system use continue
	to improve.
	• Land use planning is supporting mixed use, infill and redevelopment and
	community is proactive to further encourage non-vehicular modes.
Implementation	High percentage of residents work outside Carrboro with significant
Challenges	challenges for using transit or commuting by bike or on foot.
	 Constraints such as topography/natural features, ownership, and grey infrastructure exist in some areas for further bicycle and pedestrian facility development.
	 Non-vehicular transportation options in some parts of Town are more limited.
	• Ability to monitor and track progress towards emissions reduction is
	currently quite limited methodologically and in terms of clarity of the
	responsible party for tracking.
Resources Needed	There are no resource requirements associated with a recognized community-
(human and material)	wide goal, although there will be resources needed for implementation of different actions.
Anticipated Cost	There are no specific costs associated with a recognized community-wide goal,
	although there will be resources needed for implementation of different
	actions.
Leadership	Local elected officials and community leaders could endorse this goal
Partners	Various public, private, nonprofit
Time Frame	It is recommended that local leaders do this immediately.
Fit with Items	Buildings and renewable energy challenges
Next Step(s)	Formal adoption/publicity for challenge
Evaluation Criteria	Ability to track emissions via VMT, fuel type, and vehicle efficiency.
	CAMPO model? Other methodology?

Transportation Recommendation #2: Enhance Transit Service

Improve/Extend Transit Service

While overall, Chapel Hill Transit is the most successful transit agency in North Carolina and GoTriangle is steadily increasing service, areas farther from downtown have more limited service.

Implementation	Transit service could be extended to new areas by adding more stops in
Opportunities	Carrboro well connected to other transit, bike, and pedestrian access, and
Opportunities	including more hours of service.
	New Transit Oriented Development could be sited in the Northern
	Transition Area.
Implementation	Fleet has many old and inefficient vehicles
Challenges	Funding is currently stressed.
	• It is difficulty to site development of sufficient density in northern
	Carrboro to justify transit.
	Service level makes it difficult for many commuters to use transit.
Resources Needed	Increased funding
(human and material)	• Landowner, developer, and community support new mixed use/transit
	oriented development
Anticipated Cost	Improved local transit service costs will depend on different factors, and will
	be implemented by Chapel Hill Transit and GoTriangle.
Leadership	Board/Transit Partners, NTAAC, Transportation Advisory Board, Town staff for
	new development. Chapel Hill Transit for improved/expanded local transit
	service; GoTriangle for regional transit. Other partners below can also provide
	leadership.
Partners	Local business community, NTA neighbors
Time Frame	Transit development/improvement by nature is an ongoing and long term
	undertaking.
Fit with Items	See separate recommendation for steps to promote transit service.
Next Step(s)	Work with GoTriangle and Chapel Hill Transit staff to provide additional
	feedback on plans for future service and ability to accelerate adding
	service.
	Enhance transit access points along the 54/15-501 corridor from Chapel
	Hill/Carrboro to Durham and provide more frequent, reliable bus service.
Evaluation Criteria	Number of bus commuters/trips
	1

Transportation Recommendation #3: Improve Vanpool/Carpool Options

Improve Vanpool/Carpool Options for Commuters

A considerable amount of transportation related emissions can be attributed to people commuting in and out of Carrboro for work. Vanpools and carpools can be an effective approach for reducing vehicle miles traveled and single occupancy vehicle trips, but existing park and ride areas could be more convenient for Carrboro commuters. Adding vanpool parking areas could reduce vehicle miles traveled and emissions.

Implementation	Add GoTriangle vanpool/carpool parking in Carrboro (including downtown
Opportunities	Carrboro and Northern Carrboro) and nearby in Chapel Hill.
Implementation	Requires partnership with GoTriangle and local businesses.
Challenges	
Resources Needed	Signs to identify vanpool and carpool parking areas
(human and material)	
Anticipated Cost	Signs to identify vanpool and carpool parking areas
Leadership	Board of Aldermen; Staff; GoTriangle
Partners	Chapel Hill Transit, GoTriangle; businesses with suitable parking
Time Frame	The main timing consideration is determining who can champion this.
Fit with Items	Reduce transportation emissions by 50% by 2025.
Next Step(s)	Work with GoTriangle to identify currently registered vanpools and carpools
	and use this info along with expected increase in use to establish carpool and
	vanpool parking areas, including downtown Carrboro and Northern Carrboro
	and nearby areas in Chapel Hill.
Evaluation Criteria	Number of vanpool and carpool commuters

<u>Transportation Recommendation #4: Further Promote Walking, Biking, Transit</u>

Take Additional Steps to Promote Walking, Biking, and Transit Use

Carrboro has a considerable base of bicycling, walking, and transit use to build on. In September 2010, the League of American Bicyclists named the Town of Carrboro a Bicycle Friendly Community at the "Silver" level, and there is an aspiration to achieve the "Gold" level during the next review. Carrboro has significant support from the Carrboro Bike Coalition and other partners and already participates in the Safe Routes to School program. Marketing and educational programs, as well as regulations, significantly affect levels of bicycling, walking, and transit use. Investments in infrastructure must be supported by outreach programs to be most effective.

Implementation Opportunities	More promotion/outreach for bicycling and walking
Implementation Challenges	Challenge of changing set behaviors.
	Some greenway, bike route, and transit services are not yet complete.
	Transit services are spotty or non-existent in some areas
	Uncertain funding for new/renovated buses
Resources Needed	Town Staff and partners support.
Anticipated Cost	TBD
Leadership	Town Transportation Planner, with support from Recreation and Parks staff, Transportation Advisory Board, Greenways Commission.
Partners	UNC, Chapel Hill Transit, GoTriangle, Carrboro Bike Coalition, Carrboro Business Alliance, Chapel Hill-Carrboro City Schools, Walk Bike NC
Fit with Items	Reduce Greenhouse Gas Emissions from Motor Vehicle Use by 50% by 2025; Improve and Extend Bicycling and Pedestrian Infrastructure; Improve and Extend Transit Services
Time Frame	This is ongoing. The main consideration for significantly accelerating efforts is identifying people with capacity.
Next Step(s)	 Continue, accelerate, and intensify efforts to: Promote bike to work days; consider doing these weekly. Studies have reported long-term increases in bicycling following bike-to-work days. Work with the Carrboro Bicycle Coalition to put on and publicize ongoing bicycle training; Work with the Carrboro Bike Coalition to hold "Open Streets" days. Work with Chapel Hill Transit and GoTriangle to develop and implement a marketing and educational program on carpooling, vanpooling, and transit use. Promote official car free, carpool, vanpool, and transit use days. Support the Safe Routes to Schools Program. Work with the Carrboro-Chapel Hill City School System and local PTAs to promote bike and walk to school days; consider doing these weekly. Pursue efforts to implement land use and development policies that help ensure destinations for daily needs, such as school, work, and shopping, are within convenient bicycling distance from home. Encourage developers to promote multi-modal transportation options. Promote "park and stroll" programs at schools, where students are dropped off at a remote location and walk or bike the rest of the way to
	 school. Research and implement a bike sharing system downtown. Explore new policies that make driving more expensive and less convenient (e.g. reduced parking supply, increased parking fees, and reduced road speeds). Lower speed limits for vehicles make bicycling safer and more attractive. One study conducted in Germany found that reducing general speed limits led to a significant increase in bicycling.
Evaluation Criteria	 Number of students biking or walking to school. Number of residents biking, walking, or using transit, carpooling or vanpooling to commute to work. Increased transit ridership.

Transportation Recommendation #5: Limit Idling in School Loading Zones

Limit Idling in School Loading Zones

Avoiding idling time has a multitude of benefits including: savings in fuel and maintenance costs, extending vehicle life, and reducing damaging emissions. It is especially appropriate to look at school loading zones because they are focal points in Carrboro for vehicle idling, expose a sensitive population to air pollution, and meaningful reductions could be achievable through simple behavior change. Outreach resources are available at http://dag.state.nc.us/motor/idle/idle_campaign.shtml.

Implementation	This is a simple effort that will reduce air pollution and GHG emissions.
Opportunities	
Implementation Challenges	Parental resistance, especially at elementary schools, and outreach/enforcement.
Resources Needed	School system employee time. Consider recruiting student and parent volunteers to help with education/outreach.
Anticipated Cost	Costs associated with staff time
Leadership	Board of Aldermen, CHCCS School Board, staff
Partners	PTA; individual school teams;
Time Frame	If the policy direction exists, this could be pursued immediately.
Fit with Items	Community integration and emission reduction recommendations
Next Step(s)	Coordinate with CHCCS
Evaluation Criteria	Monitoring of idling activity



<u>Transportation Recommendation #6: Improve Bicycle and Pedestrian Infrastructure</u>

Final version of this text will be inserted when available



Renewable Energy Measures

Carrboro's Climate Action Goal can be pursued by generating more energy from renewable sources and improving energy efficiency. This section provides recommendations for how to increase renewable energy from two sources, solar and geothermal. Solar panels convert light from the sun into electricity. Geothermal heating and cooling employs pumps and wells to take advantage of the near constant temperatures below the Earth's surface. This can be used to reduce the costs to heat buildings in the winter and cool them during the summer. Both of these approaches require considerable initial costs to install the equipment. However these technologies have low maintenance costs and a lifetime of more than 25 years, which creates considerable energy savings over time. Homeowners and businesses that can shoulder the upfront costs have been switching to renewable energy. The focus of these recommendations is to help speed the transition to renewable energy, especially addressing the barrier of initial costs.

The first recommendation is to develop a community solar project for Carrboro. Solar panels can provide low-cost energy without environmental impacts. Many home and business owners are realizing lower energy costs by investing in solar. However, most Carrboro residents either rent or own homes that are shaded by trees, and cannot benefit from solar at their home. A community solar project would allow people across Carrboro to invest in solar, lower electricity bills, and help bring about a clean energy future for our Town. However, the electric utilities that service Carrboro restrict most forms of community ownership. Legislation currently under discussion in the NC General Assembly would allow a third-party, such as a community entity, to sell electricity directly to power consumers. Under this change, a community group could own a solar installation and sell the energy to a large buyer, such as the Town of Carrboro. The agreement could set the electricity price to a rate that is beneficial to both the Town and the community investment group.

The second recommendation is to explore and encourage geothermal heating and cooling, especially in downtown. The Carrboro Century Center has considerable heating and cooling costs that could be reduced by switching to geothermal. Developing geothermal heating and cooling for the Century Center could reveal economies of scale, where neighboring buildings could be added to the system at lower cost. If it is legally and technically feasible and cost-effective, the opportunity could be extended to explore the formation of a geothermal heating and cooling utility to provide low-cost, sustainably sourced heating and cooling to downtown buildings that is easy for property owners to join.

The third recommendation is to convene an action group to develop policy opportunities to create incentives for renewable energy and energy efficiency upgrades in rental properties (see Buildings Recommendation #3). The majority of Carrboro residents are renters and do not directly have control over their energy efficiency and energy generation. Because renters pay the utility bills, landlords have less financial incentive to invest in energy savings. Lowering electricity costs makes housing more affordable, but the incentives are not aligned to encourage this change. This action group will be charged with finding policy opportunities to better align renter and landlord incentives towards lowering electricity costs. This action group should include advocates from renter, property owner, affordable housing, and green building organizations.

When taken together, these recommendations provide opportunities for Carrboro residents and businesses to further participate in and benefit from the switch to renewable energy.

Renewable Energy Recommendation #1: Pursue Community Solar Projects

Pursue Community Solar Projects

Solar panels can provide low-cost energy without environmental impacts. Many home and business owners are realizing lower energy costs by investing in solar. However, most Carrboro residents have homes that are shaded by trees, and cannot benefit from solar at their home. A community solar project would allow people across Carrboro to invest in solar, lower electricity bills, and help bring about a clean energy future for our Town. However, the electric utilities that service Carrboro restricts most forms of community ownership. Legislation currently under discussion in the NC General Assembly would allow a third-party, such as a community entity, to sell electricity directly to consumers. Under this change, a community group could own a solar installation and sell the energy to a large buyer, such as the Town of Carrboro. The agreement could set the electricity price to a rate that is beneficial to both the Town and the community investment group.

Implementation	Broadly share solar investment benefits, including keeping dollars
Opportunities	local
	• Town of Carrboro buildings could be first adopters, but this approach
	could be deployed on other buildings
	• The community investment group could pay the upfront costs to
	develop solar
Implementation Challenges	Requires considerable effort to organize support and investment
	• The loss of the NC Renewable Energy Tax Credit and the absence of
	third-party sales of electricity significantly limit the market.
Resources Needed (human	This will likely require collaboration between Town staff and one or more
and material)	outside organizations.
Additional Conf	The second secon
Anticipated Cost	There are options depending on how the electricity purchasing
	agreement with the community group is defined
Leadership	Town staff for considering Town property; economic development groups for development of community infrastructure
Partners	Work with organization that coordinates community investment group
Time Frame	Projects could take months or more to develop and would have benefits
	for many decades
Fit with Items	Community Integration recommendations
Next Step(s)	Develop program with community investment group
Evaluation Criteria	Savings from lower energy bills could be put towards other projects. Keep
	energy dollars local. Reduces greenhouse gas emissions.

Renewable Energy Recommendation #2: Pursue Downtown Geothermal Heating and Cooling

Pursue Geothermal Heating/Cooling, Especially in Downtown

Geothermal heating and cooling employs pumps and wells to take advantage of the near constant temperatures below the Earth's surface. This can be used to reduce the costs to heat buildings in the winter and cool them during the summer.

Implementation Opportunities	 Lower costs of heating and cooling Century Center or Town Hall/Town Commons could be candidate for first adopter If marginal costs of adding adjacent community/commercial buildings to the heating and cooling network are low, then a municipal utility could be an effective way to provide services at low cost A community geothermal utility would make it easier to adopt geothermal broadly by lowering costs and simplifying construction. Savings from lower energy bills could be put towards other projects 	
Implementation Challenges	 Unknown technical feasibility Large upfront costs; requires low-cost financing New for Carrboro. Orange County buildings in Hillsborough have implemented geothermal in HVAC and are realizing substantial savings 	
Resources Needed (human and material)	Effort to: explore feasibility; develop engineering design; and policy development towards an approach for other community buildings.	
Anticipated Cost	Upfront costs are large but design lifetime of equipment is approximately 50 years. Geothermal systems (on average) reduce heating and cooling costs by 50%. The actual installation costs and benefits depend on the building.	
Leadership	Town staff for development for Town buildings, business community for development of community infrastructure	
Partners	Technical assistance from Orange County, contractor(s), and investors	
Time Frame	An initial assessment of technical feasibility could be pursued quickly. Project development would likely take several years, depending on the scope, with benefits for many decades	
Fit with Items	Pursue Partnerships; 50% Reduction Goal for Buildings	
Next Step(s)	 Examine completed projects in Orange County Solicit contracting support for feasibility study If deemed feasible, develop preliminary design for Town of Carrboro buildings including financial assessment and environmental benefits. Explore opportunities to develop a municipal utility Explore ways to encourage developers to install geothermal 	
Evaluation Criteria	 Reduced energy bills. Reduced greenhouse gas emissions. More comfortable work environment for Town staff. 	

Renewable Energy Recommendation #3: Create Rental Property Task Force and Process

Create a Task Force to Pursue a Facilitative Process to Achieve Greenhouse Gas (GHG) Reductions in Rental Units

It is recommended that the Town commission a Task Force to bring forward policy recommendations for how to align landlord and renter interests towards achieving renewable energy in rental units. (This Task Force could be the same as identified above for building energy efficiency.)

Implementation Opportunities	Renewable energy is clean energy and create local jobs
Implementation Challenges	The policy options to address this issue also have an impact on Town planning and affordable housing
Resources Needed (human and material)	Town staff could partner with an outside organization to facilitate this Task Force.
Anticipated Cost	Staff time and/or contract support to help facilitate Task Force
Leadership	Town staff for giving the group a well-defined mission and keeping the group on track
Partners	Work with organization that facilitates stakeholder groups
Time Frame	Time frame to set up a Task Force depends on Board priority and staff/community capacity. Operating the resulting program would be a long term endeavor.
Fit with Items	Task Force/Facilitative Process for Buildings
Next Step(s)	 Develop Task Force charge Identify relevant stakeholders needed to agree to process in order to make impactful change Identify outside organization to facilitate Task Force Commission Task Force
Evaluation Criteria	Savings from lower energy bills could be put towards other projects. Keep energy dollars local. Reduces greenhouse gas emissions.

Ecosystem Protection and Enhancement

The ecosystems that Carrboro is located within are being affected by a warming planet, but they also offer opportunities for combating climate change. This section of the plan includes recommendations to improve ecosystem health and resilience by reducing stormwater impacts, increasing tree canopy and biodiversity, better management of invasive plants and encouragement of native plants, managing organic waste and improving soil quality. In addition, there is a need for better information about the impact of climate change as well as herbivory on the health of the community forest. These focus areas are discussed separately, but are highly interwoven. The following is a brief overview of each area to provide context for the recommendations.

Climate change is likely to increase the frequency and intensity of storms and droughts in Carrboro, which will in turn increase the negative impacts of stormwater runoff that include erosion, flooding, nonpoint source pollution (including nitrogen and phosphorus delivery to surface waters), and altered hydrology²⁸. Many methods and opportunities exist to aid in curbing stormwater runoff (permeable paving, rain gardens, and green roofs to name just a few), but often landowner interest and available resources are not in place to pursue these projects²⁹. Creating a stormwater utility or joining Chapel Hill's utility could ensure a dedicated funding source for stormwater projects that is not subject to discretionary spending in annual budget cycles. Doing so would provide the financial stability and predictability needed for such projects. A utility could also support public education, helping citizens understand the causes and consequences of stormwater runoff and the ways in which individuals can limit the runoff and pollution leaving their property.

Despite climate and land use changes, forests in the southeastern USA will likely continue to provide a sink of atmospheric carbon dioxide (CO₂). There is potential for mitigating CO₂ emissions through carbon sequestration in soils and plant biomass. Protection of these natural carbon sinks in the face of development pressures is an important issue for climate change mitigation. The potential savannafication of the southeast, in which forests are converted into more open woodlands due to a combination of hotter and drier conditions, is one of the most significant potential climate change impacts in the USA. ³⁰A healthy forest, and in particular a healthy riparian forest, is integrally related to healthy creeks and downstream waters. For example, these ecosystems not only store macronutrients in their biomass, but they are also responsible for stabilizing and building soils with rich microbiological processes that recycle nutrients such as nitrogen and phosphorus. In doing so, creeks are protected from being overloaded and over fertilized with sediment and nutrients. Riparian forests shade creeks and help regulate the water temperature, and the creeks and creek valleys create important microclimates.

²⁸ http://tigerprints.clemson.edu/cgi/viewcontent.cgi?article=1131&context=scwrc

²⁹ http://www.nrdc.org/water/pollution/storm/chap4.asp

³⁰ Ingram, K., K. Dow, L.Carter, J. Anderson (eds). Climate of the Southeast United States: Variability, Change, Impacts, and Vulnerability. Washington, D.C. Island Press, 2013.

NRC (National Research Council), 2010. Adapting to the Impacts of Climate Change. Washington, D.C. National Academies Press.

Overgrazing by deer could adversely affect the health of the forest by causing a decrease in plant diversity and aiding in the spread of exotic species. Soil studies have shown that the seed stores in areas with deer overpopulation can shift from native wildflowers and woody plants to invasive plants and grasses. This could threaten the ability of our forests to regenerate in a healthy way and continue to serve as diverse ecosystems and significant carbon sinks.

Trees, whether lining a city street or part of a forest, are an important tool in addressing climate change. Carrboro's urban forest provides innumerable ecosystem services³¹ (not just limited to climate protection/resilience and energy management). Trees act as carbon sinks, reduce the heat island effect in urban areas, and reduce the energy used to cool and heat buildings. Trees stabilize and improve soil, reducing erosion and improving stormwater management through infiltration and evapotranspiration. Trees have been shown to increase property values and help to create a sense of community and economic vitality³². Trees absorb air pollutants, reducing exposure of dangerous chemicals to people and wildlife. And, of course, trees offer habitat for wildlife such as pollinators and migratory birds. A recent study has shown that Carrboro lost about 4% of its tree canopy between 2002 and 2010³³. A "Tree Coalition" could be formed to promote the preservation and health of trees and the community forest in Carrboro and be a resource for citizens who have questions about trees on their property.

Unfortunately, native plant species are being threatened by invasive plant species (categorized by the US government as non-native species that are economically and environmentally devastating). Recent studies have shown that as climate change lengthens growing seasons, invasive species are adjusting their flowering schedules more quickly than their native counterparts. This earlier bloom time can allow invasives to shade out natives and "capture a larger share of nutrients, water, or pollinators". 34 It can take decades to discover that a species is invasive, and such a discovery does not necessarily lead States to ban nursery sales of the species. Many people are unaware of the critical importance of native plants to food webs and biodiversity, and often fail to realize the impact that their own landscaping choices have on our local ecosystems. For example, because native plants serve as the host plants on which native insects lay their eggs -- and 96% of North American birds (excepting seabirds) rely on native insects to feed their young-- native plants are important both environmentally and economically. According to The White House, as of 2009, pollination of US crops by native insects was valued at more than nine billion dollars. It is recommended that the Town and community take a three-fold approach to this issue: 1) review and strengthen Town ordinances against invasive species and in favor of native species; 2) educate the community about the link between native species and ecosystem health; and 3) encourage invasive species removal projects that are carried out by citizens but led by a non-profit or task force.

http://www.fs.fed.us/openspace/fote/reports/nrs-62 sustaining americas urban.pdf

³¹ See Nowak, D. et al., "Sustaining America's Urban Trees and Forests". USDA Forest Service, Northern Research Station. State and Private Forestry General Technical Report NRS-62. June 2010.

³² Council of Tree and Landscape Appraisers, as reported by City of Raleigh ICMA, as reported by City of Raleigh

³³ Shields, Shane. 2014. Modeling Carrboro's Tree Canopy Cover 2002 to 2010. Report completed as intern to Carrboro Planning Department.

³⁴ Niijhuis, Michelle. "How Climate Change is Helping Invasive Species Take Over." Smithsonian.com. Smithsonian Magazine, December 2013. http://www.smithsonianmag.com/science-nature/how-climate-change-is-helping-invasive-species-take-over-180947630/?no-ist

The Town should consider expansion of composting in studies of and plans for waste management for multiple reasons. According to NCDENR, "landfills are the largest human-made contributor of methane into the atmosphere. Methane, a greenhouse gas, is 72 times more potent than CO₂ over twenty years." The organic material buried in landfills is responsible for this methane, releasing the gas through anaerobic decomposition. Orange County has recently begun to utilize the methane in its landfill for energy production. At the same time, reducing future methane production at landfills is a positive climate mitigation measure. Composting is considered to be the most effective way to combat this production of methane³⁵. Orange County Solid Waste Management is scheduled to begin offering onsite disposal of household organic waste (i.e. food scraps) at its Chapel Hill facility on Eubanks Road in 2016. This will be in addition to the composting facility offered at its Walnut Grove Church Road Convenience Center in Hillsborough. However, many residents do not utilize these convenience centers, instead throwing their food scraps into the trash. Cities and towns that have implemented curbside composting have been able to move to bi-weekly trash pickup, freeing up funds for commercial hauling and processing of compost. Seattle, Portland, and San Francisco have curbside composting programs that could offer examples for Carrboro³⁶.

Ecosystem Recommendation #1: Pursue Stormwater Utility

Create a Stormwater Utility in Carrboro, or Join Chapel Hill's Stormwater Utility.

The Town has taken steps to exceed minimum State requirements for stormwater volume control and water quality buffers for new development and instituted land use planning and policies that have to some extent reduced surface water impacts from new development and exceeded what many other jurisdictions have pursued. The Town has also actively worked with the Bolin Creek Watershed Restoration Team to restore the aquatic health of Bolin Creek. Nevertheless, monitoring of aquatic life continues to identify concerns for the health of Bolin Creek, and stormwater runoff is also known to impact Morgan Creek and other creeks in Carrboro. From the viewpoint of residents with properties regularly experience flooding impacts, however, the Town has not yet been able to comprehensively respond to these impacts. The reality of climate change means that it will likely become more difficult in the future to adequately safeguard the health of local streams and citizens properties. In addition, the Town is faced with both current and new future regulatory requirements related to stormwater runoff. The Town administers an NPDES Phase II stormwater permit, and also will be pursuing a multimillion dollar initiative in the next decade to comply with the Jordan Lake Existing Development Rules.

