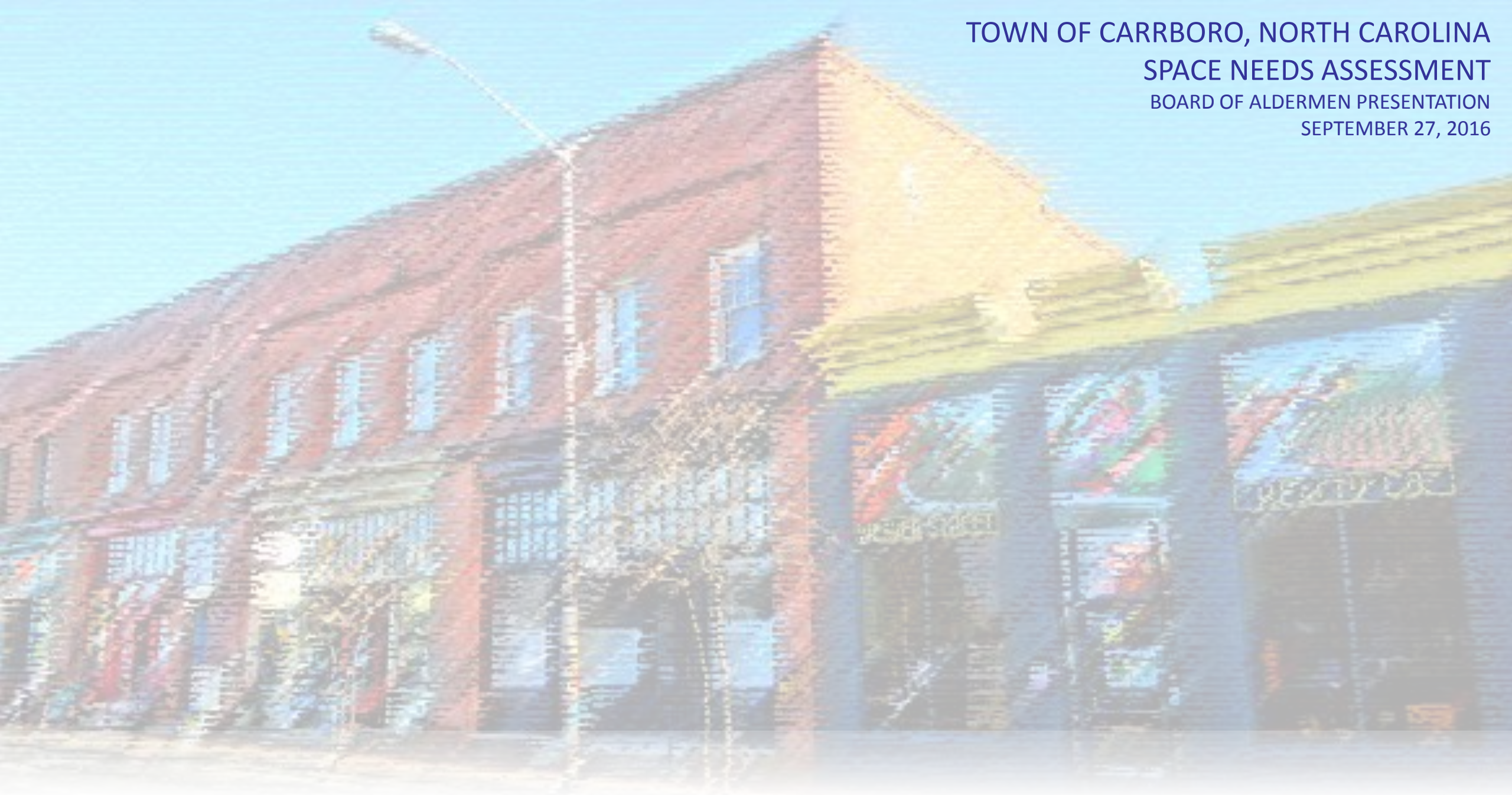
TOWN OF CARRBORO, NORTH CAROLINA
SPACE NEEDS ASSESSMENT

BOARD OF ALDERMEN PRESENTATION

SEPTEMBER 27, 2016



Creech & Associates
ARCHITECTURAL DESIGN

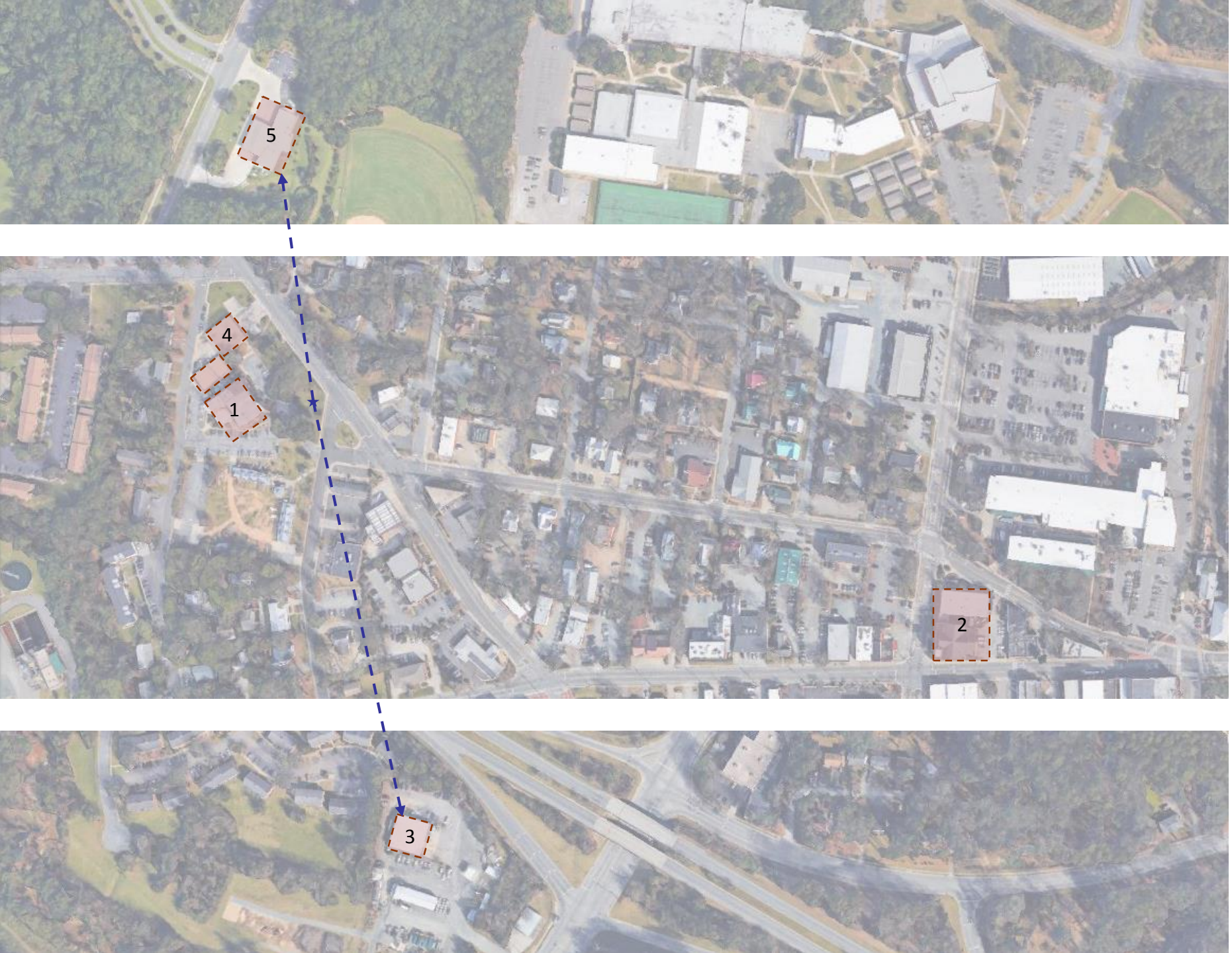
PRESENTATION AGENDA

- Interview Summary
- Building Analysis
- Historical Data Analysis
- Facility Assessment

INTERVIEW SUMMARY

- **Staff interviews with 12 departments in 5 locations encompassing 17 hours**
- **Friendly and professional working environment**
- **Prepared and open for discussion**
- **Conservative in requests for space**
- **Accustomed to doing their best in the space they are provided**

- **Each of the 5 facilities have space deficiencies and workflow inefficiencies due to layout**



