

MEMORANDUM

To: Planning Commission

From: Kinsey O'Shea, Town Planner for Current Development
Anne McClung, Planning and Building Director

Date: October 11, 2019

Subject: Requests by the Virginia Tech Foundation for redevelopment at 220 Gilbert Street including RZN 19-0007 - Request to amend existing Downtown Commercial zoning, CUP 19-0006 Request for addition height up to 100' in the DC district, and RZN 19-0008- Request to amend existing North End Special Signage District

At the September 17, 2019 Planning Commission Work Session, there was discussion regarding the North End/Gilbert Street mixed-use redevelopment requests. Based on items in the staff report and the discussion at the work session, the applicant has provided revised materials dated October 1, 2019 and October 9, 2019 to answer questions raised and provide clarifications. The responses are provided by topic.

REZONING 19-0007 AMENDMENT TO DOWNTOWN COMMERCIAL ZONING

Stormwater Management

Town Engineering staff has reviewed the revised stormwater management information included in the September 11, 2019 submittal. *The stormwater concept plan is approved at this time.*

Sanitary Sewer

The applicant has provided revised sewer calculations and the Engineering staff have determined that there are no capacity issues with regard to downstream adequacy.

Traffic Impact Analysis

The applicant has provided a revised Traffic Impact Analysis in the October 1, 2019 submittal. Town Engineering staff has reviewed the revised information and provided the attached Transportation Memo. The memo includes several recommended revisions to the TIA and application:

- Provide right turn lane warrant analysis for the in-bound movement to the site access proposed at the intersection of Turner Street / Perry Street and at the T-intersection of Turner Street / Gilbert Street.
- Provide the LOS and Queuing Analysis for the proposed 4-way stop control condition at the intersection of Turner Street / Perry Street / Site Entrance.
- Revise the reconfigured Prices Fork Road entrance design to include the warranted full width right turn lane and taper.
- Revise the reconfigured Prices Fork Road entrance design to include the appropriate exit taper per Access Management Guidelines.
- Revise the entrance design for the proposed site access onto Turner Street to reduce the entrance width per Access Management Guidelines.

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- Revise the proposed intersection design for the Turner Street / Perry Street / Site Access to include either the warranted left turn lane or consultant engineer recommended 4-way stop control condition.

The attached memo outlines the overall transportation impacts of the proposed project and the reasons for the above recommendations.

Orchard Street Pedestrian Access

The applicant has proposed extending the median fencing east along Prices Fork Road to the North Main Street roundabout to deter mid-block and uncontrolled pedestrian crossings. The Town is currently determining the scope of work and hiring a consultant to complete a conceptual plan for improved safety along Prices Fork Road from Toms Creek Road to the North Main Street roundabout. *The attached memo provides additional information regarding this corridor and concludes that staff would not recommend extending the median barrier at this time.*

Parking Counts and Ratios

The applicant has clarified the parking ratio for the development. The site will have a total of 266 parking spaces, and 290,239 square feet of gross floor area, including the 460 Turner building. This equates to a parking ratio of approximately 0.92 parking spaces per 1,000 square feet.

Emergency Vehicle Access

The applicant has verified that emergency vehicles will have adequate clearance (13' 6") under the proposed elevated parking area.

Bicycle Parking

More specificity on bike parking was needed. The applicant was asked not only to clarify the locations and number of racks but to provide different options for longer-term commuter storage versus short-term visitor bike parking. The applicant has provided the following information on the number, type, and locations of bike racks and bike storage facilities. The applicant has included a total of 72 covered/secure bike spaces, as well as 18 exterior bike parking spaces. The covered/secure bike parking is located in the ground level parking underneath the mixed-use building. *More specificity at the time of site plan will be required to ensure that the appropriate number of bike racks is included, as well as the required clear spaces.*

Landscaping

The applicant has clarified that the terraced planting areas proposed along Prices Fork Road are a substitute for the median islands typically required. The median islands are not possible given the installation of elevated parking over the existing surface level parking. The applicant proposes a mix of shrubs, groundcovers, and ornamental grasses to help shield the view of the elevated parking from Prices Fork Road.

