Transportation Analysis

Riverwalk Village

Roswell, Georgia
DRI# 2456

Prepared for:

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1. EXECUTIVE SUMMARY

This report presents the analysis of the anticipated traffic impacts of the proposed 104-acre Riverwalk Village mixed-use development located in Roswell, Georgia. This report is being prepared as part of a submittal requesting rezoning from Office Park (OP) and Residential Multi-Family – Three-Story (RM-3) to Commercial Mixed Use (CX). Because the mixed-use development will exceed 400,000 square feet (SF), the proposed development is a Development of Regional Impact (DRI) and is subject to Georgia Regional Transportation Authority (GRTA) and Atlanta Regional Commission (ARC) review. As detailed in the Letter of Understanding (LOU), GRTA and ARC have concluded that this DRI meets the criteria for expedited review (See Attachment 1).

The proposed development is expected to consist of 1,551 residential units (1,156 apartments, 125 townhouse units, and 270 senior housing units), a 200-room hotel, a 700-student private school, approximately 971,000 SF of office space, and approximately 269,000 SF of retail space. The development is expected to be completed by 2025.

The results of the detailed intersection analysis for the 2015 Existing, the 2025 No-Build (does not include the traffic generated by the Riverwalk Village development) and 2025 Build conditions (includes traffic generated by the Riverwalk Village development) identified improvements that will be necessary in order to maintain the Level of Service (LOS) standard within the study network. These improvements are listed below:

2025 No-Build Recommended Improvements *(includes background growth but does not include the Riverwalk Village project traffic):*

2025 No-Build Recommended Improvements	
Intersection	**Improvements Need to Achieve Acceptable LOS**
Holcomb Bridge Road (SR 140) @ Old Alabama Road	Construct an additional westbound left-turn lane on Holcomb Bridge Road to form dual left-turn lanes. Protected-only left-turn phasing will be necessary in conjunction with this improvement.
Old Alabama Road @ Riverside Road	Construct a dedicated northbound right turn lane for traffic travelling on Riverside Road northbound turning onto Riverside Road eastbound.

2025 Build Recommended Improvements *(includes background growth and Riverwalk Village project traffic):*

2025 Build Recommended Improvements	
Intersection	**Improvements Need to Achieve Acceptable LOS**
Holcomb Bridge Road (SR 140) @ Old Alabama Road [A]	Construct an additional eastbound through lane on Holcomb Bridge Road to maintain three continuous eastbound through lanes from the GA 400 NB ramp through the Old Alabama Road intersection. [B]
	Construct an additional westbound left-turn lane on Holcomb Bridge Road to form dual left-turn lanes. Protected-only left-turn phasing will be necessary in conjunction with this improvement. [B]
	Construct an additional southbound through lane on Old Alabama Road to allow for two southbound through lanes.
Old Alabama Road @ Riverside Road [C]	Construct an additional westbound left-turn lane on Riverside Road to form dual left-turn lanes. This will require the widening of Riverside Road to the east to provide two receiving lanes for the dual left movement.

[A] – Improvement of this intersection included in the City of Roswell Transportation Master Plan (2014) as Project# 05-1008

[B] – Improvement identified in Project Recommendation #12 of the Holcomb Bridge Road Corridor Study (2012) prepared by the City of Roswell.

[C] – Improvement of this intersection included in the City of Roswell Transportation Master Plan (2014) as Project# 05-1032

2. INTRODUCTION & PROJECT PHASING

This report presents the analysis of the anticipated traffic impacts of the proposed 104-acre Riverwalk Village mixed-use development located in Roswell, Georgia (see Figure 2-1). This report is being prepared as part of a submittal requesting rezoning from Office Park (OP) and Residential Multi-Family – Three-Story (RM-3) to Commercial Mixed Use (CX). Because the mixed-use development will exceed 400,000 SF, the proposed development is a Development of Regional Impact (DRI) and is subject to Georgia Regional Transportation Authority (GRTA) and Atlanta Regional Commission (ARC) review. As detailed in the Letter of Understanding (LOU), GRTA and ARC have concluded that this DRI meets the criteria for expedited review.

The proposed development is expected to consist of 1,551 residential units (1,156 apartments, 125 townhouse units, and 270 senior housing units), a 200-room hotel, a 700-student private school, approximately 971,000 SF of office space, and approximately 269,000 SF of retail space. The City of Roswell 2030 Comprehensive Plan identifies this area as Village Activity Center. The development is expected to be completed by 2025. This study will analyze the final build out year of 2025. A summary of the proposed land-uses and intensities can be found below in Table 2-1.

Table 2-1: Proposed Land Uses and Intensities

Land Use	Intensity
Apartments	1,156 units
Townhouse	125 units
Senior Housing	270 units
Hotel	200 rooms
Private School	700 students*
Office	971,000 SF
Retail	269,000 SF

* shown as 200,000 SF institutional on site plan

2.1 Site Plan

As shown in Figure 2-1, the project is located in the southeast quadrant of the GA 400 and Holcomb Bridge Road (SR 140) interchange. The approximately 104-acre site is bordered by GA 400 to the west, Riverside Road to the south, Raintree Road to the north, and Martins Landing neighborhood to the east. This site plan is presented in Figure 2-2. A larger-scale version of this plan will be submitted with this report for improved legibility.

Figure 2-1: Site Location Map

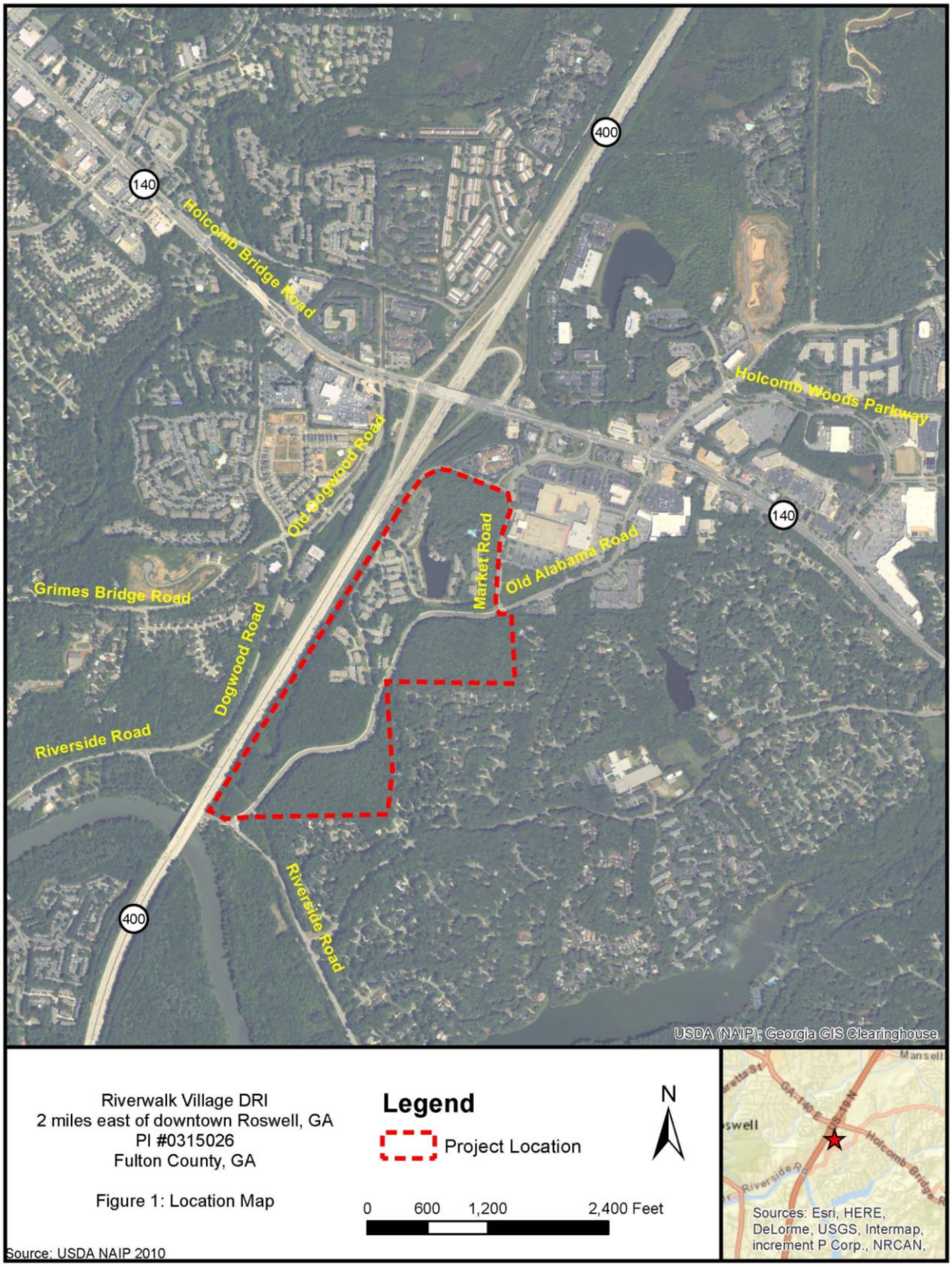
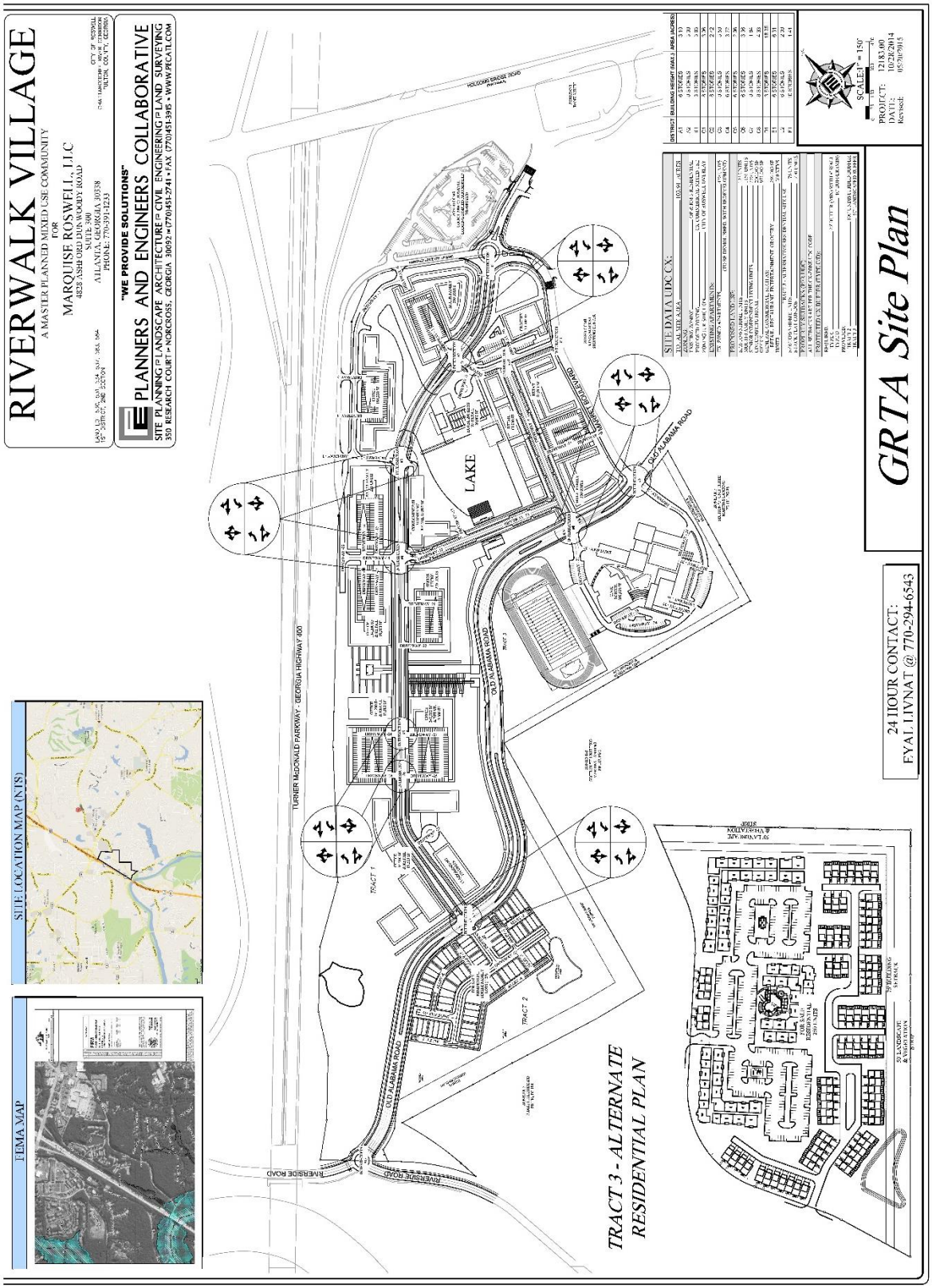


Figure 2-2: Site Plan



2.2 Site Access

The primary access point to the proposed development would be via Market Blvd. on the northern end of the project. As shown on the site plan, this access point would be provided at a roundabout proposed by the City of Roswell as part of their Early Off-Ramp project (discussed later in this report). If the Early Off-Ramp project is not constructed, this access point would utilize either a standard intersection alignment or a roundabout intersection. Additional access to the proposed development would be provided along Old Alabama Road at two full access intersections. A minor access point will also be provided along Market Blvd. The possible signalization of access points will be studied further as part of additional traffic studies being prepared for the City of Roswell.

2.3 Bicycle and Pedestrian Facilities

Pedestrian facilities (sidewalks) currently exist along Old Alabama Road through the project site. All site roadways are proposed to have sidewalks on both sides. There is a proposed on-site multi-use trail running along the west side of Old Alabama Road from Market Blvd. to Riverside Road to connect to the existing trail that runs along the Chattahoochee River.

2.4 Transit Access

The northern portion of the project is located within ¼ mile of the MARTA bus route 185. However the service to this location is limited to AM and PM peak periods. MARTA has proposed and is in the planning phase of an extension of their heavy rail Gold Line. A station location in the Holcomb Bridge area is proposed as part of that study, however this project is only included in the ARC's Aspirations Plan and is not expected to be completed by the 2025 build out date of this development.

3. STUDY NETWORK

3.1 Existing Transportation Facilities

This section provides a description of the existing roadways within the DRI study area.

- **Holcomb Bridge Road (SR 140)**
  Holcomb Bridge Road is a major arterial facility providing east-west mobility between Cobb, Fulton, and Gwinnett County. The interchange of GA 400 and Holcomb Bridge Road is immediately west of the study area. Within the study area, Holcomb Bridge Road is a 4 - 6 lane facility with an intermittent raised median and a 45 mph posted speed limit. GDOT classifies this roadway as an Urban Principle Arterial.
- **Old Alabama Road**
  Old Alabama is a north-south roadway within the study area. It originates at Riverside Road and traverses north through the study area then north and east serving residential land uses and terminates at Medlock Bridge Road (SR 141). Adjacent to the proposed site, Old Alabama Road is a 4-lane, undivided roadway with a posted speed limit of 35 mph. GDOT classifies Old Alabama Road as an Urban Minor Arterial.
- **Riverside Road**
  Riverside Road is an east west two-lane roadway that generally runs parallel to the Chattahoochee River within the study area. Riverside Road begins east of Old Alabama Road and travels under GA 400 then connects to Roswell Road (SR 9) to the west. Riverside Road is used by commuters traveling east-west in Roswell wishing to avoid congestion on Holcomb Bridge Road. Riverside road is 2-lane roadway with a 35 mph posted speed limit. GDOT classifies the road as an Urban Minor Arterial.
- **Market Boulevard**
  Market Blvd. is a local access roadway that serves traffic accessing the commercial and residential land uses within the study area. Market Blvd is generally a north-south facility connecting Holcomb Bridge Road with Old Alabama Road. This 3 - 4 lane roadway is an urban local road with no posted speed limit.

3.2 Study Network Determination

The study area and study intersections were determined at the Methodology meeting on December 5, 2014. This DRI meets the criteria for expedited review under the DRI Procedures and Principles for GRTA Development of Regional Impact Review Section 3-102.F., Livable Centers Initiative (LCI), which requires the proposed DRI project to be located within an LCI, consistent with the LCI plan, and that the LCI implementation is in good standing with the ARC. The study intersections identified during the methodology meeting are:

- Holcomb Bridge Road/SR140 @ Old Alabama Road (signalized)
- Holcomb Bridge Road/SR 140 @ Market Boulevard (signalized)
- Old Alabama Road @ Market Boulevard (signalized)
- Old Alabama Road @ Riverside Road (un-signalized)

4. TRAFFIC ANALYSES METHODOLOGY AND ASSUMPTIONS

4.1 Growth Rate

Background traffic is defined as expected traffic on the roadway network in future year(s) absent the construction and opening of the proposed project. Historical traffic count data from the Georgia DOT was reviewed for the area surrounding the proposed development, and growth rates of 1.0% per year along all roadways were agreed upon during the methodology meeting with GRTA and ARC staff.

4.2 Traffic Data Collection

2015 peak hour turning movement counts were conducted at each of the four study intersections for AM peak hour (7:00AM - 9:00AM), weekday noon (11:30AM - 1:30PM), PM peak hour (4:30PM - 6:30PM), and Saturday noon (11:30AM - 1:30PM). All traffic counts are included in Attachment B.

4.3 Level of Service Standard

For the purposes of this traffic analysis, a Level-of-Service (LOS) standard of D was assumed for all intersections within the study network. If, however, an intersection operates at LOS E or LOS F during an existing peak period, the LOS standard for that peak period becomes LOS E, consistent with the GRTA LOU.

4.4 Detailed Intersection Analysis

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 within a traffic stream. The Highway Capacity Manual defines six levels of service, LOS A through LOS F, with A being the best and F being the worst. Level of service analyses were conducted at all study intersections using Synchro Professional, Version 8.0. HCM outputs were utilized in this analysis.

5. PLANNED AND PROGRAMMED PROJECTS

The study area contains several transportation projects being undertaken by the City of Roswell that are expected to be completed prior to the expected build out date of the Riverwalk Village development. These projects are listed below and were taken into consideration in the 2025 No-Build and 2025 Build condition analyses. Since the SR 400 Early Off-Ramp project has not yet received approval from GDOT, this report analyzes study area intersections with and without the implementation of this project.

1. *Holcomb Bridge Road (SR 140) Westbound.* Roswell Project No. 09-1015. This project will construct a third westbound through lane from just east of Old Alabama Road to the northbound SR 400 on-ramp. The project also includes intersection improvements at Old Alabama Road and Market Blvd.
2. *SR 400 Northbound Early Off-Ramp*. Roswell Project No. 09-1046. This project will add an off-ramp to Exit 7A that will connect to Market Boulevard.

6. TRIP GENERATION

As stated earlier, the proposed Riverwalk Village development will consist of 1,551 residential units (1,156 apartments, 125 townhouse units, and 270 senior housing units), a 200-room hotel, a 700-student private school, approximately 971,000 SF of office space, and approximately 269,000 SF of retail space.

Traffic for these land uses was calculated using equations contained in the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 9th Edition, 2012. Average rates were used only when equations were not provided. The gross trips generated for the proposed development are displayed below in Table 6-1.

Since ITE does not provide trip generation data for the weekday noon period, the Saturday trip generation rates were utilized to estimate weekday noon. Since study area intersections experienced the highest volumes during the PM and Saturday peak periods, the use of Saturday trip generation rates to estimate weekday noon trips is unlikely to influence the results and recommendations of this transportation study.

A 1% alternate mode reduction was taken as agreed to at the methodology meeting with GRTA and ARC and documented in the December 12, 2014 LOU. Mixed-use reductions were taken according to the ITE Trip Generation Manual Handbook. Pass-by reductions were limited to 15% per GRTA guidelines. These reductions and the net total trips analyzed in this report are presented in Table 6-1.

7. TRIP DISTRIBUTION AND ASSIGNMENT

Trip distribution percentages were developed in coordination with the City of Roswell based on expected travel routes for each land use. The trip distributions for residential, school, office and hotel, and retail trips are presented in Figures 7-1 through 7-8. As described earlier, all analysis was prepared for 2025 conditions with and without the proposed Early Off-Ramp project. Figures 7-9 through 7-12 present the trip distribution percentages for each land use assigned to the study intersections based on the overall trip distribution. The Early Off-Ramp project is not expected to affect project trip distributions for the four study intersections analyzed in this report.

Once trip distributions were decided for the study area and each intersection, project trips (trips generated by the proposed Riverwalk Village) were then assigned to the four study intersections based on these trip distributions. These project trips were assigned to the study intersections according to the trip distributions for each land use. Figures 7-13 through 7-16 present the total project trips at build out (2025) assigned to each study intersection for AM, weekday noon, PM, and Saturday noon.

