



DOWNTOWN AREA TRAFFIC ANALYSIS





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01. Executive Summary

The City of Powder Springs has taken huge strides to make their downtown the jewel of the southwestern region of Cobb County. An outcome of the Springs in Motion – 2016 Downtown LCI Study, the opportunities afforded by the vision will make downtown not only a desirable place to live but to engage in business and social activities. The catalyst project identified in the heart of downtown is Thurman Springs Park, home of the Hardy Family Automotive Amphitheater. Recognizing that this is just the beginning, the City initiated the Downtown Area Traffic Analysis study to plan for infrastructure that provides a safe and efficient multi-modal network so that as redevelopment occurs and land uses change that folks have convenient mobility throughout downtown Powder Springs.

The study had four major goals:

- Discourage cut-through traffic on Marietta Street
- Foster safe pedestrian connectivity between north of and south of Marietta Street
- Enhance access between downtown and the Silver Comet Trail
- Promote multi-modal mobility in the downtown area

For each of these components, a series of alternatives were developed for Powder Springs' consideration. After selection by the City Council of the preferred alternative, specific projects are available to move into preliminary design and identify external funding sources to leverage the city's infrastructure investment.

An additional effort of the study was to evaluate the adequacy of parking to be provided by alternate development scenarios. Land use configurations and density were analyzed utilizing national parking demand standards. Recommendations were made for providing sufficient parking spaces for residents, employees, and visitors.

Detailed recommendations and potential cost estimates are outlined in the following sections.

02. Study Area

The 2016 LCI Springs in Motion built on the previously completed 2002 LCI study and expanded on the previous goals with a greater focus on revitalizing the core of Downtown.

Outcomes of the study were two alternative master plan layouts for the Downtown area addressing the established goals to increase vitality in Downtown through the following elements –

Rehabilitating existing historic buildings

Increasing the amount and types of Downtown residences

Increasing office, retail, and restaurant square feet available to improve daily foot traffic

Connecting the trail system north to the Silver Comet and south to the existing and proposed developments

To advance the potential conceptual layouts identified for the study area as shown in Figure 2.1 and Figure 2.2, the Downtown Area Traffic Analysis Study is aimed to address potential traffic and parking concerns.



Figure 2.1: Powder Springs LCI Update- Downtown Greenspace

Image Source: TSW | Planners | Architects | Landscape Architects

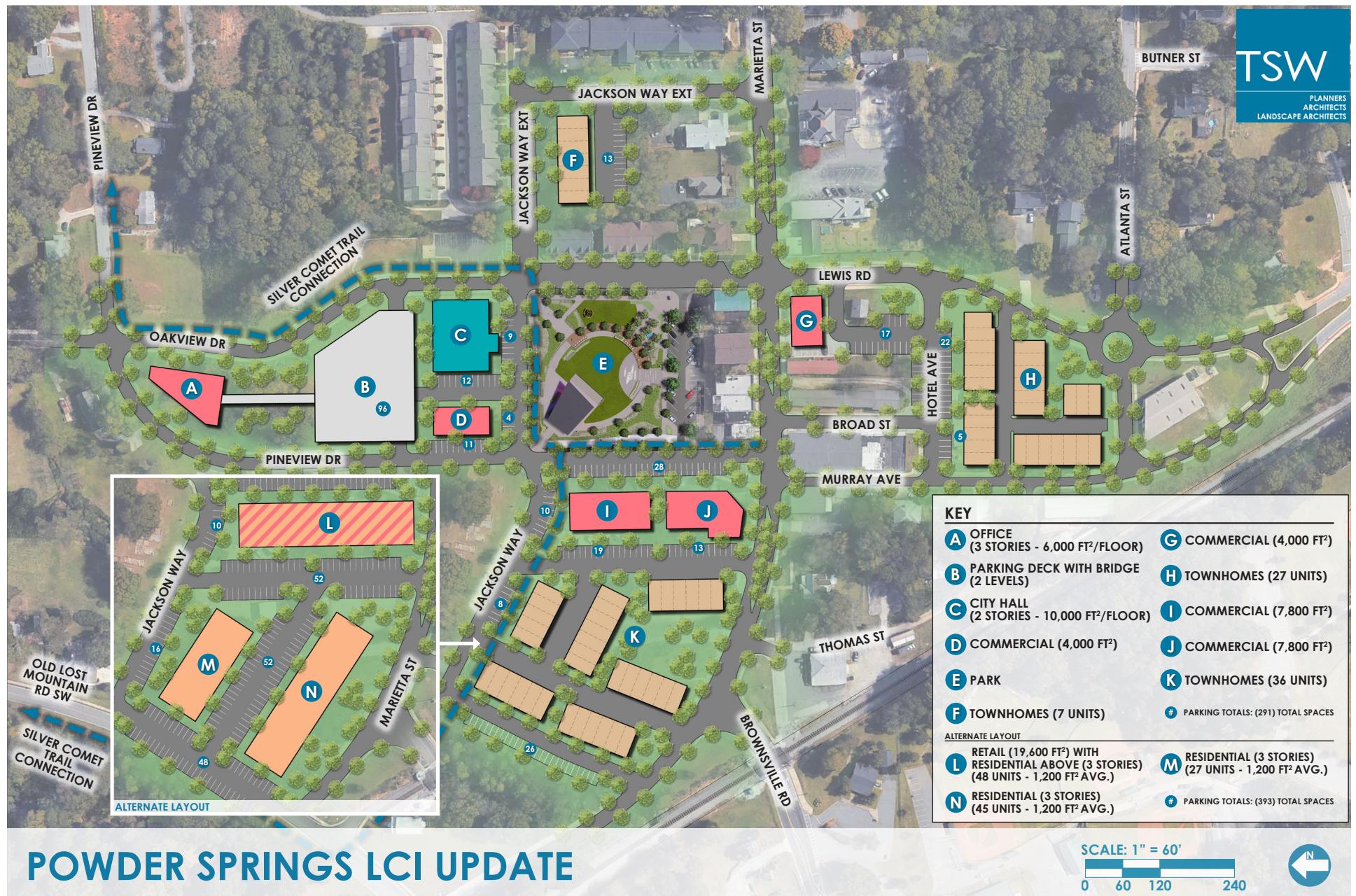


Figure 2.2: Powder Springs LCI Update Master Plan

03. Study Goals

Figure 3.1 identifies the 5 goals identified for the Downtown Area Traffic Analysis study. Through data obtained from Georgia Department of Transportation (GDOT), Cobb County DOT and other sources, the study aims to evaluate the circulation patterns to determine any infrastructure needs to promote non-motorized vehicular mobility within the study area. This includes fostering safe pedestrian connectivity between north of and south of Marietta Street, supporting access between downtown and Silver Comet Trail and promoting multi-modal mobility in the downtown area.

Another concern identified was to discourage cut-thru traffic through the study area with special attention on connectivity of activities north and south of Marietta Street. To address this goal, roadway reconfiguration concepts were intended to be identified and evaluated. In addition to the circulation and connectivity goals, the study also intended to analyze the available parking in the Downtown area and prepare a parking generation analysis to support the redevelopment and proposed land use plans in the downtown area.