Shadow Study

The applicant has provided a shadow study graphic to illustrate the impacts of the proposed building on St. Luke and Odd Fellows Hall. *The study indicates that the new building does not cast shadow at the selected times (noon on various days of the year) but does not indicate whether any shadow may impact the St. Luke and Odd Fellows Hall building in the evening when shadows from the west are longer. Without additional information, it is unknown if or how the proposed building will impact the Hall.*

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Relationship of Proposed Building and Associated Parking with Building #460

The applicant has prepared graphics to illustrate the interface between the Building #460 to remain and the proposed elevated parking area. The graphics illustrate how the concrete level of the elevated parking deck affect the front building façade of Building #460. The graphics show that there will be a 7' gap open to the sky, above the sidewalk along the front of the building. Furthermore, the elevated deck extends across only a small portion of the front of the 460 building.

Building 460 Outdoor Plaza Area

The applicant is pursuing options to provide outdoor seating to the Building 460 tenants to compensate for the loss of the pedestrian plaza between the existing Building 400 and Building 460. A site plan showing a plaza at the west end of the 460 building was approved in 2014 but never constructed. *The applicant should provide more detail on what is being proposed.*

Exterior Building Materials

The applicant has provided a list of exterior building materials for the proposed project in the documents dated October 9, 2019. The applicant noted that brick veneer, metal panels, concrete cladding panel, and curtain wall cover most of the exterior.

CONDITIONAL USE PERMIT REQUEST CUP19-0006 FOR ADDITIONAL HEIGHT

On September 10, 2019 Town Council adopted Ordinance #1900 which approved a Zoning Ordinance Amendment to allow applicants to request additional building height by Conditional Use Permit in the DC district. Specific criteria for consideration of each CUP request for additional building height were included in the amendment.

The criteria relating to arterial street frontage and distance from residential buildings are met. There was discussion about the remaining criteria listed below:

- Relationship of building to the street;
- Building mass, scale, architectural features, which should include expression lines or other horizontal building articulation, and step backs for stories above 60' in height;
- Building setbacks;
- Width of sidewalk;
- Impact on pedestrian environment; and
- Impact on adjacent land uses.

Staff analysis of the revised application against the evaluation criteria is included below.

Building Stepbacks

The applicant has prepared and refined several graphics to illustrate the nature of the building stepbacks proposed in both supplemental packages. There are building stepbacks in certain locations but also building overhangs. Staff requested clarification on building stepbacks particularly at the center of the building along the Gilbert Street frontage. This is where the building is at its tallest point.

The sheet AZ105 in the supplemental package dated October 9, 2019 displays the building step-backs along the Gilbert Street façade, as well as the Turner Street end, and the St. Luke and Odd Fellows Hall end.

- In general, a significant portion of the façade (indicated in blue on the AZ105 sheet) is flush with the sidewalk along Gilbert Street. This area will be approximately 80' tall, and flush with the face of the sidewalk. While the top level of the building is set back approximately 3'-4" from the

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sidewalk face, the roof does overhang the step-back, though, according to the diagram, not within 1' of the sidewalk face, though it appears very close. There is a horizontal step-back for the floor above the retail floor that is approximately 3'-6" deep, though the third through fifth floors will be flush with the sidewalk as described above.

- Above the anchor retail tenant entrance, the building does step back approximately 8'-5" for floors 2-6.
- At the Turner Street end, the building overhangs the plaza area approximately 42' at the floor of level 3. The building steps back 21' at level 5, and an additional 43'-8" (for a total of 64'-8") to the overhang of the roof on level 6.
- At the St. Luke and Odd Fellows Hall end, the building overhangs the ground level approximately 15'-6" at the floor of level 3. The building steps back 30' at level 5, and an additional 14' (for a total of 44') to level 6.

As building setbacks or step-backs are one of the criteria for evaluating the Conditional Use Permit request, it should be noted that for the significant portion of the Gilbert Street façade, no step-back above the sidewalk level is provided. From the ground, the building will appear to rise more than 80' in the air straight up. Building step-backs are intended to provide a more comfortable pedestrian experience by allowing natural light and airflow at the street level, and avoiding a canyon-like feel that can make the sidewalk and street seem crowded and narrow.