Table 6-1: Riverwalk Village Trip Generation

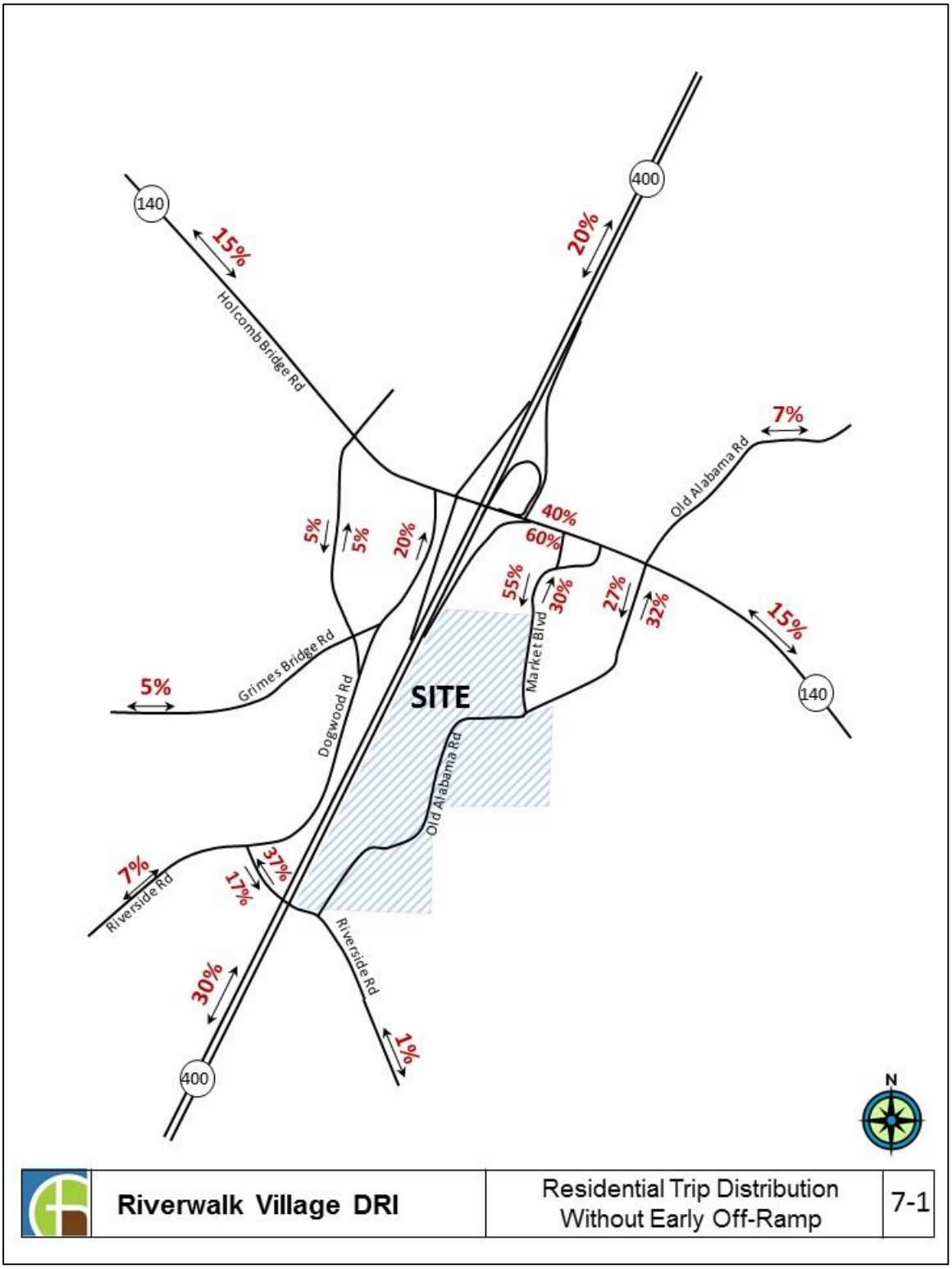
RIVERWALK VILLAGE - TRIP GENERATION														
Land Use	**Intensity**	**Daily Trips**	**AM Peak Hour**			**PM Peak Hour**			**Weekday Noon***			**Saturday Peak**		
			Total	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**
220 Apartments	1,156 units	**7,129**	570	114	456	653	424	229	493	276	217	493	276	217
230 Res Condo/Townhouse	125 units	**781**	62	11	51	72	48	24	57	32	25	57	32	25
252 Senior Housing - Attached	270 units	**826**	54	18	36	66	36	30	84	48	36	84	48	36
310 Hotel	200 rooms	**1,784**	126	73	53	140	69	71	174	99	75	174	99	75
536 ** **Private School (K-12)**	700 Students	**1,736**	559	341	218	119	51	68	100	50	50	100	50	50
710 General Office Building	971 s.f. x 1000	**7,387**	1,179	1,038	141	1,166	198	968	418	225	192	418	225	192
820 Shopping Center	269 s.f. x 1000	**12,920**	285	177	108	1,163	558	605	1663	865	798	1,663	865	798
Gross Trips		**32,563**	**2,835**	**1,772**	**1,063**	**3,379**	**1,384**	**1,995**	**2,989**	**1,595**	**1,393**	**2,989**	**1,595**	**1,393**
Alternative Mode Reduction (1%)		*-326*	*-28*	*-18*	*-11*	*-34*	*-14*	*-20*	*-30*	*-16*	*-14*	*-30*	*-16*	*-14*
Net Before MU Reduction		32,237	2,807	1,754	1,052	3,345	1,370	1,975	2,959	1,579	1,379	2,959	1,579	1,379
*Total Mixed Use Reduction****		*-3,600*	*0*	*0*	*0*	*-324*	*-162*	*-162*	*-312*	*-156*	*-156*	*-312*	*-156*	*-156*
Net Before Pass By Reduction		28,637	2,807	1,754	1,052	3,021	1,208	1,813	2,647	1,423	1,223	2,647	1,423	1,223
*Pass By Reduction (Shopping Center)****		*-1,660*	*0*	*0*	*0*	*-150*	*-74*	*-76*	*-224*	*-117*	*-107*	*-224*	*-117*	*-107*
New Trips		**26,978**	**2,807**	**1,754**	**1,052**	**2,871**	**1,134**	**1,737**	**2,423**	**1,307**	**1,117**	**2,423**	**1,307**	**1,117**
Driveway Volumes		28,637	2,807	1,754	1,052	3,021	1,208	1,813	2,647	1,423	1,223	2,647	1,423	1,223

* ITE provides no weekday noon trip generation data. Saturday trip generation utilized to best approximate trip generation

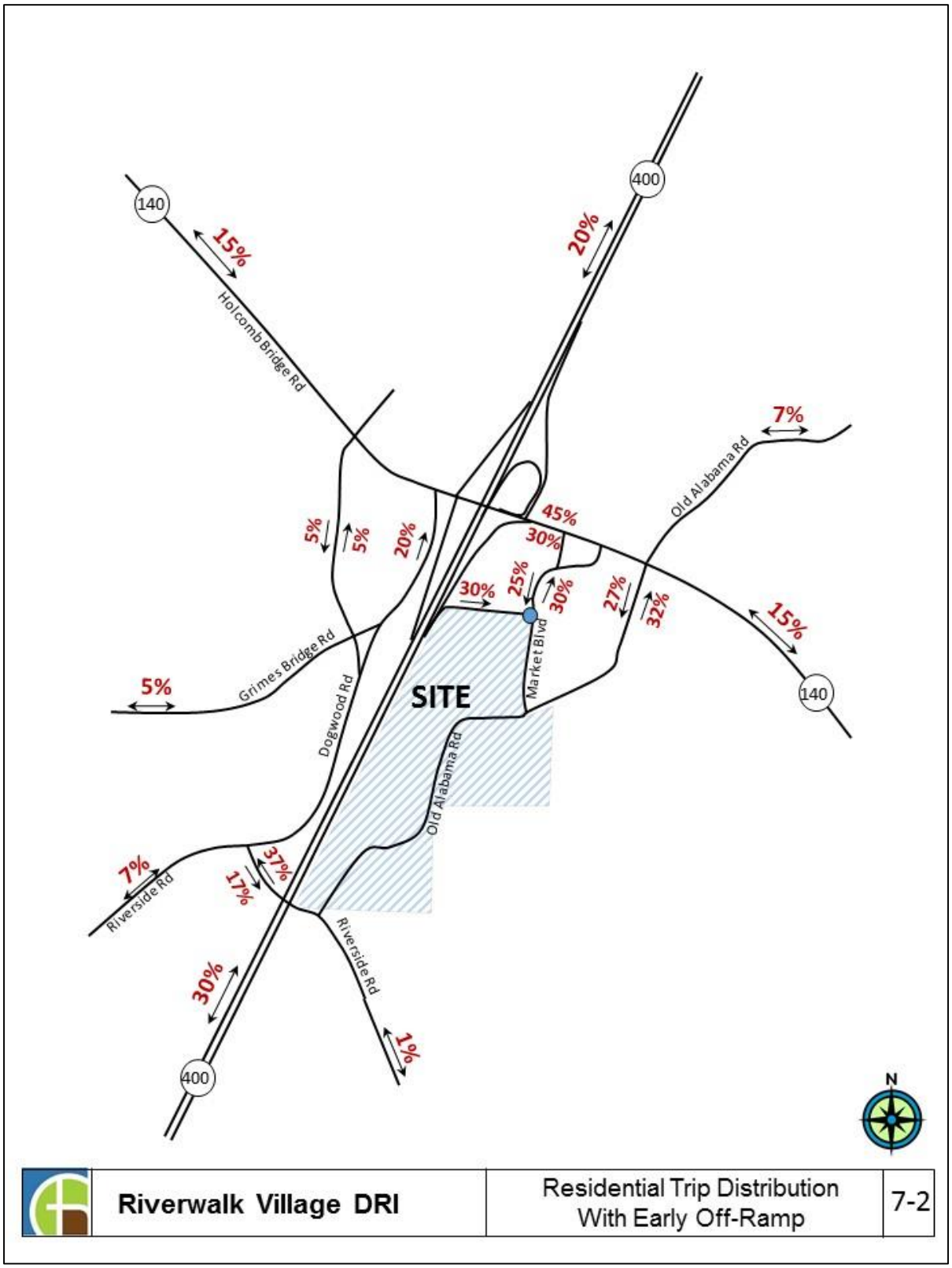
** No Saturday trip generation information provided by ITE for school. 50 trips entering and 50 trips exiting utilized to approximate Saturday school activities

*** Pass-by limited to 15% per GRTA, and mixed use reduction from ITE Trip Generation Manual 9th Edition. Pass by reduction taken from net new external shopping center trips