According to the UNC Environmental Finance Center, there are currently 55 utilities operating in North Carolina, including many utilities in small towns. There appears to be a solid foundation from the work

http://www.seattle.gov/council/bagshaw/attachments/compost%20requirement%20QA.pdf

Portland composting program: http://www.portlandoregon.gov/bps/56513

San Francisco composting program: http://www.sfenvironment.org/zero-waste/recycling-and-composting

³⁵ Dennings, Kelly. (2010). The Link between Recycling and Climate Change [SlideShares]. retrieved from http://www.slideshare.net/NCDENR/the-link-between-recycling-climate-change

³⁶ Seattle composting program:

of all these communities that there is value in having dedicated, predictable and sufficient funding for stormwater management efforts. Chapel Hill has formed a stormwater utility that has significantly increased Chapel Hill's ability to more proactively manage stormwater. Hopefully, a majority of Carrboro residents would be willing to support a utility if the revenue is well managed, especially if provisions are included so that the fee structure not be burdensome to lower income residents.

Implementation	Fee structure can be set up for greater "environmental equity" (fees are
Opportunities	based on actual runoff impact, not property value).
	Emerging/innovative financing approaches exist for stormwater and green
	infrastructure.
	Chapel Hill's stormwater utility offers: local lessons (what works well/what)
	is difficult); staff with technical expertise in engineering, science,
	administration, outreach/education; potential for efficiencies/sharing of
	resources.
	A utility would help address current limited fiscal and staff capacity to meet
	needs for flooding issues/property impacts, protecting and restoring surface
	water quality, requirements for federal/state stormwater permit, and
	planning for compliance with Jordan Lake rules.
	Opportunities exist for incorporating incentives for implementation of on- site starmwater management. For example, effecting subsidies to help
	site stormwater management. For example, offering subsidies to help homeowners and businesses pay for part of a project on their land as a way
	to incentive the implementation of BMPs on private property.
	 The City of Durham has found that it is less expensive overall to distribute
	stormwater-related expenses as a utility fee rather than by increasing
	property taxes. ³⁷
Implementation	Carefully planning the utility's goals upfront.
Challenges	 Determining whether to create a new utility, join Chapel Hill's utility, or
Chanenges	explore an alternative approach that protects the benefits of a utility.
	 Determining a pathway for helping low-income individuals (exemptions,
	reimbursements, etc.).
	 Creating a well-conceived and well-implemented public outreach campaign.
	This campaign is needed to get public buy-in, ensuring that citizens are
	understand the purpose of and need for the utility.
Resources Needed	Funds for stormwater management/financing study
(human and	Eventually, new staff position(s)
material)	Partnering agreement if collaborating with Chapel Hill
	Funds for an education campaign
Anticipated Cost	See footnote ³⁸

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³⁷ See #7 on the City of Durham's Stormwater Utility Fee Frequently Asked Questions Page: http://durhamnc.gov/ich/op/pwd/GIS/Pages/FAQ.aspx

³⁸ The average residential fee across 55 utilities in NC is currently about \$1/month/1000 sq. ft. of impervious surface. Chapel Hill's utility's fee is about twice the average rate. See http://www.efc.sog.unc.edu/reslib/item/nc-stormwater-utility-dashboard# for details on NC stormwater utility rates.

http://www.efc.sog.unc.edu/project/innovative-financing-approaches-stormwater-and-green-infrastructure has information on innovative financing.

Leadership	Policy leadership from Board of Aldermen.				
	 Management, technical, and administrative leadership from staff. 				
	• Environmental Advisory Board may be able to provide support.				
	Chapel Hill and Durham stormwater may be able to provide advice based on				
	their own experiences.				
Partners	Potentially Chapel Hill, OWASA				
Fit with Items	Creating a new revenue stream for the Town adds capacity (Community Integration Recommendation #5)				
Time Frame	Deciding to look into a stormwater utility could happen immediately. Forming a utility or joining Chapel Hill's utility would likely take 1-2 years				
Next Step(s)	 Staff to look into both administrative and policy opportunities and challenges a) Contact nearby jurisdictions and Environmental Finance Center determine best fit for Carrboro in creating a utility. b) Determine whether or not to partner with Chapel Hill's stormwater utility. Craft public outreach/education campaign about negative impacts of stormwater and economic/environmental benefits of a utility. 				
Evaluation Criteria	 Town can consider annual surveys and other means of measuring public awareness about stormwater impacts and management Increased number of BMPs created and increased amount of area treated to control stormwater runoff* Improved stream health as measured by aquatic insects Changes in stream hydrology based on stream gage monitoring Availability of harvested rainwater in times of drought Utility is being funded by fees collected 				

Ecosystem Recommendation #2: Evaluate Extent to Which the Deer Population and Climate Change affect Native Plant Ecosystems.

Evaluate Extent to Which the Deer Population and Climate Change affect Native Plant Ecosystems.

It is recommended that Carrboro seek professional support to determine whether native plant ecosystem effects from the deer population and climate change are apparent in the community forest. The potential savannafication of the southeast, in which forests are converted into more open woodlands due to a combination of hotter and drier conditions, is one of the most significant potential climate change impacts in the USA. Overgrazing by deer has the potential to adversely affect the health of forests, causing a decrease in plant diversity and forest regeneration, and aiding in the spread of nonnative, invasive species.

Implementation	A better understanding of ecosystem impacts from climate change and		
Opportunities	herbivory would:		
	 Provide a baseline of forest ecosystem conditions; 		
	 Identify if actions are needed to mitigate negative ecosystem impacts; 		
	Yield action options more specific and more consistent with local		
	conditions.		
Implementation	An evaluation of forest ecosystem impacts would:		
Challenges	Require outside assistance from experts in forest/ecological/wildlife		
	assessment;		
	 Require coordination among owners of community forest. 		
Resources Needed	Administrative support from Town Staff with help from the		
(human and material)	Environmental Advisory Board.		
	 Information/advice/guidance from organizations such as the NC 		
	Forest Service – Orange County, Humane Society of the United States,		
	ecologists/botanists.		
Leadership	Policy leadership by the Board of Alderman. Support from Town Staff and the		
	Environmental Advisory Board.		
Partners	Carolina North Forest Management, NC Forest Service – Orange County		
Fit with Items	Tree Coalition, Invasive Plant Management		
Time Frame	Further study could be pursued immediately.		
Next Step(s)	1. Obtain professional assistance with evaluating impact of climate		
	change and deer herbivory on forest health		
	2. Consider outcome of evaluation and identify response that meets		
	needs of community.		
Evaluation Criteria	Forest understory (increase in native flora, decrease in exotic species, and		
	increase in plant and animal biodiversity).		

Ecosystem Recommendation #3: Accelerate/Expand Organic Waste Collection/Composting

Accelerate Efforts to Study and Implement a Comprehensive Organics Collection and Composting Program.

The Solid Waste Advisory Group, along with local government staff, are actively looking at the future of solid waste in Orange County, including implementation of an organics program. Prioritization/acceleration of this effort is encouraged. Details are provided below.

Implementation Opportunities	 Improved soil quality by increasing soil organic content; Improved water quality by improving infiltration; Decreased carbon footprint by decreasing methane gas and decreasing the number of trips to the transfer station. Potential to move to bi-weekly trash pickup, freeing up funds for commercial hauling and processing of compost. Funding for the program could come entirely from the reduction of trash hauling and tipping fees. A backyard composting demonstration site(s) in a central location(s) could encourage people to participate in composting. The Town could consider offering finished compost for sale to the community (currently done at the county level) or providing it for free to program participants.
Implementation Challenges	 Educating the public is critical, as contamination of waste streams remains problematic. Contamination is a big problem in composting due to packaging, utensils, and other plastics being discarded with organic matter. Any campaign would need to be multilingual, as Carrboro is home to many people who speak Spanish or Karen as their first (and sometimes only) language. Residential composting is especially challenging for multi-family housing, which is more prevalent in Carrboro than other jurisdictions in Orange County. Future planning needs to be sensitive to this challenge. It can be labor-intensive to get businesses on board. Orange County staff currently have to go back to a business two or three times to get the business to agree to participate. In addition, employees need to be retrained as new people are hired. Questions remain about program financing. Will Pay-As-You-Throw be viable? Would residents be charged for composting services, or given a discount on trash/recycling services if they compost? Would they pay for the collection but then receive free compost in return?
Resources Needed (human and material)	 Potentially, further waste characterization studies Composting equipment (bins, trucks). A business to take the food waste if Carrboro isn't going to have its own composting site. Utility or some way to process fees from participants. Additional staff resources and/or partnerships with community groups

	and/or businesses to expand outreach and education. This could include encouragement of a local business to operate the curbside program (such as CompostNOW).			
Anticipated Cost	The main cost is likely to be the educational campaign aimed at letting people know what can be composted and what still goes in the trash, along with bins. Once the program is running, it could fund itself through money that used to be spent hauling and disposing of trash in landfills.			
Leadership	Policy: Solid Waste Advisory Group. Technical: Local government staff.			
Partners	Local gardening organizations, environmental groups, local businesses, county staff.			
Fit with Items	Community Integration recommendations			
Time Frame	Carrboro has initiated a solid waste study. Current trajectory for Solid Waste Advisory Group (SWAG) to consider a residential composting program is three to four years.			
Next Step(s)	 The solid waste study can include lessons learned from other communities with successful curbside composting (e.g., San Francisco, Portland, Seattle, NYC) and locally successful programs (CHCCS, UNC, etc.) as well as how to collaborate with local contractors (Brooks, CompostNow, etc.).³⁹ Budget for and choose area for pilot program that includes residential and multi-family units. Expand program to entire town. 			
	 Future plans should consider adding a more central drop-off location downtown. Future studies and plans should include curbside compost collection. 			
Evaluation Criteria	Set a goal of 30% reduction in organic material being hauled to the transfer station by 2020, then 70% by 2030.			

Ecosystem Recommendation #4: Tree Preservation, Protection and Conservation

Help Community Members Form an Independent Tree Coalition to Support the Community and Advocate for the Community Forest

<u>Maintain Arbor Day Foundation Tree City USA standards and aim for Tree City USA</u> <u>Growth Award</u>

Trees act as a carbon sink, helping remove carbon dioxide from the air and mitigate climate change. Most of Carrboro's community forest is owned and managed by private landowners. There is a rich community of local arborists, gardeners, landscapers, nurseries, botanists, and ecologists that can support the community in creating healthier and more beautiful yards and ultimately a more resilient and diverse community forest. However, the knowledge and skills are relatively dispersed. Landowners can benefit from a local resource to help with forest, landscape, and tree management and advocacy.

Implementation Opportunities	 Increase public awareness of the intrinsic value and beauty of trees. Provide oversight for a community scale urban forestry program. Educate citizens about proper tree selection, planting, and care. Educate citizens about the health of the larger community forest, its importance for both human and environmental health, and ways in which they can support it. Partner with local government and civic groups to improve and expand the Town's tree canopy. A new community organization could partner with the Town to support the Town's participation in the Arbor Day Foundation's Tree City USA program, and to pursue the Tree City USA Growth Award.
Implementation Challenges	Creating a new and sustainable organization or finding an existing organization to lead the coalition.
Resources Needed (human and material)	 A nonprofit organization to become a community champion for education, outreach, and action. Neighborhood and business champions. Broad support from community leaders, utilities, and business partners to help fund and provide technical expertise (e.g., arborists, foresters, nurseries, landscapers, NC Botanical Gardens, NC Cooperative Extension Service, Carolina North staff, Duke Forest staff). Fiscal/policy/staff support from Town, North Carolina Urban Forest Council.
Anticipated Cost	Costs associated with nonprofit establishment/management if an existing nonprofit doesn't offer to take on the task (though this may be unnecessary if a coalition, like the Carrboro Bike Coalition, is formed.)
Leadership Partners	Nonprofit/community members pulled together by Town staff. NC Botanical Garden, Arbor Day Foundation, National Wildlife Federation, possibly expanding to Chapel Hill, Hillsborough, and/or Orange County.
Challenges Resources Needed (human and material) Anticipated Cost Leadership	 Town's participation in the Arbor Day Foundation's Tree City USA progand to pursue the Tree City USA Growth Award. Creating a new and sustainable organization or finding an exorganization to lead the coalition. Connecting with the public. A nonprofit organization to become a community champion for education outreach, and action. Neighborhood and business champions. Broad support from community leaders, utilities, and business partner help fund and provide technical expertise (e.g., arborists, forein nurseries, landscapers, NC Botanical Gardens, NC Cooperative Extensions Service, Carolina North staff, Duke Forest staff). Fiscal/policy/staff support from Town, North Carolina Urban Forest Courcosts associated with nonprofit establishment/management if an exnonprofit doesn't offer to take on the task (though this may be unnecessar coalition, like the Carrboro Bike Coalition, is formed.) Nonprofit/community members pulled together by Town staff.

Fit with Items	Community forest; native plant ecosystems, invasive plant management,		
	stormwater utility; watershed management		
Time Frame	Depends on identifying leadership and ability to mobilize community		
Next Step(s)	Establish goals for the coalition		
	Recruit members		
	Form partnerships with those who have technical expertise.		
	Begin education/outreach campaign to community		

Ecosystem Recommendation #5: Improve Regulations and Community Capacity to Discourage Invasive Plants and Encourage Native Plants

Pursue both Regulatory and Non-regulatory Approaches to Better Manage Invasive Plant Species and Increase Community Efforts to Improve Plant Communities

The spread of non-native and invasive plants is a threat to forest resilience and biodiversity. Ideas for approaches to reduce the spread of non-native/invasive plants are offered in this recommendation.

Implementation	Implement a campaign to educate people on the link between native plant			
Opportunities	species and ecosystem health, particularly for pollinators who face stress			
	due to climate change and other factors.			
	Encourage naturalized landscaping instead of manicured lawns. These types			
	of landscapes offer critical wildlife habitat, cause a decline in the use of			
	petroleum-based fertilizers and pesticides, more effectively capture			
	stormwater runoff, and reduce the heat island effect. ⁴⁰			
	Pursue invasive species removal projects, especially in Town parks and			
	along greenways/bikeways/right-of-ways. Such projects would be carried			
	out by citizens but perhaps spearheaded by a local non-profit or task force.			
	Projects could initially focus on:			
	1. Vining invasives (Japanese wisteria, porcelain berry, kudzu, mile-a-			
	minute, English ivy, Japanese honeysuckle, oriental bittersweet,			
	Japanese euonymus) that threaten urban tree health;			
	2. Japanese stiltgrass and privet that alter soil pH and outcompete many			

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⁴⁰ See this book for more information on the benefits and approaches for more naturalized yards and landscapes: Tallamy, Doug. *Bringing Nature Home*. Portland: Timberpress, 2010. Print.

	native grasses and shrubs.			
	 The Bolin Forest and Quarterpath Trace neighborhoods have pursued a 			
	neighborhood initiative which could be a resource for other			
	neighborhoods. 41			
Implementation	Many people can't distinguish between native and non-native/invasive			
Challenges	plants, nor do they know that the plants they're choosing for their yard are			
Chancinges	invasive.			
	 Many people don't understand the link between native plants and 			
	ecosystem health, choosing their plants based on cost or aesthetics.			
	 Renters don't often have the option to choose what's planted outside their 			
	door.			
	 Some landowners and HOAs are resistant to native species or more natural- 			
	looking landscapes.			
	Some developers may need outreach and education.			
	Large/big box nurseries often sell few (if any) native species			
	Some people need assistance learning about/accessing local nurseries that			
	specialize in natives.			
	Deer tend to ignore non-native species and prefer native species.			
Resources Needed	Town staff to examine/amend ordinances.			
(human and	 Someone(s) to head an educational campaign. 			
material)	Someone(s) to lead invasive species removal projects.			
Anticipated Cost	Money for an educational campaign and supplies for projects removing			
	invasives (tools, leaf bags, etc.).			
Leadership	Town staff, Environmental Advisory Board, a non-profit or task force to lead			
Darthare	invasive removal projects			
Partners	NC Botanical Garden, NC Native Plant Society, local nurseries, biologists, local bee keepers, landscapers knowledgeable about native/invasive species, HOAs,			
	Friends of Bolin Creek, Morgan Valley Alliance			
Fit with Items	Community forest; Tree Coalition			
Time Frame	Town staff are currently looking at the LUO. An outreach campaign is a long			
Time Trume	term undertaking.			
Next Step(s)	Update the Land Use Ordinance invasive/native plant requirements.			
117	 Implement an educational campaign, maybe in partnership with the 			
	Botanical Gardens or others, to help citizens and businesses understand the			
	importance of planting natives and avoiding invasives. This could be done in			
	conjunction with the Town's newly established annual Pollinator Day.			
	Explore options for implementing invasive removal projects.			
	Develop and update inventory of areas with excessive invasive plant growth			
Evaluation Criteria	Stronger ordinance against invasive species and in favor of native species.			
	Decrease in the number of invasive species in Carrboro and an increase in			
	the number of natives.			
	More knowledgeable citizenry concerning the importance of native species.			

⁴¹ http://www.townofcarrboro.org/1028/Neighborhood-Urban-Forest-Stewardship

Ecosystem Protection and Restoration Challenge #6: Pursue Watershed Restoration Actions to Protect Local Streams from Changes in Rainfall Due to Climate Change

One of the ramifications of a changing climate is the changing of precipitation patterns that affect runoff and groundwater recharge dynamics. Both ends of the spectrum are of concern- more frequent and intense rain and runoff events and longer and more pronounced droughts. Both regional and local evidence points to a relatively recent (on a years to decades time scale) increase in storm events (\$\frac{42}{42}\$,43\$). This increase stresses stream channels and threatens their geomorphic stability, which is exacerbated in an urban and urbanizing area. These conditions can also lead to groundwater depletion, and by association, less available water in the soil to support plant ecosystems. Another impact of climate change is the potential for an increase in water temperature which can affect the amount of dissolved oxygen in the water and the suitability as habitat for aquatic species (44). Forested riparian buffers are a critical component of stream health. An established streamside tree canopy plays a crucial role in maintaining cool water temperatures in stream, while supporting many other ecosystem processes and functions such as carbon cycling and sequestration, filtering of upland runoff, providing habitat, and supporting biodiversity.

The Bolin Creek Watershed Restoration Team (BCWRT) worked through a small grant to characterize stream channel conditions, vulnerabilities, and restoration opportunities in 2007 (45). In 2012, the BCWRT published a Watershed Restoration Plan that identified steps that would help protect and restore creek, riparian, and watershed conditions and in doing so, also support adaptation to meteorological and hydrological changes associated with climate change (46). The purpose of this recommendation is to highlight this plan and encourage the pursuit of its implementation.

https://carrboro.legistar.com/LegislationDetail.aspx?ID=2546739&GUID=FCFDAECE-5C15-4397-AEA2-AACB60FCE076&Options=ID|Text|&Search=flood

⁴² Ingram, K., et al (ed.). 2013. Southeast Climate Consortium Climate of the Southeast United States. Variability, Change, Impacts, and Vulnerability. Island Press. https://www.sercc.com/ClimateoftheSoutheastUnitedStates.pdf
⁴³ A Board of Aldermen agenda item included an analysis of stream gage data indicating an uptick in the frequency of high flow storm events. See this link for details:

⁴⁴ Kaushal, S. et al. Rising Stream and River Temperatures in the United States. 2010. Frontiers in Ecology and the Environment, Ecological Society of America. http://onlinelibrary.wiley.com/doi/10.1890/090037/abstract

⁴⁵ Bolin Creek Geomorphic Assessment. Available at http://www.townofchapelhill.org/town-hall/departments-services/public-works/stormwater-management/local-watersheds-water-quality/watershed-assessments-recommendations/bolin-creek-geomorphic-assessment

⁴⁶ Bolin Creek Watershed Restoration Plan, available at http://www.townofchapelhill.org/town-hall/departments-services/public-works/stormwater-management/local-watersheds-water-quality/watershed-assessments-recommendations/bolin-creek-watershed-restoration-plan-2012

Implementation Opportunities	Additional actions outlined in the Bolin Creek Watershed Restoration Plan could be pursued to: reduce impacts from "flashy" flows and less groundwater recharge and lower stream baseflow; help stabilize stream channels and improve instream habitat, and restore cleared riparian zones.				
Implementation Challenges	 There is limited land available for watershed restoration practices Permission is needed from the landowners, or land needs to be acquired Funding is needed for engineering design and construction of restoration measures Broad participation is needed to achieve meaningful improvements at a watershed scale. 				
Resources Needed (human and material)	Funding and broad community participation				
Anticipated Cost	<u>TBD</u>				
Leadership	<u>TBD</u>				
<u>Partners</u>	Bolin Creek Watershed Restoration Team partners				
<u>Time Frame</u>	<u>TBD</u>				
Fit with Items	Stormwater utility, Tree Preservation, Protection and Conservation				
Next Step(s)	<u>TBD</u>				
Evaluation Criteria	Changes/improvement in geomorphic and biological indicators				

Food Choice Measures

Reducing emissions from food choices in Carrboro will rely on a coordinated effort involving outreach, engagement, and participation broadly with partners and across the community to encourage Carrboro residents to adopt a climate-friendly diet, which reduces or eliminates meat, dairy, and eggs.

The livestock sector is one of the most significant contributors to-serious environmental problems, at every scale from local to global, and must become a major policy focus. ⁴⁷ Livestock and their byproducts account for at least 32,000 million tons of carbon dioxide (CO₂) per year, or 51% of all worldwide greenhouse gas emissions (GHG). ⁴⁸

According to a recent study, the mean GHG emissions in pounds of CO₂ equivalents per day (lbs. CO₂e/day) are 15.85 for high meat-eaters, 12.41 for medium meat-eaters, 10.30 for low meat-eaters, 8.62 for fish-eaters, 8.40 for ovo-lacto vegetarians, and 6.39 for plant-based vegans. Dietary GHG emissions in meat-eaters are approximately twice as high as those in vegans. Changing from a high-meat diet to a vegan diet saves 9.46 pounds of carbon dioxide equivalents per day or 3,452.9 pounds per year (1.73 tons), ⁴⁹ or the equivalent of 178 gallons of gasoline per year. That's enough to drive a Prius 26 miles per day (or a Hummer 4.5 miles per day) for an entire year. In other words, a vegan who drives a Prius less than 26 miles per day (or a Hummer less than 4.5 miles per day) has a smaller carbon footprint than a high meat eater who commutes by bicycle.

Animal agriculture is a driving force behind virtually every major category of environmental damage: deforestation, erosion, fresh water scarcity, air and water pollution, climate change, biodiversity loss, social injustice, the destabilization of communities, and the spread of disease.⁵⁰

Meat is an inefficient way of turning land into calories. It takes 2,500 gallons of water, 12 pounds of grain, 35 pounds of topsoil and the energy equivalent of one gallon of gasoline to produce one pound of feedlot beef⁵¹. We're using our limited land to feed animals instead of people: 56 million acres of U.S. land produce hay for livestock, but only 4 million produce vegetables for human consumption. The world's cattle alone consume enough calories to feed 8.7 billion people – more than the global

⁴⁷ Steinfeld H, Gerber P, Wassenaar T, Castel V, Rosales M, de Haan C. *Livestock's long shadow: environmental issues and options*. Rome, Italy: FAO; 2006. (ftp://ftp.fao.org/docrep/fao/010/a0701e/a0701e00.pdf)

⁴⁸ Goodland, R Anhang, J. Livestock and Climate Change: What if the key actors in climate change were pigs, chickens and cows? *World Watch*, November/December 2009. Worldwatch Institute, Washington, DC, USA. Pp. 10–19. (http://www.worldwatch.org/files/pdf/Livestock%20and%20Climate%20Change.pdf)

⁴⁹ Scarborough P, Appleby PN, Mizdrak A, et al. Dietary greenhouse gas emissions of meat-eaters, fish-eaters, vegetarians and vegans in the UK. *Climatic Change*. 2014; 125(2):179-192. doi:10.1007/s10584-014-1169-1., (http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4372775/)

⁵⁰ WorldWatch Institute: Is Meat Sustainable? 2004. (http://www.worldwatch.org/node/549)

⁵¹ Food Choices and the Planet (http://www.earthsave.org/environment.htm)

population⁵². You would save more water by eating just one pound of beef less than if you didn't shower for an entire year.⁵³

The additional benefits to human health of plant-based diets include reducing cardiovascular diseases, hypertension, many cancers, diverticulitis, diabetes, obesity, osteoporosis, arthritis, appendicitis, gall stones, kidney stones, other chronic diseases, food allergies, and food poisoning. The associated economic benefits are massive. The social justice benefits include greater food security and environmental justice for minority and low-income communities living near factory farms.

