



Technical Memorandum

TO: Megan Costa, Syracuse-Onondaga County Planning Agency
Mark Premo, Onondaga County Department of Transportation

FROM: Meghan Vitale

DATE: January 30, 2018

RE: Route 57 build-out impact analysis
Technical Memorandum #2: Future alternatives assessment

CC: James Fensken, Onondaga County Department of Transportation
Mark Territo, Town of Clay
Mark Nicotra, Town of Salina

Introduction

The Syracuse Metropolitan Transportation Council's (SMTC) 2016-2017 Unified Planning Work Program (UPWP) includes a "Comprehensive Plan Assistance Block" to assist municipalities within our Metropolitan Planning Area (MPA) with transportation-related elements of their comprehensive planning, as requested by the Syracuse-Onondaga County Planning Agency (SOCPA). In September 2016, the SMTC agreed to provide technical assistance related to proposed and potential development of the Route 57 corridor between the New York State Thruway (I-90) and John Glenn Boulevard.

The prior Tech Memo summarized the first two tasks: capacity analysis for existing conditions, and future traffic volumes and analysis of future (base) conditions. This Tech Memo summarizes the SMTC's work on the third and final task for this analysis: future alternatives assessment.

Identification of future alternatives

The existing conditions and future base analysis results were presented in the previous Tech Memo and were reviewed with the Study Advisory Committee (SAC) at a meeting on May 22, 2017. At that meeting, the SAC discussed potential options for modifying the transportation network to address some of the operational concerns associated with the 2030 traffic volumes (based on the long-term anticipated development scenario). The future "base" does not include changes to the existing transportation network (other than the addition of unsignalized access driveways for the proposed developments). The SAC members agreed on two future alternative scenarios with the following transportation network changes (with all land uses changes previously identified for the 2030 analysis):

Alternative 1

- Signal timing adjustments at John Glenn Boulevard and Long Branch Road, as suggested in the 2010 Signal Optimization report completed by the SMTC for Onondaga County DOT.
- Signalization of the Old Cove Road/Sharkey's access intersection.
- Right-in/right-out access on Route 57 for the kickball park parcel.
- New signalized intersection on the Liverpool Bypass, at about the midway point, with access driveways to the golf course and kickball park properties.
- New signalized intersection on Morgan Road at access driveway for the golf course property, aligned with the existing Raymour & Flanigan driveway.¹

Alternative 2 – all of the above, plus

- Cross-access to the Dunkin Donuts and apartments proposed for the adjacent parcel from Old Cove Road.
- Connection between the Sharkey's driveway on Route 57 and the golf course driveway on Morgan Road to create a new local road.
- Connection from the golf course driveway at the Liverpool Bypass to the new local road network through the golf course property.

These changes are illustrated on Figure 1.

Traffic volumes for future alternatives

The network changes for Alternative 1 and Alternative 2 were added to the SMTC's travel demand model, and the resulting traffic volumes on the study area roads and at the study area intersections were used to inform the development of the intersection turning movement volumes for each alternative. Generally, the model outputs for each alternative were compared to the model outputs for the Future Base, and the resulting percentage change in each turning movement was applied to the 2030 Future Base Traffic Volumes that had been previously determined based on actual recent counts and anticipated growth (see Tech Memo 1 for a discussion of the 2030 Future Base Traffic Volumes). The 2030 Future Base Traffic Volumes are shown in Figure 2.

Alternative 1

Under Alternative 1, turning movements are expected to remain unchanged from the 2030 Future Base volumes at the Thruway ramps and all of the intersections on Route 57 north of the Liverpool Bypass. Due to the addition of an access point on the Liverpool Bypass and the restriction of turning movements (right-in/right-out only) proposed for the kickball park site on Route 57, the turning movement volumes are anticipated to change at the Route 57/Liverpool Bypass and Morgan Road/Liverpool Bypass intersections. Alternative 1 also required that turning movements be developed for the new intersection on the Liverpool Bypass (driveways to kickball park and golf course properties) and on Morgan Road at the new driveway for the golf course property (aligned with the

¹ There are currently two driveways on Morgan Road for Raymour & Flanigan. For this planning-level analysis, the new access to the golf course property was assumed to align with the southern driveway (closest to Morgan Place), but the final selection of location would depend on the actual site plan proposed for the golf course property.

southern existing Raymour & Flanigan driveway²). The 2030 Alternative 1 traffic volumes are shown on Figure 3 (note that only the southern half of the study corridor is shown because volumes at the intersections on Route 57 north of the Liverpool Bypass did not change under this alternative).

The most substantial change in turning movements shown by the travel demand model was a significant decrease in the northbound right turn movement at Route 57/Liverpool Bypass. The model suggested that most of this volume would turn onto the new driveway through the kickball park property, with some traffic using that connection as a new bypass. In our final traffic volume calculations, SMTC staff tempered the changes suggested by the model, and instead maintained a volume of 20 vehicles for this northbound right turn movement in both peak hours for each alternative.