.**Figure 7-1: Retail Trip Distribution without Early Off-Ramp Project**



.Figure 7-2: Retail Trip Distribution with Early Off-Ramp Project



.**Figure 7-3: School Trip Distribution without Early Off-Ramp Project**

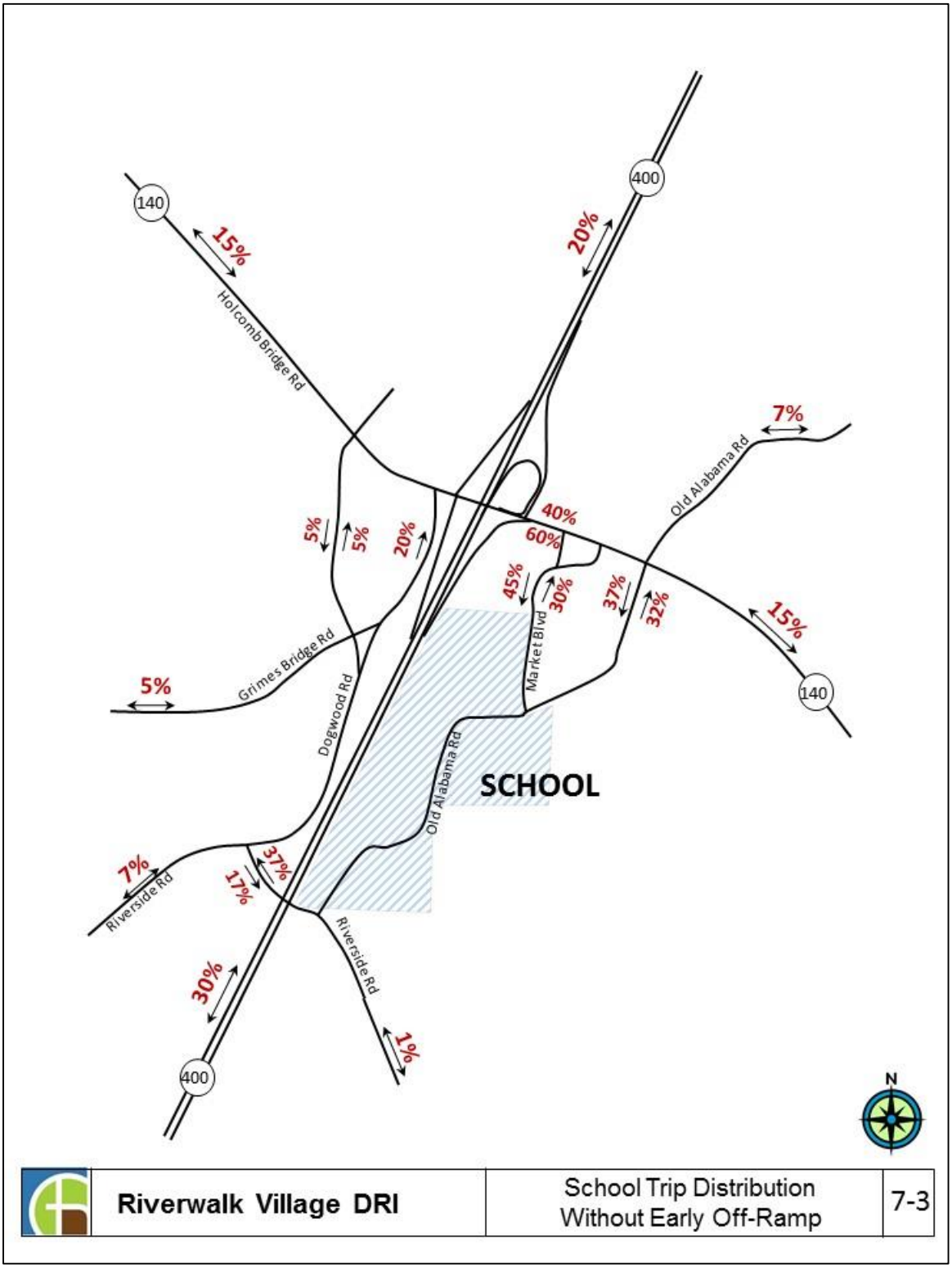


Figure 7-4: School Trip Distribution with Early Off-Ramp Project

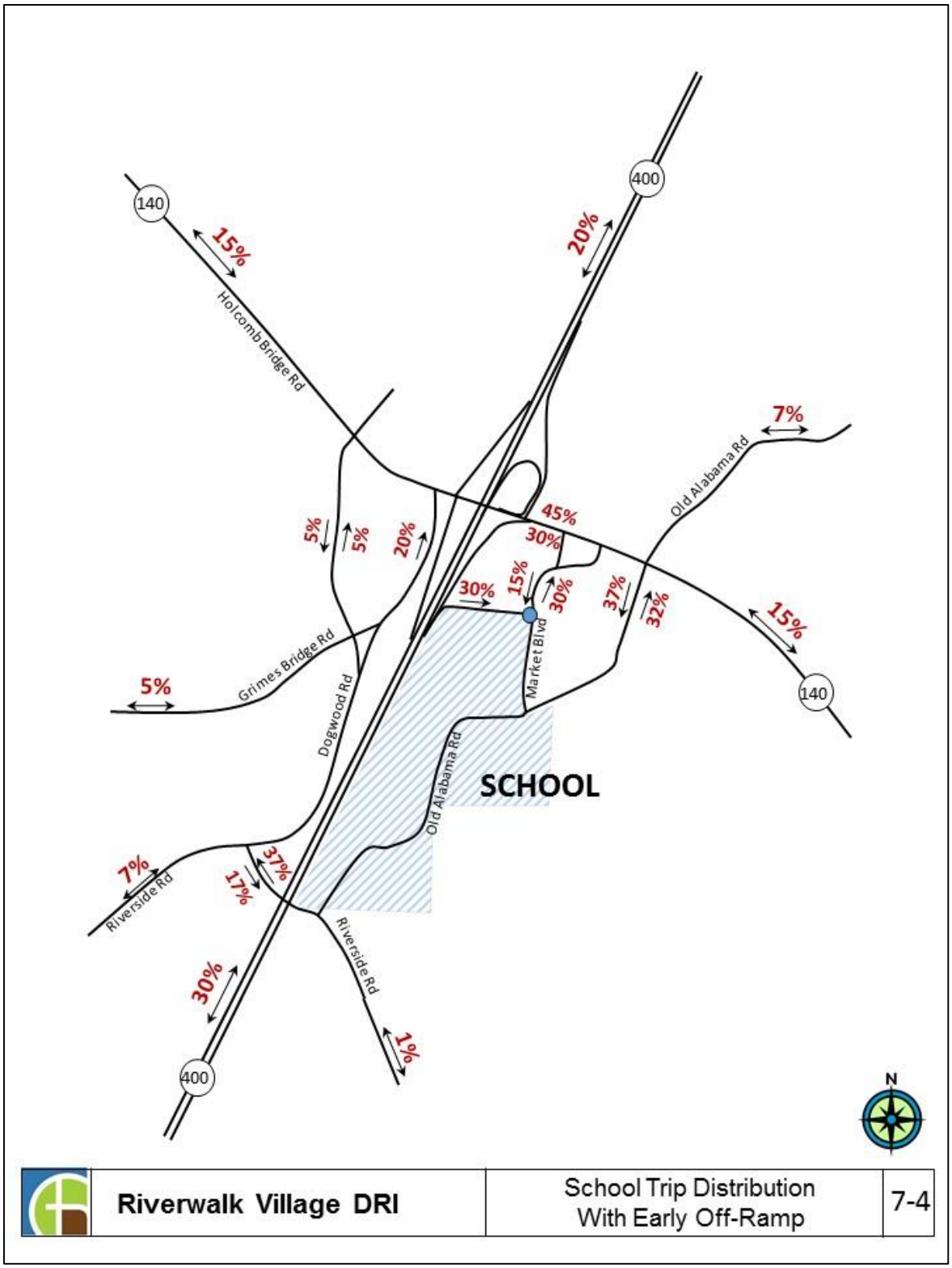


Figure 7-5: Office and Hotel Trip Distribution without Early Off-Ramp Project

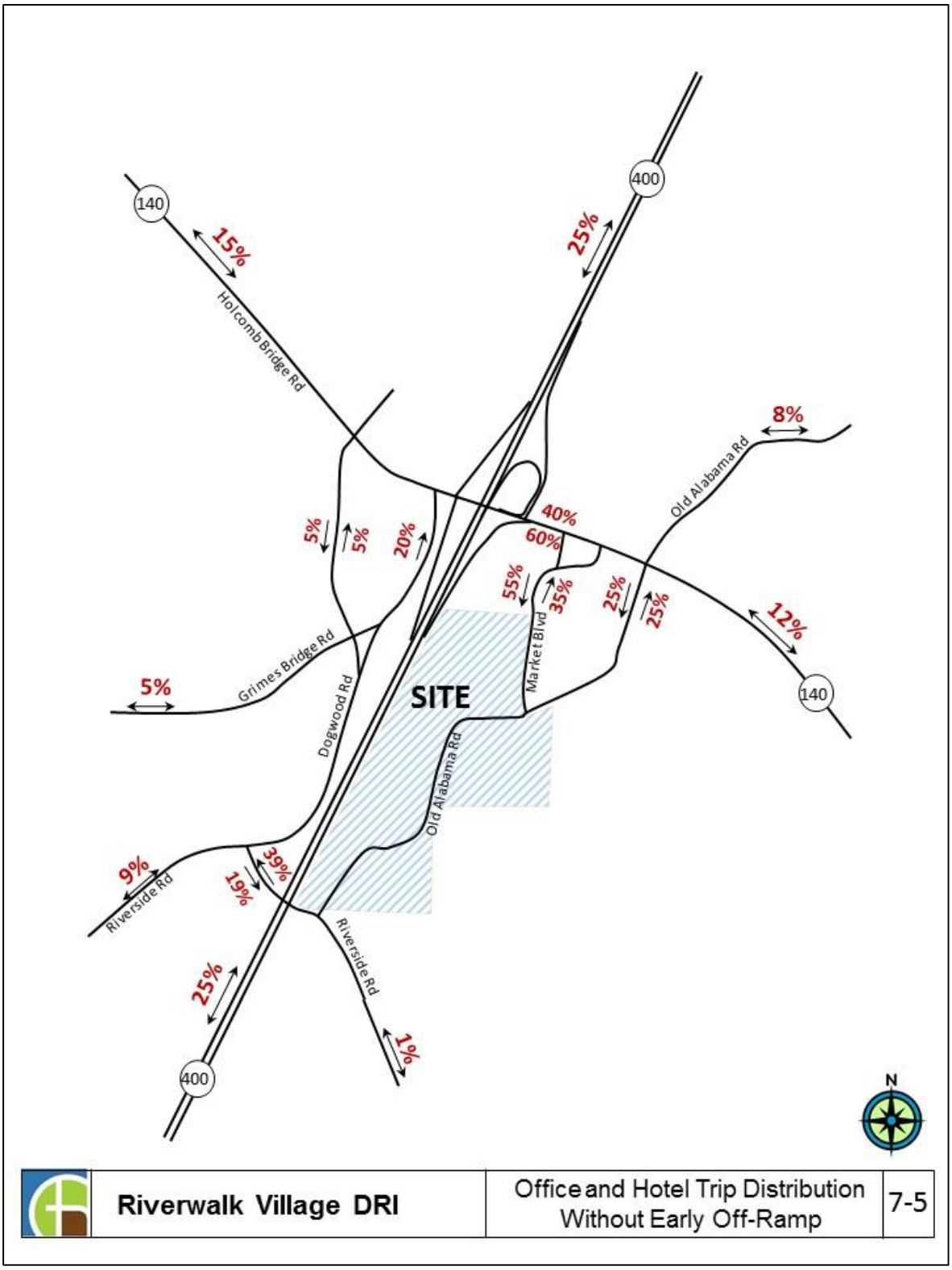


Figure 7-6: Office and Hotel Trip Distribution with Early Off-Ramp Project

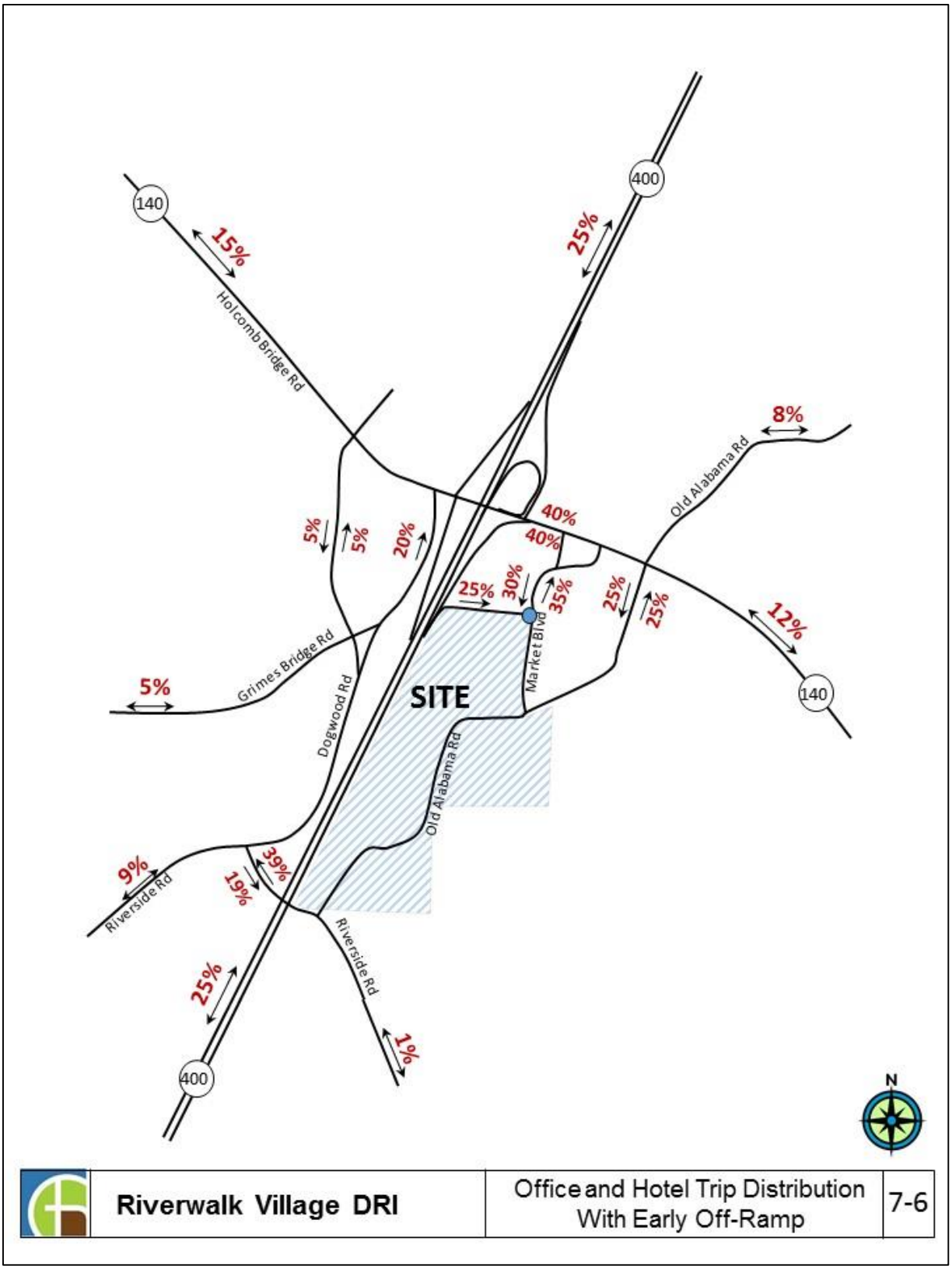


Figure 7-7: Retail Trip Distribution without Early Off-Ramp Project

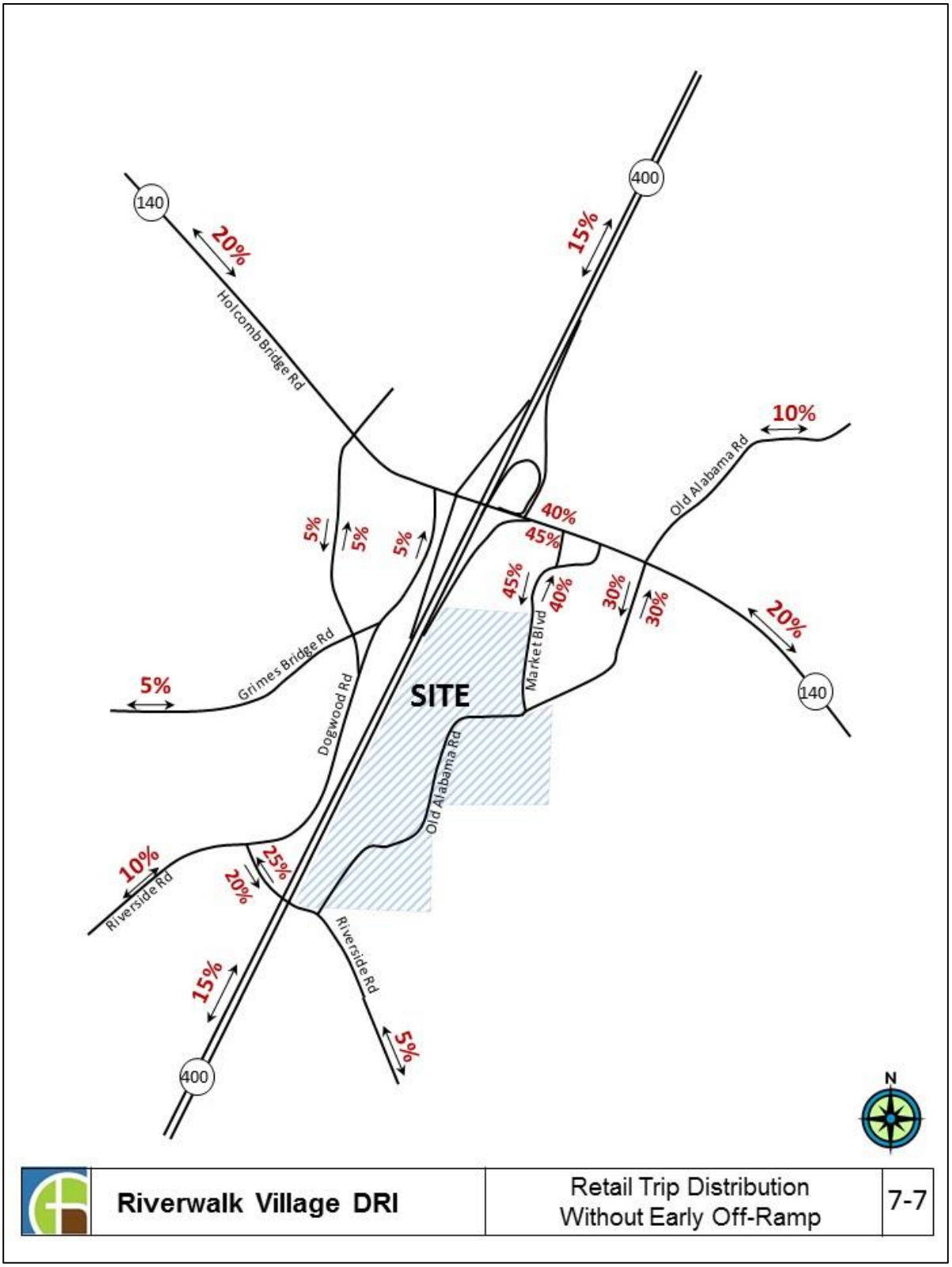


Figure 7-8: Retail Trip Distribution with Early Off-Ramp Project

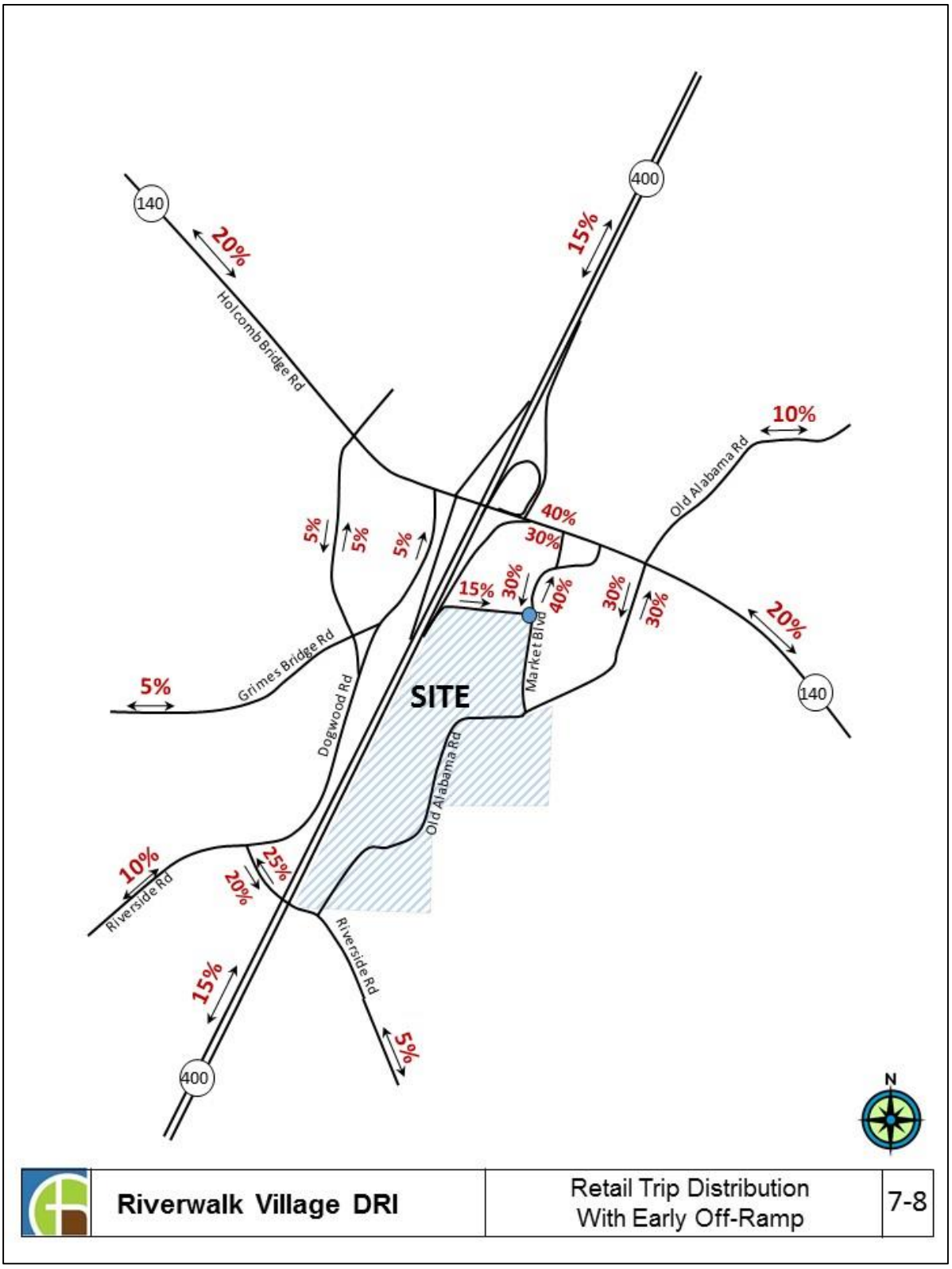


Figure 7-9: Residential Trip Distribution by Intersection

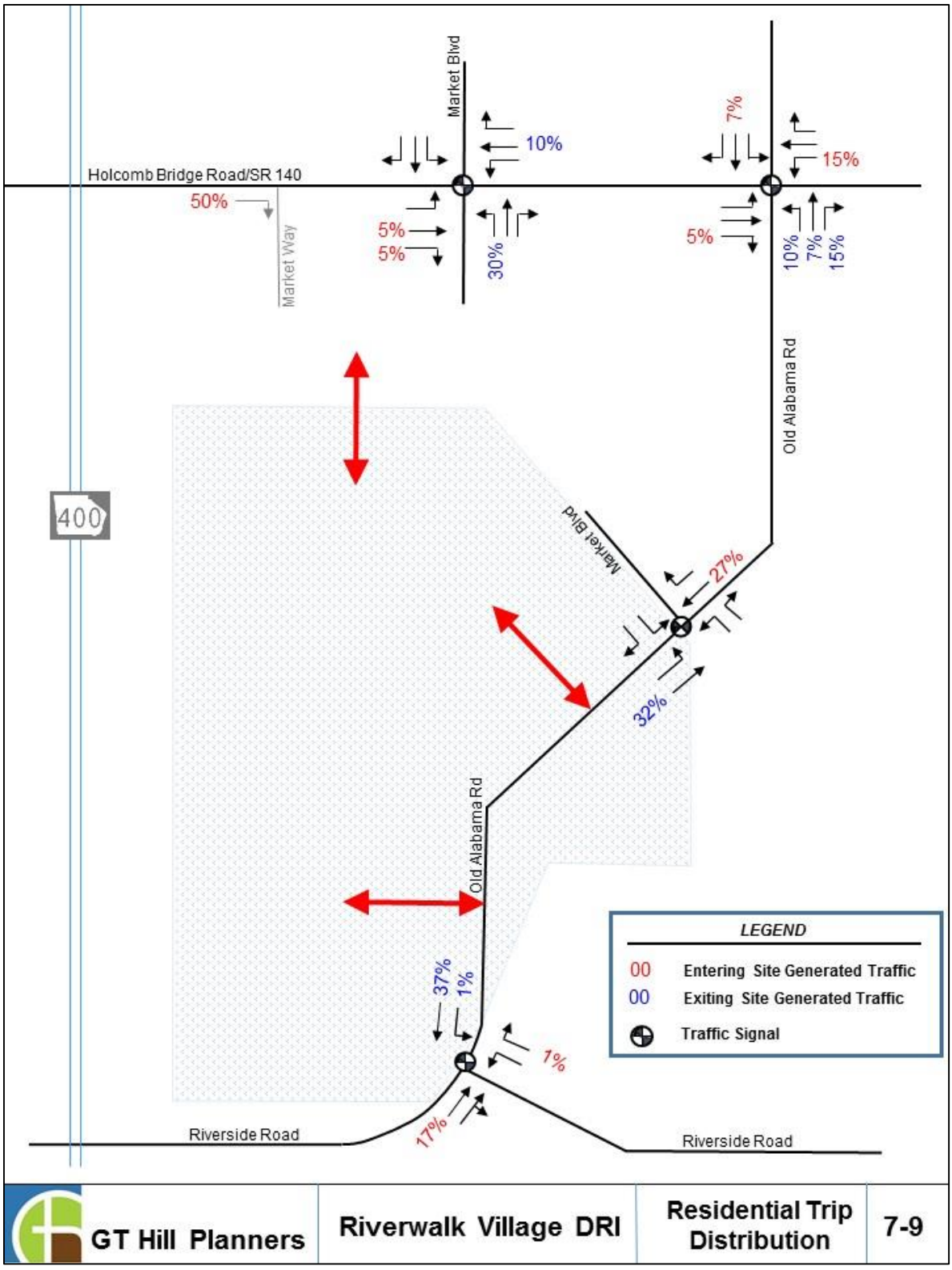


Figure 7-10: School Trip Distribution by Intersection

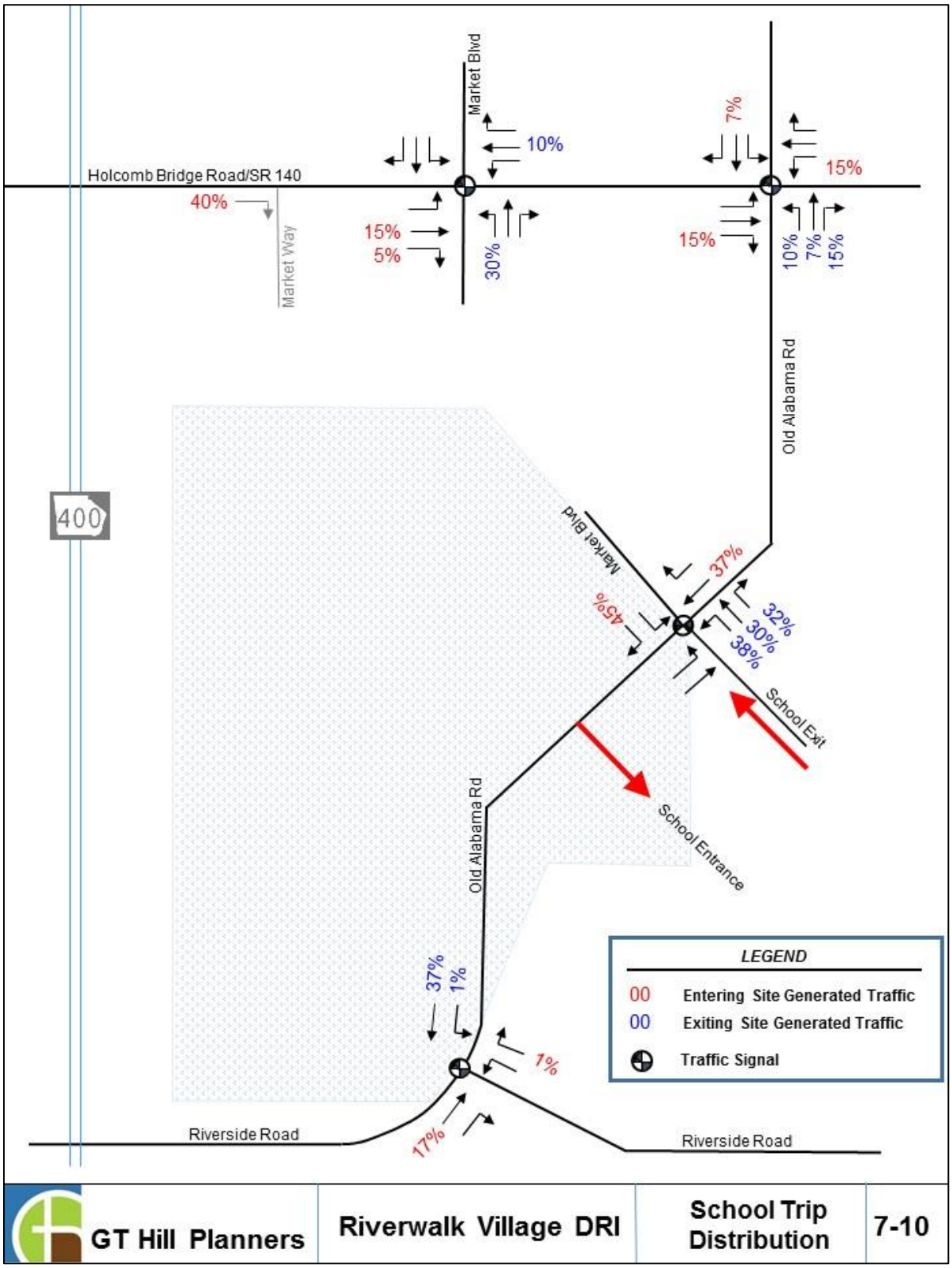


Figure 7-11: Office and Hotel Trip Distribution by Intersection

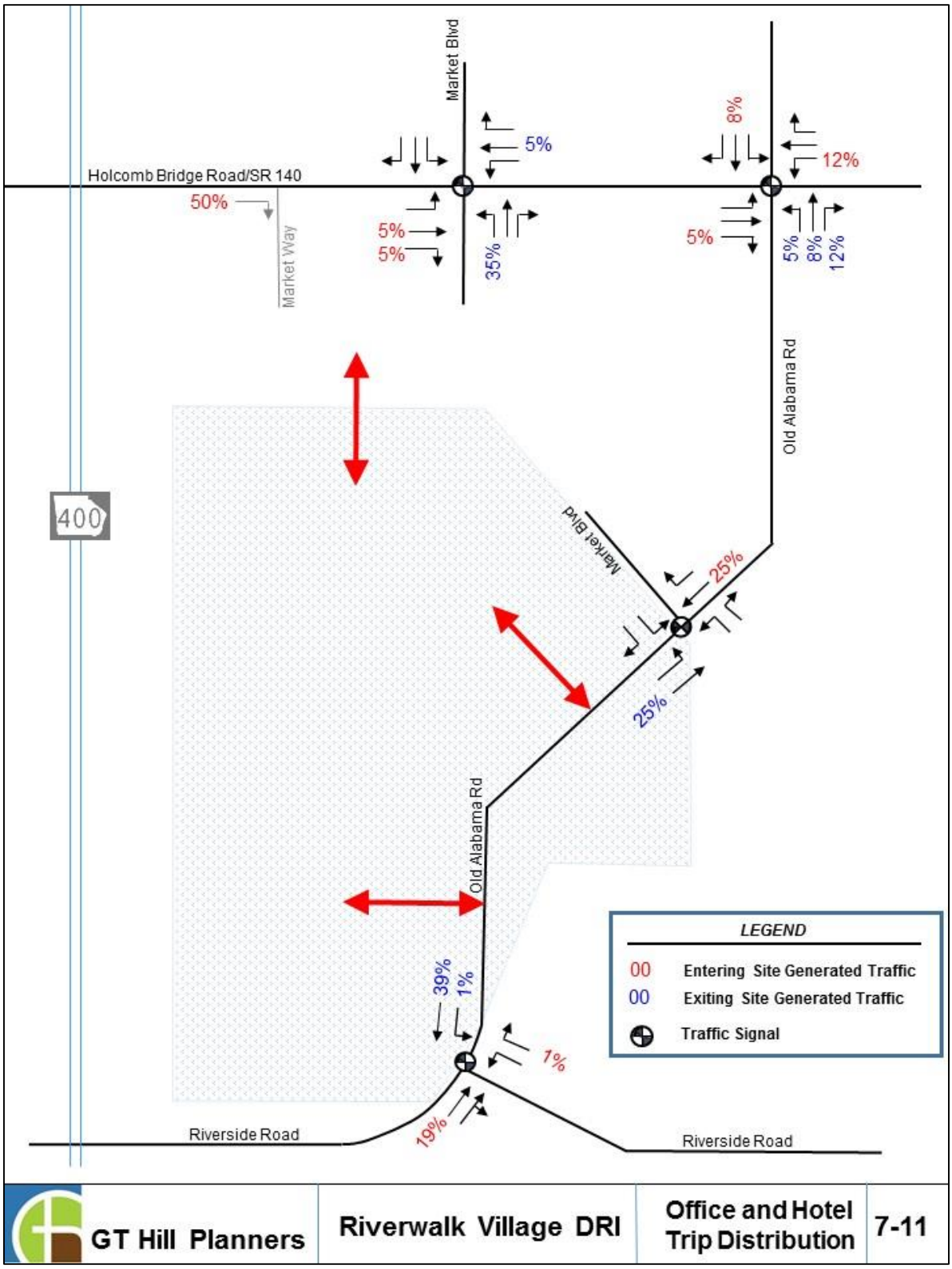


Figure 7-12: Retail Trip Distribution by Intersection

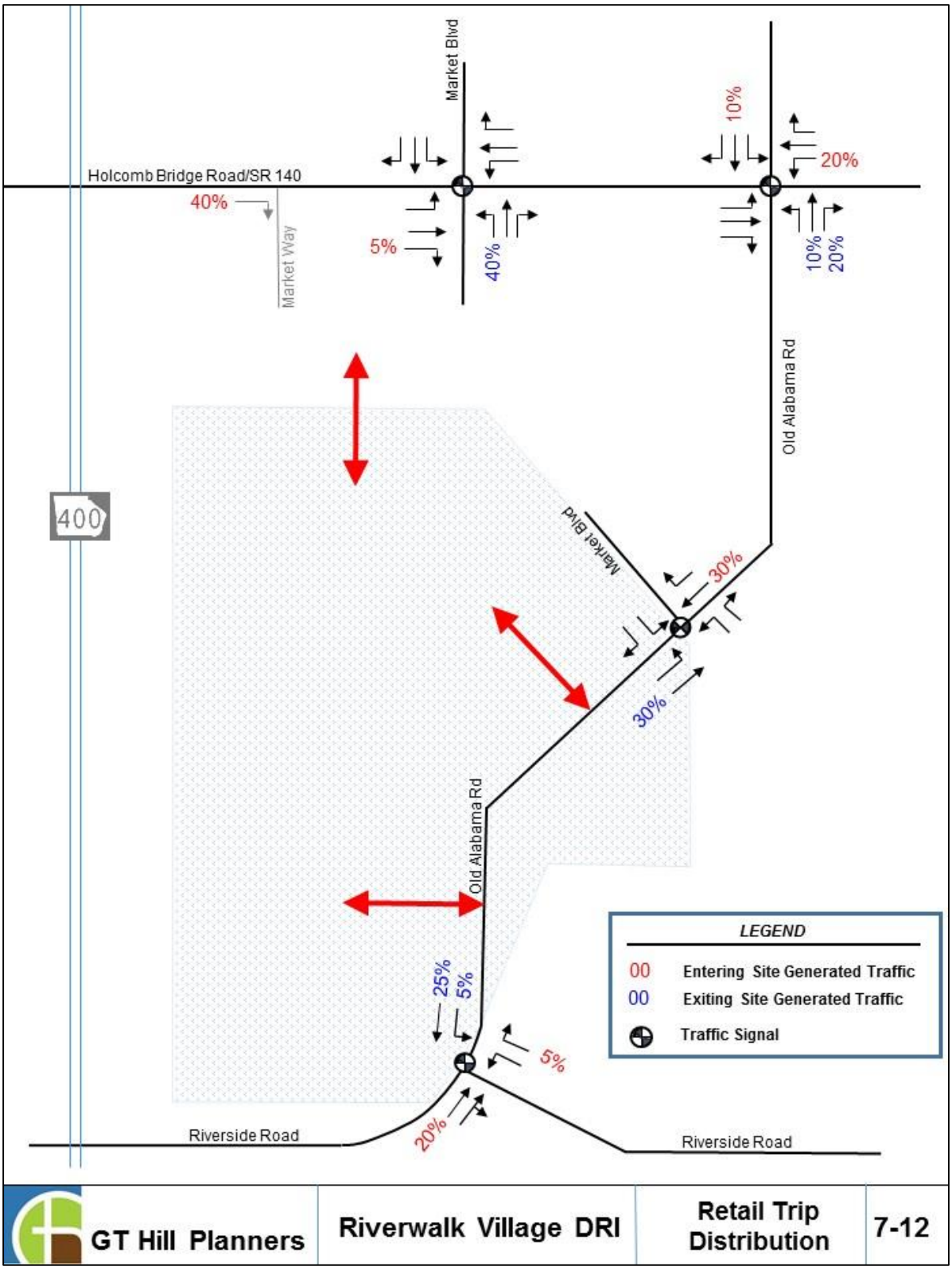


Figure 7-13: 2025 AM Peak Hour Project Trips

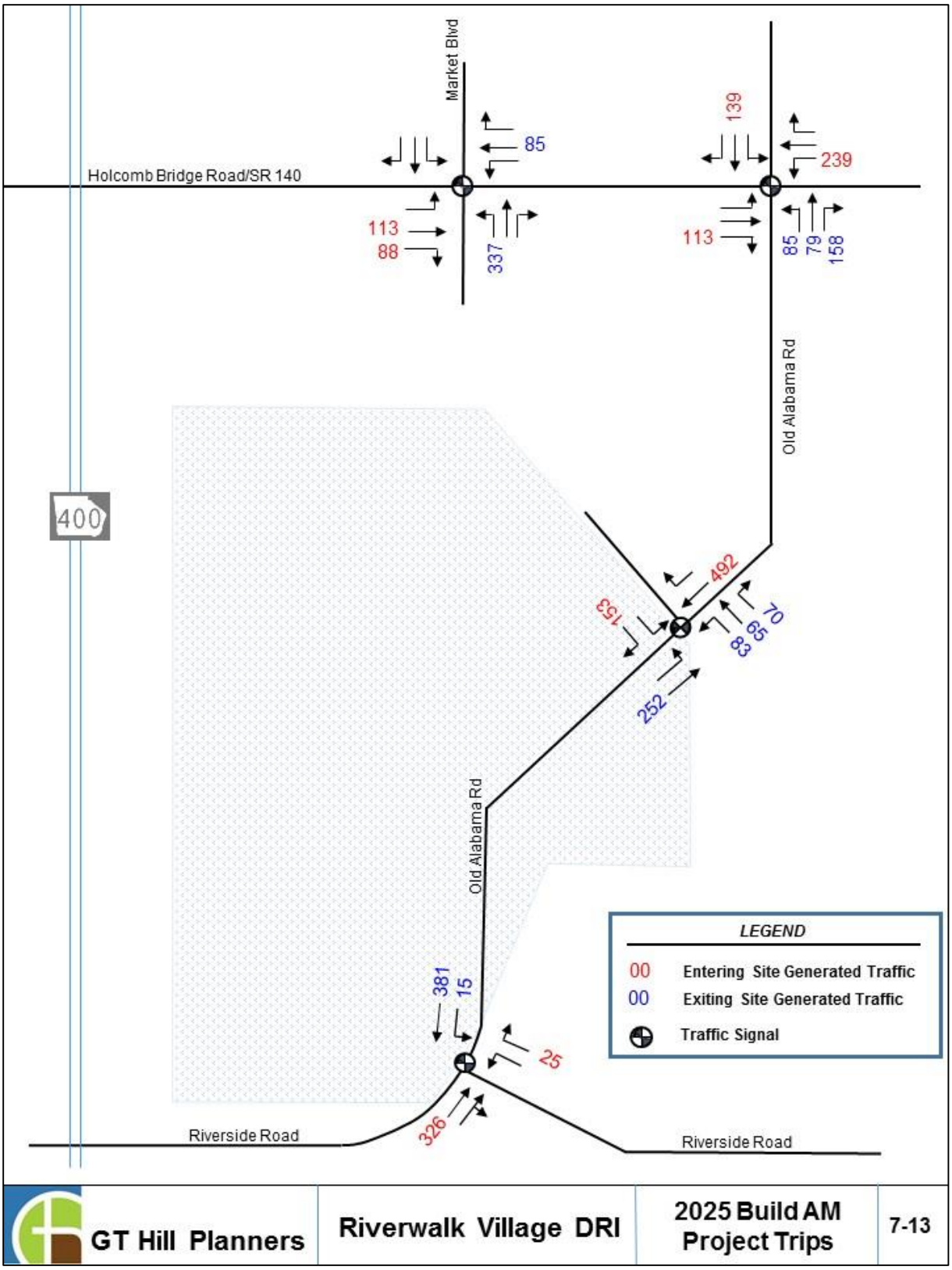


Figure 7-14: 2025 Weekday Noon Peak Hour Project Trips

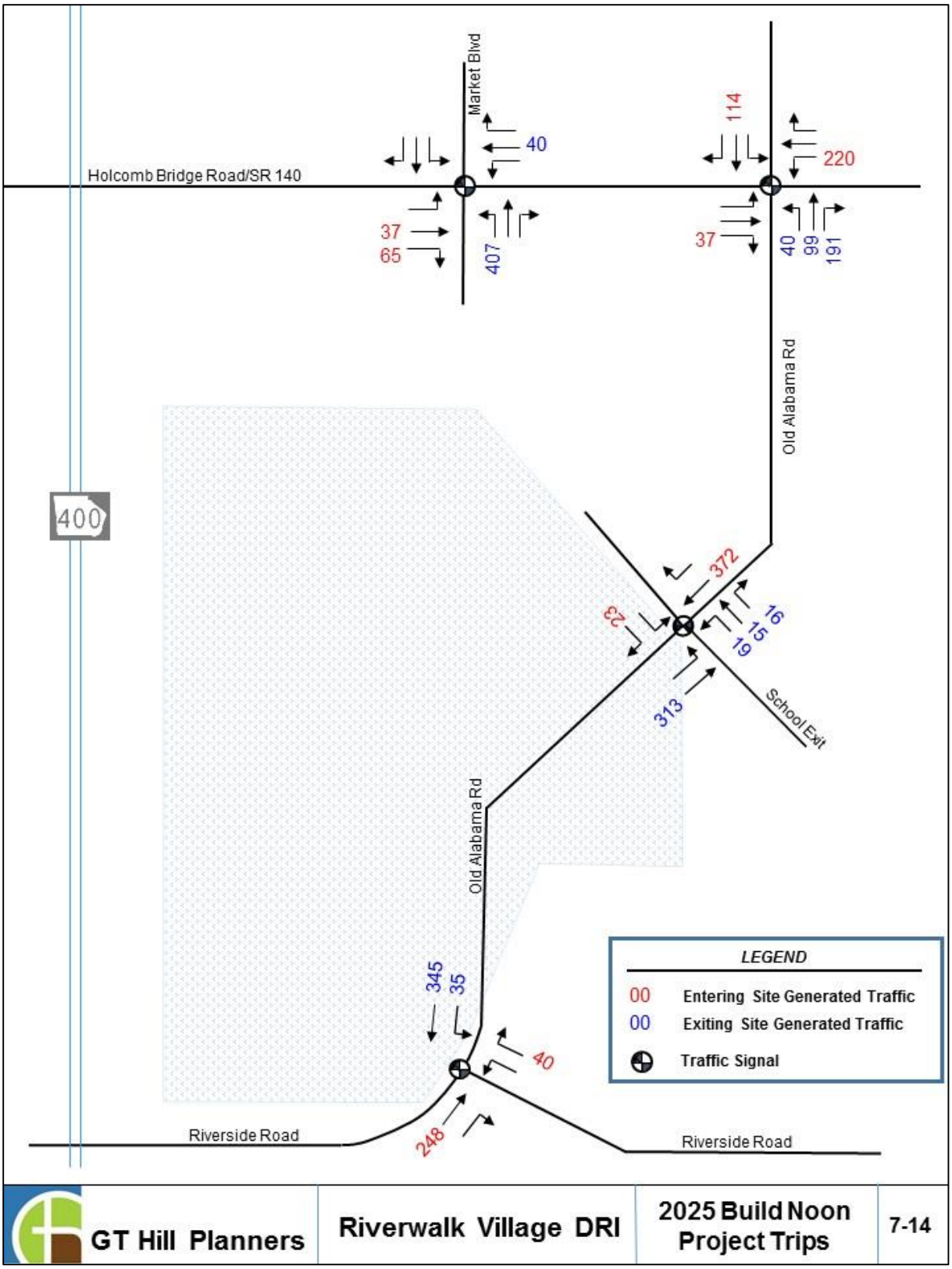


Figure 7-15: 2025 PM Peak Hour Project Trips

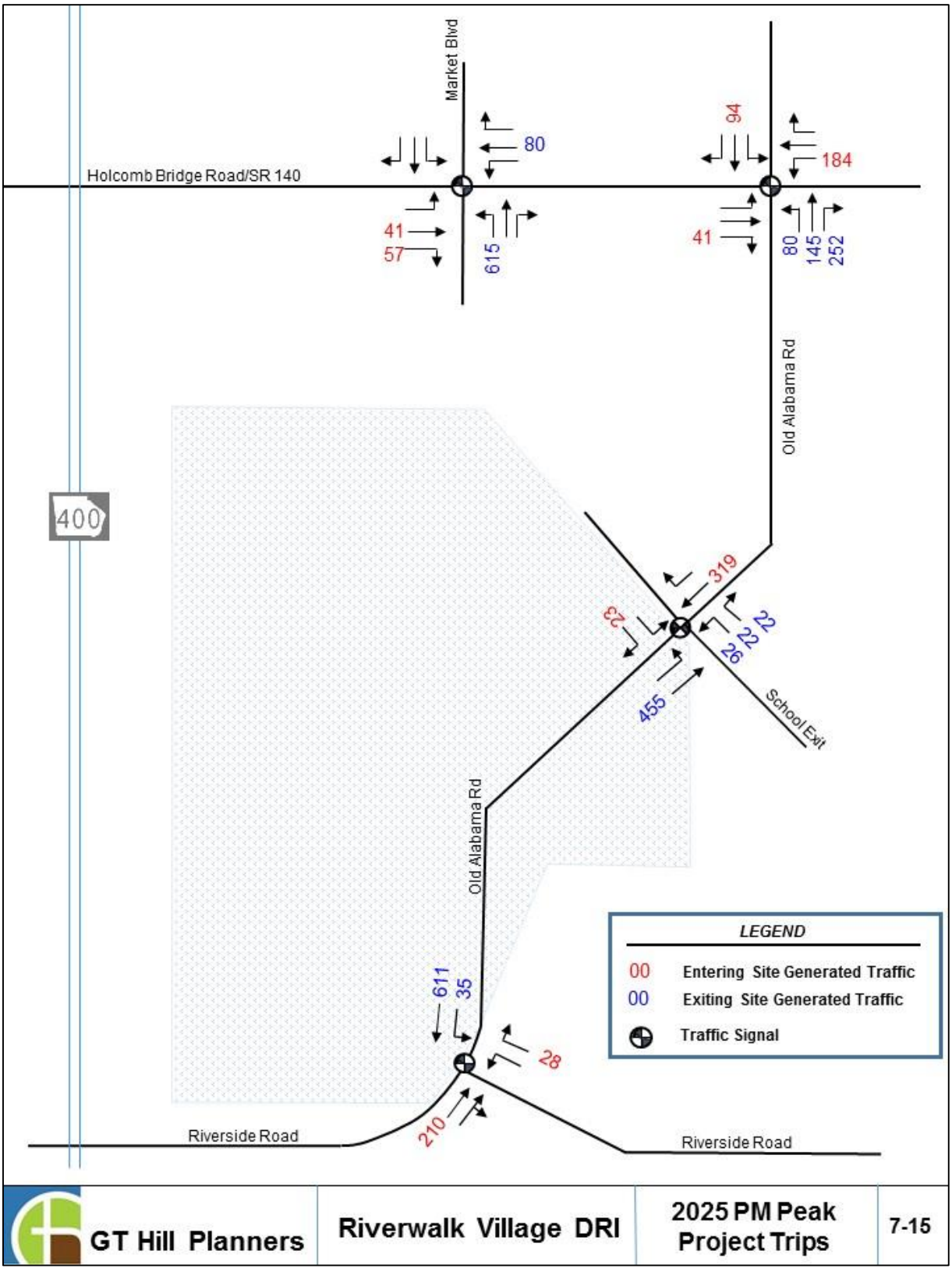
