UPDATED PLEASANT HILL ROAD CONCEPT

Prepared by KCI Technologies, Inc.
FINAL REPORT - August 2024

Introduction

KCI Technologies, Inc. has performed an update of transportation improvement concepts and potential projects along Pleasant Hill Road from Old Norcross Road to Club Drive. **Figure 1** illustrates the study limits. This report summarizes the findings for the Updated Pleasant Hill Road Concept.

In 2019 the Pleasant Hill Road at I-85 Interchange Assessment study was completed. This study identified intersection projects along Pleasant Hill Road, potential new exit ramps along I-85, and two potential interchange alternatives to provide additional capacity at the I-85 at Pleasant Hill Road to handle future traffic volume growth. Some recommendations from this study were considered in this study.

Since then, the Gwinnett Place Mall Site Revitalization Strategy has been completed, to provide a framework for redevelopment. The transportation system will need to be ready to accommodate future changes in travel patterns and activity in the area and along Pleasant Hill Road. For the purposes of this study, additional development trips expected to travel in the Pleasant Hill Road corridor were added to the future year capacity analysis.

Gwinnett County is planning for Bus Rapid Transit along Satellite Boulevard. The most recent study indicated the need for transit priority lanes and/or bus queue jump lanes at major intersections to accommodate future transit. This study considered options to accommodate future transit at the intersection of Pleasant Hill Road and Satellite Boulevard. Additionally, project concepts along Pleasant Hill Road considered accommodating future planned trails in the study area. The Gwinnett Countywide Trails Master Plan includes the proposed trail along Venture Drive/Venture Parkway crossing Pleasant Hill Road.

A separate Interchange Modification Report (IMR) is currently underway for the Interchange of Pleasant Hill Road at I-85. This study will analyze future traffic conditions and identify a preferred interchange improvement project. For the purposes of this study, the previously identified preferred alternative to reconstruct and add additional travel lanes (capacity) to the Diverging Diamond Interchange was included in the traffic analysis of the Pleasant Hill Road corridor.

Most recently, the Gwinnett Place Area Mobility and Traffic Study was completed in 2022. This identified potential projects in the Gwinnett Place CID area. This study considered the above efforts, as well past planning efforts, to analysis and refine potential projects as stated below.

This effort for the Updated Pleasant Hill Road Concept included:

- Update and revise project concept layouts for major intersections along the corridor
- Updated cost estimates (planning level opinion of probable cost)
- Collecting traffic volumes along Pleasant Hill Road
- Forecast traffic volumes for potential design year of 2054
- Perform traffic capacity analysis for existing year and design year (no-build and build conditions)
    - Synchro Studio 11 Software was utilized to provide intersection capacity results as well as network performance results. Results reported from either HCM methodology or SimTraffic microsimulation.
- Review crash history to identify safety improvements
    - GDOT's AASHTOWare Safety database was utilized
- Review pedestrian, bicycle, and transit conditions and identify potential improvements

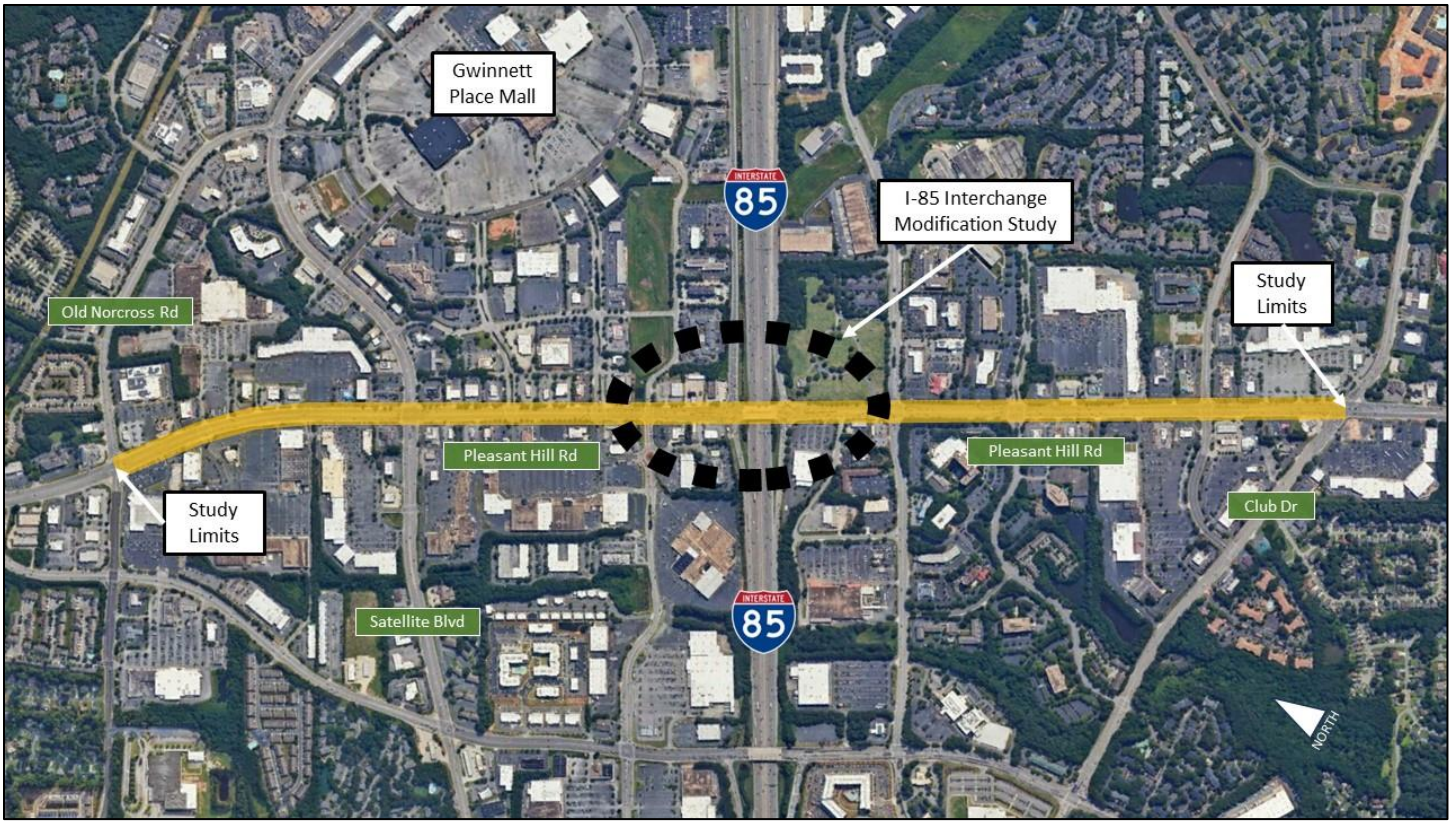

Figure 1: Study Limits

Proposed Projects

This report identifies nine projects along Pleasant Hill Road. **Figure 2** illustrates the project locations, beginning from north to south along the corridor. **Table 1** identifies the projects and summarizes the improvement, estimated project cost, and implementation recommendation. Concept layouts are included in **Appendix A**. The planning level opinion of probable construction cost estimates are included in **Appendix B**. The projects are further explained in this section.

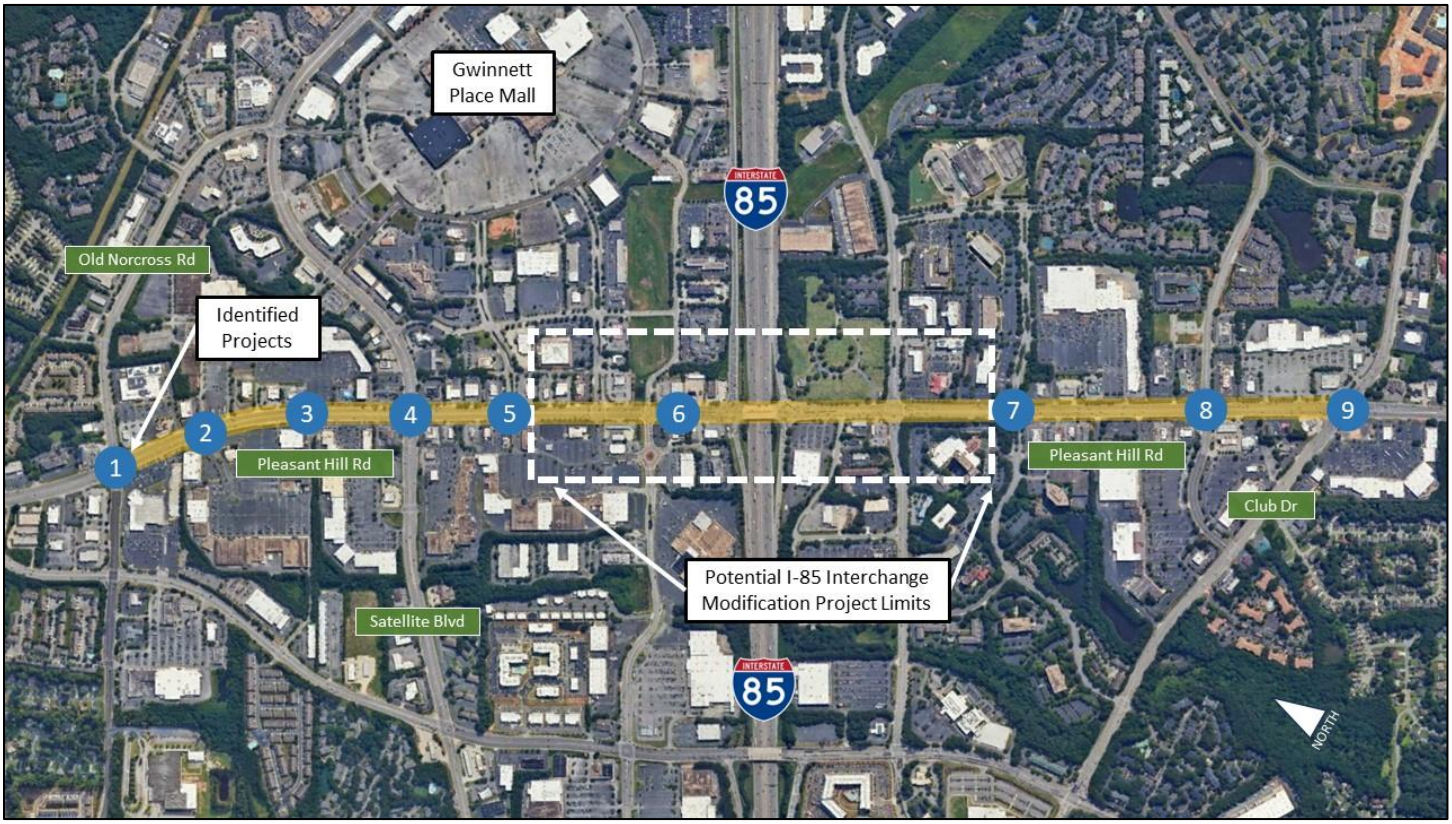

Figure 2: Project Location Map

Table 1: Proposed Projects				
Project ID	**Location**	**Improvement**	**Cost Estimate**	**Implementation Recommendation**
1	Pleasant Hill Rd at Old Norcross Road	Dual right-turn lanes on westbound approach of Old Norcross Rd	$2,489,000	SPLOST candidate project
2	Pleasant Hill Rd at Gwinnett Prado driveway	Add left-turn lane on westbound approach; restripe eastbound approach	$731,000	SPLOST & Development Partnership
3	Pleasant Hill Rd at Gwinnett Station driveway	Add separate left-turn lane on westbound approach	$580,000	SPLOST & Development Partnership
4A	Pleasant Hill Rd at Satellite Blvd	Median U-turn Intersection; redirect eastbound and westbound left-turn movements along Satellite Blvd WITH U-turn loon for large trucks/buses; add westbound right-turn lane along Satellite Blvd; add two transit queue jump lanes in median	$4,712,000	SPLOST candidate project
4B	Pleasant Hill Rd at Satellite Blvd	Same Median U-turn improvements as 4A, except redirected movements along Satellite Blvd would NOT have U-turn loons	$1,676,000	SPLOST candidate project
4 Alternative	Pleasant Hill Rd at Satellite Blvd	Displaced Left-turn Intersection; redirect northbound and southbound left-turn movements along Pleasant Hill Road; removes two adjacent signals along Pleasant Hill Road	$39,088,000	SPLOST & Federal candidate project
5	Pleasant Hill Rd at Mall Blvd	Add pedestrian bridge over Pleasant Hill Rd; maintains traffic signal and includes lane modifications on side-streets	$11,270,000	SPLOST & Federally funded project
*	Pleasant Hill Rd at Gwinnett Place Drive	Maintain traffic signal and includes lane modifications	**	Combined with I-85 Interchange Project
*	Pleasant Hill Rd at Venture Drive/Venture Parkway	Remove traffic signal	**	Combined with I-85 Interchange Project
6	Pleasant Hill Rd at Venture Drive/Venture Parkway	Create new street connection under Pleasant Hill Rd	$28,362,000	Combined with I-85 Interchange Project
*	Pleasant Hill Rd at I-85 Interchange	Separate Interchange Project to identify preferred alternative	**	--
*	Pleasant Hill Rd at Shackleford Rd / Breckenridge Rd	Maintain traffic signal and includes lane modifications	**	Combined with I-85 Interchange Project
7	Pleasant Hill Rd at Crestwood Parkway/Koger Blvd	Add dual left-turn lanes on eastbound and westbound approaches	$768,000	SPLOST candidate project
8	Pleasant Hill Rd at Sweetwater Road	Extend westbound left-turn lane along Sweetwater Rd	$134,000	SPLOST candidate project
9	Pleasant Hill Rd at Club Drive	Add northbound right-turn lane along Pleasant Hill Rd	$520,000	SPLOST candidate project

Project 1

- Location: Pleasant Hill Road at Old Norcross Rd
- Improvement: Dual right-turn lanes on westbound approach of Old Norcross Rd
- Additional description: Add westbound dual right-turn lanes, add right-turn overlap signal phase, and prohibits northbound and southbound U-turn movements along Pleasant Hill Road
- Location identified in prior study: GCPID Area Mobility Study – Project I-9, Tier 1 (Note: different project)
- Vehicular Benefit: Reduces vehicle delay, primarily for the westbound right-turn movement. The capacity comparison table shows the decrease in delay and percent improvement. The forecast Year 2054 right-turn volume is 780 (AM) and 655 (PM). In the existing year (2024), the overall intersection operates at LOS D (AM) and D (PM).
- Pedestrian, Bicycle, and Transit: The project will rebuild sidewalk. No transit route at this intersection.
- Considerations: The project will require right-of-way and modification to parking spaces. One traffic signal pole and the GCDOT CCTV pole will need to be relocated.
- Concept Layout: Shown in **Exhibit A**.

Capacity Comparison (Design Year 2054)		Westbound Right-Turn Movement		Overall Intersection	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
No-Build Conditions	average vehicle delay (sec)	228	165	60	74
	LOS	F	F	E	E
Build Conditions	average vehicle delay (sec)	54	14	51	60
	LOS	D	B	D	E
% Improvement (delay)		76%	92%	15%	19%

Opinion of Probable Cost Summary	
PE (Engineering)	$195,000
ROW (Right-of-way)	$268,000
CST (Construction)	$1,701,000
Contingency	$325,000
Total Cost Estimate	**$2,489,000**

- Additional Alternatives: The study evaluated two additional options at the intersection of Pleasant Hill Road at Old Norcross Rd. These are listed in the table below along with the estimated intersection delay/LOS. One concern identified was the existing 48-inch water main located in the shoulder along Old Norcross Road. The extension of the single right-turn lane to Fairlie Drive would likely avoid impacting the 48in water main while still providing operational benefits. Additionally, if the right-turn overlap signal phase is added then the U-turn movement along the Pleasant Hill Road southbound approach would have to be prohibited. (Note: The traffic software model for the Old Norcross Road dual right-turn lane plus the overlap phase was conducted so that no green time was taken from the mainline (Pleasant Hill Road). As the table shows, there is a similar benefit in delay reduction for both dual right-turn lane options.

Capacity Comparison (Design Year 2054)		Westbound Right-Turn Movement		Overall Intersection	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
No-Build Conditions	average vehicle delay (sec)	228	165	60	74
	LOS	F	F	E	E
Build Conditions (dual right-turns + RT overlap signal phase) (NO U-turn)	average vehicle delay (sec)	54	14	51	60
	LOS	F	B	D	E
Build Conditions (dual right-turns, without RT overlap signal phase) (Allow U-turn)	average vehicle delay (sec)	57	16	53	59
	LOS	E	B	D	E
Build Conditions (single right-turn lane extended, with RT overlap signal phase) (NO U-turn)	average vehicle delay (sec)	190	28	55	61
	LOS	F	C	D	E

- The existing right-turn lane is 220-feet long. Extending the right turn lane to Fairlie Drive would provide 450-feet of storage. The dual right-turn lane concept includes 385-feet of storage. By providing additional storage, the queue for the right-turning vehicles and the through vehicles will impact each other less. For existing year conditions, the traffic simulation model reported 95th percentile queue lengths was 270 feet for the right-turn vehicles and 1,247 feet for the through vehicles in the AM peak hour, confirming the through vehicle queue blocks vehicles desiring to make the right-turn. The traffic simulation model reported 95th percentile queue lengths was 238 feet for the right-turn vehicles and 409 feet for the through vehicles in the PM peak hour.

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Project 2

- Location: Pleasant Hill Road at Gwinnett Prado Driveway
- Improvement: Add westbound left-turn lane along driveway
- Additional description: Create two lanes along the Gwinnett Prado driveway; change striping on eastbound approach to one left-turn lane and one shared through/right-turn lane.
- Identified in prior study: 2019 Corridor Study
- Vehicular Benefit: Reduces vehicle delay, primarily for the westbound approach. The capacity comparison table shows the decrease in delay and percent improvement. The addition of a left-turn lane will provide additional capacity for the Pleasant Hill Road mainline through movement and accommodate future redevelopment. In the existing year (2024), the overall intersection operates at LOS A (AM) and B (PM).
- Pedestrian, Bicycle, and Transit: Project maintains pedestrian crosswalks. There is no transit route along this section of Pleasant Hill Road.
- Considerations: This is a potential development partnership project.
- Concept Layout: Shown in **Exhibit A**.

Capacity Comparison (Design Year 2054)		Overall Intersection	
		AM Peak Hour	PM Peak Hour
No-Build Conditions	average vehicle delay (sec)	4	17
	LOS	A	B
Build Conditions	average vehicle delay (sec)	4	11
	LOS	A	B
% Improvement (delay)		--	35%

Opinion of Probable Cost Summary	
PE (Engineering)	$64,000
ROW (Right-of-way)	--
CST (Construction)	$609,000
Contingency	$58,000
Total Cost Estimate	**$731,000**

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Project 3

- Location: Pleasant Hill Road at Gwinnett Station Driveway
- Improvement: Add westbound left-turn lane along driveway
- Additional description: Add westbound left-turn lane, change striping on eastbound approach to be one left-turn lane and one shared through/right-turn lane
- Identified in prior study: 2019 Corridor Study
- Vehicular Benefit: Reduces vehicle delay, primarily for the westbound approach. The capacity comparison table shows the decrease in delay and percent improvement. The addition of a left-turn lane will provide additional capacity for the Pleasant Hill Road mainline through movement and accommodate future redevelopment. In the existing year (2024), the overall intersection operates at LOS A (AM) and B (PM).
- Pedestrian, Bicycle, and Transit: Project adds one pedestrian crosswalk across Pleasant Hill Road. There is no transit route along this section of Pleasant Hill Road.
- Considerations: This is a potential development partnership project.
- Concept Layout: Shown in **Exhibit A**.