STUDY BUILDINGS

1 – Town Hall

2 – Century Building

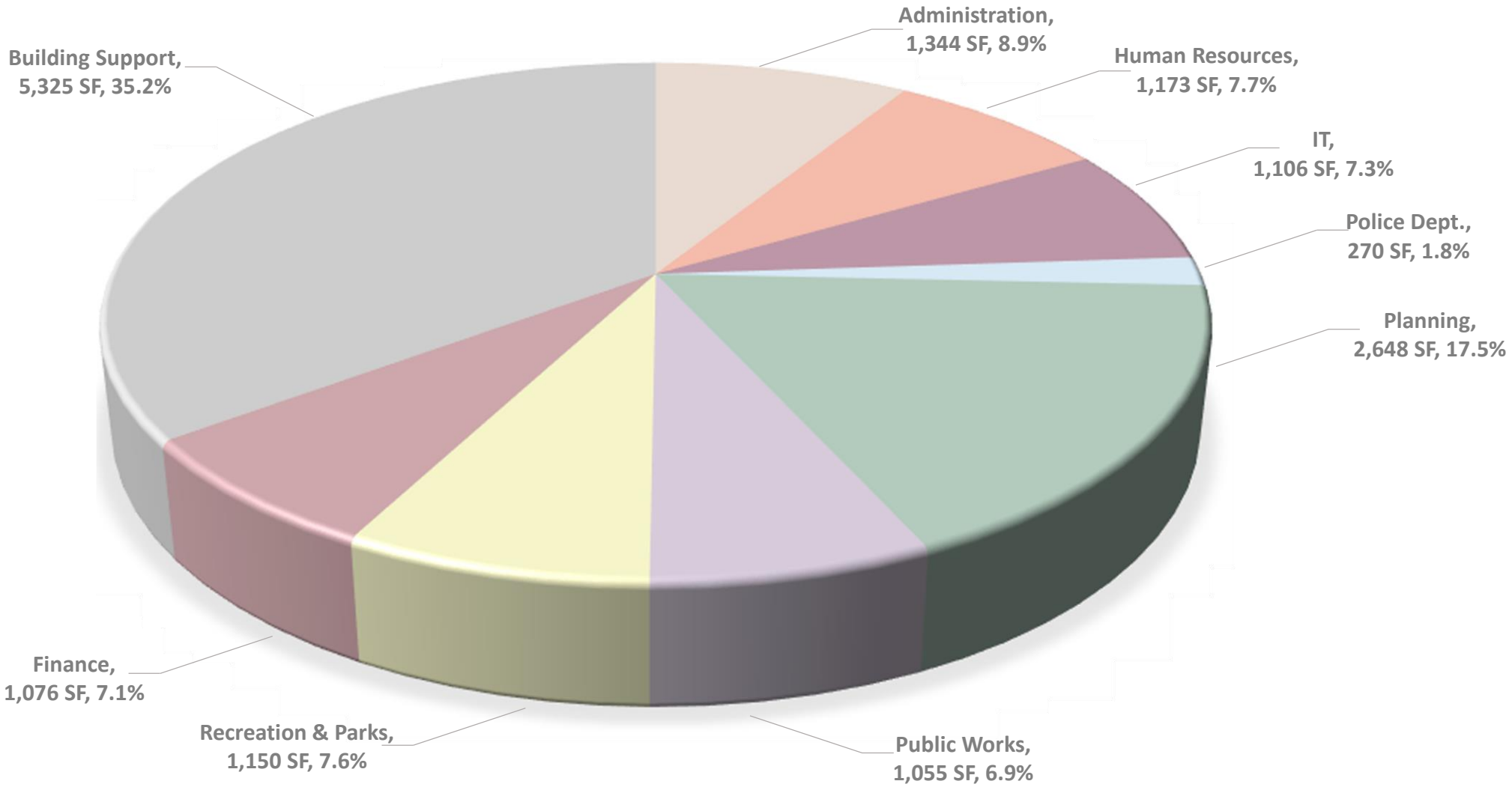
3 – Public Works
0.72 miles SE from Town Hall

4 – Fire Station 1

5 – Fire Station 2
2.37 miles NW from Town Hall

TOWN HALL ASSESSMENT

Area per Department



TOWN HALL ASSESSMENT

Basement Floor Plan

- 6 departments totaling 4,751 NSF
- GSF of floor = 6,892 (69% program space)
- At grade exit from Human Resources
- Mechanical and electrical rooms
- Public Works, Recreation & Parks, and Police spaces

Town Hall Basement Floor Plan

Human Resources	1,173 SF
IT	717 SF
Police Department	270 SF
Public Works	1,055 SF
Recreation & Parks	743 SF
Building Support	793 SF
Total NSF Basement	4,751 SF

TOWN HALL ASSESSMENT

First Floor Plan

- 4 departments totaling 5,054 NSF
- GSF of floor = 6,218 (81% program space)
- Main entrance to facility
- Board room and executive conference
- Public counter staffed by Finance
- Server room and safe

Administration	1,344 SF
IT	389 SF
Finance	1,076 SF
Building Support	2,245 SF
Total NSF 1st Floor	5,054 SF

Town Hall First Floor Plan

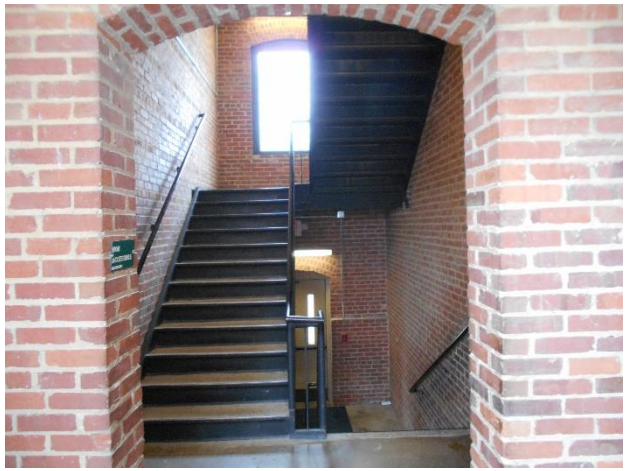
TOWN HALL ASSESSMENT

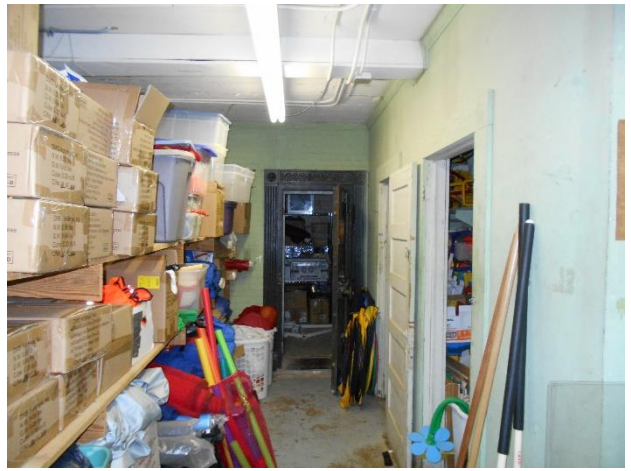
Second Floor Plan

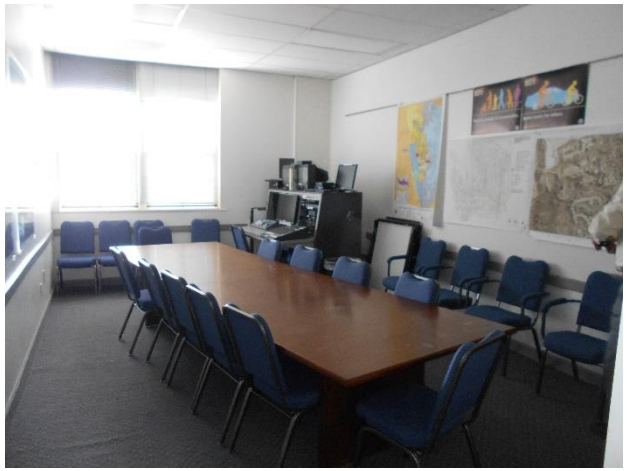
- 3 departments totaling 5,342 NSF
- GSF of floor = 6,218 (86% program space)
- Mostly attic space with R&P athletic storage
- Planning department
- Shared Town Hall storage

Recreation & Parks	1,150 SF
Planning	2,648 SF
Building Support	1,544 SF
Total NSF 2nd Floor	5,342 SF