In the final future traffic volumes, approximately 50 vehicles in the peak hour were assumed to use the new connection through the kickball property to “pass through” from Route 57 to the Liverpool Bypass. Alternative 1 also included increases in the southbound left-turn and westbound right-turn volumes at Route 57/Liverpool Bypass, as well as the northbound left-turn and eastbound right-turn volumes at Morgan Road/Liverpool Bypass. Overall, this resulted in a decrease of about 50 vehicles in the PM peak hour on the western end of the Liverpool Bypass and an increase of about 80 vehicles in the PM peak hour on the eastern end of the Liverpool Bypass (about 10% change).

Alternative 2

Alternative 2 includes additional roadway connections through redevelopment areas that create new route choices for travelers, especially north of the Liverpool Bypass. As expected, the travel demand modeling showed more shifting of trips within the study area under this alternative than under Alternative 1, which resulted in more significant changes to the individual turning movements at the study area intersections. The turning movement volumes at the Thruway ramps and the intersections on Route 57 north of Old Cove Road are expected to remain unchanged from the 2030 Future Base and Alternative 1 volumes.

With the addition of cross-access from the Dunkin Donuts to Old Cove Road, some shifting of turning movements is expected at these two intersections on Route 57. This would primarily impact the left-turn movements at the Dunkin Donuts driveway, with some of the current volume anticipated to shift to the signalized intersection at Old Cove Road.

Also under Alternative 2, southbound left-turns and westbound right-turns at Route 57/Old Cove Road are expected to increase since the Liverpool Sports (i.e. Sharkey’s) driveway would provide access to all of the development on the golf course property. This would be accompanied by decreases in the southbound left-turns

² No recent turning movement counts were available at the Raymour & Flanigan driveway on Morgan Road, so this was not analyzed under the existing or Future Base conditions. This currently functions as an unsignalized driveway. To assess how this might function as a signalized driveway with an additional approach under future conditions, turning movements were estimated. Northbound and southbound through movement volumes were balanced to the volumes at the Morgan Road/Liverpool Bypass intersection. Turning movements to/from the Raymour & Flanigan property were estimated using ITE trips generation rates for warehousing and general office based on an approximation of the gross floor area of the buildings from available aerial photography. Although this provides a reasonable assessment for a planning-level study, actual count data should be collected at this driveway for any traffic impact assessment required for the redevelopment of the golf course property.

and westbound right-turns at the Route 57/Liverpool Bypass intersection. Similarly, increases in turning movements in and out of the golf course property are expected at the driveway on Morgan Road.

Some vehicles are expected to use the new road connections through the kickball park and golf course properties as an alternative to the existing Liverpool Bypass. Select link analyses within the SMTc's travel demand model were used to identify the likely number of through trips on the new road connections within the kickball park and the golf course properties. Model results indicate that up to about 60 vehicles would use the north-south roadway to pass through the kickball and golf course properties between Route 57 and Morgan Road in the evening peak hour. For the east-west connection through the golf course property between Route 57 and Morgan Road, up to about 90 vehicles are expected to use this as a pass-through route in the evening peak hour. Both routes show slightly lower usage in the morning peak hour. These new network connections were entered into the travel demand model as typical local roads, but the final design of these connections could impact how many vehicles actually use these as through routes.

The 2030 Alternatives 2 traffic volumes are shown on Figure 4.

Capacity analysis results

Synchro software was used to analyze both of the alternatives, with the network modifications and future traffic volumes discussed above. Tables 1 and 2 provide the level of service (LOS) and delay for study area intersections in the AM and PM peak hours, respectively.

The Alternative 1 and Alternative 2 results are nearly identical for the Route 57 intersections at John Glenn Boulevard, Longbranch Road, and Glenn Crossing Plaza. As described above, the traffic volumes at these intersections did not change from the Future Base to the alternatives, but both alternatives included adjustments to the signal timings at the John Glenn Boulevard and Longbranch Road intersections to match what was proposed in the 2010 Signal Optimization study. At John Glenn Boulevard, this resulted in an overall decrease in delay (and improvement in LOS) for the intersection as a whole, even though some individual movements are expected to experience an increase in delay, when comparing Alternatives 1 and 2 to the Future Base condition. At the Longbranch Road intersection, overall delay and the delay on individual movements increased with the adjusted signal timings. This is likely due to the longer cycle length recommended in the 2010 Signal Optimization report. Although this resulted in increased delay at the Longbranch Road intersection, these timings were not adjusted further because the intent of the proposed timings was to benefit the overall corridor as a coordinated system.

There was no impact on the Route 57/Glenn Crossing Plaza intersection from either alternative (compared to the Future Base).

Signalization of the Old Cove Road intersection will reduce delays there, mostly for the eastbound and westbound (side-street) movements. Signalization of this intersection is also likely to benefit the Dunkin Donuts driveway intersection, especially with a cross-connection as shown in Alternative 2, by providing both gaps in traffic and the option for left-turns to be made at the signal.

The intersections of the Liverpool Bypass with Route 57 and with Morgan Road are likely to experience minimal changes in LOS and delay under either network alternative in both the morning and evening peak hours. This is also true for the Thruway ramps on Route 57.

Both alternatives include a new signalized intersection on the Liverpool Bypass to provide access to the kickball park and golf course redevelopment areas. The intersection was analyzed with a single lane (and permitted left turn movements) on all approaches, and was found to operate at LOS A/B under both alternatives for the AM/PM peak hours.

