

Prentice Drive/Lockridge Road West

Shellhorn Road to Lockridge Road



PREPARED FOR:



ATTACHMENTS

CPAM-2014-0002

ZMAP-1998-0003 Concept Development Plan

STPL-2015-0011

Prentice Drive and Lockridge Road West
Preliminary Typicals, Plans, and Profiles

Project Schedule

Opinion of Probable Costs

PREPARED BY:

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Project Description

Prentice Drive and Lockridge Road West are located in the Ashburn District of Loudoun County. Of the proposed extensions of these roads, the Loudoun County 2010 Revised Countywide Transportation Plan (CTP) stated, “these improvements would complete the planned road network between and proximate to the two planned Metrorail stations along the Dulles Greenway at Route 606 and at Route 772.” The segments of roadway subject to this alignment concept study are identified within Appendix 1 of the CTP as project segments 131, 149, and 150.

This project also is located within an area defined by Loudoun County as the Silver Line Policy Area. As of the date of this study, a comprehensive plan amendment (CPAM-2016-0002) is anticipated to be passed by the Loudoun County Board of Supervisors in late 2016. While the adoption of CPAM 2016-0002 will not impact the general alignments of either Prentice Drive or Lockridge Road West, adoption of the CPAM will impact the typical sections of the roadways.

The general alignments of Prentice Drive and Lockridge Road West were established as part of a board-initiated comprehensive plan amendment (CPAM-2014-0002) passed on July 1, 2015 (please see Attachment 1).

Figure 1 reflects the alignments of Prentice Drive and Lockridge Road West as approved in CPAM-2014-0002. These alignments were originally recommended in the Kimley-Horn (KH) study, Loudoun County Transportation Prioritization Study for the Area Surrounding the New Metrorail Stations dated July 2013. The KH study recommended the completion or implementation of several transportation system improvements prior to the opening of Metrorail in the 2018 – 2019 timeframe, one of which was the need for an additional direct road connection between the Ashburn and Loudoun Gateway Metrorail Stations.

Both Prentice Drive and Lockridge Road West are planned four-lane divided urban roadways. The majority of the right-of-way required for this project is located on private property and has not been reserved.

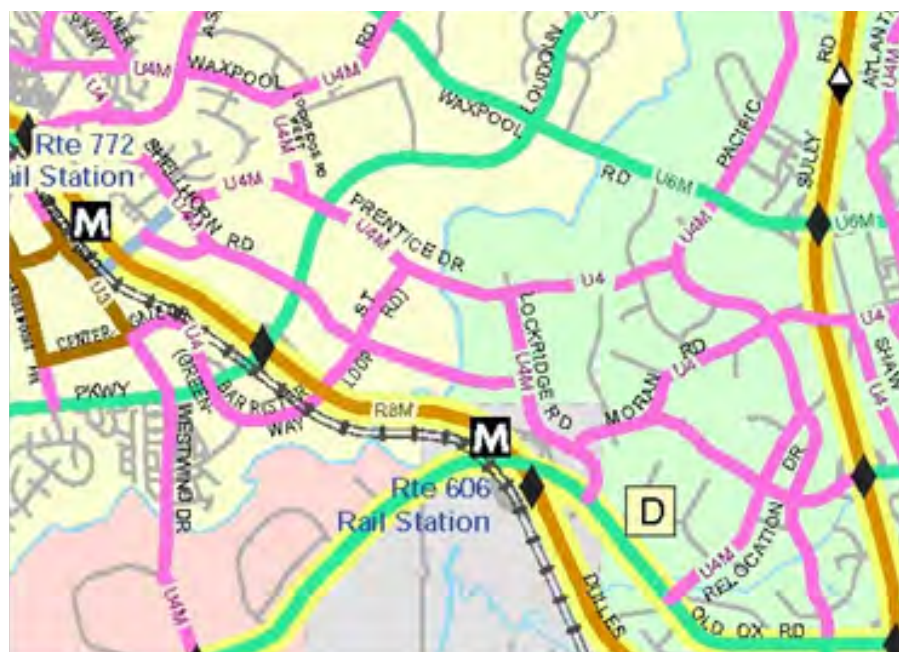


Figure 1. Alignments as Approved in CPAM-2014-0002

One crossing of Broad Run is included as part of this project. **Figure 2** shows the view looking north along Broad Run. The proposed bridge for Prentice Drive crosses at this location just south of the existing Dominion Transmission Line Easement.



