Wake Transit Plan

Condition and Capacity Analysis

CONTENTS

Task 4.1 – Condition and Capacity of Current Bus Facilities

PURPOSE

This report reviews the condition and capacity of the current bus maintenance and operations facilities for each of the Transit Partners in Wake County. This analysis identifies future operations and maintenance facility requirements for GoRaleigh, GoRaleigh/GoWake Access, GoTriangle, and GoCary.

Background information on all four operating garages is included, as well as a brief history of studies related to the facilities. Each operating facility is presented along with known potential relocation/redevelopment issues. The Functional Condition and Functional Capacity of each of the four garages is provided, the main purpose of which is to identify the efficient capacity of each garage.

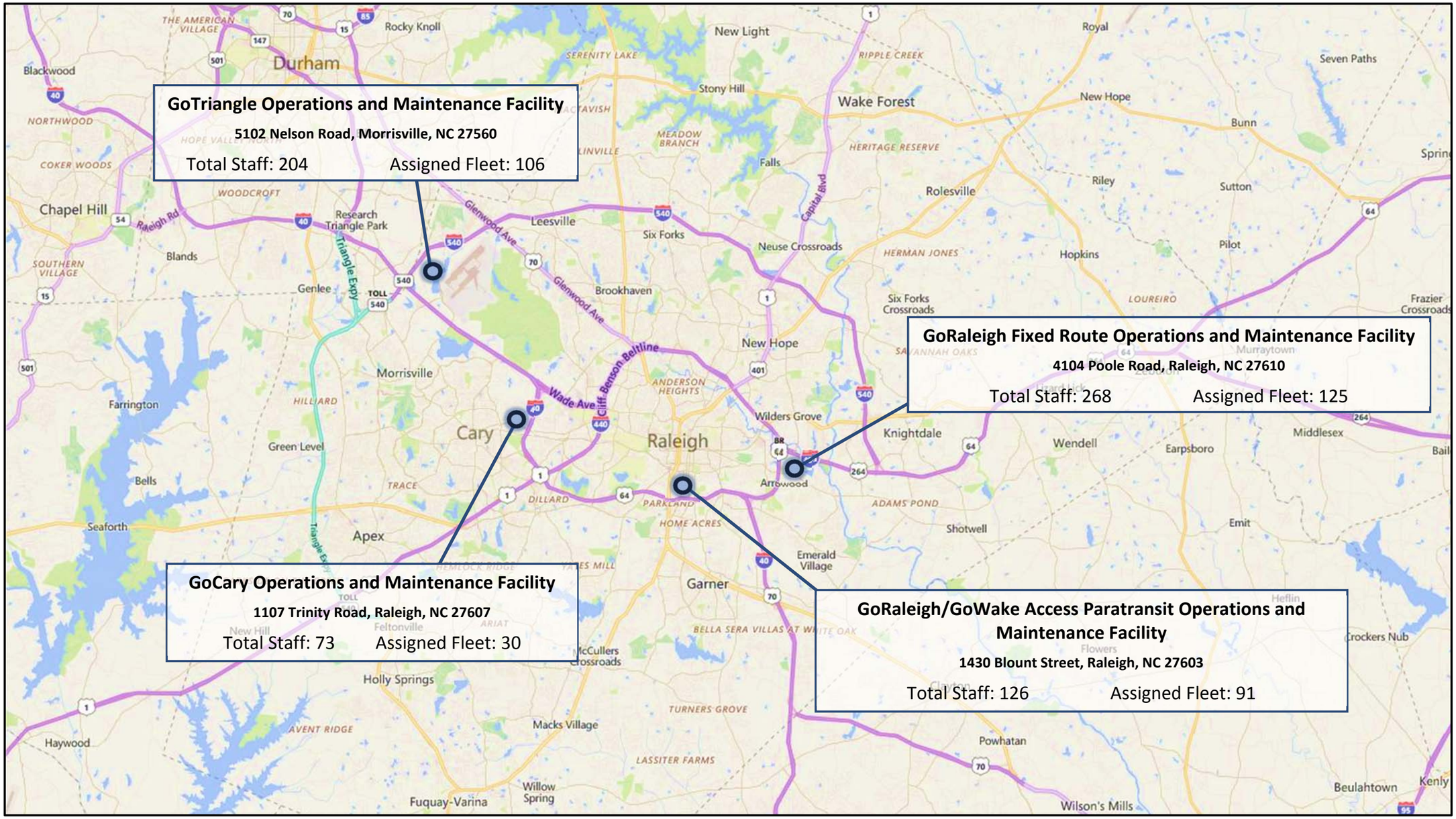
INTRODUCTION

A total of 352 paratransit and standard buses provide service throughout Wake, Orange, and Durham Counties and the Raleigh metropolitan area. Exhibit A shows the general location of the four facilities within Wake County. The capacity suggested is based on standard vehicle per bay ratios discussed in this document.

- GoRaleigh Bus Operations and Maintenance Facility
- GoRaleigh/GoWake Access Paratransit Operations and Maintenance Facility
- GoTriangle Bus Operations and Maintenance Facility
- GoCary Paratransit Operations and Maintenance Facility

Staff from each Transit Partner, along with NN and HDR | Maintenance Design Group staff, toured the abovementioned facilities in September 2017 to collect data to determine the functional capacity and condition of each facility. Discussions with facility staff provided insight as to the deficiencies unique to each facility. The purpose was to document issues related to general condition, function, and capacity as a basis for the data contained in this report.

Exhibit A – Facility Location Overview



FACILITY EVALUATIONS AND CAPACITY ANALYSIS

Evaluation and Capacity Analysis Approach

The purpose of this analysis is to gain an understanding of space utilization at all four of the operations and maintenance facilities through a basic comparative analysis of how space is being utilized and how that utilization compares to other facilities used for similar functions.

The statistics for each facility are included in the detailed evaluation. For comparative purposes, the facilities were evaluated and photo documented. Space in each facility was categorized into one of five areas: Bays, Shop/Support Areas, Parts/Storage Areas, Office and Support Areas, and Circulation. Provided in this section are Exhibits and Charts that document the basic statistics for each facility.

Space Utilization Analysis

Utilization comparisons are based on the data generated from each of the four facilities that analyzes the five functional area types. The square footage documented is a professional estimate based on area takeoffs of the existing drawings of the four facilities. The takeoffs are summarized into five categories.

- Circulation
  - The Circulation identified is a total of egress (true) circulation. This area does not include the building circulation (mechanical, electrical, and structural) elements. All building circulation is included in the other four categories.
- Office and Support Areas
  - Office and Support Areas are any space occupied by administrative or operations staff. This area includes the driver's areas and administrative offices.
- Parts and Storage Areas
  - Parts and Storage Areas consist of any area used for storage of materials to support the maintenance functions. This area does not include file storage or general storage used to support the administrative functions. Storage mezzanines are also included in this category.
- Shop and Support Areas
  - Shop and Support Areas includes any shop accessed by the maintenance staff. These areas also include staff and building support spaces dedicated to the maintenance areas, such as restrooms and mechanical rooms.
- Bay Areas
  - Bay Areas are considered any area where a vehicle is maintained or serviced. This category includes repair, preventative maintenance/inspections, and wash bays.

This analysis includes comparisons of allocated square feet for each facility, the functional allocation percentages, and the allocated square feet per assigned vehicle to each facility. In addition, the analysis includes a comparison of each facility to the average Fleet Management Shop facilities.

Square Footage Analysis Summary

Exhibit B and Exhibit C represents the allocation of space of the five area types of each facility, as well as in comparison to an average between the four operations and maintenance facilities.

Exhibit D provides a detailed comparison of the four operations and maintenance facilities. This Exhibit produces an average amount of square footage utilized for each of the five area types. The following section contains the detailed information used to populate the table in this exhibit.

Exhibit B: Functional Space Summary

Facility		Circulation (SF)	Office and Support Areas (SF)	Parts/ Storage Areas (SF)	Shop/ Support Areas (SF)	Bay Areas	Total (SF)
GoRaleigh	Square Footage	17,025	26,370	4,940	11,010	34,445	**93,790**
	% of Total	18%	28%	5%	12%	37%	
GoRaleigh/GoWake Access	Square Footage	2,510	3,710	1,540	5,610	7,525	**20,895**
	% of Total	12%	18%	7%	27%	36%	
GoTriangle	Square Footage	5,840	8,860	4,535	4,550	13,950	**37,735**
	% of Total	15%	23%	12%	12%	37%	
GoCary	Square Footage	2,765	3,075	1,765	2,700	8,800	**19,105**
	% of Total	14%	16%	9%	14%	46%	
Facility Average	Square Footage	*7,035*	*10,504*	*3,195*	*5,968*	*16,180*	***42,881***
	% of Total	*16%*	*24%*	*7%*	*14%*	*38%*	

Exhibit C: Space Utilization Analysis

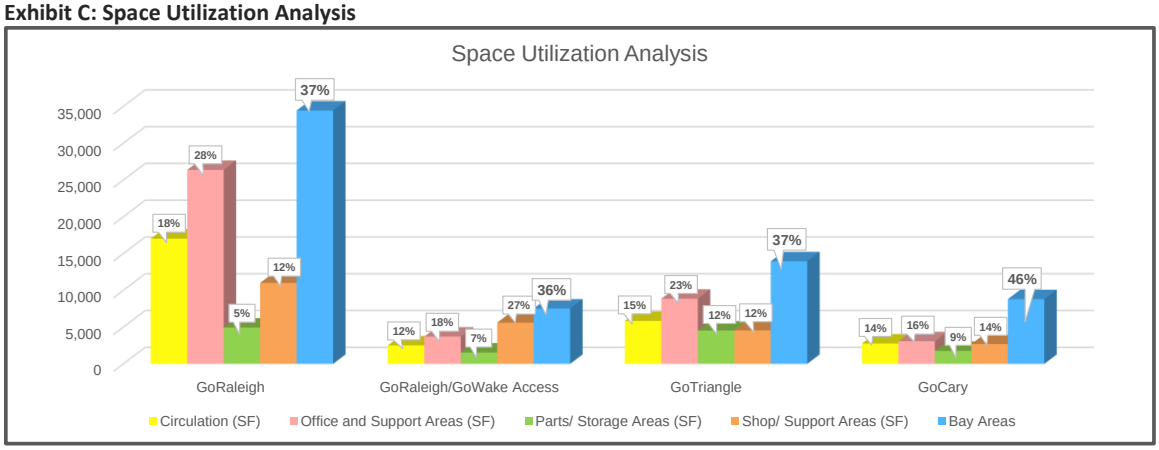


Exhibit D: Functional Space Breakdown

Facility		Circulation (SF)	Office and Support Areas (SF)	Parts/ Storage Areas (SF)	Shop/ Support Areas (SF)	Bay Areas	Total (SF)
GoRaleigh	Square Footage	17,025	26,370	4,940	11,010	34,445	**93,790**
	% of Total	*18.15%*	*28.12%*	*5.27%*	*11.74%*	*36.73%*	*100%*
	SF/Vehicle	136.20	210.96	39.52	88.08	275.56	750.32
Number of Vehicles/Equipment Maintained		125	125	125	125	125	125
GoRaleigh/GoWake Access	Square Footage	2,510	3,710	1,540	5,610	7,525	**20,895**
	% of Total	*12.01%*	*17.76%*	*7.37%*	*26.85%*	*36.01%*	*100%*
	SF/Vehicle	37.46	55.37	22.99	83.73	112.31	311.87
Number of Vehicles/Equipment Maintained		67	67	67	67	67	67
GoTriangle	Square Footage	5,840	8,860	4,535	4,550	13,950	**37,735**
	% of Total	*15.48%*	*23.48%*	*12.02%*	*12.06%*	*36.97%*	*100%*
	SF/Vehicle	55.09	83.58	42.78	42.92	131.60	355.99
Number of Vehicles/Equipment Maintained		106	106	106	106	106	106
GoCary	Square Footage	2,765	3,075	1,765	2,700	8,800	**19,105**
	% of Total	*14.47%*	*16.10%*	*9.24%*	*14.13%*	*46.06%*	*100%*
	SF/Vehicle	92.17	102.50	58.83	90.00	293.33	636.83
Number of Vehicles/Equipment Maintained		30	30	30	30	30	30
Facility Average	Square Footage	7,035	10,504	3,195	5,968	16,180	**42,881**
	% of Total	*16.41%*	*24.49%*	*7.45%*	*13.92%*	*37.73%*	*100%*
	SF/Vehicle	85.79	128.09	38.96	72.77	197.32	522.94
Number of Vehicles/Equipment Maintained		82	82	82	82	82	82

Circulation

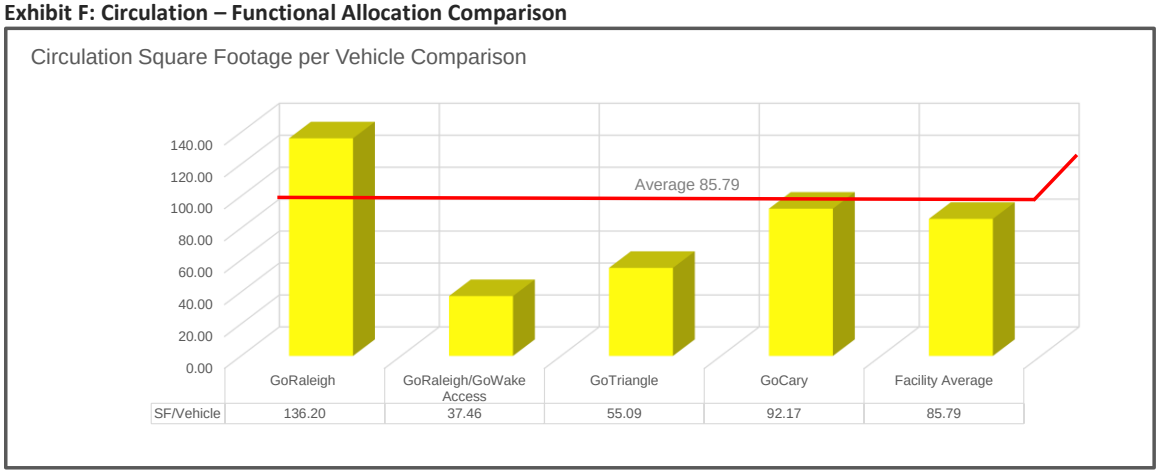
Circulation between the four facilities varied greatly. This variation can be attributed mainly to the fact that the Poole Road facility was constructed recently and was designed with modern space planning ratios. The average for all facilities is 7,035 square feet; 16.41% of the total average facility size of 42,881 square feet.

Exhibit E shows the comparison of space allocated in each facility for circulation and the comparison of space at each facility to the facility average circulation allocated. Also provided is the amount of circulation provided in the facility in relation to the fleet size. The exhibit shows that the average is 85.79 square feet of circulation space per vehicle. Using the average square footage per vehicle as a minimum requirement it becomes clear which facilities are more efficient than the others. Exhibit F graphically represents the allocation of circulation area in relation to the total fleet of each facility. The data is also compared against the average square footage of circulation area per vehicle of all facilities.

Exhibit E: Circulation Allocation

Facility		Circulation (SF)	Office and Support Areas (SF)	Parts/ Storage Areas (SF)	Shop/ Support Areas (SF)	Bay Areas	Total (SF)
GoRaleigh	Square Footage	17,025	26,370	4,940	11,010	34,445	**93,790**
	% of Total	*18.15%*	*28.12%*	*5.27%*	*11.74%*	*36.73%*	*100%*
	SF/Vehicle	136.20	210.96	39.52	88.08	275.56	750.32
Number of Vehicles/Equipment Maintained		125	125	125	125	125	125
GoRaleigh/GoWake Access	Square Footage	2,510	3,710	1,540	5,610	7,525	**20,895**
	% of Total	*12.01%*	*17.76%*	*7.37%*	*26.85%*	*36.01%*	*100%*
	SF/Vehicle	37.46	55.37	22.99	83.73	112.31	311.87
Number of Vehicles/Equipment Maintained		67	67	67	67	67	67
GoTriangle	Square Footage	5,840	8,860	4,535	4,550	13,950	**37,735**
	% of Total	*15.48%*	*23.48%*	*12.02%*	*12.06%*	*36.97%*	*100%*
	SF/Vehicle	55.09	83.58	42.78	42.92	131.60	355.99
Number of Vehicles/Equipment Maintained		106	106	106	106	106	106
GoCary	Square Footage	2,765	3,075	1,765	2,700	8,800	**19,105**
	% of Total	*14.47%*	*16.10%*	*9.24%*	*14.13%*	*46.06%*	*100%*
	SF/Vehicle	92.17	102.50	58.83	90.00	293.33	636.83
Number of Vehicles/Equipment Maintained		30	30	30	30	30	30
Facility Average	Square Footage	7,035	10,504	3,195	5,968	16,180	**42,881**
	% of Total	*16.41%*	*24.49%*	*7.45%*	*13.92%*	*37.73%*	*100%*
	SF/Vehicle	85.79	128.09	38.96	72.77	197.32	522.94
Number of Vehicles/Equipment Maintained		82	82	82	82	82	82

Exhibit F: Circulation – Functional Allocation Comparison



Office and Support Areas

Office and Support Area varied by each facility in relation to the level of administrative and operations functions that occurred at each location. The GoRaleigh and GoTriangle operations are larger and therefore have more administrative staff, which requires more space. These partners also utilize a portion of their office and support area for municipal transit planning and administrative staff. The only office and support areas at the GoRaleigh/GoWake Access and GoCary facilities is utilized for operations staff.

The size of the fleet directly impacts the amount of operations space required for the agency to operate efficiently. The average for all facilities is 10,504 square feet; 24.5% of the total average facility size of 42,881 square feet. The average is high when compared to three of the facilities because the Poole Road facility has more administrative and operations functions on-site.