<u>Finally</u>, elimination of animal products facilitates backyard composting, as most gardeners advise against composting meat. It also helps reduce the frequency of trash pickup, with rotting meat, dairy, and eggs removed from the trash stream.

For every plant-based meal that each resident of Carrboro consumes, he or she reduces his or her animal-based dietary CO_2e emissions by 4.76%. Of course, each resident of Carrboro who adopts a fully vegan diet (no animal products) reduces his or her animal-based dietary CO_2e emissions by 100%.

If 50% of Carrboro's 20,984 residents make a 50% reduction in their consumption of meat, dairy, and eggs by 2025, and if an additional 25% of Carrboro residents consume no animal products by 2025, Carrboro could eliminate 18,151 tons of CO_2e per year (50% x 10,492 x 1.73 tons/person/year=9,076 tons of CO_2e per year).

Moving to a plant-based diet is a much quicker way to affect climate change than most, as the turnover rate for farm animals (especially factory produced animals) is much greater than that for cars, busses, or buildings. And while CO_2 can remain in the air for more than a century, methane cycles out of the atmosphere in just eight years, producing a further potential for quicker reduction in climate change.

Food for thought – You can change your light bulbs, buy a hybrid car and plant more trees, but nothing is as effective, available, inexpensive, quick, and powerful for the individual in affecting climate change as the choice of where to stick your fork.

Food Choice Recommendation #1: 50% Challenge

Reduce Greenhouse Gas Emissions from Diets by 50% by 2025

It is proposed that local leaders announce an emissions reduction challenge to reduce community wide emissions from animal consumption by 50% by 2025. The challenge could include a component focused on emissions from meat, dairy, and eggs in Carrboro.

(https://www.ciwf.org.uk/media/3817742/global-benefits-of-eating-less-meat.pdf)

(http://www.earthoria.com/global-hunger-the-more-meat-we-eat-the-fewer-people-we-can-feed.html)

⁵² Gold and Porritt. 2004. *The Global Benefits of Eating Less Meat*.

⁵³ Earthoria. 2008: Global Hunger: The more meat we eat, the fewer people we can feed.

Implementation	•	Awareness and demand for plant-based meals continue to grow.
<u>Opportunities</u>	•	A growing percentage of residents are aware of the financial, health,
		environmental, and justice aspects of plant-based diets.
	•	Local nonprofits and organizations such as Triangle Vegfest and
		Triangle Vegetarian Society have experience and expertise in
		educating on the how-to and benefits of plant-based diets.
	•	Local interest in active, healthful living is already strong.
	•	Improved health of Carrboro residents
	•	Town functions could reduce or eliminate red meat and dairy
		(products with the highest emissions) and offer prominently labeled
		plant-based and locally-produced options.
	•	The Town web site could host a Climate-Friendly Diet pledge.
	•	Community programming could involve something as simple as a
		monthly vegan potluck and movie night at the Century Center.
	•	Cooking class options could be expanded to include plant-based
		meal preparation and nutrition at low or reduced costs.
	•	Restaurants could offer a "Climate Friendly Menu Options" window
		sticker and/or a Carrboro Vegan Challenge modelled after the Bull
		City Vegan Challenge in Durham, increase plant-based diet
		patronage and benefit Carrboro's economy.
		The Cooperative Extension Family and Consumer Science programs
		and Master Gardner program could partner with young people to expand learning about growing and preparing foods that support
		plant-based diets.
		Interfaith Council food pantry and kitchen provide opportunities for
		cooking and serving plant-based meals and for requesting donations
		of supplies and ingredients to support plant-based diet meal
		preparation at home for pantry patrons.
	•	Carrboro Farmers' Market participates in SNAP/EBT, WIC, and
		SENIORS FMNC programs and provides bonus Market Bucks for any
		of these users checking in at the Market Booth before shopping,
		making local products more accessible to lower income members of
		the community. Consider working with the market to provide
		outreach on the benefits of local and plant-based dietary choices
Implementation	•	Public schools have strict food guidelines that present unique
<u>Challenges</u>		challenges to changing meal choices in cafeterias.
<u>enanenges</u>	•	High percentage of residents may be unaware of the financial,
		health, environmental, and justice aspects of plant-based diets.
	•	Cultural and social conditioning is present that suggests that eating
		meat, dairy, and eggs is necessary for human health.
	•	Plant-based options in many restaurants and institutions are limited.
		Access to quality food and knowledge on how to prepare it can also
		affect dietary choices.
		<u>Disconnects between information and reality – plant-based diets can</u>
		<u>Pisconnects between information and reality – plant-based diets call</u>

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	be very economical but focus is often directed to local and
	particularly organic foods, which are perceived to be more
	<u>expensive.</u>
Resources Needed	Volunteers and groups to host educational programs and work with
(human and material)	restaurants and schools.
	Staff time or monetary resources for web page development
	Staff time or monetary resources for implementation of plant-based
	programs in Carrboro schools.
	Printed educational materials about plant-based foods and food
	choice impacts on the environment.
	A nonprofit organization could become a community champion, as
	could neighborhoods and businesses.
Anticipated Cost	There could be costs associated with printing educational materials and
	developing web pages. Depending on the incentives provided to the
	Carrboro Farmer's Market participants, monetary resources may be
	required. Plant-based menus typically cost less than meat-based menus,
	so, these programs have the opportunity to save the town money.
<u>Leadership</u>	Local elected officials and community leaders could endorse this goal.
<u>Partners</u>	Food Policy Council, Triangle Meatless Mondays, Triangle Vegfest,
	Triangle Vegetarian Society, CHCCS, Carrboro Business Alliance,
	especially local food providers (retail groceries, restaurants, food trucks),
	<u>Chapel Hill-Carrboro Chamber of Commerce</u>
<u>Time Frame</u>	It is recommended that local leaders begin these measures immediately.
	Especially the measures which take little to no monetary resources.
<u>Fit with Items</u>	Local living economy, social justice, ecosystem protection, composting
Next Step(s)	Formal adoption/publicity for challenge
	2. Begin offering more clearly labeled plant-based options, eliminating
	or high carbon foods at town functions.
	3. <u>Begin conversations with organizations on opportunities for</u>
	partnerships in educational programs.
Evaluation Criteria	Increase in plant-based options at Town functions, local restaurants,
	and schools.
	Number of individuals who take a plant-based pledge on Carrboro
	<u>website</u>

Food Choice Recommendation #2: Develop Local Dietary Consumption and Associated GHG Profile

Develop Data and Method to Better Capture Diet-Related Greenhouse Gas Emissions and Measure Progress Towards Reduction Goal

Monitoring progress towards diet-related greenhouse gas emissions relies on understanding consumption patterns that occur outside of Carrboro in the development and creation of food, and consumption occurring in Town as well. Greenhouse gas inventories developed for Carrboro have focused on the more directly accountable community scale activities, such as fossil fuel consumption from motor vehicles and metered utilities that occur within the geographic confines of the community. These emissions account for a percentage of the full scale "life cycle" direct and indirect emissions associated with the behaviors and activities of community members. In relation to food, emissions for local transport, storage, and processing, cooking, and waste management are included within total estimates for transportation, electricity, natural gas, and waste. Emissions associated with other aspects of food production and consumption are not yet captured. Establishing a broader baseline of food consumption emissions will raise awareness and support individual and household choices to shift from more carbon-intensive to less carbon-intensive diets.



Implementation Opportunities	UNC researchers (or others) could be approached about pursuing a research project to track changes in emissions associated with dietary choices. The Food Council, Chapel Hill Carrboro City Schools, Carrboro Farmers Market, and perhaps others could help track local food production and consumption. Tracking consumption prior to and following outreach and education related to benefits of plant-based dietary choices will help determine impact. The ICLEI protocol and Berkeley Cool Climate Calculator ⁵⁴ are resources that can help assess total GHG from adoption of plant-based diets and other changes in household activities.
Implementation Challenges	Community level data collected to date has not included household consumption of goods and services, including food. The ability to monitor and track progress towards emissions reduction from dietary changes is currently limited.
Resources Needed (human and material)	Some labor/human resources will need to be dedicated to establishing the technical basis and coordinating efforts Funding may be needed for contractual support
Anticipated Cost	<u>TBD</u>
Londorship	Detential leaders include: existing and/or new negatific), the Carrhere
<u>Leadership</u>	Potential leaders include: existing and/or new nonprofit(s); the Carrboro Business Alliance; Chamber of Commerce. Local elected officials and other community leaders could endorse this goal
Partners	Business Alliance; Chamber of Commerce. Local elected officials and other
	Business Alliance; Chamber of Commerce. Local elected officials and other community leaders could endorse this goal Potential partners include: existing and/or new nonprofit(s); the Carrboro Business Alliance; Chamber of Commerce; Triangle Meatless Mondays;
<u>Partners</u>	Business Alliance; Chamber of Commerce. Local elected officials and other community leaders could endorse this goal Potential partners include: existing and/or new nonprofit(s); the Carrboro Business Alliance; Chamber of Commerce; Triangle Meatless Mondays; Triangle Vegfest, Triangle Vegetarian Society; CHCCS. This would take some time to scope out and find partners/researchers. Maybe one year to begin with development of data collection strategy that
Partners Time Frame	Business Alliance; Chamber of Commerce. Local elected officials and other community leaders could endorse this goal Potential partners include: existing and/or new nonprofit(s); the Carrboro Business Alliance; Chamber of Commerce; Triangle Meatless Mondays; Triangle Vegfest, Triangle Vegetarian Society; CHCCS. This would take some time to scope out and find partners/researchers. Maybe one year to begin with development of data collection strategy that could be replicated every 3 years

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⁵⁴ http://coolclimate.berkeley.edu/calculator

Implementation Recommendations

This plan identifies a number of recommendations that include elements of implementation, however it is beyond the scope of the plan to include a detailed implementation plan. The following suggestions are offered as a starting point for pursuing implementation, and focus on categorizing the recommendations into (somewhat arbitrary) timeframes for consideration. "Work has already begun" refers to recommendations which are currently being pursued, and the predominant need is for acceleration, mobilization, and/or additional resources. "Begin immediately" refers to recommendations that could be prioritized because they support other recommendations, can potentially be pursued with more limited partnering requirements, outside or new resources or statutory authority, and in general have a lower risk/higher reward. Those listed "Within one year" are likely to involve more effort/resources, rely more heavily on the creation of partnerships, the development of educational campaigns, and/or input from the community. Items listed under "Within two years" will likely require significant effort and reliance on potential partners and are subject to some uncertainties. Finally, a regulatory based approach to two recommendations is likely to be possible only through changes in state law. While this prioritization is offered to attempt to make the entire pallet of recommendations more manageable from an implementation perspective, considerable flexibility is needed, and reasons to adjust the priorities will no doubt arise as part of implementation. Additional suggestions on the time frame and next steps are included in the more detailed recommendations in previous sections of the plan.

Work has already begun:

Transportation Recommendation #3: Improve Vanpool/Carpool Options

Transportation Recommendation #4: Further Promote Walking, Biking, Transit

Ecosystem Recommendation #3: Accelerate/Expand Organic Waste Collection/Composting

Ecosystem Recommendation #5: Improve Regulations and Community Capacity to Discourage Invasive Plants and Encourage Native Plants

Begin immediately:

Community Integration Recommendation #4: Integrate Climate Action with Local Living Economy

Buildings Recommendation #1: 50% Challenge

Transportation Recommendation #1: 50% Challenge

Ecosystem Recommendation #1: Pursue Stormwater Utility

Begin Within 1 Year:

Community Integration Recommendation #1: Create Grass Roots Partnerships to Engage Community Community Integration Recommendation #2: Expand Public Partnerships to More Explicitly Consider Climate Action

Community Integration Recommendation #3: Create Green Neighborhood Program

Community Integration Recommendation #5: Expand Capacity

Community Integration Recommendation #6: Facilitate Low Cost Financing for Energy Efficiency and Renewable Energy Projects

Community Integration Recommendation #7: Integrate Climate Action and Social/Equity Initiatives
Buildings Recommendation #4 and Renewable Energy Recommendation #3: Create Rental Property Task
Force and Process

Buildings Recommendation #5: Create Rental Property Registry/Certification

Transportation Recommendation #5: Limit Idling in School Loading Zones

Renewable Energy Recommendation #1: Pursue Community Solar Projects

Ecosystem Recommendation #2: Evaluate Extent to Which the Deer Population and Climate Change affect Native Plant Ecosystems

Ecosystem Recommendation #4: Create a Tree Coalition

Begin Within 2 years:

Transportation Recommendation #2: Enhance Transit Service

Renewable Energy Recommendation #2: Create a Downtown Geothermal District

Statutory Authority May Be Needed to Pursue Recommendation as a Requirement:

Buildings Recommendation #2: Require Energy Audit/Performance Rating

Buildings Recommendation #3: Demonstrate/Pursue Energy Performance Beyond Minimum Requirements for New Development

(For these two recommendations, a non-regulatory approach is also offered in the recommendation for which statutory authority is not needed.)

Appendix 1

Summary of 2016 Public Outreach

The public outreach pursued in the spring of 2016 has resulted in a diversity of community input. The discussion that follows offers some summary observations. Those interested in the range and specifics of input are encouraged to review the April 26th Public Hearing agenda item and minutes, and details in the appendices of this memo.

1. As far as participation:

- Approximately 20 people participated in the April 6th drop in session
- 13 people spoke at the Public Hearing, including the 5 Task Force members
- 5 people participated in the May 31st drop in session
- 4 people participated in the June 9th drop in session
- <u>26 responses to the initial Survey Monkey survey were received; 170 responses</u> (as of June 15th) to the follow up Google Form survey have been received

2. General results of the surveys:

- The objective/multiple choice responses indicated broad support for the plan's recommendations that were addressed by the survey questions. For example, half or more of respondents to the second survey (Google form) indicated strong support for each of 9 of the 10 plan recommendations addressed in the survey, and over 95% of respondents were either neutral or supported all the recommendations included. The recommendation for more carpooling and vanpooling support, while having fairly broad support, did not receive quite as enthusiastic support as the other recommendations addressed by the questions. While the longer Survey Monkey survey only had 26 responses, it in general displayed a similar response of support for the plan's recommendations.
- A majority of respondents indicated that they are currently pursuing, or intend to pursue in the future, recommendations in the plan related to: improving the energy efficiency of buildings; biking/walking/bus/carpooling more; making improvements to their land/yards; and supporting local sustainable businesses. Somewhat fewer but still a significant percentage of respondents indicated plans to install solar energy and work in the community on issues related to climate change and social equity and climate mitigation.
- The most frequently received supplemental comments addressed a need for the plan to include an endorsement for plant-based diets. 43 responses spoke to this topic; there is some double counting of respondents since this includes supplemental comments under two separate questions.
- Respondents offered other supplemental comments. From a very broad brush perspective, these comments addressed transportation infrastructure, other transportation topics, solar energy, and several miscellaneous comments.

 Supplemental comments for actions respondents are currently pursuing addressed adoption of a plant-based diet (most frequent), involvement in education, choices for transportation modes, and various other actions.

Climate Action Survey

(Open in May and June, 2016 through Google Forms)

Survey Questions

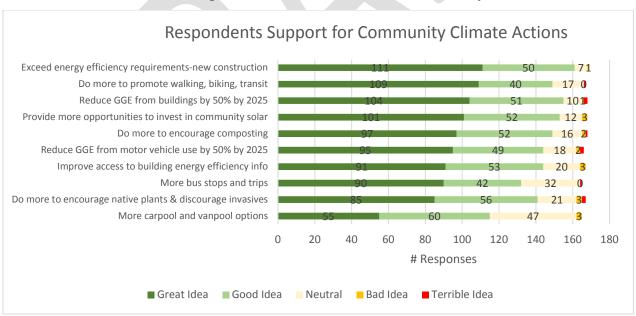
- 1. Please rate the following recommendations from the Community Climate Action Plan
 - (Choices: Great idea; Good idea; Neutral; Bad idea; Terrible idea)
 - A. <u>Develop and implement a strategy to reduce greenhouse gas emissions from</u> buildings by 50% by 2025
 - B. <u>Make it easier for renters and buyers to access information about the energy</u> <u>efficiency of existing buildings</u>
 - C. <u>Pursue energy efficiency features in new buildings that exceed minimum</u> requirements
 - D. <u>Develop and implement a strategy to reduce greenhouse gas emissions from motor vehicle use by 50% by 2025</u>
 - E. Add more bus stops and trips in Carrboro
 - F. Add more carpool and vanpool options in Carrboro
 - G. Do more to promote walking, biking, and transit
 - H. Provide more opportunities for citizens to invest in community solar projects
 - I. Do more to support and encourage composting
 - J. Do more to encourage native, noninvasive plants and discourage invasive plants
- 2. <u>Please add any other community climate actions you'd like to see included in the plan</u> (open ended for text response)
- 3. Please check any actions you expect/intend to do over the next decade (check all that apply)
 - A. <u>Invest in solar energy</u>
 - B. Make my home more energy efficient
 - C. Bike, walk, bus, and carpool more and drive less
 - D. <u>Make choices on my land that improve the soil, reduce erosion and runoff impacts,</u> favor native plants over invasive plants, and in general support the local ecosystem

- E. <u>Increase my support of local businesses</u>, <u>especially those pursuing sustainable</u> practices
- F. Work in the community on issues related to climate change and social equity (e.g., food security, green economy for all, affordable utility costs)
- G. Work with neighbors, coworkers, and/or others in the community on efforts that reduce greenhouse gas emissions
- 4. Please add any actions related to climate change and resilience not included above that you are currently doing or plan to do. (open ended for text response)
- 5. <u>Is there anything else that you would like to share on the topic of community climate</u> action? (open ended for text response)
- 6. <u>If you would like, please feel free to provide your name and address. Anonymous</u> responses are also welcome. (open ended for text response)

Survey Responses

(through June 15)

1. Please rate the following recommendations from the Community Climate Action Plan



- 2. Please add any other community climate actions you'd like to see included in the plan
- 5. <u>Is there anything else that you would like to share on the topic of community climate action? (open ended for text response)</u>

<u>Responses to these two questions are compiled and organized below under major topic</u> <u>headings.</u>

Endorse a Plant-Based Diet

While all these things are good, without the inclusion of plant-based diet recommendations, I fear the document is all but meaningless. Animal agriculture is destroying the environment far faster and with more devastating results than anything else.

I am very discouraged to see no recommendation for encouraging a change in diet on the part of Carrboro citizens. It is becoming more and more evident that animal agriculture is the single biggest cause of climate disruption yet there is zero mention of the single most important change that individuals can make to be part of the solution. Of course, I realize that laws and ordinances cannot be put into effect to regulate what people eat, but the city of Carrboro ought to be forward thinking enough to create a honest and effective campaign to alert people to the devastation caused by the choices on their plates. Any community climate action is weak without recognizing the elephants in the room that are the dairy industry, the meat industry, and the egg industry. Of course, what I am suggesting will take courage, but that is something we should be able to expect of a community that is actually serious about this enormous problem.

<u>Since animal agriculture is the leading cause of climate change and environmental</u> <u>degradation, there should be a section about educating the public about the effects of their food choices.</u>

Encourage people to cut their consumption of products from animal agriculture (meat, dairy, etc).

Reduce meat consumption, decrease the negative environmental impacts of animal agriculture

Include change in diet

Encourage more plant based fare and less need for animal agriculture. With all the information available about saving your life with a plant based diet, you also save the earth.

Promote plant based diets, as animal agriculture is the number ONE reason by far for climate change. Encourage local restaurants and businesses to provide more plant-based options over meat centered options.

Encourage eating more plant-based foods. Meat agro is the #1 cause of greenhouse gases in the atmosphere according to UN data.

Educate people about the environmental problems associated with mass animal agriculture and encourage eating less animal products (Meatless Mondays, vegan/vegetarian options and recipes).

Address the issue of animal foods' contribution to climate change. More focus on plant food initiatives.

Encourage a move away from animal agriculture. Promote Plant based diets to reduce the release of greenhouse gasses into the environment

Educate citizens on impact of animal products on climate change. Provide support and incentives to businesses and citizens to move toward more plant-based diets or just reducing meat consumption. Reducing meat consumption will do far more to limit our carbon footprint than transportation changes. For lower income citizens especially, plant-based diets are more accessible than many of the other solutions presented below (I don't own a home, I can't ride a bus or bike to work, I don't own land, etc.

Promote plant-based diets

When approving restaurants and new places of business, encourage vegan and plant based options. It's one of the greatest ways to fight climate change due to the excessive resources meats use in their production.

There is no mention of animal agriculture which is by far a greater threat to the environment. Encouraging a plant-based diet would have more impact than anything mentioned here. Please consider this fact.

<u>Animal Agriculture is now the leading cause of environmental pollution</u>

<u>Consider the impact of animal agriculture on the environment and increase vegan-</u>
friendly restaurants!

<u>Cut out animal products from our diets! Animal agriculture contributes more greenhouse gas emissions than all of transportation combined!</u>

Ending Animal Agriculture

According to the Worldwatch Institute, livestock and their byproducts account for at least 51% of all worldwide greenhouse gas emissions. A community climate action plan is completely ineffective without including a recommendation to eliminate animal flesh and secretions from our plates.

Animal agriculture is one of the leading causes of climate change (even more so than all transportation combined), so I think that any plan to combat climate change must encourage plant-based diets among residents. Some ideas could include plant-based cooking and nutrition classes and incentives for restaurants to offer plant-based meals. Educate about big impact of animal agriculture on climate change (eg. World Watch attributes 51 percent of annual worldwide GHG emissions to 'livestock and their

<u>byproducts' http://www.worldwatch.org/node/6294</u>) Get behind Meatless Mondays, <u>etc. Make it positive!</u>

It is so important that we educate people about the harmful effects of animal agriculture. "Shifting less than 1 day per week's (i.e., 1/7 of total calories) consumption of red meat and/or dairy to other protein sources or a vegetable-based diet could have the same climate impact as buying all household food from local providers." This study found that transportation is only responsible for 11% of GHG emissions in food production. A vast majority comes from production.

http://pubs.acs.org/doi/full/10.1021/es702969f

Animal agriculture is a huge contributor to climate change, and that should be addressed by discouraging the practice, as well as the consumption of animal products. Animal agriculture is the number one cause of global climate change, so efforts to minimize the impacts from this industry should be taken.

<u>Changing to a plant based life takes some doing but check out Physicians Committee for</u> Responsible Medicine.

Carrboro has the ability to make a huge impact on reducing greenhouse gases because it is such a small community and many people are open to making small changes in their lifestyle. If Carrboro can adopt meatless Mondays, and provide education to the community as to how this significantly helps our environment, it has the potential of being quite successful.

Eating less animal products can greatly reduce climate impact as animal agriculture is responsible for more greenhouse gases than all transportation combined.

Please include diet and animal agriculture in this climate change action plan.

Some have suggested that encouraging plant based diets or less animal product based diets is "elitist". When looking through the other suggestions presented in the climate action plan I do not understand how this suggestion is seen as anymore elitist or inaccessible than other suggestions. It seems hard and it makes us uncomfortable, but our future depends on it. Please consider including plant-based diets or at the very least reducing animal product consumption, like many other cities have done in their plans Please research the effects of animal agriculture. It is the elephant in the living room here.