Figure 2. View Looking North Along Broad Run

Project Elements (Please See Conceptual Plans and Profiles)

Roadway Segments:

The proposed project includes approximately 1.6 miles of new roadway alignment (Prentice Drive), which extends existing Prentice Drive from its intersection with Lockridge Road at the eastern terminus of the project to Shellhorn Road at the western terminus of the project. Also included within the project scope is approximately 0.4 miles of new roadway alignment (Lockridge Road West) from Prentice Drive to Waxpool Road. The major elements that make up the complete project are as follows:

- ◆ 8,500-foot segment of new roadway (Prentice Drive) from Shellhorn Road to Lockridge Road tying into Metro Center Drive and existing Prentice Road (CTP road segments 149 and 150)
- ◆ 2,000-foot segment of new roadway (Lockridge Road West) from the new Prentice Drive to Waxpool Road (CTP road segment 131)

Cross Sections

As previously mentioned in this study, the cross sections of Prentice Drive and Lockridge Road West are subject to the approval of the Silver Line Policy Area Comprehensive Plan Amendment (CPAM-2016-0002). This study uses the typical sections currently outlined in the document entitled “Silver Line Small Area Plan — Working Draft” (SLSAP) dated September 13, 2016 and anticipated to be approved as part of CPAM-2016-0002. Based on the SLSAP, Prentice Drive and Lockridge Road West are classified as “boulevards.” **Figure 3** reflects the road network classification within the Silver Line Policy Area.



Figure 3. Road Network Classifications per the Silver Line Policy Area

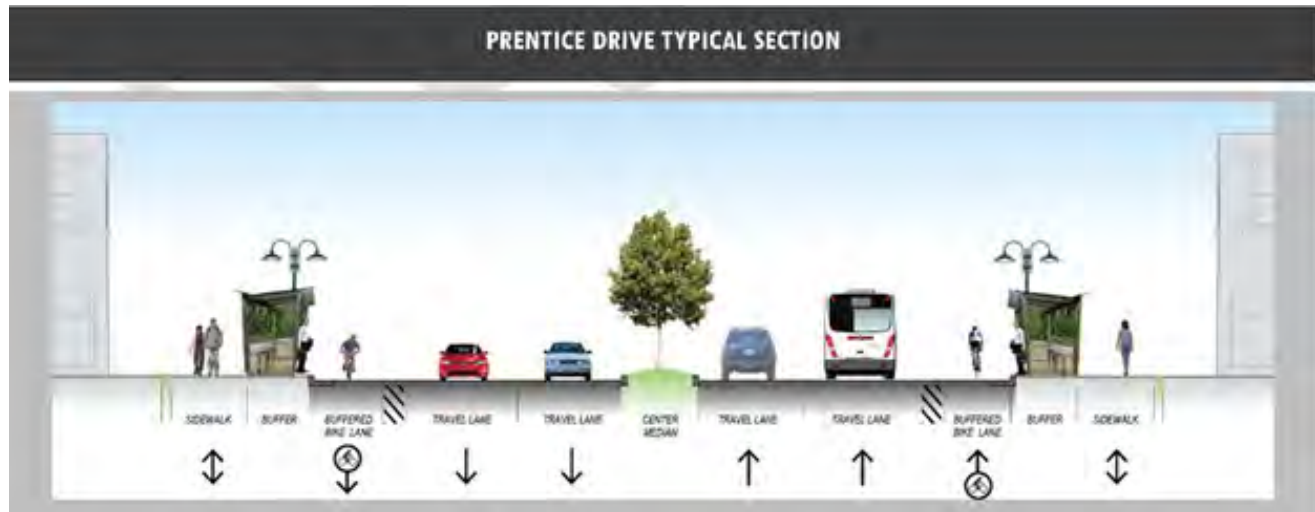


Figure 4. Prentice Drive Typical Section

Figure 4 shows the proposed typical section for both Prentice Drive and Lockridge Road West as reflected in the SLSAP.