Both alternatives also included a new driveway on Morgan Road to access the golf course property, aligned with the existing Raymour and Flanigan driveway, and signalization of this intersection. (Under Alternative 2 only, this driveway would connect to the Sharkey's driveway on Route 57, providing access through the golf course property). This intersection was analyzed with single-lane approaches for eastbound and westbound (driveway) traffic, and no changes to the existing cross-section of Morgan Road at this location (two travel lanes in each direction for shared turning movements). All left-turns at this intersection were assumed to be permitted-only. The analysis indicates that the intersection will operate at LOS A/B during the AM/PM peak hours under both future alternatives.

Table 1: Level of Service and delay at study area intersections, AM peak hour

Intersection		Level of Service (delay, in seconds)				
Approach	Movement	Existing	2021	2030	Alt 1	Alt 2
CR 57/John Glenn Blvd (signalized)						
Eastbound	Left	D(46)	D(45)	D(44)	E(62)	E(62)
	Through/right	D(47)	D(47)	E (66)	E(55)	E(55)
Westbound	Left	D(52)	D(53)	D(53)	F(105)	F(105)
	Through/right	C(35)	C(34)	D (36)	D(41)	D(41)
Northbound	Left	D(45)	D(45)	D(45)	E(71)	E(78)
	Through	C(27)	C(28)	C(29)	C(26)	C(25)
	Right	A(8)	A(8)	A(8)	A(9)	A(8)
Southbound	Left	D(45)	D(45)	D(45)	E(63)	E(63)
	Through	D(38)	D(42)	E(56)	C(35)	D(35)
	Right	B(17)	B(17)	B(18)	B(16)	B(16)
OVERALL		D(37)	D(38)	D(47)	D(42)	D(42)
CR 57/Longbranch Rd/Belmont Dr (signalized)						
Eastbound	Left	C(30)	C(29)	C(30)	D(43)	D(46)
	Through/right	B(19)	B(16)	B(16)	B(18)	B(19)
Westbound	Left	C(25)	C(24)	C(25)	C(33)	D(35)
	Through/right	B(18)	B(19)	B(19)	B(16)	B(19)
Northbound	Left	D(41)	D(42)	D(42)	E(71)	E(72)
	Through/right	B(15)	B(15)	B(16)	B(17)	B(16)
Southbound	Left	D(41)	D(41)	D(41)	E(68)	E(69)
	Through	C(22)	C(27)	C(32)	C(34)	B(15)
	Right	A(0)	A(0)	A(0)	A(0)	A(0)
OVERALL		C(21)	C(24)	C(27)	C(31)	C(21)
CR 57/Glenn Crossing Plaza (signalized)						
Eastbound	Left/through	C(28)	C(28)	C(28)	C(28)	C(28)
	Right	A(4)	A(4)	A(5)	A(5)	A(5)
Westbound	Left/through/right	C(26)	C(26)	C(26)	C(26)	C(26)
Northbound	Left	A(2)	A(2)	A(2)	A(2)	A(2)
	Through/right	A(1)	A(1)	A(1)	A(1)	A(1)
Southbound	Left/through/right	A(6)	A(6)	A(7)	A(7)	A(7)
OVERALL		A(5)	A(5)	A(6)	A(6)	A(6)
CR 57/Old Cove Rd (unsignalized)				(signalized)		
Eastbound	Left/right	E(40)	F(59)	F(131)	E(62)	E(67)
Westbound	Left/right	na	E (36)	F(73)	D(38)	C(26)
Northbound	Left	C(15)	C(16)	C(18)	B(13)	C(24)
	Through/right	---	---	---	A(5)	A(5)
Southbound	Left	na	A(9)	A(9)	A(5)	A(5)
	Through/right	---	---	---	A(8)	A(8)
OVERALL		---	---	---	B(12)	B(13)
CR 57/Dunkin Donuts (unsignalized)						
Eastbound	Left/right	E(35)	F(77)	F(124)	F(152)	F(99)
Northbound	Left	C(16)	C(17)	C(19)	C(19)	C(18)

Table 1, continued: Level of Service and delay at study area intersections, AM peak hour