Livestock is responsible for 65% of all human-related emissions of nitrous oxide – a greenhouse gas with 296 times the global warming potential of carbon dioxide, and which stays in the atmosphere for 150 years. "Livestock's Long Shadow: Environmental Issues and Options." Food and Agriculture Organization of the United Nations. 2006. Promote plant-based diets to reduce global warming/climate change

Since animal agriculture is a main driver of climate change, please include animal agriculture and diet in this climate change action plan. include animal agriculture and diet in their climate change action plan

Animal agriculture & diet contributes to greenhouse gas (methane), water pollution, water usage, and land destruction

<u>Please consider animal agriculture because it accounts for over 41% of greenhouse gas</u> emissions and forest destruction and water pollution.

Animal agriculture has an enormous effect on climate change. Addressing this issue is more important than any of the above suggestions combined:

http://www.fao.org/docrep/010/a0701e/a0701e00.HTM

<u>Promote a whole food plant based diet to eliminate factory farming which is the largest producer of greenhouse gas, greater than any other sector.</u>

Encouraging a meat free diet.

You should focus more on animal agriculture's massive impact on creating climate change. Until you do this, you are ignoring a large part of the problem.

Encourage more plant based diets, like meat free Mondays.

<u>Transportation: Infrastructure and Service</u>

I would like to see additional bike lanes added to more roads in Carrboro. I would especially like to see a bike lane added to Greensboro Rd. by the farm.

Whenever possible, include bike lanes in plans for new roads or resurfacing Roads should be built with shoulders so that there is room for people to safely bike and walk.

Build more greenways! If it's safe for children and old people to bike, everyone bikes!

I support greenways and bike paths that make alternatives to vehicles possible. Often these alternatives are challenged. I welcome open forums about these issues exploring whether there are indeed negative environmental ramifications for these projects or if it is a case of NIMBY politics.

I strongly advocate designing better bike paths throughout our cities. We need to look at the amazing ways in which Colorado, a much larger state, has managed to create bike paths that link neighborhoods and cities throughout the state. The park system is funded by the lottery and bonds. Coloradoans value parks and communities much more than North Carolinians seem to do.

Provide more park & ride options

Greater Number of residential and commercial charging stations for electric vehicles, like the ones made by GE.

One electric vehicle charging station/school

CHCCS makes million dollar buildings that are LEED certified but CHCCS will not support alternative fuel vehicles on site. Even when private individuals will pay for installation.

More charging stations for electric vehicles to promote their adoption.

Sync those traffic lights as best you can to move traffic along efficiently.

Bus stops to Carr Mill Mall so people can easily grocery shop without driving.

More sidewalks - particular on Simpson St. There is already a park and folks walk to the bus stop! Where is the sidewalk?

<u>Increase bus routes and transportation</u>

Municipal fleet non-fossil fueled

Reducing emissions from cars is not something the town can realistically take on.

Concentrate on community actions that are within the control of the town.

Reduce hardscape coverage throughout town, especially surface car parking

<u>Transportation: Education and Outreach</u>

<u>Discourage driving for people who are able to walk, promote walking/biking as "cool" and "the Carrboro way"</u>

<u>Create carpooling options for town events like Parks and Rec events and camps.</u>

<u>Would like crossing guards on Seawell School Road, and Homestead Road to promote walking to school by elementary and middle school children. Lots of homes in walking distance but no crossing guards for bike riders and walkers.</u>

Reducing emissions from motor vehicles seems like more of a national than local issue.

Promoting walking, biking, and transit seems like a good idea but can be controversial.

In principle I love that you are thinking about all of this. In practice there may be aspects that are unrealistic for the town to act on. For example reducing greenhouse gas emissions from vehicles.

Buildings

Require new buildings to be "solar ready". Pursue joint policies with Chapel Hill, schools, County, Durham. Hire staff to manage this, maybe could be shared with Chapel Hill, Orange County.

Please, find a way to erect solar panels on suitable public buildings, or commercial building if the owner is inclined, AND find a way that private citizens can invest in the project. My roof is not suitable for solar panels, but I still would like to contribute to having more solar energy powering Carrboro

The best way to save in residential construction is by using thermostats correctly. (Setback during the day) Making Smart Thermostats easier to attain or providing training on how to use existing thermostats would go A LONG way.

<u>Is there any way to control the size of houses and mixed use projects, some of which can</u> be energy gluttons?

Allow for nontraditional structures to be built like shipping container homes.

Landscaping/gardening

Encourage people to conserve water and to reduce consumption of meat products by offering incentives to create your own vegetable garden and subsidize rain barrels for irrigation. Also plant bee-friendly flowers.

If, by "invasive" plants, you are including poison ivy/oak, I will be thrilled!

Plant more trees, implement green infrastructure on current and future development projects

More education on planning for a backyard vegetable garden and which bushes, trees, flowers are native and environmentally aligned here (and not preferred by deer). I'm new here, so if this is already available, I just haven't found it yet...

Plant edible gardens in town-owned spaces.

Emission free lawn equipment

More community gardening - how about y'all buy 303 Jones Ferry for one!

Preserving green space within and around carrboro, also city funds going to planting

trees in the area and development of more community garden space.

<u>Promote and facilitate residential organic gardening, permaculture, rain water catchment.</u>

Education

General education about climate change

We need to get the schools involved in teaching our children to make climate-friendly choices, especially in food.

ACE would love to help out. I'll let my advisor know. The Climate Summit would be another great venue, and events at Weaver Street or places with more publicity. Educate regarding how food choices have different impacts

We have to lead by example and then effectively tell the story about how implementing all of these practices has saved us money and created a more vibrant community.

Share with other similarly-sized towns and learn from their progress.

Other Feedback

Require that whatever goes in the northwest corner of Greensboro and Weaver be a showcase for sustainability (not LEED, necessarily)

We did consult regarding converting our home to solar power and were told there were too many trees in the way. We didn't want to give up our trees so what other options would there be? Are trees and solar power incompatible?

We should do this stuff to keep our air clean and environment healthy. Climate changes. READ your history books! Ask the dinosaurs.

Be sure that these actions do not systemically drive out any residents or small business owners who cannot afford to pay for or invest in the initiatives related to any "community" climate plan. The people are the most important force within the community. It is important not to lose the unique character of Carrboro, NC.

Gentrification has already began to show its true colors in other affluent areas of Orange County.

Take action against animal cruelty or neglect, and find more humane ways to control the population of unwanted animals in the town limits to replace hunting and poison.

Gondolas!

Ban plastic bags and bottle, continue to improve hybrid and electric bus fleet, add additional solar/ electric charging stations

Ban Plastic Bags!!! Get all food businesses and non-profits involved in commercial composting; Initiate a food waste reduction plan;

<u>Solid waste diversion (beyond composting, mentioned above)- key driver of GHG emissions</u>

<u>I applaud the town of Carrboro, where I live, for doing something about this serious problem.</u>

Thank you for the work on this vital issue!

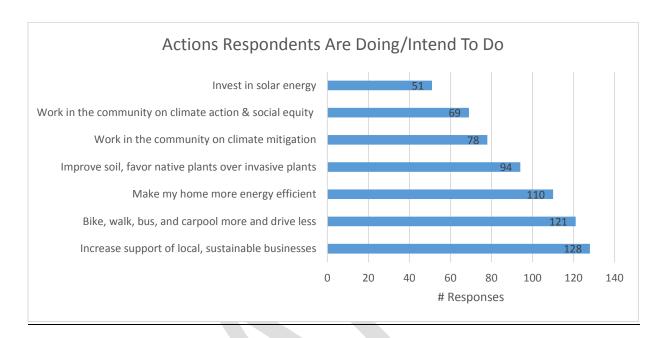
I appreciate the work that the creators of this survey are trying to do.

I love that Carrboro is taking the initiative and doing this! Proud to live here!

These initiatives are incredibly important. It is great to see Carrboro leading the way on this. Encouraging other communities to follow suit is probably the most important and most difficult thing.

We don't need any more 'strategies' researched and implemented. Everything is going in the right direction but please leave it alone. Don't need any more rules.

3. Please check any actions you expect/intend to do over the next decade (check all that apply)



4. Please add any actions related to climate change and resilience not included above that you are currently doing or plan to do. (open ended for text response)

Responses are compiled and organized below under major topic headings.

Plant Based Diet

I will continue to educate people about the importance of plant-based diets.

My family and I are vegan.

I plan to educate the public about the harmful effects of animal agriculture.

I have eliminated my demand for animal products which use a lot of resources. I don't plan to reproduce (humans use so many resources!)

Reduce meat (and other animal product) consumption, stop the negative environmental effects of animal agriculture

I am a vegan, for the earth, the animals and my health.

I have adopted a plant-based diet.

I eat a plant-based diet.

Eat a vegan diet which saves thousands of gallons of water every day.

Promote Meatless options/ Meatless Mondays!!!

I have adopted a vegan lifestyle in part because animal agriculture is the biggest driver of climate change.

Continue to refuse to utilize any animal agriculture products and deny support of animal agriculture businesses.

Hosting vegan potlucks and educating friends, coworkers, family, etc on the role of animal products play on climate change

Eating an environmentally friendly diet of plants.

Meatless Mondays

Eat vegan; support those places that offer sustainable food and beverage options. Eating totally plant-based for 4 years now.

Making vegan food choices to lower water and air pollution

Eat vegan

I am involved with promoting veganism; it is, by far, the most impactful choice that we have to make a difference in the environment. Let me know if I can help! --Dilip dilip@trianglevegsociety.org

Go vegan! It's the most environmentally-conscious decision any of us can make that will have a far greater impact than almost anything else. Watch Cowspiracy on Netflix if you're in doubt.

Ending Animal Agriculture

We do not purchase or consume animal flesh or secretions. We donate only low-carbon-footprint foods to food banks. We do not support local restaurants that offer foods that are GHG-intensive.

Eat plant based diet to reduce climate change

Educate the public about the negative impact that animal agriculture has on the planet. Plant-based eating

Plant-based diet.

I eat a plant based diet and that is the single best way to impact climate change. I'm always shocked when I see so-called energy ideas and plans to save our planet which neglect to include eliminating animal flesh and dairy and eggs. Please do more to promote Veganism along with these other efforts.

As I am aware of animals ag's huge impact on climate change, I am vegan and would encourage everyone to participate in a wholesome, delicious vegan diet

Eat local foods and no meat

Eating sustainably--for me, this means a vegan diet.

Education

<u>Teach my students about sustainability, climate change affected by human action, and teach them how to grow their own food at home.</u>

Working at school to promote conservation and energy efficiency.

Alliance for Climate Education, North Carolina Climate Justice Summit

<u>Transportation</u>

I drive an electric vehicle for my 96 mile roundtrip commute.

I would love better buses from QPT to UNC campus.

I plan to move to a neighborhood from which I can walk or bike to town.

Eat at home more, fly less

Reducing Waste, Recycling, Reuse, Composting

Compost

Reducing overall consumption in an effort to become a minimalist. Many people in this community feel really good about recycling, and rightfully so, however any member of that group failing to realize the effects of over consumption is as irresponsible as a person who does not recycle at all. I am personally unaware of the recycling loop here in North Carolina, but I wonder what percentage of "recycled" materials (paper, plastic, glass, cardboard, etc.) around our country still go into a landfill. I believe more education on how recycling helps the community should also reflect its loop (the process in which recycled materials are turned into new materials) and finally the overall economic impact (positive or negative).

Other/Multiple Topics

Increase the biodiversity of the plants on my property.

Make these things affordable... the reason my family is terrible at this is that it is cheaper to use the nonpreferred way.

I already compost. I am 65, still employed, and would gladly use public transportation but it does not fit my exercise and work schedule. I would consider biking, if traffic were not so deadly. I patronize local businesses and combine errands to minimize driving time. I use native plants in my garden.

Switch from incandescent to LED bulbs

I drive very little, am a vegetarian, and try to recycle everything I can.

Vote anyone out of office who gets in the way of these things and promote local and sustainable ag

Within the last few years, I already have added solar panels, purchased an electric car and renovated the entire house to be more energy & water efficient. Next up: Learning what to do/not do with our land....

Conserving and re-using water. Growing my own produce. Burning firewood instead of non-renewable fuels.

Plant a tree!!! Simple!

I do research related to climate change at UNC. Additional actions include: reducing use of / eliminating plastic products that cannot be recycled from daily life (and minimizing plastic use in general), consuming less meat, composting, using heat/ AC sparingly, driving a hybrid vehicle, etc...

At home we are working to significantly reduce our dependence on plastics; Home composting and energy reduction measures (lights out curfew), educating kids about energy reduction in daily lives, etc.

Start a vegetable garden

6. If you would like, please feel free to provide your name and address. Anonymous responses are also welcome.

- 1. Carrie Monette, 302 Lindsay Street, Carrboro, NC
- 2. Linda Nelson
- 3. Lisa Baxter, 2006 Camden Lane, Chapel Hill, NC
- 4. Beverly swaim@yahoo.com
- 5. Sylvia Badger
- 6. Katie Steinheber
- 7. Sandra Lynch
- 8. Cedric Bush, 215 Eubanks Road, Chapel Hill, NC, 27516
- 9. I work for CHCCS and live in downtown Carrboro
- 10. jwthompson@chccs.k12.nc.us
- 11. <u>Sharon Thomas</u>. 358 <u>Deerhaven Lane</u>, <u>Thomasville</u>, <u>NC</u>. 27360. 336-862-0160
- 12. Daniel Turbert, Edwater Circle 27516
- 13. Shahab (Shawn) Siahpoosh
- 14. Dilip Barman
- 15. William Nievaart
- 16. Ellen Weiss, QPT
- 17. A Carrboro resident.
- 18. Sabannah/Carrboro

- 19. Suzanne Setti
- 20. Olivia Wander; owander98@gmail.com
- 21. <u>Laurakaywenzel@gmail.com</u>
- 22. Ben Berolzheimer, 910 Tallyho tr
- 23. Erin Nelson
- 24. Erica Wolak, 143 Torrey Heights Lane Durham, NC 27703
- 25. Cindy Yates 105 Linville Dr., Castle Hayne, NC
- 26. Melody Kramer 102D Todd Street
- 27. Anthony Holderied 105 Phipps Street
- 28. <u>Justin Baumann 106 W Poplar Ave</u>
- 29. Lindsay Griffin 115 Barnes St.
- 30. Pamela Tandy, 601 West Rosemary, Unit 305/Chapel Hill, 27516
- 31. Jeffrey Clayton
- 32. Laura Pellice

Appendix 2

Boulder's Local Climate Action Plan and Climate Commitment

The Task Force recommends that Carrboro pay close attention to Boulder, Colorado, a community that is leading the pack with local climate action planning in the US⁵⁵. For example, Boulder is:

- 1) A leader in energy efficiency according to the American Council for an Energy Efficient Economy. Boulder has distinguished itself through:
 - a. excelling in improving access to energy usage information;
 - b. implementing the SmartRegs program, which mandates baseline energy efficiency requirements for rental housing;
 - c. receiving the highest rating from ACEEE by having staff dedicated to implementing community-wide efficiency goals and implementing programs to mitigate the urban heat island effect, including instituting an Urban Forestry program.
 - d. Piloting Community Power Partnership, a program designed to help residents and businesses better understand their electricity use at a whole-building and circuit levels.
 - e. Piloting Boulder Energy Challenge, a grant program launched in 2014 that has provided \$300,000 funding for innovative solutions from the community to reduce emissions.
 - f. Running EnergySmart, a program that offers energy efficiency assessments, advising services and rebates for residents and businesses. Since EnergySmart began in 2010, more than 7,500 housing units and 2,300 businesses have participated in the program, more than \$3.4 million in rebates have been paid and over \$18 million in private investments made.
- 2) Working to become a zero waste community that reuses, recycles and composts at least 85 percent of its waste stream by the year 2025.
- 3) Becoming a Platinum Bicycle Friendly Community (one of 4 in the US).
- 4) Pursuing owning and operating a local electric utility, a process known as municipalization. For the city, it's an opportunity to move away from getting electricity from a for-profit investor-owned utility with a carbon-intensive coal-powered energy supply.
- 5) Becoming a platinum-level Solar Friendly Community in 2014, with one of the highest per-capita solar installations in the country. Since 2007, Boulder residents, businesses and institutions have installed more than 15 megawatts of solar on more than 1,900 rooftops.
- 6) Supporting climate action initiatives by the Climate Action Plan (CAP) tax (since 2007). The tax funds city-funded programs and services designed to reduce local greenhouse gas emissions.
- 7) Pursuing a GHG reduction goal of 80% by 2050, having already made substantial progress.

 $^{^{55}}$ More information about what Boulder is doing is available at $\underline{\text{https://bouldercolorado.gov/climate}}$ and $\underline{\text{https://bouldercolorado.gov/climate/boulders-climate-commitment}}$.

Appendix 3

How the Jones Household Goes Carbon Free in 10 Years

In July 2008, Al Gore challenged the country
to generate all our electricity carbon free in just 10 years. He
believes it's possible, and so do we. We also think it's possible
for individual families to go carbon free in 10 years.

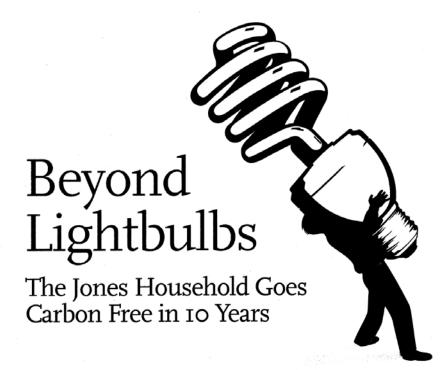
How the Jones Household Goes Carbon Free in 10 Years





Reprinted from
Issue 45
Spring 2008
CLIMATE
SOLUTIONS

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START HERE YEAR 1

A Big Difference from Small Changes

The family starts off with easy changes: They wash clothes in cold water and air dry them in the summer, replace incandescent bulbs with compact fluorescents (CFLs), turn off their computer when not in use. That's an instant, virtually free savings of 6,200 pounds of CO2. They make one simple transportation change: One of the adults commutes by bus three days a week-enough to see whether it can be done, but keeping the second car just in case. That's worth another 2,200 pounds. They're down to 51,600 pounds and it hasn't cost them anything but the price of the CFLs and a clothesline. They're actually saving money.



YEAR 2

Home Improvement

They stop donating so much heat to the outdoors: attic and basement insulation, sealing and insulating heat ducts, and patching the large air leaks typical of standard construction saves them a whopping 7,100 pounds. These savings aren't free up front, but the savings in heating and cooling bills will repay the cost over time. Besides, Mrs. Jones is handy with home repair, and does a lot of this work herself. Down to 44,500 per year.



YEAR :

House and Car

The bus commute's gone well, so Mr. Jones now buses to work all the time. They've worked on consolidating trips outside work, and find they can do without the second car altogether. That's 5,900 pounds gone. They finish weatherproofing their house: beefing up wall insulation. weatherizing doors and windows, and upgrading to high performance windows. Another 1,800 pounds disappear. They're at 36,800.



YEAR 4

Shed Carbon on Vacation

Instead of flying for their annual vacation, the Joneses take the train: a leisurely way to save 7,200 pounds every year. (If they took the bus, they'd save even more.) They're at 29,600 pounds per year—halfway there a year early.



VEAD

Car Upgrade

Time to replace the car. Thanks to consumer demand, electric cars have become widely available, and they buy one. Even charging on dirty power, they save 9,000 pounds. Household total is now 20,600.



51,600 lbs - 7,100 lbs 44,500 lbs



44,500 lbs - 7,700 lbs 36,800 lbs





29,600 lbs - 9,000 lbs 20,600 lbs



Brooke Jarvis and Doug Pibel

eet the Joneses. They're your average U.S. energy consumers. They haven't yet upgraded to energy-efficient appliances, their house needs better insulation, and they keep the place as cool in the summer and warm in the winter as most Americans do. The two adults commute 30 miles each per day, in separate cars with average fuel efficiency, and every year they each drive an additional 4,500 miles running errands and taking their child to soccer games and violin practice. The family takes one vacation trip per year, flying to visit grandparents 1,350 miles away. How much CO2 do their house and cars produce? We figure it at 60,000 pounds, or 10 tons for each family member.

Lately, though, the Joneses have been reading about climate change, and they're getting worried. Ecological crisis has never felt so urgent before. Even little Joey Jones is talking greenhouse gases-he learned at school that scientists are predicting a worldwide climate catastrophe that will change the rest of his life, unless we stop the worst effects by making big changes in the next ten years. The Joneses decide: change is necessary, and they're ready to do their part. But how much can they really do? A lot, it

In 10 years, without sacrificing their way of life, the Jones family eliminates the CO2 emissions that their home and transportation used to create-the bulk of their carbon footprint.

Count Your Carbon

Want to keep up with the Joneses? Here are the numbers we used. Use them to find-then shrinkyour own carbon footprint.

> CO2 output, in pounds

Gallon of gas	19.36
Gallon of fuel oil or diesel	22.38
Kilowatt hour of electricity (national average)	1.43
Therm of natural gas	11.71
Gallon of propane	12.67
Per passenger:	
Airplane mile	1.28
Train mile	0.42
Long-distance bus mile	0.18
Local mass transit mile	0.50
Electric bike mile	0.02

The Rest of the Story

The Joneses only changed their housing and transport habits. How can you go further?

Eat meatless. For every day of the week you skip meat, you'll save 215 lbs. per year.

Buy local. Most food eaten in the U.S. has traveled 1,500 miles to your plate

Be a low-impact consumer.

Choose local products, reduce the stuff you buy, and save embedded energy by buying used.

Reduce waste. Stop junk mail, reduce packaging, and reduce the 2,020 lbs. each American's waste produces annually.

Avoid the McMansion. A smaller house saves a lot of carbon: on average, 11.4 lbs. of CO2 per square foot per year.



Hot and Cold

They improve their water system, including insulating their hot water heater and their pipes, and also lower the temperature of their water heater: 1,000 pounds down. When the old refrigerator kicks the bucket, the Joneses buy a new energy-efficient one and finally unplug a second fridge in the garage, knocking off another 1,300. Total remaining: 18,300.



YEAR 7

Close to Home

Grandma and Grandpa retire and move nearby. The loneses now vacation within the range of their electric car, saving 3,300 pounds of CO2 each year. The city converts its bus fleet to clean electricity, which saves another 1,200 pounds. They're down to 13,800.



YEAR 8

A Few More Things Around the House

An efficient clothes washer saves carbon on its own, and saves dryer time. With all the money they're saving, they decide it's time to invest in a solar hot water system. Total: 2,000. Leaving 11,800



YEAR 9

Electric Bikes

While the Joneses have been on this journey, their town has responded to citizen pressure and gone bike friendly. The new bike paths make it easy for both to ride to work. To ease the hills, they buy electric bikes. There are four months of the year when they can't bike, so they continue their usual commute patterns then. Savings: 3,500. Total remaining: 8,300.



Green Power

The Joneses' furnace has been groaning and working overtime. They replace it with an electric heat pump, which also cools the house in summer. They also buy certified green, renewable power from their electric company, and the switch from coal plants eliminates the remaining 8,300 pounds of CO2 produced by the electricity for their house and car.















8.300 lbs

Sources: Rocky Mountain Institute, Bureau of Transportation Statistics, Environmental Protection Agency, Department of Energy, University of Chicago. Illustration by Kayann Legg / I-S

Appendix 4

10 Things You Want to Know about Human Nature if you're Fighting Climate Change

By <u>Lisa Bennett</u>, posted at http://grist.org/climate-energy/10-things-you-want-to-know-about-human-nature-if-youre-fighting-climate-change/ June 10, 2015.

I've spent nearly a decade thinking about why people get stuck on climate change: stuck in debates, denial, what looks like indifference, and the awful discomfort that comes with the question "But what can I do?" In search of answers, I've interviewed dozens of experts in psychology, neuroscience, sociology, economics, political science, and other fields — and many more Americans across a broad spectrum of political affiliations, income brackets, and ages. I've also read widely to tap the thinking of those who were once more commonly looked to for insights into human nature, such as poets, philosophers, and spiritual leaders. What I've come up with is my own climate-centric version of Robert Fulghum's All I Really Need to Know I Learned in Kindergarten. Climate change has been my window into learning about human nature — or, at least, about what we humans do when faced with a challenge much greater than ourselves. The experience has also persuaded me that a better understanding of our own nature can help inspire a more effective response to what is happening to the natural world.