The typical section used in this study reflects the proposed section above. The typical section for the proposed roadway will include the following (please see the typical section sheet for an illustration of the proposed typical section—Attachment 4):

- ◆ 110 feet of right-of-way
- ◆ 4-lane divided roadway
- ◆ 13-foot median to allow for a single left-turn lane
- ◆ 10-foot multi-use path (north side of Prentice Drive and east side of Lockridge Road West)
- ◆ 8-foot sidewalk (south side of Prentice Drive and west side of Lockridge Road West)
- ◆ 6-foot-wide on-street buffered bike lanes on both sides with traffic

Intersection Improvements

New intersection improvements are proposed as part of this project at the following locations:

- ◆ New traffic signal at Shellhorn Road and Prentice Drive
- ◆ New traffic signal at Loudoun County Parkway and Prentice Drive (the proposed future location of this intersection and signal along Loudoun County Parkway is shown in **Figure 5**)



Figure 5. Proposed Location of the Loudoun County Parkway and Prentice Drive Intersection and Traffic Signal

- ◆ New traffic signal at Prentice Drive and Lockridge Road
- ◆ New roundabout at Waxpool Road and Lockridge Road West

Drainage/Environmental

Roadway drainage systems and stormwater management facilities will be required along both proposed roadways. The drainage collection system has not yet been sized. Drainage inlet and pipe quantities are based on road profiles and impervious areas. Based on topography, proposed impervious areas, and road profiles, it is assumed that three stormwater management BMP facilities will be required as part of the overall project. Stormwater management best management practices (BMP) facilities have been preliminarily sized based on proposed impervious areas.

The Prentice Drive extension will require the construction of a significant bridge over Broad Run. The bridge is anticipated to be similar in nature to the bridge carrying Gloucester Parkway over Broad Run to the north of this project. The bridge would consist of two separate structures—the southern bridge would carry the eastbound Prentice Drive traffic and the sidewalk, while the northern bridge would support the westbound Prentice Drive traffic and the shared-use path (please see the bridge transverse section on plan sheet 1 of Attachment 4 for more details). Based on the proposed alignment, the proposed bridge would be 800 feet in length (please see plan sheets 4 and 10 of Attachment 4 for proposed bridge location).

In addition to impacting the Federal Emergency Management Agency (FEMA) floodplain associated with Broad Run, the proposed Prentice Drive extension alignment runs parallel to and directly south of an existing FEMA floodplain associated with a tributary to Broad Run. Based on the proposed alignment, additional FEMA floodplain impacts should be expected.

There will be one major culvert crossing along Lockridge Road West that is located near the new Prentice Drive intersection. The water there flows from west to east toward Broad Run. Preliminary calculations show that this proposed culvert under Lockridge Road West could be a single 6-foot-by-8-foot box culvert that is approximately 120 feet long.

Observations during a project site visit indicate that wetland impacts are likely. These impacts, in conjunction with floodplain impacts, will require permitting through the U.S. Army Corps of Engineers (USACE) and Virginia Department of Environmental Quality (VDEQ). Additional mitigation may be required depending on future environmental due diligence. Habitats for several threatened and endangered species of plants and animals could be impacted by this project. Northern long-eared bats (NLEB) may be impacted due to the densely forested areas (please see [Figure 6](#)) in which this future road will be located. If NLEB habitat is found within the project area, the construction schedule could be impacted by time-of-year restrictions for tree clearing. Small whorled pogonia habitat also could be identified based on the presence of densely forested areas. Several species of freshwater mussels could be impacted due to impacts to Broad Run.