Capacity Comparison (Design Year 2054)		Overall Intersection	
		AM Peak Hour	PM Peak Hour
No-Build Conditions	average vehicle delay (sec)	6	10
	LOS	A	B
Build Conditions	average vehicle delay (sec)	5	10
	LOS	A	B
% Improvement (delay)		17%	--

Opinion of Probable Cost Summary	
PE (Engineering)	$51,000
ROW (Right-of-way)	--
CST (Construction)	$483,000
Contingency	$46,000
Total Cost Estimate	**$580,000**

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Project 4A / Project 4B

- Location: Pleasant Hill Rd at Satellite Blvd
- Improvement: Median U-turn Intersection
- Additional Description: Redirect eastbound and westbound left-turn movements along Satellite Blvd to the adjacent traffic signals; add a westbound right-turn lane along Satellite Blvd; add two transit queue jump lanes in median along Satellite Blvd.
- Identified in prior study: GCPID Area Mobility Study – Project I-2, Tier 1
- Vehicular Benefit of Preferred Improvement: Reduces vehicle delay for the overall intersection. The capacity comparison table shows the decrease in delay and percent improvement at the one intersection of Pleasant Hill Road at Satellite Blvd only (does not include additional intersections). The removal of eastbound and westbound left-turn movements provides additional capacity for the heavier through movements while still providing adequate capacity at the two adjacent signals on Satellite Boulevard. In the design year (2054), Satellite Blvd at Mall Corners is expected to operate at LOS A (AM) and LOS B (PM), and Satellite Blvd at Market St is expected to operate at LOS A (AM) and LOS B (PM). In the existing year (2024), the overall Satellite Blvd intersection operates at LOS D (AM) and C (PM).
- Pedestrian, Bicycle, and Transit: This project will add transit queue jump lanes to accommodate the proposed Satellite Blvd Bus Rapid Transit Route (BRT). The lanes are proposed in the median (replacing the existing dual-left-turn lanes). The project proposes median refuge islands in both crosswalks across Satellite Blvd.
- Considerations: **Project 4A** - The concept layout illustrates two potential U-turn loons for large trucks/buses. The u-turn loon provides an 80-foot turning radius compared to the current width of three travel lanes. Gwinnett County Transit bus route #25 currently makes the westbound left-turn from Satellite Blvd to Pleasant Hill Road. This movement could either be accommodated by the u-turn loon at the intersection to the west or the bus route could be relocated.
- Considerations: **Project 4B** – The option to not include the two u-turn loons for large trucks/buses. Observations during one weekday AM and PM peak periods were conducted to determine whether U-turn loons would be necessary at the adjacent signalized intersections. Based on the observed counts, there were 3 heavy vehicles (1 eastbound, 2 westbound) making left-turn movements from Satellite Boulevard during the AM peak hour and 5 heavy vehicles (2 eastbound, 3 westbound) during the PM peak hour. Reviewing the existing street network, it is likely large vehicles choose other routes to make these two left-turn movements. Based on the low number of heavy vehicles, U-turn loons could potentially be removed from the project.
- Considerations: Project 4A potentially includes one property displacement to construct the u-turn loon located to the east.
- Concept Layout: Shown in **Exhibit A**.

Capacity Comparison (Design Year 2054)		Overall Intersection	
		AM Peak Hour	PM Peak Hour
No-Build Conditions	average vehicle delay (sec)	80	63
	LOS	E	E
Build Conditions	average vehicle delay (sec)	51	28
	LOS	D	C
% Improvement (delay)		36%	56%

Opinion of Probable Cost Summary		
	Project 4A: With U-turn Loons	**Project 4B: WithOUT U-turn Loons**
PE (Engineering)	$284,000	$150,000
ROW (Right-of-way)	$1,970,000	$226,000
CST (Construction)	$2,064,000	$1,092,000
Contingency	$394,000	$208,000
Total Cost Estimate	**$4,712,000**	**$1,676,000**

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Project 4 - Alternative

- Location: Pleasant Hill Road at Satellite Blvd
- Improvement: Displaced Left-Turn intersection
- Additional Description: Displace the northbound and southbound left-turn movements along Pleasant Hill Road approaches; add eastbound and westbound right-turn slip-lanes from Satellite Blvd; add two transit queue jump lanes along the right-side of Satellite Blvd.
  To accommodate this project, the two adjacent traffic signals (full movement intersections) at Gwinnett Station and at Mall Blvd, would be converted to right-in/right-out intersections.
- Identified in prior study: GCPID Area Mobility Study – Project I-2, Tier 1
- Vehicular Benefit of Preferred Improvement: Reduces vehicle delay for the overall intersection. Displacing the northbound and southbound left-turn movements would provide a capacity improvement. The capacity comparison table shows the decrease in delay and percent improvement at the one intersection of Pleasant Hill Road at Satellite Blvd only (does not include additional intersections). In the existing year (2024), the overall Satellite Blvd intersection operates at LOS D (AM) and C (PM).
- Pedestrian, Bicycle, and Transit: This project will add transit queue jump lanes to accommodate the proposed Satellite Blvd Bus Rapid Transit Route (BRT). The lanes are proposed along the right-side of Satellite Blvd. The project proposes median refuge islands in both crosswalks across Pleasant Hill Road.
- Considerations:
  - This project would require significant right-of-way, including potentially 8 property displacements, and modification to parking spaces.
  - Property owners may have a major concern with removing the two existing traffic signals at Gwinnett Station and at Mall Blvd.
- Concept Layout: Shown in **Exhibit B**.

Capacity Comparison (Design Year 2054)		Overall Intersection	
		AM Peak Hour	PM Peak Hour
No-Build Conditions	average vehicle delay (sec)	80	63
	LOS	E	E
Build Conditions, Alternate Improvement	average vehicle delay (sec)	47	31
	LOS	D	C
% Improvement (delay)		41%	51%

Opinion of Probable Cost Summary	
PE (Engineering)	$1,401,000
ROW (Right-of-way)	$22,981,000
CST (Construction)	$12,372,000
Contingency	$2,334,000
Total Cost Estimate	**$39,088,000**

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Project 5

- Location: Pleasant Hill Road at Mall Blvd
- Improvement: Construct pedestrian bridge over Pleasant Hill Rd
- Additional description: Construct a pedestrian bridge over Pleasant Hill Rd. Maintain the traffic signal and full-movement intersection. The project includes lane modifications on side-streets: maintains both side-street approach lanes and remove one receiving lane on the east side of the intersection
- Identified in prior study: GCPID Area Mobility Study – Project S-5, Tier 2
- Project status: A separate study is underway to develop the concept layout and cost estimate. The latest cost estimate is shown below.
- Vehicular Benefit: Concept maintains access to developments. The bridge location is not expected to be impacted by other planned transportation projects, including the I-85 Interchange reconstruction.
- Pedestrian, Bicycle, and Transit: The construction of a pedestrian overpass would provide a safe and efficient connection between the proposed Gwinnett Place Mall redevelopment site and destinations along both sides of Pleasant Hill Rd. Separately constructed multiuse path segments would need to be constructed to connect the pedestrian bridge to destinations. The project would not impact existing transit bus routes.
- Considerations: The project will require right-of-way and modification to parking spaces. The existing traffic signal will need to be replaced to accommodate the pedestrian bridge. Visibility of the traffic signals under the pedestrian bridge will need to be provided.
- Concept Layout: Location shown in **Exhibit C** of the latest concept layout.

Opinion of Probable Cost Summary	
PE (Engineering)	$1,200,000
ROW (Right-of-way)	$2,058,000
CST (Construction)	$6,767,000
Contingency	$1,245,000
Total Cost Estimate	**$11,270,000**

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Project 6

- Location: Pleasant Hill Road at Venture Dr/Venture Pkwy
- Improvement: Project proposes creating a new street connection underneath Pleasant Hill Rd which includes a multiuse path
- Additional description: Construct a new bridge and raise Pleasant Hill Road approximately 5-6 feet to accommodate Venture Drive/Venture Parkway crossing underneath. The concept maintains the new right-turn slip lane connecting from the I-85 southbound exit ramp to Venture Parkway. The concept removes the eastbound travel lane between the roundabout at Day Drive and Pleasant Hill Road; instead vehicles are routed to the Gwinnett Place Drive intersection and a second right-turn lane is proposed.
- Identified in prior study: N/A
- Vehicular Benefit:
    - The new street connection will provide improved vehicle movement between destinations to the west and east of Pleasant Hill Road. The estimated re-routed trips due to the new street connection are illustrated in **Exhibit I** in Attachment D. The new street connection is estimated to carry 600 vehicles during the AM peak hour and 500 vehicles during the PM peak hour.
    - Since the intersection at Venture Drive would be removed, vehicle delay for the intersection at Gwinnett Place Drive is reported in the capacity comparison table below. The project is expected to reduce vehicle delay at Gwinnett Place Drive due to vehicles being re-routed to the underpass and right-turn slip lane. The capacity comparison table shows the decrease in delay and percent improvement. Two options are shown in the table. The slip lane option includes the removal of the Venture Drive signalized intersection and addition of the two right-turn slip lanes shown in Exhibit C. The underpass option includes the removal of the Venture Drive signalized intersection and the new street connection under Pleasant Hill Rd.
    - The results indicate with the underpass option the intersection at Gwinnett Place Drive would operation with reduced delay compared to the slip lane option.
    - In the existing year (2024), the overall intersection operates at LOS A (AM) and C (PM).
- Pedestrian, Bicycle, and Transit: The new roadway connection underneath Pleasant Hill Rd would include a multiuse path for pedestrians and bicyclists. This would provide a safe crossing of Pleasant Hill Road. The Gwinnett Countywide Trails Master Plan includes the proposed trail along Venture Drive/Venture Parkway crossing Pleasant Hill Road in this area. The project would not impact transit; however, transit buses could be routed on the new roadway connection in the future.
- Considerations:
    - As part of the I-85 interchange project the traffic signal at Venture Drive will be removed. This project is recommended to be combined with I-85 Interchange Project so that it can be constructed at the same time.
    - The project will require at a minimum one *additional* property displacement (compared with the I-85 Diverging Diamond Interchange concept layout).
- Concept Layout: Shown in **Exhibit D**.

Capacity Comparison (Design Year 2054)		Overall Intersection Results for Pleasant Hill Road at Gwinnett Place Drive	
		AM Peak Hour	PM Peak Hour
No-Build Conditions	average vehicle delay (sec)	62	59
	LOS	E	E
Build Conditions – **Slip Lanes Option**	average vehicle delay (sec)	36	60
	LOS	D	E
% Improvement (delay)		42%	--
Build Conditions – **Underpass Option**	average vehicle delay (sec)	44	47
	LOS	D	D
% Improvement (delay)		29%	20%

Opinion of Probable Cost Summary – Underpass	
PE (Engineering)	$2,748,000
ROW (Right-of-way)	$2,258,000
CST (Construction)	$21,373,000
Contingency	$1,983,000
Total Cost Estimate	**$28,362,000**

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Project – Pleasant Hill Road at I-85 Interchange (Separate Study)

A separate Interchange Modification Report (IMR) is currently underway for the Interchange of Pleasant Hill Road at I-85. This separate study will analyze future traffic conditions and identify a preferred interchange improvement project.

For the purposes of this corridor study, the previously identified preferred alternative to reconstruct and add additional travel lanes (capacity) to the Diverging Diamond Interchange was included in the traffic analysis of the Pleasant Hill Road corridor. In this section, we wanted to highlight geometric recommendations and considerations which Gwinnett County may want to consider as part of the IMR study.

The concept layout includes the following recommendations and considerations:

1. Pleasant Hill Road at Gwinnett Place Drive:
    a. Maintain traffic signal
    b. Provide northbound dual left-turn lanes along Pleasant Hill Road
    c. Provide westbound dual left-turn lanes, one through lane, and one right-turn lane along Gwinnett Place Drive
    d. Provide eastbound left-turn lane, through lane, and right-turn lane
2. Pleasant Hill Road, between Gwinnett Place Drive and I-85:
    a. At Venture Drive/Venture Parkway – Remove traffic signal
    b. Maximize left-turn lane storage in median for southbound approach to the I-85 DDI
    c. Option to install a right-turn slip lane from the I-85 southbound exit ramp to Venture Parkway; this would limit access or remove access to the adjacent properties along Pleasant Hill Road
    d. Option to install a right-turn slip lane from Venture Drive to the I-85 southbound entrance ramp; this would limit access or remove access to the adjacent properties along Pleasant Hill Road
3. Pleasant Hill Road, between Gwinnett Place Drive and Shackleford Road / Breckenridge Road:
    a. Provide wide shared-use paths (for pedestrians and bicyclists) along both sides of Pleasant Hill Road
4. Pleasant Hill Road, between I-85 and Shackleford Road / Breckenridge Road:
    a. Maximize right-turn lane storage for northbound approach to the I-85 DDI
    b. Provide a fourth northbound travel lane (to feed into the right-turn lane at the I-85 northbound entrance ramp)
5. Pleasant Hill Rd at Shackleford Road / Breckenridge Road
    a. Maintain traffic signal
    b. Add southbound right-turn lane along Pleasant Hill Road
    c. Add a fourth northbound travel lane (shown in concept as a shared through/right-turn lane); this lane will feed into the right-turn lane at the I-85 northbound entrance ramp

Project 7

- Location: Pleasant Hill Road at Crestwood Pkwy/Koger Blvd
- Improvement: Add dual left-turn lanes on the side-street eastbound and westbound approaches
- Additional description: The addition of dual left-turn lanes will require narrowing or removing the existing medians
- Identified in prior study: GCPID Area Mobility Study – Project I-11, Tier 2
- Vehicular Benefit: Reduces vehicle delay for the eastbound and westbound approaches. The forecast Year 2054 eastbound left-turn volume is 65 (AM) and 135 (PM) and the westbound left-turn volume is 120 (AM) and 295 (PM). The capacity comparison table shows the decrease in delay and percent improvement. The addition of dual left-turn lanes on the side-street approaches will provide additional capacity for the Pleasant Hill Road mainline through movement and reduce the vehicle queue lengths along the side streets. It is important to note that the dual left-turn lanes will operate with protected-only phasing (currently protected/permissive phasing), therefore the overall intersection level of service is about the same. In the existing year (2024), the overall intersection operates at LOS B (AM) and C (PM).
- Pedestrian, Bicycle, and Transit: Project maintains pedestrian crosswalks. Gwinnett County Transit bus route #30 make the westbound left-turn movement at the intersection and the northbound right-turn movement at the intersection.
- Considerations: The project does not require right-of-way and is primarily reconstruction of the median area.
- Concept Layout: Shown in **Exhibit E**.

Capacity Comparison (Design Year 2054)		Overall Intersection	
		AM Peak Hour	PM Peak Hour
No-Build Conditions	average vehicle delay (sec)	33	48
	LOS	C	D
Build Conditions	average vehicle delay (sec)	32	48
	LOS	C	D
% Improvement (delay)		3%	--

Opinion of Probable Cost Summary	
PE (Engineering)	$69,000
ROW (Right-of-way)	--
CST (Construction)	$610,000
Contingency	$89,000
Total Cost Estimate	**$768,000**

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Project 8

- Location: Pleasant Hill Road at Sweetwater Rd
- Improvement: Extend westbound left-turn lane along Sweetwater Rd
- Additional description: Extend westbound left-turn lane and remove existing median so that the left-turn lane vehicle queue can use the existing two-way left-turn lane along Sweetwater Rd
- Identified in prior study: GCPID Area Mobility Study – Project I-13, Tier 2
- Vehicular Benefit: The extension of the westbound left-turn lane would accommodate future design year (2054) expected 95th percentile queues since the two-way left-turn lane extends for more than 1,000ft.
- Pedestrian, Bicycle, and Transit: Project maintains pedestrian crosswalks. Project does not impact nor enhance.
- Considerations: The project does not require right-of-way and is primarily reconstruction of the median area.
- Concept Layout: Shown in **Exhibit E**.

Opinion of Probable Cost Summary	
PE (Engineering)	$12,000
ROW (Right-of-way)	--
CST (Construction)	$111,000
Contingency	$11,000
Total Cost Estimate	**$134,000**

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Project 9

- Location: Pleasant Hill Road at Club Dr
- Improvement: Add northbound right-turn lane with a channelized island
- Location identified in prior study: GCPID Area Mobility Study – Project I-12, Tier 2 (Note: different project)
- Vehicular Benefit: Reduces vehicle delay at the overall intersection by converting the shared through/right-turn lane to dedicated third northbound through lane and dedicated right-turn lane. The capacity comparison table shows the decrease in delay and percent improvement. In the existing year (2024), the overall intersection operates at LOS E (AM) and E (PM).
- Pedestrian, Bicycle, and Transit: The project will rebuild the sidewalk. There is a fixed transit route along Pleasant Hill Road; however, there is no transit bus stop impacts by the project.
- Considerations: The project will require right-of-way.
- Concept Layout: Shown in **Exhibit E**.

Capacity Comparison (Design Year 2054)		Overall Intersection	
		AM Peak Hour	PM Peak Hour
No-Build Conditions	average vehicle delay (sec)	177	145
	LOS	F	F
Build Conditions	average vehicle delay (sec)	102	145
	LOS	F	F
% Improvement (delay)		42%	--

Opinion of Probable Cost Summary	
PE (Engineering)	$45,000
ROW (Right-of-way)	$89,000
CST (Construction)	$312,000
Contingency	$74,000
Total Cost Estimate	**$520,000**

**

Corridor Benefits of Projects

The Pleasant Hill Road corridor, from Old Norcross Road to Club Drive, will experience improved travel times and reduced vehicle delay with the implementation of the I-85 interchange capacity improvement and intersection improvements identified in this study. This study utilized the SimTraffic microsimulation model to calculate the vehicular travel delay for the network. The total average vehicle delay for the year 2054 No-Build network delay was 178 seconds during the AM peak hour and 203 seconds during the PM peak hour. The total average vehicle delay for the year 2054 Build network (including the improved Diverging Diamond Interchange at I-85, Median U-turn intersection at Satellite Blvd, and additional intersection improvements) was 176 seconds during the AM peak hour and 166 seconds during the PM peak hour. The Build Conditions are expected to provide 1 percent delay reduction in the AM and 18 percent delay reduction in the PM.

The traffic analysis confirms the field observation that the vehicle delay along Pleasant Hill Road in both directions due to the I-85 interchange greatly impacts the travel speeds along the Pleasant Hill Road corridor. To improve traffic flow along the corridor the I-85 Interchange improvement is the recommended priority focus.

Potential Pedestrian, Bicycle, and Transit Improvements

Pedestrian, bicycle, and transit improvements specific to projects identified in this study was provided in prior sections of this report.