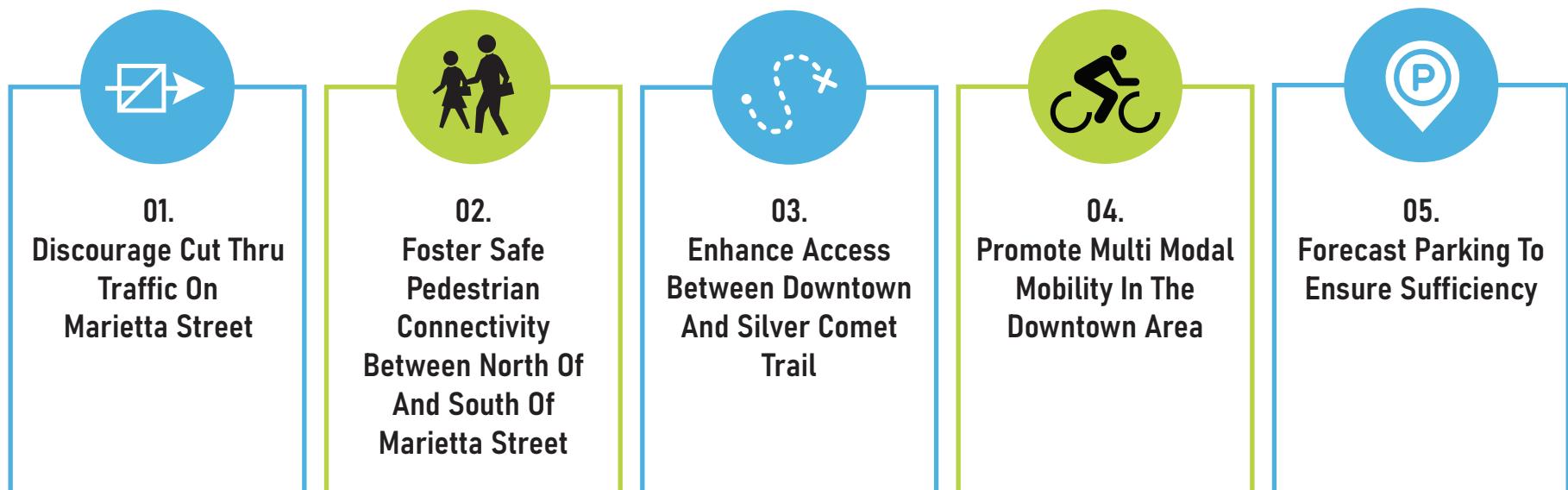


Figure 3.1: Study Goals

04. Concept Development & Recommendations

Through data collection, coordination meetings and brainstorming workshops, potential strategies and concepts were identified to address each of the 5 study goals aforementioned. The preliminary ideas were vetted and the recommendations per goal were identified. These recommendations are described in the following sections.

GOAL 01 | Discourage cut-thru-traffic on Marietta Street

Traffic on Marietta Street that is cutting through downtown Powder Springs creates challenges for pedestrians either shopping on Marietta Street or wanting to walk between the different activities on the south side and the north side. Physical traffic calming measures (e.g. speed tables) as well as signage and active devices such as the current Rectangular Rapid Flashing Beacon (RRFB) at Broad Street address the traffic volumes that are there.

Recommendation: Install chicanes or median islands on Marietta Street as a traffic calming measure, reducing speed and thereby discouraging traffic along the roadway

Advantages of Chicanes: Chicanes are placed mid-block, adjacent to the curb on alternating sides of the street in sets of three in order to introduce an S-shape travel path on a straight section of street that compels vehicles to slow down in order to negotiate the curved section. Chicanes result in an average reduction in operating speeds of 3 to 9 mph. Chicanes, however, result in narrow travel-way for bicyclists.

Advantages of Median Islands: Median islands are raised islands placed mid-block in the middle of the roadway in order to narrow the vehicle travel lanes. Median islands provide dual use, as both a narrowing device and a gateway, when placed at the entrance to a community. Median islands result in an average reduction in operating speeds of 4 mph. Median islands, however, result in narrow travel-way for bicyclists.

Figure 4.1, 4.2 and Figure 4.3 shows examples of a median island and a chicane.

Figure 4.4 shows potential locations for median islands. These locations were selected so as to not restrict any driveway and to allow enough space for an entering left turning vehicle to stop in the center turn lane thereby not blocking traffic.



Figure 4.1: Median Islands

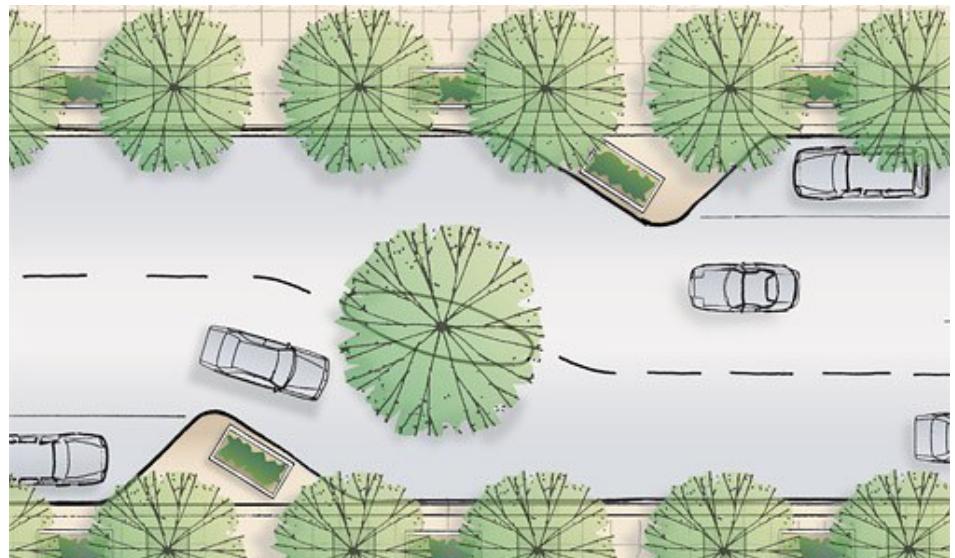


Figure 4.2: Chicanes



Figure 4.3: Chicanes with Median Island

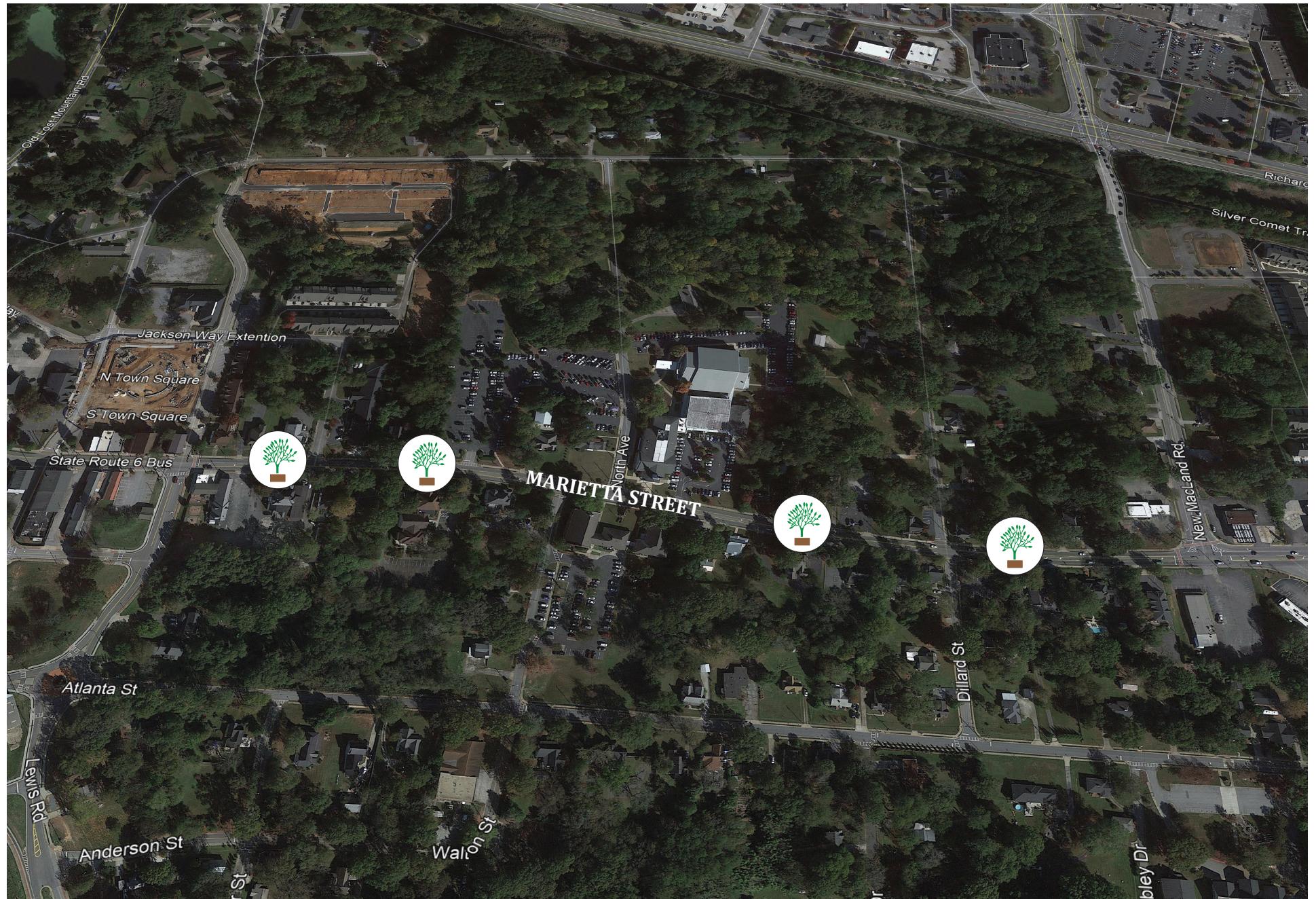


Figure 4.4: Potential Locations for Median Islands along Marietta Street

GOAL 02 | Foster safe pedestrian connectivity between north of and south of Marietta Street

Recommendation: Install speed table crosswalks on Marietta Street at Thomas Street and Murray Avenue.