Sidewalk on Gilbert Street

The proposal included an 8' wide sidewalk on Gilbert Street. This is the minimum requirement for a Downtown Commercial sidewalk on a side street. The criteria for consideration of the CUP for additional height speak specifically to the nature of the pedestrian experience. Gilbert Street has a significant amount of pedestrian and bicycle activity today and it is expected to increase with the proposed redevelopment.

The applicant has proposed extending the sidewalk into the Town right-of-way with the removal of the 11 parallel parking spaces on the north side of Gilbert Street. The parking spaces would remain on the south side of the street. As noted in the CUP criteria, the width of the sidewalk and impact on the pedestrian environment are important considerations for additional building height. As previously noted, when buildings are constructed at significant height with or without stepbacks, a wider sidewalk can help to provide more space so that the sidewalk does not feel cramped. Citizens have expressed that the existing 10' sidewalk along the Main Street façade of the Brownstone building does not feel 10' wide, but rather that it feels narrower based on the full 60' building height at the property line.

As the applicant is proposing to use Town right-of-way and convert on-street parking to sidewalk, this presents an opportunity to consider the Gilbert Street streetscape and environment for pedestrians and bicyclists. *The on-street parking allows for approximately 9 feet of additional space to be converted into a wider sidewalk along the building. This amount of space would not be ideal for separated bicycle facilities on Gilbert Street. Since no bicycle facilities are proposed, strong consideration should be given to creating a friendlier on-street environment for bicyclists. Reducing lane widths, lowering speed limits to 10 mph, removing defined curb areas and changing the street surface should be considered in order to create a shared street environment. Lower speed limits allow bicyclists to mix with vehicular traffic as the speed differential between the two modes is significantly reduced. Many examples of this condition are found in urban environments – locally, College Avenue is the best example of a shared street experience.*

This shared street environment also allows for more comfortable pedestrian movements along and across Gilbert Street. The wider sidewalk width will also allow for additional street furniture along Gilbert Street

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without impeding the pedestrian flow. This is particularly important as benches and tables are currently available in the existing condition. This may also help to alleviate a canyon effect between two large buildings and could transition easily into the proposed pedestrian plaza along the Turner Street façade.

In further considering the pedestrian environment, street crossings should be given special attention – this includes the crossing at Gilbert Street/Turner Street and also at Perry Street/Turner Street/project entrance. These crossings are opportunities for prioritizing the movement of people rather than the movement of cars as outlined in the Downtown Strategic Plan. The plan recommends “a mobility strategy that prioritizes people over cars and also supports economic activity and community vibrancy by providing expanded access to jobs, shopping, and small businesses downtown”. The Perry Street/Turner Street/project entrance includes a proposed four-way stop condition which will allow for crosswalks on all legs of the intersection. This intersection is an opportunity to significantly enhance the pedestrian environment by considering unique treatments – this may include patterns, colors, materials, and/or art – that call attention to this space. The Planning Commission also discussed lighting on Gilbert Street to ensure the street was adequately lit for safety. Addressing these elements is important as outlined in the Downtown Strategic Plan strategy to “Enhance the Public Realm” which notes that, “through improved streetscaping, these streets can better serve pedestrians and bicyclists – while still accommodating cars – and thereby encourage active transportation into downtown”.

REZONE 19-0008 NORTH END SPECIAL SIGNAGE DISTRICT AMENDMENT

The applicant has provided the following information. Revised graphics were included in the October 1st submittal.

- No signage on the St. Luke and Odd Fellows end of the building.
- The rooftop restaurant and event facility will share signage.
- The rooftop restaurant and event facility signage at the top of the building will not be illuminated.
- The building identification signage for proposed Building #220 will consist of two signs, each not to exceed 15 square feet. The signs will be located in the center of the building with one sign on the east and one sign on west facade of the building facing Prices Fork Road and Gilbert Street respectively.
- Additional wayfinding signage will be added to help pedestrians crossing Turner Street to navigate to the businesses in the existing Building #460 located on the Prices Fork Road side of the building. Access to these tenants will be through the building. Signage will be added to vehicular ramp to the parking area to indicate that pedestrian access to the ramp is prohibited.
- The applicant provided a chart to illustrate total signage square footage on the proposed Building #220. Staff has provided additional information in the following chart to clarify the total amount of signage per tenant type. The 15 square foot signage shown for small retail tenants along the northern side of the building would be used if the applicant is unsuccessful in getting a large tenant for the space.

