

FREDERICKSBURG AREA METROPOLITAN PLANNING ORGANIZATION (FAMPO)

Fredericksburg City
Spotsylvania County
Stafford County

Gary Skinner
Chairperson

Lloyd Robinson
FAMPO Administrator

FAMPO RESOLUTION 12-33

A RESOLUTION OF THE FREDERICKSBURG AREA METROPOLITAN PLANNING ORGANIZATION TO AUHORIZE STAFF TO AMEND THE KIMLEY-HORN CONTRACT FOR THE JACKSON GATEWAY INTERCHANGE STUDY TO ALLOW FOR PHASING OF THE OVERALL PROJECT

WHEREAS, for the past several years FAMPO has funded an Interchange study of the Jackson Gateway portion of I-95, extending from Exit 126 south to Exit 118, and

WHEREAS, this work has been conducted under the auspices of a Working Group of Federal, State and local government officials and FAMPO staff, supported by a consultant team, and

WHEREAS, the Jackson Gateway Working Group has developed a Preferred Alternative for extensive modifications to the existing Exit 126, new collector distributor lanes and new I-95 access in the Jackson Gateway area south of Exit 126, and

WHEREAS, the total cost for this Preferred Alternative is in the range of \$450 million, which can be phased into several lower cost segments which can be constructed individually, with independent utility and without harming I-95, and

WHEREAS, in order to obtain Federal approval for both the Preferred Alternative and for the individual phases, additional work is required to demonstrate that the individual phases have independent utility and will do no harm to I-95, and

WHEREAS, as shown in the attachment to this Resolution, the consultant team has shown it can complete this need extra work in six weeks, at a cost not to exceed \$45,000, and

WHEREAS, fully consistent with its Unified Planning Work Program (UPWP), FAMPO can contribute \$20,000 to the cost of this extra work, while Spotsylvania County has offered to contribute the remaining \$25,000, and

WHEREAS, amending the consultant contract to complete this extra work will require approval of the George Washington Regional Commission Board;

NOW, THEREFORE BE IT RESOLVED BY THE FREDERICKSBURG METROPOLITAN PLANNING ORGANIZATION (FAMPO) POLICY COMMITTEE THAT IT HEREBY RECOMMENDS THAT THE GEORGE WASHINGTON REGIONAL COMMISSION (GWRC) BOARD DIRECT STAFF TO MAKE SUCH AGREEMENTS WITH KIMLEY-HORN AND SPOTSYLVANIA COUNTY AS ARE REQUIRED TO FUND AND COMPLETE THE ADDITIONAL WORK REQUIRED TO PHASE THE PREFERRED ALTERNATIVE IMPROVEMENTS IN THE JACKSON GATEWAY AREA OF I-95.

Adopted by the FAMPO Policy Committee at its meeting on November 19, 2012.

FAMPO Resolution 12-33



Chairman

Fredericksburg Area Metropolitan Planning Organization

Date: 11/19/2012



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Gary Skinner
FAMPO Chairman

Lloyd Robinson
FAMPO Administrator

MEMORANDUM

TO: Lloyd Robinson, FAMPO Administrator
FROM: Andy Waple, Principal Planner
DATE: November 7, 2012
SUBJECT: Route 3 Travel Demand Modeling Request

During the October 22nd FAMPO Policy Committee Meeting, FAMPO staff was asked to conduct a travel demand model run to illustrate the impacts of converting the westbound right-turn lane on Route 3 in Spotsylvania County to a full travel lane. We have completed that work, and this memorandum contains the findings of the model run, along with other issues and concerns that would need to be addressed prior to implementing this improvement.

Current Conditions (2010 Network)

As shown in the attached mapping, the current Volume to Capacity Ratio (V/C) for Route 3 (westbound lanes only), in its current configuration of 3 through lanes and 1 continuous right-turn lane in this area, ranges from 1.64 (LOS F) at Bragg Road to 1.05 (LOS F), just west of Chewning Lane in the PM peak period. The daily V/C Ratios for the same westbound segment are 1.15 (LOS F) and 0.73 (LOS C) respectively. The total daily traffic volumes for this segment range from 47,987 (Bragg Rd.) to 30,680 (just west of Chewning Ln.).