Advantages: Flat “table” humps provide an overall gentler transition than the speed humps and are placed mid-block. Speed tables provide moderate vertical transition for crossing vehicles and can result in an average reduction in operating speeds of about 6 – 9 mph.

Figure 4.5 shows an example of a speed table installed on Atlanta Street.



Figure 4.5: Speed table at Atlanta Street

GOAL 03 | Enhance access between downtown and Silver Comet Trail

Recommendation: Construct a one-way roadway pair with Pineview Drive and provide new connection from Jackson Way Extension to Dillard Street. Provide streetscaping along Pineview Drive. Create a trailhead at the Trail entrance to include street furniture and public art.

Figure 4.6 shows the proposed concepts to support this goal. Figure 4.7 shows an additional proposed roadway concept along Pineview Drive that creates a separate facility for pedestrians and bicyclists.

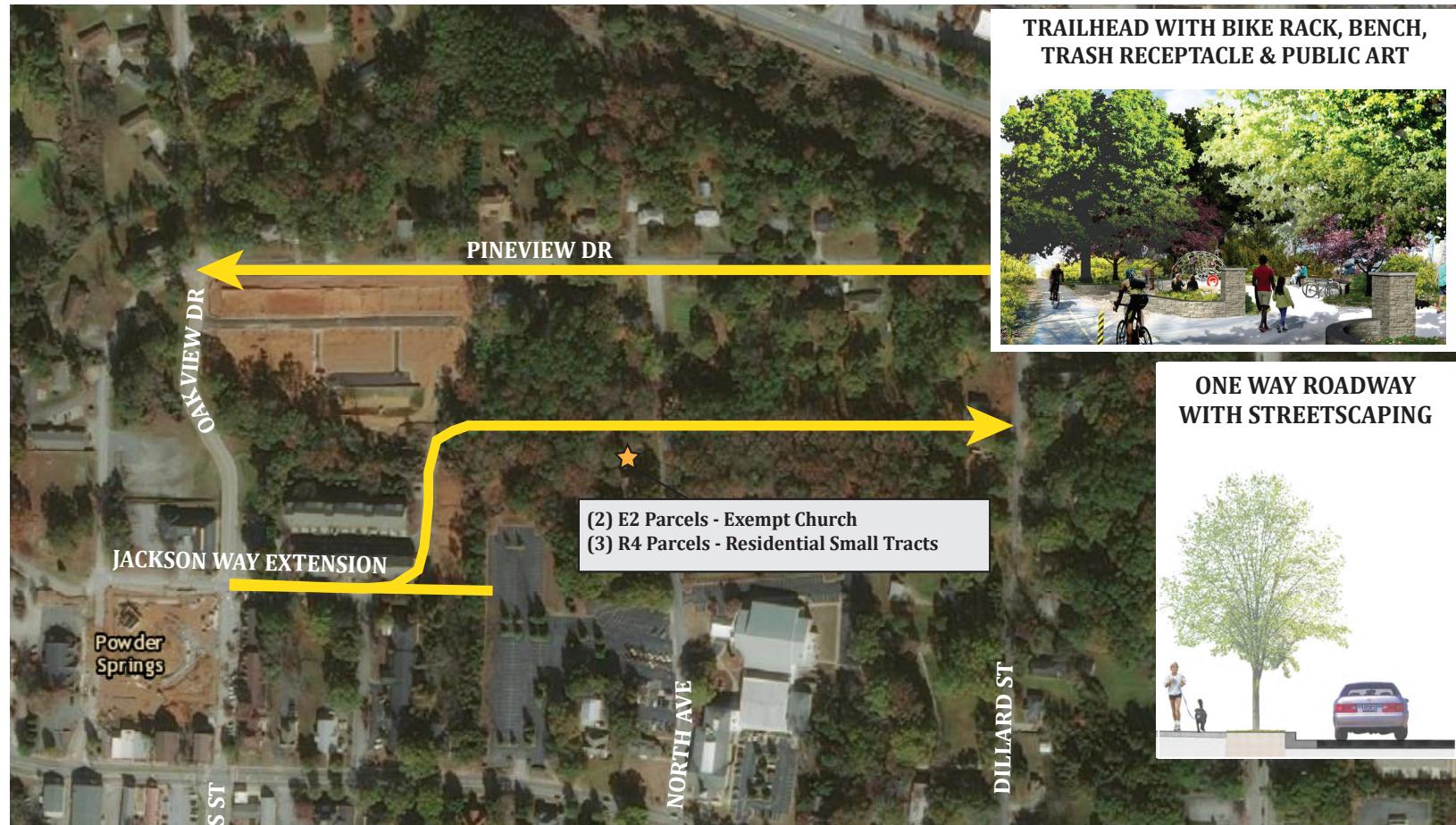


Figure 4.6: Potential Proposed One-Way Roadway Pair with Streetscaping and Trailhead at Silver Comet Trail