The Gwinnett Place Area Mobility and Traffic Study identified several strategies to enhance pedestrian, bicycle, and transit use in the area. Many strategies are applicable to the Pleasant Hill Road corridor and identified intersection projects, including:

1. Providing a wide multiuse path (i.e. 10-feet or wider) along both sides of Pleasant Hill Road over I-85 as part of the interchange reconstruction project. This improvement would provide pedestrian and bicycle access between destinations on either side of I-85.
2. Reconstructing the existing sidewalk along both sides of Pleasant Hill Road as a wide multiuse path (i.e. 10-feet or wider) with a 5-foot buffer from the vehicle travel lanes. The buffer could provide landscaping. This improvement could be constructed as part of roadway projects, or required as part of redevelopment projects, or accomplished as public-private partnership projects.
3. Implementation Leading Pedestrian Intervals (LPI) at the signalized intersections. A Leading Pedestrian Interval (LPI) gives pedestrians the opportunity to enter the crosswalk at an intersection 3 seconds before vehicles are given a green indication. The benefit is pedestrians can better establish their presence in the crosswalk before vehicles have priority to turn right or left.
4. Applying 'smart city' technologies to various aspects of the transportation system.

As mixed-use development continues to increase in the Gwinnett Place area, conflicts between vehicular traffic and active transportation users (pedestrians and cyclists) are expected to increase. Implementing improvements and strategies for active transportation users will help to improve safety and improve mobility in the area.

Gwinnett County Transit operates several local bus routes which provide service within the study area and allow for transfers between routes at the Gwinnett Transit Center, located on Satellite Boulevard adjacent to Gwinnett Place Mall. Four Gwinnett County Transit routes (10A, 10B, 25, and 30) pass through the Pleasant Hill Road study corridor as shown in **Figure 3**. Additionally, the area is located within the Gwinnett Transit Paratransit service area.

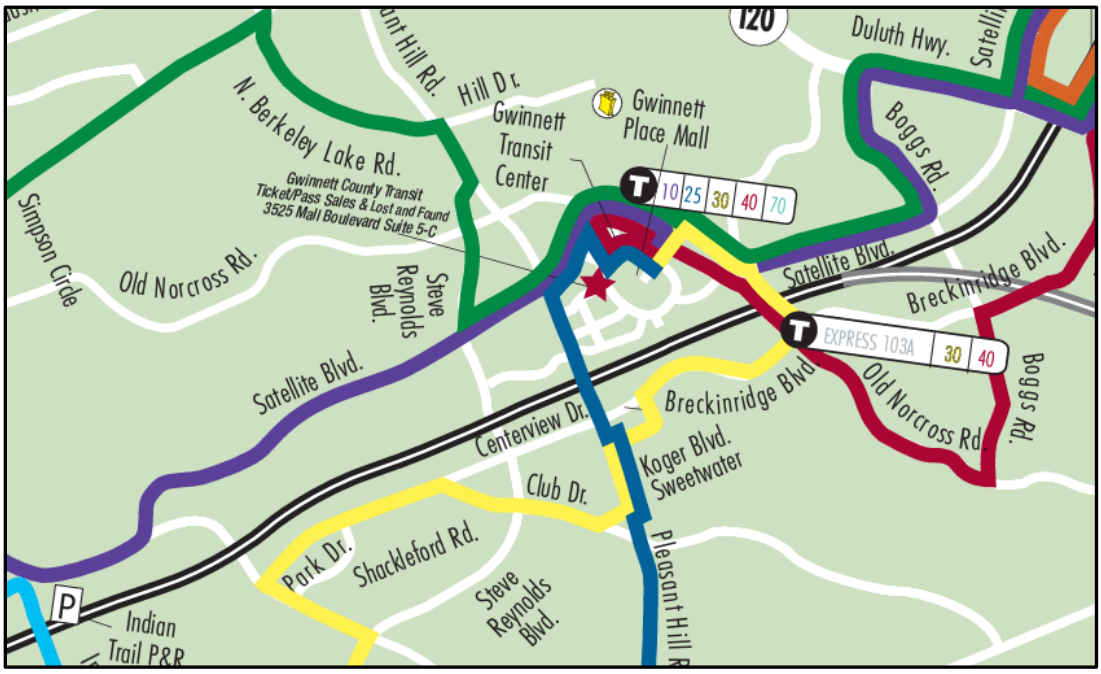


Figure 3: Bus Route Map

Within the study limits along Pleasant Hill Road, from Old Norcross Road to Club Drive, there are 4 bus stops located in the southbound direction and there are 6 bus stops located in the northbound direction. There are 10 bus shelters. As part of constructing transportation projects along Pleasant Hill Road the bus stop locations may need to be reviewed or relocated, and bus shelters may need to be replaced.

Documentation of Analysis Supporting Projects

The following sections provide the technical analysis supporting the recommended projects.

Existing Conditions

Traffic counts collected over multiple dates were utilized in the study. Dates included February 21, 2024, February 28, 2024, and April 10, 2024. The traffic data included AM and PM peak period turning movement counts at the study intersections. The traffic count data is included in a separate appendix document. AM and PM peak hour site visits were performed on Thursday, March 14, 2024. A summary of key observations is listed below:

- Consistent, heavy traffic observed throughout the corridor; queuing from I-85 ramps to just past Koger Blvd in the AM and queueing from I-85 ramps to Satellite Blvd in the PM.
- During the AM peak hour, the heavier traffic volume is travelling in the northbound direction along Pleasant Hill Road, and during the PM peak hour the heavier traffic volume is travelling in the southbound direction.
- Many minor approaches at intersections experience high delay in the PM peak hour due to the amount of through volume on Pleasant Hill Rd.
- Pedestrians seen walking along corridor in the AM and PM; some pedestrians seen 'jay walking'; bicyclists seen in the PM peak hour.
- Most Pleasant Hill Road left-turn movements at intersections operate with protected-only signal phasing; however, at Gwinnett Prado, at Gwinnett Station, at Mall Blvd, at Gwinnett Place Drive, and at Venture Drive the Pleasant Hill Road left-turn movements operate with protected/permissive signal phasing.

Historical Crash Summary

Analysis of historical vehicular crashes at the study intersections were conducted for a five-year period (2018 through 2022). The data was collected from GDOT's AASHTOWare Safety database. Crash severity is categorized using the KABCO scale, with five injury severity types: K (Fatal), A (Serious Injury), B (Visible Injury), C (Complaint of injury), and O (No Injury). **Table 2** summarizes the crashes by manner of collision and severity within the study limits along Pleasant Hill Road. **Table 3** summarizes the crashes at intersections by severity. Individual intersection crash tables are included in Attachment F. Additionally, crash density maps showing the highest crash locations throughout the corridor are included in Attachment F.

Table 2: 5-year Historical Crashes in Corridor (Type and Severity)							
Crash Type	**K**	**A**	**B**	**C**	**O**	**Total**	**Percentage**
Angle	0	4	53	162	444	663	25.0%
Head-On	0	1	10	13	28	52	2.0%
Rear End	0	3	40	361	980	1,384	50.0%
Sideswipe - Same	0	2	12	56	444	514	19.0%
Sideswipe - Opposite	0	0	0	2	10	12	0.0%
Not Collision w/Motor Veh	0	3	10	7	40	60	2.0%
Not a Collision w/Motor Veh - Pedestrian	0	3	4	6	7	20	-
Not a Collision w/Motor Veh - Bicycle	0	0	4	2	0	6	-
Total	**0**	**13**	**125**	**601**	**1,946**	**2,685**	**100.0%**

Table 2: Summary of Intersection Crashes (5-year)								
#	**Intersection**	**Traffic Control**	**Crashes**					
			K	**A**	**B**	**C**	**O**	**Total**
1	Pleasant Hill at Old Norcross Road	Signal	0	2	8	56	180	246
2	Pleasant Hill at Gwinnett Prado	Signal	0	0	3	11	23	37
3	Pleasant Hill at Gwinnett Station	Signal	0	0	1	7	31	39
3b	Pleasant Hill at Gwinnett Station Unsignalized	2-way Stop	0	0	0	2	9	11
4	Pleasant Hill at Satellite Blvd	Signal	0	1	11	36	144	192
5	Pleasant Hill at Mall Blvd	Signal	0	1	11	37	103	152
6	Pleasant Hill at Gwinnett Place Dr	Signal	0	0	8	59	88	155
7	Pleasant Hill at Venture Drive	Signal	0	2	15	84	239	340
8	Pleasant Hill at I-85 Southbound	Signal	0	0	8	41	302	351
9	Pleasant Hill at I-85 Northbound	Signal	0	0	6	49	232	287
10	Pleasant Hill at Breckinridge Blvd	Signal	0	0	13	43	145	201
11	Pleasant Hill at Crestwood Pkwy/Koger Blvd	Signal	0	0	12	37	85	134
12	Pleasant Hill at Sweetwater Rd	Signal	0	4	11	49	114	178
13	Pleasant Hill at Club Dr	Signal	0	3	18	90	251	362
All Corridor Crashes			**0**	**13**	**125**	**601**	**1,946**	**2,685**

A total of 2,685 crashes occurred at the study intersections for the five-year period. The crash severity summary (using the KABCO scale) is:

- Zero (0) fatal crashes (K)
- Seven-hundred thirty-nine (739) injury crashes, with thirteen (13) resulting in severe injury (A), one-hundred twenty-five (125) resulting in minor injury (B), and six-hundred one (601) resulting in injury complaints (C)
- There was one-thousand, nine-hundred forty-six (1,946) property damage only collisions (O)

Rear-end collisions were the most common type of collision, with one thousand, three-hundred eighty-four (1,384) during the analysis period. In descending order, the remaining type of collision (maneuver) was angle collisions (663), sideswipe-same direction collisions (514), not a collision with motor vehicle (60), head-on collisions (52), and sideswipe-opposite direction collisions (12). There were twenty (20) pedestrian related crashes and six (6) bicycle related crashes. '

Additionally, the corridor crash rate reported as "crashes per 100 million vehicle miles travelled" was calculated and compared to the statewide average for principal arterials. The crash rate calculation is shown below:

Pleasant Hill Rd Crash Rate = 1,318 per 100 MVM

*Calculated as 2,685 crashes * (100,000,000/(58,738 vehicles * 1,825 days * 1.9 miles))*

The statewide average for Urbanized, Non-Freeway Principal Arterials was 568 per 100 MVM per GDOT's 2022 Georgia statewide crash rates. The Pleasant Hill Rd corridor crash rate is 2.3 times higher than the statewide average. This indicates Pleasant Hill Road has a high crash rate, in part due to the high traffic volumes and traffic congestion. Intersection crash tables and crash density maps are included in **Attachment E.**

Capacity Analysis

Intersection capacity analysis for the existing configuration and potential projects was conducted to identify recommended improvements. The methodology used for evaluating traffic operations at intersections is based on the criteria established in the Highway Capacity Manual (HCM), 6th edition. The Synchro software, which utilizes the HCM 6th edition methodology, was utilized to perform the intersection capacity analyses. However, at Old Norcross Rd and at Satellite Blvd capacity analysis results were computed as an average of ten microsimulation runs with SimTraffic software. The SimTraffic analysis was utilized at Old Norcross Rd due to limitations of the HCM methodology computing intersection delay with the high westbound right-turn movement. The SimTraffic analysis was utilized at Satellite Blvd for the '4 Alternative' project (Displaced Left-turn) due to having signal phasing which does not follow NEMA phasing, and therefore was not able to be analyzed with HCM methodology.

Level-of-service (LOS) is used to describe the operating characteristics of a road segment or intersection in relation to its capacity. LOS is defined as a qualitative measure that describes operational conditions and motorists' perceptions. The primary measure of traffic operations and congestion used is level-of-service grades. The Highway Capacity Manual defines six levels of service, LOS A through LOS F. Level-of-service

A indicates excellent operations with little delay to motorists, while level-of-service F indicates extremely long delays.

Generally, LOS grades of A to D are viewed as acceptable, and LOS E is regarded as minimally acceptable in urban areas and unacceptable in rural areas while LOS F is always considered unacceptable. For stop-control intersections, LOS E and F exist when there are insufficient gaps in traffic, resulting in long delays. Low level-of-service for stop-control approaches are not uncommon at major cross-streets. For signalized intersections in urban locations, LOS E is typically considered to be the limit of acceptable delay.

The scenarios included existing year conditions, No-Build conditions, and Build conditions for the design year (2054). Existing 2024 traffic volumes were forecasted using a 0.8% growth rate to account for background growth. Additionally, expected new traffic volumes from the proposed Gwinnett Place Mall Site Revitalization development were added to the network for the year 2054 analysis. The intersection volume development tables in **Attachment D** show the calculations. **Exhibit F** illustrates the existing year intersection level of service (LOS), based on HCM6 results. The comparison of the No-Build and Build Conditions 2054 level of service (LOS) results was provided in prior sections for each project. **Exhibit G** illustrates the year 2054 intersection volumes for Pleasant Hill Road at Satellite Blvd for the No-Build Conditions versus the Median U-turn Alternative Conditions. The capacity analysis reports are included in a separate appendix document.

ATTACHMENTS

A. Concept Layouts (Exhibits A - E)

B. Cost Estimates

C. Exhibit F – Existing Year (2024) Level of Service

Exhibit G - Existing Year (2024) Intersection Volumes for Corridor

Exhibit H - Year 2054 intersection volumes for Pleasant Hill Road at Satellite Blvd

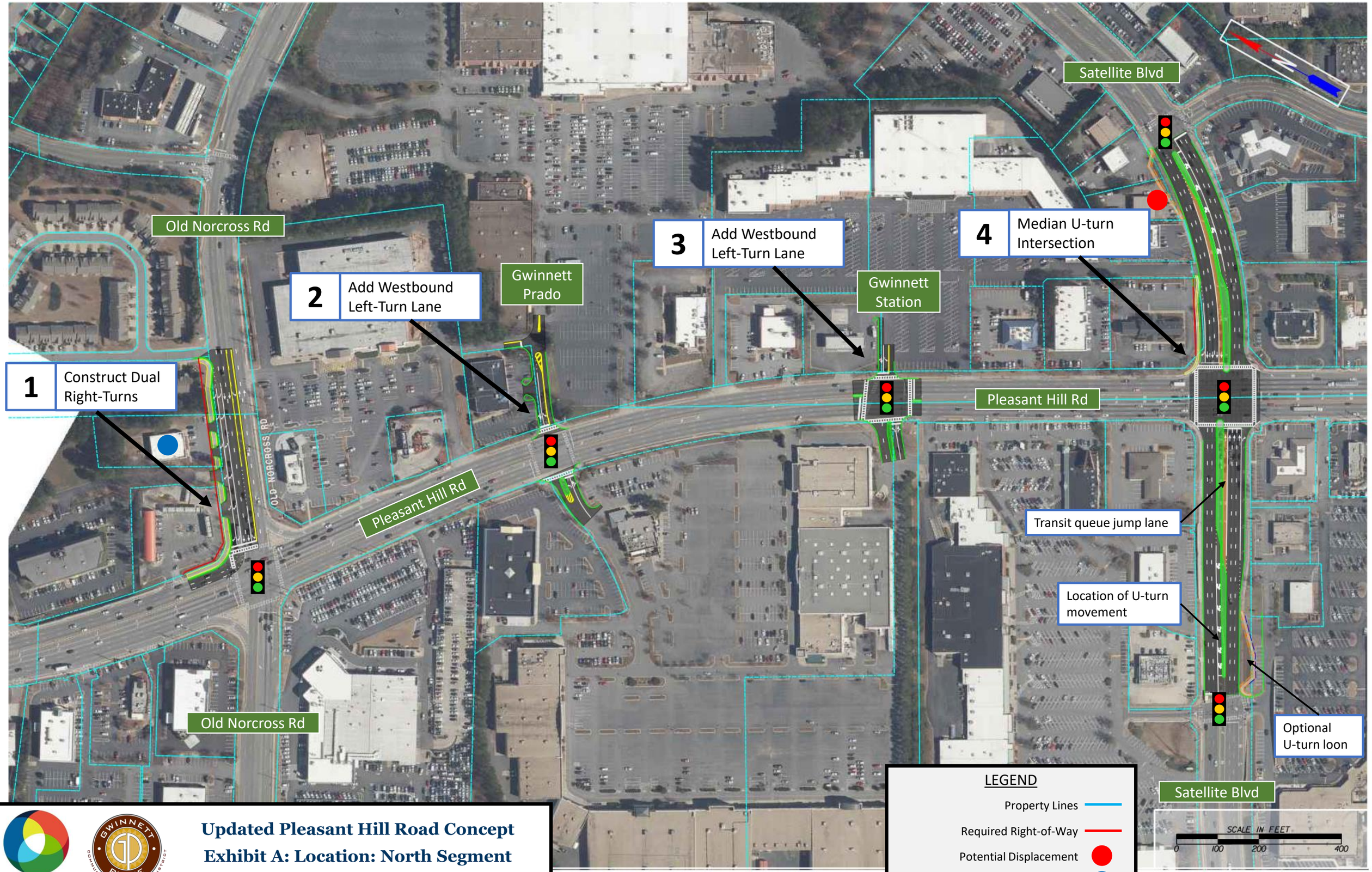
D. Intersection Volume Development

Exhibit I – Re-routed & Estimated Vehicle Trips for Project #6

E. Intersection Crash Tables and Crash Density Maps

A –

Concept Layouts



Gwinnett

GWINNETT PLACE COMMUNITY IMPROVEMENT DISTRICT

Updated Pleasant Hill Road Concept

Exhibit A: Location: North Segment

Projects: 1,2,3,4

Satellite Blvd

Mall Blvd

Gwinnett Station

Displaced left-turn movement

Displaced left-turn movement

Remove traffic signal; convert to right-in/right-out

Gwinnett Prado

Pleasant Hill Rd

Remove traffic signal; convert to right-in/right-out

Transit queue jump lane

4 Alternative

Displaced Left-turn Intersection

Satellite Blvd

LEGEND

Property Lines

Required Right-of-Way

Potential Displacement

Parking Impacted before Mitigation

SCALE IN FEET

0 100 200 400

Gwinnett

GWINNETT PLACE COMMUNITY IMPROVEMENT DISTRICT

Updated Pleasant Hill Road Concept

Exhibit B: Location: Satellite Blvd

Project 4 Alternative: Displaced Left Turn

Gwinnett Place Dr

Venture Pkwy

Mall Blvd

I-85 Interchange Project (limits)

Koger Blvd

Breckinridge Blvd

Remove traffic signal

Pleasant Hill Rd

Pleasant Hill Rd

Includes lane modifications

Potential slip lanes

Includes lane modifications

5 Construct Pedestrian Bridge

Includes side street improvements

Venture Drive

Shackleford Rd

Crestwood Pkwy

LEGEND

Property Lines

Required Right-of-Way

Potential Displacement

Parking Impacted before Mitigation

SCALE IN FEET

0 150 300 600

Gwinnett

GWINNETT PLACE COMMUNITY IMPROVEMENT DISTRICT

Updated Pleasant Hill Road Concept

Exhibit C: Location: Middle Segment

Projects: 5 & I-85 DDI

Gwinnett Place Dr

Venture Pkwy

I-85 Interchange Project (limits)