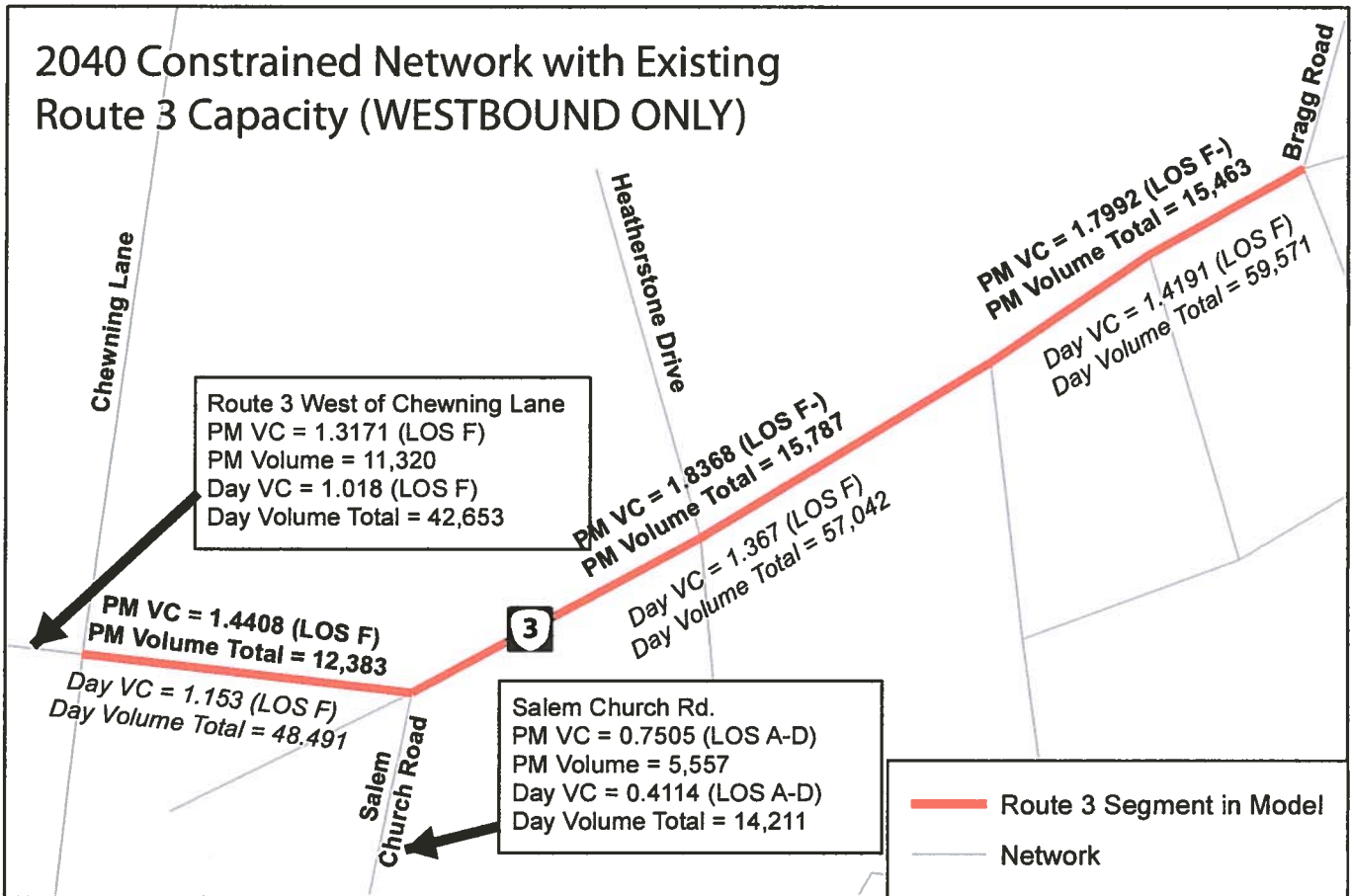
If the existing westbound continuous right-turn lane is converted into a fourth travel lane/right-turn lane along Route 3 in the westbound direction from Bragg Road to Chewning Lane, the resulting V/C Ratio range would improve from 1.35 (LOS F) at Bragg Road to 0.74 (LOS C) just west of Chewning Lane in the PM peak period. The daily V/C Ratios for the same westbound segment are 0.90 (LOS E) and 0.66 (LOS B) respectively. The total daily traffic volumes, in the westbound direction only, for this segment of Route 3 range from 49,672 (Bragg Rd.) to 31,018 (just west of Chewning Ln.).