Town Hall Second Floor Plan



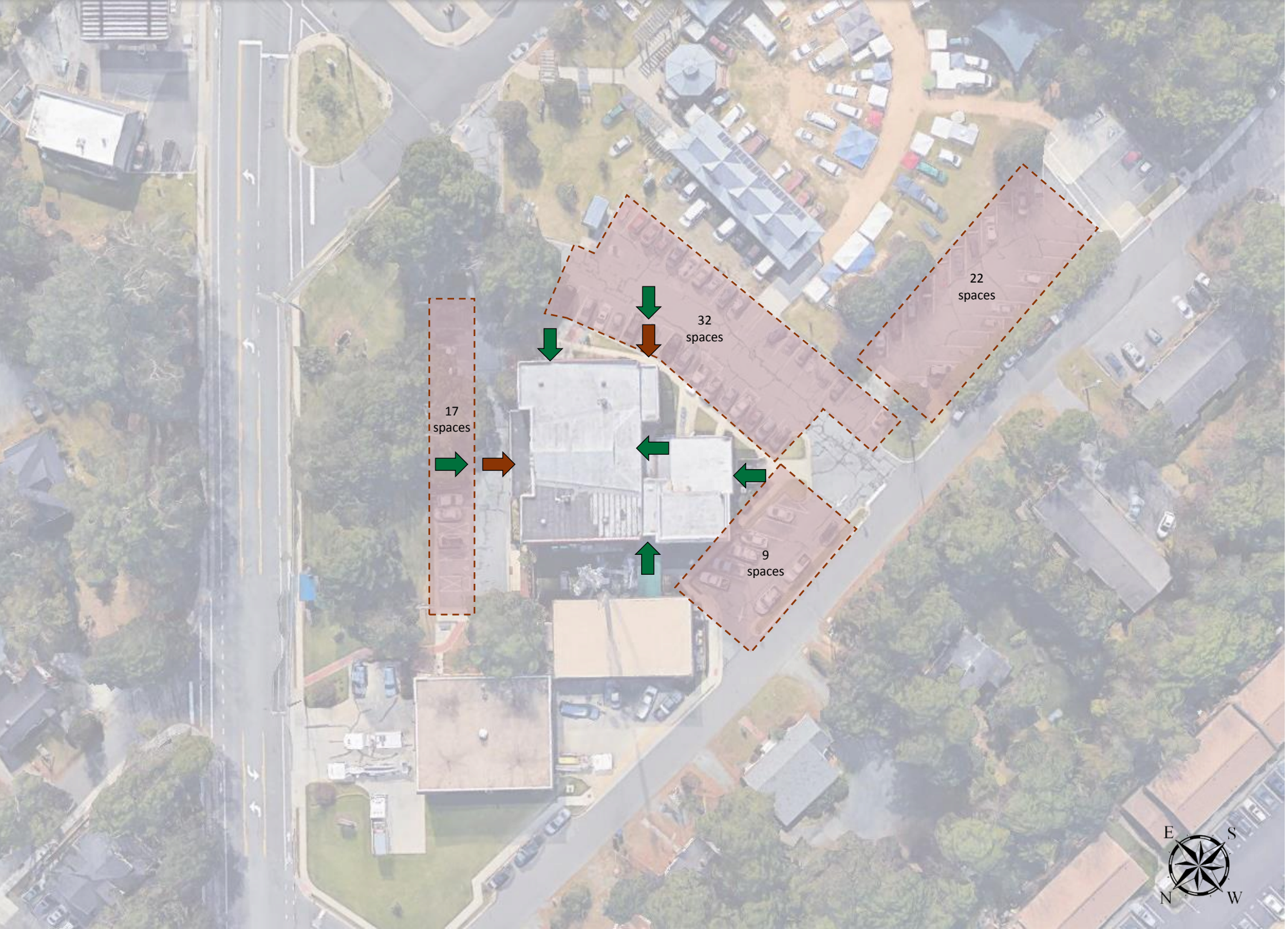




TOWN HALL

Comments

- Building has architectural character and is a landmark in the community
- Shortage of conference room space and AV equipment
- Board room often at capacity for regular meetings
- Lack of acoustical separation
- Restrooms in a difficult location
- Potential of upper floor and attic space
- History of flooding in areas of the basement
- Security risk of public access to most of the building



TOWN HALL PARKING ANALYSIS

Parking

80 surface lot spaces

Government building standard = 1 space for every 200 SF of gross floor area

Building should have 19,328 GSF / 200 SF = 96 spaces per zoning

Public Entry

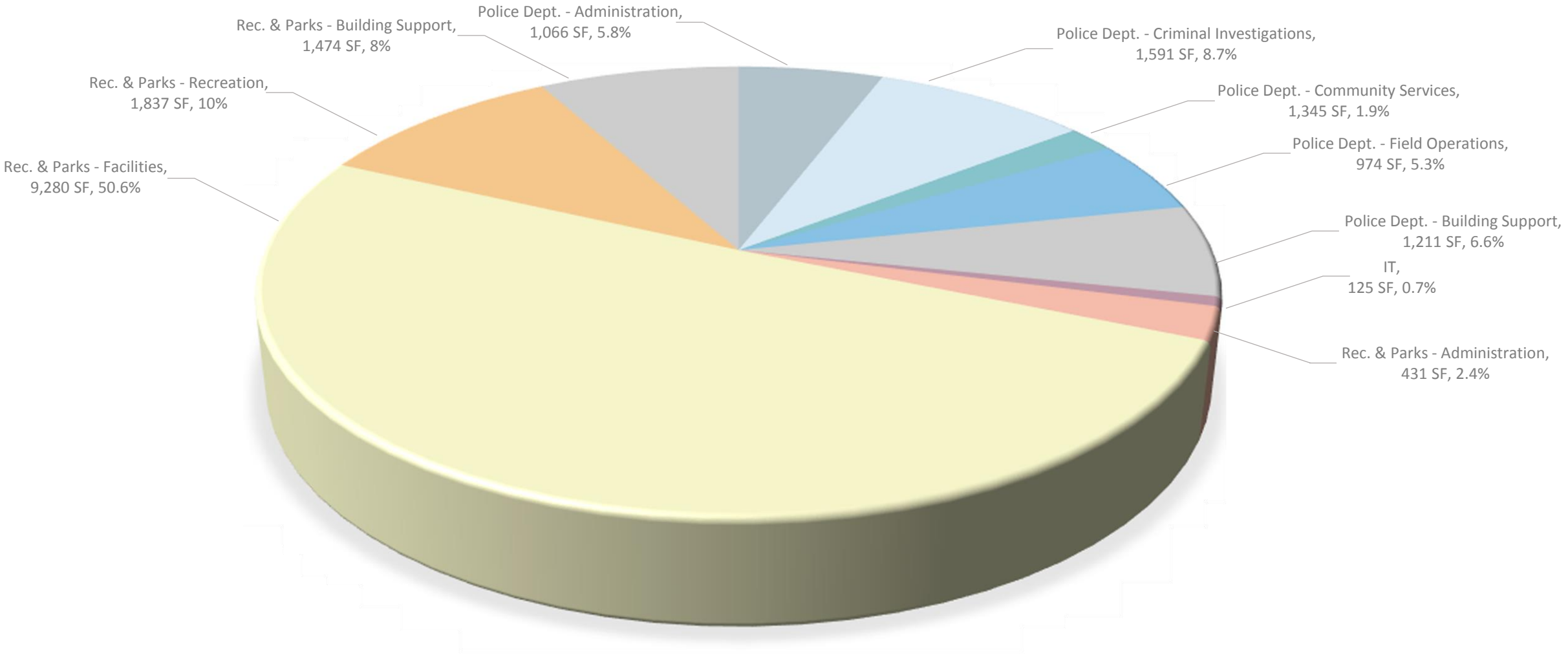
2 entrances at ground level
1 entrance at street level

Staff Entry

4 entrances at ground level
2 entrance at street level

CENTURY BUILDING ASSESSMENT

Area per Department



CENTURY BUILDING ASSESSMENT

Century Building First Floor Plan

First Floor Plan

- 8 departments totaling 8,838 NSF
- GSF of floor = 12,266 (72% program space)
- Police and Recs & Parks departments
- First floor entries are below street level
- Previously a church
- Interior courtyard

Criminal Investigations	996 SF
Community Services	93 SF
Building Support	111 SF
Total NSF Police Department	1,200 SF

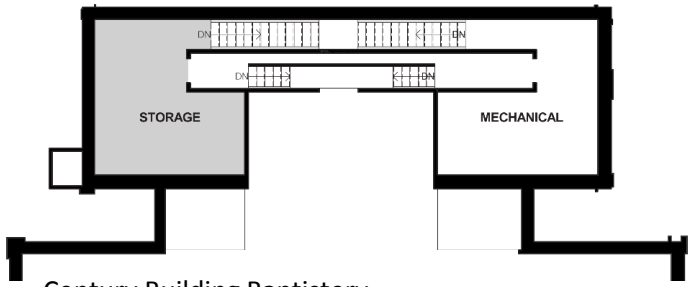
Administration	431 SF
Facilities	4,431 SF
Recreation	1,837 SF
Building Support	814 SF
Total NSF Recreation & Parks	7,513 SF

IT	125 SF
Total NSF Town Hall	125 SF

CENTURY BUILDING ASSESSMENT

Second Floor Plan

- 7 departments totaling 9,496 NSF
- GSF of floor = 11,110 (85% program space)
- ADA entrance from corner plaza
- Common vestibule



Century Building Baptistery

Century Building Second Floor Plan

Administration	1,066 SF
Criminal Investigations	595 SF
Community Services	252 SF
Field Operations	974 SF
Building Support	1,100 SF
Total NSF Police Department	3,987 SF

Facilities	4,849 SF
Building Support	660 SF
Total NSF Recreation & Parks	5,509 SF

CENTURY BUILDING

Comments

- Building has nice rental amenities including the Century Hall space
- Central downtown location
- Challenging relationship to street level requires multiple ramps and concealed entries
- Lack of identity for either police or recs and parks as a civic entity
- Several office spaces interior to the building with no access to daylight
- Lack of secure area for police detainee transfer in rear parking lot

CENTURY BUILDING PARKING ANALYSIS

Parking

15	adjacent lot spaces
40	separate lot spaces
55	total spaces

Emergency Services and government office standard = 1 space for every 200 SF of gross floor area