Mall Blvd

Additional displacement

Slip lane to Venture Pkwy

Breckinridge Blvd

Pleasant Hill Rd

Koger Blvd

Pleasant Hill Rd

Two right-turn lanes

6 New street connection and multi-use path under Pleasant Hill Road

Venture Drive

Shackleford Rd

Crestwood Pkwy

LEGEND

Property Lines

Required Right-of-Way

Potential Displacement

Parking Impacted before Mitigation

SCALE IN FEET

0 150 300 600

Gwinnett

GWINNETT PLACE COMMUNITY IMPROVEMENT DISTRICT

Updated Pleasant Hill Road Concept
Exhibit D: Location: Middle Segment
Projects: 6 & I-85 DDI

5/24/2024

Koger Blvd

7 Side Street Improvements

Sweetwater Rd

8 Side Street Improvements

9 Right-turn lane

Club Dr

Pleasant Hill Rd

Crestwood Pkwy

Sweetwater Rd

Club Dr

Pleasant Hill Rd

LEGEND

Property Lines

Required Right-of-Way

Potential Displacement

Parking Impacted before Mitigation

SCALE IN FEET

0 100 200 400

Gwinnett

GWINNETT PLACE COMMUNITY IMPROVEMENT DISTRICT

Updated Pleasant Hill Road Concept

Exhibit E: Location: South Segment

Projects: 7, 8, & 9

B –

Cost Estimates

Planning Level Preliminary Estimate of Probable Construction Cost

Gwinnett Place CID / Gwinnett County DOT

Project 1: Pleasant Hill Road at Old Norcross Road

Description: Install dual right-turn lanes on westbound approach Norcross Road)

Date prepared: 5/21/2024

Construction Costs

	Measurement			Estimate			
	UNIT	Quantity	DESCRIPTION	Quantity	UNIT	Unit Price	Total Cost
	LS	1	Traffic Control	1	LS	$ 104,000.00	$ 104,000.00
	LS	1	Staging Traffic Control	1	LS	$ 150,000.00	$ 150,000.00
	LS	1	Miscellaneous Erosion Control	1	LS	$ 25,000.00	$ 25,000.00
	LF	0	Erosion Control (silt fence) Type C	0	LF	$ 3.80	$ -
Grading							
	LS	1	Grading (including removal, fill, prep)	1	LS	$ 259,000.00	$ 259,000.00
	CY	0	Class B Concrete, Gravity Retaining Wall	0	CY	$ 945.87	$ -
	LF	0	Retaining Walls	0	LF	$ 650.00	$ -
	LF	0	Guardrail	0	LF	$ 70.00	$ -
	EA	0	Guardrail anchorage	0	EA	$ 2,400.00	$ -
Pavement							
	TN	700	GAB - GR AGGR Base CRS, Incl Matl	700	TN	$ 34.00	$ 23,800.00
	TN	0	Recycled Asph Conc Leveling, Incl Bitum Matl & H Lime	0	TN	$ 126.75	$ -
	TN	820	Recycled Asph Conc 12.5MM Superpave, GP 2 Only, Incl Polymer-Modifi	820	TN	$ 195.49	$ 160,301.80
	TN	100	Recycled Asph Conc 19MM Superpave, GP 1 or 2	100	TN	$ 217.23	$ 21,723.00
	TN	300	Recycled Asph Conc 25MM Superpave, GP 1 or 2	300	TN	$ 194.44	$ 58,332.00
	GAL	350	Tack Coat	350	GAL	$ 4.57	$ 1,599.50
	SY	3050	Mill Asph Conc Pvmt, Variable Depth	3050	SY	$ 5.60	$ 17,080.00
Concrete							
	CY	0	Class B Conc, Base or Pvmt Widening	0	CY	$ 209.78	$ -
	SF	0	Residential Concrete Driveway	0	SY	$ 66.64	$ -
	SF	2100	Commercial Concrete Driveway	233	SY	$ 64.76	$ 15,110.67
	LF	585	Concrete Curb & Gutter (8 x 30)	585	LF	$ 47.17	$ 27,594.45
	LF	0	Concrete Header Curb	0	LF	$ 20.92	$ -
	SF	0	Concrete Island/Median	0	SY	$ 75.49	$ -
	SF	0	Concrete Sidewalk, 4 in	0	SY	$ 74.03	$ -
	SF	4755	10-foot Concrete Shared Use Path, 4 in	528	SY	$ 93.72	$ 49,515.40
	EA	12	ADA Crosswalk Ramps	12	EA	$ 2,000.00	$ 24,000.00
Drainage							
	LF	150	Pipe - 18in	150	LF	$ 57.12	$ 8,568.00
	LF		Pipe - 24in	0	LF	$ 68.50	$ -
	EA	2	Manhole	2	EA	$ 2,515.00	$ 5,030.00
	EA	2	Drop Inlet	2	EA	$ 3,211.33	$ 6,422.66
	EA	1	Catch Basin	1	EA	$ 3,503.60	$ 3,503.60
	EA		Flared End	0	EA	$ 875.00	$ -
	LS		Culvert crossing	0	LS	$ -	$ -
Features							
	LF	565	Signing and Marking	565	LF	$ 22.73	$ 12,842.45
	LF	1170	Crosswalk Striping (Standard Type)	1170	LF	$ 2.61	$ 3,053.70
	EA	1	Overhead Span Wire Sign	1	EA	$ 24,000.00	$ 24,000.00
	LS	1	Traffic Signal (new, modification)	1	LS	$ 100,000.00	$ 100,000.00
	EA	0	Lighting (roadway)	0	EA	$ 6,000.00	$ -
	LS	0	Landscaping - minor improvement	0	LS	$ -	$ -
	LS	1	GCDOT CCTV (incl. pole, etc)	1	LS	$ 150,000.00	$ 150,000.00
	LS	1	Cost-to-cost: Reconstruct 4 parking spaces	1	LS	$ 150,000.00	$ 150,000.00

Construction Costs

Subtotal Construction Cost		**$ 1,400,477.23**
Inflation Rate 3.0 % @ 5 Years		$ 223,059.71
	Sub Total	$ 1,623,536.94
Contingency 20%		$ 324,707.39
TOTAL CONSTRUCTION COST		**$ 1,948,244.33**

Additional Costs

Engineering Design 10%		$ 194,824.43
Right Of Way & Esmt Cost ($/SF varies)		$ 268,440.00
Utilities 4.0%		$ 77,929.77
	Subtotal	$ 541,194.21
GRAND TOTAL		**$ 2,489,438.53**

KCI Technologies does not have control over the cost or availability of labor, materials, equipment, or over the Contractor's method of costing in the marketplace, the opinion of probable cost as herein stated is made on the basis of our experience and professional judgment as a design professional familiar with the construction industry. However, KCI does not make any guarantee as to cost, and makes no warranty, express or implied, that bids or the construction cost will not vary from these probable cost opinions. If the Owner desires assurance of the cost of construction, it is recommended he employ an independent cost estimator.

Summary

PE	$	195,000.00
ROW	$	268,000.00
CST	$	1,701,000.00
Cont	$	325,000.00
Total	**$**	**2,489,000.00**

Planning Level Preliminary Estimate of Probable Construction Cost

Gwinnett County DOT

Project 2: Pleasant Hill Road at Gwinnett Prado driveway

Description: Add left turn lane on westbound approach; restripe eastbound approach (potential development partnership project)

Date prepared: 5/21/2024

Construction Costs

	Measurement			Estimate			
	UNIT	Quantity	DESCRIPTION	Quantity	UNIT	Unit Price	Total Cost
	LS	1	Traffic Control	1	LS	$ 39,000.00	$ 39,000.00
	LS	0	Staging Traffic Control	0	LS		$ -
	LS	1	Miscellaneous Erosion Control	1	LS	$ 15,000.00	$ 15,000.00
	LF	0	Erosion Control (silt fence) Type C	0	LF	$ 3.80	$ -
Grading							
	LS	1	Grading (including removal, fill, prep)	1	LS	$ 77,000.00	$ 77,000.00
	CY		Class B Concrete, Gravity Retaining Wall	0	CY	$ 945.87	$ -
	LF		Retaining Walls	0	LF	$ 650.00	$ -
	LF		Guardrail	0	LF	$ 70.00	$ -
	EA		Guardrail anchorage	0	EA	$ 2,400.00	$ -
Pavement							
	TN	300	GAB - GR AGGR Base CRS, Incl Matl	300	TN	$ 34.00	$ 10,200.00
	TN	0	Recycled Asph Conc Leveling, Incl Bitum Matl & H Lime	0	TN	$ 126.75	$ -
	TN	250	Recycled Asph Conc 12.5MM Superpave, GP 2 Only, Incl Polymer-Modifi	250	TN	$ 195.49	$ 48,872.50
	TN	100	Recycled Asph Conc 19MM Superpave, GP 1 or 2	100	TN	$ 217.23	$ 21,723.00
	TN	100	Recycled Asph Conc 25MM Superpave, GP 1 or 2	100	TN	$ 194.44	$ 19,444.00
	GAL	90	Tack Coat	90	GAL	$ 4.57	$ 411.30
	SY	630	Mill Asph Conc Pvmt, Variable Depth	630	SY	$ 5.60	$ 3,528.00
Concrete							
	CY	0	Class B Conc, Base or Pvmt Widening	0	CY	$ 209.78	$ -
	SF		Residential Concrete Driveway	0	SY	$ 66.64	$ -
	SF	1010	Commercial Concrete Driveway	112	SY	$ 64.76	$ 7,267.51
	LF	240	Concrete Curb & Gutter (8 x 30)	240	LF	$ 47.17	$ 11,320.80
	LF		Concrete Curb & Gutter (8 x 24)	0	LF	$ 25.64	$ -
	LF		Concrete Header Curb	0	LF	$ 20.92	$ -
	SF		Concrete Island/Median	0	SY	$ 75.49	$ -
	SF		Concrete Sidewalk, 4 in	0	SY	$ 74.03	$ -
	SF		10-foot Concrete Shared Use Path, 4 in	0	SY	$ 93.72	$ -
	EA	2	ADA Crosswalk Ramps	2	EA	$ 2,000.00	$ 4,000.00
Drainage							
	LF		Pipe - 18in	0	LF	$ 57.12	$ -
	LF		Pipe - 24in	0	LF	$ 68.50	$ -
	EA		Manhole	0	EA	$ 2,515.00	$ -
	EA		Drop Inlet	0	EA	$ 3,211.33	$ -
	EA		Catch Basin	0	EA	$ 3,503.60	$ -
	EA		Flared End	0	EA	$ 875.00	$ -
	LS		Culvert crossing	0	LS	$ -	$ -
Features							
	LF	400	Signing and Marking	400	LF	$ 22.73	$ 9,092.00
	LF	462	Crosswalk Striping (Standard Type)	462	LF	$ 2.61	$ 1,205.82
	EA	0	Overhead Span Wire Sign	0	EA	$ 24,000.00	$ -
	LS	1	Traffic Signal (new, modification)	1	LS	$ 225,000.00	$ 225,000.00
	EA	0	Lighting (roadway)	0	EA	$ 6,000.00	$ -
	LS	1	Landscaping - minor improvement	1	LS	$ 10,000.00	$ 10,000.00
	LS	0	GCDOT CCTV (incl. pole, etc)	0	LS		$ -
	LS			0	LS	$ -	$ -

Construction Costs

Subtotal Construction Cost		**$ 503,064.93**
Inflation Rate 3.0 % @ 5 Years		$ 80,125.20
	Sub Total	$ 583,190.13
Contingency 10%		$ 58,319.01
TOTAL CONSTRUCTION COST		**$ 641,509.15**

Additional Costs

Engineering Design 10%		$ 64,150.91
Right Of Way & Esmt Cost ($/SF varies)		$ -
Utilities 4.0%		$ 25,660.37
	Subtotal	$ 89,811.28
GRAND TOTAL		**$ 731,320.43**

KCI Technologies does not have control over the cost or availability of labor, materials, equipment, or over the Contractor's method of costing in the marketplace, the opinion of probable cost as herein stated is made on the basis of our experience and professional judgment as a design professional familiar with the construction industry. However, KCI does not make any guarantee as to cost, and makes no warranty, express or implied, that bids or the construction cost will not vary from these probable cost opinions. If the Owner desires assurance of the cost of construction, it is recommended he employ an independent cost estimator.

Summary

PE	$	64,000.00
ROW	$	-
CST	$	609,000.00
Cont	$	58,000.00
Total	**$**	**731,000.00**

Planning Level Preliminary Estimate of Probable Construction Cost

Gwinnett County DOT

Project 3: Pleasant Hill Road at Gwinnett Station driveway

Description: Add dedicated left-turn lane on westbound approach; add crosswalk on south side (potential development partnership project)

Date prepared: 5/21/2024

Construction Costs

	Measurement			Estimate			
	UNIT	Quantity	DESCRIPTION	Quantity	UNIT	Unit Price	Total Cost
	LS	1	Traffic Control	1	LS	$ 31,000.00	$ 31,000.00
	LS	0	Staging Traffic Control	0	LS		$ -
	LS	1	Miscellaneous Erosion Control	1	LS	$ 15,000.00	$ 15,000.00
	LF	0	Erosion Control (silt fence) Type C	0	LF	$ 3.80	$ -
Grading							
	LS	1	Grading (including removal, fill, prep)	1	LS	$ 61,000.00	$ 61,000.00
	CY		Class B Concrete, Gravity Retaining Wall	0	CY	$ 945.87	$ -
	LF		Retaining Walls	0	LF	$ 650.00	$ -
	LF		Guardrail	0	LF	$ 70.00	$ -
	EA		Guardrail anchorage	0	EA	$ 2,400.00	$ -
Pavement							
	TN	200	GAB - GR AGGR Base CRS, Incl Matl	200	TN	$ 34.00	$ 6,800.00
	TN	0	Recycled Asph Conc Leveling, Incl Bitum Matl & H Lime	0	TN	$ 126.75	$ -
	TN	180	Recycled Asph Conc 12.5MM Superpave, GP 2 Only, Incl Polymer-Modifi	180	TN	$ 195.49	$ 35,188.20
	TN	50	Recycled Asph Conc 19MM Superpave, GP 1 or 2	50	TN	$ 217.23	$ 10,861.50
	TN	100	Recycled Asph Conc 25MM Superpave, GP 1 or 2	100	TN	$ 194.44	$ 19,444.00
	GAL	60	Tack Coat	60	GAL	$ 4.57	$ 274.20
	SY	330	Mill Asph Conc Pvmt, Variable Depth	330	SY	$ 5.60	$ 1,848.00
Concrete							
	CY	5	Class B Conc, Base or Pvmt Widening	5	CY	$ 209.78	$ 1,048.90
	SF		Residential Concrete Driveway	0	SY	$ 66.64	$ -
	SF	635	Commercial Concrete Driveway	71	SY	$ 64.76	$ 4,569.18
	LF		Concrete Curb & Gutter (8 x 30)	0	LF	$ 47.17	$ -
	LF		Concrete Curb & Gutter (8 x 24)	0	LF	$ 25.64	$ -
	LF		Concrete Header Curb	0	LF	$ 20.92	$ -
	SF	235	Concrete Island/Median	26	SY	$ 75.49	$ 1,971.13
	SF		Concrete Sidewalk, 4 in	0	SY	$ 74.03	$ -
	SF		10-foot Concrete Shared Use Path, 4 in	0	SY	$ 93.72	$ -
	EA	2	ADA Crosswalk Ramps	2	EA	$ 2,000.00	$ 4,000.00
Drainage							
	LF		Pipe - 18in	0	LF	$ 57.12	$ -
	LF		Pipe - 24in	0	LF	$ 68.50	$ -
	EA		Manhole	0	EA	$ 2,515.00	$ -
	EA		Drop Inlet	0	EA	$ 3,211.33	$ -
	EA		Catch Basin	0	EA	$ 3,503.60	$ -
	EA		Flared End	0	EA	$ 875.00	$ -
	LS		Culvert crossing	0	LS	$ -	$ -
Features							
	LF	250	Signing and Marking	250	LF	$ 22.73	$ 5,682.50
	LF	1976	Crosswalk Striping (Standard Type)	1976	LF	$ 2.61	$ 5,157.36
	EA	0	Overhead Span Wire Sign	0	EA	$ 24,000.00	$ -
	LS	1	Traffic Signal (new, modification)	1	LS	$ 185,000.00	$ 185,000.00
	EA	0	Lighting (roadway)	0	EA	$ 6,000.00	$ -
	LS	1	Landscaping - minor improvement	1	LS	$ 10,000.00	$ 10,000.00
	LS	1	GCDOT CCTV (incl. pole, etc)	1	LS		$ -
	LS			0	LS	$ -	$ -

Construction Costs

Subtotal Construction Cost	**$ 398,844.97**
Inflation Rate 3.0 % @ 5 Years	$ 63,525.66
Sub Total	$ 462,370.63
Contingency 10%	$ 46,237.06
TOTAL CONSTRUCTION COST	**$ 508,607.69**

Additional Costs

Engineering Design 10%	$ 50,860.77
Right Of Way & Esmt Cost ($/SF varies)	$ -
Utilities 4.0%	$ 20,344.31
Subtotal	$ 71,205.08
GRAND TOTAL	**$ 579,812.77**

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Summary

PE	$	51,000.00
ROW	$	-
CST	$	483,000.00
Cont	$	46,000.00
Total	**$**	**580,000.00**

Planning Level Preliminary Estimate of Probable Construction Cost

Gwinnett Place CID / Gwinnett County DOT

Project 4: Pleasant Hill Road at Satellite Boulevard

Description: Option A: Convert to a "Median U-Turn" intersection, WITH u-turn loon for large trucks/buses; add westbound right-turn lane along Satellite Blvd; add two transit queue jumper lanes in median