Intersection		Level of Service (delay, in seconds)				
Approach	Movement	Existing	2021	2030	Alt 1	Alt 2
CR 57/Liverpool Bypass (signalized)						
Eastbound	Left/through/right	*	*	*	C(26)	C(28)
Westbound	Left/through	D(47)	D(47)	D(48)	D(48)	D(47)
	Right	B(17)	B(17)	B(16)	B(16)	B(17)
Northbound	Left	B(17)	B(18)	B(18)	B(18)	B(16)
	Through/right	B(15)	B(16)	B(17)	B(17)	B(13)
Southbound	Left	A(9)	A(10)	B(11)	B(11)	A(6)
	Through/right	A(8)	A(9)	A(10)	A(9)	A(7)
OVERALL		B(12)	B(13)	B(14)	B(13)	B(10)
Morgan Rd/Liverpool Bypass/Crown Rd (signalized)						
Eastbound	Left/through	C(34)	C(33)	D(35)	C(34)	C(33)
	Right	A(8)	A(7)	A(7)	A(7)	A(10)
Westbound	Left/through/right	D(36)	D(37)	D(38)	D(35)	C(33)
Northbound	Left	B(11)	B(12)	B(14)	B(16)	B(11)
	Through/right	B(16)	B(17)	C(20)	C(22)	B(16)
Southbound	Left	A(10)	B(10)	B(11)	B(13)	A(9)
	Through/right	C(22)	C(24)	C(29)	C(27)	C(21)
OVERALL		B(20)	C(21)	C(24)	C(23)	B(18)
CR 57/Thruway exit 38 (signalized)						
Eastbound	Left	D(50)	D(50)	D(50)	D(50)	D(50)
	Right	A(0)	A(0)	A(0)	A(0)	A(0)
Northbound	Left	A(5)	A(6)	B(12)	B(12)	B(12)
	Through	A(3)	A(3)	A(3)	A(3)	A(3)
Southbound	Through	B(18)	C(21)	C(25)	C(25)	C(25)
	Right	A(1)	A(1)	A(1)	A(1)	A(1)
OVERALL		B(12)	B(14)	B(16)	B(16)	B(16)
Liverpool Bypass/redevelopment area driveways (signalized)						
Eastbound	Left/through/right	na	na	na	A(9)	A(9)
Westbound	Left/through/right	na	na	na	A(9)	A(9)
Northbound	Left/through/right	na	na	na	A(8)	A(9)
Southbound	Left/through/right	na	na	na	B(12)	B(13)
OVERALL		na	na	na	A(9)	A(10)
Morgan Road/Raymour & Flanigan/new driveway (signalized)						
Eastbound	Left/through/right	*	*	*	C(34)	C(28)
Westbound	Left/through/right	*	*	*	C(23)	B(18)
Northbound	Left/through/right	*	*	*	A(3)	A(4)
Southbound	Left/through/right	*	*	*	A(6)	A(8)
OVERALL		*	*	*	A(6)	A(9)

* = No data available

--- = Movement does not receive a level of service designation under unsignalized conditions

na = Movement does not exist under this development scenario

Table 2: Level of Service and delay at study area intersections, PM peak hour

Intersection		Level of Service (delay, in seconds)				
Approach	Movement	Existing	2021	2030	Alt 1	Alt 2
CR 57/John Glenn Blvd (signalized)						
Eastbound	Left	D(55)	D(55)	E(70)	E(70)	E(70)
	Through/right	D(40)	D(40)	D(44)	D(50)	D(50)
Westbound	Left	D(45)	D(47)	D(49)	E(60)	E(60)
	Through/right	D(43)	D(43)	D(47)	E(67)	E(67)
Northbound	Left	E(60)	E(63)	E(72)	F(96)	F(96)
	Through	E(66)	E(75)	F(179)	E(72)	E(72)
	Right	A(9)	A(9)	B(10)	A(5)	A(5)
Southbound	Left	D(45)	D(45)	D(46)	F(136)	F(136)
	Through	D(48)	E(60)	E(77)	C(30)	C(30)
	Right	C(21)	C(21)	C(24)	B(18)	B(18)
OVERALL		D(48)	D(53)	F(84)	E(56)	E(56)
CR 57/Longbranch Rd/Belmont Dr (signalized)						
Eastbound	Left	C(29)	C(32)	C(32)	D(46)	D(46)
	Through/right	B(10)	A(9)	A(10)	A(9)	A(9)
Westbound	Left	C(20)	B(20)	B(20)	C(23)	C(23)
	Through/right	C(29)	D(39)	D(41)	D(48)	D(48)
Northbound	Left	D(41)	D(43)	D(43)	E(68)	E(68)
	Through/right	C(26)	C(28)	C(30)	D(37)	D(37)
Southbound	Left	D(47)	D(47)	D(50)	E(56)	E(56)
	Through	C(23)	C(28)	C(29)	D(44)	D(44)
	Right	A(0)	A(0)	A(0)	A(0)	A(0)
OVERALL		C(25)	C(28)	C(29)	D(38)	D(38)
CR 57/Glenn Crossing Plaza (signalized)						
Eastbound	Left/through	C(32)	C(32)	C(33)	C(33)	C(33)
	Right	A(5)	A(5)	A(5)	A(5)	A(5)
Westbound	Left/through/right	C(22)	C(22)	C(21)	C(21)	C(21)
Northbound	Left	A(5)	A(5)	A(5)	A(5)	A(5)
	Through/right	A(5)	A(5)	A(6)	A(6)	A(6)
Southbound	Left/through/right	B(11)	B(12)	B(12)	B(12)	B(12)
OVERALL		A(8)	A(9)	A(9)	A(9)	A(9)
CR 57/Old Cove Rd (unsignalized) (signalized)						
Eastbound	Left/right	C(21)	D(32)	E(46)	D(37)	D(39)
Westbound	Left/right	na	E(44)	F(58)	C(29)	B(17)
Northbound	Left	B(11)	B(11)	B(12)	A(9)	B(12)
	Through/right	---	---	---	A(5)	A(6)
Southbound	Left	na	B(12)	B(13)	A(5)	A(10)
	Through/right	---	---	---	A(4)	A(4)
OVERALL		---	---	---	A(7)	A(8)
CR 57/Dunkin Donuts (unsignalized)						
Eastbound	Left/right	B(14)	B(15)	C(15)	C(19)	C(15)
Northbound	Left	A(10)	B(11)	B(11)	B(11)	B(10)