Figure 6. Densely Forested Area

Grade-Separated Intersections

There are no planned grade-separated intersections along this segment of roadway.

Utilities

During the field investigations of this future road corridor, the following utilities were discovered that may become potential conflicts:

- ◆ **Electrical** — Overhead power lines cross Prentice Drive east of Loudoun County Parkway. There are three parallel overhead electrical lines (shown in [Figure 7](#)) that cross the proposed alignment of Prentice Drive. The preliminary alignment and profile of Prentice Drive has been set to avoid conflicts with the high steel post transmission lines. However, two of the distribution line poles may require relocation prior to construction.



Figure 7. Overhead Power Lines Crossing Prentice Drive

- ◆ **Sanitary** — There is a sanitary line, shown in **Figure 8**, that runs along the east side of Lockridge Road West and along the north side of Prentice Drive. The existing sanitary line crosses the new Lockridge Road West in the floodplain near the proposed culvert. Design of the storm system serving both Prentice Drive and Lockridge Road West should consider the location of the existing sanitary sewer to minimize relocation requirements.



Figure 8. Sanitary Line Along Lockridge Road West and Prentice Drive

- ◆ **Telecommunications/Fiber** — There are underground communication lines crossing Prentice Drive near Broad Run. There also are several lines (please see **Figure 9**) that run along the east side of Loudoun County Parkway near the future intersection with Prentice Drive.



Figure 9. Underground Communication Lines

- ◆ **Reclaimed Water** — An underground reclaimed water line was recently constructed along the east side of Lockridge Road West and the north side of Prentice Drive from Lockridge Road West to Loudoun County Parkway. **Figure 10** is a picture that was taken during the installation of a new water valve for the reclaimed water line.



Figure 10. Installation of a New Water Valve

- ◆ **Gas** — No signs of a gas line were observed during field investigations within the proximity of this road corridor.

Right-of-Way Considerations

A 90-foot right-of-way reservation/dedication on the Worldcom Northern Virginia Campus for Lockridge Road West is shown in Attachment 2. The 90-foot right-of-way was reserved as part of ZMAP-1998-0003. **Figure 11** shows the approximate limits of the right-of-way dedication. Note that land disturbance within the right-of-way reservation is the result of the installation of a reclaimed waterline by Loudoun Water. The following language regarding the reservation was taken directly from paragraph II.B(c) of the proffers associated with the rezoning:



Figure 11. Approximate Limits of the Right-of-Way Dedication

“Route 789. The CDP depicts an alignment for Route 789, in the approximate location shown on the Countywide Transportation Plan. The Owner has shown this potential alignment because Route 789 is contemplated by the Countywide Transportation Plan to provide an ultimate additional four lane road and bridge crossing across Broad Run. However, the Owner has also suggested to the County an alternative location for an east/west crossing of Broad Run and has requested that the County initiate a Comprehensive Plan Amendment (“CPAM”) process to consider the elimination of Route 789 Extended from the location depicted on the CDP. If the CPAM process results in the elimination of Route 789 Extended from the location depicted on the CDP, then the reservation of right of way for Route 789 shall be void and of no further force and effect, effective as of the date on which such CPAM becomes final and non appealable. If the CPAM process does not result in the elimination of Route 789 from the location depicted on the CDP, then this reservation of right of way for Route 789 shall remain in effect for a period of twenty (20) years from the date of approval of ZMAP 1998 0003, and the Owner shall dedicate such right of way for public road improvements at such time as the County has completed construction plans and profiles for Route 789 through the Property, including a bridge across Broad Run. Any costs incurred by the Owner in constructing Route 789 as a regional road pursuant to the Countywide Transportation Plan may be credited against the regional road funds to be contributed by the Owner pursuant to Paragraph II G below.”