Date prepared: 5/23/2024

Construction Costs

	Measurement			Estimate			
	UNIT	Quantity	DESCRIPTION	Quantity	UNIT	Unit Price	Total Cost
	LS	1	Traffic Control	1	LS	$ 121,000.00	$ 121,000.00
	LS	0	Staging Traffic Control	0	LS		$ -
	LS	1	Miscellaneous Erosion Control	1	LS	$ 80,000.00	$ 80,000.00
	LF		Erosion Control (silt fence) Type C	0	LF	$ 3.80	$ -
Grading							
	LS	1	Grading (including removal, fill, prep)	1	LS	$ 364,000.00	$ 364,000.00
	CY		Class B Concrete, Gravity Retaining Wall	0	CY	$ 945.87	$ -
	LF	315	Retaining Walls	315	LF	$ 650.00	$ 204,750.00
	LF		Guardrail	0	LF	$ 70.00	$ -
	EA		Guardrail anchorage	0	EA	$ 2,400.00	$ -
Pavement							
	TN	1500	GAB - GR AGGR Base CRS, Incl Matl	1500	TN	$ 34.00	$ 51,000.00
	TN	0	Recycled Asph Conc Leveling, Incl Bitum Matl & H Lime	0	TN	$ 126.75	$ -
	TN	990	Recycled Asph Conc 12.5MM Superpave, GP 2 Only, Incl Polymer-Modifi	990	TN	$ 195.49	$ 193,535.10
	TN	150	Recycled Asph Conc 19MM Superpave, GP 1 or 2	150	TN	$ 217.23	$ 32,584.50
	TN	400	Recycled Asph Conc 25MM Superpave, GP 1 or 2	400	TN	$ 194.44	$ 77,776.00
	GAL	410	Tack Coat	410	GAL	$ 4.57	$ 1,873.70
	SY	3630	Mill Asph Conc Pvmt, Variable Depth	3630	SY	$ 5.60	$ 20,328.00
Concrete							
	CY	0	Class B Conc, Base or Pvmt Widening	0	CY	$ 209.78	$ -
	SF		Residential Concrete Driveway	0	SY	$ 66.64	$ -
	SF		Commercial Concrete Driveway	0	SY	$ 64.76	$ -
	LF	3280	Concrete Curb & Gutter (8 x 30)	3280	LF	$ 47.17	$ 154,717.60
	LF		Concrete Curb & Gutter (8 x 24)	0	LF	$ 25.64	$ -
	LF		Concrete Header Curb	0	LF	$ 20.92	$ -
	SF	185	Concrete Island/Median	21	SY	$ 75.49	$ 1,551.74
	SF	3465	Concrete Sidewalk, 4 in	385	SY	$ 74.03	$ 28,501.55
	SF		10-foot Concrete Shared Use Path, 4 in	0	SY	$ 93.72	$ -
	EA	7	ADA Crosswalk Ramps	7	EA	$ 2,000.00	$ 14,000.00
Drainage							
	LF	215	Pipe - 18in	215	LF	$ 57.12	$ 12,280.80
	LF		Pipe - 24in	0	LF	$ 68.50	$ -
	EA	7	Manhole	7	EA	$ 2,515.00	$ 17,605.00
	EA	3	Drop Inlet	3	EA	$ 3,211.33	$ 9,633.99
	EA	5	Catch Basin	5	EA	$ 3,503.60	$ 17,518.00
	EA		Flared End	0	EA	$ 875.00	$ -
	LS		Culvert crossing	0	LS	$ -	$ -
Features							
	LF	1450	Signing and Marking	1450	LF	$ 22.73	$ 32,958.50
	LF	2028	Crosswalk Striping (Standard Type)	2028	LF	$ 2.61	$ 5,293.08
	EA	2	Overhead Span Wire Sign	2	EA	$ 24,000.00	$ 48,000.00
	LS	1	Traffic Signal (new, modification)	1	LS	$ 160,000.00	$ 160,000.00
	EA	0	Lighting (roadway)	0	EA	$ 6,000.00	$ -
	LS	1	Landscaping - minor improvement	1	LS	$ 50,000.00	$ 50,000.00
	LS	0	GCDOT CCTV (incl. pole, etc)	0	LS	$ -	$ -
	LS			0	LS	$ -	$ -

Construction Costs

Subtotal Construction Cost		**$ 1,698,907.56**
Inflation Rate 3.0 % @ 5 Years		$ 270,591.93
	Sub Total	$ 1,969,499.49
Contingency 20%		$ 393,899.90
TOTAL CONSTRUCTION COST		**$ 2,363,399.39**

Additional Costs

Engineering Design 12%		$ 283,607.93
Right Of Way & Esmt Cost ($/SF varies)		$ 1,969,800.00
Utilities 4.0%		$ 94,535.98
	Subtotal	$ 2,347,943.90
GRAND TOTAL		**$ 4,711,343.29**

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Summary

PE	$	284,000.00
ROW	$	1,970,000.00
CST	$	2,064,000.00
Cont	$	394,000.00
Total	**$**	**4,712,000.00**

Planning Level Preliminary Estimate of Probable Construction Cost

Gwinnett Place CID / Gwinnett County DOT

Project 4: Satellite Boulevard at Pleasant Hill Road

Description: Option B: Convert to a "Median U-Turn" intersection, WITHOUT u-turn loon for large trucks/buses; add westbound right-turn lane along Satellite Blvd; add two transit queue jumper lanes in median

Date prepared: 5/23/2024

Construction Costs

	Measurement			Estimate			
	UNIT	Quantity	DESCRIPTION	Quantity	UNIT	Unit Price	Total Cost
	LS	1	Traffic Control	1	LS	$ 64,000.00	$ 64,000.00
	LS	0	Staging Traffic Control	0	LS		$ -
	LS	1	Miscellaneous Erosion Control	1	LS	$ 60,000.00	$ 60,000.00
	LF	0	Erosion Control (silt fence) Type C	0	LF	$ 3.80	$ -
Grading							
	LS	1	Grading (including removal, fill, prep)	1	LS	$ 193,000.00	$ 193,000.00
	CY		Class B Concrete, Gravity Retaining Wall	0	CY	$ 945.87	$ -
	LF	130	Retaining Walls	130	LF	$ 650.00	$ 84,500.00
	LF		Guardrail	0	LF	$ 70.00	$ -
	EA		Guardrail anchorage	0	EA	$ 2,400.00	$ -
Pavement							
	TN	800	GAB - GR AGGR Base CRS, Incl Matl	800	TN	$ 34.00	$ 27,200.00
	TN	0	Recycled Asph Conc Leveling, Incl Bitum Matl & H Lime	0	TN	$ 126.75	$ -
	TN	480	Recycled Asph Conc 12.5MM Superpave, GP 2 Only, Incl Polymer-Modifi	480	TN	$ 195.49	$ 93,835.20
	TN	50	Recycled Asph Conc 19MM Superpave, GP 1 or 2	50	TN	$ 217.23	$ 10,861.50
	TN	100	Recycled Asph Conc 25MM Superpave, GP 1 or 2	100	TN	$ 194.44	$ 19,444.00
	GAL	380	Tack Coat	380	GAL	$ 4.57	$ 1,736.60
	SY	3630	Mill Asph Conc Pvmt, Variable Depth	3630	SY	$ 5.60	$ 20,328.00
Concrete							
	CY	0	Class B Conc, Base or Pvmt Widening	0	CY	$ 209.78	$ -
	SF		Residential Concrete Driveway	0	SY	$ 66.64	$ -
	SF		Commercial Concrete Driveway	0	SY	$ 64.76	$ -
	LF	2625	Concrete Curb & Gutter (8 x 30)	2625	LF	$ 47.17	$ 123,821.25
	LF		Concrete Curb & Gutter (8 x 24)	0	LF	$ 25.64	$ -
	LF		Concrete Header Curb	0	LF	$ 20.92	$ -
	SF	185	Concrete Island/Median	21	SY	$ 75.49	$ 1,551.74
	SF	1265	Concrete Sidewalk, 4 in	141	SY	$ 74.03	$ 10,405.33
	SF		10-foot Concrete Shared Use Path, 4 in	0	SY	$ 93.72	$ -
	EA	5	ADA Crosswalk Ramps	5	EA	$ 2,000.00	$ 10,000.00
Drainage							
	LF	115	Pipe - 18in	115	LF	$ 57.12	$ 6,568.80
	LF		Pipe - 24in	0	LF	$ 68.50	$ -
	EA	6	Manhole	6	EA	$ 2,515.00	$ 15,090.00
	EA	3	Drop Inlet	3	EA	$ 3,211.33	$ 9,633.99
	EA	3	Catch Basin	3	EA	$ 3,503.60	$ 10,510.80
	EA		Flared End	0	EA	$ 875.00	$ -
	LS		Culvert crossing	0	LS	$ -	$ -
Features							
	LS		Signing and Marking	0	LS	$ -	$ -
	LF	1450	Signing and Marking	1450	LF	$ 22.73	$ 32,958.50
	LF	2028	Crosswalk Striping (Standard Type)	2028	LF	$ 2.61	$ 5,293.08
	EA	2	Overhead Span Wire Sign	2	EA	$ 24,000.00	$ 48,000.00
	LS	1	Traffic Signal (new, modification)	1	LS		$ -
	EA	0	Lighting (roadway)	0	EA	$ 6,000.00	$ -
	LS	1	Landscaping - minor improvement	1	LS	$ 50,000.00	$ 50,000.00
	LS		GCDOT CCTV (incl. pole, etc)	0	LS		$ -
	LS			0	LS	$ -	$ -

Construction Costs

Subtotal Construction Cost		**$ 898,738.79**
Inflation Rate 3.0 % @ 5 Years		$ 143,145.79
	Sub Total	$ 1,041,884.57
Contingency 20%		$ 208,376.91
TOTAL CONSTRUCTION COST		**$ 1,250,261.49**

Additional Costs

Engineering Design 12%		$ 150,031.38
Right Of Way & Esmt Cost ($/SF varies)		$ 225,600.00
Utilities 4.0%		$ 50,010.46
	Subtotal	$ 425,641.84
GRAND TOTAL		**$ 1,675,903.33**

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Summary

PE	$	150,000.00
ROW	$	226,000.00
CST	$	1,092,000.00
Cont	$	208,000.00
Total	**$**	**1,676,000.00**

Planning Level Preliminary Estimate of Probable Construction Cost

Gwinnett County DOT

Project - 4 Alternative: Pleasant Hill Road at Satellite Blvd Intersection

Description: Displaced Left-turn Intersection; redirection northbound and southbound left-turn movements along Pleasant Hill Road; removes two adjacent signals along Pleasant Hill Road

Date prepared: 5/24/2024

Construction Costs

	Measurement			Estimate			
	UNIT	Quantity	DESCRIPTION	Quantity	UNIT	Unit Price	Total Cost
	LS	1	Traffic Control	1	LS	$ 746,000.00	$ 746,000.00
	LS	1	Staging Traffic Control	1	LS	$ 200,000.00	$ 200,000.00
	LS	1	Miscellaneous Erosion Control	1	LS	$ 250,000.00	$ 250,000.00
	LF		Erosion Control (silt fence) Type C	0	LF	$ 3.80	$ -
Grading							
	LS	1	Grading (including removal, fill, prep)	1	LS	$ 1,864,000.00	$ 1,864,000.00
	CY		Class B Concrete, Gravity Retaining Wall	0	CY	$ 945.87	$ -
	LF	500	Retaining Walls	500	LF	$ 650.00	$ 325,000.00
	LF		Guardrail	0	LF	$ 70.00	$ -
	EA		Guardrail anchorage	0	EA	$ 2,400.00	$ -
Pavement							
	TN	9100	GAB - GR AGGR Base CRS, Incl Matl	9100	TN	$ 34.00	$ 309,400.00
	TN	0	Recycled Asph Conc Leveling, Incl Bitum Matl & H Lime	0	TN	$ 126.75	$ -
	TN	9640	Recycled Asph Conc 12.5MM Superpave, GP 2 Only, Incl Polymer-Modifi	9640	TN	$ 195.49	$ 1,884,523.60
	TN	1300	Recycled Asph Conc 19MM Superpave, GP 1 or 2	1300	TN	$ 217.23	$ 282,399.00
	TN	3200	Recycled Asph Conc 25MM Superpave, GP 1 or 2	3200	TN	$ 194.44	$ 622,208.00
	GAL	4560	Tack Coat	4560	GAL	$ 4.57	$ 20,839.20
	SY	39640	Mill Asph Conc Pvmt, Variable Depth	39640	SY	$ 5.60	$ 221,984.00
Concrete							
	CY	133	Class B Conc, Base or Pvmt Widening	133	CY	$ 209.78	$ 27,900.74
	SF		Residential Concrete Driveway	0	SY	$ 66.64	$ -
	SF		Commercial Concrete Driveway	0	SY	$ 64.76	$ -
	LF	9345	Concrete Curb & Gutter (8 x 30)	9345	LF	$ 47.17	$ 440,803.65
	LF	4435	Concrete Header Curb	4435	LF	$ 20.92	$ 92,780.20
	SF	13720	Concrete Island/Median	1524	SY	$ 75.49	$ 115,080.31
	SF	2225	Concrete Sidewalk, 4 in	247	SY	$ 74.03	$ 18,301.86
	SF	44560	10-foot Concrete Shared Use Path, 4 in	4951	SY	$ 93.72	$ 464,018.13
	EA	58	ADA Crosswalk Ramps	58	EA	$ 2,000.00	$ 116,000.00
Drainage							
	LS	1	Storm Water Drainage	1	LS	$ 300,000.00	$ 300,000.00
	LF		Pipe - 18in	0	LF	$ 57.12	$ -
	LF		Pipe - 24in	0	LF	$ 68.50	$ -
	EA		Manhole	0	EA	$ 2,515.00	$ -
	EA		Drop Inlet	0	EA	$ 3,211.33	$ -
	EA		Catch Basin	0	EA	$ 3,503.60	$ -
	EA		Flared End	0	EA	$ 875.00	$ -
	LS		Culvert crossing	0	LS	$ -	$ -
Features							
	LS		Signing and Marking	0	LS	$ -	$ -
	LF	4060	Signing and Marking	4060	LF	$ 22.73	$ 92,283.80
	LF	5902	Crosswalk Striping (Standard Type)	5902	LF	$ 2.61	$ 15,404.22
	EA	8	Overhead Span Wire Sign	8	EA	$ 24,000.00	$ 192,000.00
	LS	3	Traffic Signal (new, modification)	3	LS	$ 400,000.00	$ 1,200,000.00
	EA	12	Lighting (roadway)	12	EA	$ 6,000.00	$ 72,000.00
	LS	1	Landscaping - minor improvement	1	LS	$ 45,000.00	$ 45,000.00
	LS	1	GCDOT CCTV (incl. pole, etc)	1	LS	$ 150,000.00	$ 150,000.00
	LS			0	LS	$ -	$ -

Construction Costs

Subtotal Construction Cost		**$ 10,067,926.72**
Inflation Rate 3.0 % @ 5 Years		$ 1,603,559.71
	Sub Total	$ 11,671,486.42
Contingency 20%		$ 2,334,297.28
TOTAL CONSTRUCTION COST		**$ 14,005,783.71**

Additional Costs

Engineering Design 10%		$ 1,400,578.37
Right Of Way & Esmt Cost ($/SF varies)		$ 22,980,888.00
Utilities 5.0%		$ 700,289.19
	Subtotal	$ 25,081,755.56
GRAND TOTAL		**$ 39,087,539.26**

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Summary

PE	$	1,401,000.00
ROW	$	22,981,000.00
CST	$	12,372,000.00
Cont	$	2,334,000.00
Total	**$**	**39,088,000.00**

Planning Level Preliminary Estimate of Probable Construction Cost

Gwinnett Place CID/Gwinnett County DOT

Project: Pleasant Hill Road at Venture Drive/Venture Parkway Underpass

Description: Create new street connection under Pleasant Hill Road

Date prepared: 5/30/2024

Construction Costs

	Measurement			Estimate			
	UNIT	Quantity	DESCRIPTION	Quantity	UNIT	Unit Price	Total Cost
	LS	1	Traffic Control	1	LS	$ 950,000.00	$ 950,000.00
	LS	1	Miscellaneous Erosion Control	1	LS	$ 250,000.00	$ 250,000.00
	LF	4000	Erosion Control (silt fence) Type C	4000	LF	$ 3.80	$ 15,200.00
Grading							
	LS	1	Grading (including removal, fill, prep)	1	LS	$ 3,418,000.00	$ 3,418,000.00
	CY	0	Class B Concrete, Gravity Retaining Wall	0	CY	$ 945.87	$ -
	LF	600	Retaining Walls	5400	SF	$ 100.00	$ 540,000.00
	LF	200	Guardrail	200	LF	$ 70.00	$ 14,000.00
	EA	4	Guardrail anchorage	4	EA	$ 2,400.00	$ 9,600.00
Pavement							
	TN	3000	GAB - GR AGGR Base CRS, Incl Matl	3000	TN	$ 34.00	$ 102,000.00
	TN	30	Recycled Asph Conc Leveling, Incl Bitum Matl & H Lime	30	TN	$ 126.75	$ 3,802.50
	TN	2520	Recycled Asph Conc 12.5MM Superpave, GP 2 Only, Incl Polymer-Modifie	2520	TN	$ 195.49	$ 492,634.80
	TN	400	Recycled Asph Conc 19MM Superpave, GP 1 or 2	400	TN	$ 217.23	$ 86,892.00
	TN	1300	Recycled Asph Conc 25MM Superpave, GP 1 or 2	1300	TN	$ 194.44	$ 252,772.00
	GAL	250	Tack Coat	250	GAL	$ 4.57	$ 1,142.50
	SY	800	Mill Asph Conc Pvmt, Variable Depth	800	SY	$ 5.60	$ 4,480.00
Concrete							
	CY	0	Class B Conc, Base or Pvmt Widening	0	CY	$ 209.78	$ -
	SY	0	Residential Concrete Driveway	0	SY	$ 66.64	$ -
	SF	0	Commercial Concrete Driveway	0	SY	$ 64.76	$ -
	LF	3040	Concrete Curb & Gutter (8 x 30)	3040	LF	$ 47.17	$ 143,396.80
	LF	85	Concrete Header Curb	85	LF	$ 20.92	$ 1,778.20
	SF	30	Concrete Island/Median	3	SY	$ 75.49	$ 251.63
	SF	5150	Concrete Sidewalk, 4 in	572	SY	$ 74.03	$ 42,361.61
	SF	18610	10-foot Concrete Shared Use Path, 4 in	2068	SY	$ 93.72	$ 193,792.13
	EA	9	ADA Crosswalk Ramps	9	EA	$ 2,000.00	$ 18,000.00
Drainage							
	LS	1	Storm Water Drainage	1	LS	$ 200,000.00	$ 200,000.00
Features							
	LS	1	Signing and Marking	1	LS	$ 50,000.00	$ 50,000.00
	LF	1300	Signing and Marking	1300	LF	$ 22.73	$ 29,549.00
	LF	664	Crosswalk Striping (Standard Type)	664	LF	$ 2.61	$ 1,733.04
	EA	0	Overhead Span Wire Sign	0	EA	$ 24,000.00	$ -
	LS	0	Traffic Signal (new, modification)	0	LS	$ 400,000.00	$ -
	EA	20	Lighting (roadway)	20	EA	$ 6,000.00	$ 120,000.00
	LS	1	Landscaping - minor improvement	1	LS	$ 100,000.00	$ 100,000.00
	LS	0	GCDOT CCTV (incl. pole, etc)	0	LS	$ 150,000.00	$ -
	LS	1	Bridge Structure	1	LS	$ 11,000,000.00	$ 11,000,000.00

Construction Costs

Subtotal Construction Cost	**$ 18,041,386.22**
Inflation Rate 3.0 % @ 5 Years	$ 2,873,525.09
Sub Total	$ 20,914,911.31
Contingency 20%	$ 1,982,982.26
TOTAL CONSTRUCTION COST	**$ 22,897,893.57**

Additional Costs

Engineering Design 12%	$ 2,747,747.23
Right Of Way & Esmt Cost ($/SF varies)	$ 2,257,500.00
Utilities 2.0%	$ 457,957.87
Subtotal	$ 5,463,205.10
GRAND TOTAL	**$ 28,361,098.67**

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Summary

PE	$ 2,748,000.00
ROW	$ 2,258,000.00
CST	$ 21,373,000.00
Cont	$ 1,983,000.00
Total	**$ 28,362,000.00**