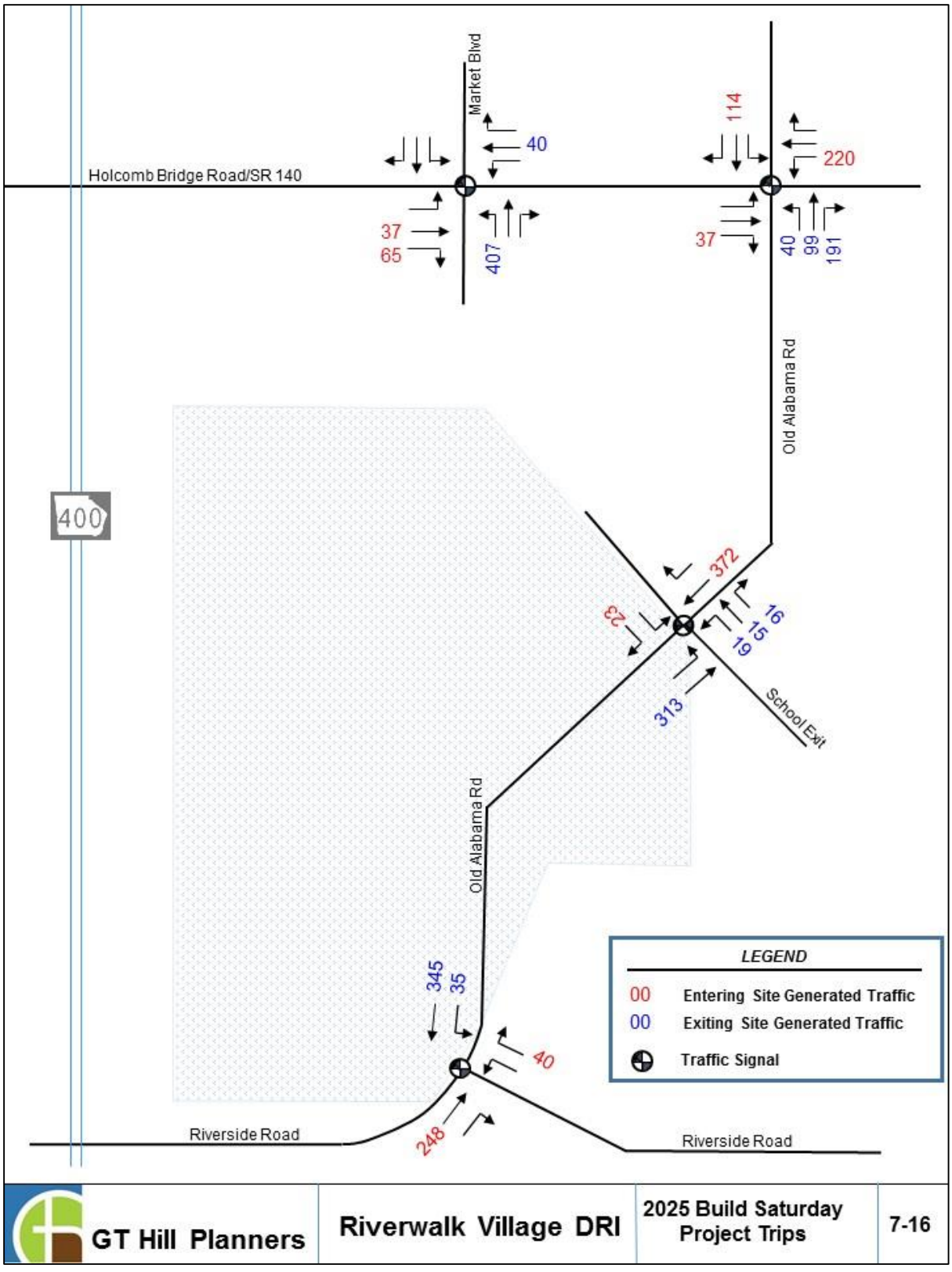


Figure 7-16: 2025 Saturday Noon Peak Hour Project Trips



8. TRAFFIC ANALYSIS

8.1 Existing (2015) Traffic Conditions

The existing traffic volumes are shown in Figures 8-1 through 8-4. These volumes were entered into Synchro 8.0 and an Existing Conditions analysis was performed. HCM outputs were utilized for this analysis. The existing analysis utilized actual field signal timing for each signalized intersection. While cycle lengths and phase splits matched actual field conditions, the analysis did optimize offsets to provide optimum traffic flow between close intersections. The results are presented in Table 8-1 below.

Table 8-1: Riverwalk Village DRI Existing (2015) Intersection Level of Service

Intersection		Control	Peak Hour Level of Service (intersection delay in seconds/vehicle)			
			AM	Noon	PM	Sat
1	Holcomb Bridge Road @ Market Blvd	Signal	B (12.0)	B (10.7)	A (8.9)	B (15.8)
2	Holcomb Bridge Road @ Old Alabama Road	Signal	F (110.8)	E (56.3)	F (94.6)	E (65.4)
3	Old Alabama Road @ Market Blvd	Signal	A (6.3)	A (6.2)	A (7.0)	A (6.3)
4	Old Alabama Road @ Riverside Road	Signal	D (38.1)	B (11.5)	B (17.9)	B (14.2)

As presented in Table 8-1, the LOS for the Holcomb Bride Road @ Old Alabama Road currently operates below the LOS standard (LOS D) in all four study time periods. Thus the LOS standard for this intersection will become LOS E for all future scenarios. All other intersections will remain LOD D.