Proposed Signage Summary

Facade	Building Identification sq. ft.	Rooftop Venue sq. ft.	Large Retail Tenant sq. ft.	Small Retail Tenants sq. ft.	Total sq. ft. per Facade
North	-	-	-	-	-
South	-	-	-	45 (3 signs)	45
East	15	60 + 20 = 80	60 + 20 = 80	135 (9 signs)	310
West	15	60 + 20 = 80	60 + 20 = 80	150 (10 signs)	325
	30	160	160	330	680

CHANGES RELATED TO ST. LUKE AND ODD FELLOWS HALL

The applicant met with representatives for St. Luke and Odd Fellows Hall to further discuss the interface between the proposed project and the historic site. The applicant has provided an exhibit detailing the existing property lines and future dedication areas. The revisions also include a landscape rendering of the area surrounding the site. The applicant has proffered a tribute to St. Luke and Odd Fellows Hall inside the lobby of the proposed building. The applicant is working with representatives for St. Luke and Odd Fellows Hall to develop a Memorandum of Agreement where the applicant will be responsible for landscaping and maintenance of the historic site. The applicant is also working to accommodate parking at the Gilbert Street Mixed-Use Building for regular meetings for Odd Fellows. The applicant will amend the proffer to further share the history of the New Town area with an outdoor kiosk or structure similar to the kiosk at the Alexander Black House.

Attachments

- Engineering Transportation Memo
- Orchard Street Pedestrian Access Memo

MEMORANDUM

TO: Kinsey O'Shea, Development Administrator

FROM: Randy Formica, Director, Engineering and GIS
Joshua Middleton, Town Engineer

DATE: October 11, 2019

SUBJECT: Gilbert Street Mixed-Use – Transportation Comments – Review 2

Analysis Revisions

Numerous revisions have been made to the traffic impact analysis by the owner's consultant engineer. Recommended revisions have been necessary to best model and represent the impacts and identify warranted mitigation measures for the proposed development. The following revisions have been made;

- Commercial trip distribution has been revised to reflect the limitations of the proposed entrance and circulation established by the master plan.
- Recently approved rezoning trip generation data has been incorporated into the analysis.
- Table 2 - Land Use codes have been updated per the appropriate land use.
- A right turn lane warrant analysis has been performed for the Prices Fork Road entrance. **Note:** Impacts warrant the addition of a right turn lane, however, it has not been included as part of the traffic impact analysis or master plan layout. (See subsequent Turn Lane Warrant Section of memorandum)
- A left turn lane warrant analysis for the site entrance in-bound movement at the existing intersection of Turner Street / Perry Street has been provided.
- A left turn lane warrant analysis has been performed for the in-bound movement at the existing T-intersection of Turner Street / Gilbert Street.
- A 4-way Stop Control Warrant analysis has been provided for the proposed 4-leg intersection at Turner Street / Perry Street / Site Entrance.

The following sections of this memorandum outline the impacts of the development as presented in the revised analysis. Much of the following appears similar to the original transportation comments memorandum, dated September 13, 2019, with new data resultant from the requested revisions.

Overview

As indicated by the traffic impact analysis, the proposed development will add a significant amount of vehicular traffic to the existing road network. Trip generation data has been determined with a conservative approach that has sought to provide a reasonable estimate of the potential impacts. The trip generation data indicates the total number of vehicle trips generated by the site to be 8,118 trips per day with AM peak hour volumes of 370 trips and PM peak hour volumes of 583 trips.

The distribution of trips, onto the adjacent road network is predominantly via Prices Fork Road and North Main Street. Prices Fork Road would be expected to receive approximately 64%, or

5195 trips, while North Main Street would be expected to receive 35%, or 2923 trips. As indicated by the traffic analysis, Prices Fork Road and North Main Street currently operate at approximately 21,000 ADT (average daily traffic) and 19,000 ADT respectively. The proposed development increase of 5195 trips along Prices Fork Road and 2923 trips along North Main Street represent 25% and 15% increase in traffic volumes on the respective roadways.