Satellite and shared parking agreement for balance

Building should have 23,376 GSF / 200 SF = 116 spaces per zoning

Public Entry

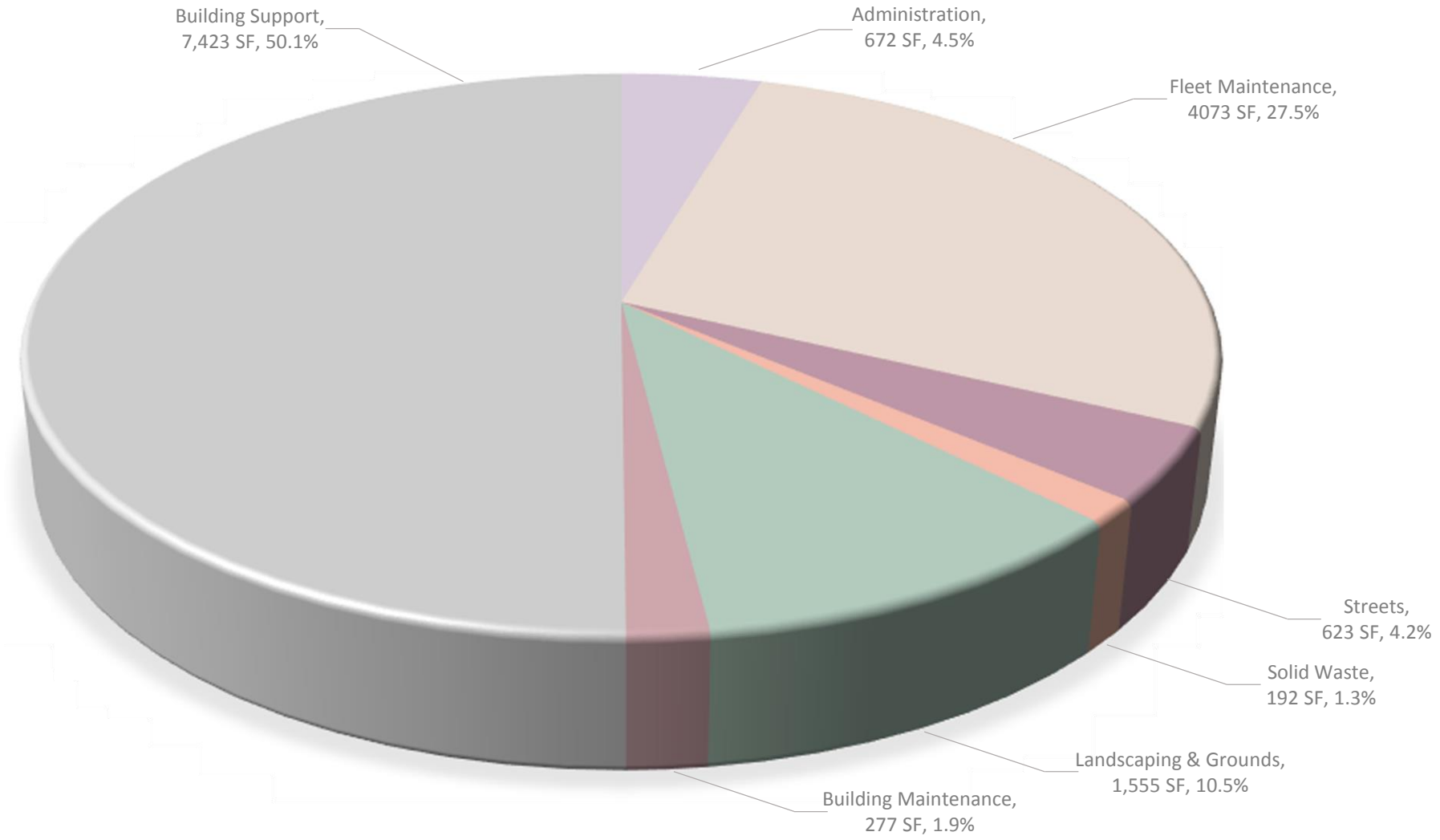
3 entrances at ground level
1 entrance at second level

Staff Entry

5 entrances at ground level
1 entrance at second level

PUBLIC WORKS ASSESSMENT

Area per Department



PUBLIC WORKS ASSESSMENT

First Floor Plan- Interior

- 6 departments totaling 5,342 NSF
- GSF of floor = 6,264 (85% program space)
- Metal building
- Tight spaces

Public Works First Floor Plan – Interior

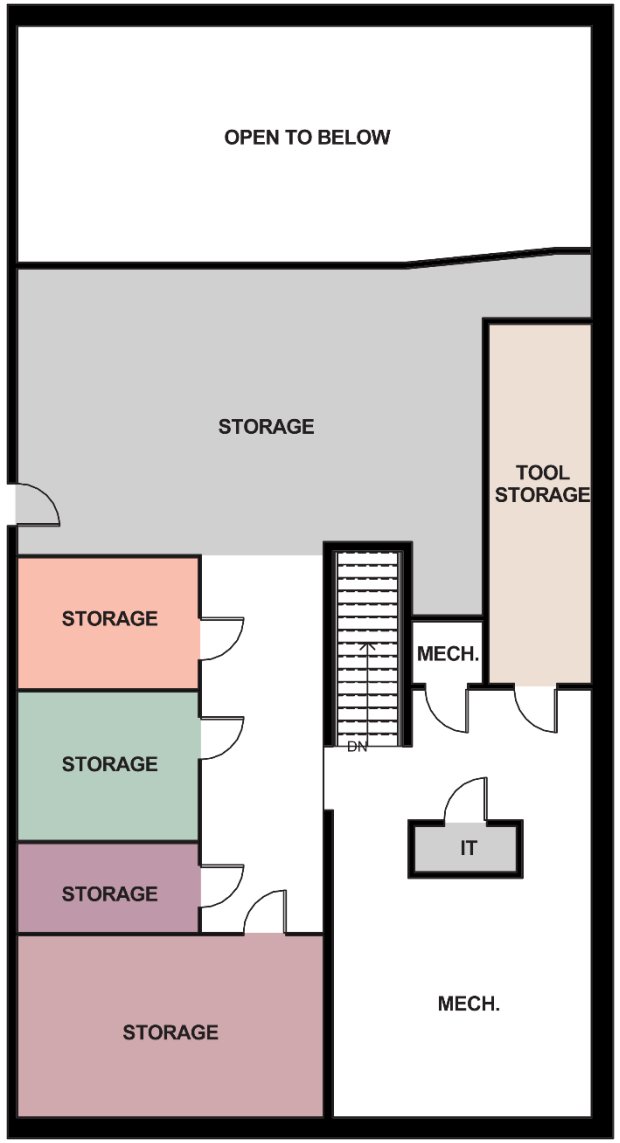
* includes exterior tire and wash pit spaces

Administration	672 SF
Fleet Maintenance	3,556 SF
Streets	67 SF
Solid Waste	73 SF
Landscaping & Grounds	81 SF
Building Support	893 SF
Total Interior NSF Public Works	5,342 SF

PUBLIC WORKS ASSESSMENT

Attic Plan

- 10 departments totaling 1,533 NSF
- GSF of floor = 2,365 (65% program space)
- Unconditioned except for IT closet
- Headroom clearance issues
- Single means of egress



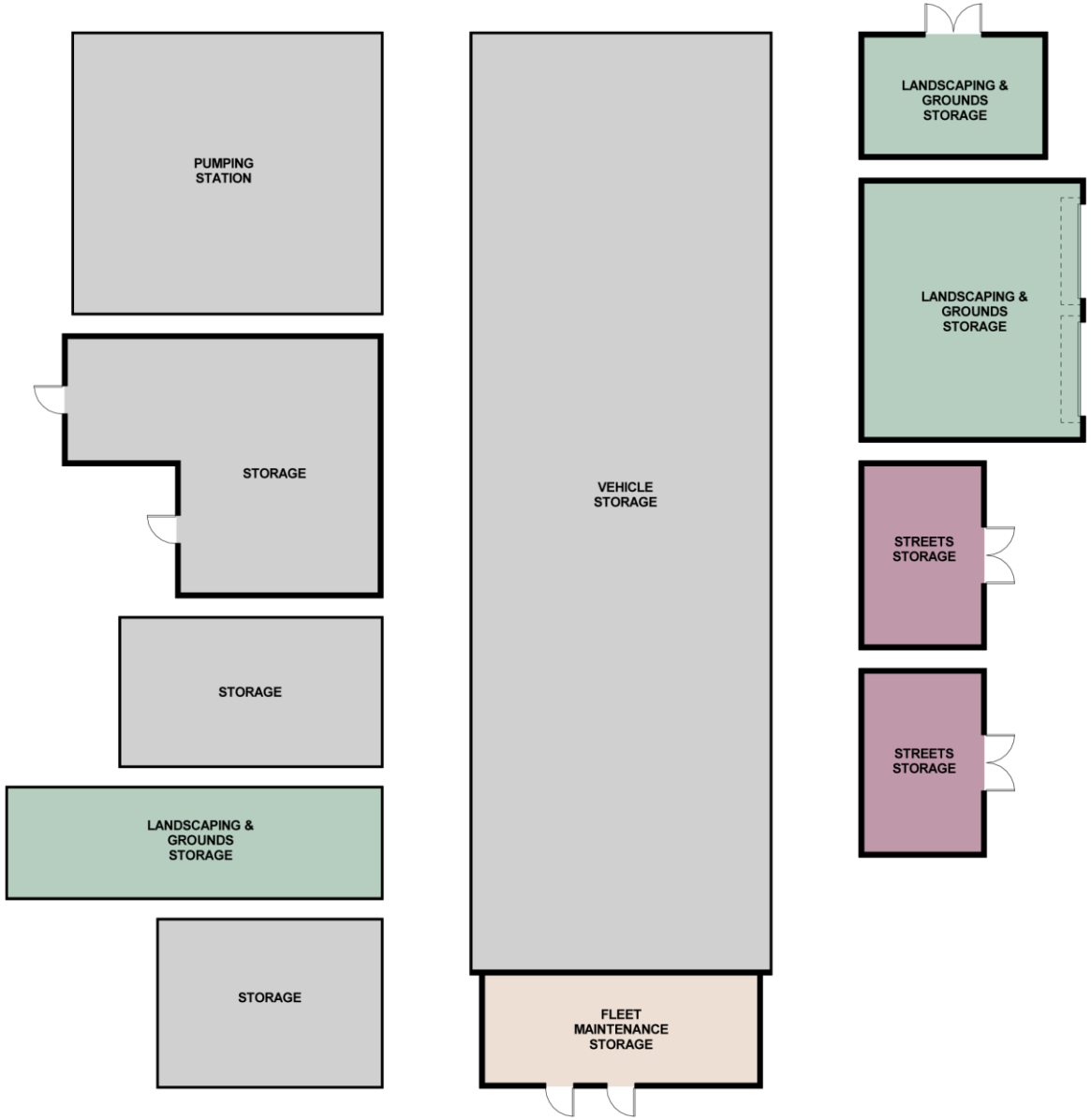
	Fleet Maintenance	184 SF
	Streets	81 SF
	Solid Waste	119 SF
	Landscaping & Grounds	135 SF
	Building Maintenance	277 SF
	Building Support	737 SF
Total	Attic NSF Public Works	1,533 SF