Here then are 10 things I've learned, along with some ideas about how these insights might be applied by those working on climate change:

1. We are overly optimistic about the future — our future, that is. Neuroscientist Tali Sharot has observed that when newlyweds are asked about their chances of getting divorced, they tend to say zero, despite the widely known fact that the odds are 50-50. We instinctively overestimate the probability of positive events and underestimate the probability of negative events in our own lives, she writes in *The Optimism Bias*, for two reasons: We think we have more control over our lives than we actually do, and we tend to see ourselves as better than average.

Applied to climate change, this means that I might think that you — and surely those poor Pacific Islanders — might be negatively affected but I'll be OK. The problem, of course, is that this reflects a bias grounded in delusion. But don't try to tell me or anyone else that. You'll have a better chance of engaging others in climate action, experts like Sharot say, if you keep a laser-like focus on how climate change is affecting people now.

2. We can be blasé about the most important issues in the world because the global perspective is way beyond ordinary human scale. "Trying to convince people of the magnitude of the climate problem through large-scale statistics is essentially useless," says Scott Huettel, chair of the Department of Psychology and Neuroscience at Duke University. "The iconic global warming image of the polar bear on the iceberg is evocative precisely because it is one polar bear. Thousands of polar bears on a glacier that is receding would be irrelevant. Our brains cannot process it."

Put another way, climate change seems like an abstraction because it is so much bigger than us. Humans relate to human-sized stories — the kind that speak to a family living in a home like ours, having dreams and struggles like ours, and maybe discovering one day that their home is on a map of places expected to soon be under water.

3. We are wired to refute imperatives. "If you say I have to act now on climate change, my first reaction will be, 'No, I don't,'" says Huettel. The reason, he explains, is that our brains are very well designed to come up with counterarguments. So no matter how good the reasons to switch to solar energy or demand that government take bolder action on climate change, people can always come up with reasons why they don't need to do anything, such as: "If I don't act right now, the world will basically be the same."

Passing a law that requires people to change their behavior (especially if those changes are relatively easy to make) is one effective way around this. But short of that — just as in other aspects of human relationships — efforts to attract people to a cause are much more likely to yield a positive response than those that threaten or make demands.

- **4.** We are vulnerable to peer pressure, especially about things that confuse us. We can watch the news, see photos of melting glaciers, even experience changing weather patterns. But if our neighbors aren't doing anything about climate change, we're unlikely to do anything either because, as much as we hate to admit it, we are herd animals who use social cues to adapt to our environment, according to Robert Cialdini, author of Influence: The Psychology of Persuasion. And if you doubt how powerful this instinct is, consider the experiment Cialdini conducted in which his team hung four different kinds of flyers on people's doorknobs in San Diego, with the goal of inspiring residents to reduce their energy consumption. Three of the flyers directly asked them to reduce their energy use, offering three different motivations: save money, save the environment, and benefit future generations. But none of these appeals made a significant difference. Only the fourth flyer did, which read simply: "The majority of your neighbors are undertaking energy-saving actions every day." The lesson: Don't be afraid to appeal to our instinct to fit in.
- **5.** We shy away from topics that remind us of our mortality but can be motivated to take action on behalf of beings more vulnerable than us. Janis L. Dickinson, a professor of natural resources at Cornell University, conducted an experiment a few years ago in which she asked 3,546 people (largely birders) if they would be willing to reduce their energy consumption after learning that climate change was, among other things, a threat to people or to birds, and then she compared the results. It turned out that people were left unmoved by considering the threat to humans, but envisioning the threat to birds was another story. One possible reason, Dickinson says, is that considering climate change as a threat to humans may trigger thoughts of death (which we also tend to deny) whereas we like to think of ourselves as helping cute little creatures that seem to need us. This suggests that emphasizing the threat climate change poses to beloved animals could be an effective way of motivating people.
- **6.** We perceive and respond to risks only when we feel them. While riding a roller coaster with my children one day, my youngest son took his hands off the bar and raised them in the air. The amusement park, I was sure, anticipated antics like this and did not expect people to remain in their seats by the strength of their grip. Still, I screamed, insisting he hold on because I was scared and, for the moment,

that made the risk I imagined feel real. This, says Columbia University professor of psychology Elke Weber, is how we perceive and respond to risk: through our emotions more than an analysis of the facts.

When it comes to climate change, this means that no matter how much scientific and journalistic evidence we are presented with, we will not be moved to action unless something makes us feel the risk. As a result, it may be more effective to tell a short, detailed story that can evoke people's feelings — for example, about an individual or family encountering some specific impact of climate change — than present yet more scientific evidence about the global or even national implications of a warming planet.

- 7. We are motivated more by hope than fear, at least in matters of social change. While research shows that fear is a more powerful motivator than hope when it comes to behaviors such as diet and fitness, inspiring social change seems to depend more on a positive vision of the future, according to the social movement, political science, and neuroscience experts with whom I spoke. "This rhetoric about we only have a certain amount of time is a killer. It doesn't make people engaged, it makes them give up," says David Meyer, professor of sociology at U.C. Irvine and author of *The Politics of Protest: Social Movements in America*. Sharot confirmed this, saying: "Our studies show that people don't process information they don't pay attention when what is being communicated is how things will get worse." In a widely shared opinion, Meyer said the implication was clear: "You have to be hopeful."
- 8. We are more likely to take action when we know precisely what we can influence. It would take a fantastic and deluded leap of the imagination to think that, as individuals, we can control rising seas, melting glaciers, or heat waves. As a result, when people hear messages that encourage them to broadly act on climate, it can strike them as unrealistic and trigger what psychologist Martin Seligman called learned helplessness specifically because it appears so far outside their sphere of influence. But, as Seligman and others have also found, it is possible to cut through learned helplessness (or apparent indifference) by appealing to what people think they can control, such as their own attitudes and behavior. For this reason, Huettel recommends emphasizing how people will feel about themselves, for example, after they take some realistic action, such as riding a bike or buying a hybrid.
- **9.** We need to believe our actions will make a difference. "We have to have some sense of efficacy to motivate us to make changes in our lifestyle that are beneficial to the planet," says Paul Slovic, a professor of psychology at the University of Oregon and expert in decision making around risk. But when it comes to big issues like genocide or climate change, his research suggests that people can be demotivated by a sense of inefficacy as well as what he calls "pseudo-inefficacy" or the illusion of inefficacy. For example, Slovic explained, some people fail to do anything because they think their action will be just a drop in the bucket, even though that drop is important. This finding suggests that it could be useful to explicitly speak to people's suspicion that individual actions don't matter and creatively show them how such drops add up.
- **10.** We will continue to behave the same way we always have even after we know it is problematic until there is a realistic alternative. It is a safe bet that if you are reading this, you know that fossil fuels contribute to climate change and yet you continue, either directly or indirectly, to rely upon them, as most of us do.

But the reason for this, I have firmly come to believe, is not because most people don't care, don't get it, or have been duped by climate denial propaganda. I find a more believable reason in the words of Thomas Kuhn, widely considered one of the most influential philosophers of science of the 20th century. "People are unlikely to jettison an unworkable paradigm, despite many indications it is not functioning properly," Kuhn said, "until a better paradigm can be presented." While individual behavior changes are essential, in other words, many of them remain dependent on systemic public- and private-sector changes. To fully succeed, we need a "moon shot"-style rapid transition to a clean energy economy, like the one proposed by a group of scientists and economists led by the U.K.'s former chief scientist, Sir David King.

But in the end, even the best of plans depends on understanding, communicating, and acting with a fuller appreciation not just of the state of the natural world but of our own nature, which means bringing today's global climate story down to a human scale. The good news is that doing so requires that we engage some of the best aspects of human nature, including our ability to be present in the here and now, to care more about people than facts, to be drawn to hope more than fear, to be willing to defend those weaker than us, and to focus our actions on things that are in our control — all the while being capable of believing in, even being thrilled by, the vision of a moon shot.

<u>Lisa Bennett</u>, coauthor of <u>Ecoliterate</u>, is a writer and communications strategist focused on climate change and what helps people rise to challenges great and small. She blogs at <u>lisabennett.org/blog</u>, and is on Twitter at <u>@LisaPBennett</u>.

Appendix 5

Energy in the 21st Century: Excerpts from Post Carbon Institute's Energy Primer⁵⁶

We are now facing a transformational moment in our energy story. As we leave the age of seemingly cheap and plentiful fossil fuels and enter an era of extreme energy, the ever-rising financial, social, and environmental costs of fossil fuels can no longer be ignored. The essential problem is not just that we are tapping the wrong energy sources (though we are), or that we are wasteful and inefficient (though we are), but that we are overpowered, and we are overpowering nature.

 Richard Heinberg, from the Introduction to ENERGY: Overdevelopment and the Delusion of Endless Growth

The Energy Picture

In order to make the right choices and investments, we must have a more comprehensive understanding of our energy predicament, including:

- The true costs, potential benefits, and limitations of all energy options, including renewables;
- The impact of each form of energy production on human societies and nature; and
- The true relationship between energy, our economic system, and the environment.

It's tempting to take the micro-view and look for ways to target each of our energy problems with a technical fix. Can't we improve the energy efficiency of vehicles, insulate our buildings, and develop renewable energy sources? Yes, of course. Can't we regulate the fossil fuel industry better, and allow the vast, recently unlocked North American reserves of shale gas and shale oil to be produced responsibly? Possibly. We could do all of those things, and many more besides, to lessen the current energy economy's impacts on natural and human communities—and still there would remain serious obstacles ahead. Why? Let's move out from the details of our dilemma and take in the big picture.

What is Energy?

Though we cannot hold a jar of pure energy in our hands or describe its shape or color, it is nevertheless the basis of everything. Without energy, nothing could happen; matter itself could not exist in any meaningful sense. But because energy as such is so elusive, physicists and engineers define it not in terms of what it is, but what it does—as "the ability to do work," or "the capacity to move or change matter."

-

⁵⁶ http://energy-reality.org/primer/

In traditional societies, most useful energy came from the sunlight annually captured by food crops and forests; people exerted energy through muscle power and obtained heat from firewood. Modern industrial societies obtain enormously greater amounts of energy from fossil fuels, nuclear power, and hydroelectric dams, and they exert energy through a vast array of machinery. Industrial energy production is essential to every aspect of modern life, but no matter how far our technology for capturing or using energy advances, energy itself always remains the same.

In the nineteenth century, physicists formulated two fundamental laws of energy that appear to be true for all times and places. These are known as the First and Second Laws of Thermodynamics. The First Law is known as the law of conservation. It states that energy cannot be created or destroyed, only transformed. Think of energy as a singular reality that manifests itself in various forms—nuclear, mechanical, chemical, thermal, electromagnetic, and gravitational—and that can be converted from one form to another.

The Second Law states that in every energy conversion, some energy is dissipated (typically as heat). When the gas gauge in a car moves from "full" to "empty," it may appear that the energy that is chemically stored in gasoline is being consumed. But all the energy that was originally present in the gasoline still exists. In reality, the stored energy is merely being released and doing some work as it moves from a condition of higher concentration to one of lower concentration. It is converted from chemical storage (via the atomic electromagnetic bonds within hydrocarbon molecules) to mechanical motion and heat (as combustion within the engine's cylinders pushes the car forward and also increases the rate of motion of molecules in the cylinder and the surrounding environment).

We might be able to get some work out of the "wasted" heat being given off by the burning of gasoline in the car engine; but heat tends to radiate quickly into the general environment, so we would have to use that heat both immediately and close to the engine. If we could gather up all the heat and mechanical energy that was released by burning the tankful of gasoline, it could do just as much work for us yet again; but the act of re-concentrating and storing it would require more energy than we could regather. Thus, in effect, available energy is always being lost.

The Second Law is known as the law of entropy (entropy is a measure of the amount of energy no longer practically capable of conversion into work). The Second Law tells us that the entropy within an isolated system inevitably increases over time. Energy that is sufficiently concentrated (relative to background energy levels) so that it can do work for us is called a source. There are two kinds of energy sources: flows (examples include sunlight, winds, and rivers) and stocks (a word that in this context refers to energy chemically stored in substances such as wood or fossil fuels). Flows tend to be variable, whereas stocks deplete.

Energy-fueled Population Growth

Humanity's current population explosion is an aberration. During the vast majority of human history, population levels were low and quite stable. Demographer Joel Cohen estimates that from the time our species emerged until roughly twelve thousand years ago, when local agriculture appeared, the

population growth rate was less than 1/500th of 1 percent. After the widespread adoption of farming the growth rate ticked up by a factor of ten or more, but for thousands of years thereafter remained at around 1/50th of 1 percent. It took all of human history until the early eighteen hundreds for global population to reach one billion. Then the population doubled—a second billion was added—in just a century or so. Adding the next billion humans to the planet took only thirty years. The next billion, fourteen years. The next, twelve years. After another dozen years, in 1999, world population reached six billion, and the seven billion mark was passed in 2011.

When charted graphically, the human demographic explosion takes the familiar "hockey stick" shape of a classic exponential growth curve. Many factors contributed to demographic expansion, including: the global agricultural revolution in the sixteen hundreds when new foods were shared between continents; the dispersal of scientific and public health knowledge; and increasing urbanization. But central to the runaway population growth of the past two centuries is the incredible windfall of energy that fossil fuels presented to humanity. The ability to command energy, especially highly energy-dense fuels like coal, precipitated the Industrial Revolution and allowed its descendant, the techno-industrial growth culture, to flourish. Food could now be produced in far larger quantities, and local scarcity could be overcome through global transport networks.

Leading ecologists agree that humanity has already surpassed Earth's ecological carrying capacity. Exploiting the onetime reserve of fossil energy has allowed us to temporarily escape the constraints that kept early human population levels in check. Today's global extinction crisis, massive poverty and malnutrition, rising social inequity, and unraveling ecosystems around the globe suggest that the age of abundance is nearly over. As economist Lisi Krall tells her students, "The defining fact of this historical moment is the reality of exponential growth. With exponential growth, if you do the same things as your parents, you'll get entirely different results." Confronting the population problem is the preeminent challenge of our time.

Net Energy

A business may have high gross receipts and still go broke; it is the net, the profit after costs are subtracted, that determines viability. For any potential energy resource, the fundamentals are the same. How much energy is available after subtracting the energy costs to extract, process, and deliver the resource? To know how much energy from a particular source can actually be deployed by society, we must factor in both the production costs and the system costs—that is, the energy required to make energy available to the end user. With gasoline, for instance, this calculation would include energy costs related to oil exploration, drilling, refining, transportation, and the infrastructure that supports each step of the process. With coal-derived electricity, the calculation would include the life cycle from mine to power plant to electric grid.

Experts who study this use the terms "net energy ratio" or "energy returned on energy invested" (EROEI). Decades ago when the most accessible reserves were drilled, an oil company might produce 100 barrels of oil or more for each barrel's worth of energy invested. Declining oil field productivity has

brought the average net energy ratio for conventional oil down to approximately 20:1 globally, with more remote or hard-to-refine oil significantly worse. For fossil energy generally, the trend is downward despite technological advances in exploration and drilling. For biofuels, the net energy ratio is lower still. Some studies suggest that corn-derived ethanol actually has a negative net energy ratio—that is, more energy than a gallon of ethanol can deliver is used to produce a gallon of ethanol. Sugarcane-based ethanol has a superior net energy ratio, but it is still low compared to fossil fuels.

Any produced energy resource can be analyzed for its net energy ratio, although the process raises a difficult question: What are the boundaries of consideration? For example, when tallying the energy required to build a solar photovoltaic panel, what should be included in the accounting? The energy needed to mine the bauxite for the aluminum frame? The energy needed to manufacture the heavy equipment that did the mining? The energy needed to construct the factory that produced the panel? Where the boundaries are drawn affects the final net energy ratios.

A society that depends on inexpensive energy to maintain a high standard of living and constant growth faces a predicament—it cannot maintain itself over the long run without high net energy fuels. Oil, natural gas, and coal have provided a huge, high-quality energy subsidy to the modern world. That subsidy, which has enabled human population and wealth to grow exponentially, is based on finite resources and cannot continue indefinitely. Renewable energy sources, excluding hydropower, are generally more diffuse and have lower net energy ratios than fossil fuels. If high net energy sources are in decline, and no reasonable replacements are available, the result may be a painful restructuring as society rearranges economic activity to fit a diminishing energy supply.

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Energy-fueled Economic Growth

World economic activity has historically grown slowly. From the Middle Ages to until the early eighteen hundreds, average per capita income rose only about 50 percent. But since the advent of the Industrial Revolution the pace has picked up, with global per capita income rising more than eightfold in just the last two hundred years.

Energy consumption has also risen dramatically, from under 20 gigajoules (GJ)⁵⁷ per person per year in the pre-industrial era to over 75 GJ per person today (and more than 300 GJ per person in the United

⁵⁷ One joule is defined as the work required to produce one watt of power for one second. A gigajoule is a billion joules

States). During this period, energy consumption and economic activity have stoked each other in a self-reinforcing feedback loop. Once the fossil fuel tap was opened for the modern world in eighteenth-century Britain, the high-energy content of coal (and, later, oil) enabled unprecedented productivity—spurring more consumption, more demand for energy, and better technology to get at yet more fossil fuels.

Despite the clear link between energy and economic growth, economists have interpreted and normalized growth as resulting from factors such as "market efficiency" and "labor productivity," which (it is assumed) can be counted upon to produce more and more growth, ad infinitum. Policy makers have therefore built dependence on growth into the design of our economic system. Investors demand constant growth and high rates of return. Future growth is assumed to wipe away the debts taken on today by governments, businesses, and households. Most Americans are even betting their retirement savings, sitting in mutual funds on Wall Street, on continued growth.

As the global bonanza of cheap fossil fuels winds down, what will happen to economic growth? Certainly it's possible to get more benefit per joule through smarter use of energy, but using energy efficiency to "decouple" economic growth from energy consumption can only go so far. After the easy efficiencies are found, further efficiency measures often require greater cost for less benefit; and while greater efficiency may reduce costs at first, it can have the effect of spurring yet more consumption.

It's intuitively clear that it takes energy to do things, and modern civilization has exploited high-energy-content fossil fuels to dramatically reshape the living conditions and experiences of billions of people. (Altering the climate and destroying natural ecosystems around the globe were unintended consequences.) In the future, humanity will need to cope with both more expensive energy and less energy available per capita. Maintaining an acceptable level of productivity—let alone growth—may constitute one of society's foremost social, political, technical, and economic challenges.

Energy Density

Different fuels contain more or less potential energy per unit of weight or volume, and even within fuel types, such as wood or coal, the heat value varies. Anthracite packs more energy than bituminous coal, and putting oak rather than pine in the woodstove before bedtime makes a big difference in how warm the house will feel on a winter morning. The fossil fuel age has been such a bonanza because oil and coal are extremely energy-dense fuels. They have benefited from the long work of geological processes to concentrate the carbon molecules from ancient plant and animal matter.

On average, coal has approximately twice the energy density of wood. Liquid fuels refined from petroleum including gasoline, kerosene, diesel, and heating oil all contain more than three times the energy value of wood. It is no accident that when human societies have had the opportunity to transition from locally harvested biomass to concentrated fossil energy fuels, they have chosen to do so.

The miraculous quality of fossil fuel energy density is easy to understand if one imagines trying to push an automobile for twenty miles. Given enough time, and some help from athletic friends, it would be

possible to push a 3,000-pound car that distance. But it would require a tremendous amount of effort. And yet a mere gallon of gasoline (which, despite recent price increases, still costs far less in the United States than an equivalent amount of good coffee) can easily power a car that far in the time it takes to drink a mocha latte. The fact that renewable energy is, in general, more diffuse than fossil fuel presents the primary challenge to transitioning from the current energy economy to a renewables-powered future.

Peak Oil and Resource Depletion

Every individual gas or oil well, every oil field, and every oil-producing country experiences a similar lifecycle. After a well is drilled, extraction ramps up to its maximum sustained output and eventually begins to decline as the reservoir is depleted. Then we search for the next well, which is generally a little harder to find, a little more expensive to produce. The price of any fossil energy determines what reserves are economically recoverable, and technological innovations can temporarily reverse the decline or extend well life. But as with any finite, nonrenewable resource—coal, natural gas, uranium, etc.—depletion is inevitable at some point.

In recent years, a large body of literature has begun exploring the many ramifications of "peak oil"—the moment when aggregate global oil production reaches its apex. The late American geologist M. King Hubbert predicted in the mid-1950s that U.S. oil production would reach the top of its production curve around 1970 and then begin to decline. That assessment was remarkably prescient: America's production of crude did peak in 1970 and has been generally declining since, despite the addition of new sources on the Alaska North Slope and in the Gulf of Mexico. The United States, the first great power of the oil age, was also the first nation to explore, exploit, and begin to deplete its conventional oil reserves.

Oil of course is a global commodity. From a global perspective, reaching Hubbert's peak means that roughly half of the world's total oil resources are still in the ground, waiting to be tapped. Practically, however, the second half of the global oil resource is more difficult to access, making it less profitable (in terms of net energy) and more environmentally destructive than the earlier-exploited reserves.

The exact timing of the global oil production peak will only be recognizable in hindsight. Some energy experts predict that the peak will occur sometime during the first two decades of the twenty-first century. Others project continued growth in oil extraction through 2050. Based on data published by the International Energy Agency, global conventional oil production has been essentially flat since 2004, despite record-high prices, and likely peaked in 2006. Increased production of unconventional oil (deepwater oil, tar sands, oil shale, and shale oil) is officially projected to help meet growth in demand in the near future, but some energy experts insist that new production from these sources will be unable to make up for accelerating declines in production from conventional oil fields. Whether peak oil has occurred, is imminent, or remains years or decades off makes little difference to the salient fact: the era of abundant, inexpensive oil is closing, and all the systems for modern life designed around that earlier reality are bound to be affected.

Embodied Energy

Every material artifact—a carrot bought at the grocery store, the cooler where it was displayed, the supermarket building, the car driven there, and the road network it travels—requires a certain amount of energy in its manufacture, maintenance, and eventual disposal. The methods used to analyze the total embodied energy of manufactured objects vary, but in general, studies over the decades have used life-cycle analysis to quantify embodied energy in computers, household appliances, automobiles, and other common products.

The embodied energy in our physical infrastructure—from water mains and buildings to superhighways and airports—is immense, and thus infrastructure is one of the most important areas where energy use (and associated greenhouse gas pollution) could be reduced. In addition to building smaller, or building less, we can also build differently. Wood, for example, has the lowest embodied energy of common building materials; plastic has approximately six times as much embodied energy by weight, glass 16 times as much, steel 24 times as much, and aluminum a whopping 126 times as much embodied energy as wood. Erecting the scaffolding of civilization took a great deal of energy, and maintaining and expanding it takes more all the time. This vast amount of embodied energy, along with psychological and financial investments in the current energy distribution system, is a key obstacle to fundamental changes in that system.

Another useful metaphor that communicates the idea of embodied energy across a product's life cycle is the "energy train." Take for example that ubiquitous artifact of modern civilization, the mobile phone. To its owner, a cell phone is simply a handy gadget that offers convenience and a feeling of connection. But the phone does not exist in isolation—it isn't a single locomotive chugging down the tracks; rather, it pulls a train of cars behind it, all of which have ecological and energetic costs. Those metaphorical railroad cars are filled with packaging to ship the phone; an advertising industry to inculcate desire for it; a retail store to sell it; a communications network that allows it to function; an assembly plant to build it; factories to manufacture plastic cases and computer chips and other components; mines where copper, silver, and rare earth elements are dug from the ground; the transportation infrastructure to move raw materials; and of course the energy system (oil wells, coal mines, power plants, hydroelectric dams, etc.) that support the entire operation. It is a very long train, and every car being pulled along must be in place for even one mobile phone to make its first call.

Energy Sprawl

The foremost criterion by which to judge any existing or potential energy source is its systemic ecological impact. A key subset of this analysis is its physical footprint. The useful term "energy sprawl" refers to the ever-increasing area—on land and offshore—that is devoted to energy production. Quantifying the area affected by different energy sources raises challenging methodological questions. It's obvious, for instance, to take into account the drilling pad when considering the energy sprawl impact of oil and gas development. But one should also include the land affected by pipelines, access roads, refining facilities, and other related infrastructure in the calculation. Nuclear power plants occupy

a small area relative to their electrical generation output, the smallest physical footprint of any major energy source. That energy sprawl impact grows considerably, however, when one factors in uranium prospecting, mining, processing, nuclear waste disposal, and any new power lines needed for an expanded nuclear industry. Moreover, as past accidents have demonstrated, when nuclear power plants fail, a large area can be contaminated.