8.2 Future (2025) No-Build Traffic Conditions

The 2025 No-Build condition is the traffic conditions that would result in 2025 as a result of background traffic growth without traffic from the Riverwalk Village development. 2015 traffic volumes were increased at 1% annual growth to develop 2025 No-Build Volumes. As mentioned previously, the 2025 traffic figures and analysis takes into account the City of Roswell projects to add a third westbound lane on Holcomb Bridge Road from just east of Old Alabama Road to the GA 400 NB On-Ramp and the GA 400 Early Off-Ramp project. The traffic study for the Early Off-Ramp project was utilized to calculate the expected change in traffic patterns and volumes as a result of the implementation of that project.

The 2025 No-Build volumes without the implementation of the Early Off-Ramp project are presented in Figures 8-5 through 8-8. The 2025 No-Build volumes with the implementation of the Early Off-Ramp project are presented in Figures 8-9 through 8-12. The results of the LOS analysis for 2025 No-Build are presented in Table 8-2. The 2025 No-Build analysis utilized 2015 cycle lengths but optimized phase splits and offsets since traffic volumes and patterns

Figure 8-1: 2015 AM Peak Hour Traffic Volumes

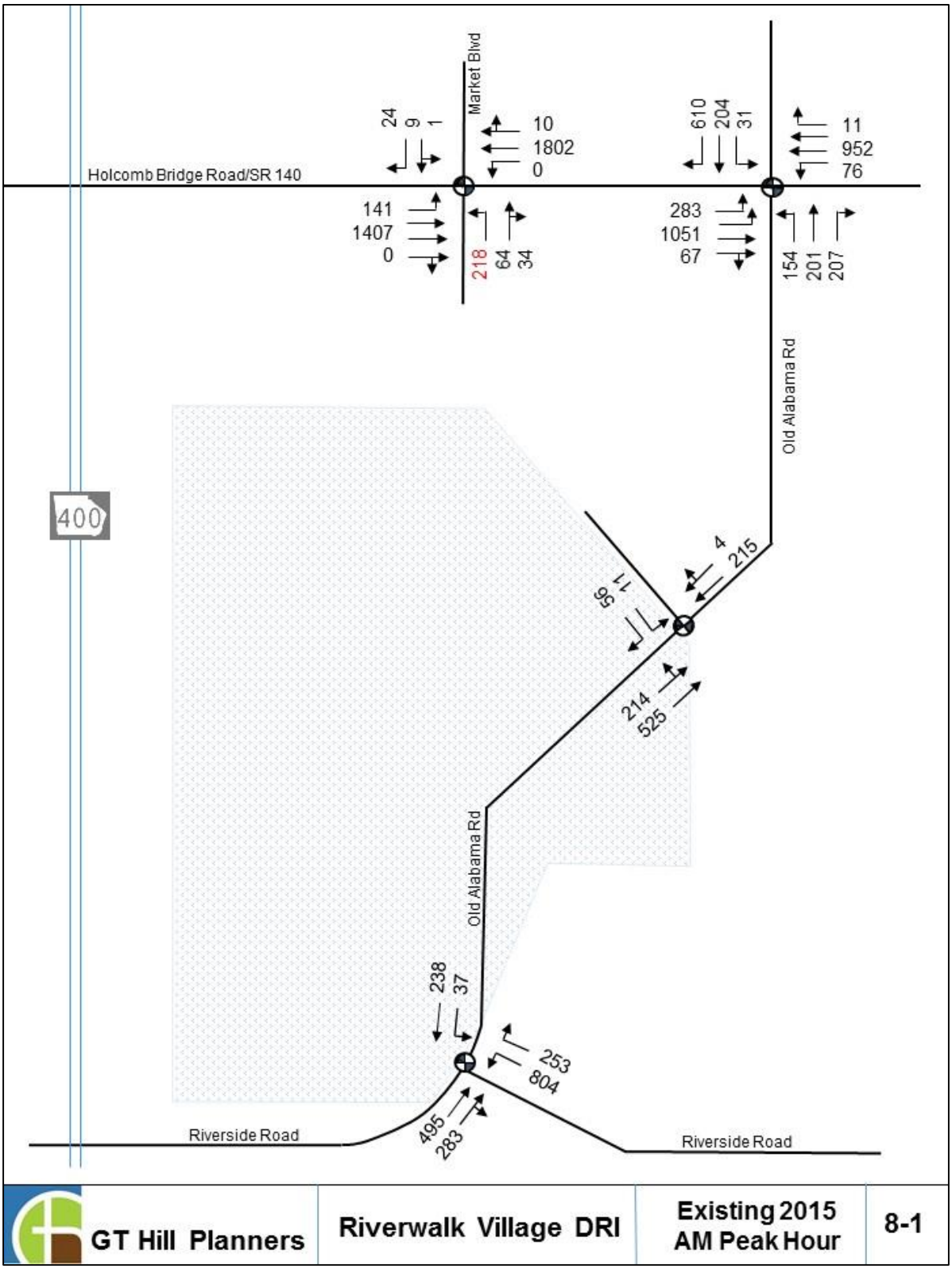


Figure 8-2: 2015 Weekday Noon Peak Hour Traffic Volumes

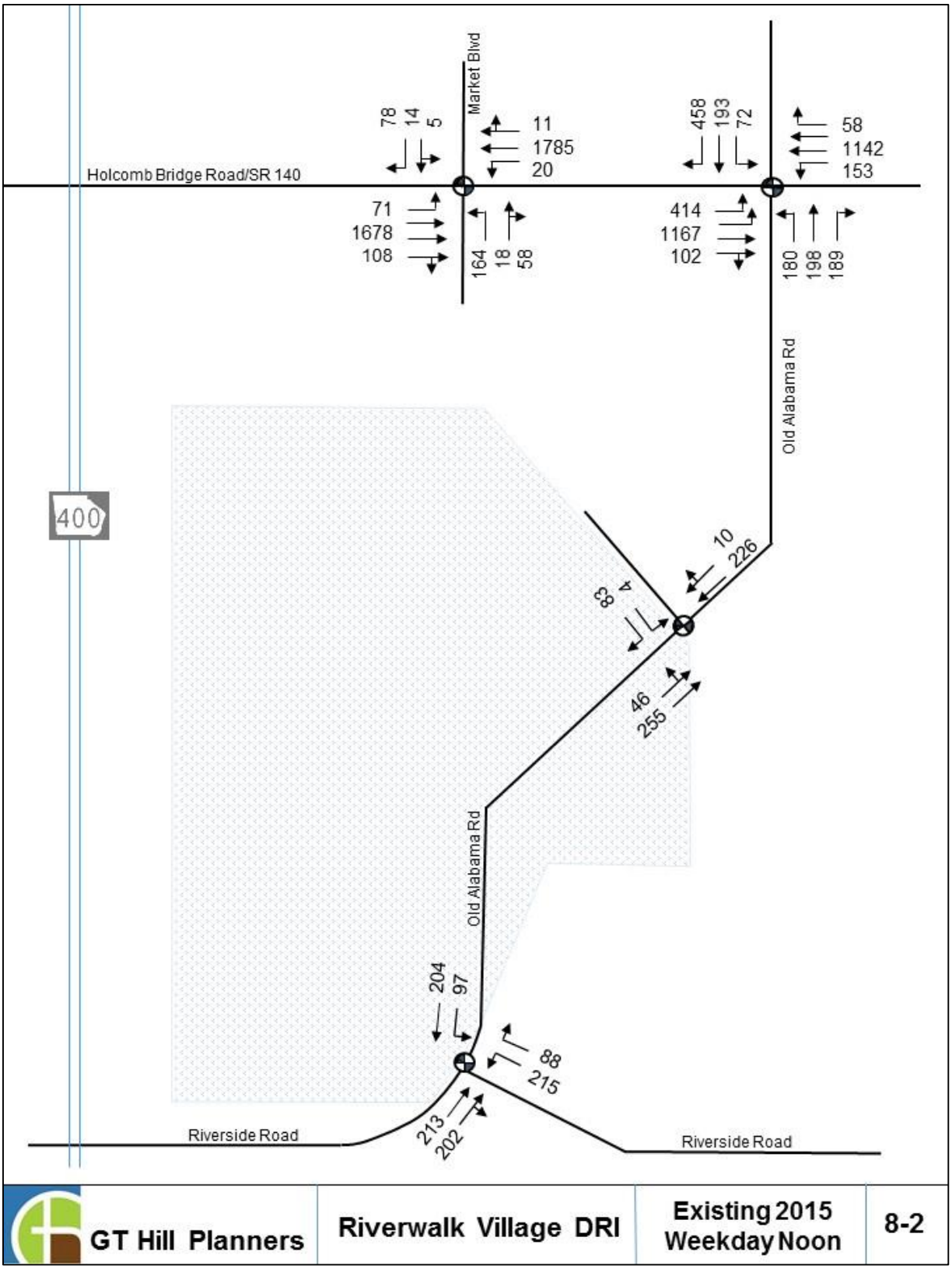


Figure 8-3: 2015 PM Peak Hour Traffic Volumes

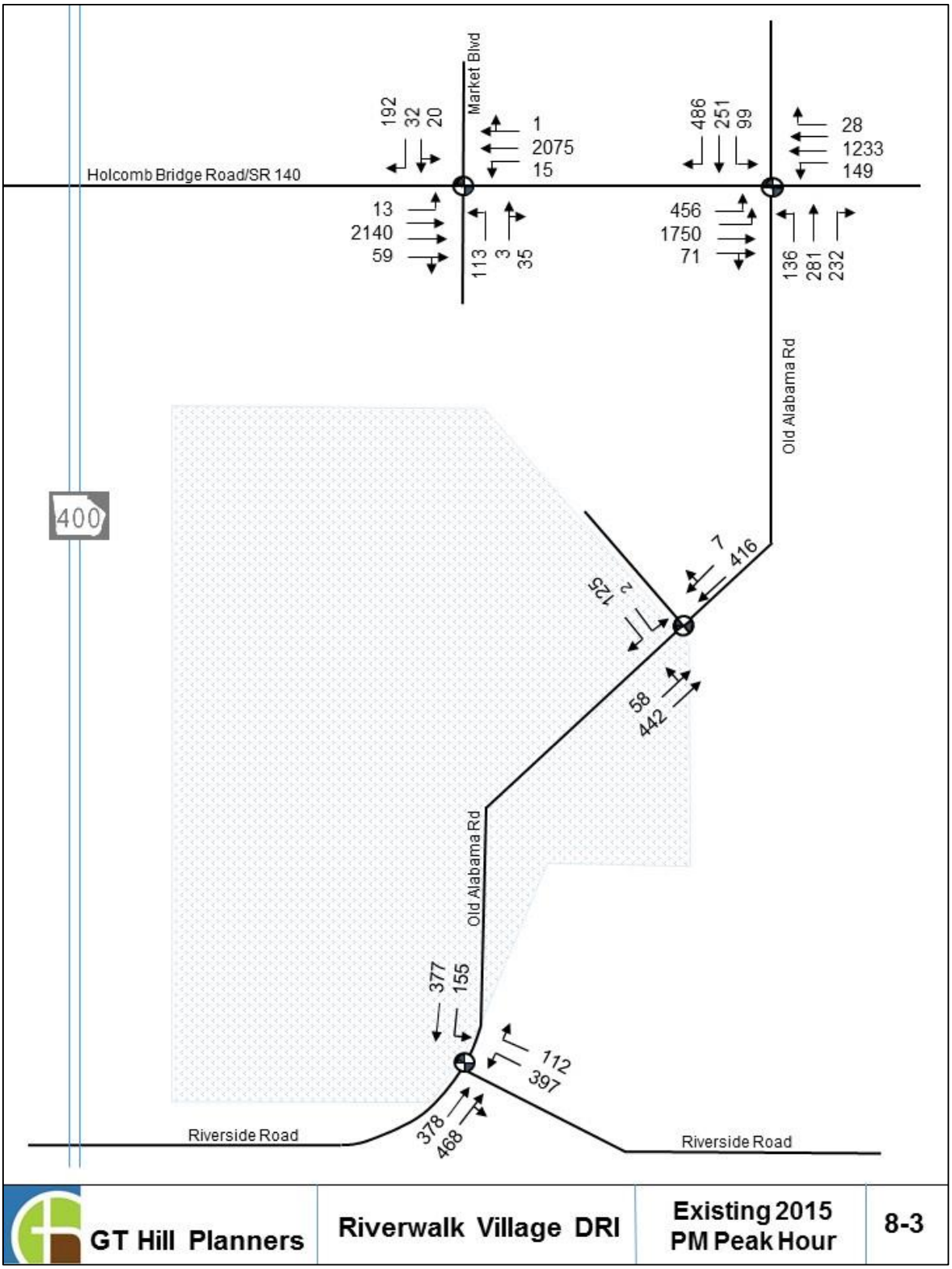


Figure 8-4: 2015 Saturday Noon Peak Hour Traffic Volumes

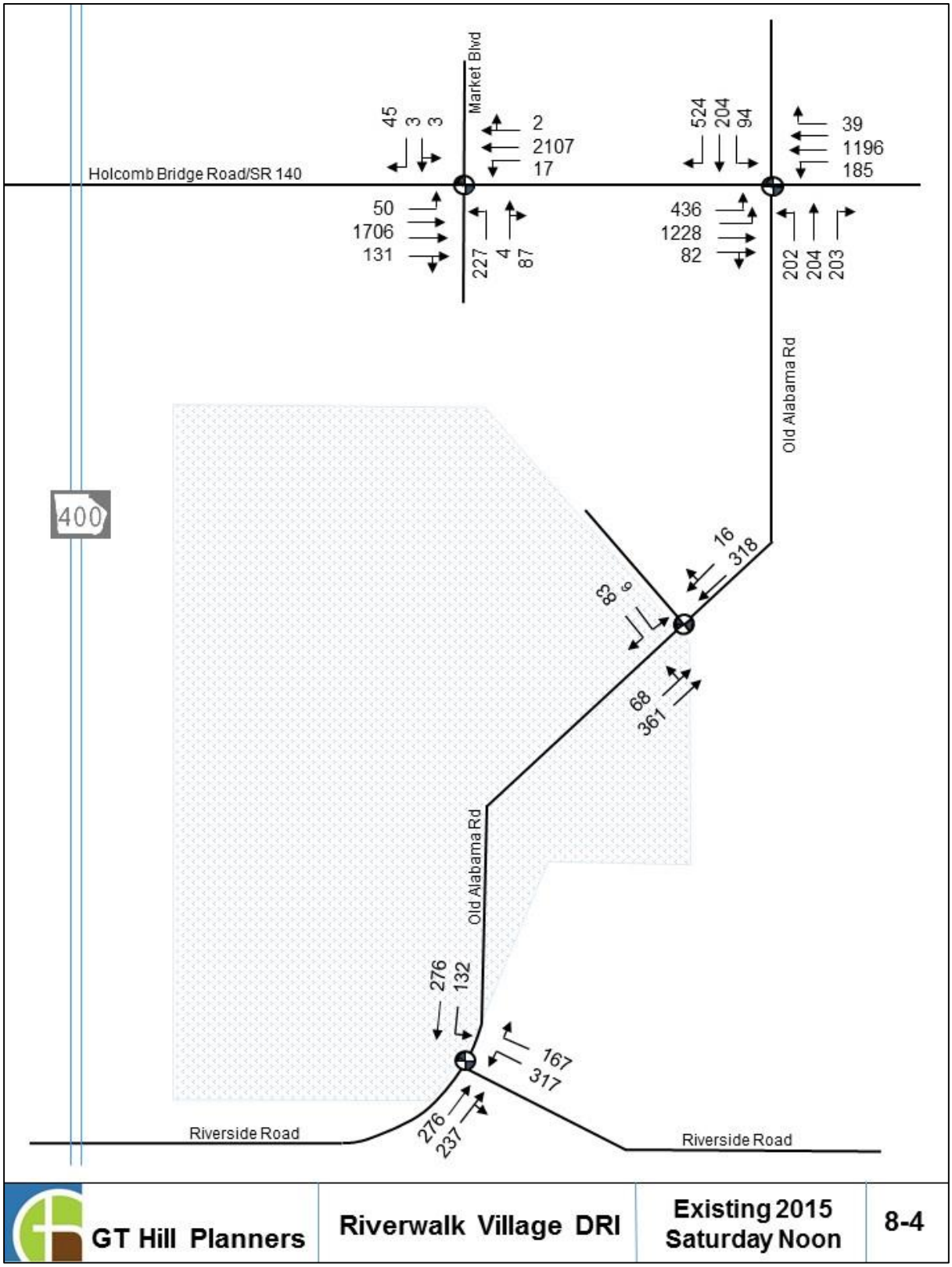


Figure 8-5: 2025 No-Build AM Peak Hour Traffic Volumes

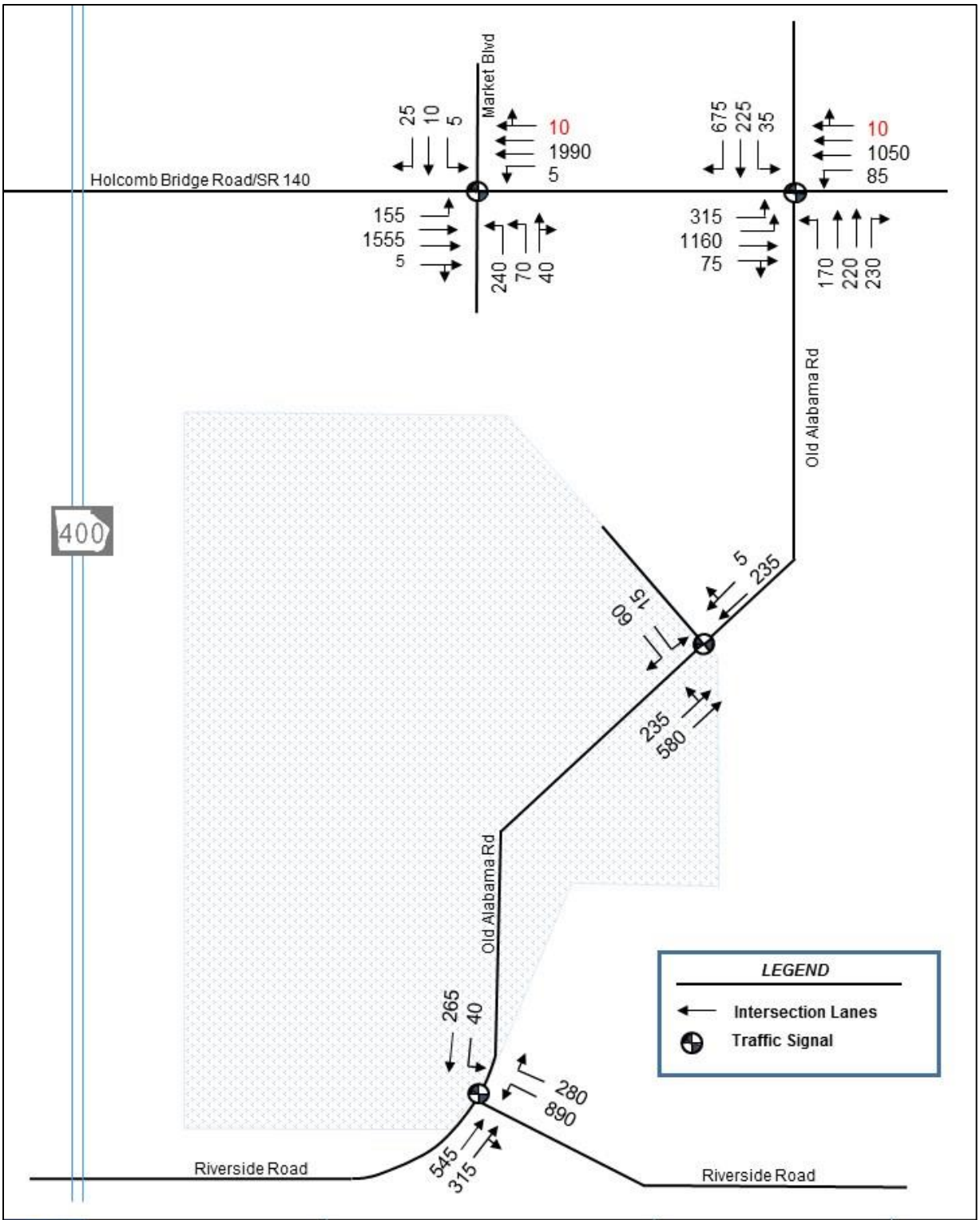


Figure 8-6: 2025 No-Build Weekday Noon Peak Hour Traffic Volumes

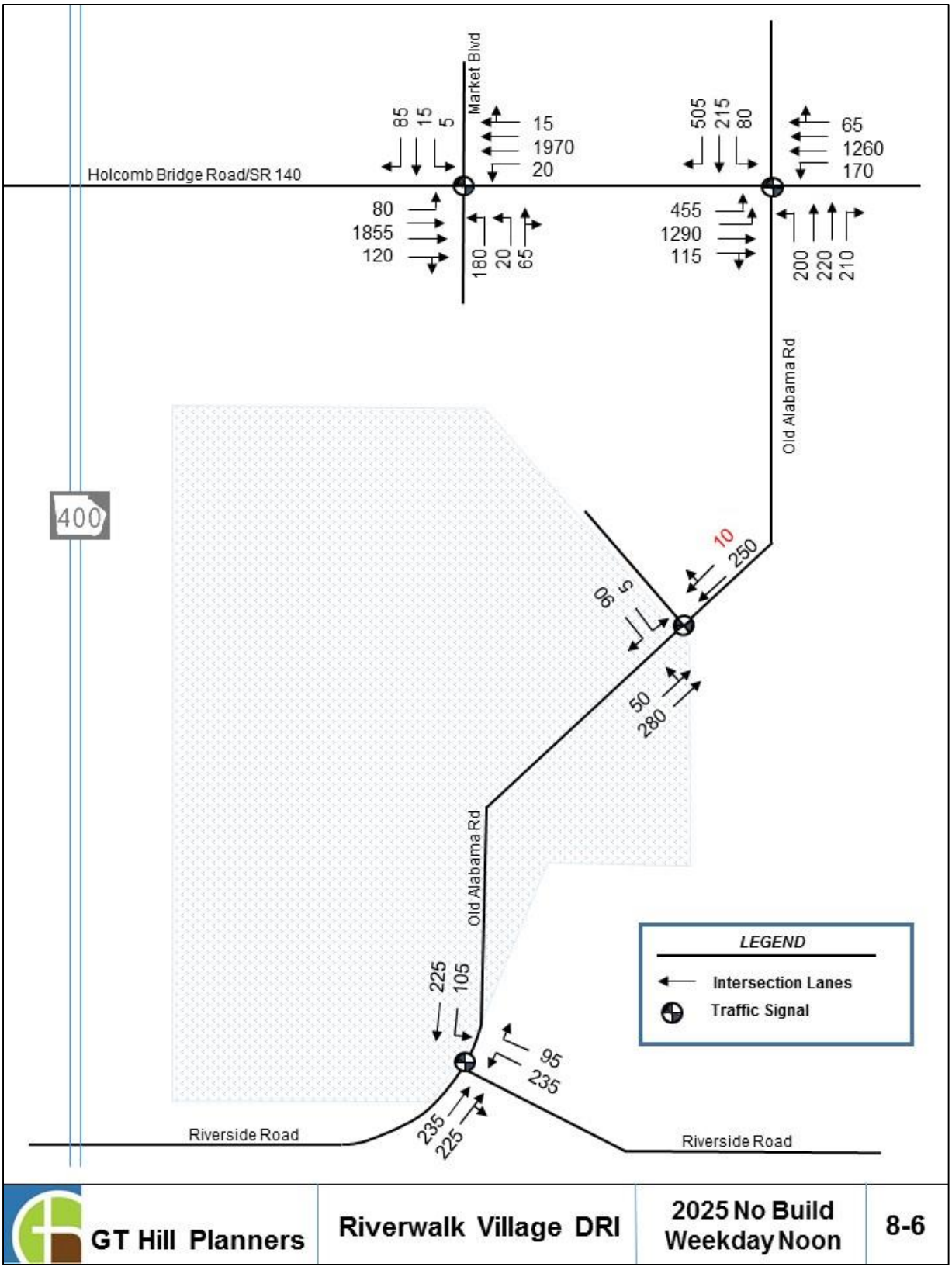


Figure 8-7: 2025 No-Build PM Peak Hour Traffic Volumes

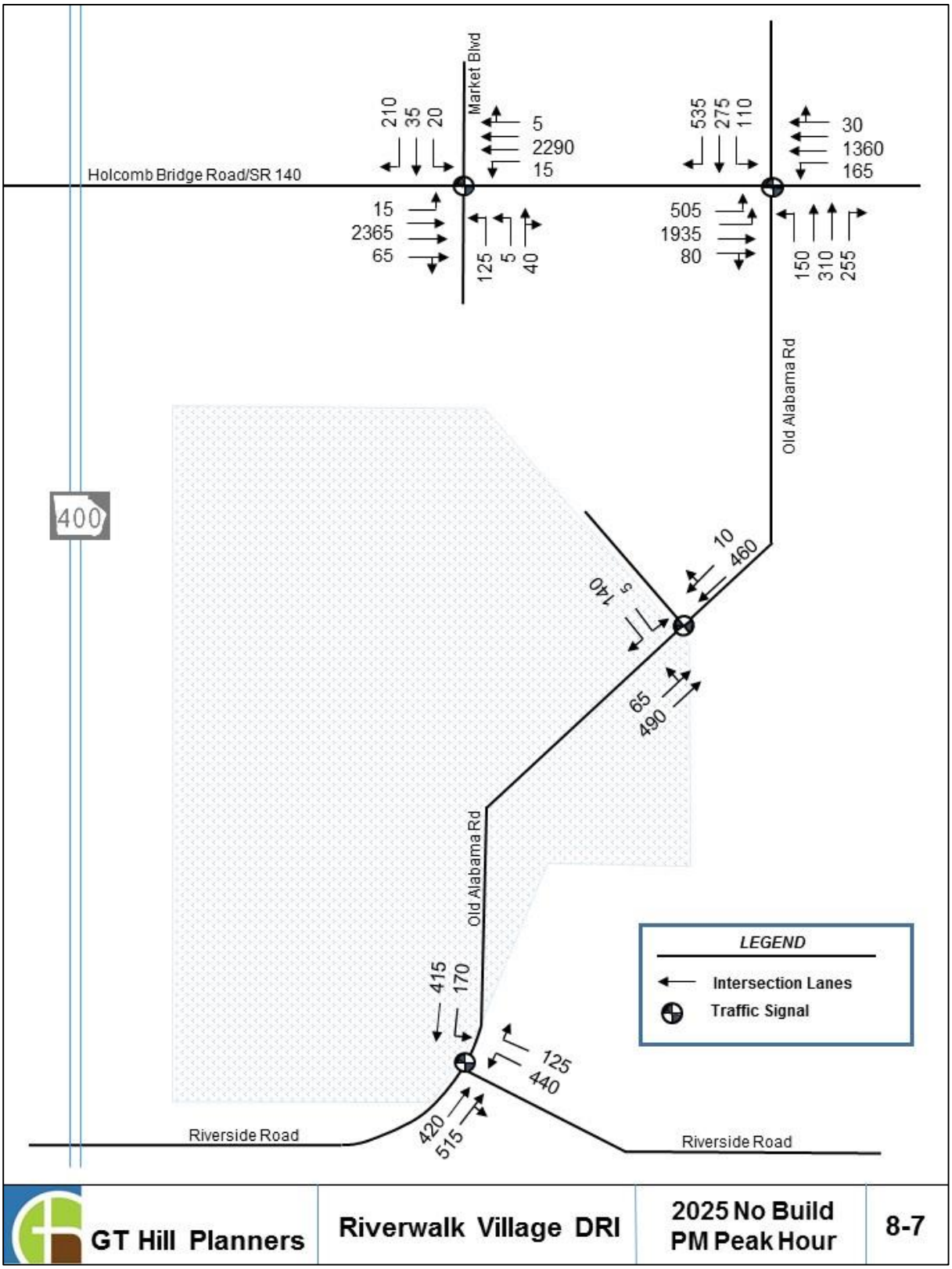


Figure 8-8: 2025 No-Build Saturday Noon Peak Hour Traffic Volumes

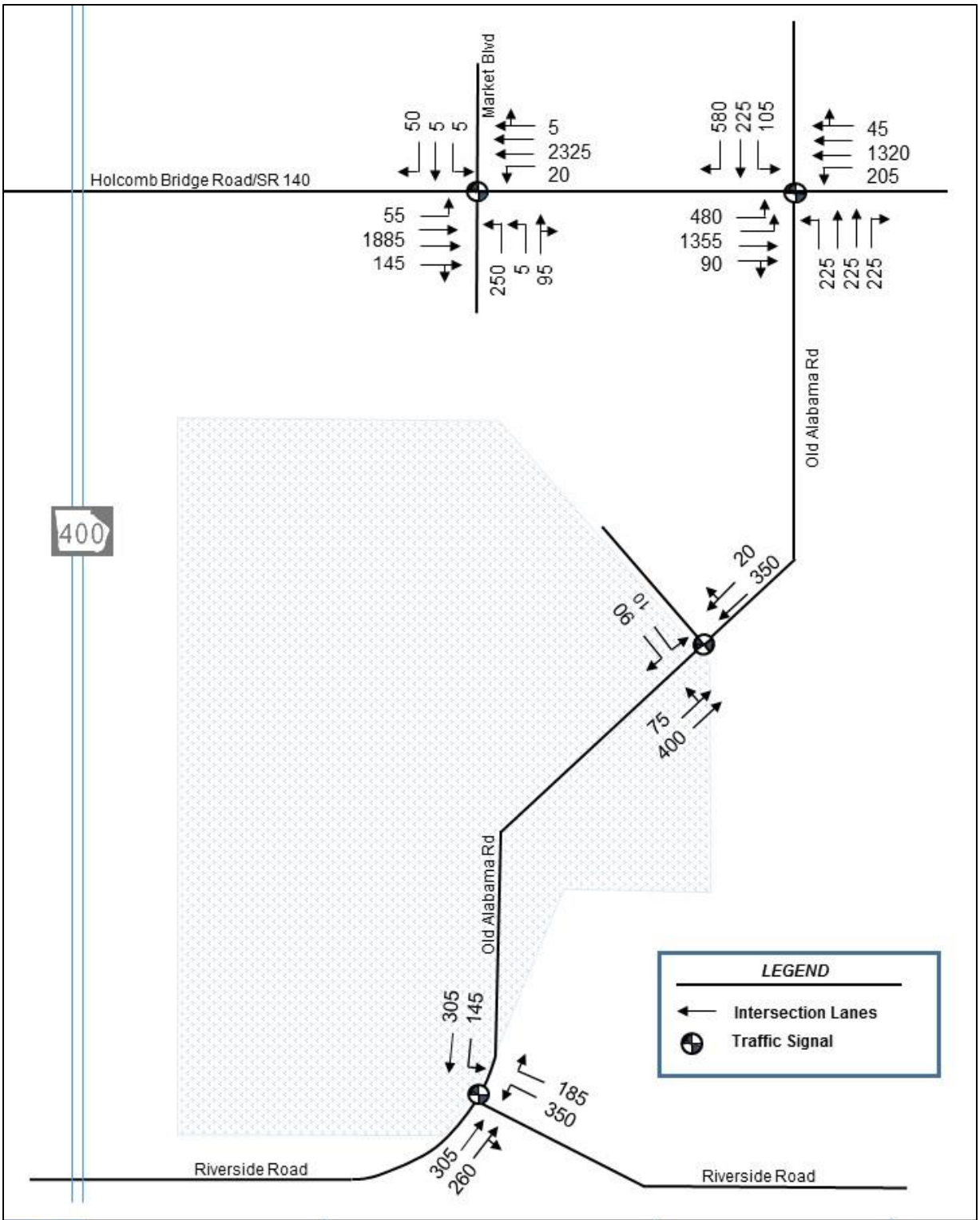


Figure 8-9: 2025 No-Build AM Peak Hour Traffic Volumes w/ Early Off-Ramp Project

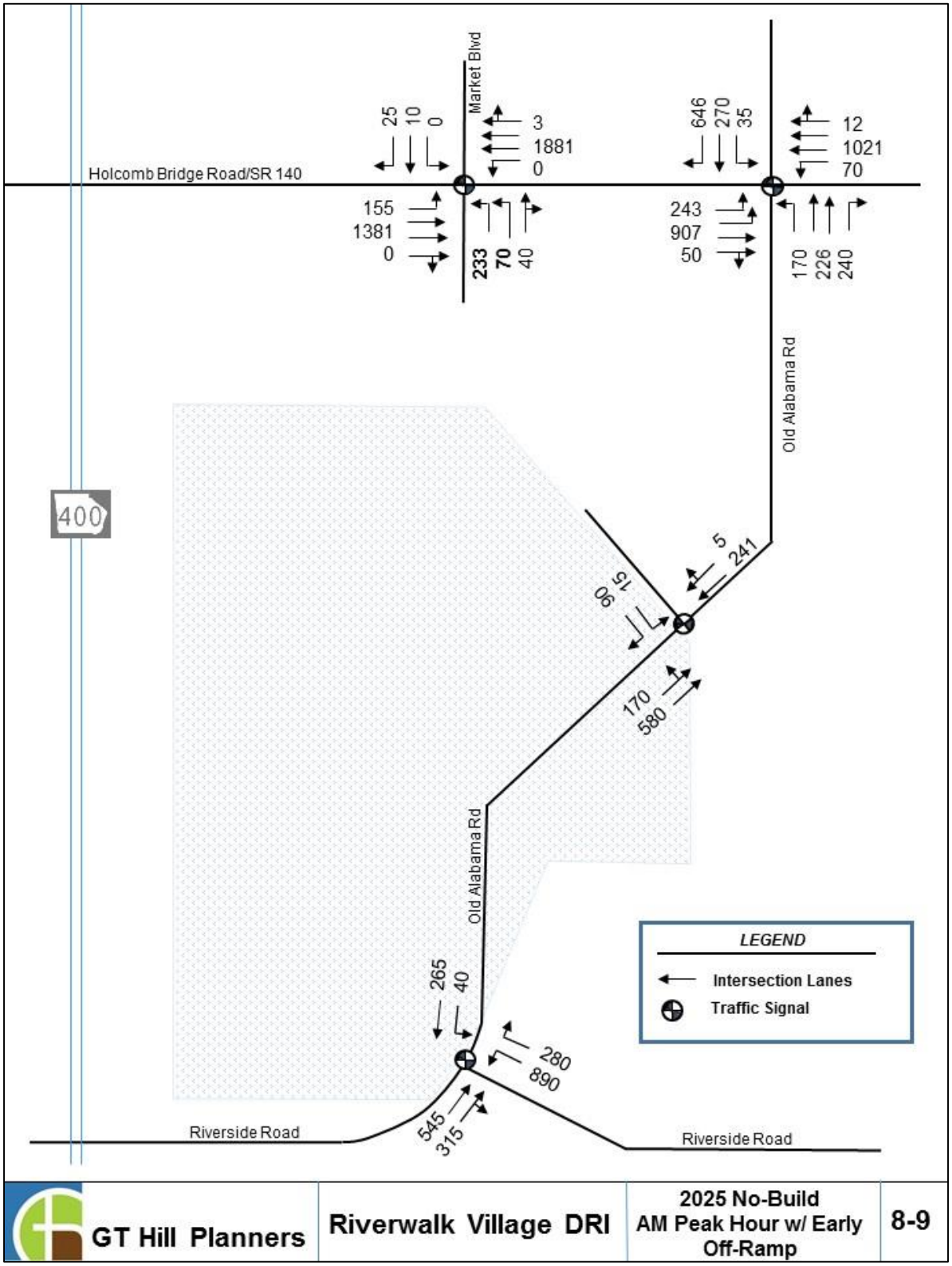


Figure 8-10: 2025 No-Build Weekday Noon Peak Hour Traffic Volumes w/ Early Off-Ramp Project

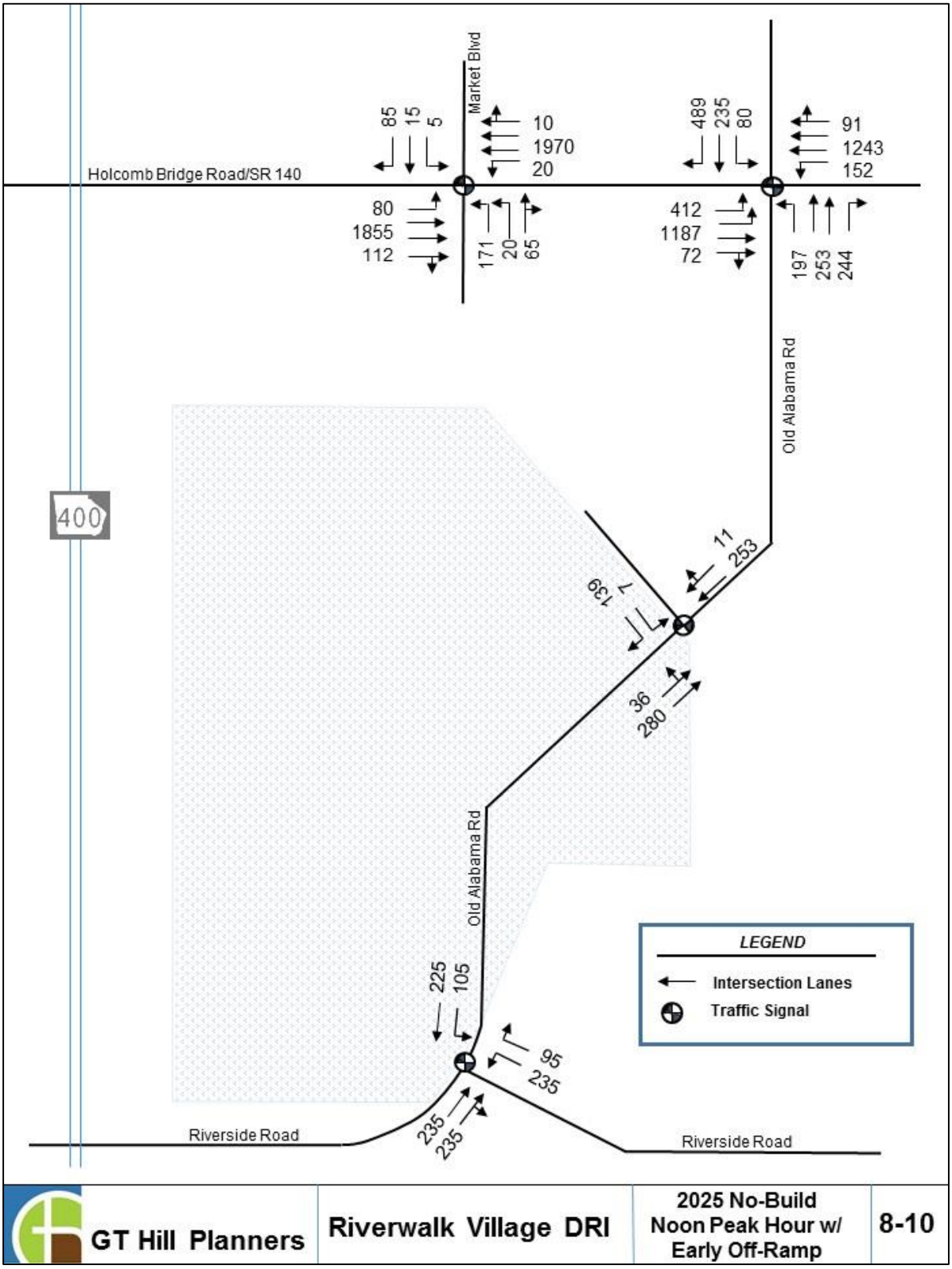


Figure 8-11: 2025 No-Build PM Peak Hour Traffic Volumes w/ Early Off-Ramp Project

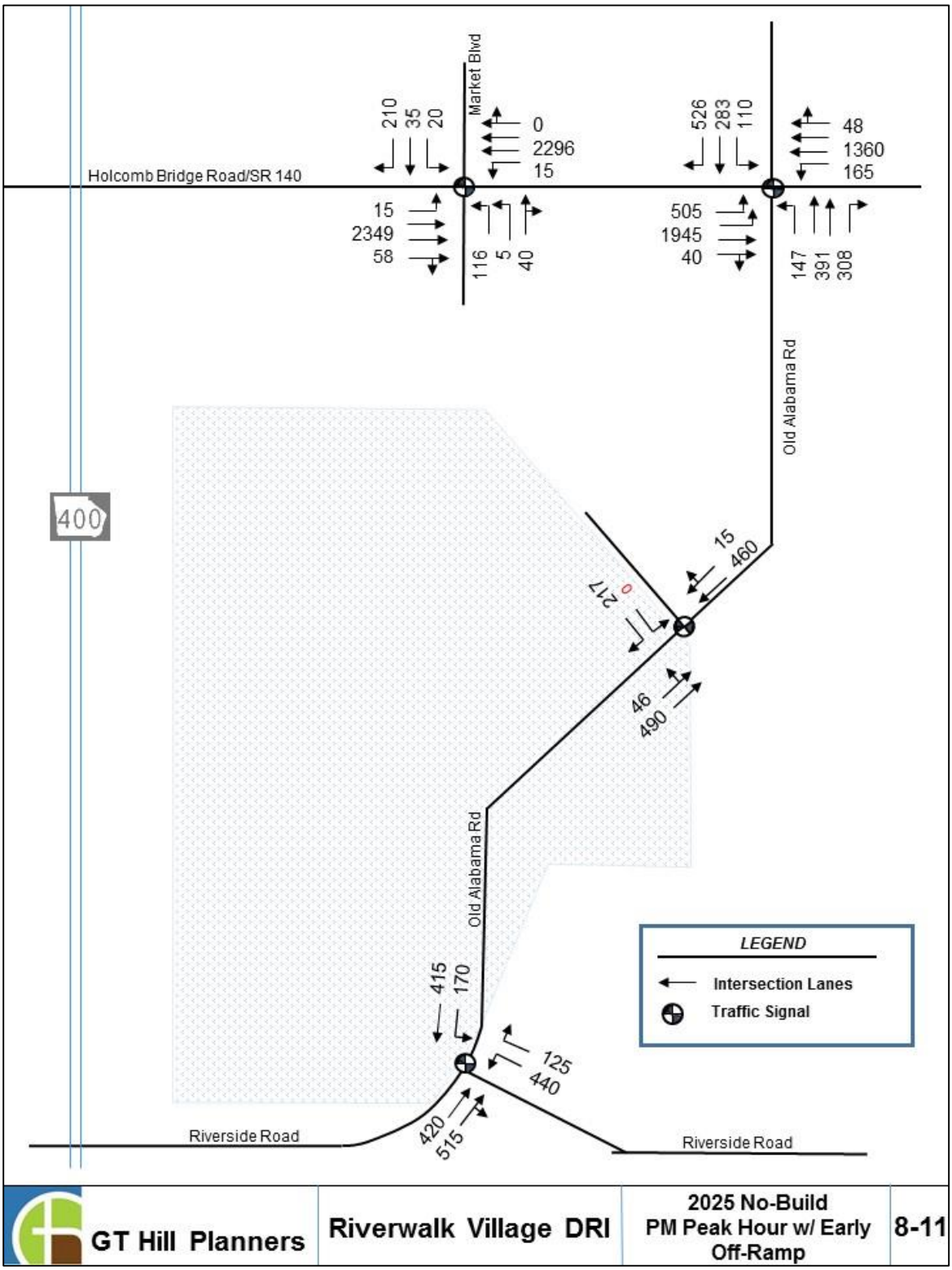


Figure 8-12: 2025 No-Build Saturday Noon Peak Hour Traffic Volumes w/ Early Off-Ramp Project