Public Works Attic Plan

PUBLIC WORKS ASSESSMENT

First Floor Plan - Exterior

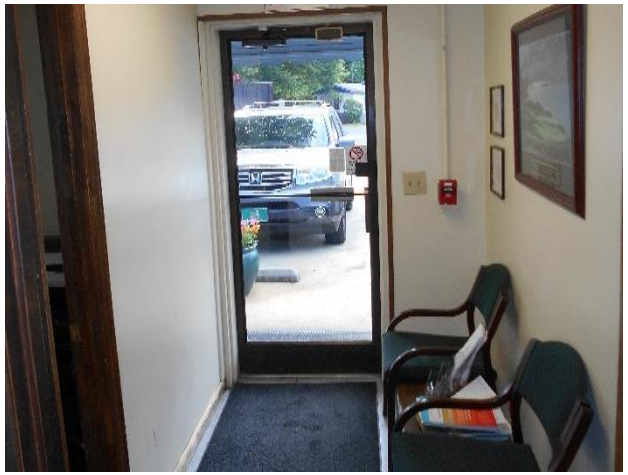
- 6 departments totaling 8,200 NSF
- GSF of floor = 7,940 (100% program space)
- Outdoor covered storage
- Unconditioned space in service yard



Public Works First Floor Plan - Exterior

* excludes exterior tire and wash pit spaces

	Fleet Maintenance	333 SF
	Streets	475 SF
	Landscaping & Grounds	1,339 SF
	Building Support	5,793 SF
Total	Exterior NSF Public Works	7,940 SF



PUBLIC WORKS

Comments

- Site is centrally located near downtown and most town facilities
- Most office deficient in space and storage
- Conference/training/break room shared space has too many functions and limits access
- Shortage of female restrooms
- Property subject to flooding in proximity to fleet vehicle parking areas
- Vehicle bay too short for maintenance on some fleet vehicles
- Police conversions and vehicle evidence processing occupies valuable bay space
- Public access to the site for mulch program

PUBLIC WORKS PARKING ANALYSIS

Parking

47	visitor and staff spaces
46	fleet spaces*
93	total spaces

Government building standard = 1 space for every 400 SF of gross floor area

Building should have 10,305 GSF / 400 SF = 26 spaces per zoning

* doesn't include covered parking spaces

Public Entry

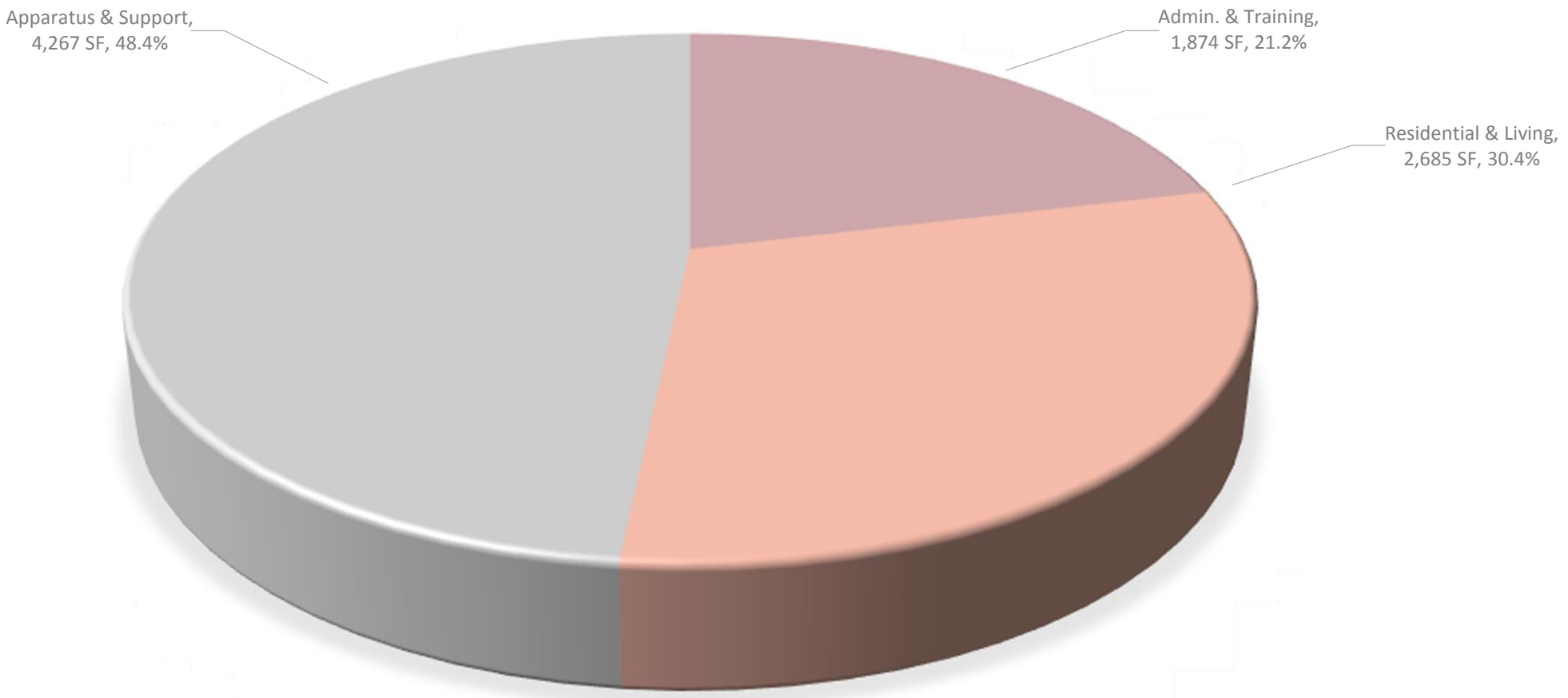
1 entrance at ground level

Staff Entry

4 entrances at ground level

FIRE STATION 1 ASSESSMENT

Area per Department



FIRE STATION 1 ASSESSMENT

First Floor Plan

- 3 departments totaling 6,766 NSF
- GSF of floor = 7,424 (91% Program Space)
- Fire administration
- Training room
- Sleeping quarters
- Apparatus bays

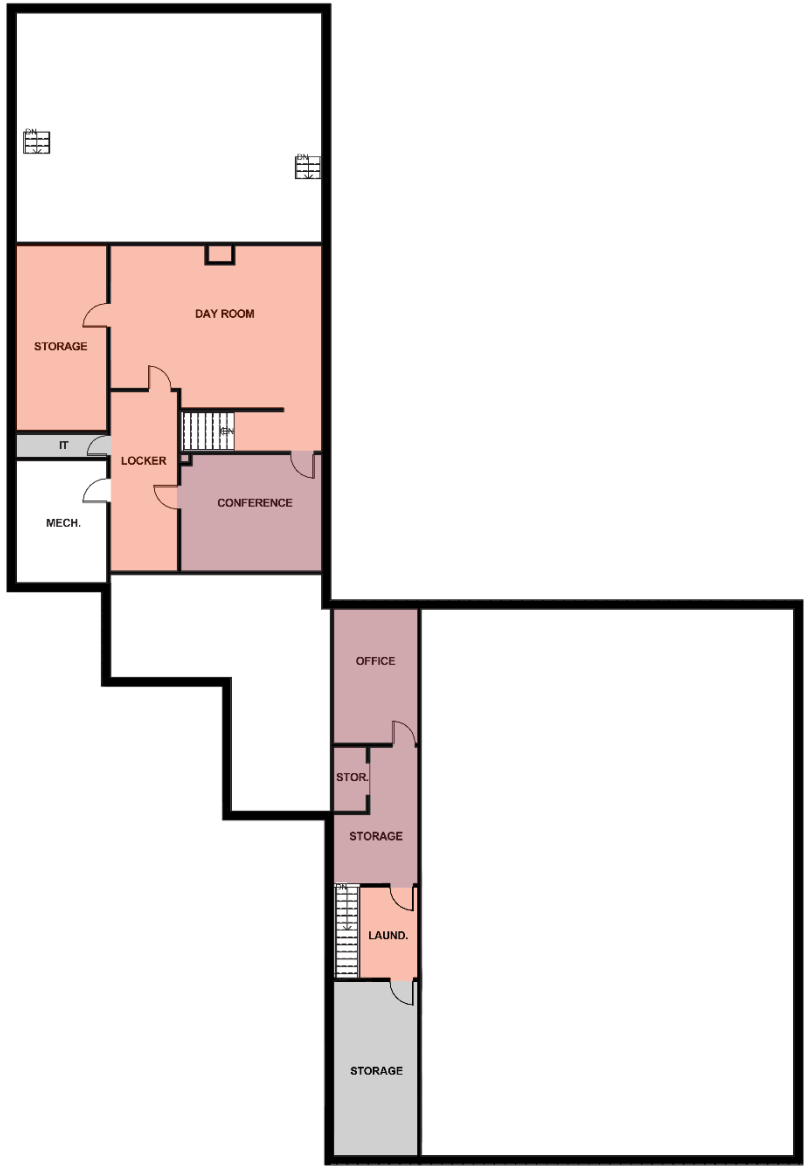
Admin. & Training	1,239 SF
Residential & Living	1,526 SF
Apparatus & Support	4,001 SF
Total NSF Fire & Rescue	6,766 SF