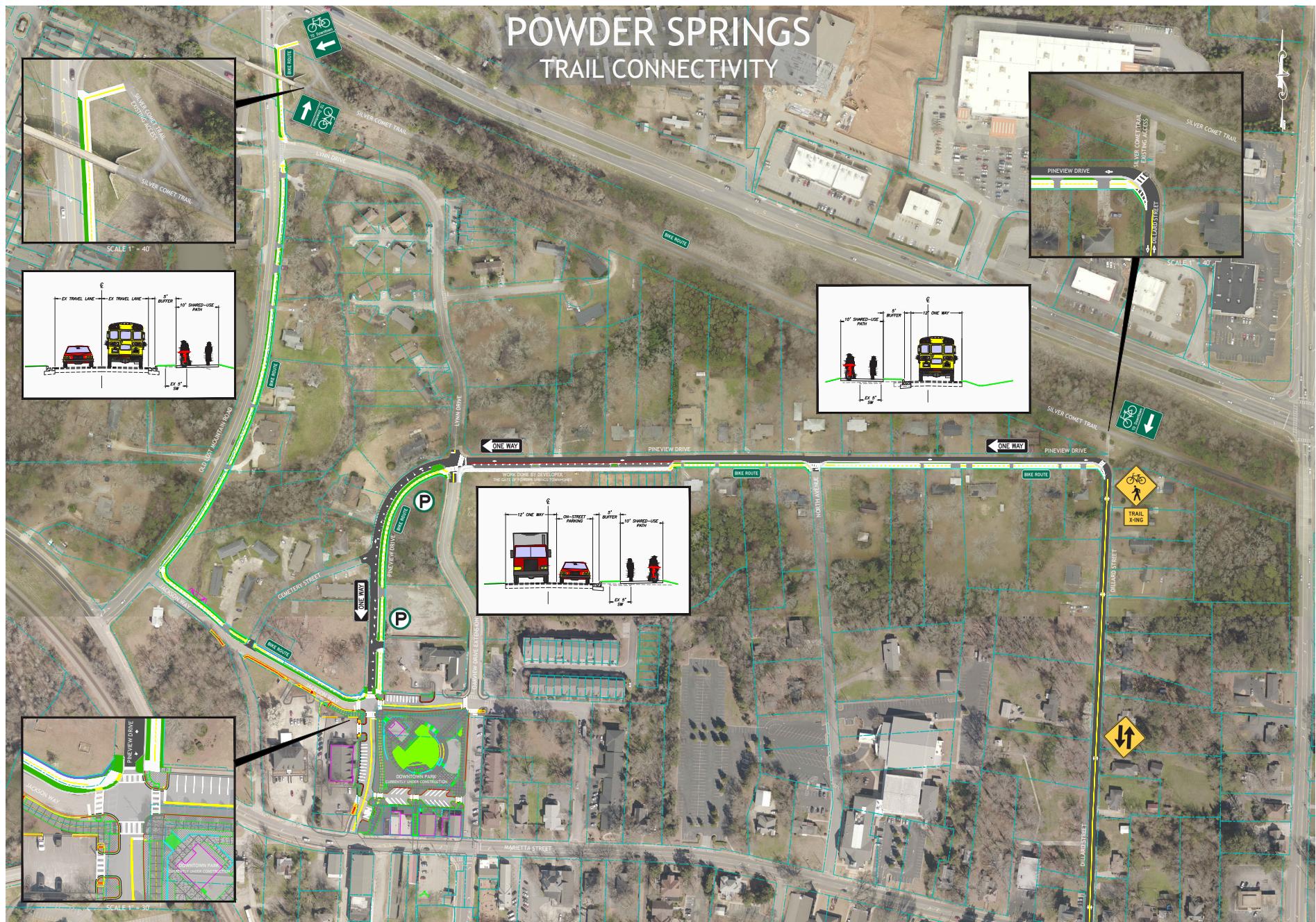


Figure 4.7: Proposed Pineview Drive Concept

GOAL 04 | Promote multi-modal mobility in the Downtown area

Recommendation: Install bikeshare station in the downtown area near the park.

Regional Best Practice: The Cumberland and Town Center Community Improvement Districts (CIDs) along with the City of Smyrna have a collaborative bikeshare program in partnership with Tandem Mobility. With the one-year pilot program, the CIDs aim to explore a regional bikeshare program with additional community partners. The City of Powder Springs can explore opportunities to collaborate with the CIDs to introduce the bikeshare program within the city with stations at the Silver Comet trailhead and in the Downtown area. The bikeshare programs allows residents to rent and return a bike from either program's stations. Users of the system will be able to ride for free for the first hour. After that, it will be \$3 per hour with a \$24 per day maximum.

Figure 4.8 shows images of an example bikeshare program.



Figure 4.8: Bikeshare Program

Recommendation: Consider a shuttle circulator enhancing connectivity from the Park and Ride station and to other locations within the downtown area.

Regional Best Practice: Gwinnett County piloted a “micro-transit” project in Snellville in 2019, which used city passenger buses to provide on-demand rides to and from destinations within a pre-defined area. The program allowed potential micro-transit passengers to request a ride via a mobile application. The app showed the bus location and estimated arrival time, an algorithm routes the closest bus to pick passengers up with “minimal disruption” for other riders. Figure 4.9 shows potential locations for shuttle stops. Detailed information on the pilot program can be found in Appendix A.

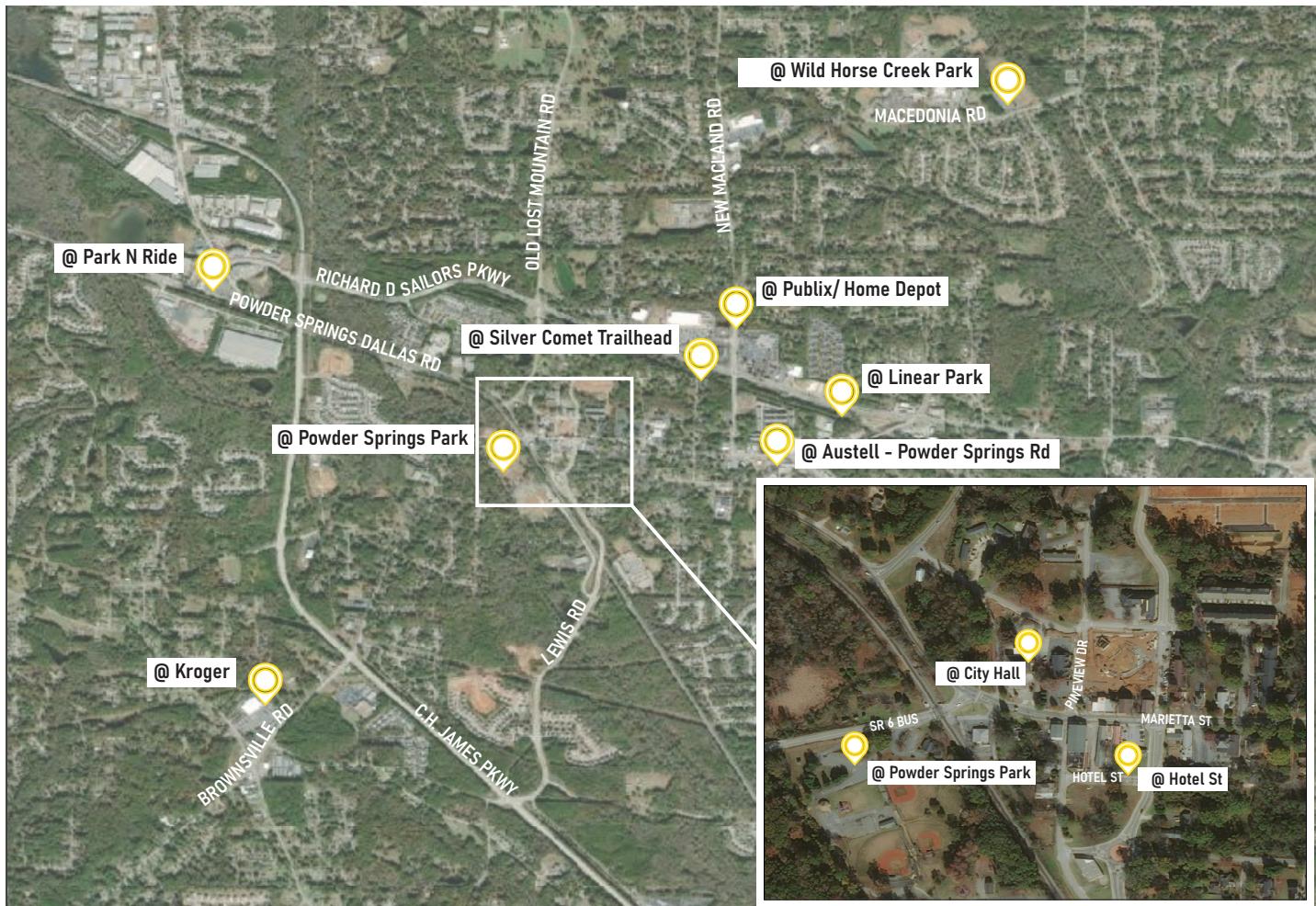


Figure 4.9: Potential Locations for Shuttle Circulator Stops

GOAL 05 | Forecast parking to ensure availability

A parking analysis was conducted to determine if the proposed parking supply would adequately support expected demand generated by the redevelopment and proposed land uses in the downtown area. The Institute of Transportation Engineers (ITE) [Parking Generation](#) 4th edition report was utilized to calculate the generated trips based on the downtown area master plan. ITE provides data regarding peak period parking demand for various types of land uses.

Two parking generation analyses, for the 85th percentile and for the average, each were completed for the two alternate layouts for the downtown master plan. Based on the master plan alternate layouts provided, the proposed spaces will exceed the 85th percentile parking demand. The parking generation worksheet is included in the appendix. Figure 4.10 and 4.11 shows the proposed site plans. Table 4.1, 4.2, 4.3 and 4.4 shows the parking generation summary for each scenario of the proposed master plan.