Because of their high energy densities, coal, oil, and natural gas have a medium-size footprint if judged on an energy-output-per-acre ratio; but in practice these extractive industries affect a huge and growing area because they dominate energy production, and because of the enormous quantities of energy being consumed. Oil shale development in the American West is a potential area of fossil fuel exploitation that would create massive energy sprawl. Renewables, which harness the diffuse energy sources of wind and solar power, can have a large physical footprint relative to energy produced; they constitute such a small part of the current energy mix in North America that their aggregate energy sprawl impact at present is modest but growing. Because wind turbines require minimum spacing distances to maximize wind energy capture, the physical footprint of wind power is extensive but can be mitigated, whereas decapitated mountains in Appalachia sacrificed for surface coal mining will never grow back. Siting wind turbines in existing agricultural landscapes need not fragment any additional wildlife habitat. Putting solar arrays on rooftops, parking lots, and urban brownfields need not contribute to energy sprawl at all while generating significant energy close to where it is needed, eliminating the sprawl precipitated by new transmission lines.

Devoting land to growing feedstock for liquid biofuels, or growing biomass for generating electricity, augurs the greatest potential energy sprawl of the major energy alternatives under discussion. The energy density of these fuels is low and the amount of land that must be effectively industrialized, even for relatively small quantities of biofuels or biomass-derived electricity, is massive. In the end, the most effective strategy for fighting energy sprawl is to reduce energy consumption.

Energy Slaves

During the vast majority of our species' history, work was done by human muscles (sometimes the muscles of human beings enslaved by others). After people learned to domesticate wild creatures, beasts of burden such as oxen and horses added to our ability to harness the Sun's energy—captured by plants and channeled into the muscles of work animals. (This relationship between domestic animals and the machines we use today is enshrined in the "horsepower" rating of modern engines.) More recently, people began using wind and waterpower to amplify human labor. But with the dawn of the fossil fuel age, the average person was able to command amounts of energy previously available only to kings and commanders of armies.

Where people or work animals formerly toiled in the fields, the petroleum-powered machines of industrial agriculture now do the work of growing food. Need to be on the other side of the planet tomorrow? Jet travel can get you there. Want to sit in the sunshine, gamble, and overeat with a few thousand strangers in a gigantic floating hotel? The cruise "industry" can make your dreams come true.

Energy-dense fossil fuels make the seemingly impossible or ridiculously extravagant whims of people a reality.

In effect, the modern energy economy provides power equivalent to that of vast numbers of human or animal servants. That is the idea behind the concept of "energy slaves." Although top athletes can do far better, a typical adult male at sustained labor is estimated to produce 75 to 100 watts of power. Calculate the total energy use of an average American and it seems that there are the energetic equivalent of more than 100 energy slaves working around the clock to prop up the easy lifestyle offered by modern civilization.

Energy Future: A Positive Vision

Everyone engaged in combating human-caused climate change or specific elements of the current energy economy knows that the work is primarily oppositional. It could hardly be otherwise; for citizens who care about ecological integrity, a sustainable economy, and the health of nature and people, there is plenty to oppose—burgeoning biomass logging, mountaintop-removal coal mining, inadequately regulated natural gas and oil drilling, poorly sited solar and wind developments, river-killing megadams, and new nuclear and coal plants around the globe. These and many other fights against destructive energy projects are crucial, but they can be draining and tend to focus the conversation in negative terms. Sometimes it's useful to reframe the discourse about ecological limits and economic restructuring in positive terms, that is, in terms of what we're for. The following list is not comprehensive, but beauty and biodiversity are fundamentals that the energy economy must not diminish. And energy literacy, conservation, relocalization of economic systems, and family planning are necessary tools to achieve our vision of a day when resilient human communities are embedded in healthy ecosystems and all members of the land community have space enough to flourish. In short, what we're for is leaving behind the current energy economy, which is wasteful, polluting, and centralized; assumes perpetual growth; and is anchored by nonrenewable fuels. We envision a bold leap toward a future energy economy that fosters beauty and health; that is resilient because it emphasizes renewable, community-scale energy generation; that supports durable economies, not growth; and that is informed by nature's wisdom. Recognizing that all human economic activity is a subset of nature's economy and must not degrade its vitality is the starting point for systemic transformation of the energy system. While such a transition may seem daunting, reforms may be implemented incrementally, and the destination offers exciting possibilities for building vibrant human communities embedded in healthy ecosystems.

Energy Literacy

Energy is arguably the most decisive factor in both ecosystems and human economies. It is the fulcrum of history, the enabler of all that we do. Yet few people have more than the sketchiest understanding of how energy makes the world go around. Basic energy literacy consists of a familiarity with the laws of thermodynamics, and with the concepts of energy density and net energy (also known as energy return on energy invested, or EROEI). It requires a familiarity with the costs and benefits of our various energy sources—including oil, coal, gas, nuclear, wind, and solar. It also implies numeracy—the ability to

meaningfully compare numbers referring to quantities of energy and rates of use, so as to be able to evaluate matters of scale. Without energy literacy, citizens and policy makers are at the mercy of interest groups wanting to sell us their vision and products for the future energy economy. We hear from the fossil fuel industry, for example, that Canada's oil reserves (in the form of "tar sands") are second only to Saudi Arabia's, or that the United States has over one hundred years of natural gas thanks to newly tapped "shale gas" resources. And it's tempting to conclude (as many people do) that there are no real constraints to national fossil fuel supplies other than environmental regulations preventing the exploitation of our immense natural treasures. On the other end of the spectrum, we hear from technooptimists that, with the right mix of innovative energy generation and efficiency technologies, we can run the growth economy on wind, solar, hydropower, and biofuels. And it's tempting to conclude that we only need better government incentives and targeted regulatory reform to open the floodgates to a "green" high-tech sustainable future. Energy literacy arms us with the intellectual tools to ask the right questions: What is the energy density of these new fossil fuel resources? How much energy will have to be invested to produce each energy unit of synthetic crude oil from oil shale, or electricity from thin-film solar panels? How quickly can these energy sources be brought online, and at what rate can they realistically deliver energy to consumers? When we do ask such questions, the situation suddenly looks very different. We realize that the "new" fossil fuels are actually third-rate energy sources that require immense and risky investments and may never be produced at a significant scale. We find that renewable energy technologies face their own serious constraints in energy and material needs, and that transitioning to a majority-renewable energy economy would require a phenomenal retooling of our energy and transportation infrastructure. With energy literacy, citizens and policy makers have a basis for sound decisions. Householders can measure how much energy they use and strategize to obtain the most useful services from the smallest energy input. Cities, states, and nations can invest wisely in infrastructure to both produce and use energy with greatest efficiency and with minimal damage to the natural world. With energy literacy, we can undertake a serious, clear-eyed societal conversation about the policies and actions needed to reshape our energy system.

Conservation

The current energy economy is toxic not simply because of its dependence on climate-altering fossil fuels, but also because of its massive scale and wastefulness. A first step toward reducing its global impacts is simply using less energy, a goal readily accomplished through conservation practices that are widely available and cost-effective. Energy conservation consists of two distinct strategies: efficiency and curtailment. Energy efficiency means using less energy to produce a similar or better service. For example, we can exchange old incandescent lightbulbs for compact fluorescents or LEDs that use a fraction of the electricity and still enjoy satisfactory levels of indoor illumination. Curtailment means exactly what you'd think: cutting out a use of energy altogether. In our previous example of indoor lighting, this strategy might take the form of turning off the lights when we leave a room. Efficiency is typically more attractive to people because it doesn't require them to change their behavior. We want services that energy provides us, not energy per se, and if we can still have all the services we want,

then who cares if we're using less energy to get them? Much has been achieved with energy efficiency efforts over recent decades, but much more remains to be done: Nearly all existing buildings need to be better insulated, and most electric power plants are operating at comparatively dismal efficiencies, to mention just two examples. Unfortunately, increasing investments in energy efficiency typically yield diminishing returns. Initial improvements tend to be easy and cheap; later ones are more costly. Sometimes the energy costs of retooling or replacing equipment and infrastructure wipe out gains from efficiency. Nevertheless, the early steps toward efficiency are almost always rewarding. While curtailment of energy use is a less inviting idea, it offers clearer savings. By simply driving fewer miles we unequivocally save energy, whether our car is a more or less efficient model. We've gotten used to using electricity and fuels to do many things that can be done well enough with muscle power, or that don't need doing at all. Conservation helps us appreciate the energy we use. It fosters respect for resources, and for the energy and labor that are embodied in manufactured products. It reduces damage to already stressed ecosystems and helps us focus our attention on dimensions of life other than sheer consumption. During the latter decades of the twentieth century, most Americans achieved a standard of living that was lavish from both historical and cross-cultural perspectives. They were coaxed and cajoled from cradle to grave by advertising to consume as much as possible. Simply by reversing the message of this incessant propaganda, people might be persuaded to make do with less—as occurred during World War II—and be happier as well. Many social scientists claim that our consumptive lifestyle damages communities, families, and individual self-esteem. A national or global ethic of conservation could even be socially therapeutic.

<u>Resilience</u>

Resilience is "the capacity of a system to withstand disturbance while still retaining its fundamental structure, function, and internal feedbacks." Resilience contrasts with brittleness—the tendency to shatter and lose functionality when impacted or perturbed. Ecologists who study resilience in natural systems have noted that ecosystems tend to progress through a series of phases: growth, consolidation and conservation, release (or "collapse"), and reorganization. Each turning of this adaptive cycle provides opportunities for individual species and whole systems to innovate in response to external and internal change (i.e., disturbance). Resilient ecosystems (in the early growth phase) are characterized by species diversity; many of the organisms within such systems are flexible generalists, and the system as a whole contains multiple redundancies. In contrast, less resilient ecosystems tend to be more brittle, showing less diversity and greater specialization particularly in the consolidation phase. Resilience can be applied to human systems as well. Our economic systems, in particular, often face a trade-off between resilience and efficiency. Economic efficiency implies specialization and the elimination of both inventories and redundancy (which typically guarantee greater resilience). If a product can be made most cheaply in one region or nation, manufacturing is concentrated there, reducing costs to both producers and consumers. However, if that nation were to suddenly find it impossible to make or ship the product, that product would become unavailable everywhere. Maintaining dispersed production and local inventories promotes availability under crisis conditions, though at the sacrifice of economic efficiency (and profits) in "normal" times. From a resilience perspective one of the most vulnerable

human systems today is the American transportation system. For over seventy years we've spent trillions of dollars building transportation infrastructure that is completely dependent (i.e., "specialized") on affordable petroleum fuels, and we've removed or neglected most alternative methods of transport. As petroleum fuels become less affordable, the effects reverberate throughout the system. Resilience becomes more of a priority during periods of crisis and volatility, such as the world is experiencing today. Households, towns, and regions are better prepared to endure a natural disaster such as a flood or earthquake if they have stores of food and water on hand and if their members have a range of practical self-sufficiency skills. While the loss of economic efficiency implies trade-offs, resilience brings incidental benefits. With increased local self-sufficiency comes a shared sense of confidence in the community's ability to adapt and endure. For the foreseeable future, as global energy, finance, and transport systems become less reliable, the rebalancing of community priorities should generally weigh in favor of resilience.

Eco-Localism

A central strategy needed to increase societal resilience is localization—or, perhaps more accurately, relocalization. Most pre-industrial human societies produced basic necessities locally. Trade typically centered on easily transportable luxury goods. Crop failures and other disasters therefore tended to be limited in scope: If one town was devastated, others were spared because they had their own regional sources— and stores—of necessities. Economic globalization may have begun centuries ago with the European colonization of the rest of the world, but it really took hold during the past half century with the advent of satellite communications and container ships. The goal was to maximize economic growth by exploiting efficiency gains from local specialization and global transport. In addition to driving down labor costs and yielding profits for international corporations, globalization maximized resource depletion and pollution, simplified ecosystems, and eroded local systems resilience. As transport fuel becomes less affordable, a return to a more localized economic order is likely, if not inevitable. The market's methods of rebalancing economic organization, however, could well be brutal as global transport networks become less reliable, transport costs increase, and regions adapt to less access to goods now produced thousands of miles away. Government planning and leadership could result in a more organized and less chaotic path of adaptation. Nations can begin now to prioritize and create incentives for the local production of food, energy, and manufactured products, and the local development of currency, governance, and culture. Natural ecological boundaries—such as watersheds— bordered traditional societies. Bioregions defined by waterways and mountain ridges could thus become the basis for future relocalized economic and political organization. Deliberate efforts to relocalize economies will succeed best if the benefits of localism are touted and maximized. With decentralized political organization comes greater opportunity for participation in decision making. Regional economic organization offers a wide variety of productive local jobs. Society assumes a human scale in which individuals have a sense of being able to understand and influence the systems that govern their lives. People in locally organized societies see the immediate consequences of their production and waste disposal practices, and are therefore less likely to adopt an "out of sight, out of mind" attitude toward resource depletion and pollution. Local economic organization tends to yield art,

music, stories, and literature that reflect the ecological uniqueness of place—and local culture in turn binds together individuals, families, and communities, fostering a sense of responsibility to care for one another and for the land.

Beauty

Discussions about energy rarely focus on beauty. But the presence or absence of this ineffable quality offers us continual clues as to whether or not society is on a regenerative and sustainable path, or on the road to further degrading nature. From the time of the earliest cave paintings, human ideals of beauty have been drawn from the wild world. Animals, plants, rivers, oceans, and mountains all tend to trigger a psychological response describable as pleasure, awe, and wonder. The sight of a great tree or the song of a goldfinch can send poets and mystics into ecstasy, while the deep order inherent in nature inspires mathematicians and physicists. Nature achieves its aesthetic impact largely through anarchic means. Each part appears free to follow its own inner drives, exhibiting economy, balance, color, proportion, and symmetry in the process. And all of these self-actualizing parts appear to cooperate, with multiple balancing feedback loops maintaining homeostasis within constantly shifting population levels and environmental parameters. The result is beauty. Ugliness, by contrast, is our unpleasant aesthetic response to the perception that an underlying natural order has been corrupted and unbalanced—that something is dreadfully out of place. Beauty is a psychological and spiritual need. We seek it everywhere and wither without it. We need beauty not as an add-on feature to manufactured products, but as an integral aspect of our lives. With the gradual expansion of trade—a process that began millennia ago but that quickened dramatically during the past century—beauty has increasingly become a valuable commodity. Wealthy patrons pay fortunes for rare artworks, while music, fashion, architecture, and industrial design have become multibillion-dollar industries. Nature produces the most profound, magnificent, and nurturing examples of beauty in endless abundance, for free. Industrialism, resulting from high rates of energy use, tends to breed ugliness. Our ears are bombarded by the noise of automobiles and trucks to the point that we can scarcely hear birdsong. The visual blight of highways, strip malls, and box stores obscures natural vistas. With industrial-scale production of buildings, we have adopted standardized materials produced globally to substitute for local, natural materials that fit with their surroundings. But industrialism does not just replace and obscure natural beauty—it actively destroys it, gobbling up rivers and forests to provide resources for production and consumption. Largescale energy production—whether from coal mines and power plants, oil derricks and refineries, or massive wind and solar installations-comes at a cost of beauty. While some energy sources are inherently uglier than others, even the most benign intrude, dominate, and deplete if scaled up to provide energy in the quantities currently used in highly industrialized nations. The aesthetic impact of industrial processes can be mitigated somewhat with better design practices. But the surest path to restoring the beauty of nature is to reduce the scale of human population and per capita production and consumption. Returning to a sustainable way of life need not be thought of as sacrifice; instead it can be seen as an opportunity to increase aesthetic pleasure and the spiritual nourishment that comes from living in the midst of incalculable beauty.

Biodiversity

The family of life on Earth is large: More than a million species have been identified and formally described by taxonomists, and estimates of the total number of species on the planet range from 3 million to 100 million. We humans depend for our very existence on this web of life of which we are a part. Indeed, it is part of us: Each human is inhabited by thousands of species of microbes that enable digestion and other basic functions. Yet through our species' appropriation and destruction of natural habitat we are shredding microbial, forest, prairie, oceanic, riparian, desert, and other ecosystems. Habitat loss, overharvesting, climate change, and other results of human numbers and behavior endanger untold numbers of species with extinction. Extinction is nothing new: It is an essential part of the process of evolution. Throughout the billions of years of life's history, life forms have appeared, persisted for thousands or millions of years, and vanished, usually individually but occasionally in convulsive mass events triggered by geological or astrophysical phenomena. There were five ancient extinction events so catastrophic that 50-95 percent of all species died out. Today humans are bringing about the sixth mass extinction in the history of life on Earth. While the normal rate of extinction is about one in a million species per year, the extinction rate today is roughly a thousand times that. According to recent studies, one in five plant species faces extinction as a result of climate change, deforestation, and urban growth. One of every eight bird species will likely be extinct by the end of this century, while one-third of amphibian and one-quarter of mammal species are threatened. As species disappear, we are only beginning to understand what we are losing. A recent United Nations study determined that businesses and insurance companies now see biodiversity loss as presenting a greater risk of financial loss than terrorism—a problem that governments currently spend hundreds of billions of dollars per year to contain or prevent. Nonhuman species perform ecosystem services that only indirectly benefit our kind, but in ways that often turn out to be crucial. Phytoplankton, for example, are not a direct food source for people, but comprise the base of oceanic food chains, in addition to supplying half of the oxygen produced each year by nature. The abundance of plankton in the world's oceans has declined 40 percent since 1950, according to a recent study, for reasons not entirely clear. This is one of the main explanations for a gradual decline in atmospheric oxygen levels recorded worldwide. Efforts to determine a price for the world's environmental assets have concluded that the annual destruction of rainforests alone entails an ultimate cost to society of \$4.5 trillion—roughly \$650 for each person on the planet. Many species have existing or potential economically significant uses, but the value of biodiversity transcends economics: The spiritual and psychological benefits to humans of interaction with other species are profound. Most fundamentally, however, nonhuman species have intrinsic value. Shaped by the same forces that produced humanity, our kin in the community of life exist for their own sake, not for the pleasure or profit of people. It is the greatest moral blot, the greatest shame on our species, for our actions to be driving other life forms into the endless night of extinction.

Nonth Carolina

TOWN OF CARRBORO

NORTH CAROLINA

TRANSMITTAL PLANNING DEPARTMENT

DELIVERED VIA: ⊠ HAND □ MAIL □ FAX ⊠ EMAIL

To: Board of Aldermen

David Andrews, Town Manager

From: Randy Dodd, Environmental Planner

Thru: Patricia McGuire, Planning Director

Christina Moon, Planning Administrator

Date: November 8, 2016

Subject: Draft Community Climate Action Plan Follow Up

Summary

At the June 21, 2016 meeting, the Board of Aldermen directed staff to assess the benefits of the draft Community Climate Action Plan and report on an implementation schedule; the purpose of this memo is to provide a response. "Benefits" as used herein refers primarily to climate mitigation, or reduction of greenhouse gas emissions. Other "benefits" are briefly presented, including climate adaptation and resilience, a qualitative perspective of the "co-benefits" of climate action, and monetary benefits through a relatively new economic concept, "the social cost of carbon". An appendix with implementation timing considerations has also been prepared.

Information

Community Greenhouse Gas Inventory

The degree of future climate change is dependent on greenhouse gas emissions¹. Actions taken today to reduce greenhouse gas emissions mean less warming and less severe impacts². In the

¹ Melillo, Jerry, Terese Richmond, and Gary Yohe. "National Climate Assessment". January 1, 2014. Accessed April 16, 2015. http://nca2014.globalchange.gov/highlights#section-5682.

Cities for Climate Protection campaign, the first step to pursue climate mitigation planning and action is to complete an inventory of greenhouse gas emissions. For Carrboro, an inventory was first attempted for Orange County (in collaboration with other local governments) in 2007 (using 2005 data), and was subsequently updated for Carrboro by a UNC Capstone Team (using 2009 data). In 2015, a second UNC Capstone Team worked with the Town to create an updated community greenhouse gas inventory for 2012³. This inventory revealed a total greenhouse gas emissions for the community of 112k tons CO₂ equivalent (CO₂e), which equates to 5.5 tons CO₂e per capita. The inventory accounted for emissions for the area within the municipal limits for "direct" GHG emissions (e.g., combustion of natural gas and motor vehicle fuels) along with limited "indirect" GHG emissions, most notably from the use of purchased electricity. As further discussed below, this community scale methodology is not explicitly designed to more holistically or comprehensively account for the full spectrum of emissions from production to consumption from household/personal or business activities.

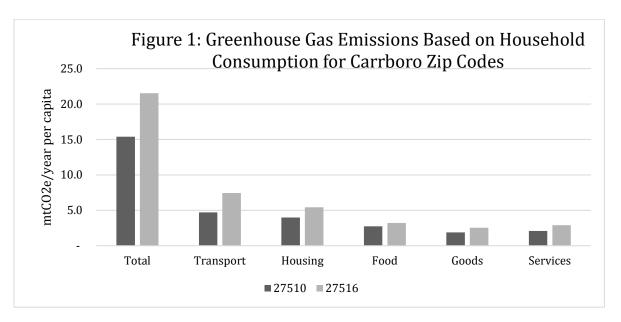
Subsequent to completion of the greenhouse gas inventory, climate mitigation and adaptation recommendations have been drafted with support from the Energy and Climate Task Force. The draft Community Climate Action Plan (CCAP) recommends a 50% per capita reduction in emissions by 2025. This recommendation is specifically articulated as cutting "the carbon footprint in half over the next 10 years for the entire community, Town operations, the buildings and transportation "sectors", and ultimately each resident and business". The plan includes recommendations organized around themes of community integration, energy efficiency in buildings, transportation, renewable energy, ecosystem protection and restoration, and (following on community input) climate mitigation through food choices. In considering the addition of food related recommendations, some initial thoughts regarding accounting for food (and other) consumption related emissions are included below.

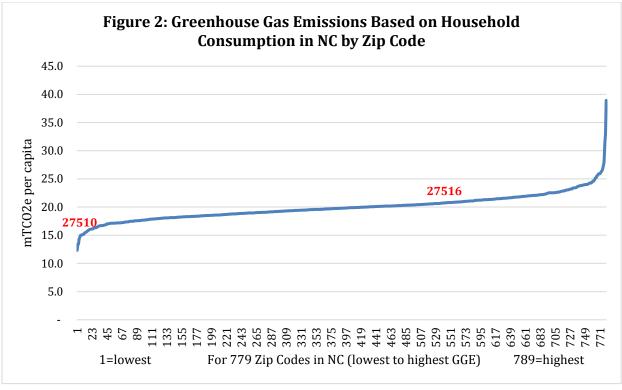
Emissions Estimates Based on Household Consumption

Researchers at UC-Berkeley have developed emissions estimates for the entire U.S., using a different method than in the community inventory that accounts for the entire "lifecycle" ("cradle to grave") of activities that households purse that lead to emissions.⁴ These estimates have been completed for five different sectors associated with individual households: transportation, dwellings, food, goods, and services, by zip code (Figures 1 and 2; the emissions shown are for the entire zip code areas across jurisdictional boundaries).

² "Climate Change Mitigation." United Nations Environment Programme. Accessed March 24, 2015. http://www.unep.org/climatechange/mitigation/ Climate change mitigation is defined as efforts to reduce or prevent emission of greenhouse gases
³ The inventory is available at http://www.townofcarrboro.org/DocumentCenter/Home/View/2788

⁴ Christopher M, Jones and Daniel M, Kammen, Spatial Distribution of U.S. Household Carbon Footprints Reveals Suburbanization Undermines Greenhouse Gas Benefits of Urban Population Density. Environ. Sci. Technol., 2013, dx.doi.org/10.1021/es4034364. Sponsored by UC-Berkeley Renewable and Appropriate Energy Laboratory, California Air Resources Board, National Science Foundation. Online calculator and maps available at http://coolclimate.berkeley.edu/calculator





A few points are worth emphasizing from this work:

1) The total emissions per capita relative to the community based methodology results in about 3 times higher estimates. Conceptually, this is a function of geographically limiting community based emissions estimates to activities within the municipal limits and to direct emissions and a limited portion of the indirect emissions. For example, the

increase in transportation emissions is mostly due to the increase in vehicle miles travelled to account for trips outside of Carrboro. In addition, the food, goods, and services emissions are not accounted for in the community based estimates.