In the near term the addition of an extra travel lane in the westbound direction will therefore help to alleviate congestion. The FAMPO travel demand model also shows that the addition of the extra travel lane would induce some additional travel demand.

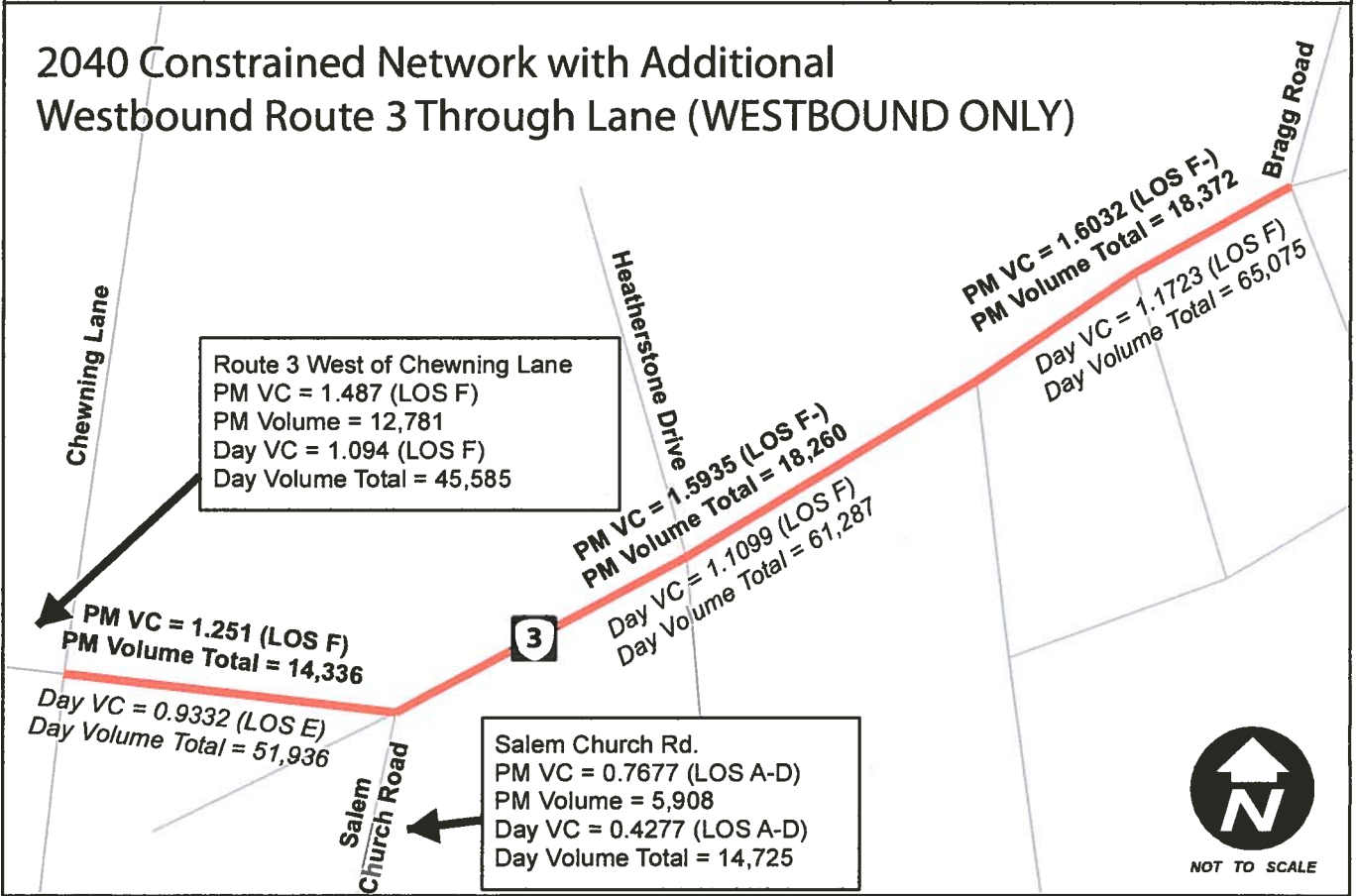
Horizon Year Conditions (2040)

As shown in the attached mapping, in 2040, with the assumption that the 2040 Constrained Highway Network is in place, the resulting V/C Ratio without the converted right-turn lane would range from 1.79 (LOS F) at Bragg Road to 1.31 (LOS F) just west of Chewning Lane in the PM peak period. The daily V/C Ratios for the same westbound segment are 1.41 (LOS F) and 1.01 (LOS F) respectively. The total daily traffic volumes, in the westbound direction only, for this segment of Route 3 range from 59,571 (Bragg Rd.) to 42,653 (just west of Chewning Ln.).