Approval of ZMAP-1998-0003 occurred on June 17, 1998. Based on this proffer language, final plans for both Prentice Drive and Lockridge Road West must be completed (note that a specific definition for the word “completed” is not given within the proffers) prior to June 17, 2018, in order for the 90-foot right-of-way for Lockridge Road West to be dedicated to Loudoun County at no cost. If final plans have not been completed by the June 17, 2018, date, it appears that the right-of-way reservation will expire and Loudoun County will be responsible for the full purchase price of the right-of-way required for Lockridge Road West.

In addition to the reservation/dedication mentioned above, a site plan entitled Loudoun Metro Data Centers LM5 – LM8 (STPL-2015-0011) is in review by Loudoun County Building & Development. The referenced site plan is included as Attachment 3. The site plan reflects a right-of-way reservation for Prentice Drive, which is highlighted in the preliminary plans in red. Use of the right-of-way reservation is infeasible, as the reservation is located within a Broad Run tributary flood plain.

Proffer Analysis

In addition to the right-of-way reservation/dedication discussed previously, proffers associated with ZMAP-1998-0003, Proffer II.D(1)(c) states that Worldcom or its successors and assigns shall be financially responsible for the construction of the traffic signal at Prentice Drive and the Loudoun County Parkway.

Impacts to Ongoing Private Land Development

The proposed alignment of the Prentice Drive extension impacts several ongoing private land development projects. The current approved site plan for Van Gogh Ventures, LLC (STPL 2014-0024) does not account for the future alignment of Prentice Drive. Attachment 4 provides an overlay of the proposed Prentice Drive extension on the current approved site plan.

Similarly, the current approved site plans for Zebra Ventures, LLC (STPL 2013-0032 and STPL 2015-0011) do not account for the extension of Prentice Drive. Attachment 4 provides an overlay of the proposed Prentice Drive extension on the subject site plans.

Other Project Elements of Note

In addition to the information provided previously, the following additional project elements should be considered as part of this project:

- ◆ Additional intersection improvements are required where the proposed roadway connections tie in to existing roadways
- ◆ As the proposed Prentice Drive extension alignment does not align with existing median breaks along Loudoun County Parkway, a reconfiguration of the existing median breaks will be required as part of the project
- ◆ This project will require close coordination with all property owners to determine access management and the characteristics of the road

Project Status

This project is proposed to be funded in the Loudoun County FY2017 Adopted Fiscal Plan during fiscal years 2017 and 2020-2021. The 2017 Adopted Budget estimates the project cost at \$89,650,000.

Implementation Actions

This project has been identified and is currently in the planning stage. The next major implementation steps are as follows:

- ◆ Finalize scoping and feasibility
- ◆ Initiate preliminary design

Project Schedule

The proposed schedule followed the current county delivery process for the major project phases. The schedule is based on funding becoming available for this project in July 2016. Major project element durations are as follows (please see the attached detailed proposed project schedule—Attachment 5):

Preliminary Design	11 months
Intermediate Design	4 months
Final Design	5 months
Right-of-Way Acquisition	12 months
Utility Relocation	22 months
Project Bidding	6 months
Construction	27 months

Planning-Level Costs

Planning-level cost opinions were performed for the proposed engineering, right-of-way, and construction of the Prentice Drive and Lockridge Road West extensions. This cost analysis is based on preliminary conceptual layouts and field review of the project area, and is subject to change. An opinion of cost for each project phase is included below (please see the attached itemized opinion of cost for details—Attachment 6).

Preliminary Engineering (PE)	\$6,300,000
Right-of-Way & Utility Relocations (RW)	\$25,100,000
Construction & Contingency (CN):	\$48,400,000
Total Cost	\$79,800,000

Attachments

1. CPAM-2014-0002
2. ZMAP-1998-0003 Concept Development Plan
3. STPL-2015-0011
4. Prentice Drive and Lockridge Road West Preliminary Typicals, Plans, and Profiles
5. Project Schedule
6. Opinion of Probable Costs

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