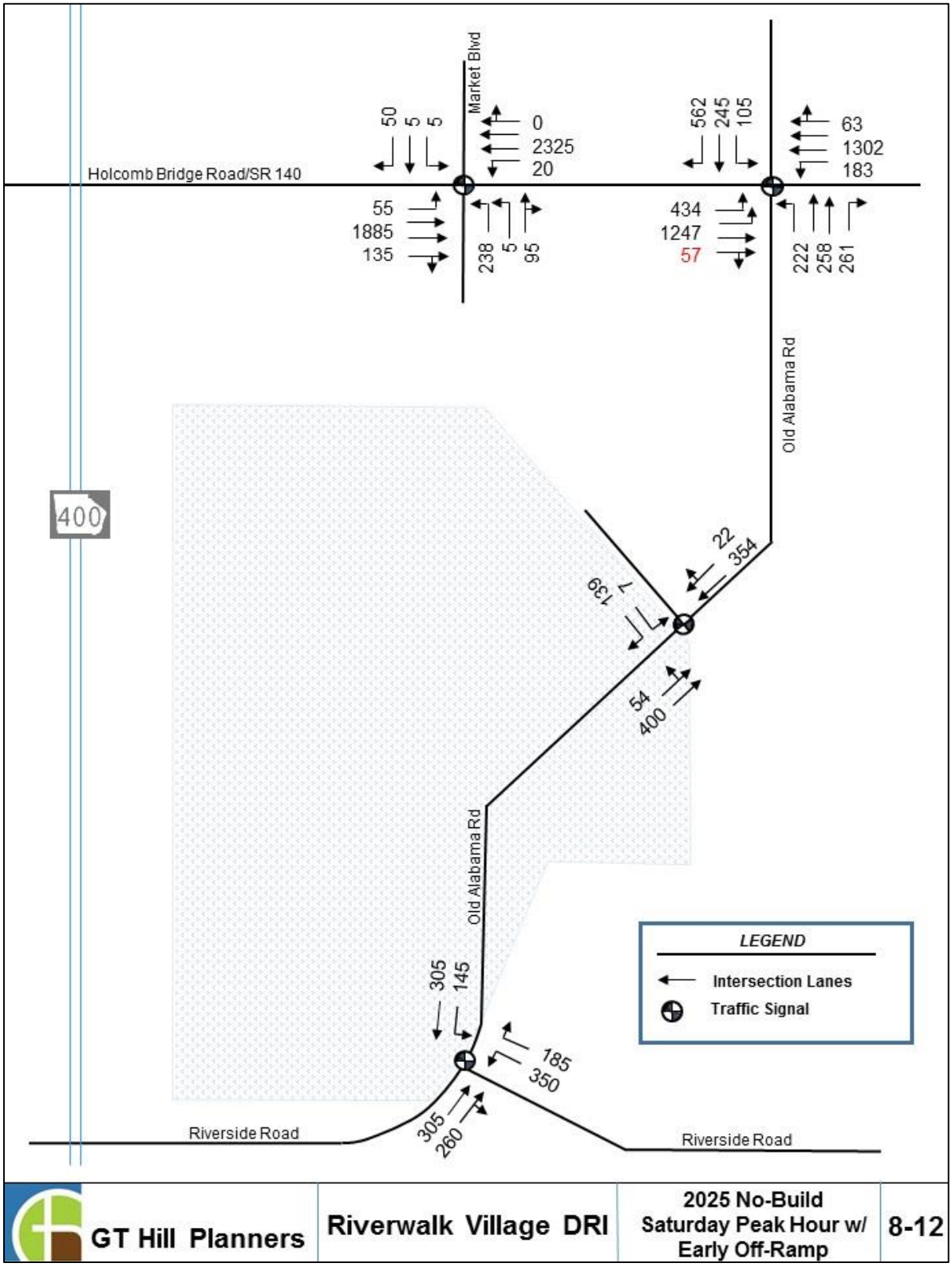


Table 8-2: Riverwalk Village DRI Future (2025) No-Build Intersection Level of Service

Intersection		Control	Peak Hour Level of Service (intersection delay in seconds/vehicle)			
			AM	Noon	PM	Sat
Without Early Off-Ramp Project						
1	Holcomb Bridge Road @ Market Blvd	Signal	B (13.4)	B (12.5)	A (8.9)	B (15.8)
2	Holcomb Bridge Road @ Old Alabama Road	Signal	E (62.7)	E (58.8)	F (94.6)	E (60.7)
3	Old Alabama Road @ Market Blvd	Signal	A.(6.5)	A (6.4)	A (7.0)	A (7.3)
4	Old Alabama Road @ Riverside Road	Signal	E (60.9)	B (11.9)	C (21.2)	B (15.4)
With Early Off-Ramp Project						
1	Holcomb Bridge Road @ Market Blvd	Signal	B (11.0)	B (12.2)	A (9.3)	B (11.8)
2	Holcomb Bridge Road @ Old Alabama Road	Signal	D (48.9)	D (52.7)	F (80.9)	E (53.3)
3	Old Alabama Road @ Market Blvd	Signal	A (7.3)	A (7.4)	A (8.3)	A (7.5)
4	Old Alabama Road @ Riverside Road	Signal	E (60.9)	B (11.9)	D (37.3)	B (15.7)

would change by 2025 and an additional westbound through lane would be added along Holcomb Bridge Road along with additional lanes as several intersections. As presented in this table, the early off-ramp project is expected to reduce delay at the Holcomb Bridge Road at Old Alabama Road intersection.

As presented in Table 8-2, the only failing LOS occurs at the Holcomb Bridge Road at Old Alabama Road intersection in the PM peak period and at the Old Alabama Road at Riverside Road intersection in the AM peak period for both Early Off-Ramp scenarios. Per GRTA's Letter of Understanding, improvements were analyzed at this intersection for each failing time period until the Level of Service was improved to the GRTA standard (LOS E, in this case). The 2025 No-Build intersection LOS with improvements is presented in Table 8-3.

As presented in Table 8-3, the improvements recommended allow these intersections to operate at acceptable LOS. The improvements necessary are presented in Table 8-4. These improvements represent the minimum level of intersection improvements necessary to result in LOS E in the 2025 No-Build condition. The improvements are as follows:

Table 8-3: Future (2025) No-Build Intersection Level of Service with Improvements

Intersection		Control	Peak Hour Level of Service (intersection delay in seconds/vehicle)			
			AM	Noon	PM	Sat
Without Early Off-Ramp Project						
2	Holcomb Bridge Road @ Old Alabama Road	Signal	N/A	N/A	E (74.4)	N/A
4	Old Alabama Road @ Riverside Road	Signal	D (44.6)	N/A	N/A	N/A
With Early Off-Ramp Project						
2	Holcomb Bridge Road @ Old Alabama Road	Signal	N/A	N/A	E (78.9)	N/A
4	Old Alabama Road @ Riverside Road	Signal	D (44.6)	N/A	N/A	N/A

Table 8-4: Improvements Necessary to Achieve Acceptable LOS

Intersection	Improvements Need to Achieve Acceptable LOS
Holcomb Bridge Road (SR 140) @ Old Alabama Road	Construct an additional westbound left-turn lane on Holcomb Bridge Road to form dual left-turn lanes. Protected-only left-turn phasing will be necessary in conjunction with this improvement.
Old Alabama Road @ Riverside Road	Construct a dedicated northbound right turn lane for traffic travelling on Riverside Road northbound turning onto Riverside Road eastbound.

8.3 Future (2025) Build Traffic Conditions

The 2025 Build traffic volumes were developed by adding the Riverwalk Village project trips (presented earlier) to the 2025 No-Build traffic volumes. As with the 2025 No-Build condition, the 2025 Build traffic figures and analysis takes into account the City of Roswell projects to add a third westbound lane on Holcomb Bridge Road from just east of Old Alabama Road to the GA 400 NB On-Ramp and the GA 400 Early Off-Ramp project.

The 2025 Build volumes without the implementation of the Early Off-Ramp project are presented in Figures 8-13 through 8-16. The 2025 Build volumes with the implementation of the Early Off-Ramp project are presented in Figures 8-17 through 8-20. The results of the LOS analysis for 2025 Build are presented in Table 8-5. While the Early Off-Ramp project is expected to provide traffic relief throughout the study area, as presented in this table, there is

very little difference in LOS and vehicle delay at the four study intersections between the two scenarios.

As presented in Table 8-5, the intersections of Holcomb Bridge Road at Market Blvd and Old Alabama Road are expected to experience failing Levels of Service in the 2025 Build condition in all four study time periods without any intersection improvements. Additionally, the intersection of Old Alabama Road at Riverside Road is expected to experience LOS E conditions in the AM peak hour without improvements.