Table 2, continued: Level of Service and delay at study area intersections, PM peak hour

Intersection		Level of Service (delay, in seconds)				
Approach	Movement	Existing	2021	2030	Alt 1	Alt 2
CR 57/Liverpool Bypass (signalized)						
Eastbound	Left/through/right	C(26)	C(25)	C(25)	C(25)	C(26)
Westbound	Left/through	D(48)	D(48)	D(50)	D(52)	D(48)
	Right	C(21)	C(22)	C(21)	B(18)	B(18)
Northbound	Left	*	*	*	B(18)	B(16)
	Through/right	B(20)	C(22)	C(24)	C(25)	C(20)
Southbound	Left	A(9)	B(16)	B(18)	C(24)	B(10)
	Through/right	A(7)	A(7)	A(8)	A(8)	A(7)
OVERALL		B(17)	B(19)	C(20)	C(21)	B(17)
Morgan Rd/Liverpool Bypass/Crown Rd (signalized)						
Eastbound	Left/through	D(46)	D(48)	D(48)	D(37)	C(34)
	Right	B(12)	B(12)	B(12)	A(10)	B(12)
Westbound	Left/through/right	C(33)	C(33)	C(34)	C(34)	C(33)
Northbound	Left	A(9)	A(10)	B(10)	B(15)	B(13)
	Through/right	C(23)	C(24)	C(35)	D(40)	C(29)
Southbound	Left	A(8)	A(8)	A(8)	A(10)	A(9)
	Through/right	B(19)	B(20)	C(21)	C(23)	C(20)
OVERALL		C(21)	C(22)	C(27)	C(29)	C(23)
CR 57/Thruway exit 38 (signalized)						
Eastbound	Left	D(48)	D(51)	D(53)	D(54)	D(54)
	Right	A(0)	A(0)	A(0)	A(0)	A(0)
Northbound	Left	A(7)	A(7)	A(8)	A(8)	A(8)
	Through	A(7)	A(8)	A(8)	A(8)	A(8)
Southbound	Through	B(19)	C(20)	C(21)	C(21)	C(21)
	Right	A(0)	A(0)	A(0)	A(0)	A(0)
OVERALL		B(19)	C(20)	C(21)	C(21)	C(21)
Liverpool Bypass/redevelopment area driveways (signalized)						
Eastbound	Left/through/right	na	na	na	A(7)	A(7)
Westbound	Left/through/right	na	na	na	B(11)	B(17)
Northbound	Left/through/right	na	na	na	B(12)	B(15)
Southbound	Left/through/right	na	na	na	A(7)	A(9)
OVERALL		na	na	na	B(14)	B(14)
Morgan Road/Raymour & Flanigan/new driveway (signalized)						
Eastbound	Left/through/right	*	*	*	C(21)	C(28)
Westbound	Left/through/right	*	*	*	C(30)	C(27)
Northbound	Left/through/right	*	*	*	B(13)	B(14)
Southbound	Left/through/right	*	*	*	B(11)	A(10)
OVERALL		*	*	*	B(15)	B(16)

* = No data available

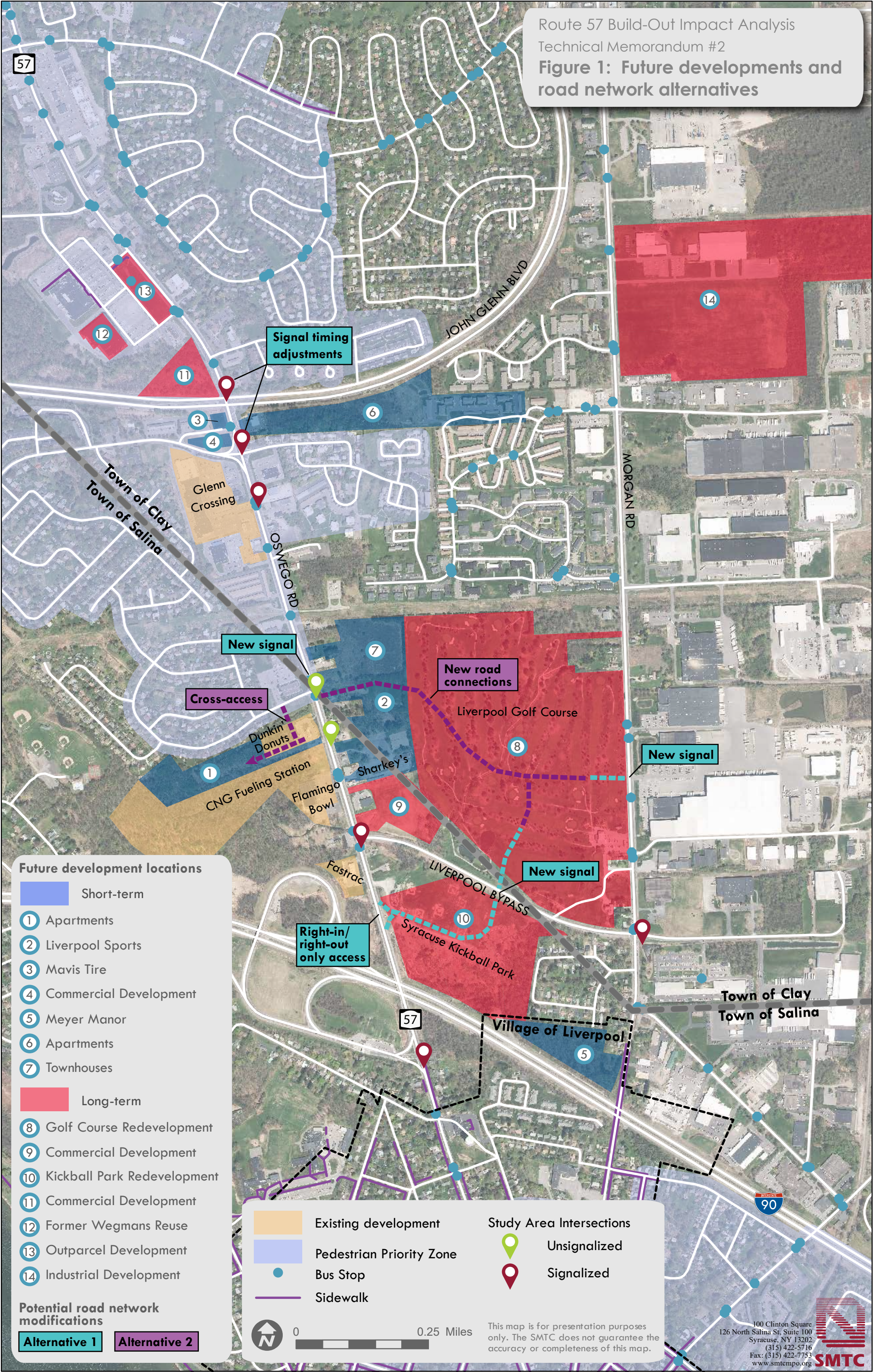
--- = Movement does not receive a level of service designation under unsignalized conditions

na = Movement does not exist under this development scenario

Summary and recommendations

Tech Memo #1 previously described the anticipated future traffic associated with development in the Route 57 corridor between John Glenn Boulevard and the Thruway ramps. Tech Memo #1 noted some concerns with increased delay at the unsignalized intersections, especially Old Cove Road, and at John Glenn Boulevard, but concluded that overall, the corridor could accommodate the anticipated future development.

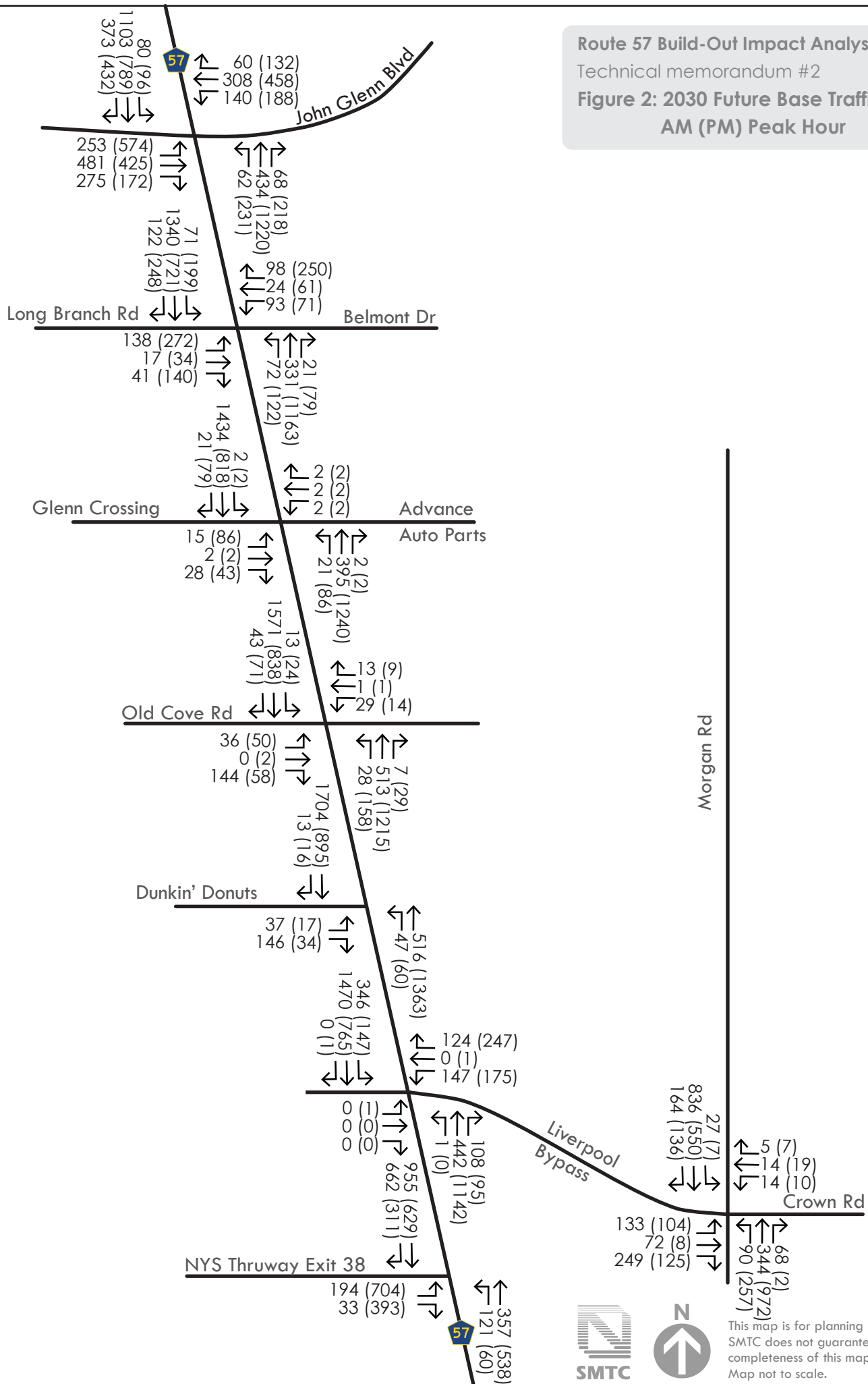
Two transportation-network alternatives have been examined in this second Tech Memo, both combined with the amount of development previously described in Tech Memo #1 for future year 2030. Results indicate that the proposed road network modifications will result in some improvements to LOS and delay in the corridor. These improvements are generally minor, with the exception of the signalization of the Old Cove Road intersection, which results in notable decreases in average delay at that location. The new intersection on the Liverpool Bypass is expected to operate at LOS A/B during AM/PM peak hours. The travel demand model suggests that between 100 and 150 vehicles in the peak hours would use new road connections within the golf course and the kickball park properties as through routes between Route 57 and Morgan Road, in addition to the trips having an origin and/or destination within these properties. The actual number of “pass through” trips would depend on the physical design of these road connections. Creating these connections as typical local roads would facilitate the creation of a more robust street grid network in this area, providing travelers with more route options while limiting access (and thereby maintaining capacity) on Route 57 and Morgan Road.