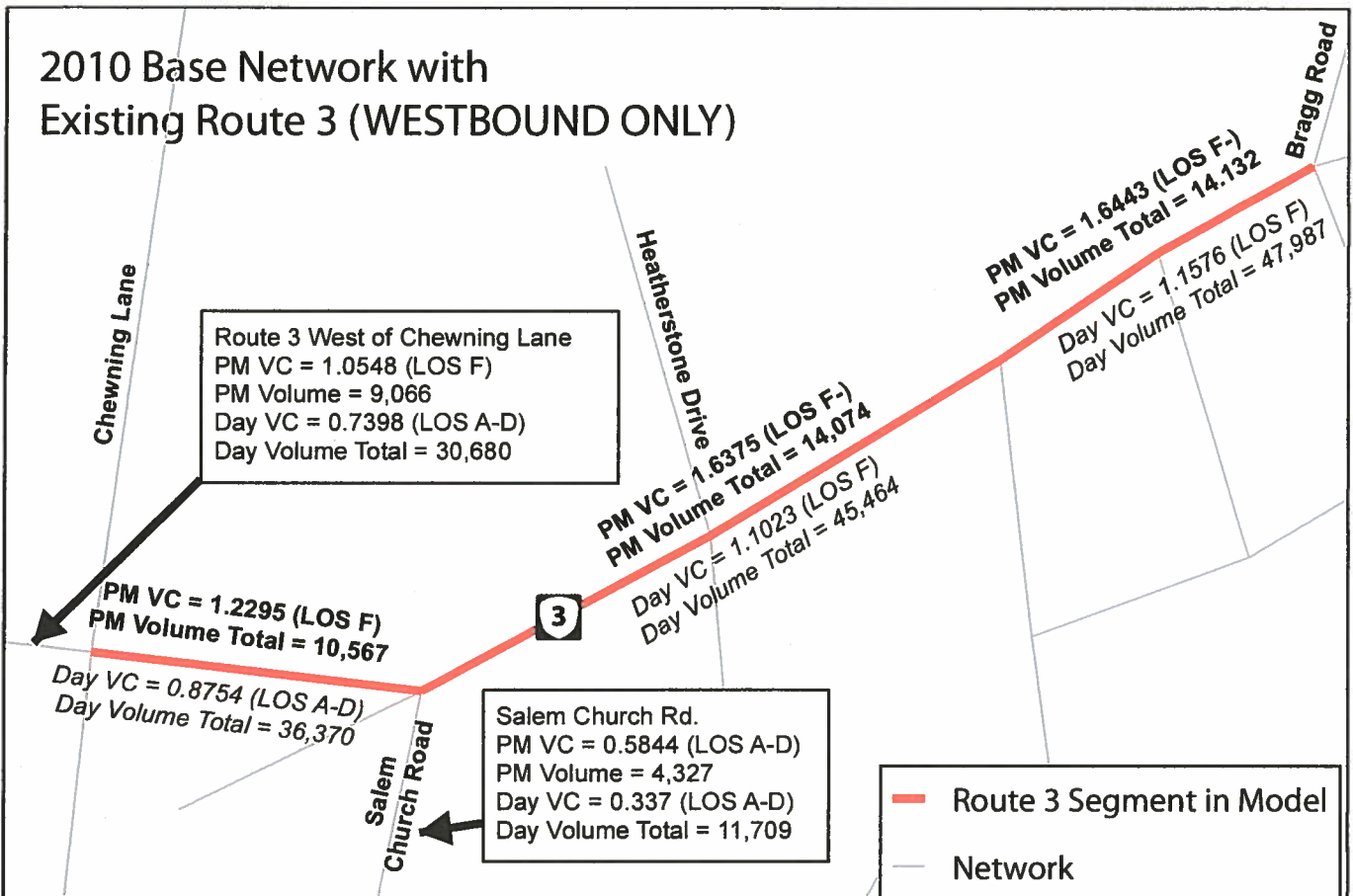
2040 Constrained Network with Existing Route 3 Capacity (WESTBOUND ONLY)