For some land uses, the parking supply is less than the parking demand; however, the overall parking supply with the parking deck meets the downtown master plan's parking needs for the 85th percentile and the average. With that in mind, it is beneficial to incorporate signage to direct visitors to park in the proposed parking deck so that the parking demand is well distributed. Without the parking deck, the proposed parking will not be enough to meet the demand.

Recommendation: Based on the proposed master plan layout with the parking deck, additional parking is not needed for the weekday peak period. There is enough parking for an average Saturday, however, there is no way to determine the demand for a special event unless specific event details (time of the event and expected number of participants) are provided. Install wayfinding signage to guide visitors to parking in parking deck to ensure that parking demand is distributed throughout the downtown area.

To accommodate additional parking demand, it is recommended to add parallel parking along Cemetery Street. Figure 4.12 shows the addition of 12 parking spots on Cemetery Street. It is recommended to provide 20-ft asphalt on Cemetery Street to accommodate the parallel parking and one-way operation. Re-paving may be required. The concept recommends striping and no curb-gutter work is required. Using information from Cobb GIS parcel map it appears that sufficient right-of-way exists. However, a detailed review of property plats should be conducted prior to any work.

In addition to the Cemetery Street parking, it is recommended to get a temporary easement for parking at the DDA parking lot accessed via Jackson Way Extension. Figure 4.13 shows the proposed layout adding 47 parking spots. A walkway will need to be constructed between the two adjacent buildings to provide a 5-foot walkway for easy access to Oakview Drive. The parcel for parking will also require to be fenced. Parking stops will need to be installed in place of striping.

Site Plan – Site #1



SCALE: 1" = 40' - 0" (24"x36" SHEET)



HUMPHREYS & PARTNERS ARCHITECTS, L.P.

NOVARE GROUP

ARCHITECTURAL SITEPLAN

SP02

POWDER SPRINGS
POWDER SPRINGS, TX

Figure 4.10: Proposed Site Plan #1

Site Plan – Site #2

NOVARE GROUP



Figure 4.11: Proposed Site Plan #2

Table 4.1: Weekday Parking Demand with Parking Deck for Downtown Powder Springs Master Plan - 85th Percentile

Existing Parking		Future Parking		
Total		306	Total	486
3-Hour Limit		100	Proposed Parking	457
All Day Parking		206	Existing Parking to remain	29

Key	LUC	Unit/Qty	Peak Period (Weekday) ¹	Parking Generation (Weekday) ¹	Nearest Parking	# Spaces	Net Difference (Weekday)	Notes
A (Office)	701	18,000 SF	9am-4pm	63	B (Parking Deck)	137	-49	Available parking does not meet demand
C (City Hall)	730	20,000 SF	9am-12pm	123	C (Adjacent) & Deck			
D (Commercial)	820	4,000 SF	11am-3pm; 6pm-7pm	13	D (Adjacent)	15	2	Sufficient for peak demand
E (Park)	411	1.75 Ac	N/A	0	E (Adjacent)	9	9	ITE parking generation data not reported for Weekday
F (Townhomes)	230	7 Units	11pm-6am	11	F (Adjacent)	13	2	Sufficient for peak demand
G (Commercial)	820	4,000 SF	11am-3pm; 6pm-7pm	13	G (Adjacent)	17	4	Sufficient for peak demand
H (Development 1)	221	52 Units	12am-5am	64	H (Adjacent)	71	7	Sufficient for peak demand
I/J/K (Development 2)	221	161 Units	12am-5am	199	I/J/K (Adjacent)	224	25	Sufficient for peak demand
Master Plan Aggregate Parking Demand (Weekday)				486		486	0	Peak weekday demand is met OVERALL; recommend wayfinding signage to guide visitors to the parking deck
1. Source for Parking Generation: ITE Parking Generation, 4th ed - 85th Percentile								

Table 4.2 Weekday Parking Demand without Parking Deck for Downtown Powder Springs Master Plan - 85th Percentile

Existing Parking		Future Parking		
Total		306	Total	390
3-Hour Limit		100	Proposed Parking	361
All Day Parking		206	Existing Parking to remain	29

Key	LUC	Unit/Qty	Peak Period (Weekday) ¹	Parking Generation (Weekday) ¹	Nearest Parking	# Spaces	Net Difference (Weekday)	Notes
A (Office)	701	18,000 SF	9am-4pm	63	N/A	41	-145	Available parking does not meet demand
C (City Hall)	730	20,000 SF	9am-12pm	123	C (Adjacent)			
D (Commercial)	820	4,000 SF	11am-3pm; 6pm-7pm	13	D (Adjacent)	15	2	Sufficient for peak demand
E (Park)	411	1.75 Ac	N/A	0	E (Adjacent)	9	9	ITE parking generation data not reported for Weekday
F (Townhomes)	230	7 Units	11pm-6am	11	F (Adjacent)	13	2	Sufficient for peak demand
G (Commercial)	820	4,000 SF	11am-3pm; 6pm-7pm	13	G (Adjacent)	17	4	Sufficient for peak demand
H (Development 1)	221	52 Units	12am-5am	64	H (Adjacent)	71	7	Sufficient for peak demand
I/J/K (Development 2)	221	161 Units	12am-5am	199	I/J/K (Adjacent)	224	25	Sufficient for peak demand
Master Plan Aggregate Parking Demand (Weekday)			486			486	-96	Peak weekday demand is not met; do not recommend the site plan without the parking deck
1. Source for Parking Generation: ITE Parking Generation, 4th ed - 85th Percentile								

Table 4.3: Weekday Parking Demand with Parking Deck for Downtown Powder Springs Master Plan - Average

Existing Parking		Future Parking		
Total		306	Total	486
3-Hour Limit		100	Proposed Parking	457
All Day Parking		206	Existing Parking to remain	29

Key	LUC	Unit/Qty	Peak Period (Weekday) ¹	Parking Generation (Weekday) ¹	Nearest Parking	# Spaces	Net Difference (Weekday)	Notes
A (Office)	701	18,000 SF	9am-4pm	52	B (Parking Deck)	137	2	Sufficient for peak demand
C (City Hall)	730	20,000 SF	9am-12pm	83	C (Adjacent) & Deck			
D (Commercial)	820	4,000 SF	11am-3pm; 6pm-7pm	11	D (Adjacent)	15	4	Sufficient for peak demand
E (Park)	411	1.75 Ac	N/A	0	E (Adjacent)	9	9	ITE parking generation data not reported for Weekday
F (Townhomes)	230	7 Units	11pm-6am	10	F (Adjacent)	13	3	Sufficient for peak demand
G (Commercial)	820	4,000 SF	11am-3pm; 6pm-7pm	11	G (Adjacent)	17	6	Sufficient for peak demand
H (Development 1)	221	52 Units	12am-5am	64	H (Adjacent)	71	7	Sufficient for peak demand
I/J/K (Development 2)	221	161 Units	12am-5am	199	I/J/K (Adjacent)	224	25	Sufficient for peak demand
Master Plan Aggregate Parking Demand (Weekday)				430		486	56	Peak weekday demand is met OVERALL; recommend wayfinding signage to guide visitors to parking in parking deck
1. Source for Parking Generation: ITE Parking Generation, 4th ed - Average								

Table 4.4: Weekday Parking Demand without Parking Deck for Downtown Powder Springs Master Plan - Average

Existing Parking		Future Parking	
Total	306	Total	390
3-Hour Limit	100	Proposed Parking	361
All Day Parking	206	Existing Parking to remain	29

Key	LUC	Unit/Qty	Peak Period (Weekday) ¹	Parking Generation (Weekday) ¹	Nearest Parking	# Spaces	Net Difference (Weekday)	Notes
A (Office)	701	18,000 SF	9am-4pm	52	N/A	41	-94	Available parking does not meet demand
C (City Hall)	730	20,000 SF	9am-12pm	83	C (Adjacent)			
D (Commercial)	820	4,000 SF	11am-3pm; 6pm-7pm	11	D (Adjacent)	15	4	Sufficient for peak demand
E (Park)	411	1.75 Ac	N/A	0	E (Adjacent)	9	9	ITE parking generation data not reported for Weekday
F (Townhomes)	230	7 Units	11pm-6am	10	F (Adjacent)	13	3	Sufficient for peak demand
G (Commercial)	820	4,000 SF	11am-3pm; 6pm-7pm	11	G (Adjacent)	17	6	Sufficient for peak demand
H (Development 1)	221	52 Units	12am-5am	64	H (Adjacent)	71	7	Sufficient for peak demand
I/J/K (Development 2)	221	161 Units	12am-5am	199	I/J/K (Adjacent)	224	25	Sufficient for peak demand
Master Plan Aggregate Parking Demand (Weekday)			430			390	-40	Peak weekday demand is not met; do not recommend the site plan without the parking deck
1. Source for Parking Generation: ITE Parking Generation, 4th ed - Average								