Figure 8-13: 2025 Build AM Peak Hour Traffic Volumes

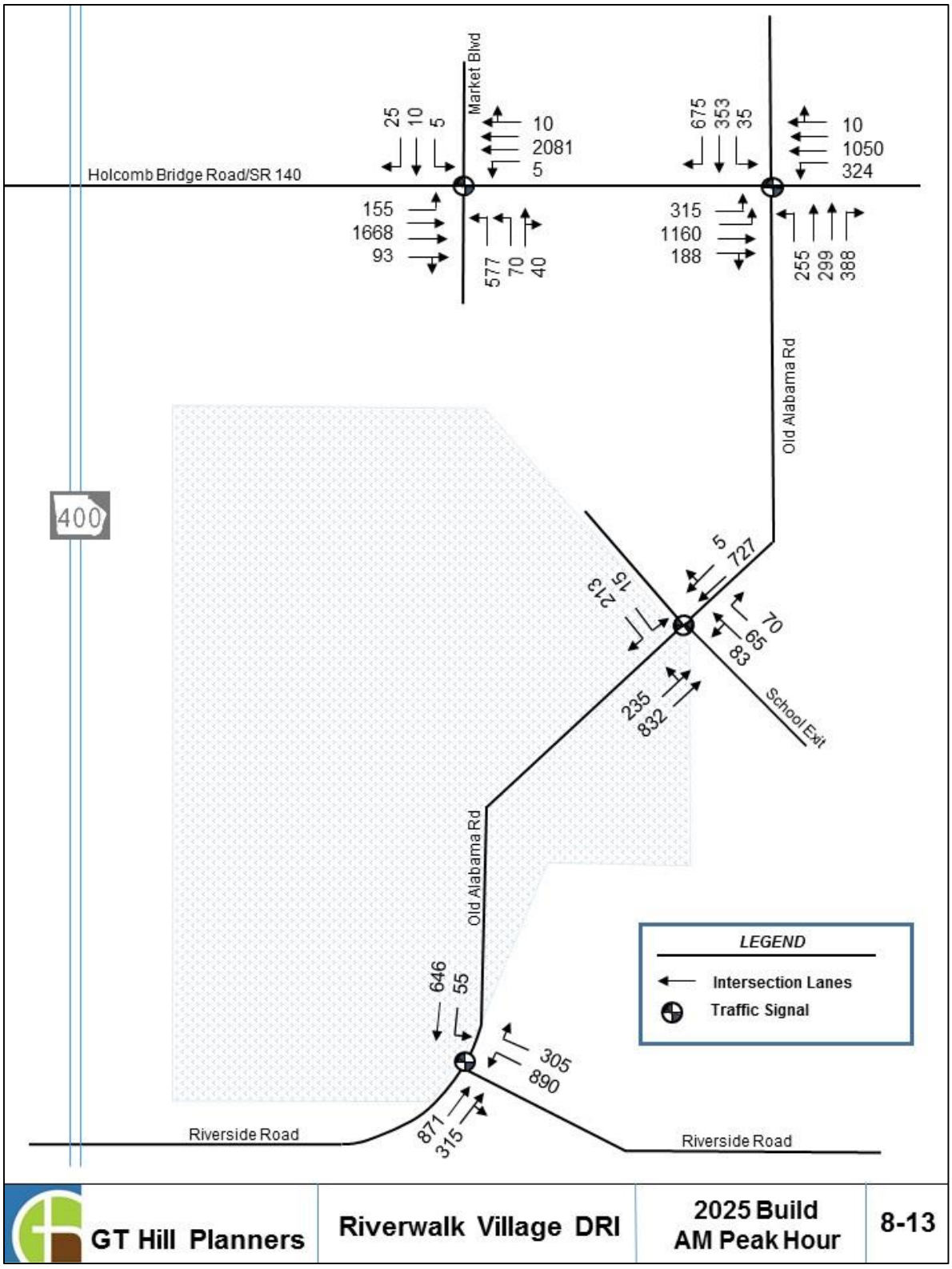


Figure 8-14: 2025 Build Weekday Noon Peak Hour Traffic Volumes

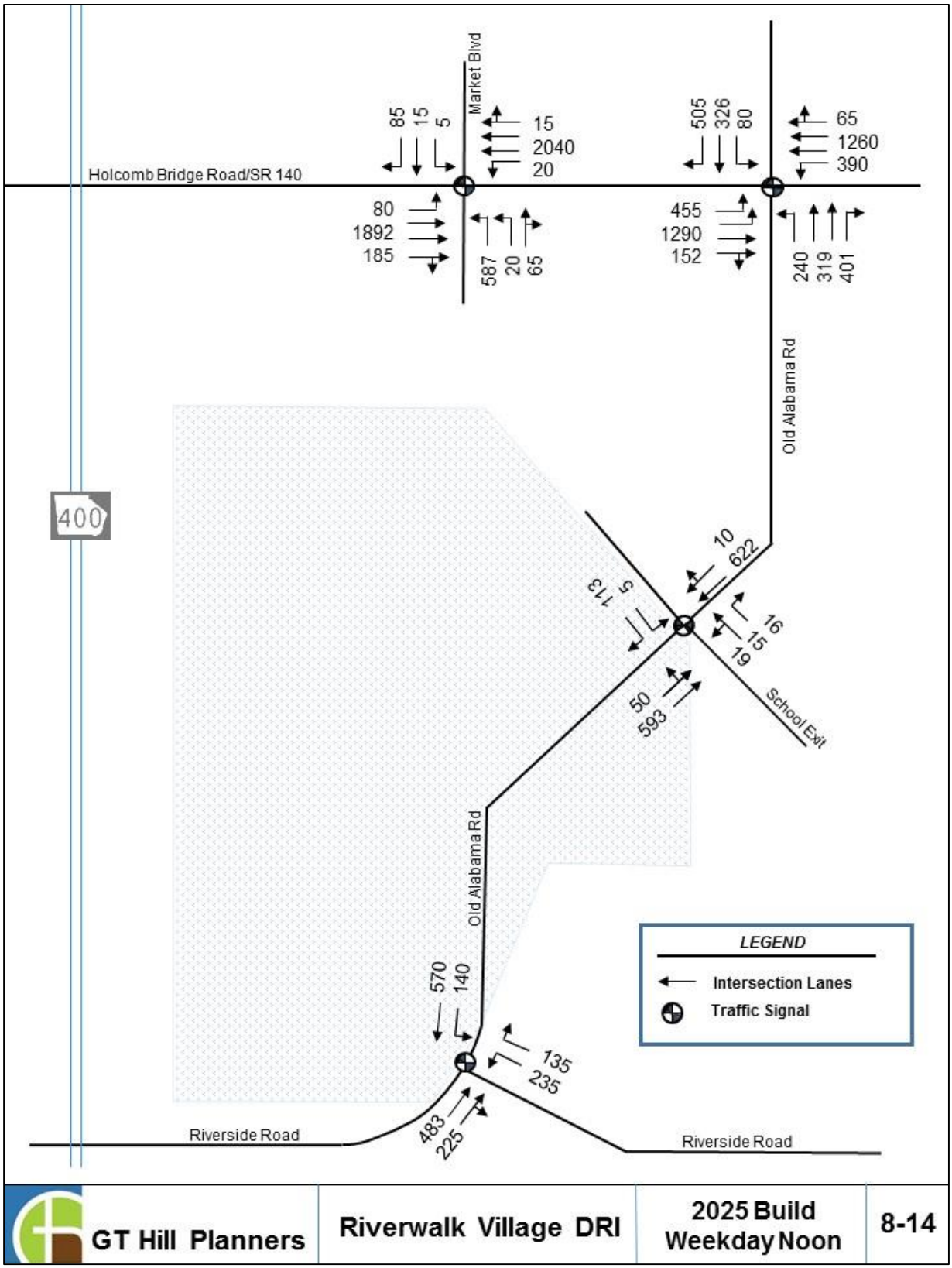


Figure 8-15: 2025 Build PM Peak Hour Traffic Volumes

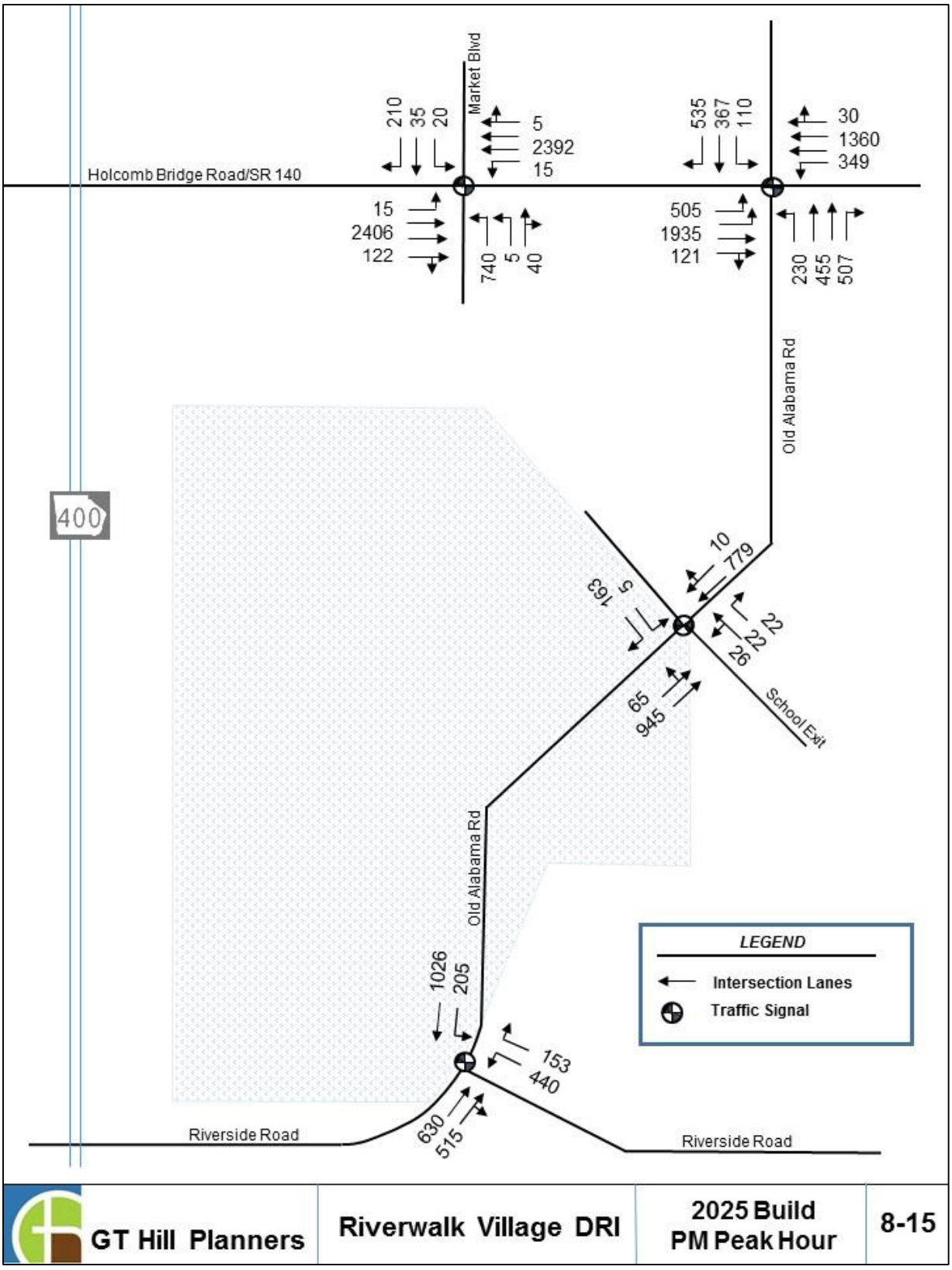


Figure 8-16: 2025 Build Saturday Noon Peak Hour Traffic Volumes

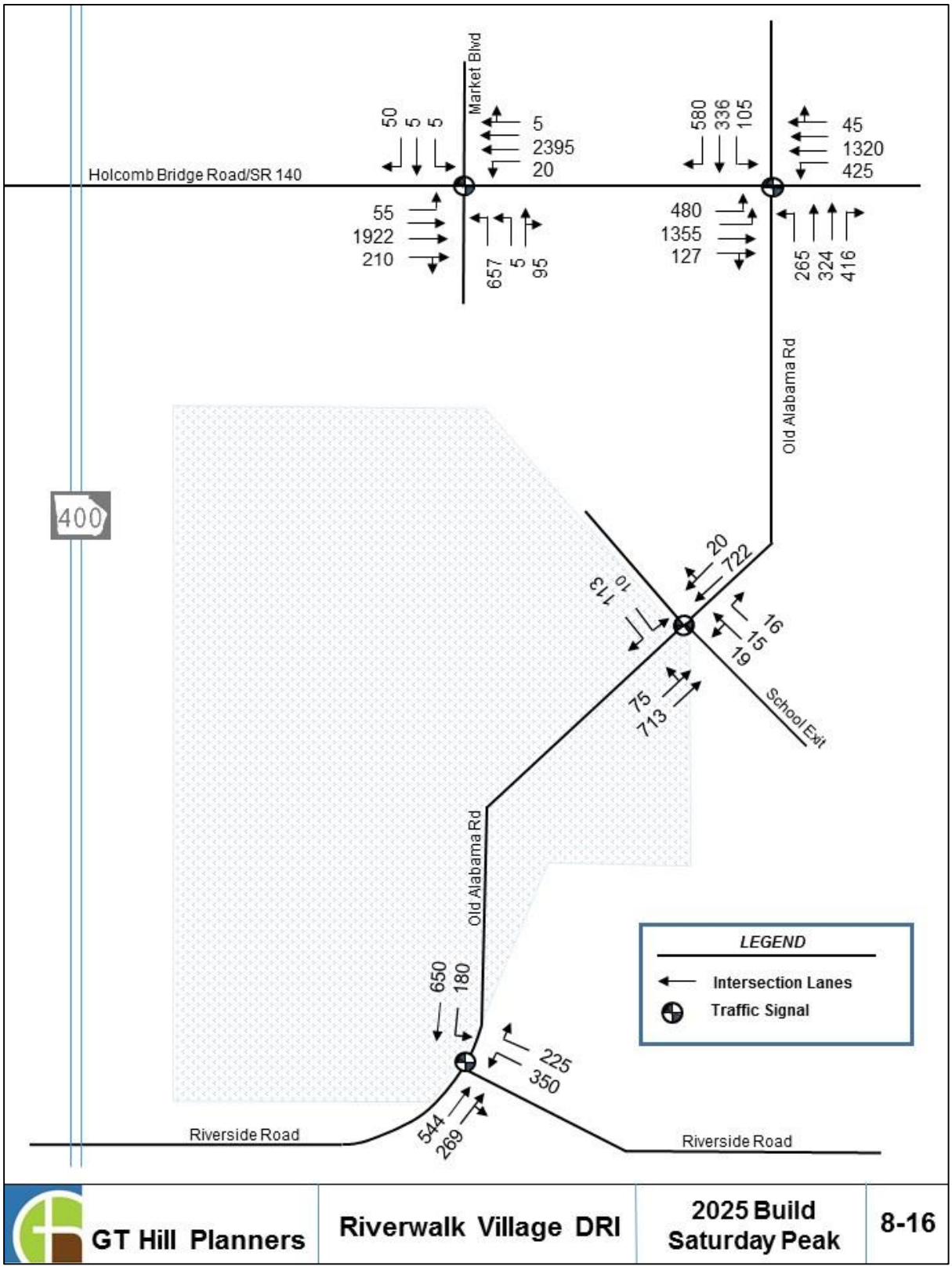


Figure 8-17: 2025 Build AM Peak Hour Traffic Volumes w/ Early Off-Ramp Project

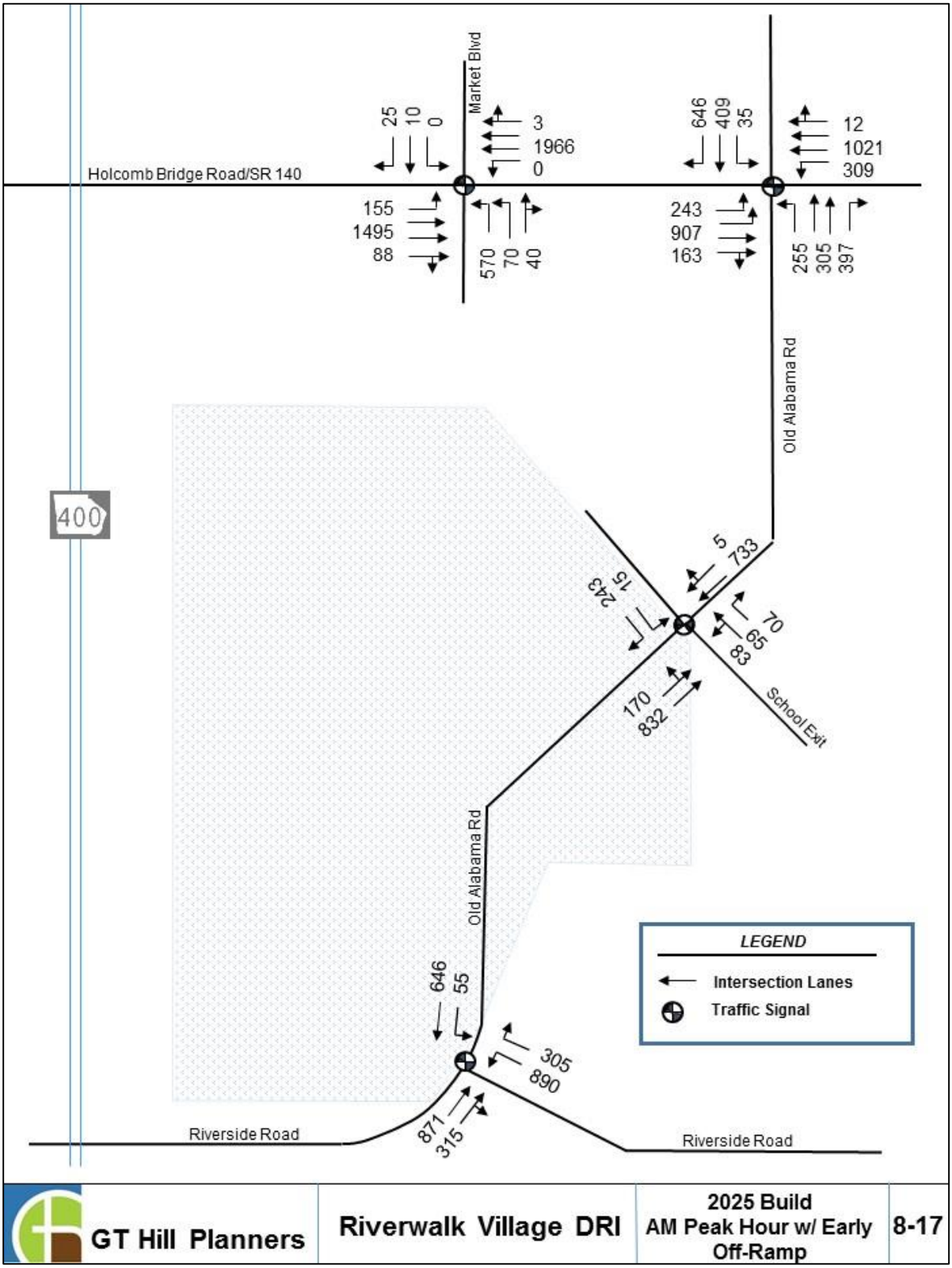


Figure 8-18: 2025 Build Weekday Noon Peak Hour Traffic Volumes w/ Early Off-Ramp Project

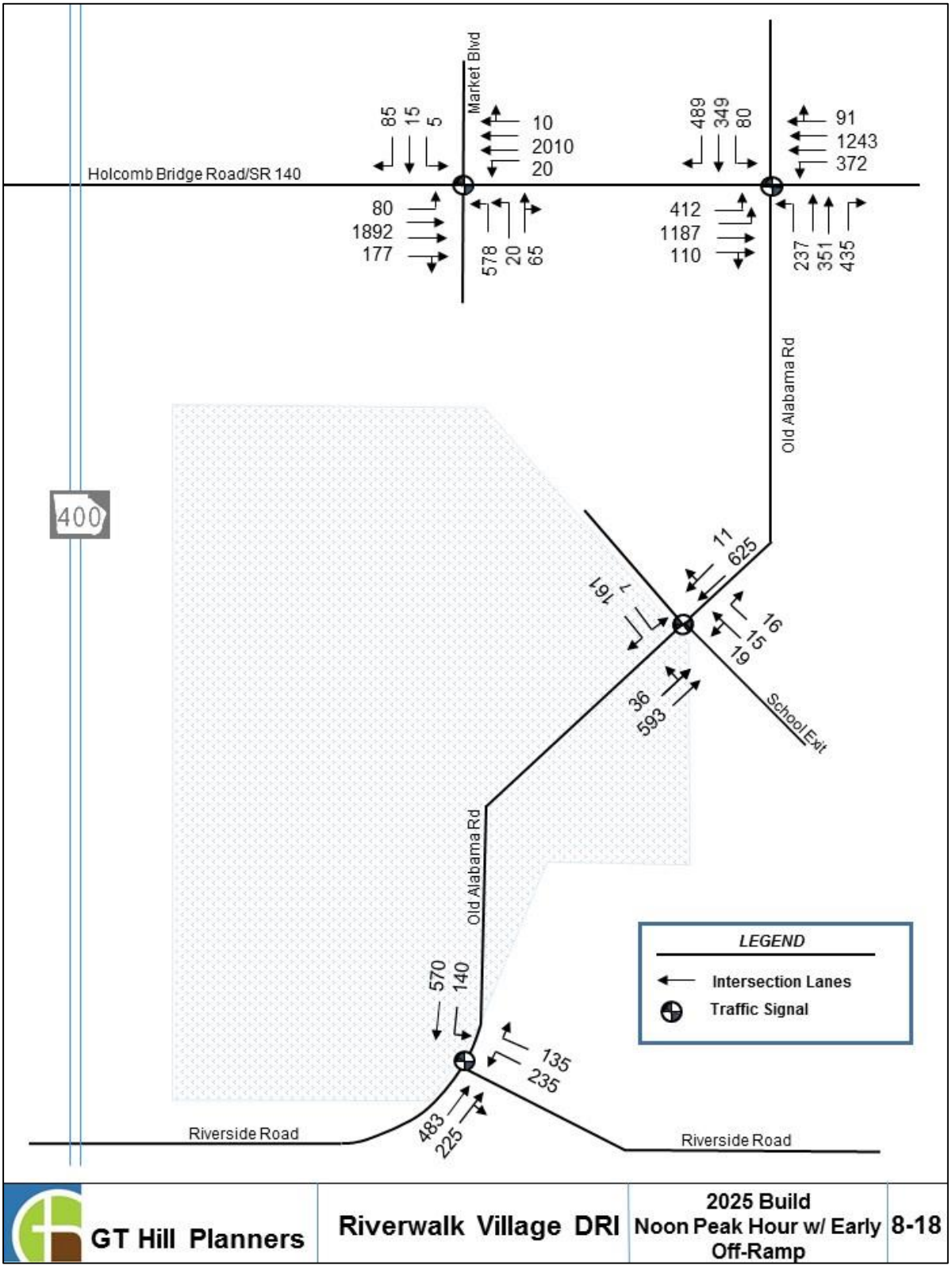


Figure 8-19: 2025 Build PM Peak Hour Traffic Volumes w/ Early Off-Ramp Project

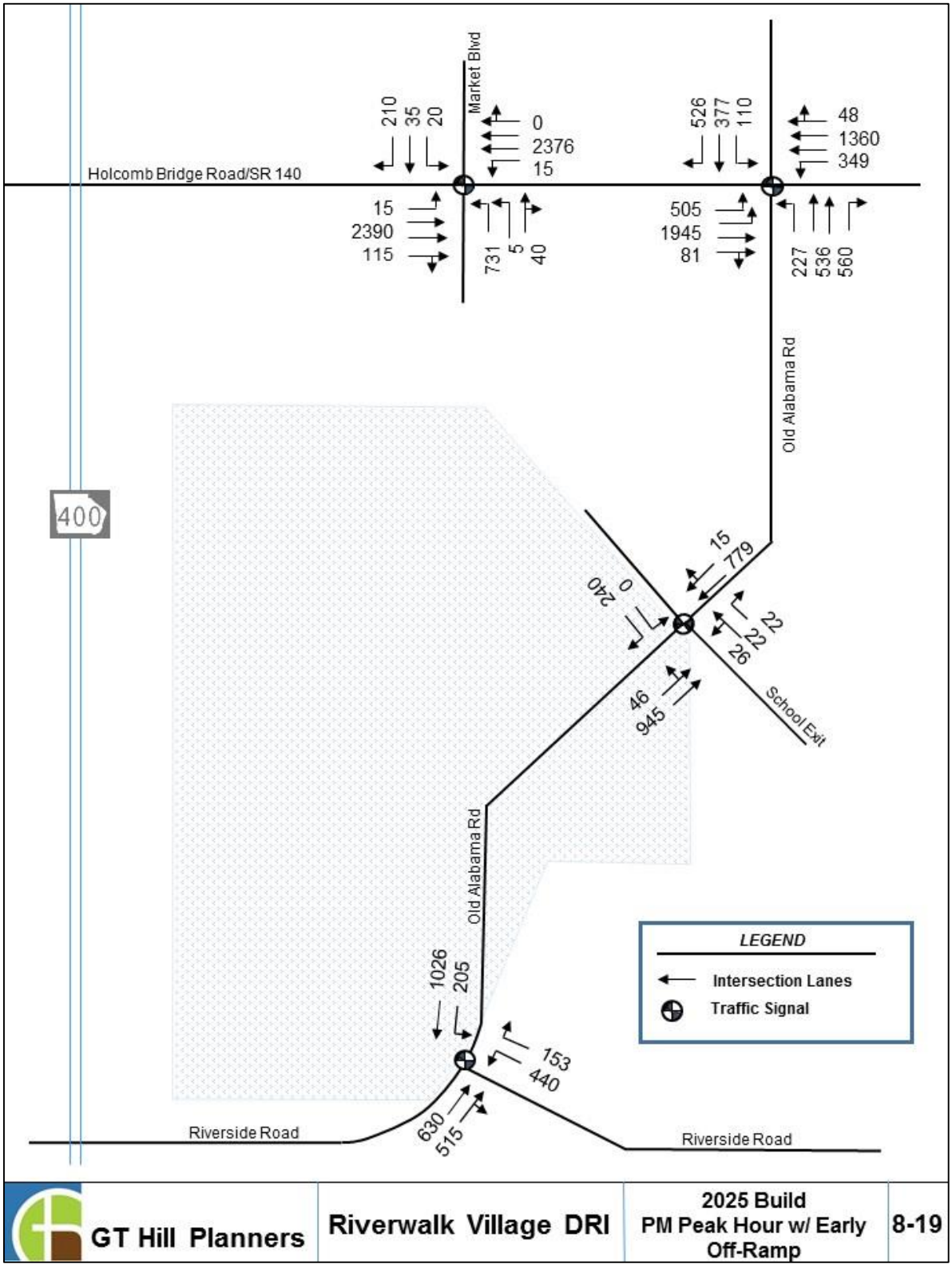


Figure 8-20: 2025 Build Saturday Noon Peak Hour Traffic Volumes w/ Early Off-Ramp Project

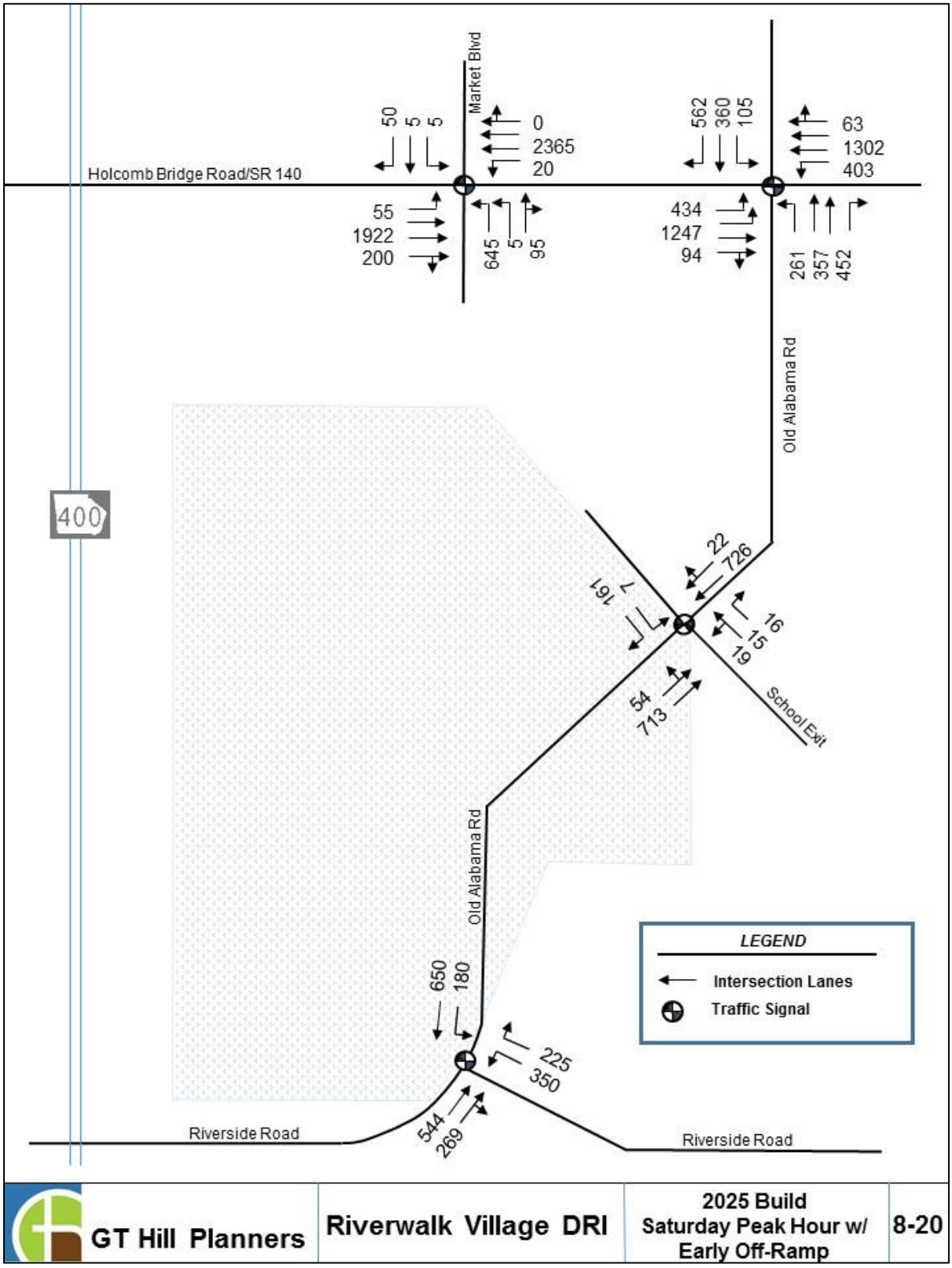


Table 8-5: Riverwalk Village DRI Future (2025) Build Intersection Level of Service

Intersection		Control	Peak Hour Level of Service (intersection delay in seconds/vehicle)			
			AM	Noon	PM	Sat
Without Early Off-Ramp Project						
1	Holcomb Bridge Road @ Market Blvd	Signal	C (21.0)	C(22.4)	C (30.2)	C (26.1)
2	Holcomb Bridge Road @ Old Alabama Road	Signal	F (80.3)	E (79.1)	F (120.7)	F (91.3)
3	Old Alabama Road @ Market Blvd	Signal	A (6.7)	A (3.3)	A (6.1)	A (5.3)
4	Old Alabama Road @ Riverside Road	Signal	F (81.9)	B (12.7)	C (34.2)	C (21.1)
With Early Off-Ramp Project						
1	Holcomb Bridge Road @ Market Blvd	Signal	B (19.2)	C (22.1)	C (28.9)	C (24.8)
2	Holcomb Bridge Road @ Old Alabama Road	Signal	E (64.0)	E (72.0)	F (124.1)	F (81.3)
3	Old Alabama Road @ Market Blvd	Signal	A (6.2)	A (5.3)	A (3.7)	A (5.5)
4	Old Alabama Road @ Riverside Road	Signal	F (81.9)	B (12.7)	C (34.2)	C (21.1)

Table 8-6: Riverwalk Village DRI Future (2025) Build Intersection Level of Service <u>with Improvements</u>

Intersection		Control	Peak Hour Level of Service (intersection delay in seconds/vehicle)			
			AM	Noon	PM	Sat
2	Holcomb Bridge Road @ Old Alabama Road	Signal	D (53.4)	N/A	E (61.6)	E (66.5)
4	Old Alabama Road @ Riverside Road	Signal	D (40.0)	N/A	N/A	N/A

Per GRTA's LOU, improvements were analyzed for each failing intersection for each time period until the LOS was improved to the GRTA standard (LOS E for Holcomb Bridge Road at Old Alabama Road and LOS D for all other intersections). Table 8-6 presents the 2025 Build Levels of Service with improvements. All improvements are necessary under both Early Off-Ramp scenarios. The improvements necessary to bring these intersections to acceptable Levels of Service are presented in Table 8-7 and Figure 8-21.

Table 8-7: Improvements Necessary to Achieve Acceptable LOS

Intersection	Improvements Need to Achieve Acceptable LOS
Holcomb Bridge Road (SR 140) @ Old Alabama Road [A]	Construct an additional eastbound through lane on Holcomb Bridge Road to maintain three continuous eastbound through lanes from the GA 400 NB ramp through the Old Alabama Road intersection. [B]
	Construct an additional westbound left-turn lane on Holcomb Bridge Road to form dual left-turn lanes. Protected-only left-turn phasing will be necessary in conjunction with this improvement. [B]
	Construct an additional southbound through lane on Old Alabama Road to allow for two southbound through lanes.
Old Alabama Road @ Riverside Road [C]	Construct an additional westbound left-turn lane on Riverside Road to form dual left-turn lanes. This will require the widening of Riverside Road to the east to provide two receiving lanes for the dual left movement.

[A] – Improvement of this intersection included in the City of Roswell Transportation Master Plan (2014) as Project# 05-1008

[B] – Improvement identified in Project Recommendation #12 of the Holcomb Bridge Road Corridor Study (2012) prepared by the City of Roswell.

[C] – Improvement of this intersection included in the City of Roswell Transportation Master Plan (2014) as Project# 05-1032

Figure 8-21: 2025 Build Improvements