2) There is a notable difference between emissions estimates for the 27510 and 27516 zip codes. The greater emissions in 27516 is due to differences between contributing factors such as vehicle fuel use and economic indicators (e.g., property value, income).

Additional discussion of the potential for emissions reductions as the plan's recommendations are pursued is provided in the following section.

Anticipated Emissions Reductions from the Community Climate Action Plan

This section provides a qualitative/preliminary assessment of the climate mitigation benefits, by sector, associated with implementing the CCAP.

Community Buildings

Between 2011 and 2013, with \$311k of ARRA federal funding support⁵, the Carrboro WISE program was successful in driving energy efficiency retrofits for 113 single-family and multifamily units and providing 5 commercial loans for projects in 3 separate commercial buildings. The projects were estimated to achieve 21% energy savings and a total of almost \$40k a year of savings for these homeowners/businesses (Table 1). This resulted in a 0.1% reduction of the total community buildings emissions footprint. This funding also supported an energy efficiency outreach and education program that reached 77 additional Carrboro residents with support from Clean Energy Durham's "Pete Street" program. Although the WISE/Pete Street efforts reached a small percentage of the entire community during this 2+ year window, it nevertheless offers a foundation and lessons learned for looking towards future reductions from energy efficiency improvements for buildings.

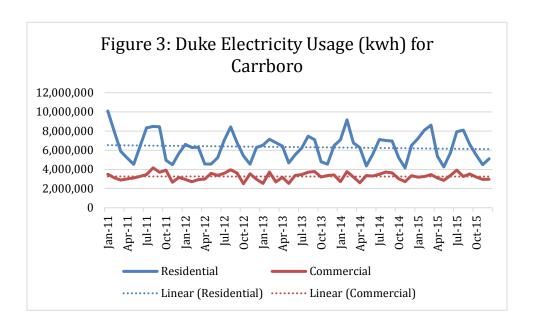
Table 1: Benefits from the Carrboro WISE program (single-family, multifamily and commercial)

Total number of units	113
Estimated MMBTU saved/year	1686
Average estimated % saved per unit	21%
Estimated kWh (electricity) saved/year	364373
Estimated Therms (natural gas) saved/year	3372
Estimated cost savings (\$)/year	\$39,6856
Estimated CO ₂ reduction/year	89.7 metric tons

⁵ This public funding provided administrative, subsidy/incentive, and technical support and leveraged significant private funds from homeowners and businesses as well as additional subsidies from utilities.

⁶ These cost savings were estimated using 2013 PSNC (\$1.05) and Duke Energy (\$0.093) rates.

To obtain a larger perspective beyond what is possible with data from the WISE program alone, it is helpful to look at community wide data and trends in energy usage and therefore greenhouse emissions associated with buildings. Duke Energy has provided monthly electricity use data aggregated for all Duke residential and commercial accounts in Carrboro from January, 2011 through the end of 2015⁷. An analysis of this data (Figure 3) indicates that residential electricity use declined by about 1% per annum during this time, while population increased by about 2% per annum.



This downward trend will need to be approximately doubled to meet the 50% by 2025 per capita emissions reduction goal. Commercial use remained very stable, with essentially no measurable reduction during this period.

How might pursuit of the actions in the CCAP affect the residential and commercial electricity use trends? An important consideration is that only 33% of homes are owner occupied, compared to 59% renter occupied (the remaining 8% of homes are vacant)⁸. The draft CCAP includes several recommendations that consider the low level of owner occupancy. With regard to emissions from commercial buildings, the Town established an Energy Efficiency Revolving Loan Fund for small businesses in 2012 and issued several loans shortly thereafter. As these loans are being repaid, the fund is being replenished so that a growing balance is available for new loans.

Conclusion #1, residential buildings: Achieving a 50% reduction by 2025 is difficult given the ownership (mostly non owner occupied), building stock (a high percentage of multifamily, a

⁷ Duke Energy is the electricity provider for about 90% of Carrboro.

^{8&}quot;Carrboro, NC Homes and Housing." USA City Facts. Accessed April 9, 2015. http://www.usacityfacts.com/nc/orange/carrboro/homes/.

sector that is harder to achieve significant reductions in), and potential reduction per building⁹. Furthermore, a more detailed implementation plan associated with the measures included in the draft plan will need to be developed to determine the specific and most effective and cost effective steps for accelerating improvements in energy efficiency.

Conclusion #2, commercial buildings: If the trend observed from 2011-2015 continues, a lower level of reduction in per capita emissions from commercial buildings through efficiency improvements than in residential buildings can be expected in the absence of significant new initiatives. Given the recent trend, it is reasonable to conclude that achieving a 50% reduction by 2025 will be even harder to achieve with commercial buildings than with residential buildings. As with residential buildings, an implementation plan will need to be developed to accelerate improvements in energy efficiency.

Transportation

Appendix A provides a summary of information used in emissions estimates from the 2012 greenhouse gas inventory. There are several important methodological point that are relevant to transportation oriented climate action planning.

- 1) Using state statistics from federal data as a proxy for the transportation factor set may not capture the unique characteristics for Carrboro and could therefore be introducing a bias into emissions estimates to the degree that vehicle type and fuel economy deviate from these statistics. For example, data and analysis from the USDOE¹⁰ that draws on local vehicle registration data reveals that the community fleet has a higher average fuel economy per vehicle (26.5 mpg versus 23.3 mpg) than assumed for the 2012 community greenhouse gas inventory estimates.
- 2) Using an aggregated snapshot for VMT at the time of the inventory does not allow for a more robust assessment of trends and patterns to help understand how VMT has changed over time, nor how it varies at different Carrboro locations. It is therefore limited in offering insights into potential emissions reduction strategies and past and future progress towards the 50% reduction goal. Local data indicate that traffic counts at different locations in Carrboro over the past decade demonstrate distinct differences and changes over time¹¹. Additional work is needed to insure that these trends and patterns are captured and accounted for in emissions tracking, and inform transportation strategies to reduce emissions.

It is also important to consider the many efforts that the community has been actively involved in for a number of years (e.g., fare free transit, support for bicycle and pedestrian infrastructure and safety, land use planning and transportation demand management that supports mode

⁹ Experience from the WISE program suggests that 40% is the maximum expected reduction per home through no cost/low cost efforts and retrofits, i.e., short of redevelopment or extensive rehabilitation

¹⁰ http://apps1.eere.energy.gov/sled/#/

http://citybeautiful21.com/2015/09/03/central-carrboro-traffic-went-down-from-1997-to-2013/

choices) that are relevant to reductions in greenhouse gas emissions from transportation ¹². Examples of relevant initiatives include the Safe Routes to Schools Program and pursuit of Bicycle Friendly Community standards. Key partners include NCDOT, the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization, Triangle Transit, Chapel Hill Transit, UNC, and the Carrboro Bicycle Coalition.

Conclusion #1: At this juncture it is difficult to assess how transportation emissions have changed and could change over time. In addition, the community based method which is limited to trips in Carrboro is not able to capture changes associated with community members' larger transportation behaviors and choices. A helpful step for tracking changes/reductions in transportation emissions for future community inventories could be the development of a new dataset and methodology. Confidence in emissions estimate is less than in the buildings sector where energy use data is more directly measured through metered utility accounts.

Conclusion #2: Carrboro has been involved in important initiatives that have reduced greenhouse gas emissions from transportation for the past 1-2 decades, and has established plans, dedicated resources and partners, and community capacity to continue with these efforts. Vehicle MPG has also steadily increased for several decades. This also is in some contrast to the situation with emissions associated with buildings. All things considered, it seems reasonable that the transportation sector may have a stronger foundation in historical emissions reductions, however, as discussed, additional work is required to more accurately assess historical emissions and assess what might be possible for reductions by 2025.

Renewable Energy

The North Carolina Sustainable Energy Association (NCSEA) tracks renewable energy installations in North Carolina. Based on the NCSEA estimate of 268 kilowatts (kW) of renewable energy generation (via photovoltaics, or "PV") for 52 installations in Carrboro, the total PV generation as of 2016 is a little under 1% of the total electricity demand. A considerable majority of the solar capacity in Carrboro was installed in 2014 and 2015 as part of back-to-back "Solarize" campaigns ¹³. To make significant progress towards the 50% emissions reduction target by 2025, renewable generation will have to ramp up quickly.

What is a reasonable estimate of the maximum amount of solar electricity that can potentially be generated in Carrboro based on physical realities of terrain, solar insolation (available sunshine), and the nature of the built environment? It can be inferred, hypothetically, by extrapolating from an estimate included in the Chapel Hill greenhouse gas inventory¹⁴, that 3% of Carrboro may be suitable for solar installations from rooftops, open land, and parking lots, and a total of 116k megawatt hours (MWh) of potential annual energy generation could mitigate up to 81k

¹² These documents are available at http://www.townofcarrboro.org/719/Transportation

¹³ <u>http://solarize-nc.org/locations/</u>

¹⁴ http://ie.unc.edu/files/2016/03/community_carbon_report.pdf (p.21)

mTCO2e. In other words, almost all of the current community electricity demand could conceivably be generated by photovoltaics based on solar access alone, which is equivalent to about 72% of the total community emissions, exceeding the 2025 climate action reduction goal. The Department of Energy has estimated that about 175k square meters of rooftop space is available in Carrboro, which is equivalent to about 34k MWh of potential annual generation, or a little more than 1/3 of the amount extrapolated above. However, economic constraints will drive adoption of new solar capacity more than physical constraints, and it is probably overly optimistic to project that solar generation will approach what is hypothetically/physically possible by 2025 based on either total or rooftop area available.

Achieving more on the order of 5-10% renewable energy generation of total electricity use in Carrboro by 2025 may be more realistic. There are factors working towards an acceleration of adoption of solar electricity. Most notably, the rapid reduction in the cost of hardware has led to market forces being close to a "tipping point" at which solar electricity production could rapidly accelerate. However, there are other factors that will limit new solar uptake, such as the discontinuation of the state renewable energy tax credit, the state-level prohibition of 3rd party sales of solar electricity, the scheduled phased expiration of the federal tax credit between 2019 and 2021, roof/building orientations and constraints, and as with energy efficiency of buildings, the high proportion of homes that are not owner occupied. Solar installations have already declined in 2016 relative to 2014 and 2015 in large part due to the discontinuation of the state tax credit¹⁶. Finally, there are no opportunities, in all likelihood, in Carrboro for significant utility scale (~1 mW and larger) solar installations because of constraints such as the need for larger open areas, less expensive land access, and proximity to substations with capacity.

There could be a niche for perhaps 20-50 kW systems that can be developed through innovative financing mechanisms and community collaboration^{16, 17}. Because of rate structures and the anticipated continued rise in electricity costs, the opportunity is enhanced for sites that can take advantage of net metering, while maintaining electrical generation on an annual basis at or below the onsite electrical demand. Figuring out the financing to create cash flow positive scenarios and making solar installations straight forward and simple for property owners seem to be primary constraints limiting the acceleration of solar installations.

A final note is that community members can also help offset emissions from electric generation through renewable energy programs such as NC Green Power¹⁸, Piedmont Electric's community solar program¹⁹, and other organizations that support renewable energy generation. Accessing

 $[\]frac{15}{http://apps1.eere.energy.gov/sled/\#/results/buildingsandindustry?city=Carrboro\&abv=NC\§ion=electricity\&zip=27510\¤tState=North%20Carolina\&lat=35.9107512\&lng=-79.08145230000002$

¹⁶ Rob Pinder, personal communication

¹⁷ The 2016-17 operating budget has included resources to initiate this exploration.

¹⁸ https://www.ncgreenpower.org/

¹⁹ https://pemc.coop/save-energy-money/renewable-generation/community-solar/

data and including these types of programs in emissions accounting could result in measurable progress towards the climate action goal.

Conclusion #1, electricity use and generation: Reducing emissions from electricity use can be pursued with a two pronged approach: improved energy efficiency in buildings and accelerated uptake in renewable energy generation. As mentioned in the section on buildings, reductions in per capita emissions from the improved energy efficiency is occurring, but at a rate about half as fast as needed to achieve the 50% reduction goal. Given current constraints, it is unlikely that solar installations in Carrboro can account for a majority or perhaps even a significant percentage of the remaining desired reductions in emissions by 2025. At the same time, at a minimum and with no major intervention, it is likely that small, incremental progress will continue. The success of the Solarize campaigns demonstrates the potential for more rapid progress, especially with new state or federal level policy changes and/or innovations to address current financing challenges.

Food Consumption

The food choices that community members make has an impact on greenhouse gas emissions. Adopting more plant-based, local, and organic diets is a viable means that individuals can choose that has an immediate climate mitigation impact. Based on the limited amount of historical attention to inventorying emissions from food choices and consumption in Carrboro, it is beyond the scope of this memo to attempt to assess emissions reduction potential associated with community scale food choices beyond what is discussed above (in "Emissions Estimates from Household Consumption") and from the input provided in the plan's recommendations.²⁰

Conclusion #1. Assessing food related emissions associated with community engagement towards a 50% reduction goal at a community scale will require additional work on the accounting methods and data sources. The latest draft of the plan includes a section that addresses this.

Other Recommendations in the Draft Community Climate Action Plan

Additional recommendations in the draft plan pertain primarily to climate adaptation and resilience through urban forestry, stormwater, and landscape management, but they also relate to climate mitigation by acknowledging the carbon sequestration benefits of the community forest. The recommendation relating to increasing the rate of organic waste collection and composting

²⁰ e.g., Scarborough P., Appleby P.N., Mizdrak A., et al. "Dietary greenhouse gas emissions of meat-eaters, fish-eaters, vegetarians and vegans in the UK". Climatic Change. 2014;125(2):179-192. This UK study found that the mean GHG emissions (lbs. CO2e/day) ranged from 15.8 for high meat-eaters to 6.4 for vegans, with progressively lower emissions between these two being estimated for medium meat eaters, low meat eaters, fish eaters, and vegetarians. There is some uncertainty in extrapolating a UK study to Carrboro given the different populations and potential for differences in diet.

is also relevant to mitigation by reducing emissions associated with waste hauling and methane emissions from the landfill. Methane is 21 times more potent as a greenhouse gas than CO₂; reducing the amount of organics that end up in a landfill is therefore an important step for reducing community GHG emissions^{21,22}, and at the same time captures the carbon for use in improving local soils. Further reductions in waste generated will also be helpful since Carrboro's solid waste now has to travel to Durham, resulting in a higher transportation footprint. Carrboro is currently pursuing a solid waste study²³ and Orange County is exploring expanded organics collections through a proposed drop off site at Eubanks Road and a pilot program at the Carrboro Farmers Market.²⁴ Both of these efforts should result in further reductions in emissions.

Conclusion #1: Since solid waste related emissions are small relative to the total community emissions, the expected/potential reductions resulting from future changes in solid waste services will contribute incrementally but not substantially to the 50% reduction goal.

Summarizing Potential Reductions

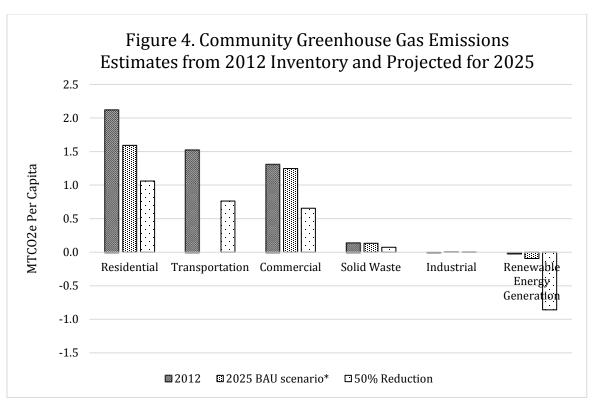
Current and potential emissions from the above discussion are summarized in Figures 4 and 5. Figure 4 presents emissions for the 2012 baseline from the community inventory along with future "business as usual" and 50% reduction scenarios. A "business as usual" transportation estimate is not included given the difficulty in completing this estimate with currently available data. Figure 4 graphically depicts the magnitude of changes expected and needed to approach the CCAP reduction goal for the different sectors and within the context provided by the 2012 inventory data and methodology.

⁻

 [&]quot;USCC Position Statement: Keeping Organics Out of Landfills." US Composting Council. Accessed April 15, 2015.
 http://compostingcouncil.org/admin/wp-content/uploads/2011/11/Keeping-Organics-Out-of-Landfills-Position-Paper.pdf
 Daigneau, Elizabeth. "Curbside Composting Added to a Major City: Is It Yours?" Curbside Composting Added to a Major City: Is It Yours? February 1, 2012. Accessed April 15, 2015. http://www.governing.com/topics/energy-env/gov-curbside-composting-added-to-major-city.html.

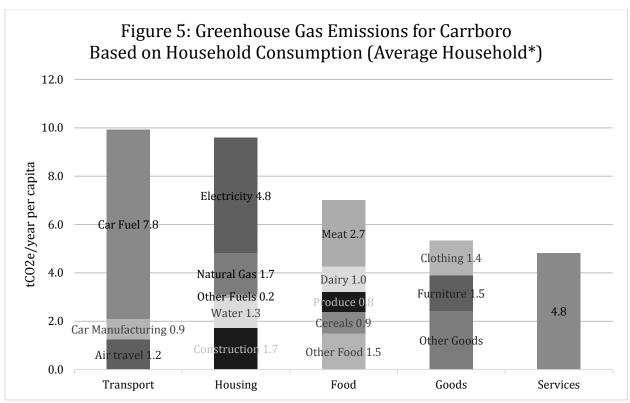
²³ The bid documents are available at http://www.townofcarrboro.org/bids.aspx?bidid=15

²⁴ A presentation to the Solid Waste Advisory Group by HDR on longer range options is available at http://www.orangecountync.gov/departments/solid waste management/SWAG/HDR OrganicsPresentation Nov4.pdf



^{* &}quot;business as usual" inferring no major changes to status quo.

Figure 5 is based on the household consumption approach from UC-Berkeley researchers and available data for an "average" Carrboro household. No attempt has been made to forecast these lifecycle based emissions estimates forward. The estimates and related information do suggest potential alternative strategies that can be considered with finer resolution than is possible with data from the community inventory. For example, household emissions can be calculated for Carrboro that indicate that the lowest (<\$10k) annual income households have about one half of the footprint of the highest (>\$110k) annual income households. The data and methods have sufficient detail to offer fairly granular assessments to help an individual household understand specific elements of their footprint and create a climate action strategy that fits that household.



^{* 2.3} persons/household with average gross annual household income (\$50k) for Carrboro.

The online resources (calculators, maps, research) available from the Berkeley researchers⁺ also offer potentially helpful support with outreach and education.

In summary, this household based data and analysis emphasizes the complexity and many elements that contribute to greenhouse gas emissions footprints from personal to household to community scales, and the importance of thinking holistically.

Other Benefits of Climate Action

The previous sections have been focused on the magnitude of emissions and factors around realizing reduction goals. Appendix B discusses the "co-benefits" of climate action and the potential for synergies with other community goals and values such as environmental quality, affordability, social equity, the local economy, and public health. Appendix C presents the relatively new concept of the "social cost of carbon" which indicates that pursuing the scale of greenhouse gas reductions recommended in the CCAP in Carrboro has a multimillion dollar annual implication when linked to global economic consequences.

Recommendation

It is recommended that the Board of Aldermen receive this staff memorandum.

⁺ From http://coolclimate.berkeley.edu/calculator

Appendix A

2012 Greenhouse Gas Inventory Summary and Data Tables

In 2015, a UNC Capstone Team worked with the Town to create an updated greenhouse gas inventory for 2012²⁵. This inventory, as with the previous inventories, was pursued using the methods and software developed by ICLEI USA-Local Governments for Sustainability to support community scale emissions estimates. This included reporting for the area within the municipal limits for "direct" GHG emissions (e.g., combustion of natural gas and motor vehicle fuels) along with limited "indirect" GHG emissions, most notably from the use of purchased electricity. According to the UNC Capstone Team, the 5.5 tons CO₂e per capita emissions estimate is amount is relatively low compared to state and national estimates and estimates from neighboring jurisdictions. Chapel Hill's 2012 inventory, which includes emissions from UNC, estimated 21.9 tons of CO₂e per person. The State of North Carolina as a whole emitted 12.7 tons of CO₂e per person in 2011²⁶ and in 2012 the United States emitted 16.4 tons CO₂e per capita²⁷. The world as a whole also had higher per capita emissions (7.65 tons CO₂e) than Carrboro²⁸. Carrboro's per capita emissions from this inventory are lower than these other estimates because Carrboro has almost no emissions from industry, and also because some components (e.g., food consumption, goods and services, upstream processes, interjurisdictional transportation, water and wastewater) that may be included in others estimates were not included in the Carrboro inventory.

In looking at emissions from the 2012 inventory, the community sector contributes 93% to Carrboro's greenhouse gas emissions, and local government operations make up 7%. Residential buildings have the largest emissions. Energy use from this sector in 2012 generated 43.4k mtCO₂e. Transportation contributed 31,183 tons of CO₂e. Commercial buildings generated roughly a quarter of the total emissions at 26,8k mtCO₂e. The solid waste and the industrial sectors contributed much lower levels of emissions.

For the transportation sector, it is important to understand the methodology used and data available to measure emissions to inform steps needed to track changes in emissions over time. The 2012 inventory accounted for vehicle miles travelled (VMT) within the municipal limits. Data were obtained from modeling performed by the NC Capital Area Metropolitan Planning Organization. Mileage from all trips taken within Carrboro, whether it be by a resident or nonresident of Carrboro, were counted, and trips taken outside of Carrboro's city limits were not counted. In addition to VMT, emissions estimate require a "transportation factor set" (provided below). For Carrboro's inventory, the factor set was obtained from statistics produced by the U.S. Department of Transportation (USDOT), and required a breakdown of vehicle type and an average fuel economy for each vehicle type. The USDOT provided a breakdown of vehicle type and fuel economy by vehicle type for North Carolina, which was used as a proxy for Carrboro^{29,30,31}.

http://edgar.jrc.ec.europa.eu/overview.php?v=GHGts1990-2012.

²⁵ The complete inventory is available at http://www.townofcarrboro.org/DocumentCenter/Home/View/2788

²⁶ "Table 5. Per Capita Energy-related Carbon Dioxide Emissions by State (2000–2011)." U.S. Energy Information Administration. Accessed April 16, 2015. http://www.eia.gov/environment/emissions/state/analysis/pdf/table5.pdf .

²⁷ Olivier, Jos, Greet Janssens-Maenhout, Marilena Muntean, and Jeroen Peters. "Trends in Global CO2 Emissions 2013 Report." European Commission. January 1, 2013. http://edgar.jrc.ec.europa.eu/news_docs/pbl-2013-trends-in-global-co2-emissions-2013-report-1148.pdf.
²⁸ "GHG (CO2, CH4, N2O, F-gases) Emission Time Series 1990-2012 per Region/country." European Commission. Accessed April 16, 2015.

²⁹ The Chapel Hill greenhouse gas inventory reports that including the entire range of trips, at the scale of the national average of almost 14k miles driven per vehicle per year, would increase transportation emissions by a factor of almost 3. (This would also extend the geographic scope of the inventory.) However, due to the extensive free bus system, the proportion of the population (including students) that either cannot or choose to not

Data tables from the inventory are provided below.