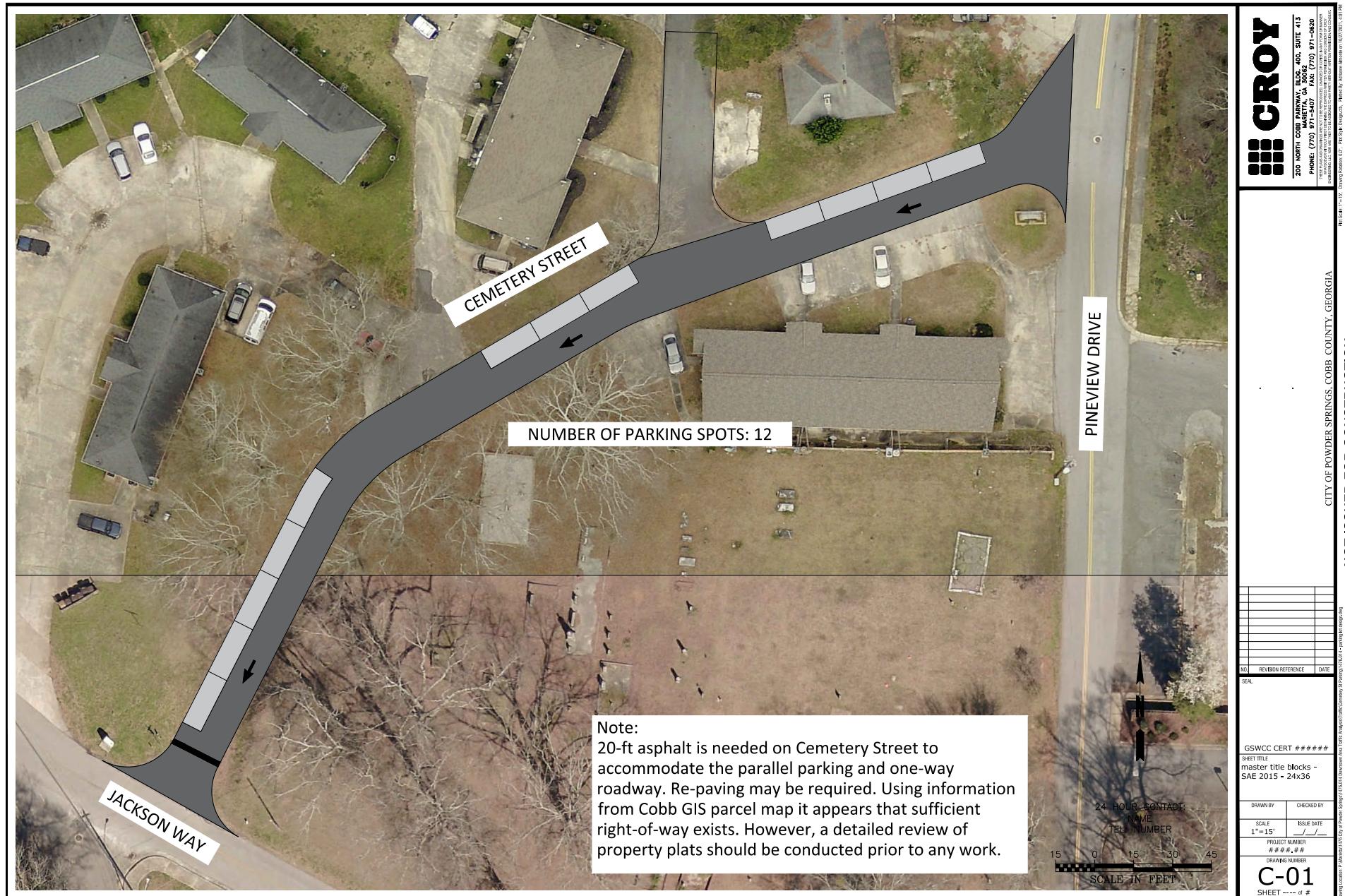


Figure 4.12: Proposed Parking - Cemetery Street

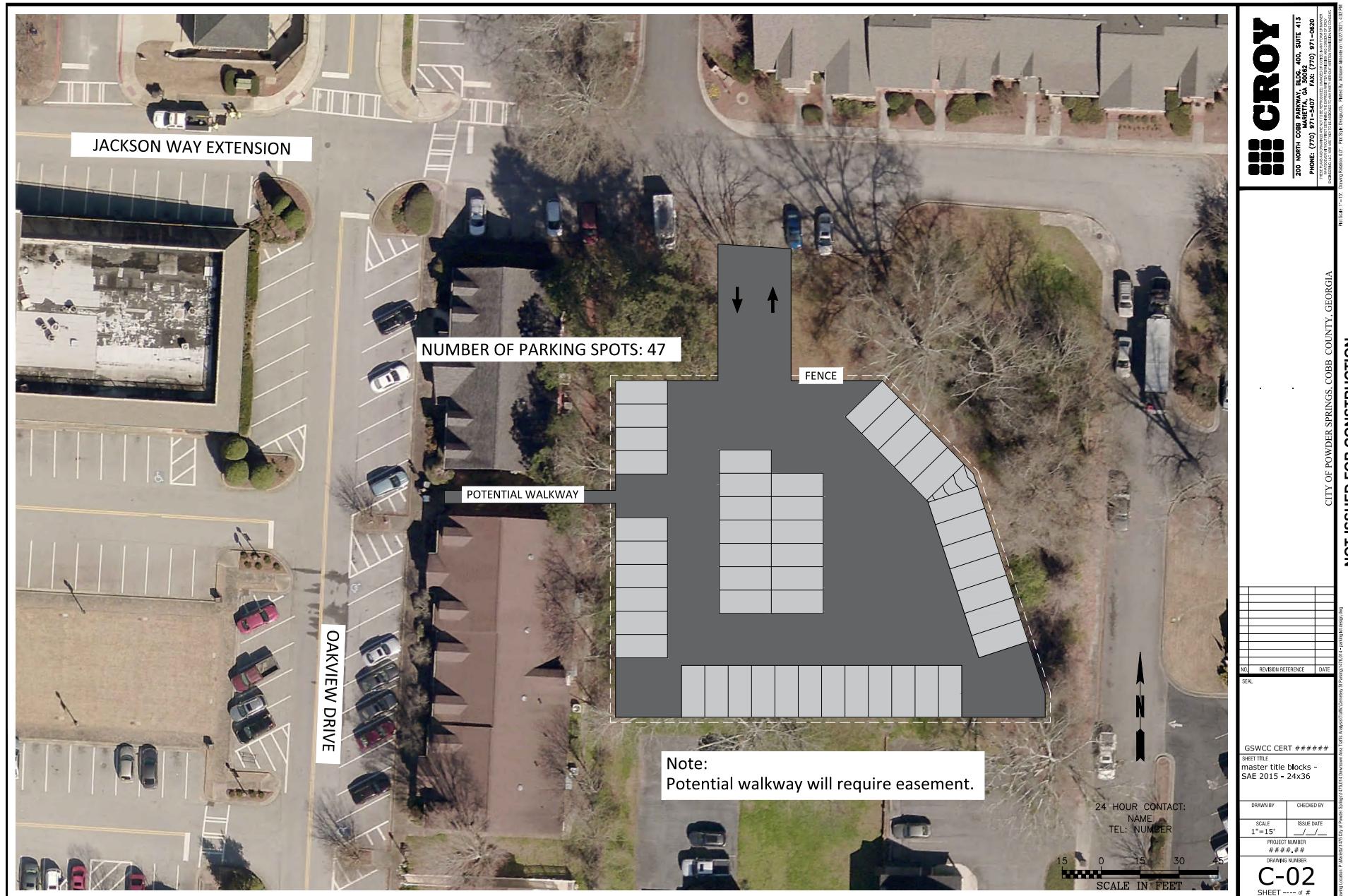


Figure 4.12: Proposed Parking - Cemetery Street

05. Cost Estimates

For each of the aforementioned project recommendations, potential cost estimates were calculated and are shown in Table 5.1.