Planning Level Preliminary Estimate of Probable Construction Cost

Gwinnett Place CID / Gwinnett County DOT

Project 7: Pleasant Hill Road at Crestwood Parkway/Koger Boulevard

Description: Add dual left turn lanes on eastbound and westbound approaches

Date prepared: 5/23/2024

Construction Costs

	Measurement			Estimate			
	UNIT	Quantity	DESCRIPTION	Quantity	UNIT	Unit Price	Total Cost
	LS	1	Traffic Control	1	LS	$ 38,000.00	$ 38,000.00
	LS	0	Staging Traffic Control	0	LS		$ -
	LS	1	Miscellaneous Erosion Control	1	LS	$ 20,000.00	$ 20,000.00
	LF		Erosion Control (silt fence) Type C	0	LF	$ 3.80	$ -
Grading							
	LS	1	Grading (including removal, fill, prep)	1	LS	$ 95,000.00	$ 95,000.00
	CY		Class B Concrete, Gravity Retaining Wall	0	CY	$ 945.87	$ -
	LF		Retaining Walls	0	LF	$ 650.00	$ -
	LF		Guardrail	0	LF	$ 70.00	$ -
	EA		Guardrail anchorage	0	EA	$ 2,400.00	$ -
Pavement							
	TN	500	GAB - GR AGGR Base CRS, Incl Matl	500	TN	$ 34.00	$ 17,000.00
	TN	0	Recycled Asph Conc Leveling, Incl Bitum Matl & H Lime	0	TN	$ 126.75	$ -
	TN	560	Recycled Asph Conc 12.5MM Superpave, GP 2 Only, Incl Polymer-Modifi	560	TN	$ 195.49	$ 109,474.40
	TN	100	Recycled Asph Conc 19MM Superpave, GP 1 or 2	100	TN	$ 217.23	$ 21,723.00
	TN	200	Recycled Asph Conc 25MM Superpave, GP 1 or 2	200	TN	$ 194.44	$ 38,888.00
	GAL	250	Tack Coat	250	GAL	$ 4.57	$ 1,142.50
	SY	2220	Mill Asph Conc Pvmt, Variable Depth	2220	SY	$ 5.60	$ 12,432.00
Concrete							
	CY	0	Class B Conc, Base or Pvmt Widening	0	CY	$ 209.78	$ -
	SF		Residential Concrete Driveway	0	SY	$ 66.64	$ -
	SF		Commercial Concrete Driveway	0	SY	$ 64.76	$ -
	LF	340	Concrete Curb & Gutter (8 x 30)	340	LF	$ 47.17	$ 16,037.80
	LF		Concrete Curb & Gutter (8 x 24)	0	LF	$ 25.64	$ -
	LF		Concrete Header Curb	0	LF	$ 20.92	$ -
	SF	535	Concrete Island/Median	59	SY	$ 75.49	$ 4,487.46
	SF		Concrete Sidewalk, 4 in	0	SY	$ 74.03	$ -
	SF		10-foot Concrete Shared Use Path, 4 in	0	SY	$ 93.72	$ -
	EA	2	ADA Crosswalk Ramps	2	EA	$ 2,000.00	$ 4,000.00
Drainage							
	LF		Pipe - 18in	0	LF	$ 57.12	$ -
	LF		Pipe - 24in	0	LF	$ 68.50	$ -
	EA		Manhole	0	EA	$ 2,515.00	$ -
	EA		Drop Inlet	0	EA	$ 3,211.33	$ -
	EA		Catch Basin	0	EA	$ 3,503.60	$ -
	EA		Flared End	0	EA	$ 875.00	$ -
	LS		Culvert crossing	0	LS	$ -	$ -
Features							
	LF	650	Signing and Marking	650	LF	$ 22.73	$ 14,774.50
	LF	1196	Crosswalk Striping (Standard Type)	1196	LF	$ 2.61	$ 3,121.56
	EA	2	Overhead Span Wire Sign	2	EA	$ 24,000.00	$ 48,000.00
	LS	1	Traffic Signal (new, modification)	1	LS	$ 50,000.00	$ 50,000.00
	EA	0	Lighting (roadway)	0	EA	$ 6,000.00	$ -
	LS	1	Landscaping - minor improvement	1	LS	$ 20,000.00	$ 20,000.00
	LS	0	GCDOT CCTV (incl. pole, etc)	0	LS	$ -	$ -
	LS			0	LS	$ -	$ -

Construction Costs

Subtotal Construction Cost		**$ 514,081.22**
Inflation Rate 3.0 % @ 5 Years		$ 81,879.81
	Sub Total	$ 595,961.03
Contingency 15%		$ 89,394.15
TOTAL CONSTRUCTION COST		**$ 685,355.19**

Additional Costs

Engineering Design 10%		$ 68,535.52
Right Of Way & Esmt Cost ($/SF varies)		$ -
Utilities 2.0%		$ 13,707.10
	Subtotal	$ 82,242.62
GRAND TOTAL		**$ 767,597.81**

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Summary

PE	$	69,000.00
ROW	$	-
CST	$	610,000.00
Cont	$	89,000.00
Total	**$**	**768,000.00**

Planning Level Preliminary Estimate of Probable Construction Cost

Gwinnett Place CID/Gwinnett County DOT

Project 8: Pleasant Hill Road at Sweetwater Road

Description: Extend westbound left turn lane along Sweetwater Road

Date prepared: 5/23/2024

Construction Costs

	Measurement			Estimate			
	UNIT	Quantity	DESCRIPTION	Quantity	UNIT	Unit Price	Total Cost
	LS	1	Traffic Control	1	LS	$ 7,000.00	$ 7,000.00
	LS	0	Staging Traffic Control	0	LS		$ -
	LS	1	Miscellaneous Erosion Control	1	LS	$ 10,000.00	$ 10,000.00
	LF		Erosion Control (silt fence) Type C	0	LF	$ 3.80	$ -
Grading							
	LS	1	Grading (including removal, fill, prep)	1	LS	$ 18,000.00	$ 18,000.00
	CY		Class B Concrete, Gravity Retaining Wall	0	CY	$ 945.87	$ -
	LF		Retaining Walls	0	LF	$ 650.00	$ -
	LF		Guardrail	0	LF	$ 70.00	$ -
	EA		Guardrail anchorage	0	EA	$ 2,400.00	$ -
Pavement							
	TN	100	GAB - GR AGGR Base CRS, Incl Matl	100	TN	$ 34.00	$ 3,400.00
	TN	0	Recycled Asph Conc Leveling, Incl Bitum Matl & H Lime	0	TN	$ 126.75	$ -
	TN	40	Recycled Asph Conc 12.5MM Superpave, GP 2 Only, Incl Polymer-Modifi	40	TN	$ 195.49	$ 7,819.60
	TN	50	Recycled Asph Conc 19MM Superpave, GP 1 or 2	50	TN	$ 217.23	$ 10,861.50
	TN	50	Recycled Asph Conc 25MM Superpave, GP 1 or 2	50	TN	$ 194.44	$ 9,722.00
	GAL	10	Tack Coat	10	GAL	$ 4.57	$ 45.70
	SY	0	Mill Asph Conc Pvmt, Variable Depth	0	SY	$ 5.60	$ -
Concrete							
	CY	0	Class B Conc, Base or Pvmt Widening	0	CY	$ 209.78	$ -
	SF		Residential Concrete Driveway	0	SY	$ 66.64	$ -
	SF		Commercial Concrete Driveway	0	SY	$ 64.76	$ -
	LF	195	Concrete Curb & Gutter (8 x 30)	195	LF	$ 47.17	$ 9,198.15
	LF		Concrete Curb & Gutter (8 x 24)	0	LF	$ 25.64	$ -
	LF		Concrete Header Curb	0	LF	$ 20.92	$ -
	SF	1804	Concrete Island/Median	200	SY	$ 75.49	$ 15,131.55
	SF		Concrete Sidewalk, 4 in	0	SY	$ 74.03	$ -
	SF		10-foot Concrete Shared Use Path, 4 in	0	SY	$ 93.72	$ -
	EA		ADA Crosswalk Ramps	0	EA	$ 2,000.00	$ -
Drainage							
	LF		Pipe - 18in	0	LF	$ 57.12	$ -
	LF		Pipe - 24in	0	LF	$ 68.50	$ -
	EA		Manhole	0	EA	$ 2,515.00	$ -
	EA		Drop Inlet	0	EA	$ 3,211.33	$ -
	EA		Catch Basin	0	EA	$ 3,503.60	$ -
	EA		Flared End	0	EA	$ 875.00	$ -
	LS		Culvert crossing	0	LS	$ -	$ -
Features							
	LF	200	Signing and Marking	200	LF	$ 22.73	$ 4,546.00
	LF	0	Crosswalk Striping (Standard Type)	0	LF	$ 2.61	$ -
	EA	0	Overhead Span Wire Sign	0	EA	$ 24,000.00	$ -
	LS	0	Traffic Signal (new, modification)	0	LS		$ -
	EA	0	Lighting (roadway)	0	EA	$ 6,000.00	$ -
	LS	0	Landscaping - minor improvement	0	LS	$ -	$ -
	LS			0	LS		$ -
	LS			0	LS	$ -	$ -

Construction Costs

Subtotal Construction Cost	**$ 95,724.50**
Inflation Rate 3.0 % @ 5 Years	$ 15,246.43
Sub Total	$ 110,970.93
Contingency 10%	$ 11,097.09
TOTAL CONSTRUCTION COST	**$ 122,068.03**

Additional Costs

Engineering Design 10%	$ 12,206.80
Right Of Way & Esmt Cost ($/SF varies)	$ -
Utilities 0.0%	$ -
Subtotal	$ 12,206.80
GRAND TOTAL	**$ 134,274.83**

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Summary

PE	$	12,000.00
ROW	$	-
CST	$	111,000.00
Cont	$	11,000.00
Total	**$**	**134,000.00**

Planning Level Preliminary Estimate of Probable Construction Cost

Gwinnett Place CID/Gwinnett County DOT

Project 9: Pleasant Hill Road at Club Drive

Description: Add northbound right-turn lane along Pleasant Hill Rd

Date prepared: 5/23/2024

Construction Costs

	Measurement			Estimate			
	UNIT	Quantity	DESCRIPTION	Quantity	UNIT	Unit Price	Total Cost
	LS	1	Traffic Control	1	LS	$ 18,000.00	$ 18,000.00
	LS	0	Staging Traffic Control	0	LS		$ -
	LS	1	Miscellaneous Erosion Control	1	LS	$ 15,000.00	$ 15,000.00
	LF		Erosion Control (silt fence) Type C	0	LF	$ 3.80	$ -
Grading							
	LS	1	Grading (including removal, fill, prep)	1	LS	$ 55,000.00	$ 55,000.00
	CY		Class B Concrete, Gravity Retaining Wall	0	CY	$ 945.87	$ -
	LF		Retaining Walls	0	LF	$ 650.00	$ -
	LF		Guardrail	0	LF	$ 70.00	$ -
	EA		Guardrail anchorage	0	EA	$ 2,400.00	$ -
Pavement							
	TN	300	GAB - GR AGGR Base CRS, Incl Matl	300	TN	$ 34.00	$ 10,200.00
	TN	0	Recycled Asph Conc Leveling, Incl Bitum Matl & H Lime	0	TN	$ 126.75	$ -
	TN	230	Recycled Asph Conc 12.5MM Superpave, GP 2 Only, Incl Polymer-Modifi	230	TN	$ 195.49	$ 44,962.70
	TN	50	Recycled Asph Conc 19MM Superpave, GP 1 or 2	50	TN	$ 217.23	$ 10,861.50
	TN	150	Recycled Asph Conc 25MM Superpave, GP 1 or 2	150	TN	$ 194.44	$ 29,166.00
	GAL	20	Tack Coat	20	GAL	$ 4.57	$ 91.40
	SY	0	Mill Asph Conc Pvmt, Variable Depth	0	SY	$ 5.60	$ -
Concrete							
	CY	0	Class B Conc, Base or Pvmt Widening	0	CY	$ 209.78	$ -
	SF		Residential Concrete Driveway	0	SY	$ 66.64	$ -
	SF		Commercial Concrete Driveway	0	SY	$ 64.76	$ -
	LF	370	Concrete Curb & Gutter (8 x 30)	370	LF	$ 47.17	$ 17,452.90
	LF		Concrete Curb & Gutter (8 x 24)	0	LF	$ 25.64	$ -
	LF		Concrete Header Curb	0	LF	$ 20.92	$ -
	SF		Concrete Island/Median	0	SY	$ 75.49	$ -
	SF	1730	Concrete Sidewalk, 4 in	192	SY	$ 74.03	$ 14,230.21
	SF		10-foot Concrete Shared Use Path, 4 in	0	SY	$ 93.72	$ -
	EA	2	ADA Crosswalk Ramps	2	EA	$ 2,000.00	$ 4,000.00
Drainage							
	LF	30	Pipe - 18in	30	LF	$ 57.12	$ 1,713.60
	LF		Pipe - 24in	0	LF	$ 68.50	$ -
	EA	2	Manhole	2	EA	$ 2,515.00	$ 5,030.00
	EA		Drop Inlet	0	EA	$ 3,211.33	$ -
	EA	2	Catch Basin	2	EA	$ 3,503.60	$ 7,007.20
	EA		Flared End	0	EA	$ 875.00	$ -
	LS		Culvert crossing	0	LS	$ -	$ -
Features							
	LF	360	Signing and Marking	360	LF	$ 22.73	$ 8,182.80
	LF	104	Crosswalk Striping (Standard Type)	104	LF	$ 2.61	$ 271.44
	EA	0	Overhead Span Wire Sign	0	EA	$ 24,000.00	$ -
	LS	0	Traffic Signal (new, modification)	0	LS	$ -	$ -
	EA	0	Lighting (roadway)	0	EA	$ 6,000.00	$ -
	LS	1	Landscaping - minor improvement	1	LS	$ 15,000.00	$ 15,000.00
	LS	0	GCDOT CCTV (incl. pole, etc)	0	LS	$ -	$ -
	LS			0	LS	$ -	$ -

Construction Costs

Subtotal Construction Cost		**$ 256,169.75**
Inflation Rate 3.0 % @ 5 Years		$ 40,801.20
	Sub Total	$ 296,970.95
Contingency 25%		$ 74,242.74
TOTAL CONSTRUCTION COST		**$ 371,213.69**

Note: Assumption includes avoiding impacts to traffic signal strain pole and GCDOT CCTV pole.

Additional Costs

Engineering Design 12%		$ 44,545.64
Right Of Way & Esmt Cost ($/SF varies)		$ 88,987.50
Utilities 4.0%		$ 14,848.55
	Subtotal	$ 148,381.69
GRAND TOTAL		**$ 519,595.38**

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Summary

PE	$	45,000.00
ROW	$	89,000.00
CST	$	312,000.00
Cont	$	74,000.00
Total	**$**	**520,000.00**

C –

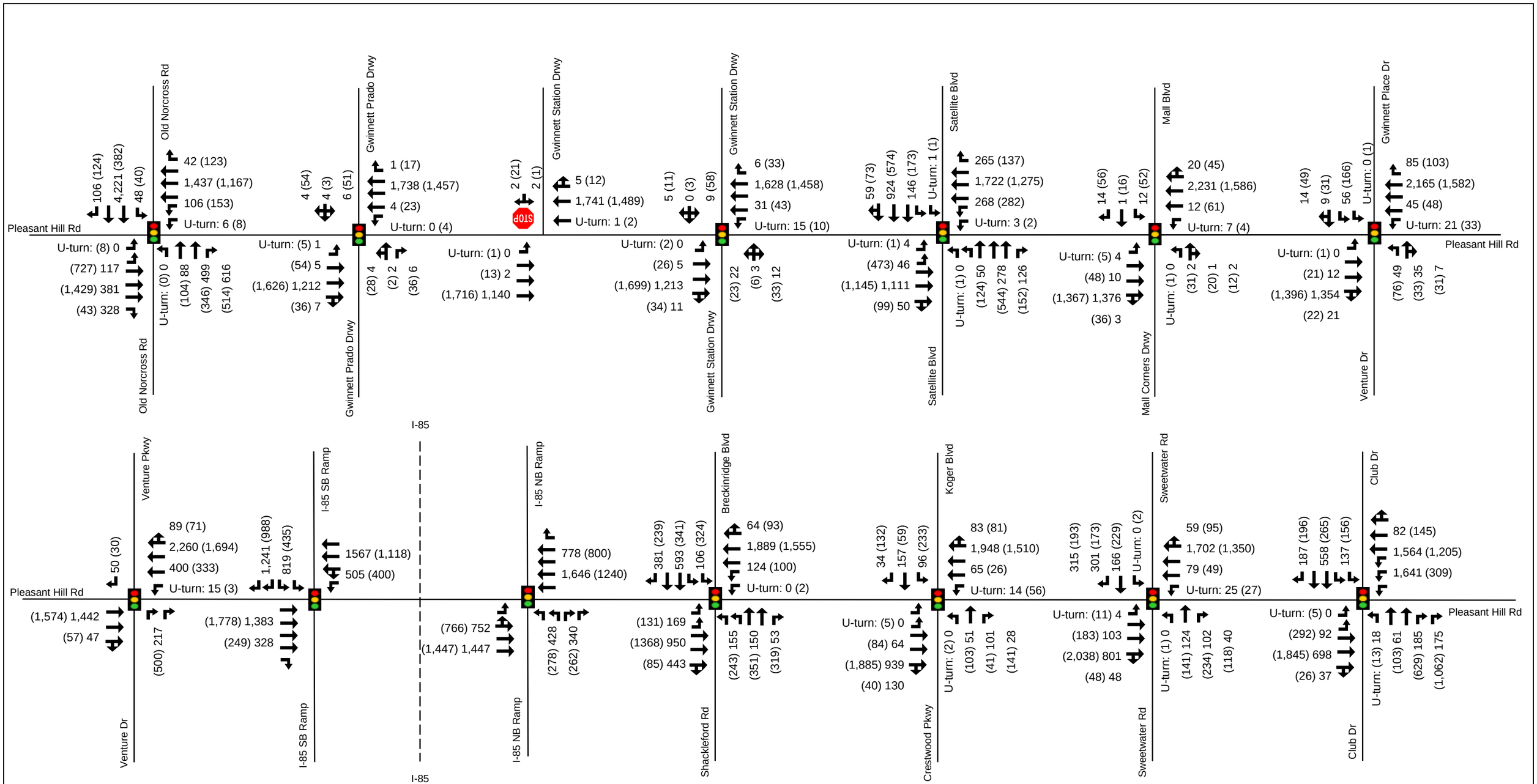
Exhibit F - Existing Year (2024) Level of Service

Exhibit G - Existing Year (2024) Intersection Volumes for Corridor

Exhibit H - Year 2054 intersection volumes for Pleasant Hill Road at Satellite Blvd

Exhibit F – Existing Year (2024) Level of Service

Intersection ID/Location	
1	Pleasant Hill Rd at Old Norcross Rd
2	Pleasant Hill Rd at Gwinnett Prado Drwy
14	Pleasant Hill Rd at Gwinnett Station Drwy
3	Pleasant Hill Rd at Gwinnett Station Drwy
4	Pleasant Hill Rd at Satellite Blvd
5	Pleasant Hill Rd at Mall Blvd
6	Pleasant Hill Rd at Gwinnett Place Dr
7	Pleasant Hill Rd at Venture Dr
10	Pleasant Hill Rd at Breckinridge Blvd
11	Pleasant Hill Rd at Koger Blvd
12	Pleasant Hill Rd at Sweetwater Rd
13	Pleasant Hill Rd at Club Dr