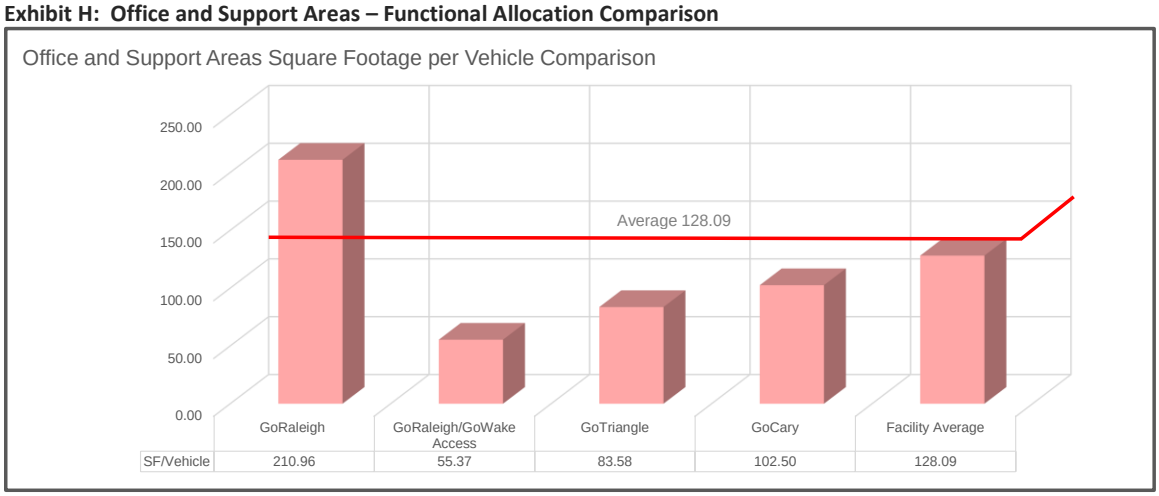
Exhibit G shows the comparison of space allocated in each facility to Office and Support Areas and the comparison of square feet at each facility to the facility average office and support areas allocated. Also represented is the amount of space provided in the facility in relation to the fleet

size. The exhibit shows that the average is 128.09 square feet of Office and Support Area per vehicle. Exhibit H graphically represents the allocation of office and support area in relation to the total fleet of each facility. The data is also compared against the average square footage of office and support area per vehicle of all facilities.

Exhibit G: Office and Support Areas Allocation

Facility		Circulation (SF)	Office and Support Areas (SF)	Parts/ Storage Areas (SF)	Shop/ Support Areas (SF)	Bay Areas	Total (SF)
GoRaleigh	Square Footage	17,025	26,370	4,940	11,010	34,445	**93,790**
	% of Total	*18.15%*	*28.12%*	*5.27%*	*11.74%*	*36.73%*	*100%*
	SF/Vehicle	136.20	210.96	39.52	88.08	275.56	750.32
Number of Vehicles/Equipment Maintained		125	125	125	125	125	125
GoRaleigh/GoWake Access	Square Footage	2,510	3,710	1,540	5,610	7,525	**20,895**
	% of Total	*12.01%*	*17.76%*	*7.37%*	*26.85%*	*36.01%*	*100%*
	SF/Vehicle	37.46	55.37	22.99	83.73	112.31	311.87
Number of Vehicles/Equipment Maintained		67	67	67	67	67	67
GoTriangle	Square Footage	5,840	8,860	4,535	4,550	13,950	**37,735**
	% of Total	*15.48%*	*23.48%*	*12.02%*	*12.06%*	*36.97%*	*100%*
	SF/Vehicle	55.09	83.58	42.78	42.92	131.60	355.99
Number of Vehicles/Equipment Maintained		106	106	106	106	106	106
GoCary	Square Footage	2,765	3,075	1,765	2,700	8,800	**19,105**
	% of Total	*14.47%*	*16.10%*	*9.24%*	*14.13%*	*46.06%*	*100%*
	SF/Vehicle	92.17	102.50	58.83	90.00	293.33	636.83
Number of Vehicles/Equipment Maintained		30	30	30	30	30	30
Facility Average	Square Footage	7,035	10,504	3,195	5,968	16,180	**42,881**
	% of Total	*16.41%*	*24.49%*	*7.45%*	*13.92%*	*37.73%*	*100%*
	SF/Vehicle	85.79	128.09	38.96	72.77	197.32	522.94
Number of Vehicles/Equipment Maintained		82	82	82	82	82	82

Exhibit H: Office and Support Areas – Functional Allocation Comparison



Parts and Storage Areas

The amount of space allocated for Parts and Storage is directly related to the fleet size and the type of maintenance that occurs at the facility. GoRaleigh/GoWake Access has minimal parts storage compared to the needs to support the fleet. Parts are ordered as needed with a minimal stockpile of parts. GoRaleigh requires more parts storage because there were more specific maintenance functions that are handled in the facility, such as vehicle overhauls. GoCary utilizes a small parts storage room for small parts stocked to maintain the fleet, requiring less space. The GoTriangle facility mainly stores small parts required to maintain its fleet. Minimal large parts are required because the agency does no heavy repair or overhauls at the facility. The

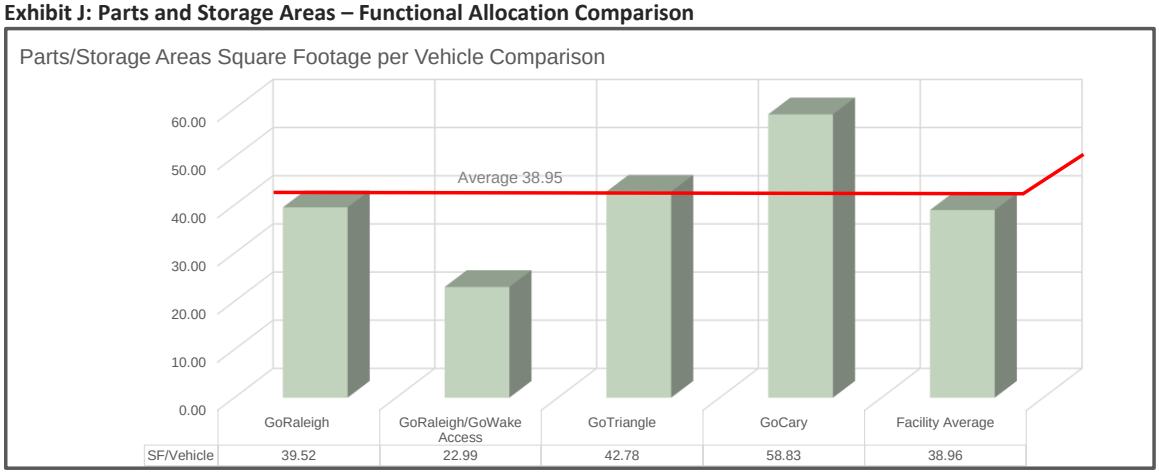
average for all facilities is 3,195 square feet; 7.45% of the total average facility size of 42,881 square feet.

Exhibit I shows the comparison of space allocated in each facility to Parts and Storage Areas and the comparison of square feet at each facility to the facility average office and support areas allocated. Also represented is the amount of space provided in the facility in relation to the fleet size. The exhibit shows that the average is approximately 38.96 square feet of Parts and Storage Area per vehicle. Exhibit J graphically represents the allocation of parts and storage area in relation to the total fleet of each facility. The data is also compared against the average square footage of parts and storage area per vehicle of all facilities.

Exhibit I: Parts and Storage Areas Allocation

Facility		Circulation (SF)	Office and Support Areas (SF)	Parts/ Storage Areas (SF)	Shop/ Support Areas (SF)	Bay Areas	Total (SF)
GoRaleigh	Square Footage	17,025	26,370	4,940	11,010	34,445	**93,790**
	% of Total	*18.15%*	*28.12%*	*5.27%*	*11.74%*	*36.73%*	*100%*
	SF/Vehicle	136.20	210.96	39.52	88.08	275.56	750.32
Number of Vehicles/Equipment Maintained		125	125	125	125	125	125
GoRaleigh/GoWake Access	Square Footage	2,510	3,710	1,540	5,610	7,525	**20,895**
	% of Total	*12.01%*	*17.76%*	*7.37%*	*26.85%*	*36.01%*	*100%*
	SF/Vehicle	37.46	55.37	22.99	83.73	112.31	311.87
Number of Vehicles/Equipment Maintained		67	67	67	67	67	67
GoTriangle	Square Footage	5,840	8,860	4,535	4,550	13,950	**37,735**
	% of Total	*15.48%*	*23.48%*	*12.02%*	*12.06%*	*36.97%*	*100%*
	SF/Vehicle	55.09	83.58	42.78	42.92	131.60	355.99
Number of Vehicles/Equipment Maintained		106	106	106	106	106	106
GoCary	Square Footage	2,765	3,075	1,765	2,700	8,800	**19,105**
	% of Total	*14.47%*	*16.10%*	*9.24%*	*14.13%*	*46.06%*	*100%*
	SF/Vehicle	92.17	102.50	58.83	90.00	293.33	636.83
Number of Vehicles/Equipment Maintained		30	30	30	30	30	30
Facility Average	Square Footage	7,035	10,504	3,195	5,968	16,180	**42,881**
	% of Total	*16.41%*	*24.49%*	*7.45%*	*13.92%*	*37.73%*	*100%*
	SF/Vehicle	85.79	128.09	38.96	72.77	197.32	522.94
Number of Vehicles/Equipment Maintained		82	82	82	82	82	82

Exhibit J: Parts and Storage Areas – Functional Allocation Comparison



Shop and Support Areas

The area provided in each facility for Shops and Support Areas varies significantly based on the individual requirements of each facility, the age of the facility, and the fleet. The amount of support space needed for the maintenance staff is based on fleet to maintenance staff ratio and code enforced space allocation for newer facilities. GoRaleigh has a significantly larger amount

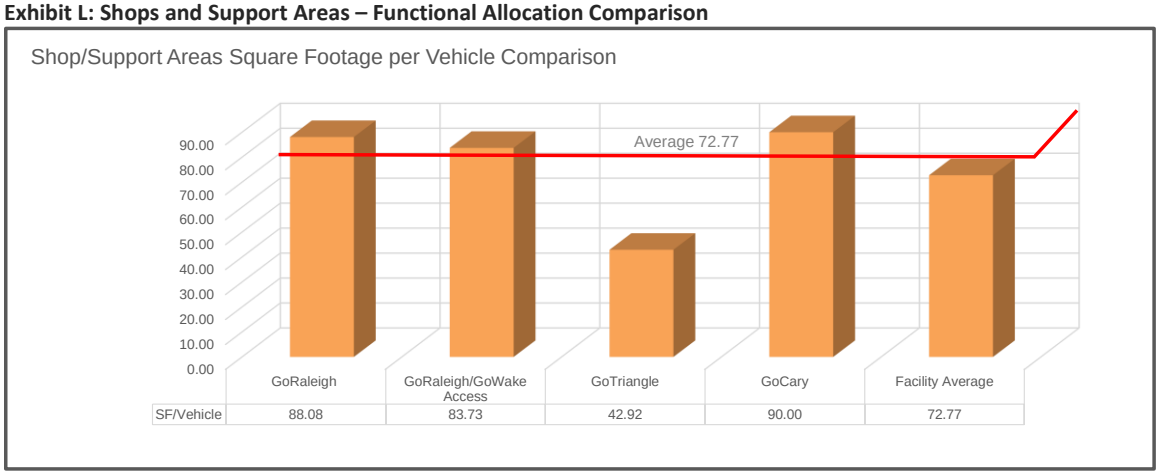
of shops and support space than the other three facilities because of the amount of maintenance staff, and the level of maintenance being provided. The average for all facilities is 5,968 square feet; 13.92% of the total average facility size of 42,881 square feet.

Exhibit K shows the comparison of space allocated in each facility to Shop and Support Areas and the comparison of square feet at each facility to the facility average Shop and Support areas allocated. Also represented is the amount of space provided in the facility in relation to the fleet size. The exhibit shows that the average is 72.77 square feet of Shop and Support Area per vehicle. Exhibit L graphically represents the allocation of shop and support area in relation to the total fleet of each facility. The data is also compared against the average square footage of shop and support area per vehicle of all facilities.

Exhibit K: Shop and Support Areas Allocation

Facility		Circulation (SF)	Office and Support Areas (SF)	Parts/ Storage Areas (SF)	Shop/ Support Areas (SF)	Bay Areas	Total (SF)
GoRaleigh	Square Footage	17,025	26,370	4,940	11,010	34,445	**93,790**
	% of Total	*18.15%*	*28.12%*	*5.27%*	*11.74%*	*36.73%*	*100%*
	SF/Vehicle	136.20	210.96	39.52	88.08	275.56	750.32
Number of Vehicles/Equipment Maintained		125	125	125	125	125	125
GoRaleigh/GoWake Access	Square Footage	2,510	3,710	1,540	5,610	7,525	**20,895**
	% of Total	*12.01%*	*17.76%*	*7.37%*	*26.85%*	*36.01%*	*100%*
	SF/Vehicle	37.46	55.37	22.99	83.73	112.31	311.87
Number of Vehicles/Equipment Maintained		67	67	67	67	67	67
GoTriangle	Square Footage	5,840	8,860	4,535	4,550	13,950	**37,735**
	% of Total	*15.48%*	*23.48%*	*12.02%*	*12.06%*	*36.97%*	*100%*
	SF/Vehicle	55.09	83.58	42.78	42.92	131.60	355.99
Number of Vehicles/Equipment Maintained		106	106	106	106	106	106
GoCary	Square Footage	2,765	3,075	1,765	2,700	8,800	**19,105**
	% of Total	*14.47%*	*16.10%*	*9.24%*	*14.13%*	*46.06%*	*100%*
	SF/Vehicle	92.17	102.50	58.83	90.00	293.33	636.83
Number of Vehicles/Equipment Maintained		30	30	30	30	30	30
Facility Average	Square Footage	7,035	10,504	3,195	5,968	16,180	**42,881**
	% of Total	*16.41%*	*24.49%*	*7.45%*	*13.92%*	*37.73%*	*100%*
	SF/Vehicle	85.79	128.09	38.96	72.77	197.32	522.94
Number of Vehicles/Equipment Maintained		82	82	82	82	82	82

Exhibit L: Shops and Support Areas – Functional Allocation Comparison



Bay Areas

Bay Areas occupy the largest percentage of total space throughout the four facilities. The area allocated for repair and service bays varies significantly by facility. The GoRaleigh Facility utilizes the most amount of space because it was constructed and designed around modern standard

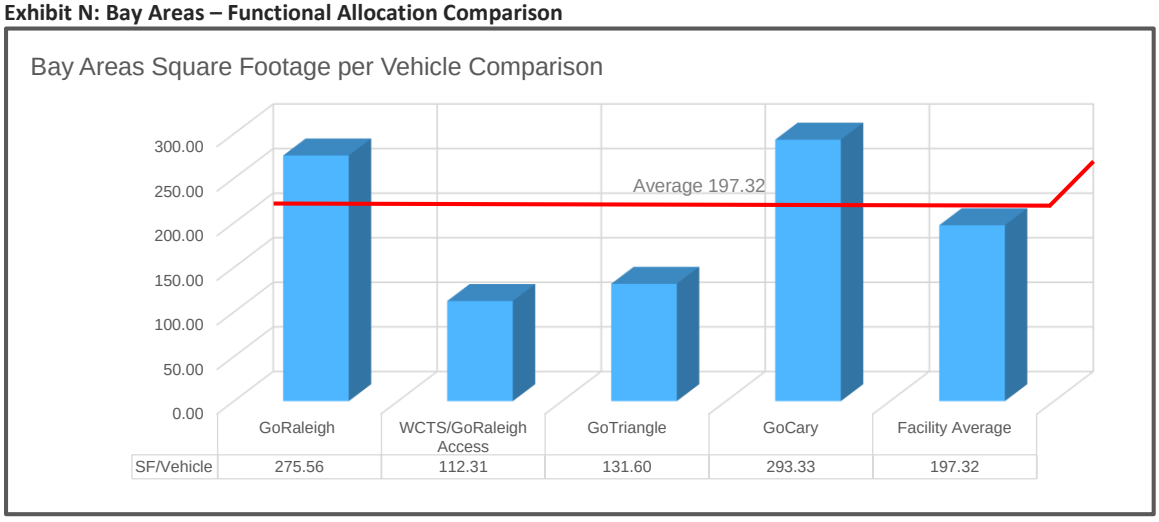
bay to fleet ratios and bay sizes to support 40-foot transit buses. The amount of space allocated for bay areas in the other facilities is not designed around these modern ratios or size. GoCary is the only facility that has a surplus of bay area because the facility has been repurposed from a heavy equipment company. The average for all facilities is 16,180 square feet; 38% of the total average facility size of 42,881 square feet.

Exhibit M shows the comparison of space allocated in each facility to Bay Areas and the comparison of square feet at each facility to the facility average Bay Areas allocated. Also represented is the amount of space provided in the facility in relation to the fleet size. The exhibit shows that the average is 197.32 square feet of Bay Area per vehicle. Exhibit N graphically represents the allocation of bay area in relation to the total fleet of each facility. The data is also compared against the average square footage of bay area per vehicle of all facilities.

Exhibit M: Bay Areas Allocation

Facility		Circulation (SF)	Office and Support Areas (SF)	Parts/ Storage Areas (SF)	Shop/ Support Areas (SF)	Bay Areas	Total (SF)
GoRaleigh	Square Footage	17,025	26,370	4,940	11,010	34,445	**93,790**
	% of Total	*18.15%*	*28.12%*	*5.27%*	*11.74%*	*36.73%*	*100%*
	SF/Vehicle	136.20	210.96	39.52	88.08	275.56	750.32
Number of Vehicles/Equipment Maintained		125	125	125	125	125	125
GoRaleigh/GoWake Access	Square Footage	2,510	3,710	1,540	5,610	7,525	**20,895**
	% of Total	*12.01%*	*17.76%*	*7.37%*	*26.85%*	*36.01%*	*100%*
	SF/Vehicle	37.46	55.37	22.99	83.73	112.31	311.87
Number of Vehicles/Equipment Maintained		67	67	67	67	67	67
GoTriangle	Square Footage	5,840	8,860	4,535	4,550	13,950	**37,735**
	% of Total	*15.48%*	*23.48%*	*12.02%*	*12.06%*	*36.97%*	*100%*
	SF/Vehicle	55.09	83.58	42.78	42.92	131.60	355.99
Number of Vehicles/Equipment Maintained		106	106	106	106	106	106
GoCary	Square Footage	2,765	3,075	1,765	2,700	8,800	**19,105**
	% of Total	*14.47%*	*16.10%*	*9.24%*	*14.13%*	*46.06%*	*100%*
	SF/Vehicle	92.17	102.50	58.83	90.00	293.33	636.83
Number of Vehicles/Equipment Maintained		30	30	30	30	30	30
Facility Average	Square Footage	7,035	10,504	3,195	5,968	16,180	**42,881**
	% of Total	*16.41%*	*24.49%*	*7.45%*	*13.92%*	*37.73%*	*100%*
	SF/Vehicle	85.79	128.09	38.96	72.77	197.32	522.94
Number of Vehicles/Equipment Maintained		82	82	82	82	82	82

Exhibit N: Bay Areas – Functional Allocation Comparison



Bay Capacity Analysis

The purpose of this section is to document the fleet capacity of the current facility for each agency based on the quantity of repair bays at each facility and the optimal bay count to efficiently maintain the current fleet. A comparative table of each facility is derived from this data in regards to the current quantity versus what is needed in terms of repair bay counts. The other comparison is the max fleet capacity that can be maintained based on the current number of bays versus the current fleet.