Table 5.1: Proposed Potential Cost Estimates

	Recommendation	Cost
1.	Re-routing concept	\$450,000 (Approximate construction cost, excluding ROW)
2.	Median Islands	\$6,000 - \$9,000 Per Island
3.	Chicanes	Asphalt - \$10,000 For A Set Of Three Concrete - \$16,000 For A Set Of Three
4.	Speed Tables	\$5,000-\$15,000 Per Table
5.	Pineview Drive - Trail Connection Concept	\$2.09 Million
6.	Pineview Drive - Trail Connection With Parallel Parking Concept	\$2.53 Million
7.	Pineview Drive - Trail Connection With West Parking Concept	\$2.16 Million
8.	New Roadway Connection From Jackson Way Extension To Dillard Street	\$2.27 Million/ Mile
9.	Silver Comet Trailhead	\$440,000 (Approximately)
10.	Bikeshare Program	\$5,000 Per Bike For Capital ¹ Operating Expenses - \$100-200 Per Bike Per Year
11.	Circulator Shuttle	Cost per Revenue Hour - \$92.97*
12.	Additional Parking Spaces	Surface Parking - 5,000 to \$10,000 Per Space Structured Parking - 20,000 to \$25,000 Per Space

*Cost information from Snellville Micro Transit. Detailed costs are in Appendix A. Pineview Drive cost estimates are in Appendix B.

¹Beitsch, R. (2016, March 24). Despite Popularity, Bike Share Programs Often Need Subsidies. Pewtrusts.Org. <https://www.pewtrusts.org/en/research-and-analysis/blogs/state-line/2016/03/24/despite-popularity-bike-share-programs-often-need-subsidies#:~:text=Starting%20a%20bike%20share%20program,founder%20of%20Bike%20Share%20Philadelphia.>

06. Action Plan

For each of the aforementioned project recommendations, the proposed action plan is shown in Table 6.1.

Table 6.1: Proposed Action Plan

Tier - 1 Recommendation: 100-Day Action Items	
1.	Install chicanes or median islands on Marietta Street as a traffic calming measure
2.	Install speed table crosswalks on Marietta Street at Thomas Street and Murray Avenue
Tier - 2 Recommendation: 1-Year Action Items	
3.	Pineview Drive - Trail connection With west parking concept + streetscaping improvements
4.	Get a temporary 3-year easement for parking at the DDA parking lot. Construct walkway and install stop bars to create temporary parking lot
Tier - 3 Recommendation: 3-Year Action Items	
5.	Create a trailhead at the Pineview Drive Trail entrance to include street furniture and public art.
6.	Install bikeshare station in the downtown area near the park
Tier - 4 Recommendation: 5-Year Action Items	
7.	New Roadway Connection From Jackson Way Extension To Dillard Street; construct a one-way roadway pair with Pineview Drive
8.	Identify options for a shuttle circulator enhancing connectivity from the Park and Ride station and to other locations within the downtown area.
9.	Add parallel parking along Cemetery Street

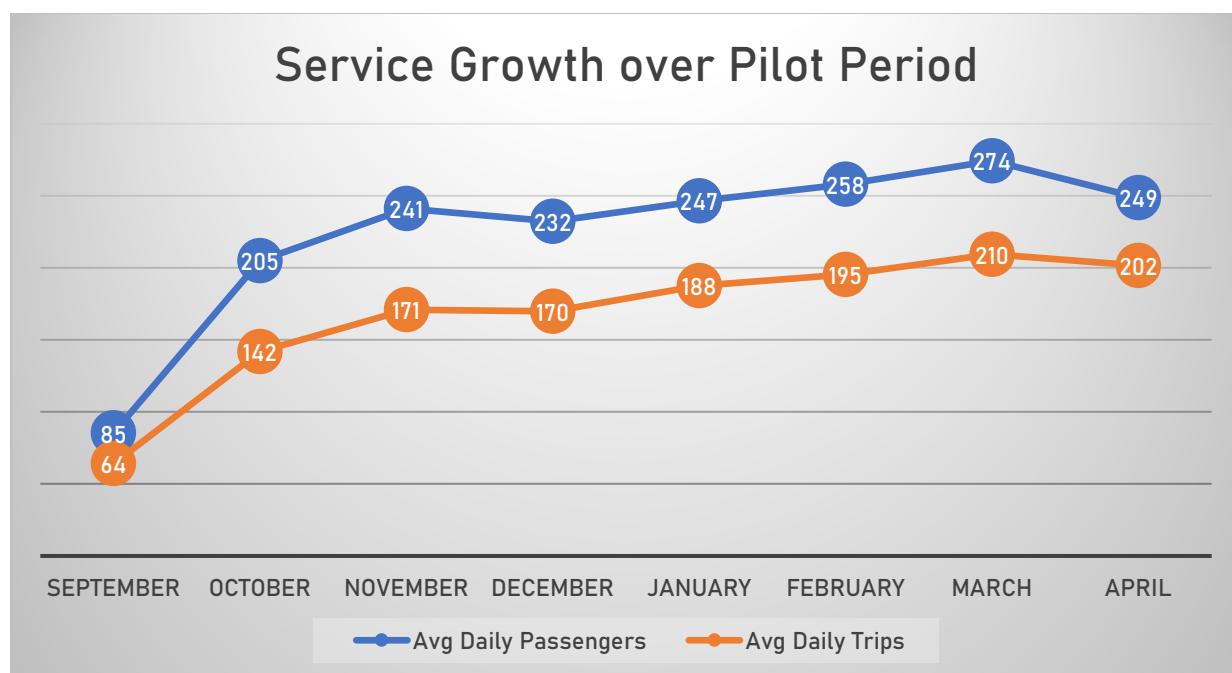
APPENDIX A



Snellville Micro transit Pilot (with Transloc)

The pilot operated from September 17, 2018 – April 30, 2019, in an approximately 17 square mile zone. The project carried a total of 44,598 passengers during this period. The service was operated in an area with no other Gwinnett County Transit service and only one regional commuter bus route to Atlanta.

- Type of Service: Curb to Curb anywhere in a Zone
- Period Covered: September 17, 2018–April 30, 2019
- Highest Single Day Passenger Count was 352 on April 24th
- Highest Single Day Trip Count was 274 on April 24th.
- The average cost per passenger during the pilot was \$23 though this was steadily declining due to increased ridership and software optimization upgrades.
- The average passengers per revenue hour during the pilot was over 4.1.
- The rideshare percentage (more than one trip on a vehicle at the same time) during the pilot ranged from 25% to 35%.
- Approximately 2.6% of the trips were connections to a regional commuter bus route.