KCI TECHNOLOGIES

Gwinnett Place CID
Updated Pleasant Hill Road Concept

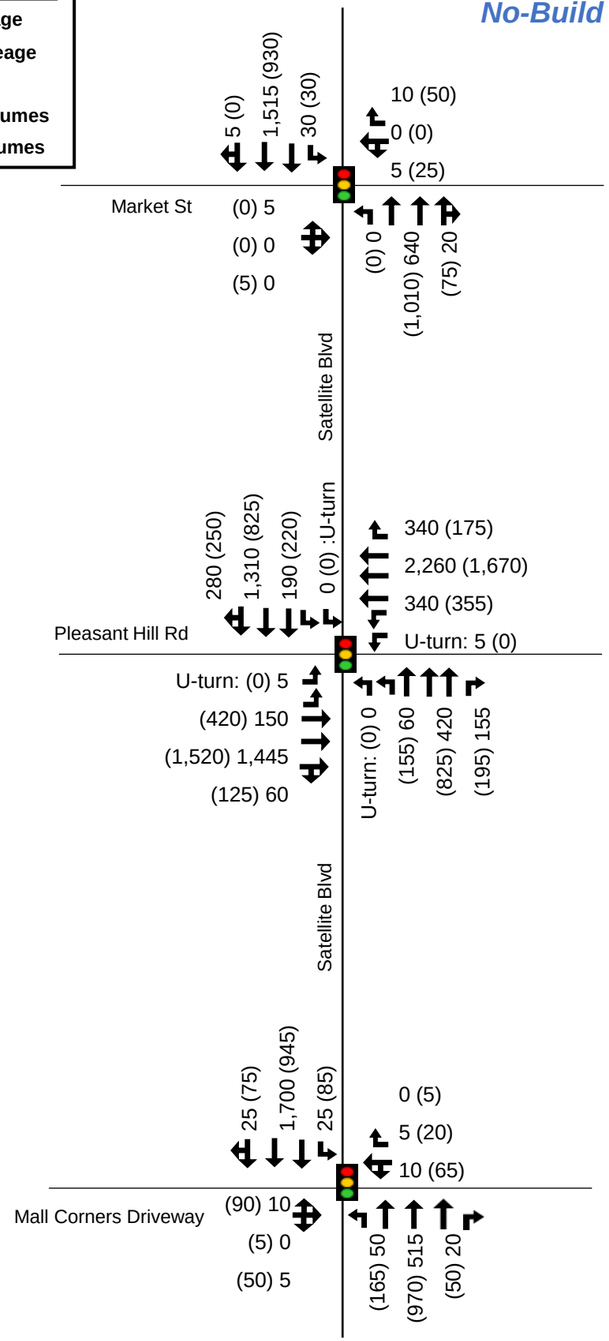
Existing 2024 Intersection Volumes for Corridor

Exhibit G

LEGEND:

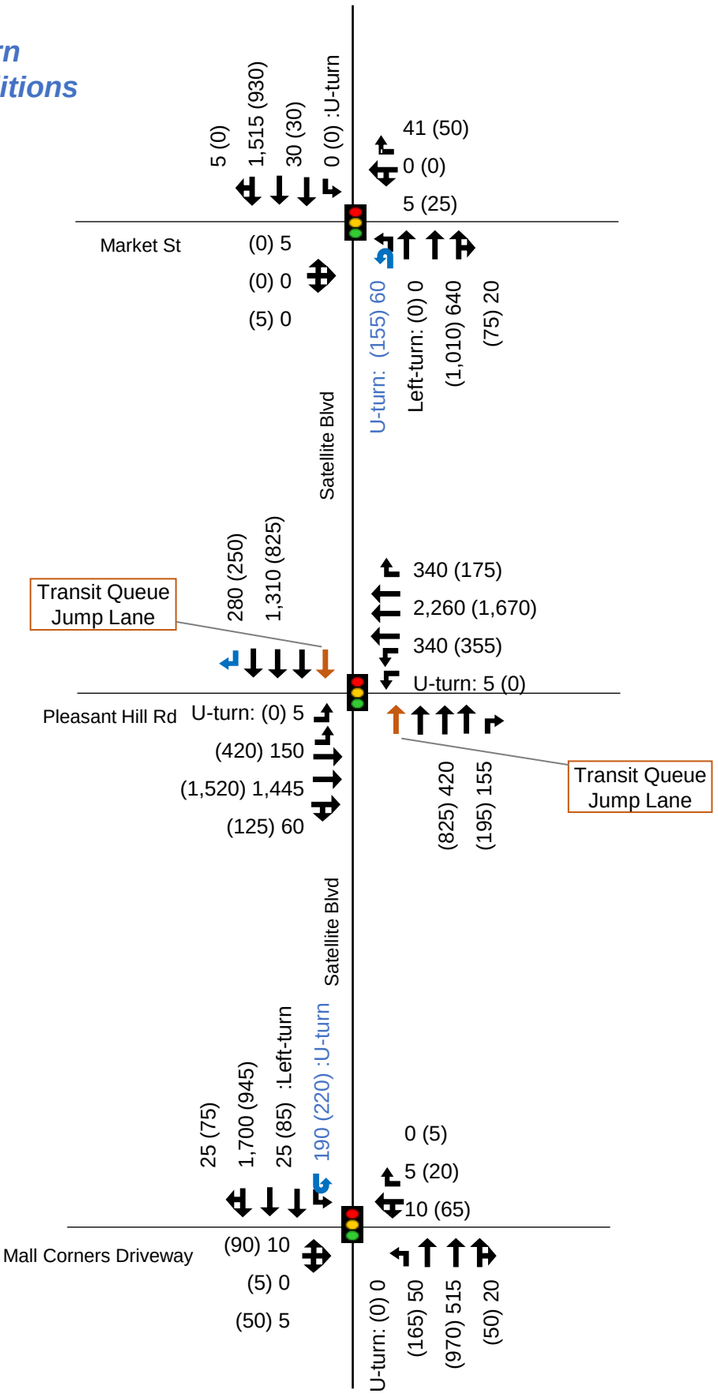
- Existing Roadway Laneage
- Proposed Roadway Laneage
- Proposed Transit Lane
- XX AM Peak Hour Traffic Volumes
- (XX) PM Peak Hour Traffic Volumes

Year 2025 No-Build Conditions



Not to Scale

Year 2025 Median U-turn Alternative Conditions



Not to Scale

KCI TECHNOLOGIES	**Gwinnett Place CID** **Updated Pleasant Hill Road Concept**	**Year 2054 Intersection Volumes for Pleasant Hill Road at Satellite Blvd**	**Exhibit H**

D –

Intersection Volume Development

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #1: Pleasant Hill Rd at Old Norcross Rd

A.M. PEAK HOUR

Condition	Old Norcross Rd Eastbound				Old Norcross Rd Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	48	221	106	0	88	499	616	6	106	1,437	42	10	323	1,029	25
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											225				102	
Reroute																
30 Year Design Year (2054)	0	60	280	135	0	110	635	780	5	135	2,095	55	10	410	1,430	30

P.M. PEAK HOUR

Condition	Old Norcross Rd Eastbound				Old Norcross Rd Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	1	40	382	124	0	104	346	514	8	153	1,167	123	8	727	1,429	43
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											172				222	
Reroute																
30 Year Design Year (2054)	0	50	485	155	0	135	440	655	10	195	1,690	155	10	925	2,080	55

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #2: Pleasant Hill Rd at Gwinnett Prado Driveway

A.M. PEAK HOUR

Condition	Gwinnett Prado Driveway Eastbound				Gwinnett Prado Driveway Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	4	2	6	0	6	4	4	0	4	1,738	1	1	5	1,212	7
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											225				102	
Reroute																
30 Year Design Year (2054)	0	5	0	5	0	5	5	5	0	5	2,480	0	0	5	1,665	5

P.M. PEAK HOUR

Condition	Gwinnett Prado Driveway Eastbound				Gwinnett Prado Driveway Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	28	2	36	0	51	3	54	4	23	1,457	17	5	54	1,626	36
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											172				222	
Reroute																
30 Year Design Year (2054)	0	35	0	50	0	65	5	65	5	30	2,060	25	5	65	2,335	50

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #3: Pleasant Hill Rd at Gwinnett Station Driveway

A.M. PEAK HOUR

Condition	Gwinnett Station Driveway **Eastbound**				Gwinnett Station Driveway **Westbound**				Pleasant Hill Rd **Northbound**				Pleasant Hill Rd **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	22	3	12	0	9	0	5	15	31	1,628	6	0	5	1,213	11
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											225				102	
Reroute																
30 Year Design Year (2054)	0	30	5	20	0	10	0	5	20	40	2,345	5	0	5	1,665	10

P.M. PEAK HOUR

Condition	Gwinnett Station Driveway **Eastbound**				Gwinnett Station Driveway **Westbound**				Pleasant Hill Rd **Northbound**				Pleasant Hill Rd **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	23	6	33	0	58	3	11	10	43	1,458	33	2	26	1,699	34
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											172				222	
Reroute																
30 Year Design Year (2054)	0	30	5	40	0	75	5	10	10	55	2,060	40	0	30	2,430	40

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #4: Pleasant Hill Rd at Satellite Blvd

A.M. PEAK HOUR

Condition	Satellite Blvd **Eastbound**				Satellite Blvd **Westbound**				Pleasant Hill Rd **Northbound**				Pleasant Hill Rd **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0		278	126			924	59	3	268	1,722	265	4	46	1,111	50
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development			51				111	168			57			76	31	
Reroute				147				50								
30 Year Design Year (2054)	0	0	420	340	0	0	1,310	340	5	340	2,260	340	5	150	1,445	60

P.M. PEAK HOUR

Condition	Satellite Blvd **Eastbound**				Satellite Blvd **Westbound**				Pleasant Hill Rd **Northbound**				Pleasant Hill Rd **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)			544	152			574	73	2	282	1,275	137	1	171	1,145	99
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development			111				76	128			44			166	56	
Reroute				174				125								
30 Year Design Year (2054)	0	0	825	405	0	0	825	400	0	355	1,670	175	0	420	1,520	125

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #4A: Satellite Blvd at Mall Corners Drwy

A.M. PEAK HOUR

Condition	Satellite Blvd **Eastbound**				Satellite Blvd **Westbound**				Mall Corners **Northbound**				Mall Corners **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	36	405	13	0	17	1,341	20	0	11	5	2	0	11	0	7
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development																
Reroute					155											
30 Year Design Year (2054)	0	50	515	20	190	25	1,700	25	0	10	5	0	0	10	0	5

P.M. PEAK HOUR

Condition	Satellite Blvd **Eastbound**				Satellite Blvd **Westbound**				Mall Corners **Northbound**				Mall Corners **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	127	762	38	0	69	745	59	0	54	13	6	0	70	7	37
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development																
Reroute					180											
30 Year Design Year (2054)	0	165	970	50	220	85	945	75	0	65	20	5	0	90	5	50

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #4B: Satellite Blvd at Market St

A.M. PEAK HOUR

Condition	Satellite Blvd **Eastbound**				Satellite Blvd **Westbound**				Market St **Northbound**				Market St **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	0	507	14	0	23	1,192	3	0	4	0	11	0	1	0	3
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development																
Reroute	50															
30 Year Design Year (2054)	60	0	640	20	0	30	1,515	5	0	5	0	10	0	0	0	5

P.M. PEAK HOUR

Condition	Satellite Blvd **Eastbound**				Satellite Blvd **Westbound**				Market St **Northbound**				Market St **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	2	796	55	0	22	733	1	0	18	0	37	0	3	0	1
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development																
Reroute	130															
30 Year Design Year (2054)	155	0	1,010	75	0	30	930	0	0	25	0	50	0	5	0	0

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #5: Pleasant Hill Rd at Mall Blvd

A.M. PEAK HOUR

Condition	Mall Corners Driveway **Eastbound**				Mall Blvd **Westbound**				Pleasant Hill Rd **Northbound**				Pleasant Hill Rd **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	2	1	2	0	12	1	14	7	12	2,231	20	4	10	1,376	3
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development						167		57				76		31		
Reroute																
30 Year Design Year (2054)	0	0	0	0	0	220	0	85	5	20	2,835	115	5	50	1,750	5

P.M. PEAK HOUR

Condition	Mall Corners Driveway **Eastbound**				Mall Blvd **Westbound**				Pleasant Hill Rd **Northbound**				Pleasant Hill Rd **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	1	31	20	12	0	52	16	56	4	61	1,586	45	5	10	1,367	36
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development						128		44				168		56		
Reroute																
30 Year Design Year (2054)	0	40	25	20	0	225	20	125	5	80	2,015	260	5	80	1,735	50

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #6: Pleasant Hill Rd at Gwinnett Place Dr

A.M. PEAK HOUR

Condition	Venture Dr Eastbound				Gwinnett Place Dr Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	49	35	7	0	56	9	14	21	45	2,165	85	0	12	1,354	21
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development						339					76	153			167	
Reroute				148					16	420		-138				
30 Year Design Year (2054)	0	60	40	190	0	485	10	20	50	565	2,840	125	0	20	1,920	25

P.M. PEAK HOUR

Condition	Venture Dr Eastbound				Gwinnett Place Dr Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	76	33	31	1	166	31	49	33	48	1,582	103	1	21	1,396	22
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development						255					168	336			128	
Reroute				255					3	349		-302				
30 Year Design Year (2054)	0	95	40	350	0	520	40	60	50	485	2,210	170	0	25	1,925	30

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #7: Pleasant Hill Rd at Venture Dr

A.M. PEAK HOUR

Condition	Venture Dr **Eastbound**				Venture Pkwy **Westbound**				Pleasant Hill Rd **Northbound**				Pleasant Hill Rd **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	0	0	217	0	0	0	50	15	400	2,260	89	0	0	1,442	47
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											229				506	
Reroute				-80					-16	-420	645	-93			140	
30 Year Design Year (2054)	0	0	0	180	0	0	0	60	0	0	3,930	0	0	0	2,615	60

P.M. PEAK HOUR

Condition	Venture Dr **Eastbound**				Venture Pkwy **Westbound**				Pleasant Hill Rd **Northbound**				Pleasant Hill Rd **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	0	0	500	0	0	0	30	3	333	1,694	71	0	0	1,574	57
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											504				383	
Reroute				-138					-3	-349	520	-74			318	
30 Year Design Year (2054)	0	0	0	465	0	0	0	35	0	0	3,390	0	0	0	2,845	75

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #8: Pleasant Hill Rd at I-85 SB Ramp

A.M. PEAK HOUR

Condition	N/A Eastbound				I-85 SB Ramp Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	0	0	0	0	819	0	1,241	0	505	1,567	0	0	0	1,383	328
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development								282			102				224	282
Reroute																
30 Year Design Year (2054)	0	0	0	0	0	1,040	0	1,920	0	640	2,115	0	0	0	2,030	755

P.M. PEAK HOUR

Condition	N/A Eastbound				I-85 SB Ramp Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	0	0	0	0	435	0	988	0	400	1,118	0	0	0	1,778	249
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development								213			212				170	213
Reroute																
30 Year Design Year (2054)	0	0	0	0	0	550	0	1,515	0	510	1,675	0	0	0	2,465	575

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #9: Pleasant Hill Rd at I-85 NB Ramp

A.M. PEAK HOUR

Condition	I-85 NB Ramp Eastbound				N/A Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	428	0	340	0	0	0	0	0	0	1,646	778	0	752	1,447	0
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											102				224	
Reroute																
30 Year Design Year (2054)	0	545	0	430	0	0	0	0	0	0	2,215	985	0	955	2,105	0

P.M. PEAK HOUR

Condition	I-85 NB Ramp Eastbound				N/A Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	278	0	262	0	0	0	0	0	0	1,240	800	0	766	1,447	0
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											212				170	
Reroute																
30 Year Design Year (2054)	0	350	0	335	0	0	0	0	0	0	1,835	1,015	0	975	2,045	0

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #10: Pleasant Hill Rd at Breckinridge Blvd

A.M. PEAK HOUR

Condition	Shackleford Rd Eastbound				Breckinridge Blvd Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	155	150	53	0	106	593	381	0	124	1,889	64	0	169	950	443
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											102				224	
Reroute																
30 Year Design Year (2054)	0	200	190	65	0	135	750	485	0	155	2,525	80	0	210	1,475	565

P.M. PEAK HOUR

Condition	Shackleford Rd Eastbound				Breckinridge Blvd Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	243	351	319	0	324	341	239	2	100	1,555	93	0	131	1,368	85
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											212				170	
Reroute																
30 Year Design Year (2054)	0	310	450	405	0	410	435	305	0	125	2,235	120	0	165	1,945	110

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #11: Pleasant Hill Rd at Crestwood Pkwy/Koger Blvd

A.M. PEAK HOUR

Condition	Crestwood Pkwy **Eastbound**				Koger Blvd **Westbound**				Pleasant Hill Rd **Northbound**				Pleasant Hill Rd **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	51	101	28	0	96	157	34	14	65	1,948	83	0	64	939	130
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											102				224	
Reroute																
30 Year Design Year (2054)	0	65	125	35	0	120	200	40	20	85	2,595	105	0	80	1,465	165

P.M. PEAK HOUR

Condition	Crestwood Pkwy **Eastbound**				Koger Blvd **Westbound**				Pleasant Hill Rd **Northbound**				Pleasant Hill Rd **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	2	103	41	141	0	233	59	132	56	26	1,510	81	5	84	1,885	40
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											212				170	
Reroute																
30 Year Design Year (2054)	0	135	55	180	0	295	75	170	75	30	2,175	105	5	110	2,595	50

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #12: Pleasant Hill Rd at Sweetwater Rd

A.M. PEAK HOUR

Condition	Sweetwater Rd **Eastbound**				Sweetwater Rd **Westbound**				Pleasant Hill Rd **Northbound**				Pleasant Hill Rd **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	124	102	40	0	166	301	315	25	79	1,702	59	4	103	801	48
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											102				224	
Reroute																
30 Year Design Year (2054)	0	155	125	50	0	210	380	400	30	105	2,280	75	5	135	1,290	60

P.M. PEAK HOUR

Condition	Sweetwater Rd **Eastbound**				Sweetwater Rd **Westbound**				Pleasant Hill Rd **Northbound**				Pleasant Hill Rd **Southbound**			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	1	141	234	118	2	229	173	193	27	49	1,350	95	11	183	2,038	48
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											212				170	
Reroute																
30 Year Design Year (2054)	0	180	295	150	0	290	220	240	35	60	1,975	120	10	230	2,795	60

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

Intersection #13: Pleasant Hill Rd at Club Dr

A.M. PEAK HOUR

Condition	Club Dr Eastbound				Club Dr Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	18	61	185	175	0	137	558	187	0	1,641	1,564	82	0	92	698	37
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											102				224	
Reroute																
30 Year Design Year (2054)	25	80	235	225	0	175	710	235	0	2,080	2,115	105	0	115	1,155	50

P.M. PEAK HOUR

Condition	Club Dr Eastbound				Club Dr Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	13	103	629	1,062	0	156	265	196	0	309	1,205	145	5	292	1,845	26
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											212				170	
Reroute																
30 Year Design Year (2054)	20	135	800	1,350	0	200	340	250	0	395	1,785	180	5	370	2,550	30

Gwinnett County - Pleasant Hill Road Updated Concept Study
Intersection Traffic Volume Development