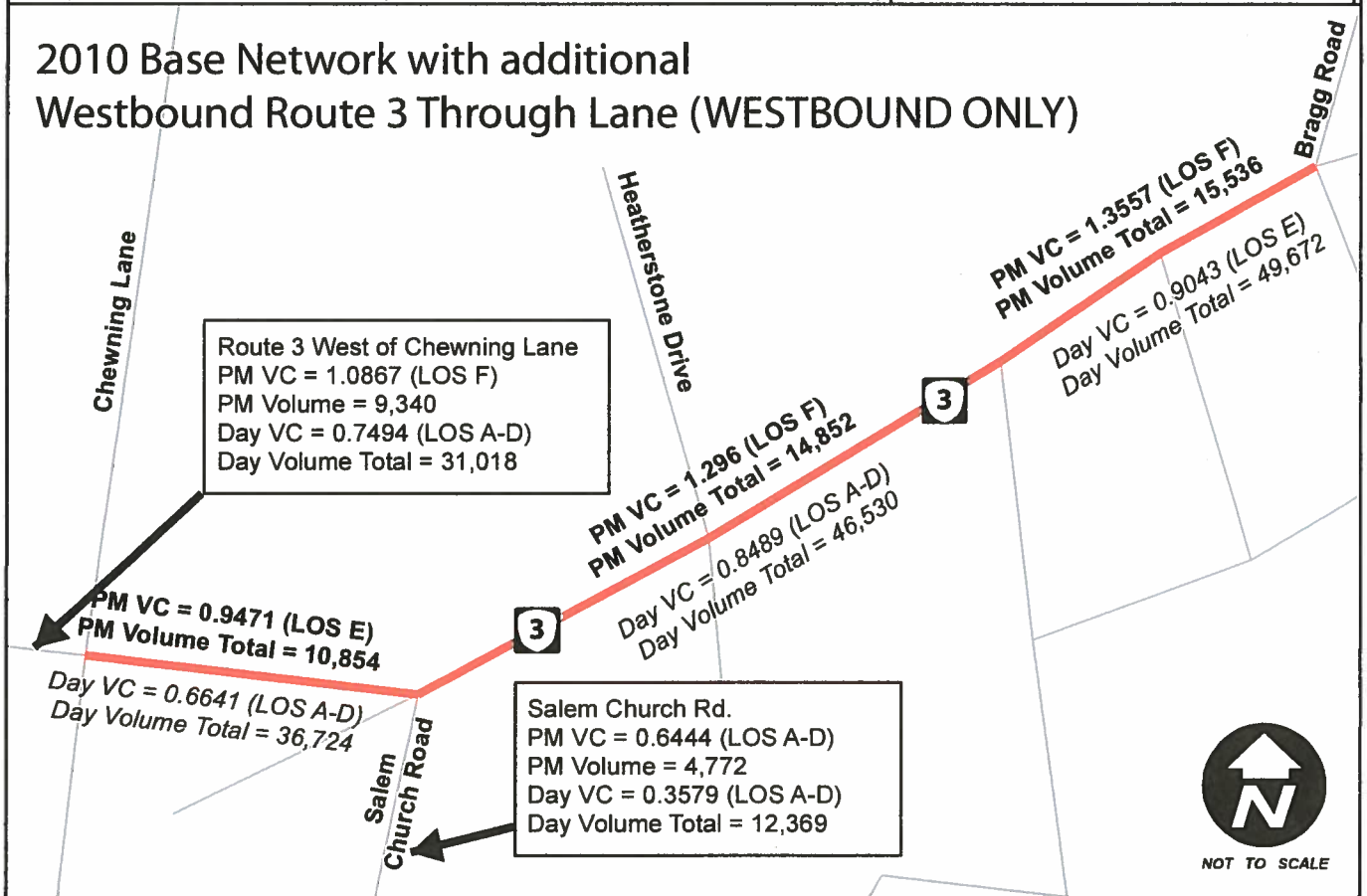
2040 Constrained Network with Additional Westbound Route 3 Through Lane (WESTBOUND ONLY)