Comparative Facilities Planning Ratios

Repair Bay to Fleet Planning Ratios are used to project bay needs based on fleet size and type. The ratios presented here were developed based on past project experience. For transit and paratransit buses, the ideal planning ratio is to provide one repair bay for every 15 to 20 vehicles maintained (15:1 to 20:1). For preventative maintenance/Inspection bays, a minimum ratio of 50 vehicles per bay is ideal (50:1). If bays are shared for repair and preventative maintenance, the ratio should be between 12 to 15 vehicles per bay (12:1 to 15:1). Exhibit O presents the Bus to Bay Ratio used at other facilities across the country.

Exhibit O: Comparative Project Planning Ratios

Facility Name/Location	Paratransit Bus/ Vehicle					Standard Bus				
	Vehicles	Repair Bays	PM Bays	Repair Ratio	PM Ratio	Vehicles	Repair Bays	PM Bays	Repair Ratio	PM Ratio
Fairfax, VA - West Ox	0	0	0	0 : 0	0 : 0	270	18	6	15 : 1	45 : 1
Columbus, OH - COTA	60	4	2	15 : 1	30 : 1	0	0	0	0 : 0	0 : 0
Pheonix, AZ - West Transit Facility	0	0	0	0 : 0	0 : 0	220	11	4	20 : 1	55 : 1
Las Vegas, NV	0	0	0	0 : 0	0 : 0	250	16	6	16 : 1	42 : 1
Tucson, AZ	0	0	0	0 : 0	0 : 0	250	16	4	16 : 1	63 : 1
LA Metro - Division 13	0	0	0	0 : 0	0 : 0	125	8	4	16 : 1	31 : 1
Oxnard, CA - Gold Coast Transit	0	0	0	0 : 0	0 : 0	125	5	2	25 : 1	63 : 1
Atlanta, GA - MARTA Brady	200	17	Shared	12 : 1	0 : 0	0	0	0	0 : 0	0 : 0
South Bend, IN - TRANSPO	14	Shared	Shared	0 : 0	0 : 0	62	4	4	19 : 1	19 : 1
Bradenton, FL - Manatee County Area Transit	0	0	0	0 : 0	0 : 0	75	8	2	9 : 1	38 : 1
AVERAGE	**137**	**11**	**2**	**13.5 : 1**	**30 : 1**	**172**	**11**	**4**	**17 : 1**	**44.5 : 1**

Current Facilities Capacity

Exhibit P compares the current bay count at each facility to the optimal bay count as calculated by the established vehicle to bay standard. The difference is shown in the last column and represents either the surplus or deficiency of repair bays between the four facilities and overall.

Exhibit P: Current Bay Capacity

Facility		Vehicles/Equipment			Current Repair Bay Count		Optimal Bay Count		Difference (Need)	
		Paratransit	Bus		Paratransit	Bus	Paratransit	Bus	Paratransit	Bus
GoRaleigh	Current Assignments	0	103	Repair Bays	0	9	0	7	0	-2
	% of Fleet	0.0%	100.0%	Vehicles:Bay	0	11:1	20:1	15:1		
GoRaleigh/ GoWake Access	Current Assignments	91	0	Repair Bays	3	0	5	0	2	0
	% of Fleet	100.0%	0.0%	Vehicles:Bay	30:1	0	20:1	15:1		
GoTriangle	Current Assignments	20	77	Repair Bays	4	6	1	5	-3	-1
	% of Fleet	20.6%	79.4%	Vehicles:Bay	5:1	13:1	20:1	15:1		
GoCary	Current Assignments	18	12	Repair Bays	10	0	1	1	-9	1
	% of Fleet	60.0%	40.0%	Vehicles:Bay	2:1	0	20:1	15:1		

The data shows that the agencies operating in Wake County use a total of 26 bays to maintain the combined fleet of 129 paratransit vehicles and 192 standard buses. The average ratio for vehicles per bays is the same for paratransit and fixed route at 12:1. These ratios are insufficient compared to the standard ratio for each bus type. However, this average ratio is not an accurate representation of the individual facilities because the surplus of bays at the GoCary facility and the lack of bays at the GoRaleigh/GoWake Access and GoTriangle facilities. No dedicated nonrevenue repair bays are located at the facilities, therefore nonrevenue vehicles are not included in the bay capacity. Exhibit P assumes that the existing bays are sufficient size with modern design features. Since the majority of these facilities are outdated and have deficiencies, the existing bays would require additional work as well. The detailed list and description of each facility's deficiencies are in the condition assessments in the next section.

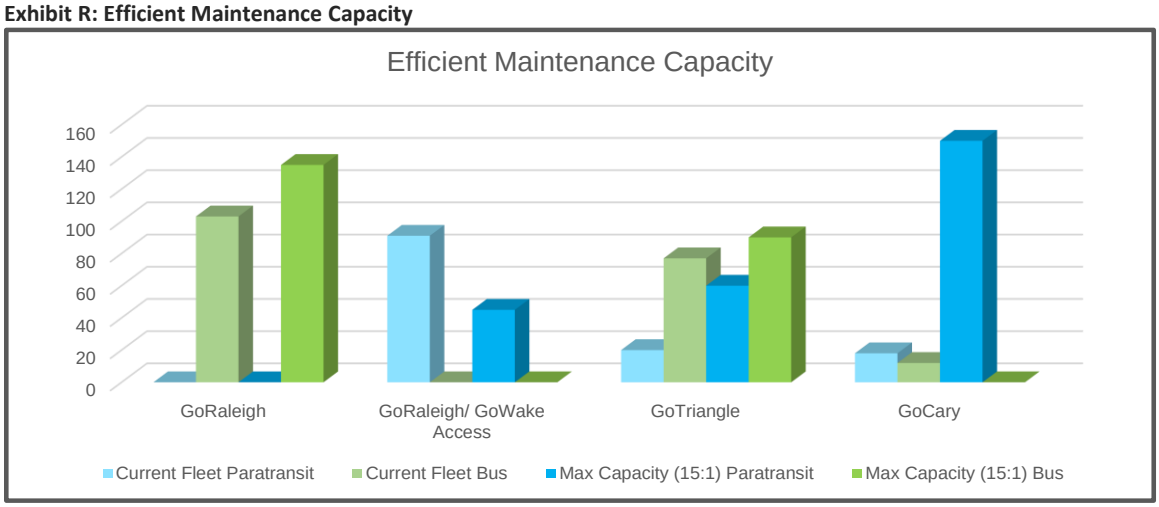
Efficient Maintenance Capacity Analysis

Exhibit Q represents the maximum fleet capacity of each facility based on their current repair bay count using a standard ratio of 15:1 vehicles per bay. Preventative maintenance bays are not included in this Exhibit as their functions could be shared if the bays are designed with modern design features. This Exhibit illustrates existing inefficiencies among the current facilities. Based on the data, the GoRaleigh/GoWake Access facility is 55 vehicles over the max capacity, using a standard ratio of 15:1 vehicles per bay. The GoTriangle facility is 35 vehicles over max capacity. The GoCary agency could maintain an additional 120 vehicles from their current facility. Exhibit R graphically presents the capacity of each facility in relation to the number of repair bay at each location.

Exhibit Q: Efficient Maintenance Capacity Analysis

Facility	Current Repair Bay Count		Current Fleet		Max Capacity (15:1)		Available Growth	
	Paratransit	Bus	Paratransit	Bus	Paratransit	Bus	Paratransit	Bus
GoRaleigh	0	9	0	103	0	135	0	32
GoRaleigh/ GoWake Access	3	0	91	0	45	0	-46	0
GoTriangle	4	6	20	77	60	90	40	13
GoCary	10	0	18	12	150	0	132	-12

Exhibit R: Efficient Maintenance Capacity



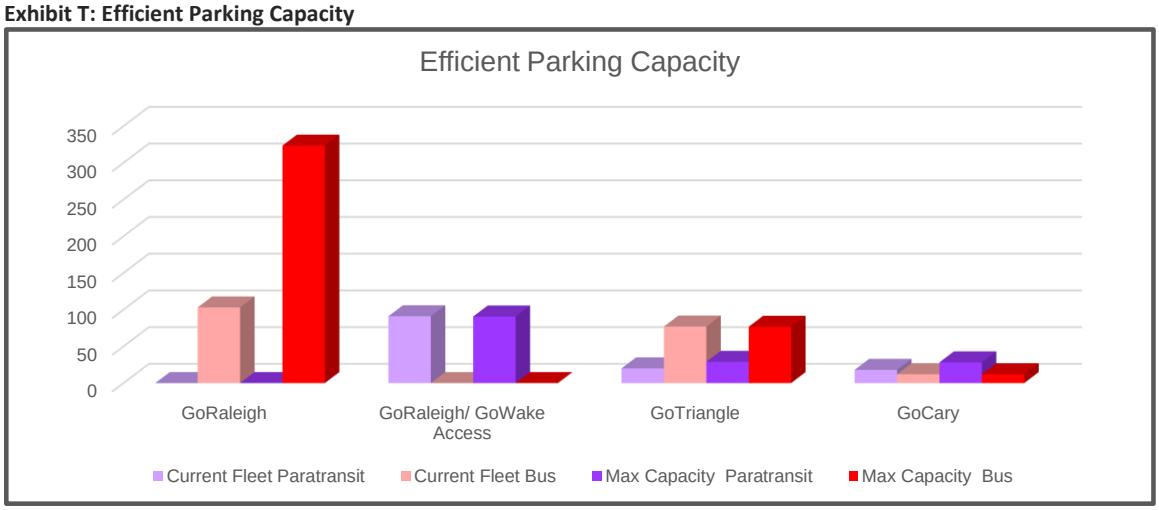
Efficient Parking Capacity Analysis

Exhibit S represents the programmatic maximum fleet capacity of each facility based on the current allocated space for bus parking. A standard bus parking stall is 12 feet wide by 40 feet long (480 square feet) whereas a paratransit parking stall is 12 feet wide by 30 feet long (360 square feet). By using the area of standard bus parking stalls and a predetermined circulation factor of 100%, an estimated maximum capacity of bus parking is developed for each site. Exhibit T graphically presents the capacity of each facility in relation to the space allocated for bus parking.

Exhibit S: Efficient Parking Capacity Analysis

Facility	Current Area (sf)		Current Fleet		Max Capacity		Available Growth	
	Paratransit	Bus	Paratransit	Bus	Paratransit	Bus	Paratransit	Bus
GoRaleigh	0	310510	0	103	0	323	0	220
GoRaleigh/ GoWake Access	65265	0	91	0	91	0	0	0
GoTriangle	20815	73670	20	77	29	77	9	0
GoCary	20315	11520	18	12	28	12	10	0

Exhibit T: Efficient Parking Capacity



GoRaleigh Operations & Maintenance Facility

General Description

The GoRaleigh Operations and Maintenance Facility located on Poole Road was constructed in 2013. One of the unique characteristics of this location is how the topography was incorporated into the design and construction of the facility. The administrative and operations building consists of two levels that transition smoothly due to the increase in grade on-site. The grade change allows for the employee entrance to be at the street elevation and for drivers to exit the driver support areas onto the bus parking area that is elevated. All maintenance, fuel, wash, and fleet parking functions occur on the same level. This provides a safe separation for visitors and employees entering the site without impacting the bus circulation paths and providing separation between the operations and maintenance staff.

Efficient Maintenance Capacity

The current maintenance facility has eight running repair bays for standard buses and one for articulated buses. There are four Preventative Maintenance/Inspection bays for standard buses and one for articulated buses that utilize a lower level work area. The future expansion of the building allows for six more repair bays to be added to maintain a fleet of just over 200 buses. Also included in the maintenance areas of the facility is a body repair bay and a down draft paint booth. Parts storage was strategically located to be centralized to the building once expanded to the full build-out. Above the small parts storage area and technician support areas is a mezzanine for long-term storage and mechanical units that support the facility. The maintenance office area includes a training room adjacent to the running repair bays that allows for more hands-on training of technicians.

The Fuel Island has two covered fuel lanes with the opportunity to expand to be a four lane fuel island. The island was designed to also have one uncovered lane that could eventually be included under cover. A dedicated lubrication room is provided at the island along with support areas for the service staff. The Wash Building consists of two drive-through wash bays with hybrid washers and a chassis wash with a parallelogram lift. Adjacent to the Wash Building is the fuel storage area with three diesel storage tanks for the bus fleet and one unleaded gasoline tank for the nonrevenue vehicles.

General Location Map

Exhibit U presents a general location of the GoRaleigh Operations and Maintenance facility in relation to Wake County. The site is located a few miles east of Interstate 440 and south of Interstate 495 at 4104 Poole Road.

Site Plan

Exhibit V graphically represents the site elements and layout of the facilities on the site. A large retaining wall surrounds nearly half of the site due to the significant grade change of the surrounding topography. Employee parking is divided into two separate lots, one with 83 spaces for administrative staff and the other with 128 for operations and maintenance staff as well as

visitor parking. Buses that enter the site park and are then taken through the service cycle by service workers. Buses that require maintenance are then brought into the maintenance facility.

Floor Plans

Exhibits W – Z shows the breakdown and summary of space for the five area types by each plan (Administration Building Level 1, Administration Building Level 2, Maintenance Facility, and Fuel and Wash).