Fire Station 1 First Floor Plan

FIRE STATION 1 ASSESSMENT

Second Floor Plan

- 10 departments totaling 2,060 NSF
- GSF of floor = 2,286 (90% Program Space)
- Day room and storage
- Conference room



Admin. & Training	635 SF
Residential & Living	1,159 SF
Apparatus & Support	266 SF
Total NSF Fire & Rescue	2,060 SF

Fire Station 1 Second Floor Plan

FIRE STATION 1

Comments

- Site is centrally located near downtown
- Shortage of parking spaces
- Apparatus bays are lacking in space and height – some vehicles being parked outside
- Lack of separation between administration and station functions
- Conference room under utilized due to lack of AV
- Sleeping quarters very cramped
- No secure public lobby
- Training room shared with other departments

FIRE STATION 1 PARKING ANALYSIS

Parking

8	surface lot spaces
3	on street spaces
11	total spaces

Emergency services standard = 1 space for every 200 SF of gross floor area

Building should have 9,710 GSF / 200 SF = 48 spaces per zoning

Public Entry

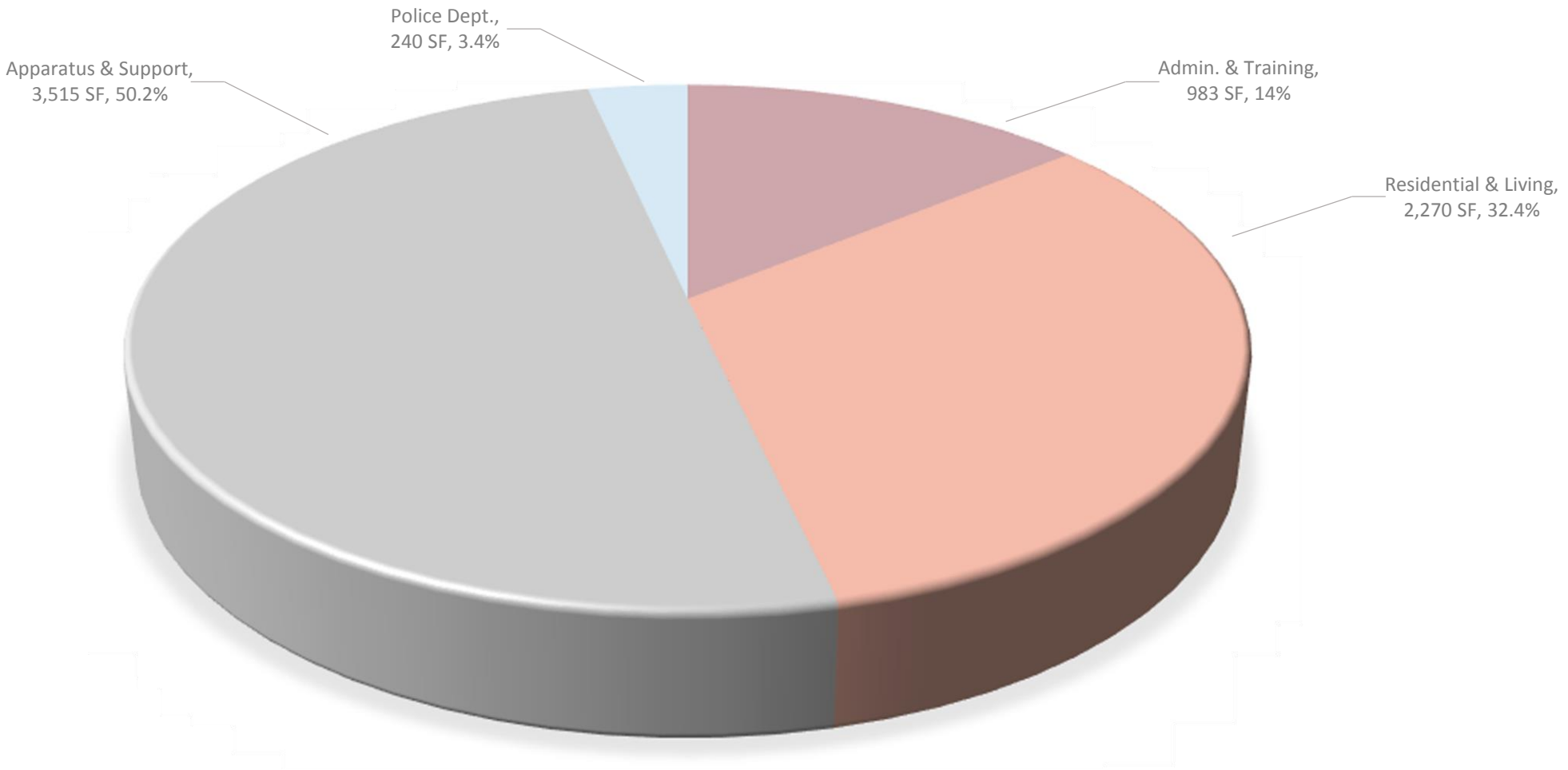
1 entrance at street level

Staff Entry

3 entrances at street level

FIRE STATION 2 ASSESSMENT

Area per Department

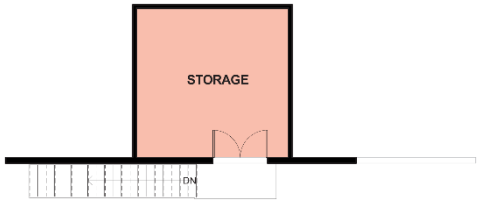


FIRE STATION 2 ASSESSMENT

First Floor Plan

- 4 departments totaling 7,008 NSF
- GSF of floor = 8,550 (85% program space)
- Newest facility
- Training room
- Police substation

Fire Station 2 First Floor Plan



Fire Station 2 Mezzanine Plan

Admin. & Training	983 SF
Residential & Living	2,270 SF
Apparatus Support	3,515 SF
Total NSF Fire & Rescue	6,768 SF

Police Department	240 SF
Total NSF Police Department	240 SF

FIRE STATION 2

Comments

- Newest facility owned by the Town and in great condition
- Sited for potential expansion of apparatus bays
- Shared sleeping rooms
- Nice kitchen
- Height of apparatus bays adequate but the length for double stacking is lacking
- Police substation
- Nice outdoor patio space
- Adequate staff parking

FIRE STATION 2
PARKING ANALYSIS

Parking

17 surface lot spaces

Government building standard = 1 space for every 200 SF of gross floor area

Building should have 8,550 GSF / 200 SF = 42 spaces per zoning

Public Entry

1 entrance at street level

Staff Entry

4 entrances at street level

FORECASTING

WHAT IS FORECASTING?

- **Mathematical model for estimating future growth of staff**
- **Based on the notion that staff will grow at similar rates to the population**
- **Utilizing data from the past 10 years to analyze and forecast the trends for the next 20 years**
- **Data sources are "growth indicators"**
- **Model contains 10 different metrics with data from the following sources:**
  - **NC Office of State Budget and Management**
  - **US Census**
  - **Town of Carrboro**
    - **Commercial Building Permits**
    - **Residential Building Permits**
- **Summary provides an average of 5 percentage growth based metrics**

- **July 2015 US Census estimate of Carrboro population = 21,156**
- **Highest population density in the area – higher than the state average density**

POPULATION PROJECTIONS

POPULATION PROJECTIONS

Metric	2010	2014	ANNUAL FACTOR	2021	2026	2031	2036
OSBM number increase	19,582	20,534	190	22,057	23,009	23,961	24,913
OSBM percentage increase	19,582	20,534	0.9%	22,108	23,152	24,245	25,390
Metric	2010	2015	ANNUAL FACTOR	2021	2026	2031	2036
Census number increase	19,589	21,156	1,567	32,125	39,960	47,795	55,630
Census percentage increase	19,589	21,156	1.2%	23,053	24,512	26,063	27,711
Metric	2000	2010	ANNUAL FACTOR	2021	2026	2031	2036
Census number increase	16,782	19,589	255	22,396	23,672	24,948	26,224
Census percentage increase	16,782	19,589	1.3%	21,447	22,880	24,410	26,042
Metric	2015	2016	ANNUAL FACTOR	2021	2026	2031	2036
Solid waste number increase (NP)							
Solid waste percentage increase (NP)							
Metric	2006	2016	ANNUAL FACTOR	2021	2026	2031	2036
Solid waste number increase (NP)							
Solid waste percentage increase (NP)							
Metric	2008	2015	ANNUAL FACTOR	2021	2026	2031	2036
Commercial permit number increase	298	370	9	442	487	532	577
Commercial permit percentage increase	298	370	2.4%	448	506	570	643
Metric	2008	2015	ANNUAL FACTOR	2021	2026	2031	2036
Residential permit number increase	468	621	19	774	870	965	1,061
Residential permit percentage increase	468	621	3.1%	792	921	1,072	1,248