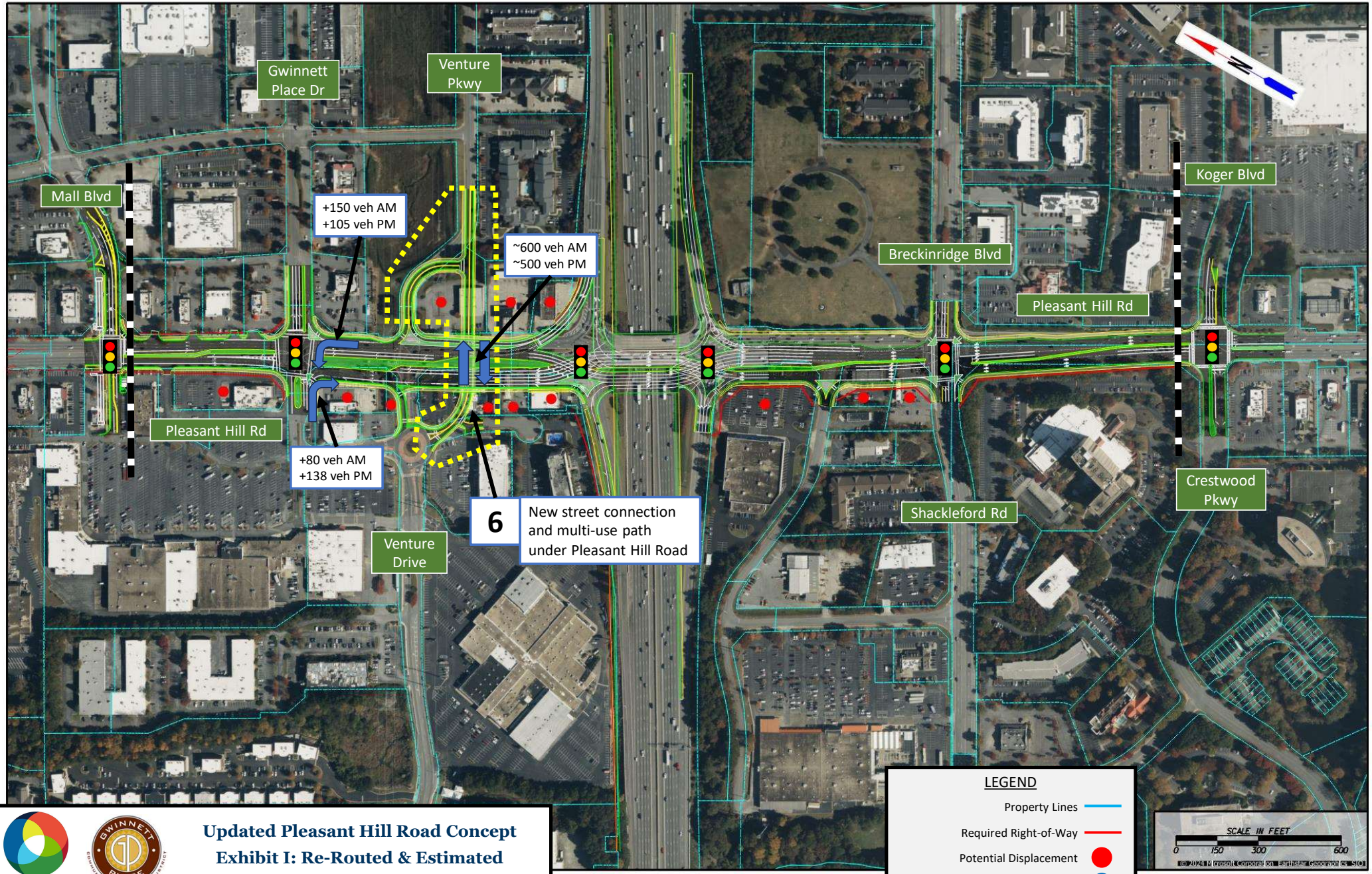
Intersection #14: Pleasant Hill Rd at Gwinnett Station Driveway

A.M. PEAK HOUR

Condition	N/A Eastbound				Gwinnett Station Driveway Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	0	0	0	0	2	0	2	1	0	1,741	5	0	2	1,140	0
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											102				224	
Reroute																
30 Year Design Year (2054)	0	0	0	0	0	0	0	0	0	0	2,335	5	0	0	1,720	0

P.M. PEAK HOUR

Condition	N/A Eastbound				Gwinnett Station Driveway Westbound				Pleasant Hill Rd Northbound				Pleasant Hill Rd Southbound			
	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R	U-turn	L	T	R
Existing Volumes (2024)	0	0	0	0	0	1	0	21	2	0	1,489	12	1	13	1,716	0
Annual Growth Rate	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%	0.80%
Growth Factor	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049	1.049
Mall Development											212				170	
Reroute																
30 Year Design Year (2054)	0	0	0	0	0	0	0	25	0	0	2,150	20	0	20	2,385	0



Gwinnett

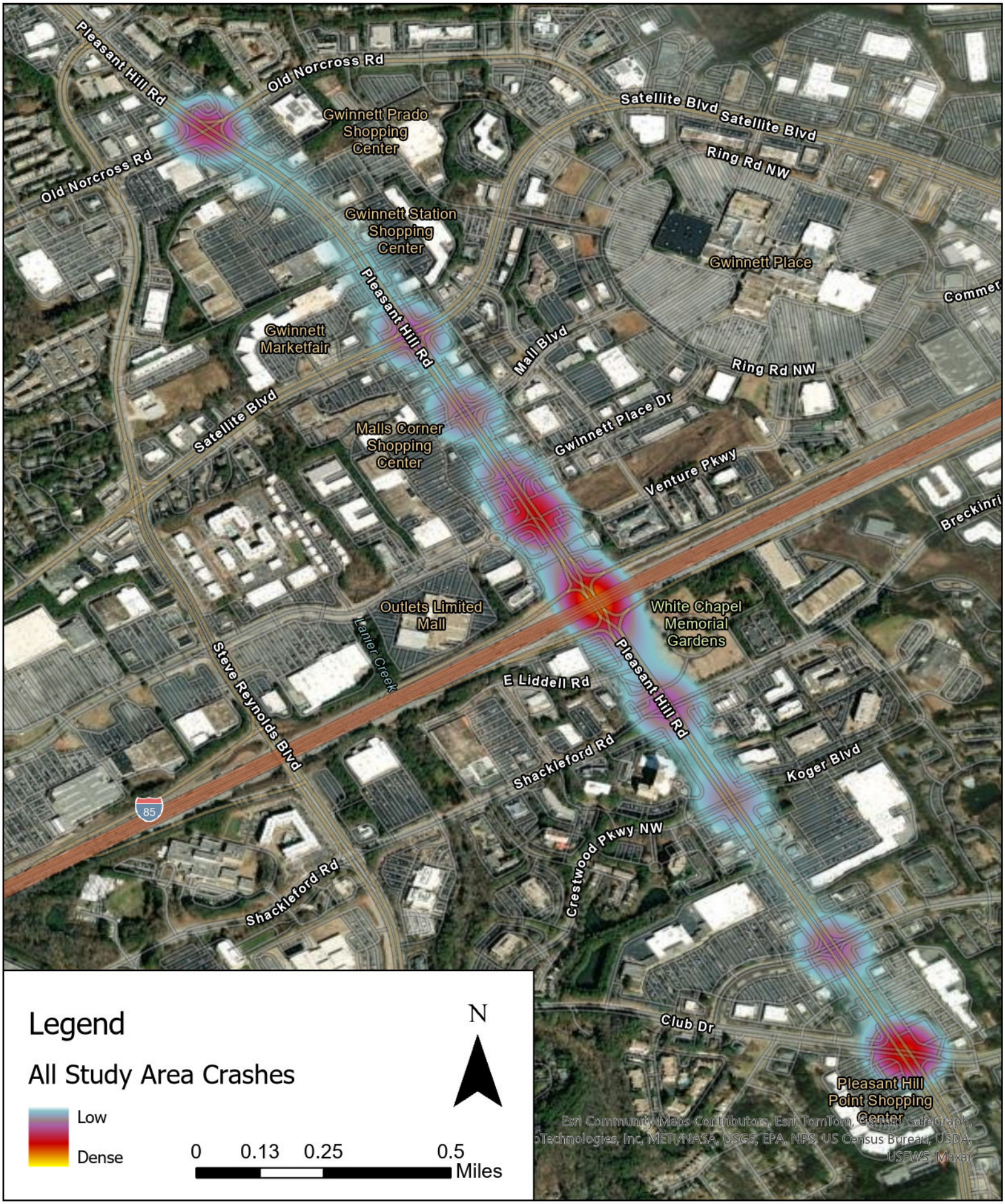
Updated Pleasant Hill Road Concept
Exhibit I: Re-Routed & Estimated Vehicle Trips

5/24/2024

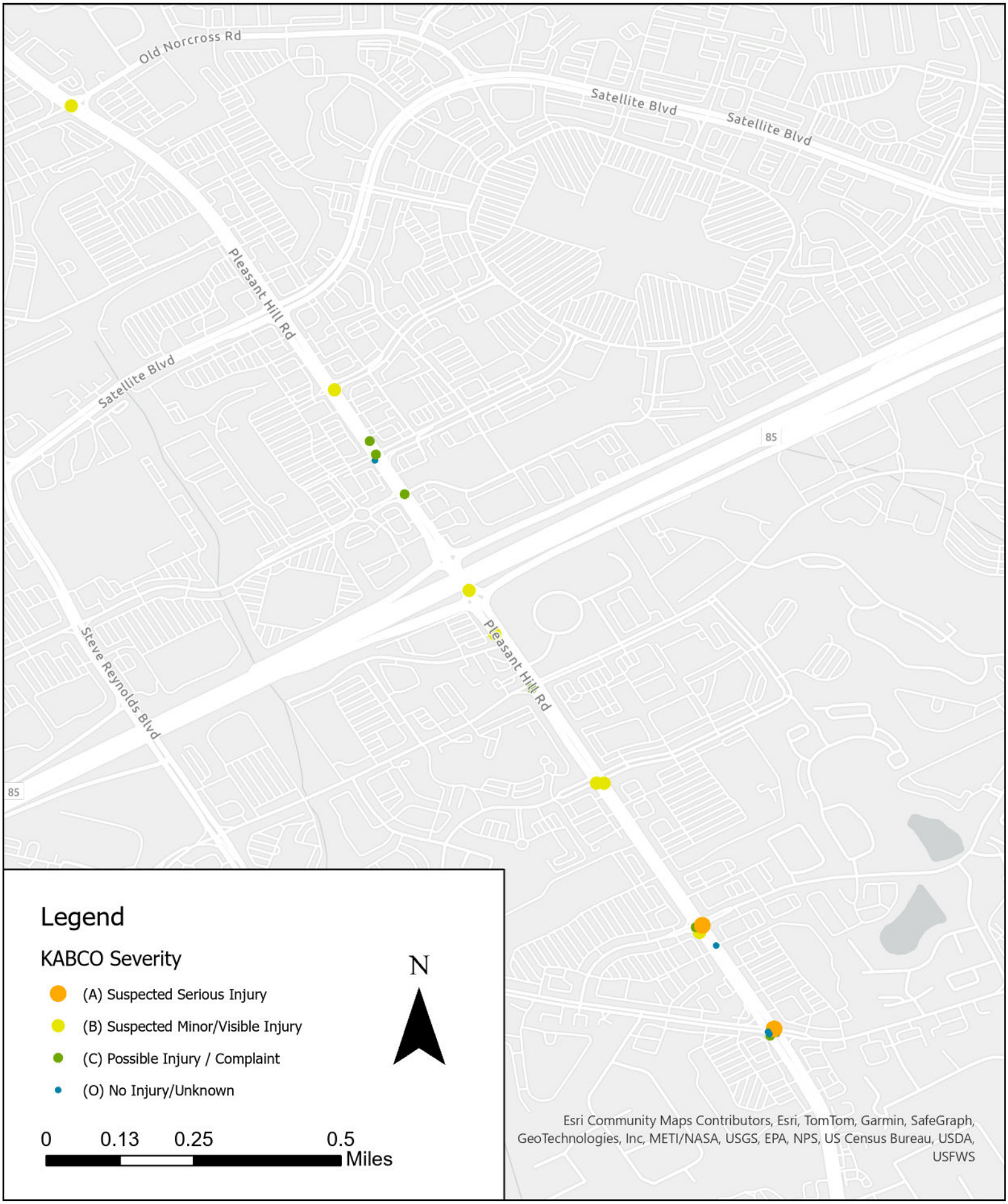
E –

Intersection Crash Tables and Crash Density Maps

All Modes Crash Frequency 2018 - 2022



KABCO Crash Severity for Bicyclist and Pedestrian Crashes 2018 - 2022



1. Pleasant Hill at Old Norcross Rd

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	0	2	11	25	38	15.0%
Head-On	0	0	2	1	1	4	2.0%
Rear End	0	1	2	42	128	173	70.0%
Sideswipe - Same	0	1	0	2	23	26	11.0%
Sideswipe - Opposite	0	0	0	0	2	2	1.0%
Not Collision w/Motor Veh	0	0	2	0	1	3	1.0%
Total	0	2	8	56	180	246	100.0%

2. Pleasant Hill at Gwinnett Prado Shopping Center

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	0	3	3	7	13	35.0%
Head-On	0	0	0	1	1	2	5.0%
Rear End	0	0	0	6	8	14	38.0%
Sideswipe - Same	0	0	0	1	5	6	16.0%
Sideswipe - Opposite	0	0	0	0	0	0	0.0%
Not Collision w/Motor Veh	0	0	0	0	2	2	5.0%
Total	0	0	3	11	23	37	100.0%

3. Pleasant Hill at Gwinnett Station Shopping Center

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	0	0	3	11	14	36.0%
Head-On	0	0	0	0	1	1	3.0%
Rear End	0	0	0	4	14	18	46.0%
Sideswipe - Same	0	0	0	0	5	5	13.0%
Sideswipe - Opposite	0	0	0	0	0	0	0.0%
Not Collision w/Motor Veh	0	0	1	0	0	1	3.0%
Total	0	0	1	7	31	39	3.0%

3. Pleasant Hill at Gwinnett Station Shopping Center Unsignalized

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	0	0	0	1	1	9.0%
Head-On	0	0	0	0	0	0	0.0%
Rear End	0	0	0	2	7	9	82.0%
Sideswipe - Same	0	0	0	0	0	0	0.0%
Sideswipe - Opposite	0	0	0	0	0	0	0.0%
Not Collision w/Motor Veh	0	0	0	0	1	1	9.0%
Total	0	0	0	2	9	11	100.0%

4. Pleasant Hill at Satellite Blvd

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	1	3	12	31	47	24.0%
Head-On	0	0	0	1	4	5	3.0%
Rear End	0	0	7	21	71	99	52.0%
Sideswipe - Same	0	0	1	2	37	40	21.0%
Sideswipe - Opposite	0	0	0	0	0	0	0.0%
Not Collision w/Motor Veh	0	0	0	0	1	1	1.0%
Total	0	1	11	36	144	192	100.0%

5. Pleasant Hill at Mall Blvd

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	0	6	17	47	70	46.0%
Head-On	0	0	1	2	1	4	3.0%
Rear End	0	1	2	14	42	59	39.0%
Sideswipe - Same	0	0	0	4	9	13	9.0%
Sideswipe - Opposite	0	0	0	0	1	1	1.0%
Not Collision w/Motor Veh	0	0	2	0	3	5	3.0%
Total	0	1	11	37	103	152	100.0%

6. Pleasant Hill and Gwinnett Place Dr

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	0	3	9	19	31	20.0%
Head-On	0	0	1	2	0	3	2.0%
Rear End	0	0	2	29	67	98	63.0%
Sideswipe - Same	0	0	2	18	0	20	13.0%
Sideswipe - Opposite	0	0	0	0	0	0	0.0%
Not Collision w/Motor Veh	0	0	0	1	2	3	2.0%
Total	0	0	8	59	88	155	100.0%

7. Pleasant Hill and Venture Dr

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	1	9	32	79	121	36.0%
Head-On	0	0	2	1	0	3	1.0%
Rear End	0	1	3	45	104	153	45.0%
Sideswipe - Same	0	0	1	6	50	57	17.0%
Sideswipe - Opposite	0	0	0	0	2	2	1.0%
Not Collision w/Motor Veh	0	0	0	0	4	4	1.0%
Total	0	2	15	84	239	340	100.0%

8. Pleasant Hill and I-85 Southbound

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	0	3	8	46	57	16.0%
Head-On	0	0	1	2	9	12	3.0%
Rear End	0	0	2	28	134	164	47.0%
Sideswipe - Same	0	0	1	2	104	107	30.0%
Sideswipe - Opposite	0	0	0	0	1	1	0.0%
Not Collision w/Motor Veh	0	0	1	1	8	10	3.0%
Total	0	0	8	41	302	351	100.0%

9. Pleasant Hill and I-85 Northbound

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	0	1	10	38	49	17.0%
Head-On	0	0	0	1	4	5	2.0%
Rear End	0	0	3	29	100	132	46.0%
Sideswipe - Same	0	0	1	8	83	92	32.0%
Sideswipe - Opposite	0	0	0	1	0	1	0.0%
Not Collision w/Motor Veh	0	0	1	0	7	8	3.0%
Total	0	0	6	49	232	287	100.0%

8. Pleasant Hill and Breckinridge Blvd

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	0	4	3	21	28	14.0%
Head-On	0	0	0	0	0	0	0.0%
Rear End	0	0	5	34	82	121	60.0%
Sideswipe - Same	0	0	3	4	40	47	23.0%
Sideswipe - Opposite	0	0	0	1	1	2	1.0%
Not Collision w/Motor Veh	0	0	1	1	1	3	1.0%
Total	0	0	13	43	145	201	100.0%

9. Pleasant Hill and Crestwood Pkwy/Koger Blvd

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	0	4	7	10	21	16.0%
Head-On	0	0	1	0	0	1	1.0%
Rear End	0	0	5	28	54	87	65.0%
Sideswipe - Same	0	0	1	2	19	22	16.0%
Sideswipe - Opposite	0	0	0	0	0	0	0.0%
Not Collision w/Motor Veh	0	0	1	0	2	3	2.0%
Total	0	0	12	37	85	134	100.0%

10. Pleasant Hill and Sweetwater Rd

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	1	7	8	32	48	27.0%
Head-On	0	1	0	0	2	3	2.0%
Rear End	0	0	2	36	60	98	55.0%
Sideswipe - Same	0	0	1	4	17	22	12.0%
Sideswipe - Opposite	0	0	0	0	1	1	1.0%
Not Collision w/Motor Veh	0	2	1	1	2	6	3.0%
Total	0	4	11	49	114	178	100.0%

1. Pleasant Hill and Club Dr

Crash Type	K	A	B	C	O	Total	Percentage
Angle	0	1	8	39	77	125	35.0%
Head-On	0	0	2	2	5	9	2.0%
Rear End	0	0	7	43	109	159	44.0%
Sideswipe - Same	0	1	1	3	52	57	16.0%
Sideswipe - Opposite	0	0	0	0	2	2	1.0%
Not Collision w/Motor Veh	0	1	0	3	6	10	3.0%
Total	0	3	18	90	251	362	100.0%