Exhibit U: GoRaleigh Operations and Maintenance Facility

Exhibit V: GoRaleigh Operations and Maintenance Facility Site Plan

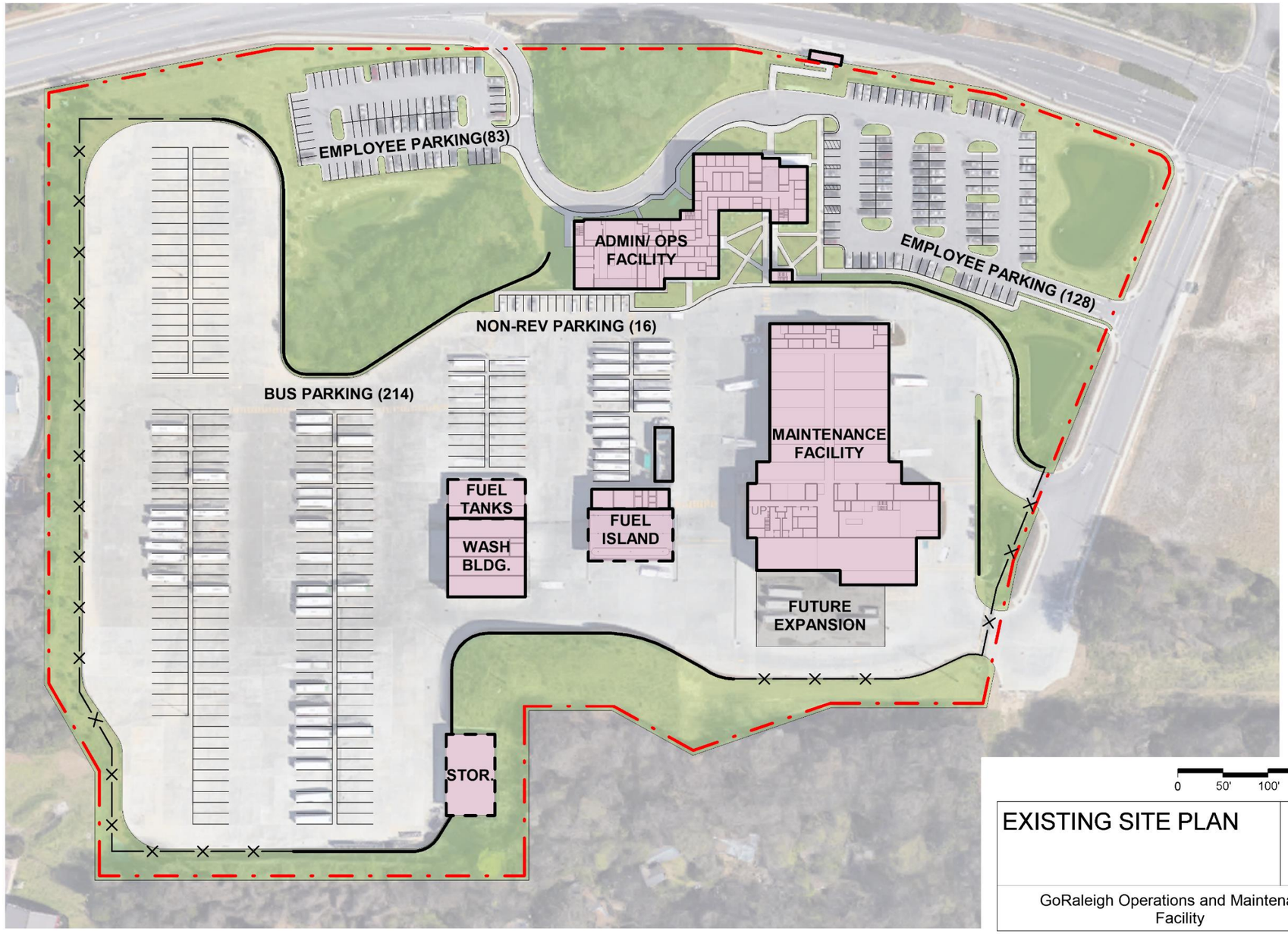


Exhibit W: GoRaleigh Administrative Building – Level 1 Floor Plan

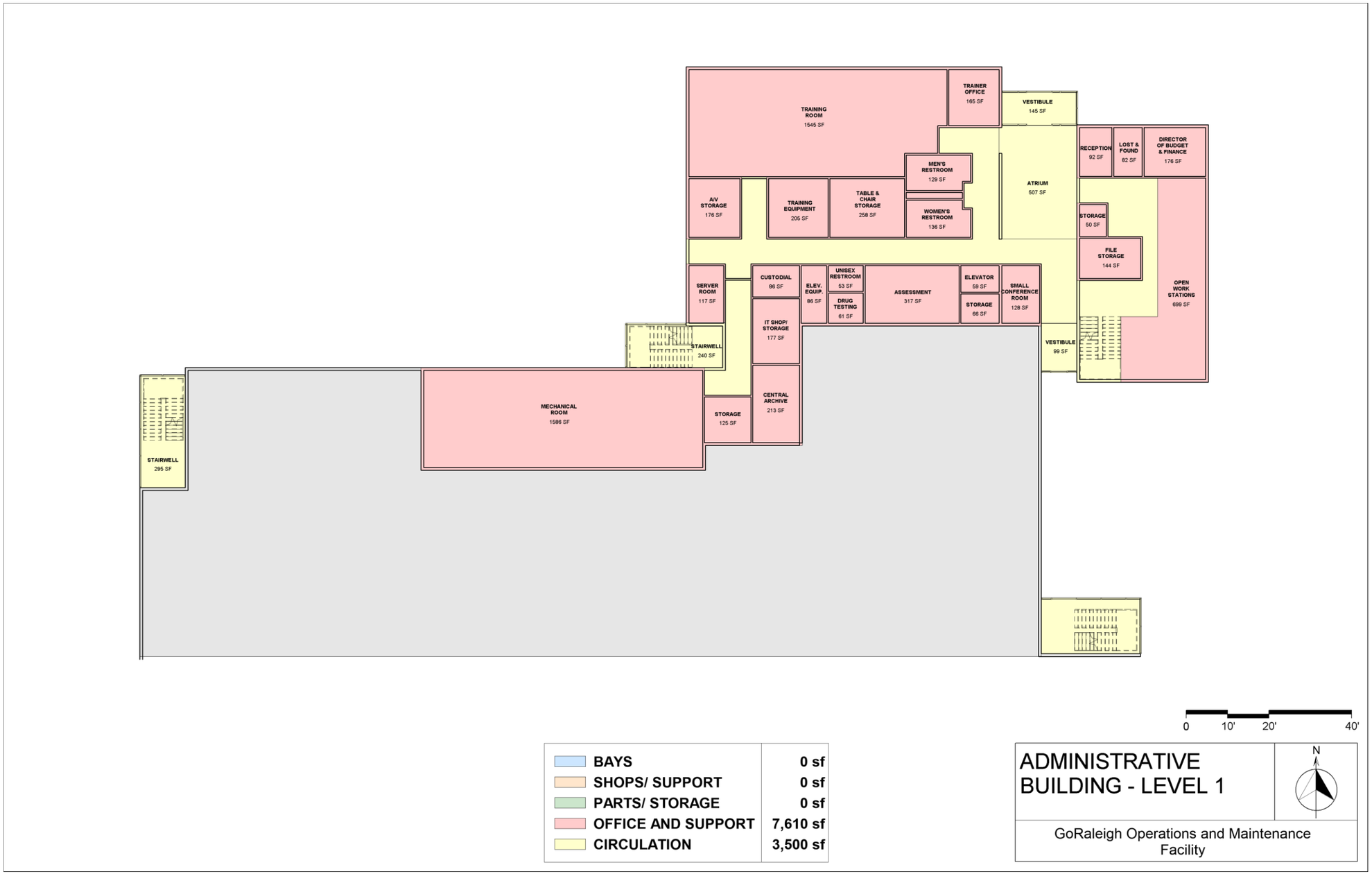
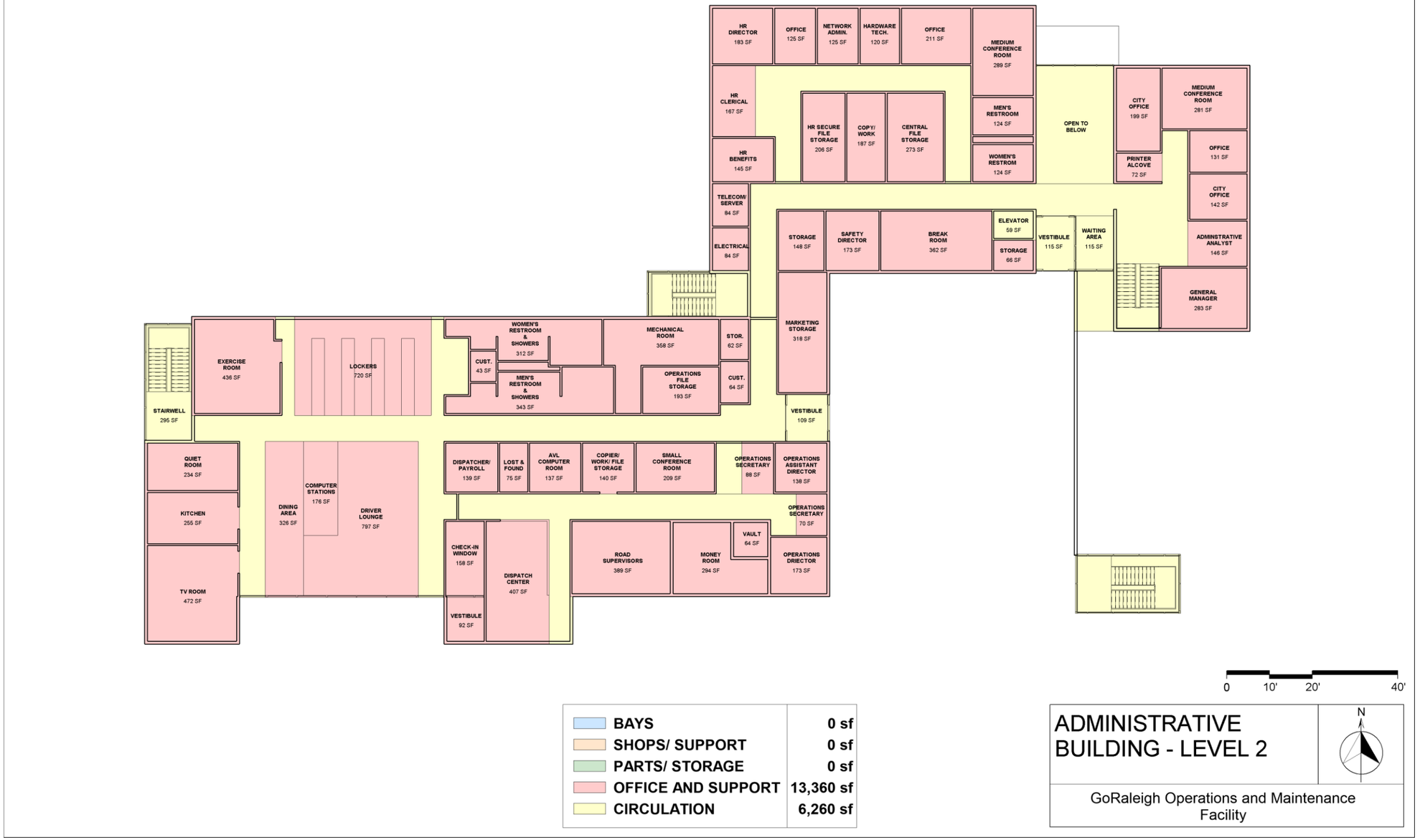


Exhibit X: GoRaleigh Administrative Building – Level 2 Floor Plan



BAYS	0 sf
SHOPS/ SUPPORT	0 sf
PARTS/ STORAGE	0 sf
OFFICE AND SUPPORT	13,360 sf
CIRCULATION	6,260 sf

ADMINISTRATIVE BUILDING - LEVEL 2

GoRaleigh Operations and Maintenance Facility

Exhibit Y: GoRaleigh Maintenance Building

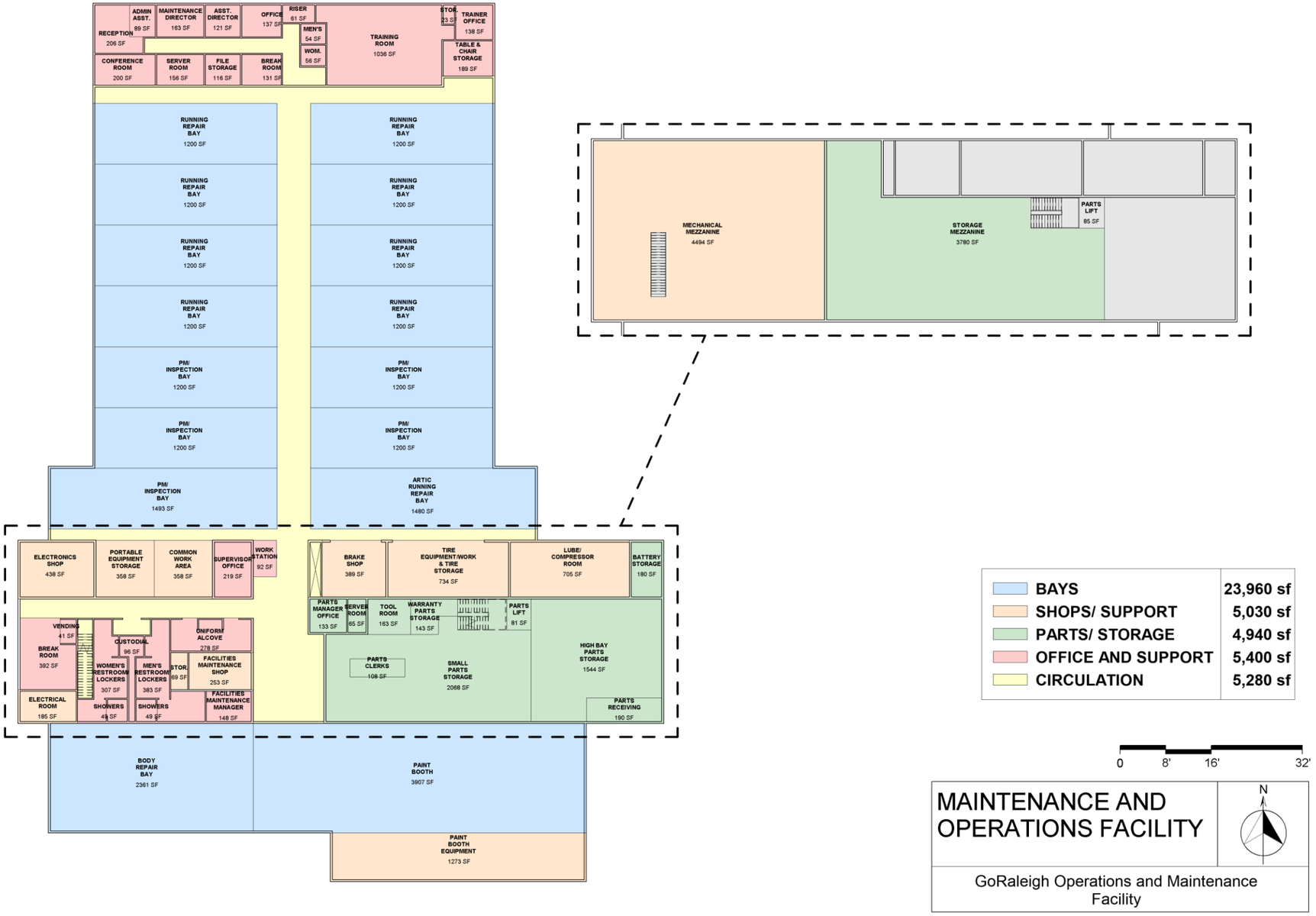
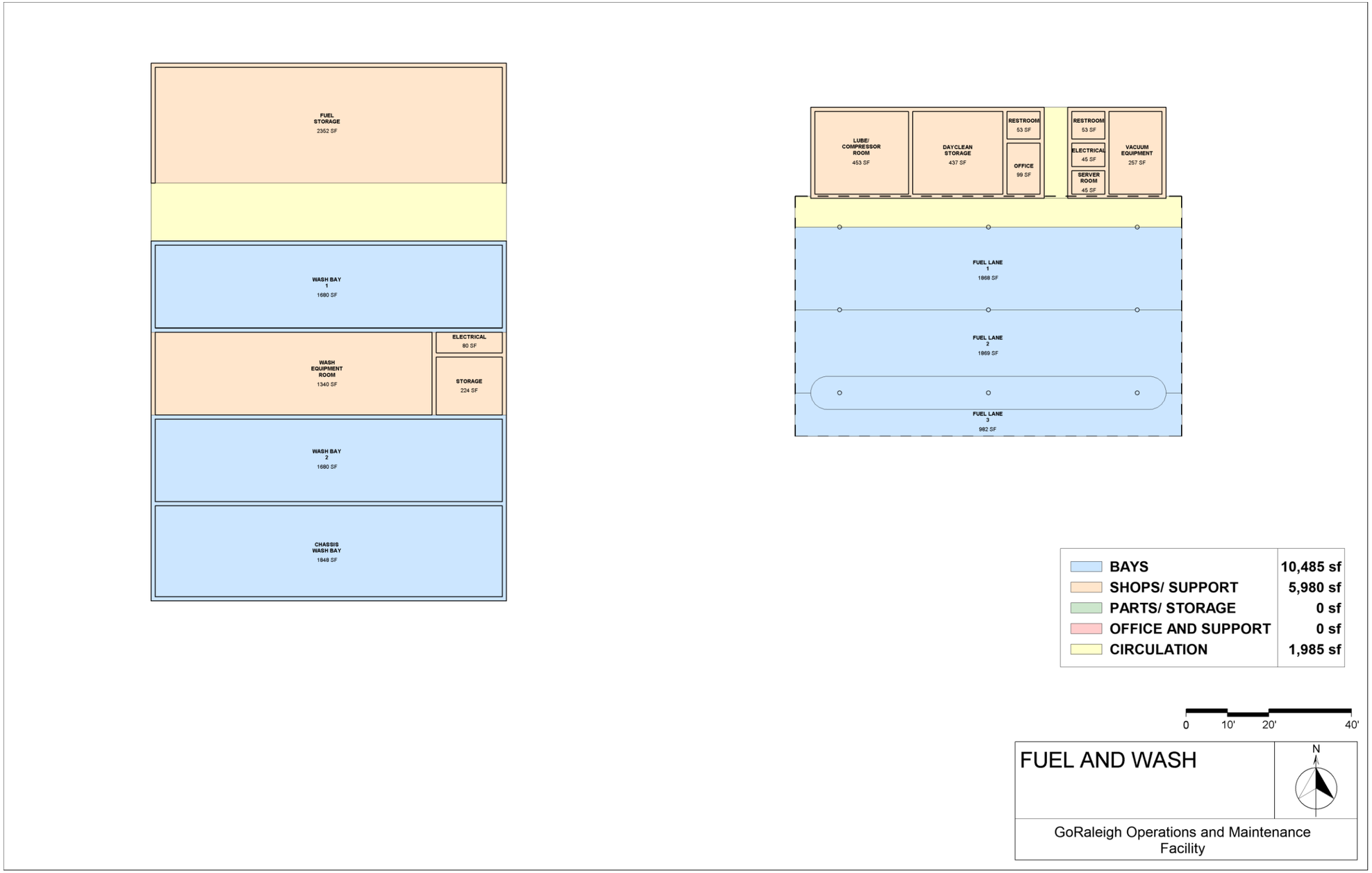


Exhibit Z: GoRaleigh Fuel and Wash Building



Facility Statistics

Different vehicles require different parking and maintenance design elements. Exhibit AA organizes the types and quantities of vehicles maintained and parked on-site.

Exhibit AA: GoRaleigh Fleet Inventory

Vehicle Type	Number of Vehicles
Fixed Route/Standard Bus	103
Articulated Bus	0
Paratransit Bus/Vehicle	0
Non-Revenue	22
Total	125

The staff at the GoRaleigh facility is divided among three departments: Administration, Operations, and Maintenance. Administrative staff are responsible for a variety of tasks including finance, drug testing and assessment, training, human resources, safety, city personnel, and site management. Operations staff includes all drivers, dispatchers, road supervisors, and directors employed to operate the transit agency. Maintenance staff includes supervisors, foremen, technicians, training, and parts handling personnel. Exhibit AB presents the total number of staff at the facility between these three departments. The exhibit separates operators from operations staff and technicians and service workers from maintenance staff, as these are the largest groups within the departments.

Exhibit AB: GoRaleigh Staff

Position	Employee Count
Administration Staff	17
Fixed Route Operations Staff	19
Fixed Route Drivers	175
Paratransit Operations Staff	0
Paratransit Drivers	0
Maintenance Administrative Staff	19
Maintenance Technicians	25
Sevice Workers	13
Total	268

Functional Capacity

Currently the GoRaleigh facility operates and maintains 103 buses, well under the maximum design capacity of the site. The design capacity for bus parking is 214 buses with an alternate parking layout that can park up to 300 buses. The maintenance building can be expanded to allow for an additional four repair bays to accommodate the increase in fleet. Operations and Administration is already sized to accommodate a fleet of up to 200 buses.

Observed Space/Functional Deficiencies

Although the GoRaleigh Operations & Maintenance facility was constructed recently, there are certain deficiencies that were mentioned by facility staff that should be considered. These deficiencies are as follows:

- Lack of use of the Lower Level Work Area (LLWA) by the technicians.
  - The facility was designed and constructed with the intention of the LLWA to be used more frequently for service and preventative maintenance inspections, however the technicians have chosen not to embrace this area, although the LLWA had a great cost impact to the construction of facility.
- An alternate forklift had to be purchased due to the circulation restrictions.
- The relationship of the parts issue counter with the clerks work stations creates an issue because the clerks are not facing the counter.
- The workstations for the clerks do not have enough layout space for them to work.

For the Administration and Operations Building, the only space need is a bulletin area in the Drivers' Room.

Overall, the allocation of space provided in the Poole Road Facility for GoRaleigh is more optimal than the other three facilities within Wake County. Exhibit AC depicts the overall percentage of space allocated between the five area types.