Route 57 Build-Out Impact Analysis

Technical memorandum #2

Figure 2: 2030 Future Base Traffic Volumes, AM (PM) Peak Hour

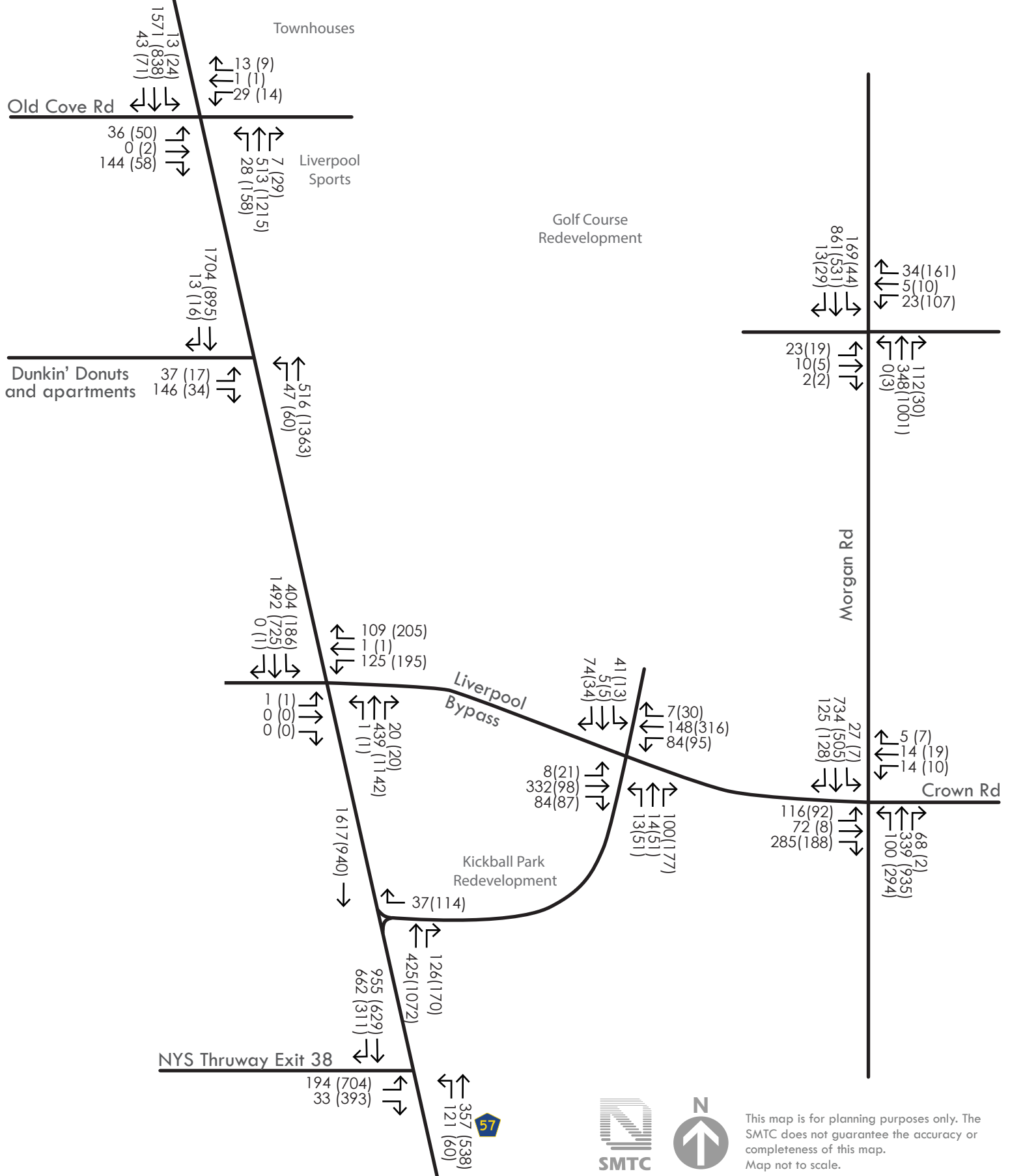


This map is for planning purposes only. The SMTC does not guarantee the accuracy or completeness of this map. Map not to scale.

Route 57 Build-Out Impact Analysis

Technical memorandum #2