Source	Fuel	CO2 (MT)	CH4 (MT)	N2O (MT)	CO2e (MT)	Energy Equivalent (MMBtu)	Electricity Used (kWh)	Fuel Use (Therms)
Residential Buildings								
PSNC	Natural Gas	6219	0.5865	0.01173	6237	117300		1173000
PEMC	Electricity	1897	0.038319	0.031164	1907	13293	3894809	
Duke Energy	Electricity	35073	0.70854	0.57624	35262	245795	72017858	
Commercia	l Buildings							
PSNC	Natural Gas	3165	0.2985	0.00597	3175	59700		597000
PEMC	Electricity	4714	0.095239	0.077456	4740	33039	9680331	
Duke Energy	Electricity	18820	0.3802	0.30921	18921	131892	38644446	

Solid Waste

Source	Tons	CO2 (MT)	Per Capita lbs/day	Per Capita CO2 (MT)/day
OCSW	8,047	3,034	2.24 lbs	.15 CO2 tons

Industrial Energy

Source	CO2 (MT)	CH4 (MT)	N2O (MT)	CO2e (MT)	Electricity Energy Equivalent (MMBtu)	Electricity Used (kWh)
Ready Mix Concrete Plant	54	0.00108	0.00088	54	377	110598
Duke Energy	58	0.00117	0.00095	59	409	119740

Transportation

	DVMT	AVMT	CO ₂ e (tons)
Orange County	4,335,000	1,575,068,000	-
Carrboro	190,780	69,317,524	31,183

own vehicle, and a vehicle mix that probably has a higher percentage of efficient vehicles, a tripling of transportation emissions to account for the

entire extent of trips may be an overestimate.

30 "Highway Statistics Series." Table VM-4 – Office of Highway Policy Information (OHPI) – FHWA. November 1, 2014. Accessed April 16, 2015.

http://www.fhwa.dot.gov/policyinformation/statistics/2013/vm4.cfm . 31 "National Transportation Statistics." Bureau of Transportation Statistics. Accessed April 16, 2015.

 $http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/index.html\ .$

Factor Set for Community Transportation

Type of Vehicle	Percentage	Fuel Economy (miles/gallon)
Passenger Vehicles	71.73%	23.3
Light Trucks	20.49%	17.1
Heavy Trucks	6.04%	7.3
Motorcycles	0.85%	43.5

Factor Set for Community Solid Waste

ClearPath Factor Set	2012 Percentage	Waste Composition Category
Percentage Newspaper	2.1%	"newspaper/print" under "paper"
Percentage Office Paper	2.2%	"mixed office paper" under "paper"
Percentage Corrugated Cardboard	1.5%	"recyclable cardboard" under "paper"
Percentage Magazines/Third Class Mail	0.9%	"glossy magazines" under "paper"
Percentage Food Scraps	21.2%	"food waste" category under "organics"
Percentage Grass	0.6%	1/3 of "yard waste"
Percentage Leaves	0.6%	1/3 of "yard waste"
Percentage Branches	0.6%	1/3 of "yard waste"
Percentage Dimensional Lumber	1.4%	"lumber" under "wood"
Mixed Solid Waste	68.9%	100% minus all previous categories

Factor Set for Grid Electricity

	2007	2010
CO2 lbs/MWh	1134.88	1073.65
CH4 lbs/GWh	23.77	21.69
N2O lbs/GWh	19.79	17.64

Appendix B

Co-benefits of Mitigating Greenhouse Gas Emissions.

While mitigation is essential to prevent the most devastating impacts of climate change, pursuing mitigation can also improve quality of life and have monetary benefits. Combustion of fossil fuels produce not only greenhouse gases that contribute to climate change but also pollutants such as fine particulates and nitrous oxides, a precursor to ground-level ozone. Limiting greenhouse gas emissions from combustion typically limits these dangerous pollutants and reduces health impacts which will especially benefit populations most susceptible to respiratory illness such as the poor, elderly and children³². Investments in renewable energy and building energy efficiency will reduce emissions through less fossil fuel combustion, improve indoor air quality and comfort, reduce utility bills, and result in a higher degree of energy independence. Emission reduction strategies that increase walking, biking and using transit should also reduce fuel use (and expense) and traffic congestion and improve air quality and public health³³. Eating less meat, dairy, and eggs and more plants than in a typical American diet is arguably better for people while reducing the environmental impacts of food production. With more tree canopy, not only will more CO₂ be captured, but citizens will enjoy a greener community and cooler temperatures in the summer. Improving stormwater management in response to the risk imposed by shifting rainfall patterns will not only improve water quality and stream health, but will also help create green infrastructure that improves quality of life and decreases the cost of grey infrastructure maintenance and replacement and property damage. Waste reduction and increased composting will not only reduce methane emissions³⁴, but will also reduce fuel use (and CO₂ emissions) and the costs of collection and hauling. Jobs will be created to support the transition to renewable energy, making buildings more efficient, and creating green infrastructure. The "greening" of the local economy and environment attracts investment and new residents and businesses. Some recommendations in the draft CCAP focus on, or at least recognize, the need for addressing social and economic equity and community cohesion and collaboration which are different types of community benefits.

Co-benefits mean those benefits discussed above that derive from mitigation efforts, but are not the primary intent of mitigation (greenhouse gas emissions reduction). There is merit in the plan's climate mitigation and adaptation recommendations for their co-benefits alone. From this perspective, reductions in greenhouse gas emissions can be seen as an ancillary benefit to interests already being pursued with motivations besides addressing climate change. Transitioning to a lower carbon future involves maximizing the synergies in these many and varied interests and opportunities.

³² "Society Impacts." United States Environmental Protection Agency. September 9, 2013. Accessed March 24, 2015. http://www.epa.gov/climatechange/impacts-adaptation/society.html

³³ Hosking, Jamie, Pierpaolo Mudu, and Carlos Dora. "Health Co-benefits of Climate Change Mitigation." World Health Organization. January 1, 2011. Accessed March 24, 2015. http://www.who.int/hia/green economy/transport sector health co-benefits_climate_change_mitigation/en/

³⁴ Smith, Alison. "The Big Picture: Climate Policies & Co-benefits." In *The Climate Bonus: Co-benefits of Climate Policy*, 8. Abingdon, Oxford: Routledge, 2013.

Appendix C The "Social Cost of Carbon"

Globally, climate change is leading to negative social and economic consequences such as the spread of disease, decreased food production, coastal destruction, and many more. The social cost of carbon pollution index calculates the economic cost of these problems and estimates the damage done by each metric ton of carbon dioxide equivalent. It compares the costs of limiting pollution to the costs of climate change mitigation. In benefit-cost analyses, agencies use social cost of carbon pollution to measure the monetary benefits of regulations that reduce carbon emissions, and weigh them against the costs of the regulation. The current estimate adopted by the U.S. government for regulatory/policy analysis varies based on different factors but can be generalized at around \$40/mTCO2e. Those performing studies of the social cost of carbon acknowledge that many impacts have not yet been monetized. Some researchers believe the number used for regulatory analysis should be considerably higher. Using the current federal general estimate, a 50% reduction in emissions for Carrboro equates to a benefit of \$2.25M/year when looking at the community based estimates, and about 3 times as much when looking at consumption based/lifecycle estimates. OWASA approved including the social cost of carbon (based on the methodology used by Federal agencies) in the evaluation of clean energy projects at its September 8th, 2016 Board of Directors meeting, and Orange County is also looking at this concept.

More information on the social cost of carbon is available at:

http://costofcarbon.org/

https://www3.epa.gov/climatechange/EPAactivities/economics/scc.html

https://www3.epa.gov/climatechange/Downloads/EPAactivities/social-cost-carbon.pdf

ate change E E Publishing 1_13_15_.pdf

https://www.owasa.org/Data/Sites/1/media/about/meeting%20summaries/2016/2016-09-

08_board_summary.pdf

Appendix D Implementation Timing Considerations

Recommendation	Time Frame (from Plan)	Type	Notes
Community Integration			
Create Grass Roots Partnerships to Engage Community	This can move forward as soon as leadership is identified.	New	
Expand Public Partnerships to More Explicitly Consider Climate Action	Exploration can begin immediately. Some partnerships will take longer to develop.	Ongoing	
Create Green Neighborhood Program	Will depend on identification of leadership	New	
Integrate Climate Action with Local Living Economy	Some steps can be pursued immediately, others will take longer	New	
Expand Capacity	As soon as possible	New	Sustainability Coordinator position recommended in plan.
Facilitate Low Cost Financing for Energy Efficiency and Renewable Energy Projects	Exploration could begin immediately.	New	Next Climate and staff are currently exploring potential for pilot project
Integrate Climate Action and Social/Equity Initiatives	Coordination with affordable housing focused efforts can be explored immediately. Significant traction is a long term proposition.	New	
Buildings			
50% Challenge	Exploration could begin immediately. For a higher probability of moving forward, a champion will likely be needed.	New	
Demonstrate/Pursue Energy Performance Beyond Minimum Requirements for New Development	Exploration could begin immediately. Identifying a champion will likely be needed.	New. statutory authority if regulatory	
Create Rental Property Task Force and Process	Depends on Board priority and staff/community capacity. Operating the resulting program would be a long term endeavor.	New	
Create Rental Property Registry/Certification	Time frame to set up depends on Board priority and staff/community capacity. Operating it would be a long term endeavor.	New. statutory authority if regulatory	
Transportation			
50% Challenge	It is recommended that local leaders do this immediately.	New	
Improve Bicycle and Pedestrian Infrastructure	Some elements have begun, and could be accelerated depending on the priority. Infrastructure improvement is a long term undertaking.	Ongoing	
Enhance Transit Service	Transit improvement is an ongoing and long term	Ongoing	

	undertaking.		
Improve Vanpool/Carpool	The main timing consideration is	Ongoing	
Options	determining who can champion		
•	this.		
Further Promote Walking,	This is ongoing. The main	Ongoing	
Biking, Transit	consideration for accelerating is		
	identifying people with capacity.		
Limit Idling in School Loading	This could be pursued	New	
Zones	immediately.		
Renewable Energy			
Pursue Community Solar	Projects could take months or	Ongoing	Next Climate and staff are currently
Projects	more to develop with benefits for		exploring potential for pilot project.
	decades.		
Pursue Downtown Geothermal	An initial assessment could be	New	
Heating and Cooling	pursued quickly. Project		
	development would several		
	years, with benefits for decades		
Create Rental Property Task	Depends on Board priority and	New	
Force and Process	staff/ community capacity.		
	Operating would be a long term		
	endeavor.		
Ecosystem Protection and			
Enhancement			
Pursue Stormwater Utility	Deciding to look into a	Ongoing	This process has been initiated.
	stormwater utility could happen		
	immediately. Forming a utility		
	or joining Chapel Hill's utility		
	would likely take 1-2 years		
Evaluate Extent to Which the	Further study could be pursued	New	
Deer Population and Climate	immediately.		
Change affect Native Plant			
Ecosystems.			
Accelerate/Expand Organic	Carrboro has initiated a solid	Ongoing	Solid waste study has been initiated
Waste Collection/Composting	waste study. Current trajectory		
	for Solid Waste Advisory Group		
	(SWAG) to consider a residential		
	composting program is three to		
	four years.		
Tree Preservation, Protection	Depends on identifying	Ongoing/	
and Conservation	leadership and ability to mobilize	New	
Y	community	0 . /	
Improve Regulations and	Town staff are currently looking	Ongoing/	A neighborhood initiative is being
Community Capacity to	at the LUO. An outreach	New	pursued at Bolin Forest and
Discourage Invasive Plants and	campaign is a long term		Quarterpath Trace
Encourage Native Plants	undertaking.	Oncoin - /	Wotamahad mastamatian wiles is a
Pursue Watershed Restoration	TBD	Ongoing/	Watershed restoration plan has been
Actions to Protect Local		New	created.
Streams from Changes in			
Rainfall Due to Climate Change Food Measures			
	It is recommended that local	Nov	
50% Challenge		New	
Davidon I coal Distant	leaders do this immediately.	New	
Develop Local Dietary Consumption and Associated	Maybe a year to begin to collect data with approach that could be	INEW	
GHG Profile	replicated every 3 years.		
OHO FIGHE	replicated every 5 years.		



Town of Carrboro

Town Hall 301 W. Main St. Carrboro, NC 27510

Agenda Item Abstract

File Number: 16-335

Agenda Date: 11/15/2016 File Type: Agendas

In Control: Board of Aldermen

Version: 1

TITLE:

Presentation of Parking Study Findings and Draft Plan Recommendations

PURPOSE: The purpose of this agenda item is for the Board of Aldermen to receive a presentation from

VHB on the parking study findings and draft plan recommendations.

DEPARTMENT: Planning

CONTACT INFORMATION: Bergen Watterson, 919-918-7329, <u>bwatterson@townofcarrboro.org</u> mailto:bwatterson@townofcarrboro.org; Patricia McGuire, 919-918-7327, <u>pmcguire@townofcarrboro.org</u>; Christina Moon, 919-918-7325, <u>cmoon@townofcarrboro.org</u>

INFORMATION: Since November 2015, transportation consulting firm VHB has been working on a parking study and plan for the Town. The Board of Aldermen received updates on the study in April, June and October 2016, and VHB is now ready to present their findings and draft recommendations.

Additional information on the parking study process, data collection, findings, and draft recommendations can be found in the draft Executive Summary (Attachment A).

Next steps include compilation of the Parking Study, request for referral to advisory boards, public hearing and Board action. Staff anticipates presenting the Board with the Study in early 2017, with other steps to follow.

FISCAL & STAFF IMPACT: There is no fiscal impact associated with receiving this information.

RECOMMENDATION: Town staff recommends that the Board of Aldermen receive the presentation and provide comments on the findings and draft recommendations.



Carrboro Parking Study

Executive Summary

Since the 1980's the Town of Carrboro has gradually acquired or leased properties to use as municipal parking lots, and currently maintains 710 parking spaces in the downtown area. The Town does not charge for the use of those spaces. Despite this investment, concerns relating to insufficient parking in the downtown have emerged, which has led the Town to reconsider its role in providing or managing parking for public use. VHB Engineering, NC, P.C. was retained as the transportation consultant to lead the planning effort, involve stakeholders, collect existing conditions data, and identify potential strategies for parking management.

The plan vision was described by Town staff and Board of Alderman as an inclusive process to examine the current and future states of parking in Carrboro, involving public outreach to identify potential barriers that may be preventing residents from visiting downtown more frequently.

Public Engagement

VHB prepared a public engagement plan to address the project vision and goals. Public engagement items included a project website, online survey, social media outreach, two public meetings, attendance at the Farmers Market, Coffee with a Cop, and Business Alliance meetings, as well as individual meetings with local business owners. More than 600 individuals responded to the online survey, and feedback received during these public engagement activities helped to inform the planning process and shape the final plan recommendations.



Existing Conditions

VHB used a field inventory of all parking spaces generated by the Town to determine the patterns of existing parking utilization. Private parking accounted for four out of every five total parking total spaces, public parking accounted for the remaining 18%. Public parking includes 435 spaces that are leased by the Town within four (4) lots and one (1) parking deck. The Town of Carrboro owns 275 spaces within four (4) parking lots, which accounts for 7% of total parking spaces and 39% of the total public spaces.

Parking Spaces by Ownership

Parking Type	Spaces	% of Total
Public-owned	275	7%
Public-leased	435	11%
Private	3,293	82%
Total	4,003	_

The total number of parked cars was observed at four (4) periods between 9 AM and 9 PM on a typical Thursday in January of 2016. This process was repeated on a typical Thursday in April, as well as a Saturday in April. These counts included all public and private parking areas to determine the maximum parking demand. The January counts observed a peak of 2,029 parked cars during the 11-1 PM lunchtime period. The April counts observed a peak of 2,122 parked cars during the same 11-1 PM lunchtime period, an increase of 5%. During this peak period private lots were found to be 53% occupied, and the public lots were found to be 52% occupied.

Observed Parked Vehicles by Time of Day

CARS				OCCUPANCY			
Count Periods	January	April	Saturday	January	April	Saturday	
9 AM to 11 AM	1,858	1,942	1,493	49%	49%	37%	
11 AM to 1 PM	2,029	2,122	1,475	51%	53%	37%	
2 PM to 5 PM	1,699	1,879	1,487	42%	47%	37%	
6 PM to 9 PM	1,426	1,758	1,561	36%	44%	39%	

Note: Parking counts include public and private lots (4,003 spaces in total).

The shaded cell represents the maximum number of parked cars, for each period, between all three data collections.

Survey respondents and meeting attendees remarked that the <u>most challenging time of day to find parking within a public parking lot was during the evening (6-9 PM) period</u>, not during lunchtime. Parking counts supported this perspective, as the project team observed 466 vehicles parking within public lots during the evening period, an occupancy rate of 66%. During this same period private parking lots were found to be only 39% occupied, suggesting that downtown visitors seek public parking rather than private lots after 6 PM.



Comparison of Parked Vehicles within Public Lots Only

CARS			OCCUPANCY			
Count Periods	January	April	Saturday	January	April	Saturday
9 AM to 11 AM	304	354	361	43%	50%	51%
11 AM to 1 PM	356	368	285	50%	52%	40%
2 PM to 5 PM	339	312	240	48%	44%	34%
6 PM to 9 PM	331	466	457	47%	66%	64%

Note: Parking counts include only public lots (710 spaces in total).

The shaded cell represents the peak period (466 cars for 710 public spaces is 66% occupancy).

Parking occupancy is not evenly distributed among the varying parking lot sizes and locations. The pattern of parking lot occupancy is displayed and discussed further in the Existing Conditions section of the full report. In general terms, the high demand areas during the morning period were near O2 Fitness and Rise Biscuit and Donuts, shifting to the restaurant-dense area within the central portion of Carrboro during the 11-1 PM period. In the mid-afternoon the high demand areas relatively disappear, or become more balanced. After 6 PM the central public and private parking lots that are close to dinner restaurants are in high demand.

Length of Stay

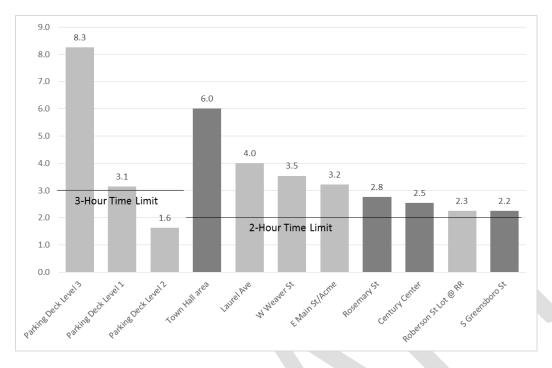
Data collection also included a length of stay analysis for public parking lots. Vehicle license plates were observed for all nine (9) public parking lots, every hour between the hours of 8 AM and 6 PM. More than 800 unique license plates were collected over a 10-hour period parking within these 710 public parking spaces. A majority of vehicles (557 cars, representing 69%) were observed on three (3) or fewer occasions, suggesting that they remained parked for 3-hours or less. A minority of vehicles (151 cars, representing 19%) were observed on seven (7) or more occasions, suggesting that they remained parked in the same spot for most of the day and were likely downtown employees. VHB requested a list of Town of Carrboro employee license plates to exclude from the length of stay analysis.

These 151 cars represent a small number of total vehicles, however, they occupied public parking spaces for a large portion of the day. Factoring in the 10-hour period of data collection, these 151 cars observed on seven (7) or more occasions accounted for 48% of the total occupied time throughout the day, effectively rendering one-fifth of public parking spaces unavailable to visitors or customers.

An average length of stay was calculated for each parking lot. The public parking lots with the shortest average length of stay (in hours) were found to be the Greensboro St lot (2.2), Roberson St lot (2.3), and Century Center lot (2.5), all three of which are centrally-located. The Rosemary Street lot is the next lowest (2.8), which is located at the very east end of Carrboro along Rosemary Street. These lots are considered to be more heavily used for short-term visitor parking.



Average Length of Stay (Hours) for Public Parking Lots



Note: Dark shaded bars represent Town-owned parking lots; Light shaded bars represent leased parking lots.

Public parking lots with the longest average length of stay were found to be the 3rd level of the Hampton Inn parking garage (8.3 hours), Town Hall area (6.0), Laurel Ave (4.0) and Weaver Street lot (3.5). These lots are considered to be more heavily used for long-term employee parking, and they are located further from the center of downtown Carrboro than the lots with shorter average lengths of stay.

Future Conditions

Future parking needs were also examined by constructing a parking demand model to forecast future parking demand. The Town identified ten development projects that are anticipated in the next five (5) years, including hotel, residential, retail, civic, and mixed use developments. The parking demand model includes assumptions based on input from the Town of Carrboro and professional judgement, which are described in more detail within the Future Conditions section of the full report. This quantitative analysis does not support the need for the Town to construct additional parking spaces in the next five to ten years.

Existing Surplus

Applying a desired maximum parking lot occupancy of 85%, the current combined public and private parking available in downtown Carrboro can optimally support 3,400 parked cars on a typical day. This study observed a maximum of 2,122 parked cars during field data collection, which represents the actual parking demand. **The calculated existing parking surplus for downtown Carrboro is 1,280.** Public parking lots account for a



surplus of 236 spaces, while private lots have more than four-times that. These are surplus spaces for a typical weekday, though they are often filled during special events.

Existing Parking Surplus

Scenario	Spaces	Targeted Occupancy	Effective Capacity	Actual Demand (Cars)	Existing Surplus
Public	710	85%	604	368	236
Private	3,293	85%	2,798	1,754	1,044
Total	4,003	85%	3,402	2,122	1,280

Note: Actual Demand (cars) from the 11-1 PM peak period, collected on Thursday April 21, 2016.

Effective Capacity is the total Supply x Targeted Occupancy (4,003 x 0.85).

Existing Surplus is the Effective Capacity – Actual Demand (3,402 – 2,122).

Future Surplus

Future parking supply is expected to increase by +655 spaces as a result of the ten anticipated future projects, as required by the Town Land Use Ordinance. By 2021 downtown Carrboro may support more than 3,942 parked cars in its public and private lots, which represents the same target maximum parking lot occupancy of 85% that was applied to the existing surplus calculation. VHB estimates the future parking demand to be +899 new spaces. Adding the actual demand from 2016 counts to the new parking demand yields a total future parking demand of 3,021 cars. This leaves an **estimated future surplus of 921 empty spaces**, within a range of +/- 140 throughout the day. Public parking lots will account for a surplus of 189 spaces, while private lots have nearly four-times as many surplus spaces.

Future Parking Surplus

Scenario	Future Spaces	Targeted Occupancy	Effective Capacity	Future Demand	Future Surplus
Public	839	85%	713	524	189
Private	3,799	85%	3,229	2,497	732
Total	4,638	85%	3,942	3,021	921

Note: Future Spaces estimated from future development projects.

Effective Capacity is the total Supply x Targeted Occupancy (4,638 x 0.85).

Future Demand is calculated as the average between the Low and High Demand estimates, added to the existing demand.

Future Surplus is the Effective Capacity – Future Demand (3,942 – 3,021).

Management Strategies

Rather than construct new parking lots or structured parking, **the Town should choose to more effectively manage its existing supply of 710 parking spaces**. There are many strategies for actively managing parking to achieve better balance of supply and demand. Strategies have been organized into five (5) categories, Education, Encouragement, Enforcement, Evaluation, and Engineering.



The first four (4) categories offer a variety of cost-effective management strategies with the goal of reducing or balancing demand throughout the existing parking supply. The final category (Engineering) involves physically constructing new parking lots/garages, which is typically the first option for suburban-style developments. Public opinions received during the public engagement phase suggest that citizens of Carrboro desire a variety of approaches, including the "build more parking" solution that was suggested by some participants.

A full discussion of potential strategies is included in the Management Strategies section of the full report. The five (5) potential strategies that are expected to have the most significant impact are:

- 1. Education Wayfinding and regulatory signage improvements
- 2. Encouragement Lighting and sidewalk improvements
- 3. Enforcement Time limited parking options
- 4. Evaluation Shared parking arrangements between businesses
- 5. Evaluation Annual data collection program to count parked vehicles

The intended goal of improving wayfinding and signage is to increase visibility and consistency of all nine (9) public parking lots. Several stakeholders commented that they were unaware of several of these smaller public parking lots.

Lighting and sidewalk improvements are intended to encourage visitors to park once and walk to their destination, a stated goal of the business owners that were involved in this project.

Enforcement strategies are intended to improve parking flexibility by providing a <u>limited number</u> of high turnover spaces in the high demand areas (30-min parking) and long term spaces in low demand areas (4-hour parking).

Shared parking arrangements are intended to balance the use of the majority of parking (private spaces) within downtown by facilitating agreements between property owners.

Annual data collection may be the most important strategy because data should be used to validate the diverse opinions related to parking, and separate fact from speculation.