Exhibit AC: GoRaleigh Space Allocation

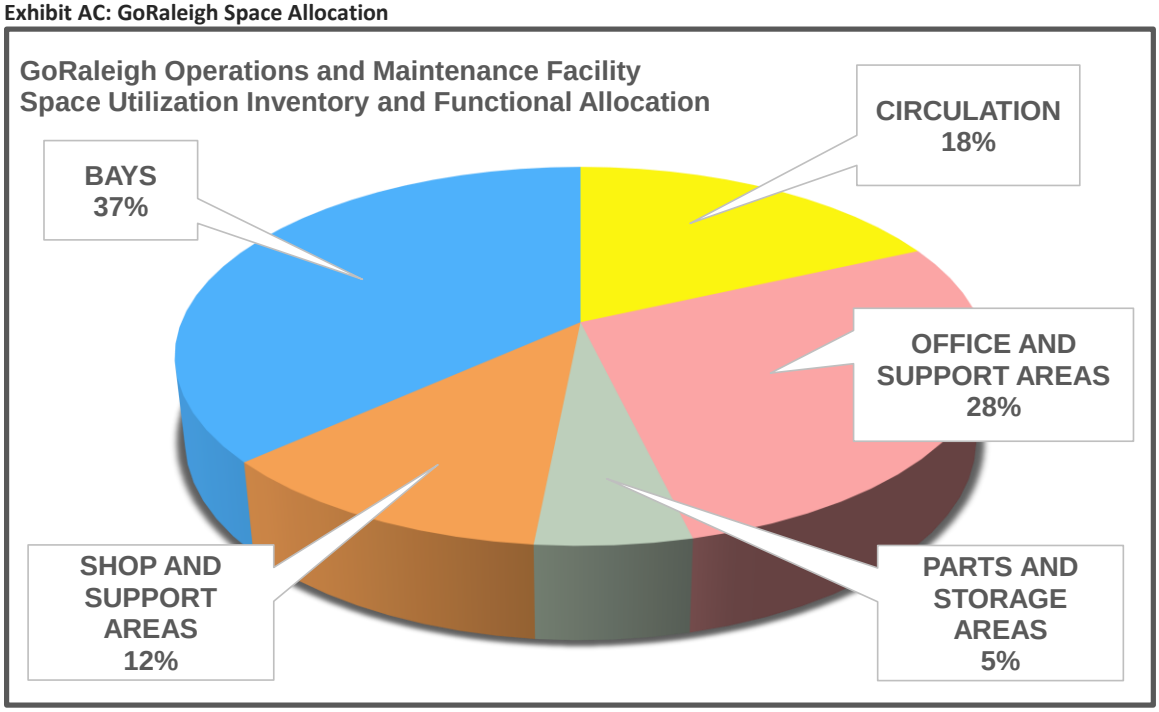
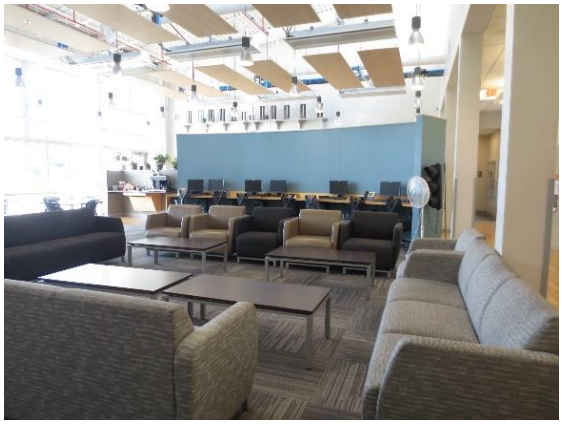


Photo Documentation

The following photographs illustrate the current condition and capacity of the GoRaleigh facility.



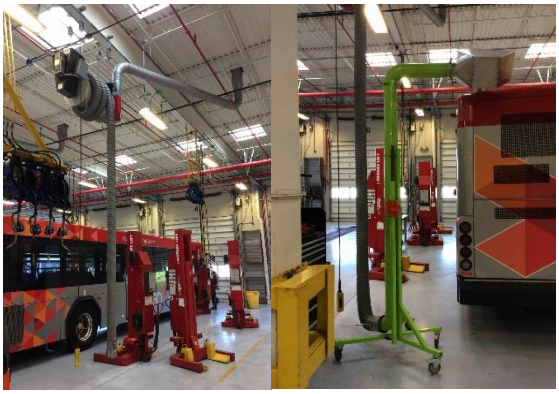
Drivers' Room with lounge furniture, computer workstations, kitchenette, quiet room, and TV room

Dedicated locker area only for Drivers to use for personal items while on shift

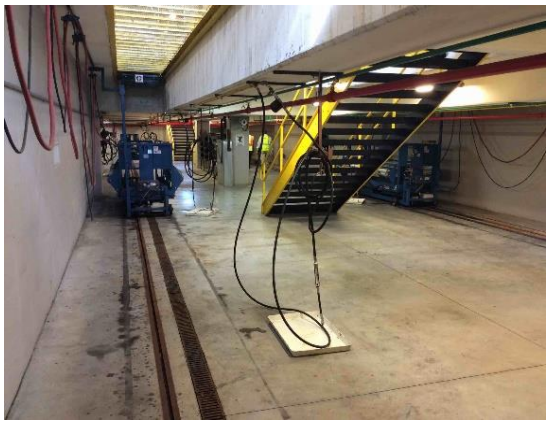
Dispatch vestibule adjacent to the Drivers' Room

Fitness Room for Drivers to use between shifts

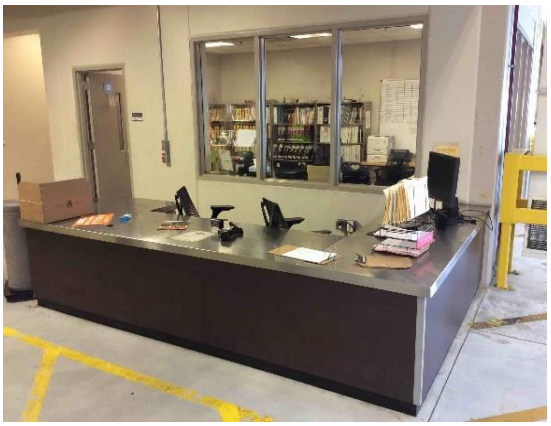
Caution striping is peeling throughout the maintenance facility



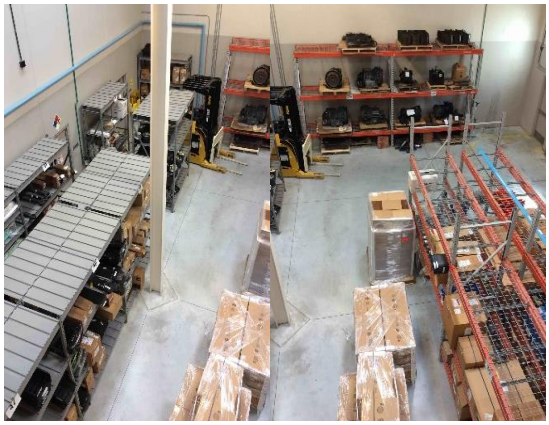
Different exhaust vacuum equipment has been purchased to meet the requirements of the buses



Lower Level Work Area is not used by maintenance technicians

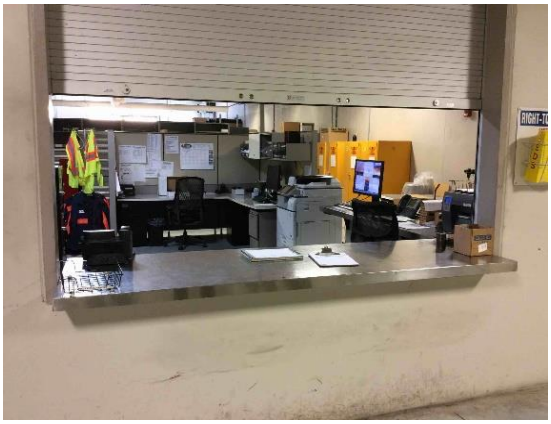


Maintenance Supervisor located to provide oversight of the repair bays

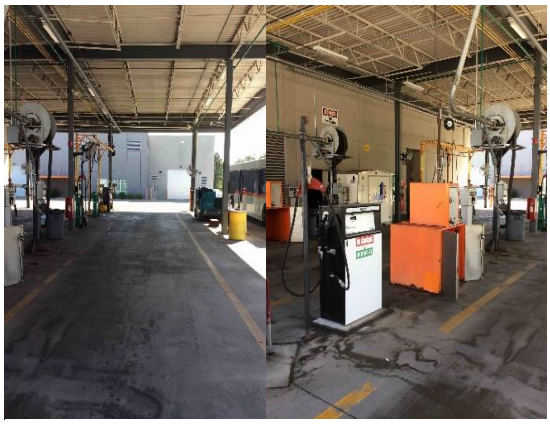


Circulation space is limited in the parts room for maneuvering the forklift. A smaller forklift was purchased

Parts distribution window/counter



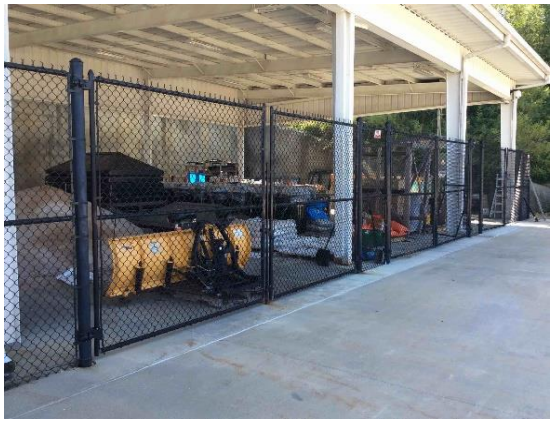
Parts clerks do not face the parts distribution window and do not have a direct view of the receiving area



Service lanes include diesel and gasoline fueling, fare collection services, and interior cleaning/vacuuming

Walls in the Chassis Wash need a coating to assist with cleanliness

Traction coating on the lift in the Chassis Wash needs recoating



Covered structure for storage of site maintenance equipment and materials

Overview of the bus parking lot

GoRaleigh/GoWake Access Paratransit Operations & Maintenance Facility

General Description

The GoRaleigh/GoWake Access Operations and Maintenance Facility was constructed more than 20 years ago. Originally, GoRaleigh used the facility for their operations. The building and was closed for two years once the Poole Road facility was constructed and reopened in 2015 for use by GoRaleigh/GoWake Access.

The maintenance portion of the facility has been repurposed to maintain the paratransit buses instead of 35-foot transit buses the building was originally designed and constructed for. Instead of servicing the existing in-ground hydraulic lifts that are in the repair bays, the existing lifts were decommissioned and four post surface mounted lifts were installed in three of the four bays; the remaining bay is used as a flat repair bay. The drive through washer was removed from the wash bay, which is now used for hand washing the paratransit vehicles. An existing paint booth is in the facility that will soon be renovated to create more office and technician support space.

The operation functions of the agency occur in the east side of the facility, separate from the maintenance areas. The operators have a clear flow through the facility from the entrance to the operators' areas and out to the bus parking yard.

General Location Map

Exhibit AD presents a general location of the GoRaleigh/GoWake Access Paratransit Operations and Maintenance facility in relation to Wake County. The site is located just north of Interstate 40 and east of Highway 401 at 1430 S. Blount Street in Raleigh.

Site Plan

Exhibit AE graphically represents the site elements and layout of the facilities on the site. Employee and visitor parking is located on the north side of the site near the facility entrance. The paratransit bus yard occupies the southern side of the site, with the yard entrance leading straight into the fueling lane.

Floor Plans

Exhibits AF shows the breakdown and summary of space for the five area types.

Exhibit AD: GoRaleigh/GoWake Access Paratransit Operations and Maintenance Facility

Exhibit AE: GoRaleigh/GoWake Access Paratransit Operations and Maintenance Facility Site Plan

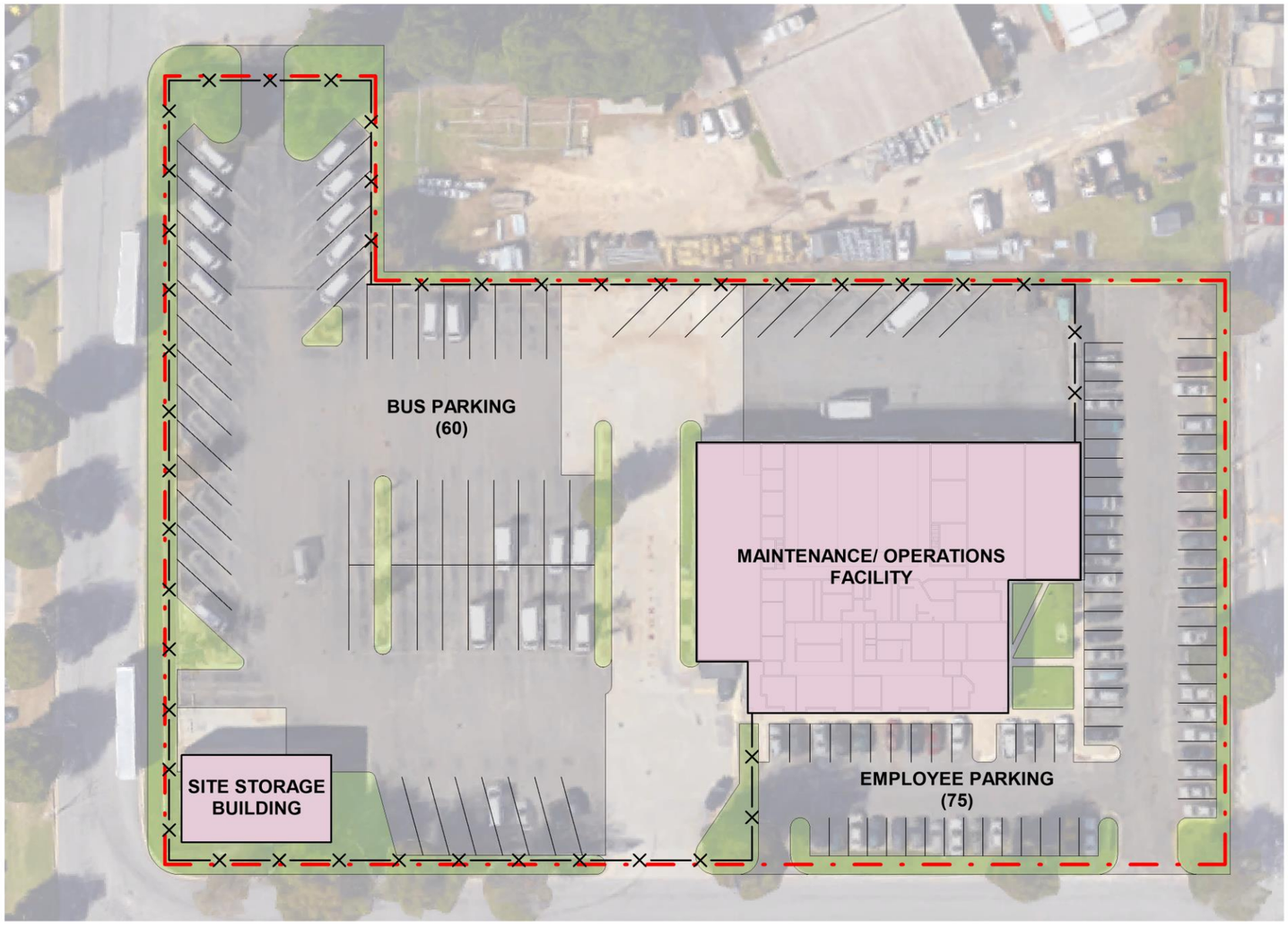


Exhibit AF: GoRaleigh/GoWake Access Paratransit Operations and Maintenance Facility Floor Plan

Facility Statistics

Different vehicles require different parking and maintenance design elements. Exhibit AG organizes the types and quantities of vehicles maintained and parked on-site.

Exhibit AG: GoRaleigh/GoWake Access Fleet Inventory

Vehicle Type	Number of Vehicles
Fixed Route/Standard Bus	0
Articulated Bus	0
GoWake Access Paratransit Bus	71
GoRaleigh Paratransit Bus	20
Non-Revenue Vehicle	0
Total	91

The WCTS staff is divided among operations and maintenance. Operations staff includes all drivers, dispatchers, road supervisors, and directors employed to operate the transit agency. Maintenance staff includes supervisors, foremen, technicians, training, and parts handling personnel. Exhibit AH presents the total number of staff at the facility between these three departments. The exhibit separates operators from operations staff and technicians and service workers from maintenance staff since these are the largest group within the departments.

Exhibit AH: GoRaleigh/GoWake Access Staff

Position	Employee Count
Fixed Route Operations Staff	14
Fixed Route Drivers	100
Paratransit Operations Staff	shared
Paratransit Drivers	shared
Maintenance Administrative Staff	2
Maintenance Technicians	6
Sevice Workers	4
Total	126

Functional Capacity

The current fleet consists of 91 total paratransit vehicles which exceeds the capacity of the site and facility. The site and facility s designed to handle roughly 60 buses based on standard bus to repair bay ratios and the current parking configuration. .