POPULATION PROJECTION SUMMARY

Metric	ANNUAL FACTOR	2021	2026	2031	2036
Average of 5 percentages (based on census number increase)	1.8%	23,962	26,192	28,629	31,293

- Strongest indicator is residential permit
- Weakest indicator is OSBM
- US Census analyzed over a 10 year span and 5 year span with similar percentage results
- Skewed metrics are removed from the forecast (ex: there is no value associated with solid waste)

Town Hall | Study Building 1

Town of Carrboro Facilities Assessment

Side Facade

Side Facade

Rear Facade

Rear Facade

Basement Plan

First Floor Plan

Second Floor Plan

BUILDING SUMMARY

The Carrboro Town Hall is a three story structure adjacent to Fire Station #1. It has exterior brick walls constructed in a common bond pattern. The main entrance faces northeast, fronting Main Street, and is characterized by a column-supported portico.

BUILDING AREA

Basement	7,786 GSF
First Floor	6,675 GSF
Second Floor	6,675 GSF
Total	21,136 GSF

GENERAL CONDITIONS

Basement	Fair
First Floor	Good
Second Floor	Good
Roof	N/A
Facades	Good
Structural	Good
Fire Protection	N/A
Plumbing	Fair
Mechanical	Fair
Electrical	Good

CURRENT TENANT

Town Hall administrative and town services.
Recreation & Parks holds various storage rooms used for sports equipment and recreational items.
The Police Department has an evidence room.
Public Works occupies an office and two shop spaces.

SUITABLE USES

Office

Front Facade

DRAFT

STEWART

STRUCTURAL FACILITITIES CONDITION ASSESSMENT

CARRBORO TOWN HALL

Town of Carrboro, North Carolina
301 West Main Street
Carrboro, North Carolina 27510
September 7, 2016

STRONGER BY DESIGN

421 FAYETTEVILLE ST.
SUITE 400
RALEIGH, NC
27601
T 919.380.8750
F 919.380.8752

TOWN HALL

Structural Assessment

EXISTING CONTRACT DRAWINGS

No existing building drawings were available as part of this facility condition assessment.

FACILITY STRUCTURAL OBSERVATIONS

At the time of the field visit, the limits of visual observation for structure were significant. Access was restricted to removal of acoustical ceiling tiles for the purpose of viewing isolated locations of horizontal superstructure, and this was further hindered by obstruction in the form of an older phase of existing construction consisting of gypsum wallboard ceiling. As such, opportunities for observing horizontal floor structure were quite literally limited to two or three locations that had been previously "punched through" or could be seen in a remote corner of a basement utilities room. Likewise, for vertical superstructure, access was limited to exposed surface observation, typically exterior. These limitations can of course make it challenging to deduce whole-system structural arrangements and their implicit connectivity.

FACILITY CONDITION ASSESSMENT SUMMARY

Carrboro Town Hall			
Component Observed	Assessment		
	Good	Fair	Poor
Wood-framed floor structure - main building	*Insufficient access*		
Wood-framed roof structure – main building	*Insufficient access*		
Wood-framed roof structure – maintenance building	■		
Interior structural alignment/levelness		■	
Building envelope (moisture ingress)		■	
Load-bearing exterior masonry – main building	■		
Load-bearing exterior masonry – maintenance building	■		
Egress stair – exterior masonry and stair structure	■		
Roof connector component (to fire station)	■		
Main building portico surface features		■	

CONCLUSIONS

It should be noted that visual observations herein, and the subsequent assessment based thereupon, are limited to areas containing the respective structural components listed, and were in many instances significantly isolated. The effort outlined in this summary does not constitute a detailed evaluation of whole-system structural adequacies associated with other areas or features of the building structure obstructed or not capable of being observed at the time of the visual survey.

Stewart will gladly assist with subsequent structural assessments of the property, or any related work in this capacity. We appreciate the opportunity to provide this assessment and look forward to continued involvement in the project as deemed appropriate.

OPTIMA ENGINEERING, P.A.
150 Fayetteville Street | Suite 520
Raleigh, North Carolina 27601
www.optimapa.com

TOWN OF CARRBORO
FACILITY CONDITION ASSESSMENT REPORT
CARRBORO, NC

MEP ENGINEERING EXISTING FACILITY ASSESSMENT

September 1, 2016

Buildings Included in Report

Town Hall, 301 W Main Street
Century Center, 100 N Greensboro Street
Public Work Complex, 100 Public Work Drive
Fire Station 1, 301 W Main Street
Fire Station 2, 202 Roberson Street

DRAFT

TOWN HALL

MEP Assessment

FIRE PROTECTION:

The building is not equipped with any form of automatic fire suppression system.

PLUMBING:

The basement has a single lavatory that is no longer in use. There is also an electric, vertical storage water heater located in the basement that appears to serve the break room sink on the ground floor and the lavatory in the basement. This water heater is a State Select model ES640DORS, serial number 1147A009847, 40-gallon capacity, and is rated for 4.5 kW at 240-volt, single phase. There are large quantities of abandoned, exposed piping throughout the basement. There was standing water observed at entrance to the basement and within the basement. There is a self-contained eyewash in the maintenance shop.

The ground floor has two group restrooms. The water closets are floor-mounted, floor outlet, flush valve fixtures and are in poor condition. The urinals are floor-mounted, floor outlet, flush valve fixtures and are in poor condition. The lavatories are wall-mounted, rectangular enameled case iron basins with single lever manual faucets. There is a single floor drain located in the women's restroom. The restroom lavatories have a single tankless water heater located beneath the women's restroom lavatory. This water heater is an Eemax model SP3512, serial number 2075401, and is rated for 3.5 kW at 120-volt, single phase. There are many instances of exposed piping and poor patching jobs from previous fixture locations throughout both restrooms. Additionally, there is a break room in the ground floor that has only a sink.

The first floor has two single use restrooms. The water closets are floor-mounted, floor outlet, flush tank fixtures and are in good condition. The lavatories are wall-mounted, rectangular vitreous china basins with single lever manual faucets. The restroom lavatories have a single tankless water heater located beneath one of the restroom lavatories. This water heater is an Eemax model SP3512, serial number 915139, and is rated for 3.5 kW at 120-volt, single phase. The other restroom is equipped with a Sloan thermostatic mixing valve that is no longer in use. Additionally, there is a single surface-mounted electric water cooler in the corridor.

There are no other plumbing fixtures on the second floor except for a floor-mounted drinking fountain located in the storage area; it appears to be unused.

MECHANICAL:

Town Hall is served by (6) residential style split system units with electric heat and also heat pumps. No outside air for ventilation is ducted to any of the indoor air handling units.

The Planning Offices on the 2nd Floor are served by a Goodman model ARUF60 split system A/C unit with electric heat. The unit is located above ceiling in the planning area and the condensing unit is located on the roof and both were manufactured in 2014. The A/C unit is fitted with an Aprilaire MERV-13 filtration unit. The unit appears to be in good working order and is equipped with a programmable thermostat.

The Zoning and Inspections offices on the 2nd Floor appear to be served by a Lennox split system A/C unit. They unit appears to be located above ceiling in the space and the condensing unit is located on the lower roof. The unit appears to be manufactured in the mid-late 90s, approximately 20 years old and getting near the end of its life cycle. The condensing unit coils show normal signs of wear and tear with noticeable damage and debris build up on the condenser coils.

The 1st Floor and part of the Basement Floor are served by (2) Goodman model ARUF48 split system A/C units with electric heat. The indoor A/C Units are located in the basement mechanical/storage room and the outside condensing units are located just outside of the access stairs to the mech/storage room. Both units were manufactured in 2014. The A/C units are fitted with Aprilaire MERV-13 filtration units. The units appear to be in good working order and are equipped with programmable thermostats. Ductwork insulation appears to be older, ripped, and patched in a few places.

The 1st Floor Town Hall Meeting Area is served by a Goodman model ARUF60 split system A/C unit with electric heat. The unit is located in a 2nd Floor storage room closet and the condensing unit is located on the roof, both were manufactured in 2012. The unit appears to be in good working order and is equipped with a programmable thermostat.

The Basement HR Department Offices appear to be served by a Lennox split system heat pump A/C unit. The condensing unit is located outside the entry door and has a manufacture date of 1994. The outdoor unit is located under an overhang so the condensing unit appears to be in relatively good condition for its age, however it is getting near the end of its life cycle.

A part of the basement offices appears to be served by a Lennox split system heat pump A/C unit. The condensing unit is located outside underneath a stairwell and has a manufacture date of 1999. The condensing unit coils show normal signs of wear and tear with noticeable damage and debris build up on the condenser coils.

The Maintenance Shop is served by an International Comfort Products model FEM4X3000A split system A/C unit. The unit has a manufacture date of April 2009 and appears to be in good working order. The condensing unit is located behind the maintenance shop. The maintenance shop is also equipped with a dedicated exhaust fan for (2) fume/paint hoods in the shop.

A Leibert unit is installed in the first floor server room and appears to be the main air conditioning and dehumidification unit for the space. It supplies two ceiling diffusers and returns air through a louvered panel on the front of the unit. The unit appears to be in good working order and is controlled by a temperature sensor in the space.

A supplemental through-window A/C unit was installed in the window of the server room as well to supplement the Leibert and mini-split unit in cooling the server room. Daylight can be seen around the plastic panels that border the window unit and it doesn't appear that the panels are insulated.

A Mitsubishi Mr. Slim Model PKA-A18HA6 ductless split system heat pump is installed above the door in the first floor server room. The manufacture date is June 2015. The unit appears to be in good working order and is controlled by a temperature sensor in the space. The mini-split was not operating at the time of the visit.

Basement bathroom exhaust fans are sidewall through window and are controlled on timer switches at the bathroom entrance. The fans appear to be relatively old and make a significant amount of noise when activated.

The stairwells and second floor storage rooms are all unconditioned and were fairly warm during the summer, mid-day site visit. There are ceiling fans in the stairwells that seem to circulate the air somewhat but the storage rooms don't have any air circulation or ventilation.

ELECTRICAL:

Utility Service:

The building is served by two separate utility services and meters. The first electrical service serves the entire main front portion of the town hall and partially serves the shop/maintenance area located at the back of the building. This electrical service is fed from a dedicated 240 Volt, 3 phase high leg delta pole-mounted transformer located approximately 100' from the building. The transformer appears to be in good shape physically, though it is past it's expected design life of 20-25 years. Thus the internal wiring insulation is likely starting to break down and the transformer has an increased chance of failure. If the building is to be utilized for a short time prior to a complete remodel, this transformer may be reutilized.

The second electrical service partially serves the maintenance/shop area located at the back of the building. This electrical service is fed from a 240V, 1 phase pole mounted transformer located approximately 100' from the building adjacent to Bim St. This transformer also appears to feed a house located on Bim St. The transformer looks to be less than 20 years old and in good shape physically. If the building is to be utilized for a short time prior to a complete remodel, this transformer may be reutilized.

If the building is to be completely remodeled, it is recommended that the two existing electrical services be removed from the building and replaced with one new electrical service that serves the entire building. It is also recommended that the service voltage be changed to 208 Volt, 3 phase since most new mechanical equipment operates at this voltage. The new electrical service would be fed from a new 208 Volt, 3 phase transformer sized appropriately for the load. The new transformer would either be a pad-mounted or pole-mounted transformer depending on local utility requirements.

Electrical Distribution:

The main service to the building is fed underground from the utility transformer via a 4" PVC conduit to a CT cabinet and meter located on the side of the building. From the CT cabinet, a 4" EMT conduit feeds a 400A main service disconnect located in the basement electrical closet. It is required that the main service disconnect be located nearest the point of entrance of the service entrance conductors per the NEC. If the building is completely remodeled, the main service disconnect would need to be located where the service entrance conductors first enter the building.

The 400A main service disconnect serves a wire trough. The trough feeds (10) safety switches that serve as disconnecting means to electrical panels located throughout the building as well as mechanical equipment.

The second service to the building is fed overhead from the utility transformer to a meter located on the exterior of the building near the shop area. From the utility meter, a 2" EMT conduit feeds a 200A load center located in the shop area office.

The electrical distribution panels are as follows:

Basement Level:

- A 120/240V, 1 phase, 3W, weatherproof panel located on the exterior of the building adjacent to the meter and CT cabinet. This panel was not labeled and is fed from the electrical wiring trough on the interior of the building.
- A 42 pole, 120/240V, 1 phase, 3W, Square D load center located in the basement corridor. This panel is labeled as panel 'B' and is served from the electrical wiring trough. The ampacity of the panel could not be determined.
- A 16 pole, 120/240V, 1 phase, 3W, Zinsco load center located in the basement corridor. This panel is labeled as panel 'H' and is served from the electrical wiring trough. The ampacity of the panel could not be determined.
- A 42 pole, 200A, 120/208V, 3 phase, 4W, Square D load center located in the basement telecom closet. This panel is labeled as panel 'EMD' and is served from generator stand-by panel 'P2' located in the fire station adjacent to the town hall. This panel appears to be recently installed and may be re-used during renovation.
- A 16 pole, 120/240V, 1 phase, 3W, Federal load center located in the basement electrical closet adjacent to the wiring trough serving the panel. This panel is labeled as panel 'C.' The ampacity of the panel could not be determined.
- A 120/240V, 1 phase, 3W, GE fused load center located in the shop area. This panel appears to be original to the building and is labeled as panel 'D' It is fed from the electrical wiring trough. The ampacity of the panel could not be determined.
- An 8 pole, 125A, 120/240V, 1 phase, 3W, Imperial load center located in the basement office area. This panel was not labeled and appears to be served from the electrical wiring trough.

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Lighting:

Most of the existing lighting fixtures in the building utilize T8 fluorescent or compact fluorescent lamps. There are also (6) runs of track lights in the first floor corridors and (6) spot lights in the board room that appear to utilize halogen lamps. This type of lighting is efficient and meets the requirements of the North Carolina Energy Code.

Most of the lighting controls in the building are standard manual (on/off) wall mounted switches. Lighting controls in the offices, restrooms, and break rooms will need to be replaced with occupancy sensors per the requirements of the North Carolina Energy Code for any areas that are renovated. For total building renovation, it will be required that automatic lighting controls be installed that shut off lighting for the entire building. This can be accomplished by installing occupancy sensors in all spaces that turn off lighting within 30 minutes of the occupant leaving the space, or by installing a schedule basis, programmed lighting control system.

Existing emergency lights are battery backed "bug eye" emergency lights. There are some locations in the building where egress paths would not adequately be illuminated in the event of an emergency, particularly in the stairwell and in the basement corridors. Additional emergency lights need to be added so that 1 foot-candle of light will illuminate the path of egress in the event of an emergency. Exterior emergency lights appear to be in good condition and should remain in place.

Fire Alarm:

The existing fire alarm control system is less than 10 years old and is fully addressable. The fire alarm control panel is an EST Quickstart by GE. Pull stations were located at all building exits. There appears to be full smoke detector coverage throughout the building; however, there are a few locations that there is no smoke detection or the smoke detectors serving the area are residential type and are not tied into the building fire alarm system. The residential smoke detectors need to be replaced with detectors that are connected to the building fire alarm system, and additional detectors need to be added in areas that did not have any smoke detection.

Fire alarm notification devices need to be added in spaces throughout the building to meet code requirements. Horn strobes need to be added to corridors in the building that had blind spots where notification devices were not visible or there were no devices at all. There were also many conference rooms and double offices that had no notification devices. Strobes need to be added to any room that occupies more than a single person.

Fire alarm cabling was routed exposed in some locations. It is recommended that all fire alarm cabling be routed conduit for building renovation to protect the cable from damage.

- A 2 section 32 pole, 100A, 120/240V, 1 phase, 3W, Federal load center located in the basement mechanical room. This panel is labeled as the 'TAX AND POLICE' panel and is served from the electrical wiring trough. The panel appears to feed the building's HVAC equipment.
- A 22 pole, 200A, 120/240V, 1 phase, 3W Siemens load center located in the shop area office. This panel was not labeled and is fed from directly the utility transformer.

First Floor:

- A 30 pole, 150A, 120/240V, 2P, 3W, Square D load center located on the first floor in the closet adjacent to the reception desk. This panel is labeled as panel 'F' and is served from the electrical wiring trough.
- A 16 pole, 100A, 120/240V, 2P, 3W, Eaton load center located in the first floor office area. This panel was not labeled and is appears to be served from the electrical wiring trough.

Second Floor:

- A 30 pole, 150A, 120/240V, 1 phase, 3W, Square D load center located in the second floor storage area. This panel was not labeled and appears to be served from the electrical wiring trough.
- An 8 pole, 125A, 120/240V, 1 phase, 3W, Square D load center located in the second floor storage area. This panel was not labeled and is appears to be served from the 30 pole panel located in the second floor storage area.

The electrical panels appear to be code compliant and are adequate for serving the existing building. However, most of the panels are past the end of their designed useful life and will be very difficult to obtain new breakers to accommodate a redesigned distribution system. Any remodeling of the existing building will require all the electrical panels to be replaced with the exception of the new 42 pole generator backed stand-by panel (Panel 'EMD'). It may be re-used during renovation. All conduit, disconnects, wire troughs and conductors that are part of the building's electrical distribution system should be removed and new installed for total building remodel as well.

Electrical Devices:

The existing receptacles are both recessed (in gypsum board walls) and surface mounted at varying heights. In general, the receptacles appear to be in fair condition and adequate for use. Depending on the configuration of a renovation, it is more than likely that new receptacles will need to be added.

There is an existing server room on the first floor and an IT closet on the basement floor that houses the telephone backboard. There are existing data and telecom outlets that are recessed in the office area gypsum board walls. In general, outlets appear to be in good condition. Depending on the configuration of a renovation, it is more than likely that new outlets will need to be added.

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NEXT STEPS

- Vet/ refine programs of spaces for each department
- Complete facility assessment document
- Develop expansion concepts
- Preliminary cost estimates for each option