Traffic to Prices Fork Road and North Main Street is largely distributed via Turner Street with 60%, or 4871 trips, being routed along this cross connection. As indicated by the traffic impact analysis vehicle counts, Turner Street currently operates at approximately 7500 ADT. The proposed development increase, of 4871 trips, represents a 65% increase in traffic volume. This is largely a function of office use trips being directed to the existing parking garage accessed from Gilbert Street and Barger Street via Turner Street.

Trip Generation

Land use and applicable trip reduction factors for trip generation volumes were developed in conformance with the recommendations of Town Staff. The analysis applied the trip generation impact for a mix of development uses, to include;

- 4,500 SF of Fast Food Restaurant space
- 7,000 SF of High Turnover Restaurant space
- 3,000 SF of Quality Restaurant space
- 7,400 SF of Drinking Place (Wine Lab)
- 18,700 SF of Supermarket space
- 3,200 SF of Clinic space
- 140,900 SF of University/College space

As noted previously the total trip generation anticipated is 8,118 trips with 45%, or 3,785 trips, being generated by the University/College space. Per the rezoning application these trips would be directed to the existing parking garage with over 80% expected to access from Turner Street. The commercial components of the development are expected to utilize the site parking which is split between two levels of parking.

Trip generation was distributed to and from four locations at two (2) entrance connections to the proposed development and two (2) entrance connections to the existing parking garage. The proposed development would maintain and revise the existing entrance along Prices Fork Road and proposes the addition of a second entrance on Turner Street adjacent to the intersection of Perry Street.

Site Access / Entrances

The existing entrance on Prices Fork Road is proposed to be reconfigured to eliminate the out-bound left movement directing vehicles instead towards the roundabout at the intersection of North Main Street. Similarly, the out-bound left turn movement from Orchard Street would be eliminated, directing all outbound movements toward the intersection of Toms Creek. Though restrictive for some vehicle movements, the combination of these two conditions provides a more functional and safe intersection as it eliminates numerous conflict points within the intersection (See Level of Service Analysis section for resultant condition summary). This reconfiguration was discussed with Town Staff during preliminary meetings and seems to provide the best application for the proposed development.

This second site entrance on Turner Street would provide full access to the upper parking level as well as in-bound access to the lower parking level. Exit movement from the lower level would be restricted from accessing Turner Street and all vehicles leaving the lower level would have to

exit via Prices Fork Road. The addition of the entrance, adjacent to Perry Street, would re-establish the 4-leg intersection that was previously removed. Per the conclusions provided in the traffic impact analysis, this intersection is recommended to be a 4-way stop controlled intersection, which the applicant's consultant engineer indicates is warranted given the anticipated vehicle volumes. However, the 4-way stop control condition does not appear to have been fully included as part of the impact analysis or master plan layout.

Turn Lane Warrant Analysis

The traffic impact analysis has been revised to include several key turn lane warrant analyses. Town Staff had requested that turn lane warrants be performed for the following locations;

- Right turn lane warrant analysis for the reconfigured Prices Fork Road entrance.
- Turn lane warrant analysis for the in-bound movement to the site access proposed at the intersection of Turner Street / Perry Street.
- Turn lane warrant analysis for the in-bound movement to Gilbert Street at the T-intersection of Turner Street / Gilbert Street.

As indicated previously, several of these requested warrant analyses have been performed. However, right turn lane warrants for the in-bound movement to the site access proposed at the intersection of Turner Street / Perry Street and at the T-intersection of Turner Street / Gilbert Street have not been included. This warrant analysis would be needed to confirm whether mitigation measures are needed.

➤ **Prices Fork Road Entrance**

The results of the right turn lane warrant analysis for the Prices Fork Road / Site Access entrance indicate that a full width turn lane and taper is warranted. Turn lane warrants are triggered when the amount of turning vehicle volumes are significant enough to create notable safety and operational concerns for the adjacent street traffic. The implementation of a taper and/or turn lane represent the mitigation measure necessary to reduce the imposed safety and operational impacts of the development.