Observed Space/Functional Deficiencies

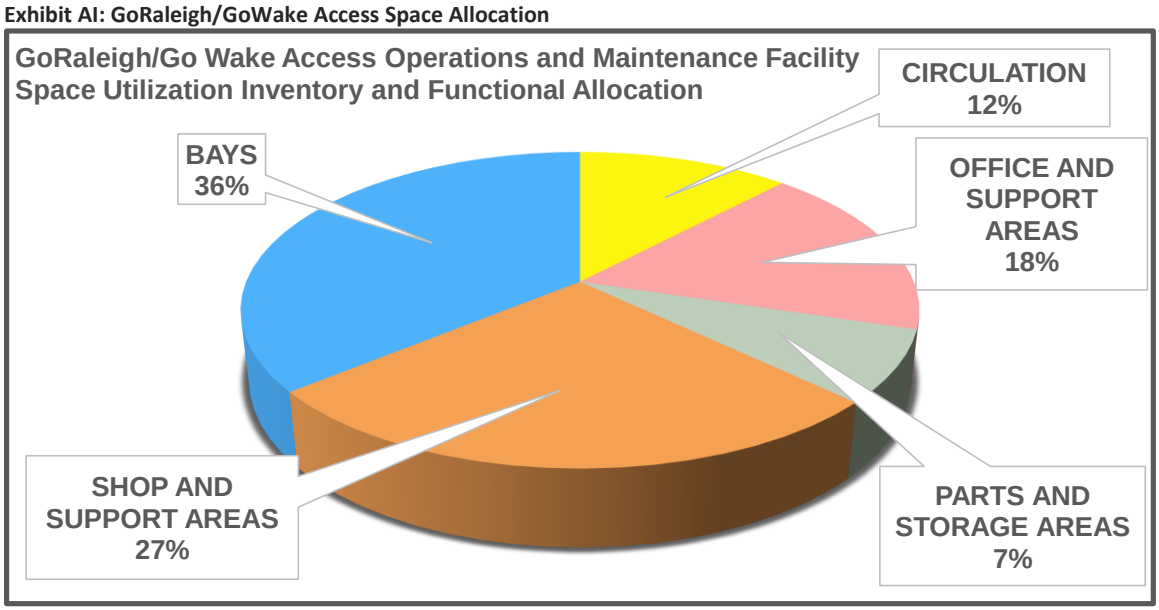
Several deficiencies occur at the GoRaleigh/GoWake Access Facility since the building does not meet the area requirements to maintain the fleet and staff. Examples of the space deficiencies and building quality are as follows.

- The facility entrance and call center share the same space
- Lack of conference and training space
- Insufficient space provided in the Drivers' Room
  - No modern driver support features (kitchenette, quiet room, TV room, etc.)

- Dispatch/Sign-out area and vestibule does not have enough space and is not secluded from the Drivers' Room which creates a noise issue
- Insufficient quantity, size, and condition of repair bays
- Unused in-ground lifts are still in place
- Bulk fluid storage is located in the Wash Bay
- No drive through automated wash system
- Paint booth is unused and not code compliant
- Severe lack of ground level parts storage space
- Northwest corner of the facility is actively separating from the main structure
- Parking arrangement is unorganized for paratransit vehicles using former parking areas designed for larger buses
- Site is constructed on an old landfill, which is unstable and causes random erosion and can crack the slab, structure, and parking

Any money spent to increase the efficiency of the GoRaleigh/GoWake Access facility would be a short-term solution unless a new facility was to be constructed in a phased approach addressing potential issues related to the soil conditions. Exhibit AI depicts the overall percentage of space between the five area types.

Exhibit AI: GoRaleigh/GoWake Access Space Allocation



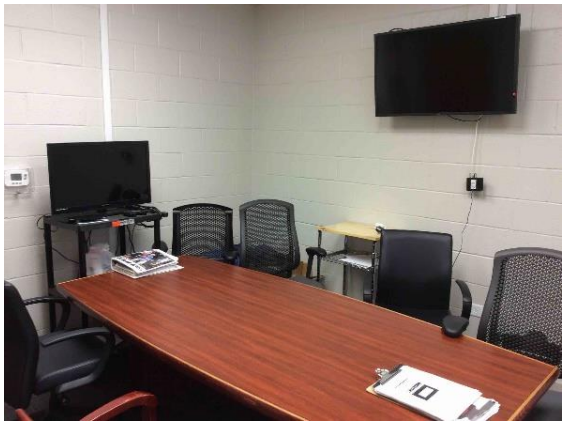
The operations area does not have enough space nor up to date amenities typically seen for driver support and operations functions. In maintenance, upgrading the repair bays to standards that have been embraced by the transit industry in the past decade would require significant renovation of the facility and the equipment. The employee parking area is also at maximum capacity with no area to expand without reducing the parking area for the paratransit buses.

Photo Documentation

The following photographs illustrate the current condition and capacity of the GoRaleigh/GoWake Access Facility.

Call center and lobby share one area. Call center needs to be in a secluded area so it is not impacted by other noise

Small kitchenette for administrative staff; however, no break area is provided



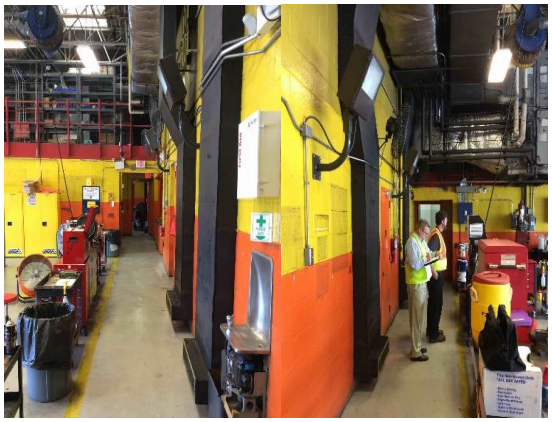
Conference space is limited to one room. Modern features are not included (large TV, projector, etc.)

The Drivers' Room is limited in space to support the amount of drivers. No modern design features are included

The Dispatch Vestibule only allows for one driver at a time to interact with the dispatchers

Drivers' lockers are located in an egress path

Only three surface mounted lifts are provided to maintain the fleet

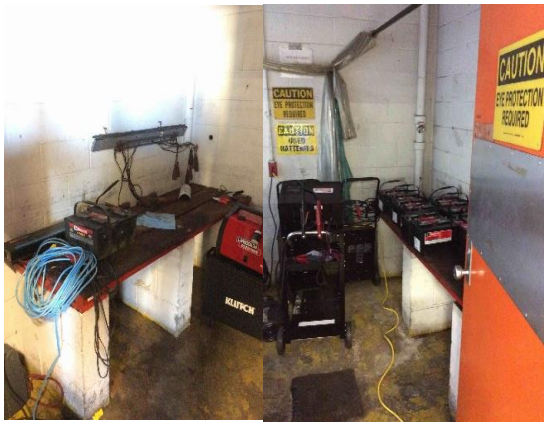


Egress space is limited in the maintenance shop

Fluids are stored in the maintenance shop area via drums instead of utilizing bulk storage tanks in a secure lube room

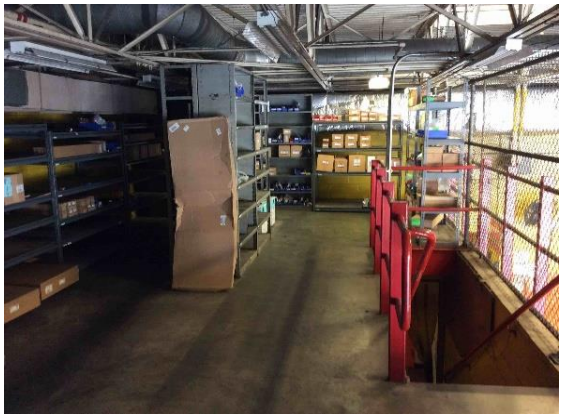
Decommissioned in-ground lifts have not been removed and filled

Two compressors are used to supply the maintenance shop; compressors are located on the mezzanine



Battery charging/storage room is limited in space and does not include an emergency eye wash/shower station

Parts office – Shelving units are in the office, air conditioning does not work, inefficient working area



A minimal amount of parts are stored due to the lack of space. Majority of parts are purchased as needed which slows repair

Bus washing is done by hand since the drive through washer was removed

The paint booth has been decommissioned and is currently being used as a work area

A portion of the facility is separating from the main structure. The site is located on an old land fill which is unstable

Numerous areas on the site have begun to sink due to the unstable subgrade, such as outside of the old wash bay

GoTriangle Operations & Maintenance Facility

General Description

The GoTriangle Operations and Maintenance Facility was originally constructed in 1998 for the operations and maintenance functions of 35-foot transit buses. In 2006, an addition was built for administrative functions to serve the agency.

The maintenance portion of the facility consists of 10 repair bays, two of which utilize an in-ground axle engaging scissor lift. The remaining repair bays use portable lifts when needed. Two of the bays provided are for paratransit and non-revenue vehicle service and repair. One of these repair bays is equipped with a four post surface mounted lift; the other with a two post surface mounted lift. The parts storage room mainly consists of small parts storage with a mezzanine for larger items and building mechanical and electrical units. Also included with the maintenance areas of the facility is a Wash Bay with a drive through wash system. This bay separates the operations and maintenance functions of the building. The facility also includes a steam cleaning area for cleaning the engine bay of the buses before preventative maintenance inspections or maintenance is performed.

Operations areas are located in the west side of the facility, separate from the maintenance areas. All administrative functions occur in the building addition along the north face of the facility.

General Location Map

Exhibit AJ presents a general location of the GoTriangle Operations and Maintenance facility in relation to Wake County. The site is located in the northeast corner of Interstate 40 and Interstate 540 near the Raleigh-Durham International Airport at 5201 Nelson Road.

Site Plan

Exhibit AK graphically represents the site elements and layout of the facilities on the site. Employee and visitor parking is located on the north side of the property at the entrance to the site. The bus parking yard occupies the south half of the site with the operations and maintenance facility dividing the site.

Floor Plans

Exhibits AL shows the breakdown and summary of space for the five area types.

Exhibit AJ: GoTriangle Operations and Maintenance Facility

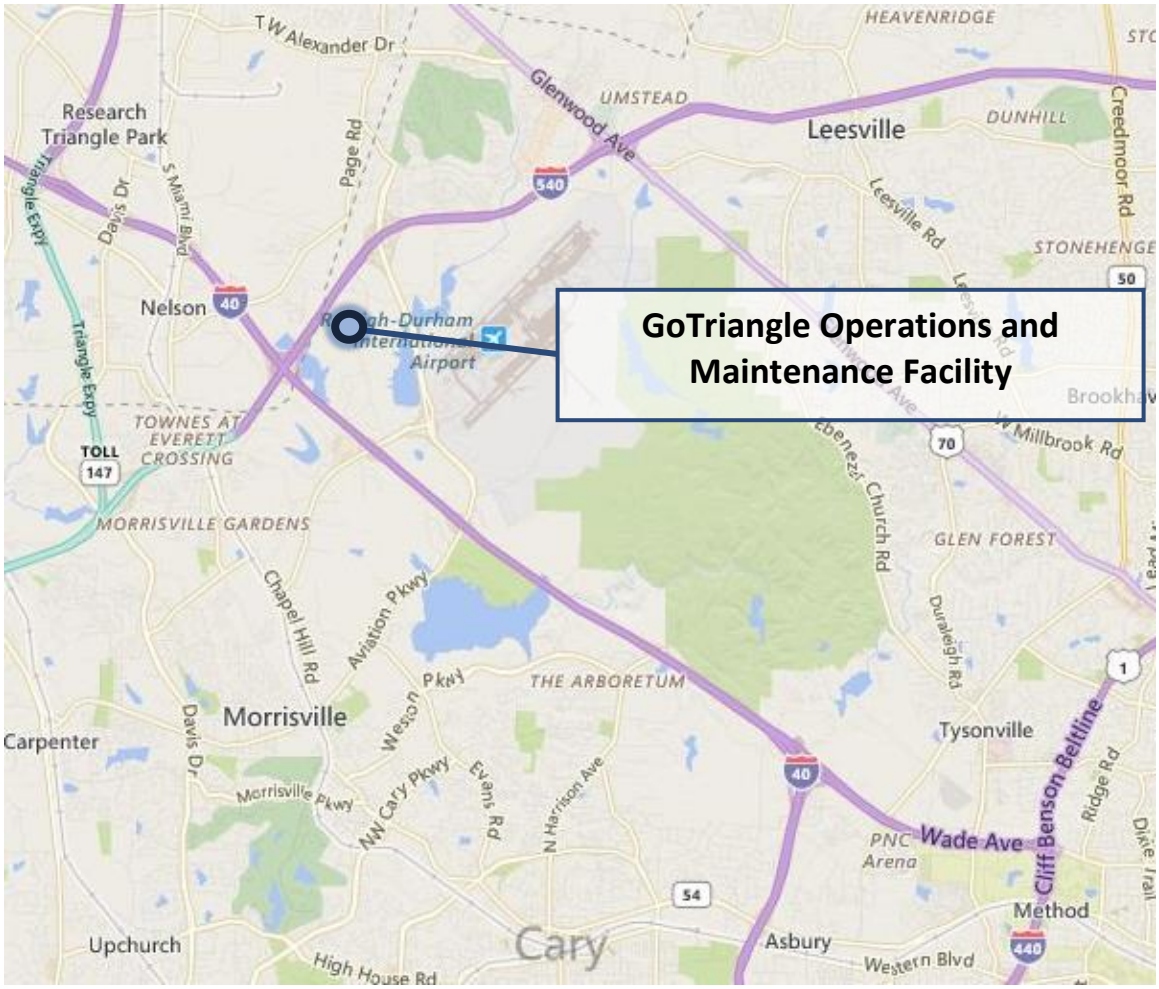
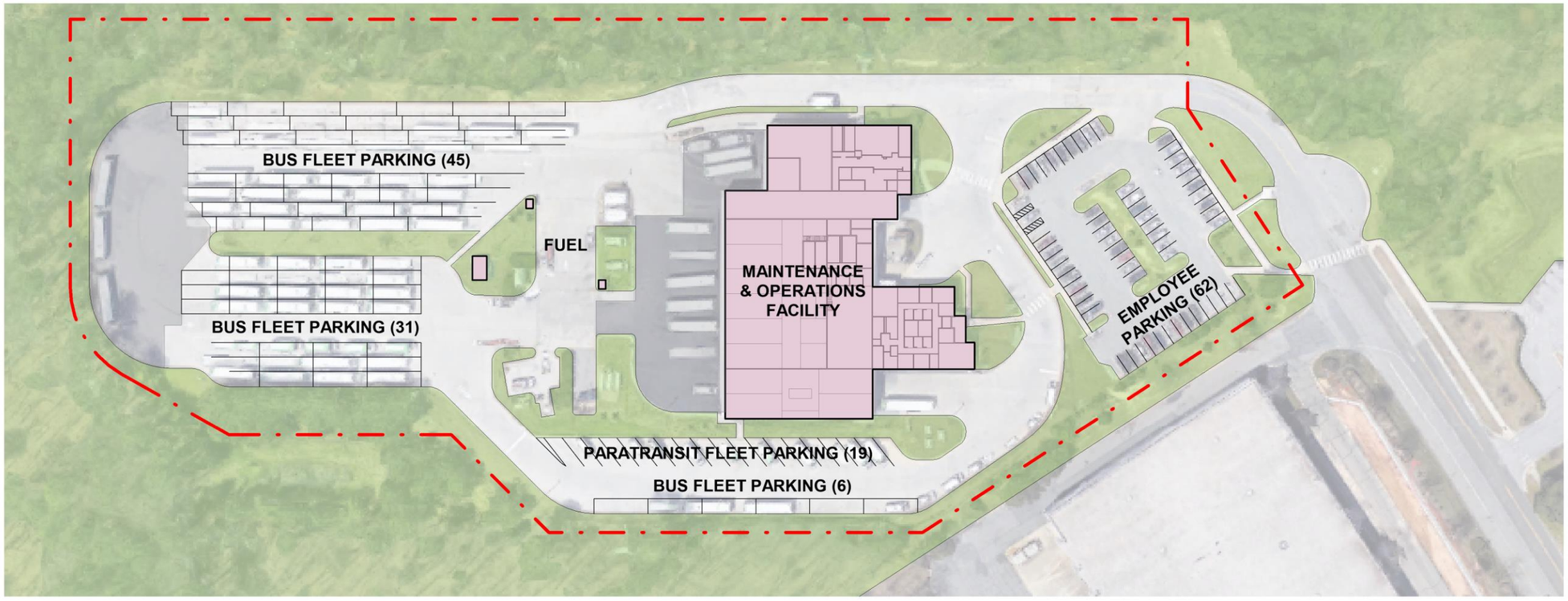


Exhibit AK: GoTriangle Operations and Maintenance Facility Site Plan



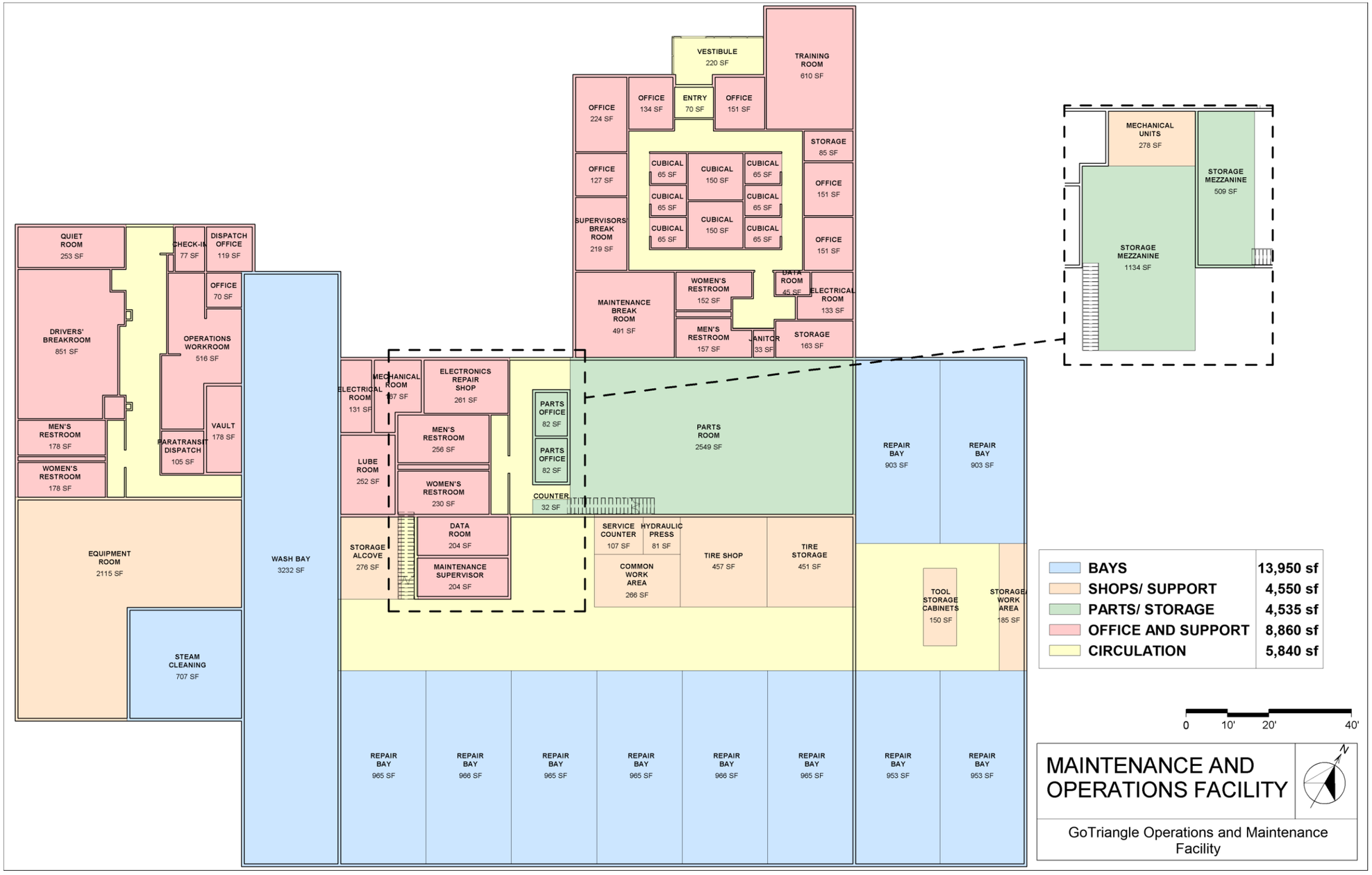
0 40' 80' 160'

EXISTING SITE PLAN

N

GoTriangle Operations and Maintenance Facility

Exhibit AL: GoTriangle Operations and Maintenance Facility Floor Plan



Facility Statistics

Different vehicles require different parking and maintenance design elements. Exhibit AM organizes the types and quantities of vehicles maintained and parked on-site.