2010 Base Network with Existing Route 3 (WESTBOUND ONLY)

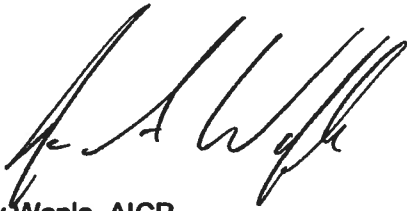


2010 Base Network with additional Westbound Route 3 Through Lane (WESTBOUND ONLY)



- A traffic analysis of the existing conditions, including: daily and peak hour traffic volumes; analyses of intersection and roadway delay and level of service using traffic modeling software such as Synchro and Corsim
- A traffic analysis of the build conditions, including: daily and peak hour traffic volumes; analyses of intersection and roadway delay and level of service using traffic modeling software such as Synchro and Corsim
- A detailed safety analysis of the overall corridor
- Analysis of establishing inter-parcel connections, a new local roadway to serve the connections
- Analysis of needed intersection improvements/reconfigurations to accommodate the additional travel lane
- Considerations for transit access and pedestrian accommodations
- An inventory of right-of-way impacts
- An estimate of costs associated with the recommended improvements
- A public outreach component to work with affected businesses and other interests, looking towards implementation of a project

To scope and cost this study the FAMPO on-call consultants could be asked to propose scopes and budgets. To fund this study, funds would need to be identified, as FAMPO currently has no available resources for this purpose.



Andy Waple, AICP
Principal Planner
Fredericksburg Area Metropolitan Planning Organization

Attachments:

Base Year (2010) LOS Map
Horizon Year (2040) LOS Map

In 2040, again with the assumption that the 2040 Constrained Highway Network is in place, the resulting V/C Ratio with the converted right-turn lane would range from 1.60 (LOS F) at Bragg Road to 1.48 (LOS F) just west of Chewning Lane in the PM peak period. The daily V/C Ratios for the same westbound segment are 1.17 (LOS F) and 1.09 (LOS F) respectively. The total daily traffic volumes, in the westbound direction only, for this segment of Route 3 range from 65,075 (Bragg Rd.) to 45,585 (just west of Chewning Ln.).

While this improvement may marginally increase traffic throughput in the immediate improvement area, the modeling shows that a bottleneck will be created when the fourth lane tapers back to a three-lane facility at Chewning Ln. The lower traffic volumes in the 2040 Constrained Network without the converted lane indicate that traffic is using other facilities, such as Harrison Road, to reach their destinations to the west. Due to the increased capacity created by the conversion of the fourth lane, additional demand is created, pulling traffic from other facilities like Harrison Rd.

Conclusion from the Modeling

The conversion of the continuous right-turn lane into a full travel lane is not a long-term solution to the Route 3 congestion problem. As the travel demand modeling clearly shows, this segment of Route 3 still fails in 2040 with or without this improvement in place.

Other Concerns

Converting the existing westbound right-turn lane to a full travel lane/right-turn lane could have significant impacts on the operations and safety of Route 3, especially during the heavy traffic volumes experienced during the PM peak period. In its current configuration, from 2005-2009, there have been 528 crashes on the segment of Route 3 from Bragg Road to Chewning Lane. Motorists both entering and exiting Route 3 from the various businesses will create dangerous start and stop conditions and added weaving movements which have the potential of increasing rear-end and side crashes in a corridor with an already high crash rate.

In order to mitigate these potential problems, several of the access points for the businesses along the corridor would have to be closed and those businesses would have to be served via inter-parcel connections and then, possibly, tied into the local road system that already intersects with Route 3 (such as Bragg Rd., Heatherstone Dr, and Chewning Ln.). This would entail the purchase of right-of-way, the construction of a new local roadway and the establishment of new access points to affected businesses.

Each of the signalized intersections (Bragg Rd., Heatherstone Dr., and Chewning Ln.) would also have to undergo various levels of reconstruction to accommodate the added through lane. Intersection reconstruction costs can range from a few hundred thousand to several million dollars, depending on the extent of needed modifications and right-of-way impacts. It should also be noted that the parcel abutting the Route 3/Heatherstone Dr. Intersection (northwest quadrant) is owned by the United States National Park Service and is part of the Fredericksburg and Spotsylvania National Military Park.

Therefore a detailed corridor plan would have to be undertaken to fully understand the impacts of this improvement. The corridor plan should include, at a minimum, the following: