

Rezoning Transportation Analysis

Petition Number: 2016-139

General Location Identifier: 029-021-21, 029-021-32

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CDOT's review of this rezoning petition is intended to ensure consistency with the Transportation Action Plan (TAP) which seeks to ensure that the City's transportation network supports current and future land uses and includes streets that provide safe and comfortable mobility for motorists, pedestrians, bicyclists, and transit users.

This document is primarily for communication to Planning Department staff as part of the overall City staff analysis of the rezoning petition and includes an overall summary of the case from a transportation perspective, information on trip generation, and resolved or outstanding site plan concerns. Additional advisory information about the driveway permit process is provided for information only.

Based on our review of the petition, we offer the following information for your consideration.

Transportation Summary

This site is located in the northwest quadrant of an interchange for I-85 and a major thoroughfare. The current site plan commits to several transportation improvements to provide site access as well as enhance the existing and future transportation system including, constructing a new street through the site that creates a new connection between a thoroughfare and a collector; realigning, widening, and signaling an existing intersection to create site access and set up for a potential new connection in the adjacent University Research Park; offsite widening at the I-85 southbound on- and off-ramps and the Mallard Creek and Galloway intersection; reservation for a future east-west street connection; construction of the Galloway extension; site design to accommodate a future overcrossing of Galloway at I-85; and correcting an existing offsite condition with a minor intersection modification. Upon review of the storage lengths and intersection operations, CDOT is requesting adjustments to the north-south street configuration.

General Description

The site is located in the University Research Park area between Mallard Creek Church Rd., a major thoroughfare, and Galloway Rd., a minor collector.

The site is located in a wedge outside Route 4, near the I-85/Mallard Creek Church Rd. Interchange. A new traffic signal is proposed to access the site from Mallard Creek Church (MCC) Rd. at Leganger Rd. approximately 950' west of I-85 exit ramp.

A Traffic Impact Study (TIS) is required by both CDOT and NCDOT.

Trip Generation

Scenario	Land Use	Intensity	Trip Generation (vehicle trips/day)	Source
Existing Use	Single Family/Vacant	3 dwellings	30	Tax Records
Entitlement with Current Zoning	Single Family (35.7 acres of R-3) Office (21.7 acres of RE-3 (CD)) Office (8.3 acres of RE-1)	107 dwellings 300k sf 300k sf	7,170	Guidance from Planning
Proposed Zoning	Apartments	395 du	41,735	Site Plan: 08-

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Scenario	Land Use	Intensity	Trip Generation (vehicle trips/day)	Source
	Retail	160k sf		<i>22-16</i>
	Supermarket Retail Fast Food Drive Thru Apartments Coffee/Donut Drive Thru	130k sf 18.75k sf 6.5k sf 395 dwellings 2k sf	23,000	<i>Traffic Study</i>
	Retail Fast Food Drive-Thru Apartments Convenience Store w/ Gas Pumps Topgolf Entertainment Venue	32.5k sf 6.5k sf 395 dwellings 20 pumps	22,900	<i>Petitioner's Traffic Consultant</i>
	Supermarket Hotel Fast Food Drive-Thru Apartments Coffee/Donut Drive-Thru	130k sf 100 rooms 6.5k sf 395 dwellings 2k sf	21,500	<i>Updated Trip Generation</i>

Resolved Issues

1. The petitioner should revise the site plan along the site's Mallard Creek Church (MCC) frontage as follows:
 - a. Depict and provide a conditional note to extend curb/gutter, 8' planting strip, and a 12' wide multiuse path to the I-85 exit ramp if approved by NCDOT during permitting.
 - b. Depict and provide a conditional note to restrict the proposed site driveway on MCC Rd. to a right-in only movement.
 - c. CDOT requests that the petitioner consider extending the 12' multiuse path to fill in the gap on the north side of Mallard Creek Church between the site and existing sidewalk.
2. The petitioner should revise the site plan along the site's Galloway frontage as follows:
 - a. Depict and provide a conditional note to add an 8' planting strip and 6' wide sidewalk along the south side of Galloway Rd. between Garrison Rd. and Leganger Rd.
 - b. Depict and provide a conditional note to dedicate in fee simple 36' right-of-way as measured from the street's existing centerline needs along the site's Galloway Rd's. frontage to accommodate a local collector typical street cross-section (see CLDSM U-07). Additional traveled way width may be required during permitting to accommodate left turn lanes at driveways. Coordinate with CDOT to determine appropriate bicycle and pedestrian facilities within cross section.
 - c. Depict and provide a conditional note to implement a westbound 150' left turn storage lane on Galloway Rd. at Leganger Rd. extension when requested by CDOT.
 - d. Depict and establish a building set back line along the site's Galloway Rd's. frontage east of Leganger Rd. to accommodate a future I-85 grade separation structure. CDOT requests a working session to clarify needs after considering exhibits received on 12/1.
 - e. Revise the right of way or provide sidewalk utility easement to 44' from existing centerline to accommodate future left and buffered bike lane. Shift proposed back of sidewalk to 40' from centerline.
3. The petitioner should revise the site plan along the site's Legranger extension frontage as follows:

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- a. Depict and provide a conditional note relocating the northernmost proposed site driveway located on Leganger Rd. extension, serving the multi-family buildings along Galloway Rd., to approximately 250' south of Galloway Rd.
 - b. Depict and provide a conditional note that would restrict site driveways and on-street parking within 150' of all proposed roundabouts approach legs.
 - c. Depict and provide a conditional note to restrict the proposed site driveway on Leganger Rd. extension, serving the Mallard Creek Presbyterian Church, to right-in/right-out movements, including the installation of a raised concrete median between MCC and the roundabout.
 - d. Add a conditional note to allow a future east/west street connection to Legranger Rd. from parcel no. 02902101 for a possible street extension to Creekmere Lane in the future.
 - e. Traffic circle north of MCC on the Legranger Rd extension should operate like a roundabout, not a four-way stop to ensure operations at signalized intersection are unimpeded by internal circulation.
 - f. Depict and provide a conditional note committing to a Local Office/Commercial Wide minimum cross section and right of way in compliance with CLDSM U-05. Additional traveled way width may be required during permitting to accommodate left turn lanes at driveways. Coordinate with CDOT to determine appropriate bicycle and pedestrian facilities within cross section.
 - g. Restrict Outparcel 1 access to right-in/right-out at both access points. Extend roundabout median on eastern leg.
 - h. Close the southbound vehicle movement on the south leg of the internal roundabout. A single inbound lane from the right-in access is acceptable however two-way movement on this leg presents driver expectation concerns to CDOT and NCDOT.
4. The petitioner should revise the site plan to include a conditional transportation note indicating that the existing southern Leganger Rd. leg realignment is required for approval of the signalized access point on MCC into the site. Spacing to the I-85 SB ramps interchange signal shall be maximized (approximately 950') and is subject to NCDOT and CDOT approval. The final MCC Rd./Legranger Rd. intersection geometry will be determined and approved during the permitting process and will include requirements for:
- a. Pedestrian refuge islands on each street to shorten pedestrian crossing distances.
 - b. Appropriate transition from mutiuse path to on-street bike lanes.
 - c. Due to the sharp corners before the intersection near side signals are required to warn approaching traffic what the signal is showing.
 - d. The single left turn lane on the north leg may not be able to be permissive. It appears the the left turning sight visibility is not adequate.
 - e. Be sure the lane lines up once it is confirmed which ones are needed. If you have a single left turn opposing dual left turns it needs to be offset with a marked out lane.
 - f. Provide at least a 100' tangent on each Legranger approach leg entering into the W. Mallard Creek Church right of way
 - g. Provide flattest vertical alignment possible for best operations.
5. A Traffic Impact Study (TIS), required by both CDOT and NCDOT, has not been submitted. Additional transportation comments may be forthcoming once the agencies have completed the review of a submitted TIS.
6. The petitioner should revise the site plan to add a conditional note specifying dedication and fee simple conveyance of all rights-of-way to the City/NCDOT before the site's first building certificate of occupancy is issued. CDOT requests right of way set at 2' behind back of sidewalk.
7. The petitioner should revise the site plan to add a note specifying all transportation improvements will be constructed and approved before the site's first building certificate of occupancy is issued or phased per the site's development plan.
8. The petitioner should revise the site plan to add conditional note for transportation mitigation measures and identified in the combined NCDOT and CDOT traffic study review comments.
9. CDOT requests that the petitioner consider minor modifications to the Garrison/Galloway intersection to obtain better compliance of stop control condition. See concept below:

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10. The petitioner should revise transportation conditional notes as follows:
 - a. Notes 4H, 4N, 4O, and 4R(4)(b) - remove ***“or if there is not existing right-of-way to accommodate these improvements, then the Petitioner shall have no obligation to install such improvements”***. All transportation improvements included in the subject site plan are important and necessary to be implemented; therefore the Petitioner needs to be responsible to obtain all necessary right-of-way for transportation improvements. CDOT has existing policies that deal with the acquisition right-of-way which can be applied in the project’s permitting process.
 - b. Note 4L – Clarify that this reserved area will not be included in tree save.
 - c. Note 4R(1)(a) – revise to clarify that the improvement is to construct a ***second*** right turn lane and include language to channelize these right turn lanes with a pedestrian island.
 - d. Add ***“plus the appropriate taper length”*** to all notes with a specific turn lane storage length
 - e. Note 4R(3)
 - i. Include a northbound through at access point #2 at Mallard Creek Church.
 - ii. Add R(3)(i.): The petitioner shall remove all existing pavement/drainage structures not needed and replace with top soil and necessary landscaping within the existing Laganger Rd. right-of-way between Mallard Creek Church Rd. and the proposed realigned Laganger Rd
 - f. Note 4R(5)(a) - Provide a ***three (3)*** lane cross section on the northbound Connector Road at Galloway Rd. providing one ingress lane, one left turn lane, and one 100’ right turn storage lane with an appropriate taper length

Outstanding Issues

1. The petitioner should revise the site plan and add transportation conditional notes to obtain storage lengths identified in the TIS for adequate operations at the new signal:
 - a. Remove the proposed roundabout internal to the site and provide a continuous street from Access #1 to Access #3. Access #2 and drive aisle to outparcels 2 and 3 will have to be reconfigured to tee in to the continuous street. Please note, NCDOT has indicated that the right in from Mallard Creek (Access #2) needs to have one lane free flow into the site and not left turn ingress lane from the north-south continuous street so there’s no confusion that the opposing left turn lane can only turn left and cannot go straight.
 - b. Create a third eastbound lane on MCC through the intersection to increase Laganger northbound approach’s green time (need to confirm with NCDOT)
 - i. Restripe the eastbound MCC Rd. right turn only lane at Laganger Rd. to a shared thru/right lane
 - ii. Extend the eastbound MCC Rd. right turn only storage lane at southbound I-85 entrance ramp to Laganger Rd.
2. The petitioner should revise the site plan to maintain the multiuse path along the west side of the continuous north-south street. CDOT recognizes there will be a pinch point reduction near the future vehicular access to the adjacent church and will work with the petitioner during permitting to reduce

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the path width as needed. CDOT is not supportive of bringing the main path across two vehicle crossings (the north-south connector and the MCC signalized intersection).

Advisory Information

The following are requirements of the developer that must be satisfied prior to driveway permit approval. We recommend that the petitioner reflect these on the rezoning plan as-appropriate.

1. According to the City of Charlotte's Driveway Regulations, CDOT has the authority to regulate/approve all private street/driveway and public street connections to the right-of-way of a street under the regulatory jurisdiction of the City of Charlotte.
2. Adequate sight triangles must be reserved at the existing/proposed street entrance(s). Two 35' x 35' sight triangles (and two 10' x 70' sight triangles on North Carolina Department of Transportation on NCDOT maintained streets) are required for the entrance(s) to meet requirements. All proposed trees, berms, walls, fences, and/or identification signs must not interfere with sight distance at the entrance(s). Such items should be identified on the site plan.
3. The proposed driveway connection(s) to public streets will require a driveway permit(s) to be submitted to CDOT (and the North Carolina Department of Transportation on NCDOT maintained streets) for review and approval. The exact driveway location(s) and type/width of the driveway(s) will be determined by CDOT during the driveway permit process. The locations of the driveway(s) shown on the site plan are subject to change in order to align with driveway(s) on the opposite side of the street and comply with City Driveway Regulations and the City Tree Ordinance.
4. All proposed commercial driveway connections to a future public street will require a driveway permit to be submitted to CDOT for review and approval.
5. Any fence or wall constructed along or adjacent to any sidewalk or street right-of-way requires a certificate issued by CDOT.
6. A Right-of-Way Encroachment Agreement is required for the installation of any non-standard item(s) (irrigation systems, decorative concrete pavement, brick pavers, etc.) within a proposed/existing City maintained street right-of-way by a private individual, group, business, or homeowner's/business association. An encroachment agreement must be approved by CDOT prior to the construction/installation of the non-standard item(s). Contact CDOT for additional information concerning cost, submittal, and liability insurance coverage requirements.

Revision Log

Date	Description	By
09/20/2016	First Review	RHG
02/01/2017	Second Review	RHG
04/19/2017	Third Review	RHG
08/24/2017	Fourth Review	RHG