Exhibit AM: GoTriangle Fleet Inventory

Vehicle Type	Number of Vehicles
Fixed Route/Standard Bus	77
Articulated Bus	0
Paratransit Bus/Vehicle	20
Non-Revenue Vehicle	9
Total	106

The staff at the GoTriangle Facility is divided among three departments: administration, operations, and maintenance. Administrative staff are responsible for a variety of tasks including finance, training, human resources, safety, and site management. Operations staff includes all drivers, dispatchers, road supervisors, and directors employed to operate the transit agency. Maintenance staff includes supervisors, foremen, technicians, training, and parts handling personnel. Exhibit AN presents the total number of staff at the facility between these three departments. The exhibit separates operators from operations staff and technicians and service workers from maintenance staff since these are the largest group within the departments.

Exhibit AN: GoTriangle Staff

Position	Employee Count
Administration Staff	3
Fixed Route Operations Staff	14
Fixed Route Drivers	113
Paratransit Operations Staff	10
Paratransit Drivers	29
Maintenance Administrative Staff	9
Maintenance Technicians	16
Sevice Workers	10
Total	204

Functional Capacity

GoTriangle operates and maintains a fleet of 97 transit vehicles, exceeding the capacity of the site and facility. GoTriangle must park 66 service vans at a remote site due to the lack of space. This causes a deadhead of approximately five minutes. The total fleet size also exceeds the capacity of the operations and maintenance area. The service vans are not maintained on-site.

Observed Space/Functional Deficiencies

The current GoTriangle Operations and Maintenance buildings are in good physical shape. However, all could use some general modernization, system updates and increase of area for some driver functions. The parking area for employees is insufficient, which has caused employees to park along Nelson Road instead of within the parking lot. The site could be reorganized to allow for more buses to be parked on-site. The overall circulation of the service

cycle is inefficient and causes the buses to have to loop around the site before or after being parked. This also causes a bottleneck when buses are returning to the site.

The bus bay sizes and quantity are smaller than necessary to support the fleet of 40-foot buses. Buses are being maintained on the apron outside of the facility year round. Shop space is also limited, as is tool box storage and equipment storage areas. Support areas for the technicians is not adjacent to the repair bays. Instead, maintenance staff must exit and reenter the building to access these areas. Parts storage does not have access to the exterior, which makes the deliveries of parts difficult.

The Operations area is also handling a greater number of drivers and operations staff than originally anticipated. Lockers are located in the central walk aisle; the Drivers' Room is undersized for the number of drivers it is supporting; and the restrooms are not sized properly for the staff. There is not a distinct path for drivers to enter the building, sign in/out, and exit to the bus parking area. Instead, all driver/dispatch interactions occur right at the front door, which causes a crowded entryway as drivers are entering and exiting the building.

Administrative areas are efficient, with the only real issue being the lack of conference space. With only one conference room, many meetings are held in the administrative break room or in offices.

Exhibit AO represents the allocation of space among the five area types compared to the overall square footage of the GoTriangle Operations and Maintenance Facility.

Exhibit AO: GoTriangle Space Allocation

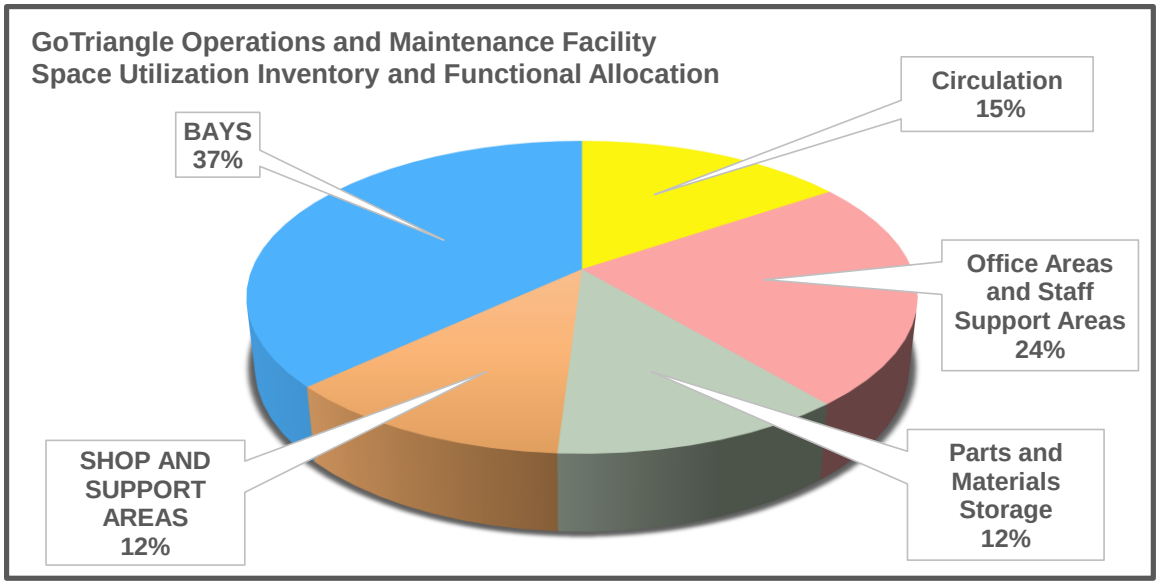


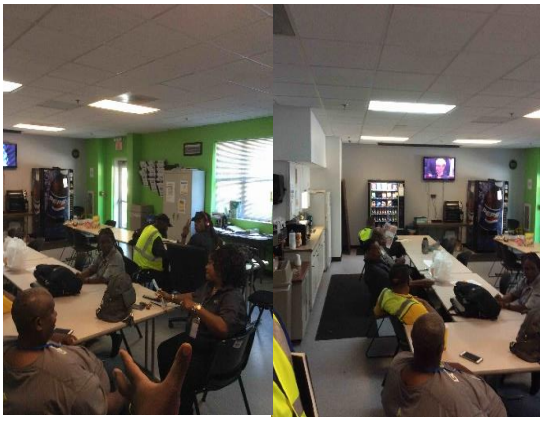
Photo Documentation

The following photographs illustrate the current condition and capacity of the GoTriangle Facility.

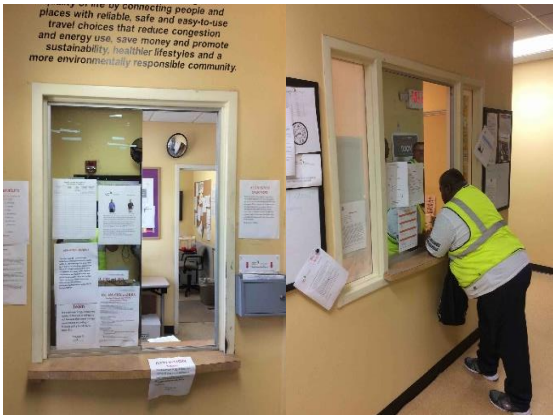
No personnel stationed at the entry/lobby to allow visitors into the facility

No conference space provided. Meetings are held in individual offices or in the administrative break room

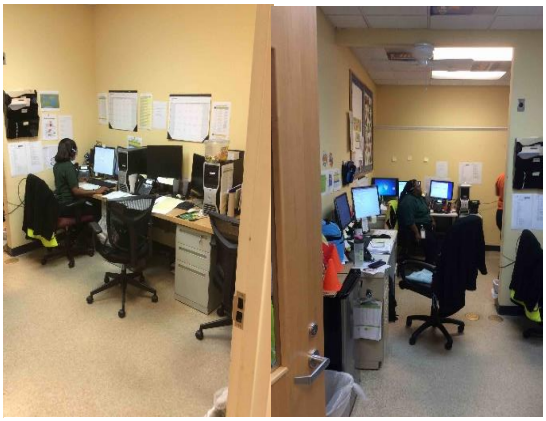
Drivers' lockers are located in the main egress path



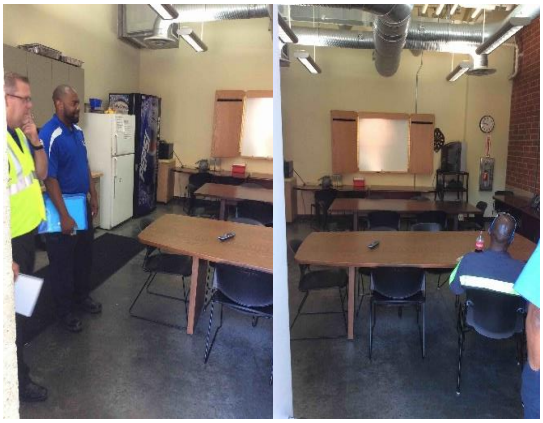
Drivers' Room does not have separation between the kitchenette, vending area, and computer workstations



Dispatch for fixed route and paratransit fleet is in the main egress path, causing a congestion of drivers during sign-out

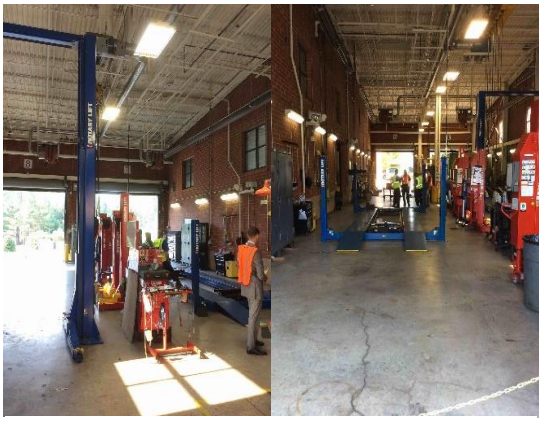


Paratransit operations has no offices or separate/secluded areas for the supervisor or the reservationists

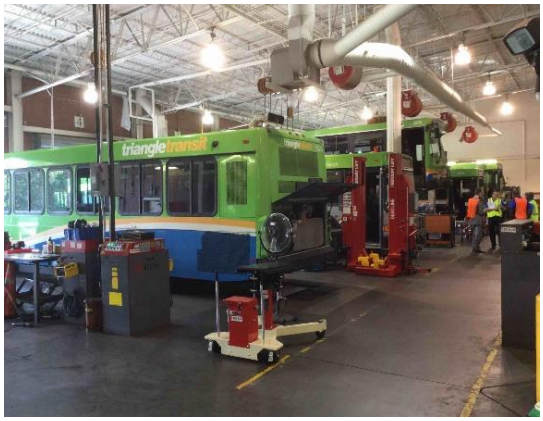


The maintenance break room is used as a conference room due to limited conference space

Bus repair overflows into the repair bays intended for paratransit repair and inspection due to the lack of repair bays



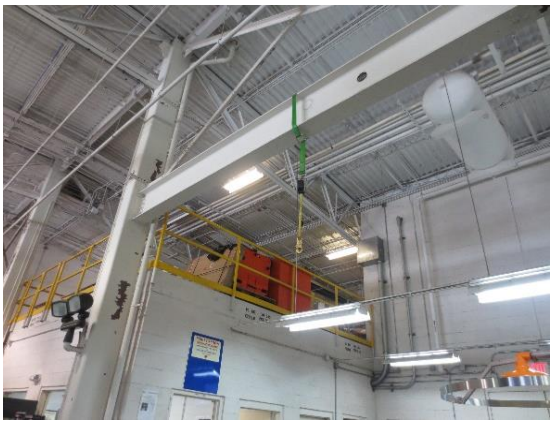
Paratransit repair utilizes portable lifts, four post surface mounted lifts, and a two post surface mounted lift



Repair bays do not have sufficient working space in front and behind the bus because bays were designed around 35 foot buses

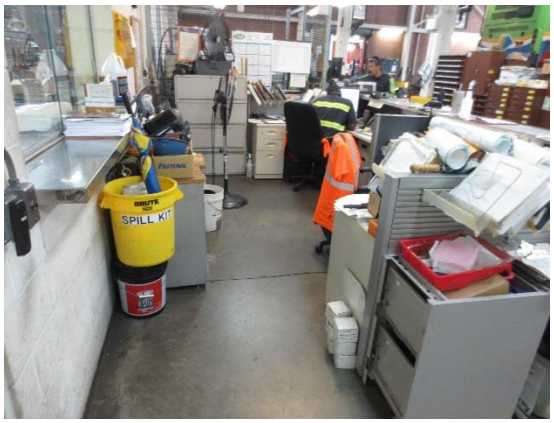
Bus repair bays utilize portable lifts and in-ground scissor lifts for repair and inspections

Toolboxes and shop equipment are stored between repair bays because of the lack of equipment storage space



Overhead fall protection is not parallel with the bay. A bus blocks the egress path when roof top maintenance is needed

Work benches/workstations are between bays restricting the circulation around buses when serviced



The maintenance manager is located on the shop floor

Tires are stored in two separate areas within the facility instead of in one large tire storage room/area

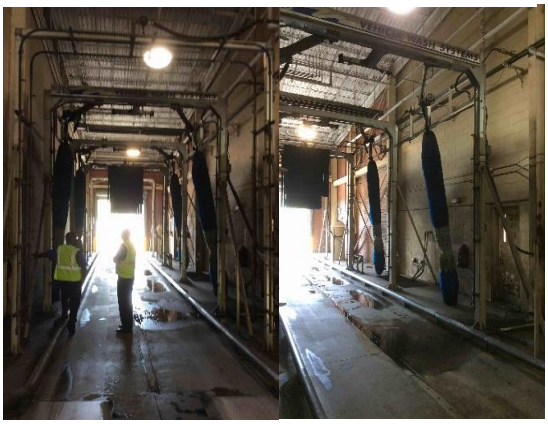
Batteries are currently stored in a locked cabinet instead of in a dedicated storage/charging room

Diesel particulate filter cleaning is required

Parts room has no room for large parts to be stored and has reached capacity on the ability to store small parts

Electronics repair shop is limited in workspace and require a designated repair bay

The steam room utilizes two portable lifts to lift only one end of the bus instead of a drive-on type lift



One drive through wash is used to clean the buses daily. One additional wash bay is needed due to the number of buses

Maintenance often occurs outside of the facility due to the insufficient amount of repair bays

Service workers work in the elements because the fuel lanes are not covered

GoCary Operations and Maintenance Facility

General Description

The GoCary Operations and Maintenance operates from a building previously used by a heavy truck repair shop. The facility is leased by Cary's operations contractor who repurposed the building for GoCary's operation and maintenance facility. The Wake Transit Plan and corresponding annual work has already decided that GoCary will be constructing a new facility and the lease will be terminated on the current site. It is assumed that the new facility will be constructed and operational in two years.

The maintenance area is made up of 10 repair bays, exceeding the quantity needed for an efficient repair bay to bus ratio. In the maintenance areas are two cranes, a three ton jib and a 7.5 ton bridge, neither of which are used. Two four post surface mounted lifts are used for lifting the vehicles as well as two sets of portable lifts. Fluid storage consists of 55 gallon drums stored along the exterior wall with hand pumps. Support areas for the maintenance staff are in the office portion of the building.

The administrative and operations functions share the office portion of the building. These functions include training, supervisors, management, dispatch, and scheduling.

General Location Map

Exhibit AP presents a general location of the GoCary Operations and Maintenance Facility in relation to Wake County. The site is located west of Interstate 40 near NC 54 at 1107 Trinity Road.

Site Plan

Exhibit AQ graphically represents the site elements and layout of the facilities on the site. Employee and visitor parking is divided between two parking lots. Due to the lack of space, employees also park in the yard. The bus parking occurs on the back half of the property, however there are no designated parking spaces.

Floor Plans

Exhibits AR shows the breakdown and summary of space for the five area types.