The warranted right turn lane has not been included as part of the traffic analysis or master plan for the development. This is contrary to both Town Code Section 5-312 as well as the principles of Access Management. Justification for the exclusion of the warranted mitigation measures has been provided in the study, suggesting that maintaining the character and consistency along the Prices Fork Road corridor make the turn lane unnecessary. Town Staff does not support this justification and recommends that this warranted mitigation measures be pursued as part of the master plan for the following reasons:

- Town Code Section 5-312 requires that turn lanes be provided on all adjacent street where warranted by the minimum requirements of VDOT – Access Management Design Standards.
- Significant volumes of right-turning traffic can have an adverse effect on intersection safety. The deceleration of the turning vehicles creates a speed differential between them and the through vehicles. This can lead to delay for the through vehicles, as well as rear-end crashes involving both movements. ITE's *Transportation and Land Development* indicates that a vehicle traveling on an at-grade arterial at a speed 16 km/h (10 mph) slower than the speed of the normal traffic stream is 180 times more likely to be involved in a crash than a vehicle traveling at the normal traffic speed
- Significant volumes of right-turning traffic can have an adverse effect on intersection operations. Right-turn lanes remove decelerating and slower-moving vehicles from the through traffic stream, which will reduce delay for following through vehicles.

➤ **Turner Street Entrance**

The results of the left turn lane warrant analysis for the Turner Street / Site Access entrance indicate that a left turn lane would be warranted considering the Town's policy that requires turn lane implementation if the warrant analysis is within 10% of the threshold. However, if the intersection was configured as a 4-way stop controlled intersection the need for a left turn lane would be mitigated. Further information is needed as part of the traffic impact analysis and master plan layout to determine whether a 4-way stop control will be implemented. If a 4-way stop control is not implemented, Town Staff would recommend that the warranted left turn lane be pursued to ensure the development impacts on Turner Street can be appropriately mitigated.

➤ **Turner Street / Gilbert Street**

The results of the left turn lane warrant analysis for the Turner Street / Gilbert Street intersection indicate that a left turn lane would not be warranted as it falls just short of the Town's policy that requires turn lane implementation if the warrant analysis is within 10% of the threshold. If site trip distribution is revised and anticipated volumes increased per subsequent revision, it would be likely that a left turn lane warrant would be triggered and should then be pursued accordingly.

Entrance Design & Layout

Proposed revisions to the existing Prices Fork Road entrance would include a restriction of the out-bound left turn movement, which would require the entrance to be reconfigured. A median island would be added to provide delineation and direction for out-bound traffic to channel them into the one-way northbound direction. The layout of the island and approach from the lower level parking area seem to generally follow the requirements of Access Management. However, an integral part of the design, of this type of restrictive entrance, requires a small merging taper be provided for the out-bound movement. This taper does not appear to be included as part of the master plan layout. Considerations for this merging taper should be provided and was previously discussed with the applicant during preliminary meetings. This will likely require an adjustment to the proposed landscape terracing proposed just to the north of the entrance as additional space will be needed to shift the sidewalk and provide room for the taper. This should be accomplished as part of the master plan to ensure the required space is provided and configuration of the landscape terrace can be accurately represented.

Concerning the proposed site entrance on Turner Street, as represented on the master plan, the entrance appears to be approximately 50-feet wide at the right of way. This width exceeds the 40-foot maximum standard width required in the Access Management Standards. The entrance should be revised to limit the width to meet the requirements of Access Management. This would serve to better align the proposed entrance with the opposing Perry Street connection and provide for better pedestrian movement by limiting the width of the entrance crossing and better align the pedestrian crosswalk crossing Turner Street.

Analysis Area

The analysis area was developed in conformance with the recommendations of Town Staff and analyzed the impact at eleven (11) existing intersections;

- Prices Fork Road / Toms Creek (signalized)
- Prices Fork Road / Turner Street
- Prices Fork / Orchard Street
- Prices Fork Road / North Main Street (round-about)
- North Main Street / Progress Street (signalized)

- North Main Street / Gilbert Street
- North Main Street / Turner Street (signalized)
- Gilbert Street / Turner Street
- Perry Street / Stanger Street
- Perry Street / Turner Street
- Stanger Street / Future BT Entrance (future round-about)

Two (2) day - 12-hour existing traffic counts were obtained at these locations to establish the current volumes and movement distributions.

