



The purpose of the public hearing is to consider the facts in order to formulate a decision. The Thoroughfare and Collector Street Plan map (adopted February 2019) and the Transit Plan map (amended May 2020) of Advance Apex: The 2045 Comprehensive Transportation Plan represent a network of current and future facilities that provide guidance on what is likely to be suitable for long term growth. The plans do not require a schedule for implementation nor do they set aside funding for improvements. Instead, the plans help the Town establish long term priorities.

**Proposed Amendment to the Transit Plan Map:**

- (1) Remove the Proposed Rail and Bus Transit Center along South Salem Street between NC 540 and Apex Barbecue Road

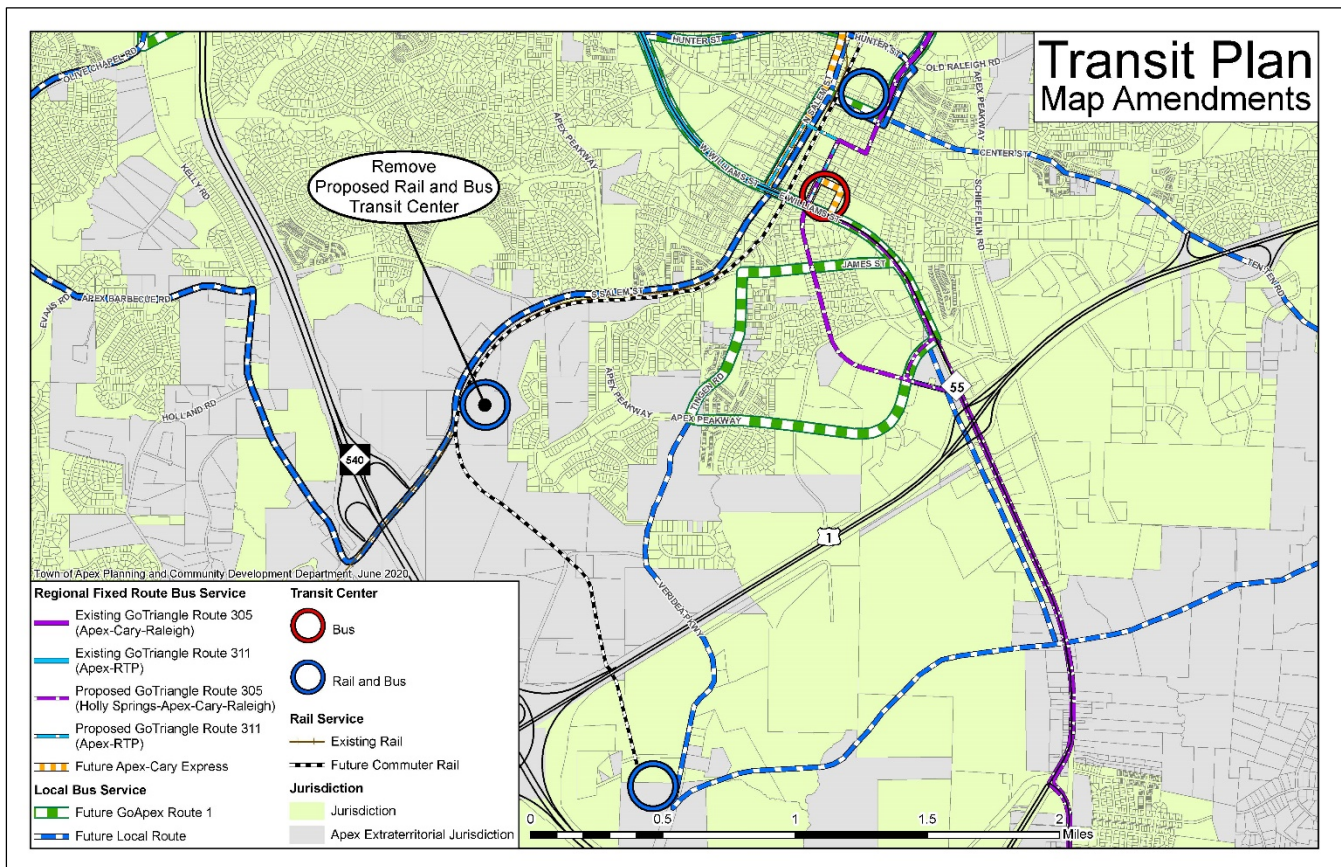


Figure 1. Proposed Transit Plan map amendment

The adopted Transit Plan map currently shows three potential future commuter rail stations in Apex: (1) In downtown; (2) Along a realigned South Salem Street, between NC 540 and Apex Barbecue Road; and (3) East of US 1, within future Veridea. Removal of the Proposed Rail and Bus Transit Center in the middle location is proposed for three main reasons: (1) The future rail stations shown on the Transit Plan map were originally proposed for light rail and are too close together for commuter rail, (2) Both existing and anticipated future land use densities surrounding this proposed station do not support commuter rail and increased densities proposed as part of *Advance Apex: The 2045 Land Use Plan Update* were met with public opposition, and (3) There are design constraints to constructing and operating a station in this location. Finally, the commuter rail station

proposed in this location is associated with the proposed realignment of South Salem Street shown on the Thoroughfare and Collector Street Plan map, which is also proposed for removal under a separate amendment. Additional information supporting the three reasons above follows.

Distance between commuter rail stations and land uses supportive of commuter rail transit:

- Three rail stations were initially identified when light rail was a possibility in Wake County. This is no longer the case, as funding for light rail was never supported and the region is actively working to implement commuter rail. Generally, light rail stations are closer together than commuter rail stations.
- Commuter rail studies are underway for the Wake Transit Plan recommended project from Morrisville to Garner and there are some critical lessons learned from that work that can inform future plans:
  - In a study of peer systems, it was found that the average distance between commuter rail stations is 4.7 miles. For the Wake Transit Plan commuter rail:
    - In areas with medium-to-high density (defined in study as 10 or more people plus jobs per acre) stations are recommended to be at least 2 miles apart.
    - In areas with relatively low density (less than 10 or more people plus jobs per acre) stations are recommended to be about 5 miles apart.
    - Federal Transit Administration research actually recommends an ideal station spacing of 3 miles and suggests much higher densities – 25-35 residential dwelling units per acre and 100-150 employees per acre for centers around commuter rail.
- The station in question would be roughly 2 miles from a future downtown station and a little less than that from a future Veridea station. The existing land uses and the vision for future land uses shown on the 2045 Future Land Use map do not recommend the intensity of development in this location supportive of commuter rail.
  - Zoning conditions for the adjacent residential area known as Salem Village limit density to a maximum of four dwelling units per acre (or approximately 11 people per acre based on average people per dwelling unit from the Apex Development Report).
  - The adjacent land areas southeast of South Salem Street are shown similarly as Medium/High Density residential on the future land use map.

Design constraints:

GoTriangle, the agency leading the current commuter rail studies between Morrisville and Garner, provided the following general guidance regarding conceptual planning for station locations:

- Avoid areas where there are existing track switches.
- Offset station platforms from grade crossings by as much distance as possible.
- Avoid areas where there is horizontal track curvature. Station platforms need a minimum of 600 feet of straight, relatively flat track.
- Assume room for an additional track within the corridor, in addition to 20 foot-wide station platforms on both sides of the corridor
- An end of line station or one that is proximate to US 1 or NC 540 would need around 1,000 parking spaces.

A suitability analysis for commuter rail station locations in the vicinity of the proposed location using this information is shown in Figure 2. There are three locations shown with at least 600 feet of straight track. One is adjacent to the Apex Peakway and is constrained by existing switches and private crossings. The two others are pushed even closer to the proposed station in Veridea and still have the land use compatibility concerns previously presented. Further, there is limited width between NC 540 and the proposed rail line extension to support necessary parking, platforms, and supporting uses.

While a conceptual analysis shows that there are feasible station locations for a mid-point commuter rail station in Apex, the station would have design constraints, would not meet recommended spacing guidelines, and the future land use map does not support the intensity of development for commuter rail.

*Staff Recommendation:*

Planning staff recommend approval of the proposed amendment. The proposed amendment was reviewed with staff from Public Works and Transportation, Police, and Fire and there were no concerns.

*Town of Apex Transit Advisory Committee Recommendation:*

The Town of Apex Transit Committee has not had an opportunity to formulate a recommendation regarding the proposed amendment; however, a summary of the above information was shared with committee members and no concerns were expressed regarding the staff recommendation.

*Planning Board Recommendation:*

The Planning Board considered the amendment at their July 13, 2020 meeting and unanimously recommended approval.

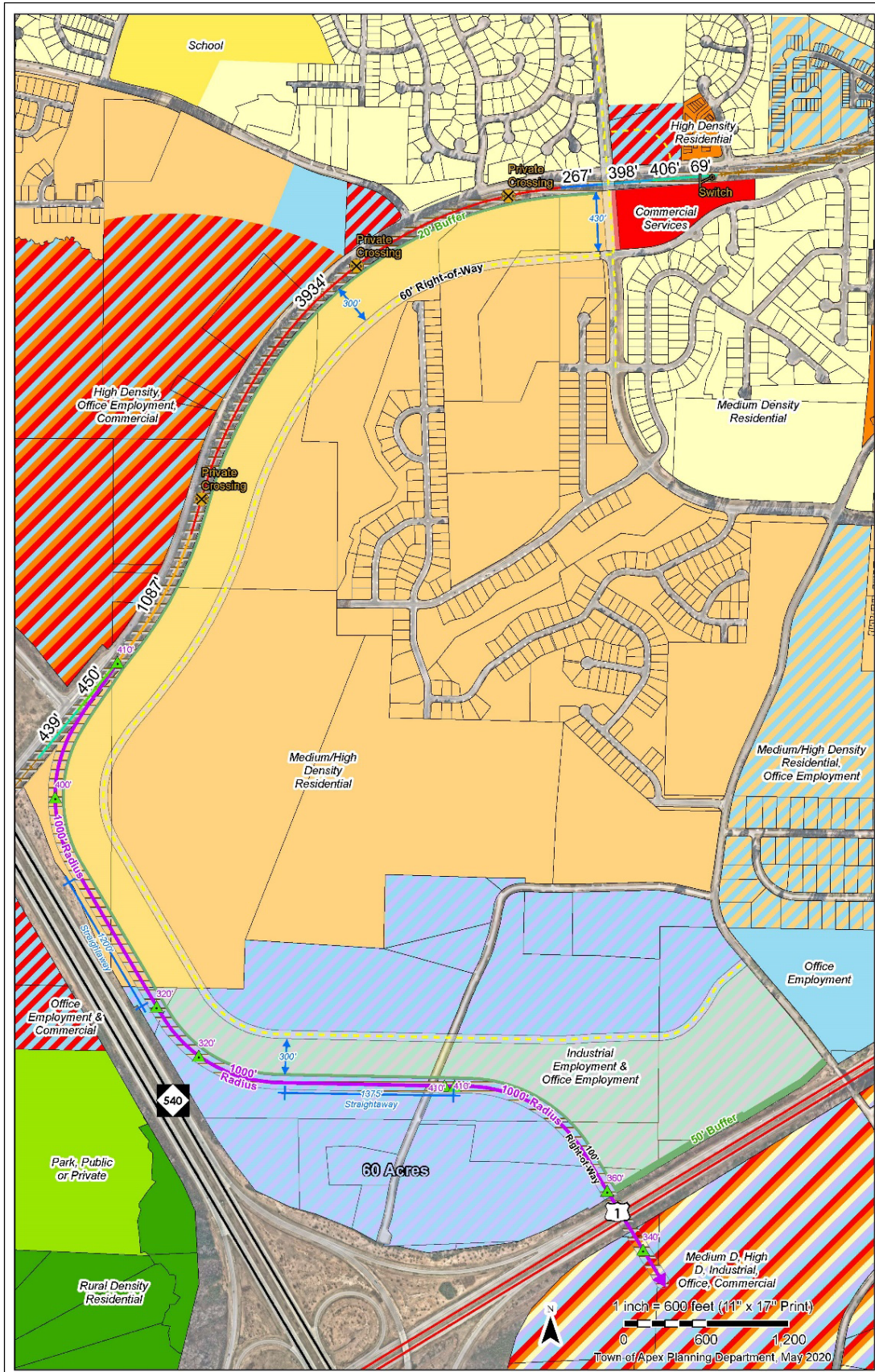


Figure 2. Analysis of constraints for Proposed Bus/Rail Transit Center

### **Proposed Amendments to the Thoroughfare and Collector Street Plan Map:**

Two possible scenarios combining several amendments to the Thoroughfare and Collector Street Plan map are presented for consideration. The main difference is that Scenario One maintains the future grade-separated crossings of NC 540 and South Salem Street, while Scenario Two removes these future grade-separated crossings.

Scenario One, shown in Figure 3 and Figure 4, represents the planned roadway network with a revised alignment of the future bridge crossing of South Salem Street and removal of the future realignment of South Salem Street. These changes result in necessary adjustments to the network of collector streets. In addition, this scenario includes reclassifying the function of some roadways, realignments to improve design, and removal of the future roundabout at Apex Barbecue Road and South Salem Street.

Scenario Two, shown in Figure 5 and Figure 6, represents the planned roadway network with removal of: the future bridge crossings of NC 540 and South Salem Street, the future realignment of South Salem Street, and the future roundabout at Apex Barbecue Road and South Salem Street. These changes also result in necessary adjustments to the network of collector streets.

An explanation of the proposed amendments for each scenario, along with recommendations are provided following the figures. The amendments proposed in Scenario Two are requested by the applicants of Rezoning Case #20CZ01 Depot 499 PUD. A memorandum provided by the applicants supporting their request is provided as Attachment 1.

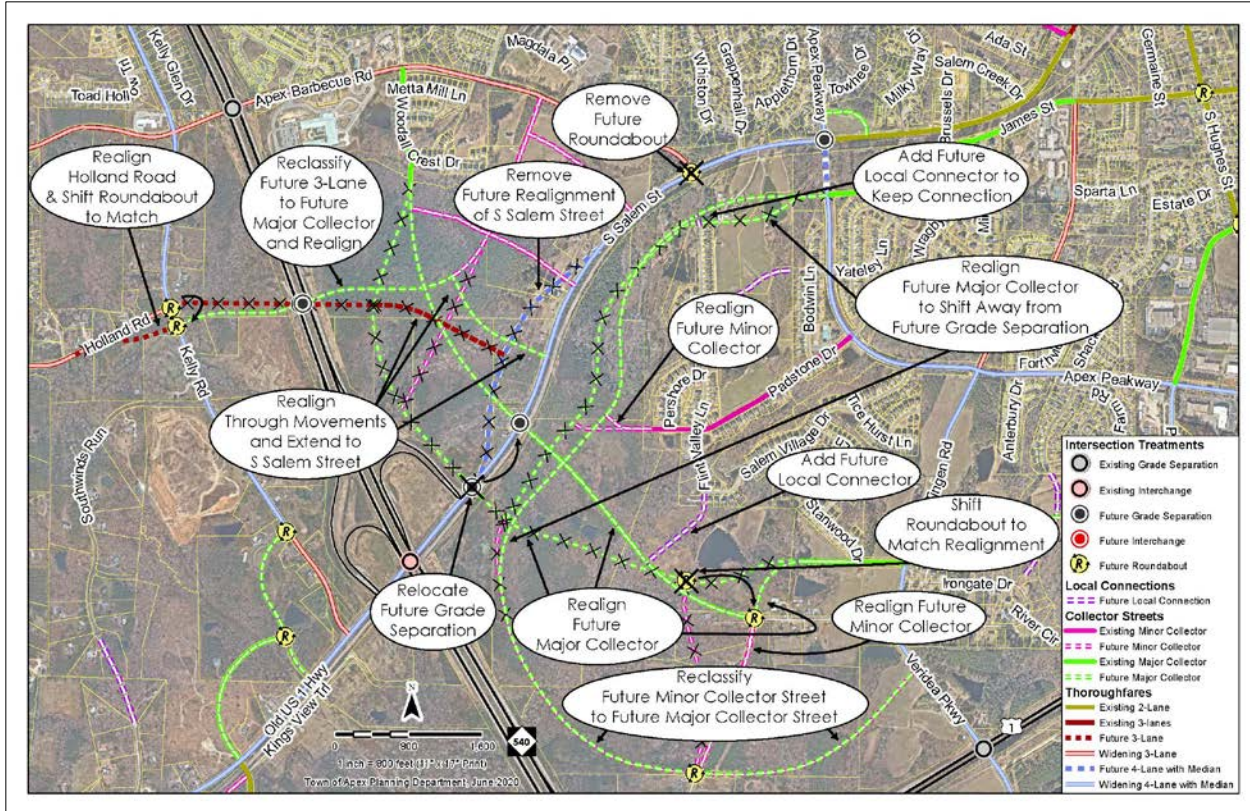


Figure 3. Scenario One, showing proposed amendments

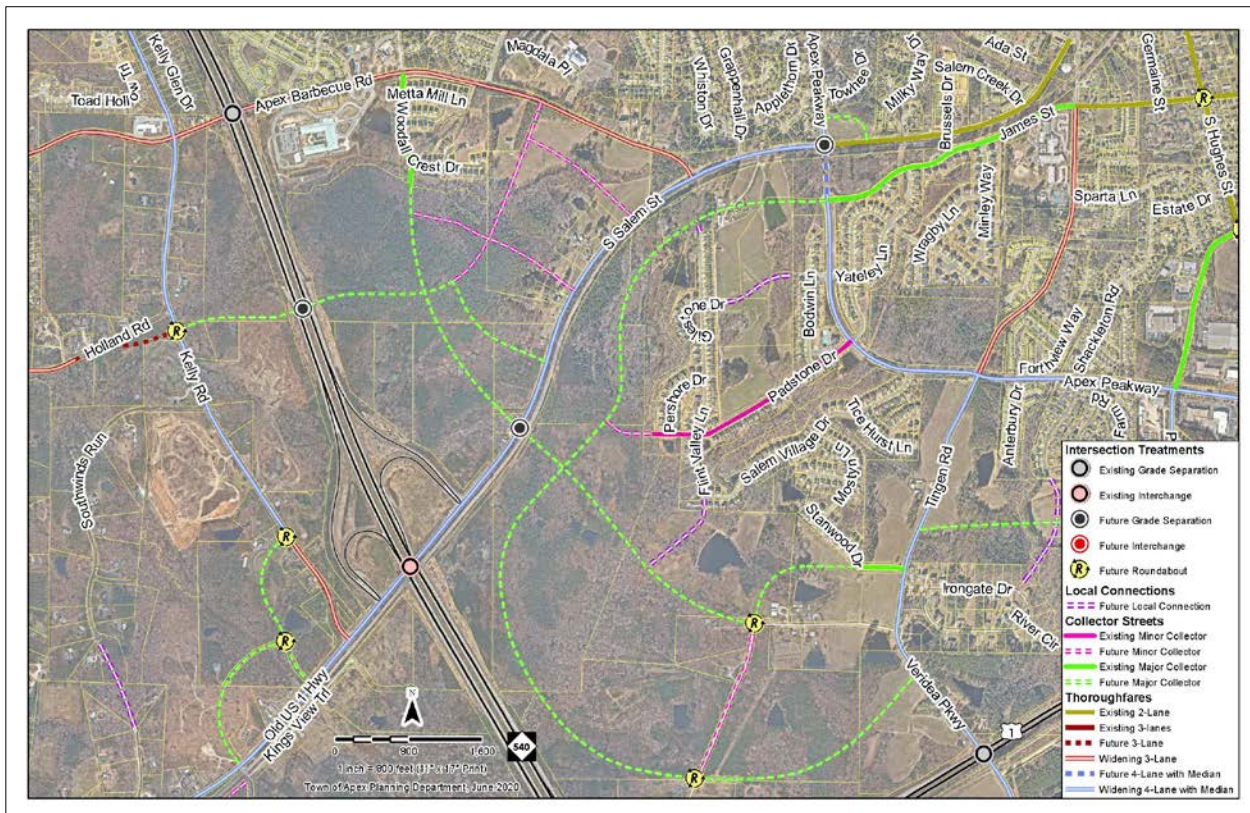


Figure 4. Scenario One, showing resultant plan with amendments

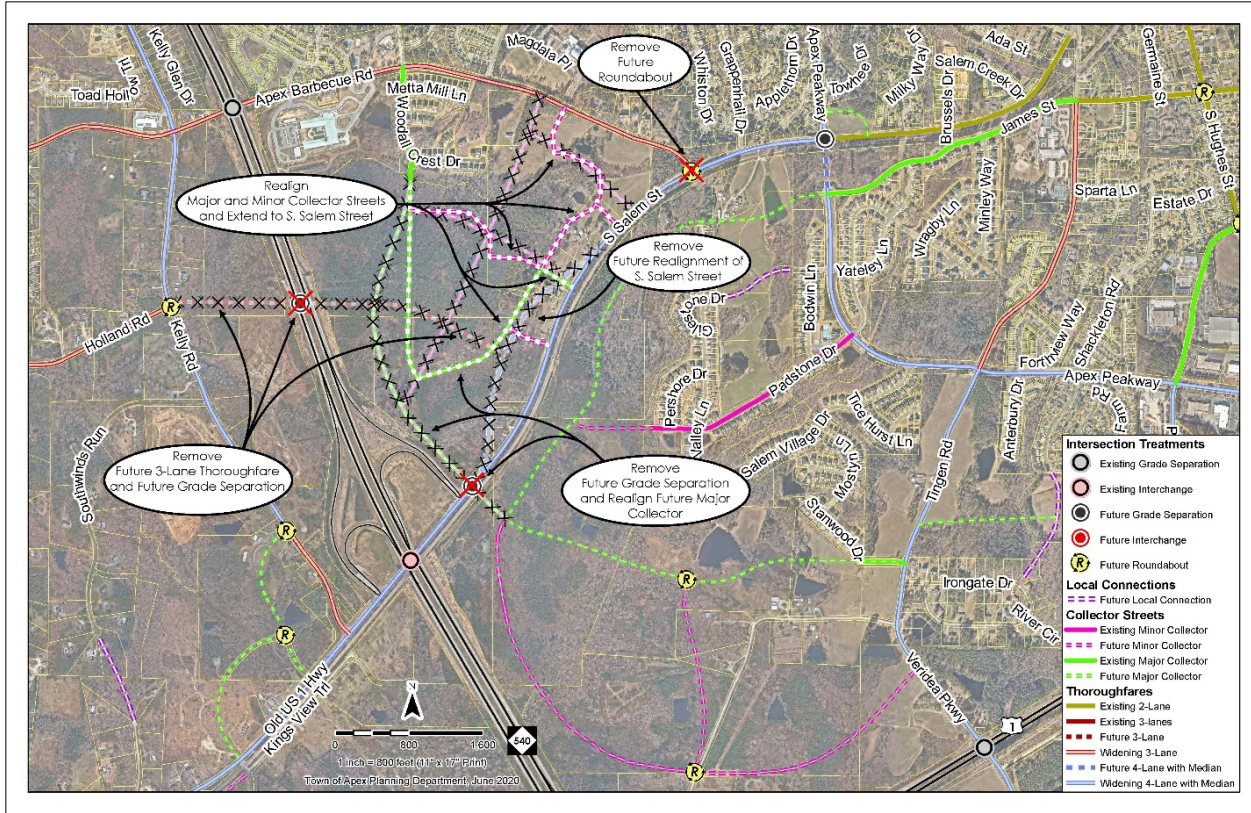


Figure 5. Scenario Two, showing proposed amendments

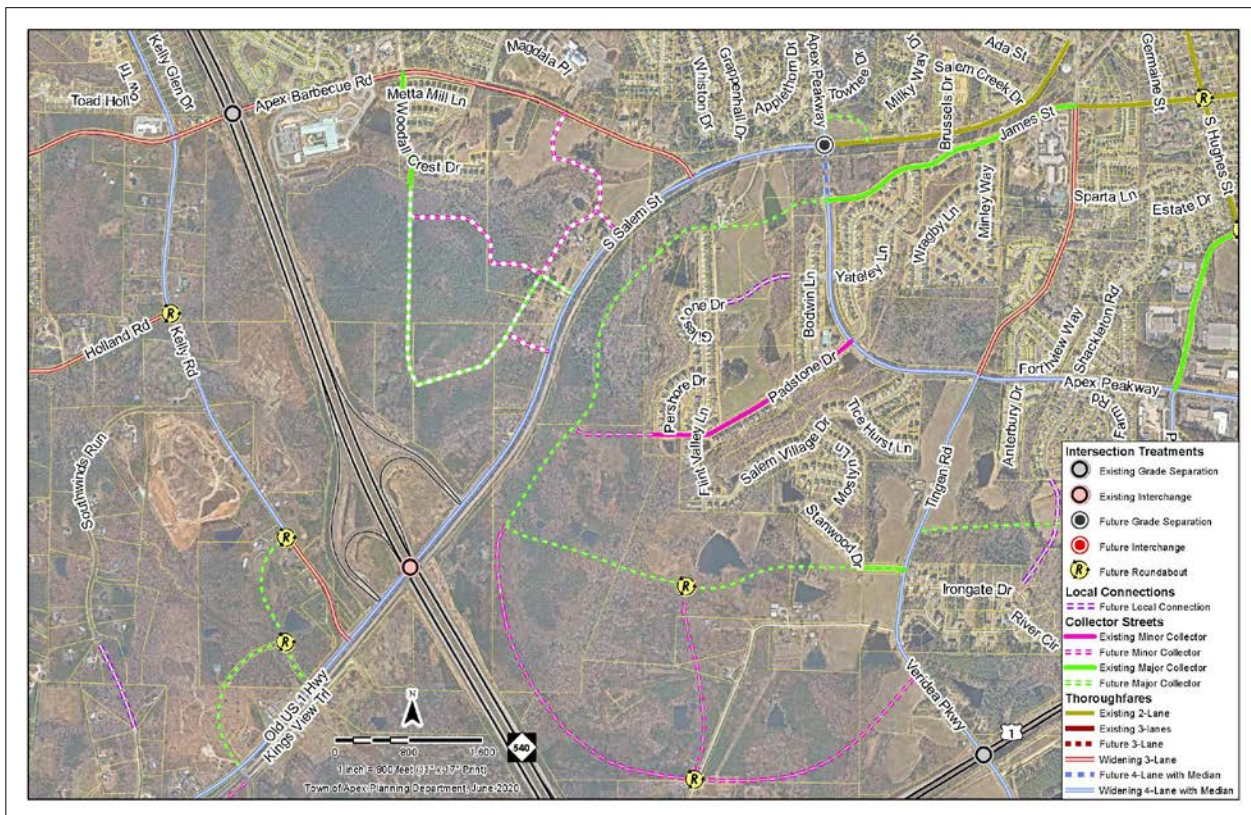


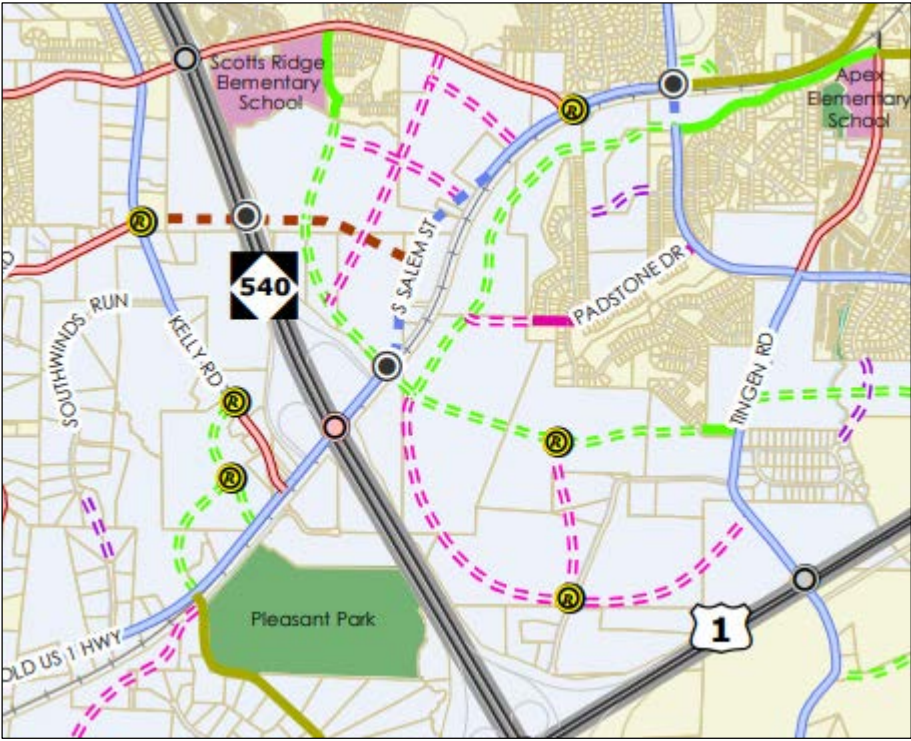
Figure 6. Scenario Two, showing resultant plan with amendments

Table 1. Comparison of Proposed Amendments with Scenario One and Scenario Two

Description		Explanation	SCENARIO		RECOMMENDED BY:	
			One	Two	Staff	Applicant
A	Remove Future Realignment of South Salem Street between NC 540 and Apex Barbecue Road	The intent of the realignment is to create space for a rail station that could be boarded on the southwest side of S. Salem Street. The applicant for 20CZ01 is requesting to remove this realignment as it would negatively impact developable area. Staff are requesting this amendment based on the proposed Transit Plan map amendment to remove the Future Rail and Bus Transit Center in this location.	Y	Y	Y	Y
B	Remove Future Roundabout at South Salem Street and Apex Barbecue Road	The roundabout was initially added to the Transportation Plan based on available 2013 Annual Average Daily Traffic data. Even then, it was noted the roundabout would need to be sized for future multi-lanes. More recent traffic projections, and the Traffic Impact Analysis completed for 20ZC01, indicate that this location would not operate well with a roundabout. In addition, a substantial shift in the intersection and acquisition of new right-of-way would be required due to the proximity of the railroad.	Y	Y	Y	Y
C	Relocate Future Grade Separation of South Salem Street and realign Future Major Collector Street	As part of the Southwest Area Study, led by the Capitol Area Metropolitan Planning Organization (CAMPO) and adopted in 2020, the Town requested analysis of existing and planned future grade-separated crossings of the railroad. This means locations where either a bridge or tunnel is anticipated so that the roadway and railroad do not intersect at the same grade. Based on this analysis, the SWAS recommended a revised alignment for the future Major Collector street extending from Woodall Crest Drive, over NC 540, to Tingen Road.	Y	N	Y	N
D	Remove Future Grade Separation of South Salem Street and realign Future Major Collector Street	<p>The applicants of 20CZ01 recommend removing the Future Grade Separation of South Salem Street. Summarizing from Attachment 1, the applicants provide the following basis for the request: (1) Relatively low traffic projections of 5,100 vehicles per day (vpd) by 2045, (2) The substantial land area that would be required to build a bridge over South Salem Street and the railroad, and (3) The anticipated cost (estimated \$20M) of constructing this future crossing.</p> <p>The applicant correctly cites the projected traffic volumes from the SWAS. Staff followed up with CAMPO to further investigate the inputs resulting in these projected volumes, which do seem low. The volumes are the result of runs of the Regional Transportation Demand Model. One of the inputs to the model is projected change in residential dwelling units. For the land area that closely matches the area encompassed by 20CZ01, the regional model anticipates a total of 333 new single-family dwelling units and 18 multi-family units by 2045. This is in contrast to 1,500 dwelling units (with a 2028 projected build-out) proposed with 20CZ01. It should also</p>	N	Y	N	Y



Description	Explanation	SCENARIO		RECOMMENDED BY:	
		One	Two	Staff	Applicant
	<p>be noted that the model forecasts 6,500-6,700 vpd for Apex Barbecue Road by 2045, which is equivalent to the actual Annual Average Daily Traffic measured by NCDOT in 2018. The bottom line is that there are weaknesses in the regional model and the close examination of this particular area revealed that the model is not accurately projecting future traffic volumes.</p> <p>In addition to the capacity provided by this future roadway, it will serve a critical role in vehicular connectivity. There are limited existing and planned opportunities to cross South Salem Street and the parallel railroad tracks, especially if tolled facilities and future roadways are excluded:</p> <ul style="list-style-type: none"> <li>• 1.3 miles – approximate distance between future Apex Peakway and NC 540</li> <li>• 1.8 miles – approximate distance between future Apex Peakway and Pleasant Plains Road (excluding tolled roads)</li> <li>• 2.4 miles – approximate distance between Pleasant Plains Road and Tingen Road (excluding tolled roads and future roads)</li> </ul> <p>Assuming that the conservative projected volumes of 5,100 vpd on this future roadway are correct, if removed from the plan, those volumes will put additional pressure on those existing and potential future crossings including Pleasant Plains Road, Tingen Road, and the Apex Peakway. In addition, the side path proposed along this future roadway would also be eliminated, impacting bicycle and pedestrian connectivity.</p> <p>While the current focus is development on the west side of South Salem Street and the railroad tracks, there is also substantial future development potential to the east of South Salem Street and the need for connectivity from this area across the railroad tracks is important. The snip from the Thoroughfare and Collector Street Plan map demonstrates that this future Major Collector Street extends to Tingen Road, which is also planned to have a future grade separation of US 1.</p> <p>The grade-separated crossing of South Salem Street was originally added to the Transportation Plan in 2002. It was retained with the updates in 2011 and 2019, and with the NC 540/S. Salem Street Small Area Plan. Each of these planning processes involved substantial public engagement.</p>				

Description	Explanation	SCENARIO		RECOMMENDED BY:	
		One	Two	Staff	Applicant
					
E Remove Future 3-Lane Thoroughfare and Future Grade Separation of NC 540	<p>The applicants of 20CZ01 request removing the future grade separation of NC 540. Summarizing from Attachment 1, the applicants provide the following basis for the request: (1) Low (2,600 vpd) projected traffic volumes for this road by 2045 in the SWAS; (2) Concerns about potential conflicts with the gantries and tolling system on NC 540; (3) The anticipated need for substantial fill and potential environmental impacts and costs; (4) Redundancy with S. Salem Street; and (5) Concerns about bisecting planned residential areas associated with the rezoning case.</p> <p>The same issues regarding the regional travel demand model and the validity of the projected traffic volumes explained with the grade separation of South Salem Street are relevant for this roadway.</p>	N	Y	N	Y

Description		Explanation	SCENARIO		RECOMMENDED BY:	
			One	Two	Staff	Applicant
		<p>This future roadway would provide important connectivity. The intersection of Kelly Road at Old US 1 Highway is anticipated to become a right-in/right-out intersection in the future. Once this happens, if the future grade separation is removed, all of the southbound traffic on Kelly Road desiring to make a left turn on Old US 1 Highway will instead need to use Apex Barbecue Road or go through the West Village development. Without the additional option of using the proposed roadway, this will result in substantial increased traffic on Apex Barbecue Road and residential streets. In addition to this function, Fire Department staff indicate this roadway will provide important connectivity to Fire Station No. 5 (at the corner of Apex Barbecue Road and Kelly Road) and will serve as a relief valve for evacuation purposes.</p> <p>Measures to address concerns related to conflicts with toll gantries on NC 540, land use context concerns, and environmental impacts are addressed with the recommended amendment in Row F.</p>				
F	<p>Realign Holland Road at Kelly Road, realign Future Grade Separation of NC 540, and reclassify Future 3-Lane Thoroughfare to Future Major Collector Street</p>	<p>This alternative to removing the grade separation of NC 540 is intended to address the concerns regarding potential conflicts with tolling equipment, environmental impacts, and bisecting residential land uses.</p> <p>The realignment of Holland Road at Kelly Road and associated shift in the location of the future roundabout is intended to avoid a stream crossing of the extension of Holland Road. This realignment is also proposed to plan for a future perpendicular crossing of NC 540. The grade separated crossing is in the same location and, without completing an engineering feasibility study, avoids impacting tolling equipment to the extent feasible.</p> <p>The reclassification of the Future 3-Lane Thoroughfare to a Future Major Collector Street is suggested to be complementary of the walkable residential land uses anticipated on either side of this future roadway.</p>	Y	N	Y	N
G	<p>West of South Salem Street - realign through movements and extend future collector streets associated with the <b>realignment</b> of the Future Grade Separation of South Salem Street and the</p>	<p>The amendments proposed in Row A, Row C, and Row F result in necessary adjustments to the network of future collector streets between Apex Barbecue Road, South Salem Street and NC 540. The amendments, as proposed, retain a Future Minor Collector Street connection to Apex Barbecue Road and South Salem Street and a Future Major Collector Street connection to South Salem Street. The amendments are planned to provide appropriate spacing between intersections and minimize impacts to streams.</p>	Y	N	Y	N

Description		Explanation	SCENARIO		RECOMMENDED BY:	
			One	Two	Staff	Applicant
	removal of the Realignment of South Salem Street					
H	West of South Salem Street – realign future collector streets associated with <b>removal</b> of Future Grade Separation of South Salem Street and removal of Realignment of South Salem Street	<p>The amendments proposed in Row A, Row D, and Row E result in different adjustments to the network of future collector streets between Apex Barbecue Road, South Salem Street, and NC 540. These adjustments reflect the collector street network proposed by the applicants of 20CZ01. The proposed network maintains a Major Collector Street connection to South Salem Street and Minor Collector Street connections to South Salem Street and Apex Barbecue Road.</p> <p>*Staff support the recommended changes only if the Town Council approves the amendments in Row D and Row E, which are not supported by staff.</p>	N	Y	Y*	Y
I	East of South Salem Street – shift the Future Major Collector Street away from the Future Grade Separation and reclassify from Future Minor Collector Street to Future Major Collector Street	<p>The purpose of realigning the Future Major Collector Street extending from James Street is to shift it away from realigned grade-separated crossing of South Salem Street. While not related to the realignment, this roadway is also recommended to be upgraded from a Minor Collector Street to a Major Collector Street to reflect the anticipated function it will serve as a connection between two Thoroughfares.</p> <p>This change is unrelated to 20CZ01, therefore the applicant recommendation is noted as “Not Related” (NR).</p>	Y	N	Y	NR
J	East of South Salem Street - realign the Future Minor Collector Street (Padstone Drive)	The purpose of this amendment is to plan for a perpendicular connection of the future extension of Padstone Drive to the realigned Major Collector Street noted in Row I. This change is unrelated to 20CZ01, therefore the applicant recommendation is noted as NR.	Y	N	Y	NR
K	East of South Salem Street - add Future Local Connectors at Flint Valley Lane	The purpose of this amendment is to plan for connectivity by showing Future “Local Connectors” extending from Flint Valley Lane. This change is unrelated to 20CZ01, therefore the applicant recommendation is noted as NR.	Y	N	Y	NR
L	East of South Salem Street – realign the Future Minor Collector Street (Tingen Road) and shift the roundabout to match realignment	The purpose of the proposed realignment is to use existing right-of-way (for Tingen Road) for the Future Minor Collector street and to adjust the alignment and roundabout location to intersect with the realigned Major Collector Street described in Row A. This change is unrelated to 20CZ01, therefore the applicant recommendation is noted as NR.	Y	N	Y	NR

*Rezoning Case #20CZ01 Depot 499 Request:*

The applicants for Rezoning Case # 20CZ01 Depot 499 PUD request the amendments to the Thoroughfare and Collector Street Plan map described as Scenario Two and shown in Figure 5 and Figure 6. Further explanation for their requests is provided as Attachment 1.

*Staff Recommendation:*

Planning Staff recommend the amendments to the Thoroughfare and Collector Street Plan map described as Scenario One and shown in Figure 3 and Figure 4. Staff from the following departments support this recommendation: Public Works and Transportation, Fire, and Police.

If the Town Council approves the removal of the future grade separations of South Salem Street and NC 540, which staff do not recommend, then staff recommend approval of the revised network of collector streets west of South Salem Street as proposed in Scenario Two and requested by the applicant.

*Planning Board Recommendation:*

The Planning Board considered the proposed amendments at their July 13, 2020 meeting and unanimously recommended approval of the amendments described as Scenario One and shown in Figure 3 and Figure 4.