FINANCIAL METRICS

Total Cost of Pilot/Program	1,065,922
Cost per Revenue Hour	\$92.97
Cost per Vehicle Hour	\$75.77
Cost per Trip	\$30.70
Cost per Revenue Mile	\$6.36
Subsidy per Ride	-
Cost per Vehicle Mile	\$5.25
Cost per Passenger/Boarding:	\$22.98
Farebox Recovery (%)	0

PASSENGER METRICS	
Unlinked Passenger Trips	44,598
Passengers per trip	1.33
Passenger Miles Traveled	159,187
Avg Passenger Miles	3.57
Avg Daily Boarding	244
Boarding per Revenue hour	4.1
Avg Rides per Vehicle hour	2.46
Avg Ride Requests per Hour	Not Available
Avg Wait Time	20.9 minutes
Avg Ride Time	11.3 minutes
Percent (or total) of Rides Generated	
• App	85%
• Phone	12%
• Web	Not Available
• Walk Ups	3%
Percent (or total) of Rides	
• Completed	33,376
• Canceled	15,482
• No Show	3,280
• Denied	-

VEHICLE METRICS	
Peak Number of Vehicles	6
Total Vehicle Hours	14,089
Avg Daily Vehicle Hours	74
Total Vehicle Miles	197,448
Avg Daily Vehicle Miles	1,065
Total Revenue Miles	162,143
Avg Daily Revenue Miles	879
Total Revenue Hours	11,221
Avg Daily Revenue Hours	60



APPENDIX B



Cost Estimate

Project:

Downtown Area Traffic Analysis - Cemetery

Date: 10/27/2021

Project No.: 1476.014

Prepared By: AA

Total Estimated Construction Cost:

41,247.45

E&C Rate 10.0

4,124.74

Inflation Rate

Total Construction Cost

45,372,19

Right-of-way

0.00

ReImb Utilities

0.00

Grand Total Project Costs

45,372,19



Cost Estimate

Project:

Downtown Area Traffic Analysis - Pakring L

Date: 10/27/2021

Project No.: 1476.014

Prepared By: AA

Total Estimated Construction Cost:

27,438.72

E&C Rate 10.0

2,743.87

Inflation Rate

Total Construction Cost

30,182,59

Right-of-way

0.00

ReImb. Utilities

0,00

Grand Total Project Costs

30,182,59



Cost Estimate

Project:

Concept - Trail Connection

Date: 09/30/2019

Project No.: 1476.006

Prepared By: EMB

Total Estimated Construction Cost:

1,905,218.85

E&C Rate 10.0

190,521.88

Inflation Rate

Total Construction Cost

2,095,740.73

Right-of-way

0.00

ReImb. Utilities

0.00

Grand Total Project Costs

2,095,740.73



Cost Estimate

Project: Concept - Trail Connection-Parallel Parking

Date: 09/30/2019

Project No.: 1476.006

Prepared By: EMB

Item Number	Quantity	Unit	Unit Price	Item Description	Cost
150-1000	1	LS	100,000.00	TRAFFIC CONTROL -	100,000.00
210-0100	1	LS	700,000.00	GRADING COMPLETE -	700,000.00
310-1101	1,600	TN	25.04	GR AGGR BASE CRS, INCL MATL	40,069.01
402-1812	80	TN	95.00	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	7,600.00
402-3121	310	TN	100.00	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL	31,000.00
402-3130	766	TN	105.00	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL	80,430.00
402-3190	155	TN	100.00	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL	15,500.00
413-0750	1,400	GL	1.69	TACK COAT	2,368.45
432-0206	7,859	SY	2.40	MILL ASPH CONC PVMT, 1 1/2 IN DEPTH	18,882.06
441-0014	300	SY	40.14	DRIVEWAY CONCRETE, 4 IN TK	12,042.00
441-0106	3,583	SY	56.50	CONC SIDEWALK, 6 IN	202,439.50
441-4020	885	SY	52.31	CONC VALLEY GUTTER, 6 IN	46,297.01
441-5002	133	LF	20.29	CONCRETE HEADER CURB, 6 IN, TP 2	2,698.32
441-6216	4,682	LF	20.42	CONC CURB & GUTTER, 8 IN X 24 IN, TP 2	95,605.40
500-3002	50	CY	993.20	CLASS AA CONCRETE	49,659.89
500-3201	75	CY	824.60	CLASS B CONCRETE, RETAINING WALL	61,844.64
500-3800	364	CY	1,238.05	CLASS A CONCRETE, INCL REINF STEEL	450,651.09
511-1000	6,493	LB	0.98	BAR REINF STEEL	6,391.55
515-2020	775	LF	37.73	GALV STEEL PIPE HANDRAIL, 2 IN, ROUND	29,243.23
610-1055	156	LF	1.93	REM GUARDRAIL	301.21
641-1200	226	LF	20.86	GUARDRAIL, TP W	4,714.96
641-5001	2	EA	1,250.14	GUARDRAIL ANCHORAGE, TP 1	2,500.28
641-5012	2	EA	1,927.19	GUARDRAIL ANCHORAGE, TP 12	3,854.38
653-1501	350	LF	0.64	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	223.23
653-1502	1,775	LF	0.66	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	1,167.75
653-1704	83	LF	6.95	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	576.71
653-1804	881	LF	2.42	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	2,135.36
653-3502	3,174	GLF	0.32	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, YELLOW	1,010.47
653-6004	18	SY	3.50	THERMOPLASTIC TRAF STRIPING, WHITE	63.02
700-9300	4,000	SY	7.40	SOD	29,610.41
	1	LS	35,000.00	SIGNING	35,000.00
	1	LS	200,000.00	STORM	200,000.00
	1	LS	70,000.00	EROSION CONTROL	70,000.00

Total Estimated Construction Cost:

2,303,879.91

E&C Rate 10.0

230,387.99

Inflation Rate

Total Construction Cost

2,534,267.91

Right-of-way

0.00

ReImb. Utilities

0.00



Cost Estimate

Project: Concept - Trail Connection-West Parking
 Project No.: 1476.006

Date: 10/04/2019

Prepared By: EMB

Item Number	Quantity	Unit	Unit Price	Item Description	Cost
150-1000	1	LS	80,000.00	TRAFFIC CONTROL -	80,000.00
210-0100	1	LS	600,000.00	GRADING COMPLETE -	600,000.00
310-1101	500	TN	25.04	GR AGGR BASE CRS, INCL MATL	12,521.56
402-1812	66	TN	95.00	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	6,270.00
402-3130	661	TN	105.00	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM M	69,405.00
413-0750	400	GL	1.69	TACK COAT	676.70
432-0206	7,859	SY	2.40	MILL ASPH CONC PVMT, 1 1/2 IN DEPTH	18,882.06
441-0014	200	SY	40.14	DRIVEWAY CONCRETE, 4 IN TK	8,028.00
441-0106	3,557	SY	56.50	CONC SIDEWALK, 6 IN	200,970.50
441-4020	675	SY	52.31	CONC VALLEY GUTTER, 6 IN	35,311.28
441-5002	133	LF	20.29	CONCRETE HEADER CURB, 6 IN, TP 2	2,698.32
441-6216	2,858	LF	20.42	CONC CURB & GUTTER, 8 IN X 24 IN, TP 2	58,359.72
500-3002	50	CY	993.20	CLASS AA CONCRETE	49,659.89
500-3201	75	CY	824.60	CLASS B CONCRETE, RETAINING WALL	61,844.64
500-3800	364	CY	1,238.05	CLASS A CONCRETE, INCL REINF STEEL	450,651.09
500-9999	20	CY	209.70	CLASS B CONC, BASE OR PVMT WIDENING	4,193.91
511-1000	6,493	LB	0.98	BAR REINF STEEL	6,391.55
515-2020	775	LF	37.73	GALV STEEL PIPE HANDRAIL, 2 IN, ROUND	29,243.23
610-1055	156	LF	1.93	REM GUARDRAIL	301.21
641-1200	226	LF	20.86	GUARDRAIL, TP W	4,714.96
641-5001	2	EA	1,250.14	GUARDRAIL ANCHORAGE, TP 1	2,500.28
641-5012	2	EA	1,927.19	GUARDRAIL ANCHORAGE, TP 12	3,854.38
653-1501	128	LF	0.64	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	81.64
653-1502	1,775	LF	0.66	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	1,167.75
653-1704	83	LF	6.95	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	576.71
653-1804	881	LF	2.42	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	2,135.36
653-3502	3,174	GLF	0.32	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, YELLOW	1,010.47
653-6004	18	SY	3.50	THERMOPLASTIC TRAF STRIPING, WHITE	63.02
700-9300	3,000	SY	7.40	SOD	22,207.81
	1	LS	35,000.00	SIGNING	35,000.00
	1	LS	150,000.00	STORM	150,000.00
	1	LS	50,000.00	EROSION CONTROL	50,000.00

Total Estimated Construction Cost:

1,968,721.04

E&C Rate 10.0

196,872.10

Inflation Rate

2,165,593.14

Total Construction Cost

0.00

Right-of-way

0.00

ReImb. Utilities

0.00

Grand Total Project Costs

2,165,593.14