Level of Service Analysis

A review of the Level of Service Analysis provided in the traffic study indicates that the intersections most impacted by the proposed development are the intersections of Prices Fork Road / Toms Creek, Prices Fork / Orchard / Site Entrance, Prices Fork Road / North Main Street Roundabout and Turner Street / Perry Street / Site Entrance. The greatest impacts occur during the PM peak hour time frame and are summarized as follows;

➤ **Prices Fork Road / Toms Creek**

The Level of Service, at this signalized intersection, should remain at an overall LOS D with a maximum increase in total delay of approximately 4.5 seconds per vehicle during the PM peak hour. The total anticipated delay would be 35.9 seconds during the AM peak hour and 54.9 seconds in the PM peak hour. This Level of Service meets the requirement of Section 5-307 of the Subdivision Ordinance as LOS D is maintained for the peak hour volume.

➤ **Prices Fork Road / Orchard Street / Site Entrance**

The Level of Service, at this un-signalized intersection, should remain at LOS A with a slight decrease in total delay of approximately 0.9 seconds per vehicle during the PM peak hour. The total anticipated delay would be 1.0 seconds during the AM peak hour and 1.5 seconds in the PM peak hour. This Level of Service meets the requirement of Section 5-307 of the Subdivision Ordinance.

A major factor in the overall LOS delay decrease is the impact of reconfiguring the entrance to restrict out-bound left movement from Orchard Street and the Site Entrance. The minor approaches from Orchard Street and the Site Entrance would experience reductions as great as LOS E (46.9 seconds) to LOS B (10.2 seconds) during the PM peak hour.

➤ **Prices Fork Road / North Main Street Roundabout**

The Level of Service, at this un-signalized intersection currently operates at an overall LOS A (9.0 seconds) during the AM peak hour and LOS B (14.1 seconds) during the PM Peak hour. Based on the anticipated development impacts the AM peak hour will drop to LOS B, with an anticipated increase in total delay of 1.6 seconds per vehicle. The PM peak hour will drop to LOS C, with an anticipated increase in total delay of 5.5 seconds per vehicle. The total anticipated delay would be 10.6 seconds during the AM peak hour and 19.6 seconds in the PM peak hour. This Level of Service meets the requirement of Section 5-307 of the Subdivision Ordinance as the drop in peak hour LOS is not below level D.

➤ **Turner Street / Perry Street / Site Entrance**

*Special Note: The LOS analysis, provided as part of the traffic impact analysis, was performed as a 2-way stop control for the Perry Street and Site Entrance legs only. This is notable as the consultant engineer has recommended a 4-way stop control condition. *

If maintained as a minor leg stop controlled intersection, the Level of Service at this un-signalized intersection should remain at LOS A during the AM peak hour and drop from LOS A to LOS B during the PM peak hour. A maximum increase in total delay of approximately 7.6 seconds per vehicle during the PM peak hour is anticipated. The total anticipated delay would be 4.9 seconds during the AM peak hour and 14.2 seconds in the PM peak hour. This Level of Service meets the requirement of Section 5-307 of the Subdivision Ordinance.

The major factor in the overall LOS delay increase is the introduction of the site entrance leg of the intersection which would immediately experience a LOS F with an anticipated delay of 79.5 seconds. A delay of this nature would not be advisable but is allowed as the site entrance delay creates impacts only within the private development and is not governed by the Subdivision Ordinance.

The sizable delay introduced at the proposed site entrance is likely the reason a 4-way stop control condition is being recommended, as it would provide relief to the site entrance delay by reallocating the delay to the other legs of the intersection. Though the LOS and queuing analysis for the 4-way stop control condition was not provided, as part of the traffic impact analysis, there is information indicating that the Turner Street movement would experience a maximum increase in delay from 6.6 seconds (LOS A) to 23 seconds (LOS C) during the PM peak hour. In addition, the anticipated queuing length of vehicles could grow to 140-ft, or just under half the distance back to Prices Fork Road.