Figure 3: 2030 Alternative 1 Traffic Volumes, AM (PM) Peak Hour

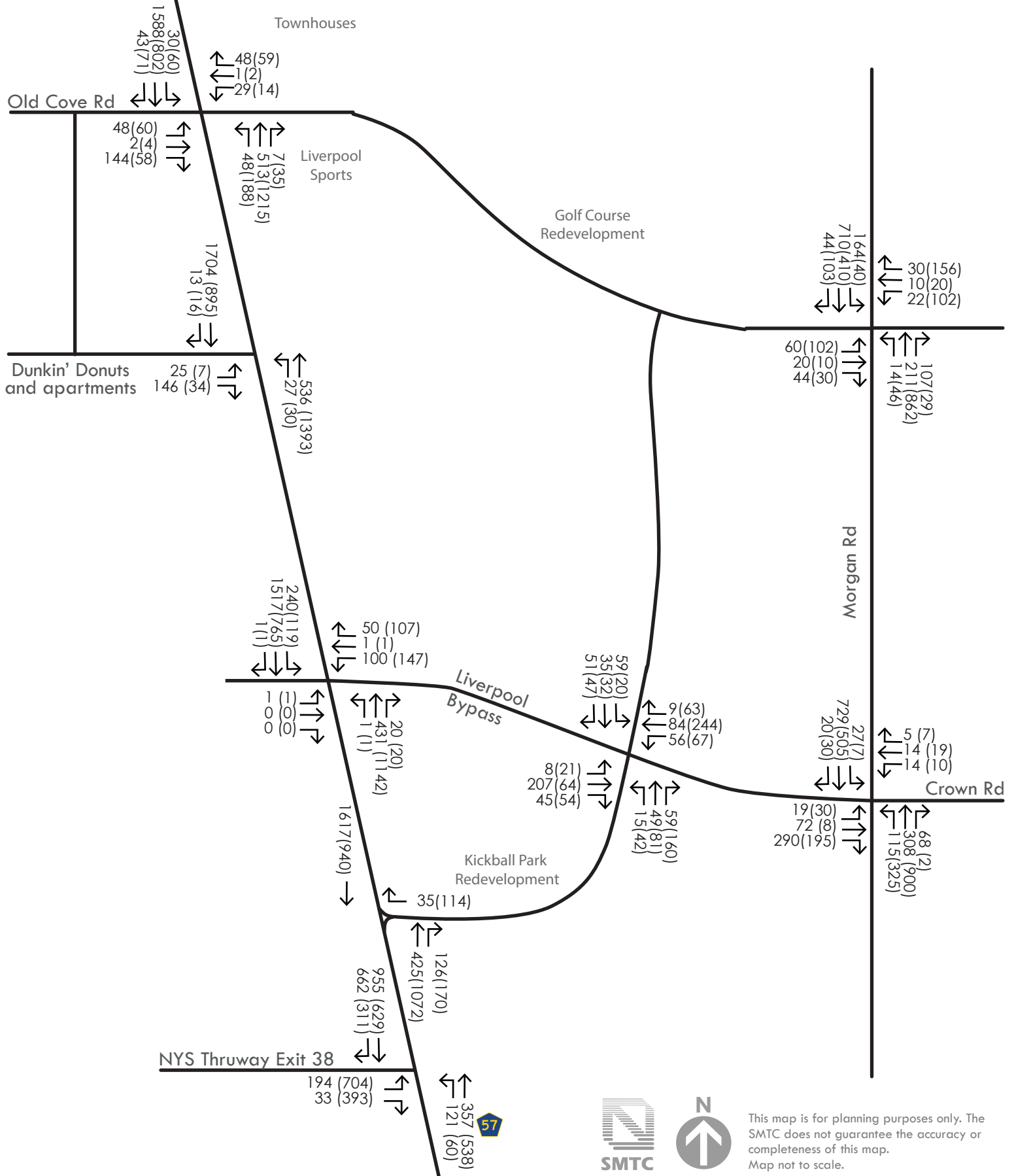


This map is for planning purposes only. The SMTC does not guarantee the accuracy or completeness of this map. Map not to scale.

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Figure 4: 2030 Alternative 2 Traffic Volumes, AM (PM) Peak Hour



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