Exhibit AP: GoCary Operations and Maintenance Facility

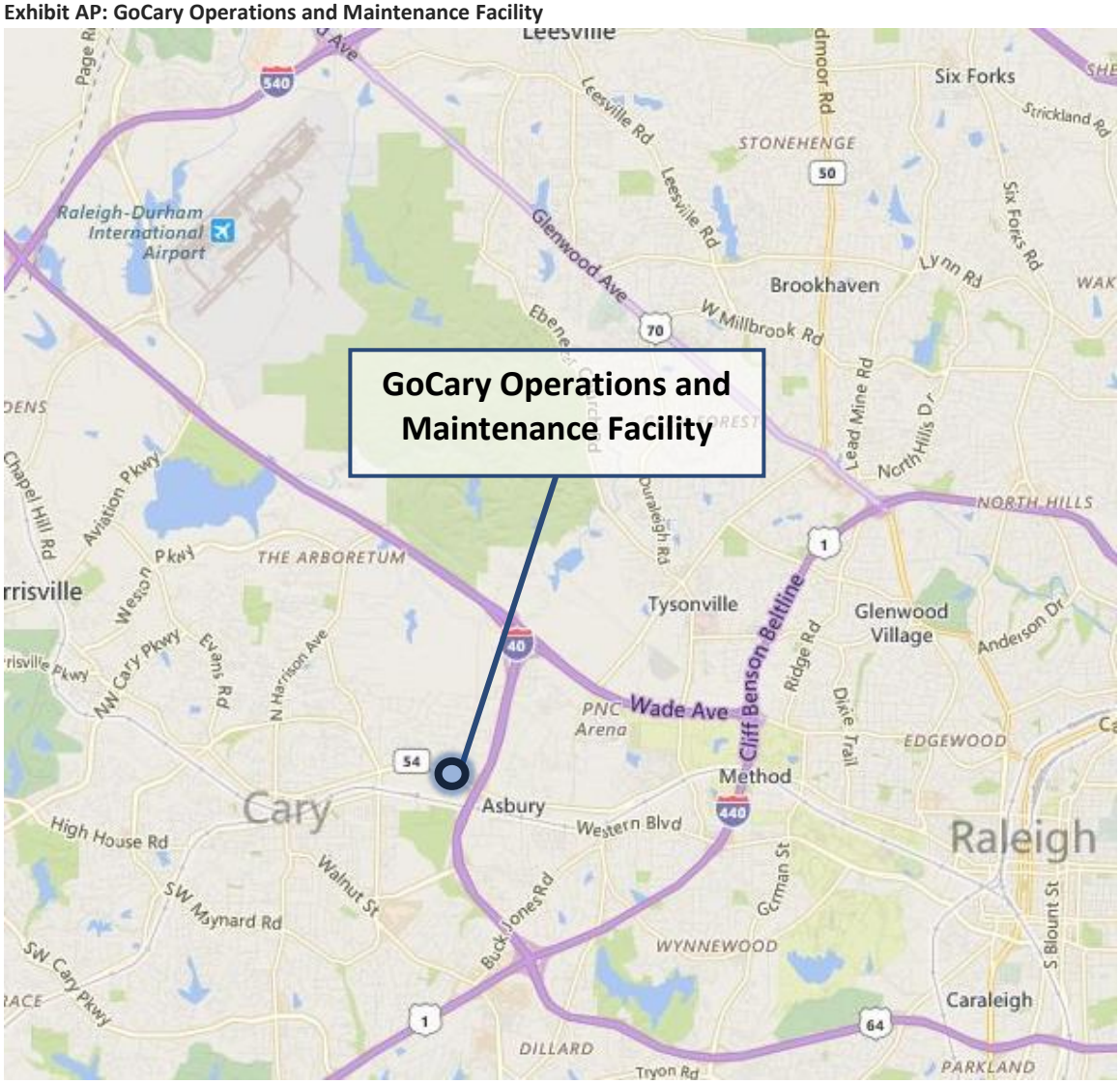


Exhibit AQ: GoCary Operations and Maintenance Facility Site Plan

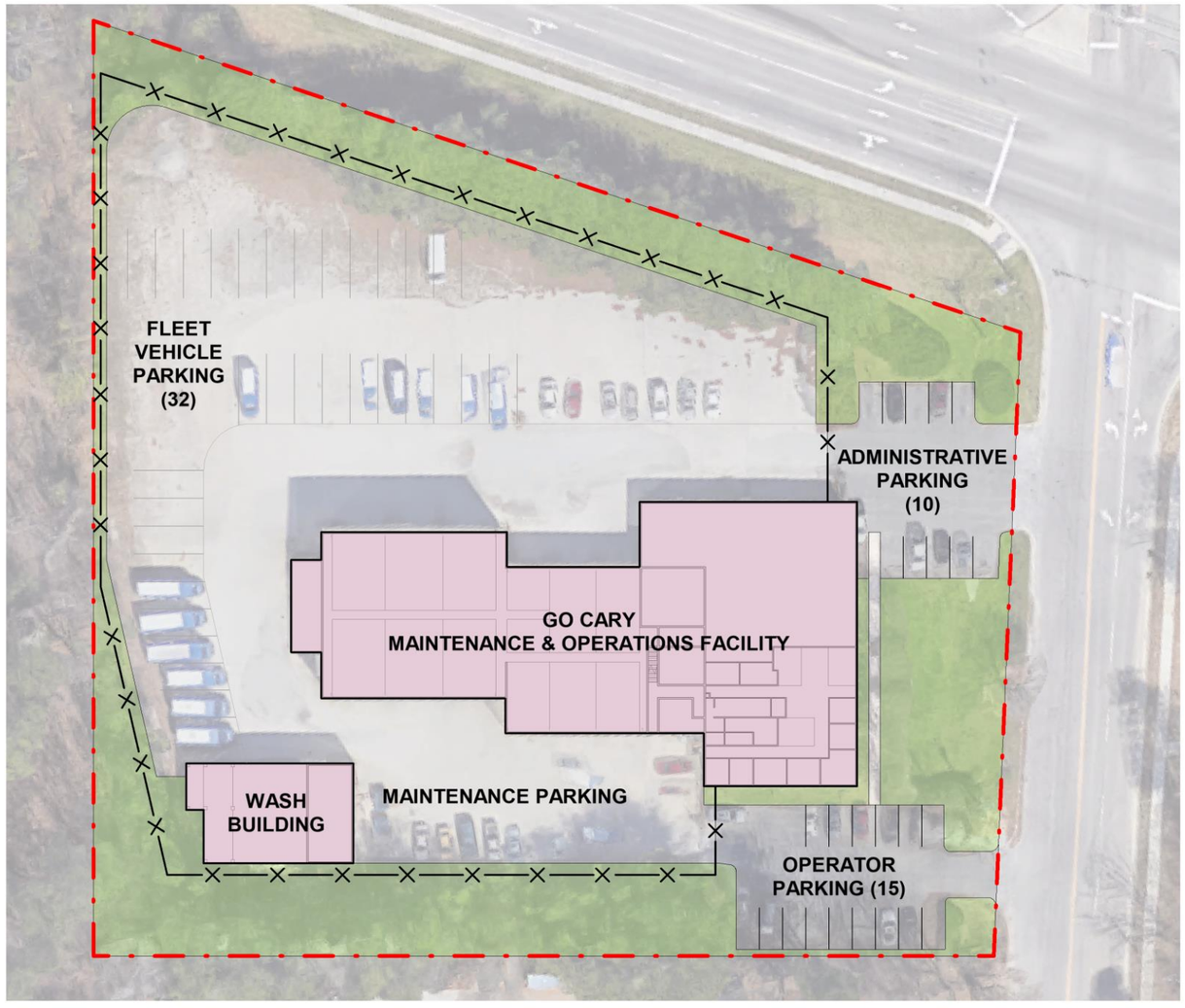
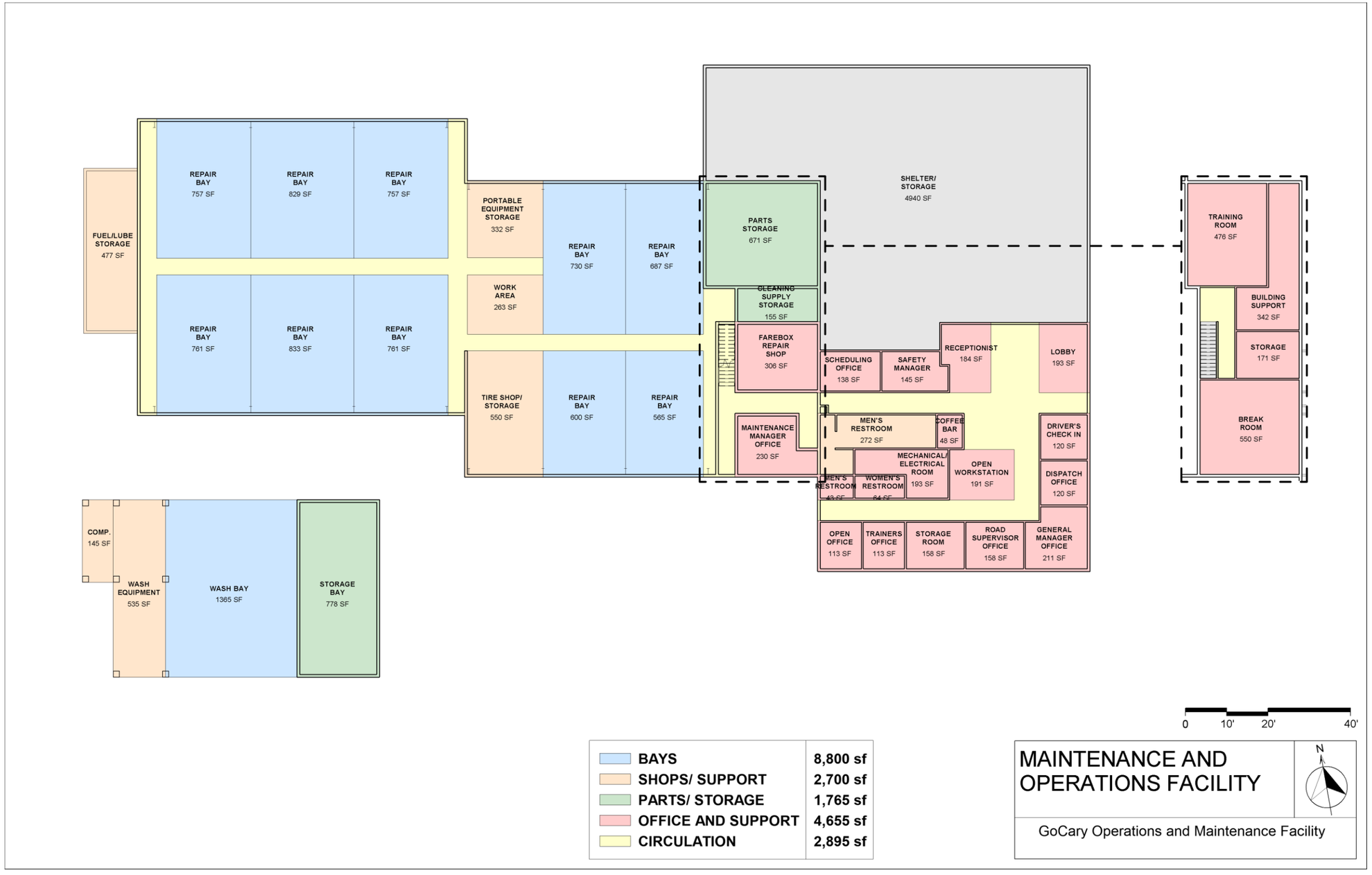


Exhibit AR: GoCary Operations and Maintenance Facility Floor Plan



Facility Statistics

Different vehicles require different parking and maintenance design elements. Exhibit AS organizes the types and quantities of vehicles maintained and parked on-site.

Exhibit AS: GoCary Fleet Inventory

Vehicle Type	Number of Vehicles
Fixed Route/Standard Bus	12
Articulated Bus	0
Paratransit Bus/Vehicle	18
Non-Revenue Vehicle	0
Total	30

The staff at the GoCary Facility is divided among two departments: operations and maintenance. Operations staff includes all drivers, dispatchers, road supervisors, and directors. Maintenance staff includes supervisors, foremen, technicians, training, and parts handling personnel. Exhibit AT presents the total number of staff at the facility between these three departments. The exhibit separates operators from operations staff and technicians and service workers from maintenance staff since these are the largest category within the departments.

Exhibit AT: GoCary Staff

Position	Employee Count
Administration Staff	3
Fixed Route Operations Staff	shared
Fixed Route Drivers	shared
Paratransit Operations Staff	9
Paratransit Drivers	54
Maintenance Administrative Staff	1
Maintenance Technicians	3
Sevice Workers	3
Total	73

Functional Capacity

GoCary operates and maintains 30 vehicles, exceeding the maximum capacity of the site. There is inadequate parking for fleet and employee vehicles, which causes an overrun of parking. Maintenance bays exceed the quantity needed to maintain the fleet; however, the space is utilized. Operations and maintenance need almost twice as much space as they currently occupy.

Observed Space/Functional Deficiencies

The GoCary Operations and Maintenance facility lacks modern driver and technician support and bus parking areas. Inadequate amount of parking spaces for employees has caused operations and maintenance staff to park in the yard, which causes a safety issue. Because the facility is an adaptive reuse, the amount of area available for buses to be parked on concrete is limited. Some buses are parked along the edge of the site in the gravel and grass.

The maintenance area exceeds what is needed to support the current GoCary fleet. There is a large amount of unused space. Fluids are not stored in a dedicated compliant room, the compressor is located at the wash building, and some support areas and restrooms may not meet current code requirements.

The operations area lacks modern support areas for the drivers and staff, such as a dedicated break room, training room, quiet room, and lockers. All staff share a training and break room located on the second floor.

Administrative staff lack conference space and offices with adequate sizes. Support areas, such as restrooms, are inefficient with outdated fixtures. Adjacent to the administration and operations areas is a vacant space that is used for non-revenue vehicle parking.

GoCary owns an eight acre property that will be developed for a new operations and maintenance facility. Once complete, lease on the current site will be terminated.

Exhibit AU represents the allocation of space among the five area types compared to the overall square footage of the GoCary Operations and Maintenance Facility.

Exhibit AU: GoCary Space Allocation

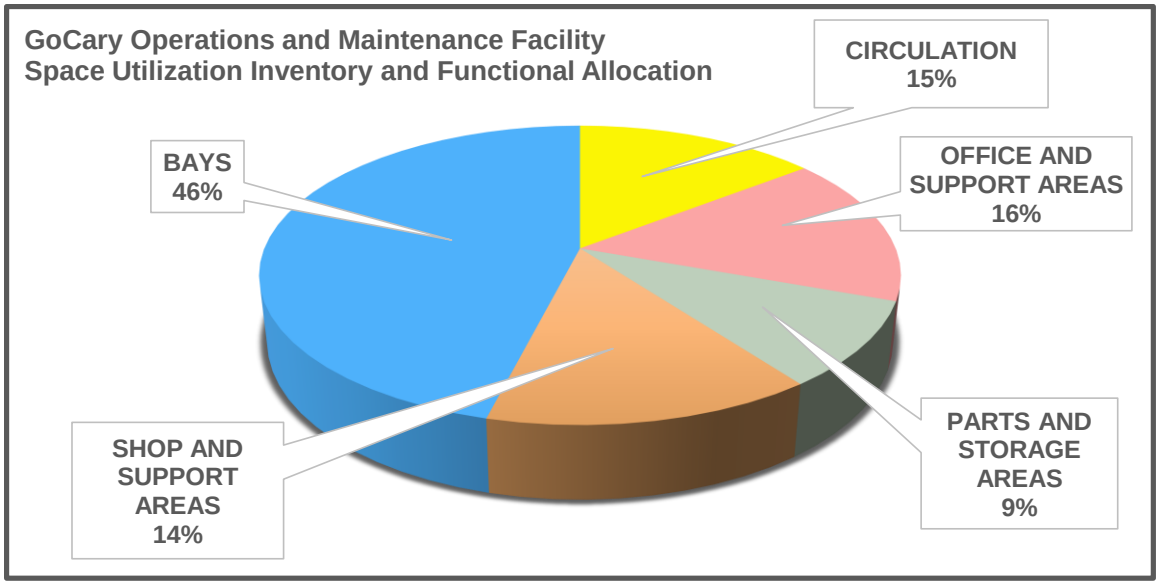


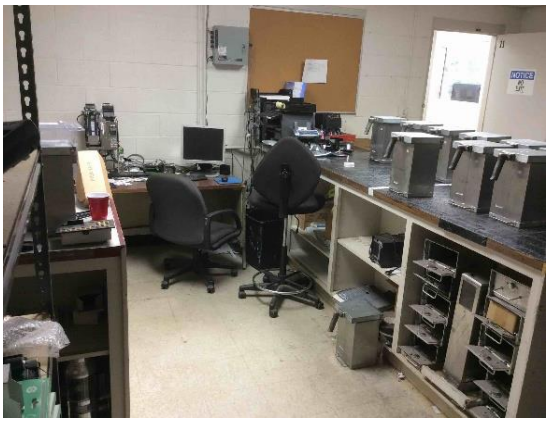
Photo Documentation

The following photographs illustrate the current condition and capacity of the GoCary Facility.

No dedicated Drivers' Room. All areas are open and shared.

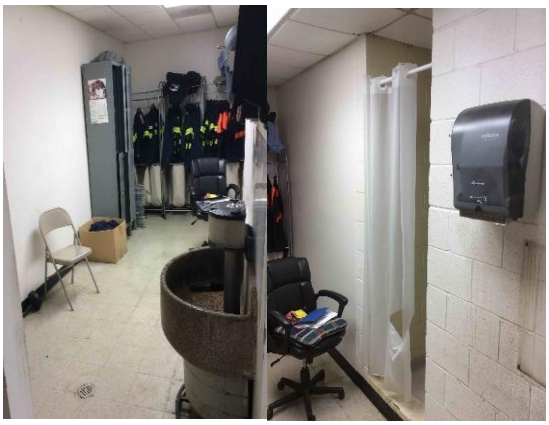
Administrative areas are open to the support areas and lobby of the facility.

Building features and systems are outdated. The facility was repurposed from a prior trucking company.



The fare box collection and repair room is only accessed by authorized personnel.

The vacant area of the building used for non-revenue vehicle parking.



The mechanics restroom is provided only for men. No support areas for drivers.

Training/Conference room is on second level and shared between all functions. There is no elevator in the building.

Break Room is shared between all functions.

The jib crane is from the previous building use and is not used.

There is an excess of space provided compared to what is needed to maintain the fleet.

No designation of work areas including portable equipment storage and work areas.

Tire shop/storage area is unorganized and tires are not secure.

Surface mounted and portable lifts are used to maintain and service the buses.

Bulk fluid is stored using 55 gallon drums along the back wall of the facility.

Wash structure is deteriorating from rust.

Service staff use a high-pressure wash and soap dispensing system to clean the vehicles.

Oil, gasoline, and diesel are stored outside the facility. Fuel is only plumbed into the building; buses are filled off-site.

Some buses are parked in the grass. No striping designates circulation and parking stalls.