Conclusions

The proposed development is anticipated to add a significant number of vehicular trips to the adjoining road network. Impacts are anticipated to be most notable along Turner Street, and Prices Fork Road, at the revised intersections of Turner Street / Perry Street / Site Access, Prices Fork Road / Sites Access and at the existing intersections of Prices Fork Road / Toms Creek and Prices Fork Road / North Main Street.

Mitigation measures are warranted at both of the proposed site access entrances that are not currently included as part of the traffic impact analysis or master plan layout. These measures would be critical in managing the proposed development impacts to the adjacent roadway networks and require additional consideration.

Summary of Recommended Revisions

- Provide right tune lane warrant analysis for the in-bound movement to the site access proposed at the intersection of Turner Street / Perry Street and at the T-intersection of Turner Street / Gilbert Street.
- Provide the LOS and Queuing Analysis for the proposed 4-way stop control condition at the intersection of Turner Street / Perry Street / Site Entrance
- Revise the reconfigured Prices Fork Road entrance design to include the warranted full width right turn lane and taper.
- Revise the reconfigured Prices Fork Road entrance design to include the appropriate exit taper per Access Management Guidelines
- Revise the entrance design for the proposed site access onto Turner Street to reduce the entrance width per Access Management Guidelines.
- Revise the proposed intersection design for the Turner Street / Perry Street / Site Access to include either the warranted left turn lane or consultant engineer recommended 4-way stop control condition.

MEMORANDUM

DATE: October 4, 2019

TO: Kinsey O'Shea, Planner

FROM: Randy Formica, Director, Engineering and GIS Department

TITLE: RZN 19-0007-Gilbert Street Mixed-Use Re-development-Orchard Street Pedestrian Access

Background-The pedestrian/bicycle access issue along the Prices Fork Road corridor between the roundabout at North Main Street and the Prices Fork Road/Toms Creek Road/Stanger Street intersection has been under review by the Town. Several improvements have been installed by the Town to provide a safer environment including removal of a mid-block crosswalk at Webb Street, the installation of countdown pedestrian signal heads at the traffic signals at Prices Fork Road/Toms Creek Road and the installation of a median barrier between Toms Creek Road and Orchard Street to discourage mid-block crossings by pedestrians. The purpose of these measures are to encourage pedestrians to choose the safer signalized crossing at Toms Creek Road and Stanger Street. These improvements were intended to provide interim solutions to the issue while the Town performed a study to determine what additional improvements should be constructed.

Current project-The Town funded a Capital Improvement Program project to review the area between Webb Street and Toms Creek Road. The majority of the pedestrian trips originate at Webb Street due to the proximity of The Edge student housing development.

The Town's consultant has prepared a preliminary design and Staff has meet with the affected adjacent property owners. The proposed improvements include a widened sidewalk with landscaping strip along the north side of Prices Fork Road between Webb Street and Toms Creek Road and a pedestrian staging area on the northeast corner of Prices Fork Road and Toms Creek Road. In addition, bike boxes and painted bike lanes will be installed at the intersection of Prices Fork Road, Toms Creek Road and Stanger Street. Finally, a more aesthetically pleasing barrier is planned for the median between Toms Creek Road and Orchard Street.

This second phase of improvements provides additional interim solutions and also serves in providing a safer pedestrian and bicycle environment in the corridor.

Future projects-The Town anticipates future re-development along this corridor in addition to this rezoning, therefore, the current project is the initial phase of a larger Prices Fork Road pedestrian and bicycle corridor study. There is a funded Capital Improvement Program project whose scope is to study pedestrian/bicycle pathways to

the University area. This project will be utilized for further study of the Prices Fork Road corridor between Toms Creek Road and the roundabout. The Town is in the process of developing the scope of work for this phase and the hiring of a consultant. This project will provide a conceptual plan of improvements that will enhance the safety of pedestrians and bicyclists using the corridor. This conceptual plan will be the basis for developing future transportation Capital Improvement Program projects.

Applicant Proposal For Orchard Street Pedestrian Access-The applicant has proposed extending the fence as a median barrier from its current terminus up to the roundabout at North Main Street.

Recommendation-Staff would recommend not extending the fence as a median barrier until the initial improvements are constructed and the corridor study is completed. The conceptual plan may provide other options or recommendations other than a median barrier for this area.