CONTENTS

Executive Summary ............................................................................................................................................. i

1. Introduction .................................................................................................................................................. 1
   1.1 Rosslyn – Active, Urban, Accessible, Growing ....................................................................................... 1
   1.2 Sector Plan: Realize Rosslyn .................................................................................................................. 2
   1.3 Core of Rosslyn Transportation Study Initiation and Timeline ............................................................. 3
      1.3.1 Study Area ......................................................................................................................................... 3
      1.3.2 Study Timeline and Milestones ....................................................................................................... 5
      1.3.3 Goals and Objectives ....................................................................................................................... 6
      1.3.4 Focus Areas .................................................................................................................................... 6

2. Study Methodology ....................................................................................................................................... 8
   2.1 Scope of Study ......................................................................................................................................... 8
   2.2 Data Sources and Uses .......................................................................................................................... 9
   2.3 Performance Measures ........................................................................................................................ 10
   2.4 Comparative Assessment .................................................................................................................... 13

3. Engagement Strategy ................................................................................................................................... 14
   3.1 Study Stakeholders ............................................................................................................................... 14
   3.2 Engagement Milestones ......................................................................................................................... 15
   3.3 Additional Engagement Activities ....................................................................................................... 15
   3.4 Future Engagement .............................................................................................................................. 16

4. Existing Conditions ..................................................................................................................................... 17
   4.1 Summary of System Operations and Conditions .................................................................................. 17
      4.1.1 Travel Patterns ............................................................................................................................... 18
EXECUTIVE SUMMARY

In 2015, the Arlington County Board adopted the Rosslyn Sector Plan, which included a multimodal transportation vision set forth by the community. In 2017, Arlington County initiated the Core of Rosslyn Transportation Study to assess the feasibility and potential impacts of the proposed changes to the transportation network in Rosslyn through the year 2030 included in the Rosslyn Sector Plan.

The Core of Rosslyn Transportation Study and Implementation Plan examines the feasibility and potential impacts of permanent changes to the street network in the core of Rosslyn with the goals of improving safety and accessibility for all users—those walking, biking, using transit, and driving—and recommends next steps for implementation of specific street improvement projects that, over time, will result in realizing the study’s 2030 Preferred Alternative scenario for the Rosslyn street network.

Core of Rosslyn Transportation Study

The Core of Rosslyn Transportation Study has analyzed travel patterns in Rosslyn and outlined a plan for implementation of the Rosslyn Sector Plan’s transportation goals during the next 10 years. The analyses have enabled an informed evaluation of how the street changes proposed in the Rosslyn Sector Plan could feasibly be phased and implemented within the available to the public right-of-way.

The outcome of this study is a recommended program of projects that can be implemented by 2030. The projects are systematically phased for incorporation into the County’s Capital Improvement Program (CIP). The study also includes key transportation projects contingent on redevelopment in Rosslyn’s core, as well as projects that will require future study and analysis.

This study examined the feasibility and potential impacts of permanent changes to the street network in the core of Rosslyn. With the goals of improving safety and accessibility for all users—those walking, biking, using transit and driving—the study aims to:

- Transform Rosslyn’s street system into an enhanced grid network of complete streets
- Enhance transit facilities, operations, and connections serving Rosslyn while transforming the area into one of the region’s premier transit hubs
- Transform the pedestrian and bicycle network into a safer, more attractive, and more accessible place to walk and bike
- Coordinate and manage the most effective and efficient performance of Rosslyn’s transportation network to support the area’s future growth

The study’s objectives also reflect the goals of the Rosslyn Sector Plan and include:

- Evaluating multimodal design concepts (Concept 1 then Concept 2)
- Measuring how each concept achieves the Sector Plan goals
- Engaging the public and stakeholders
- Adopting a 2030 Preferred Alternative concept composed of individual projects that will move through the County’s design process
- Sequencing those projects to create a fluid network transition into 2030
- Identifying improvements that go beyond 2030 to continue realizing the Rosslyn Sector Plan in the future

Engagement Strategy and Study Milestones

The Core of Rosslyn Transportation Study team’s engagement strategy was designed with the goal of generating meaningful dialogue between the study team, the public, and stakeholders on transportation issues related to the assessment and design processes. A diverse group of stakeholders and several engagement milestones and meetings helped to guide the study team in identifying community desires, generating solutions, and building acceptance for the transportation network improvements proposed through the study process as shown in Figure E.1.

However, this Final Report and Implementation Plan is not the end for public input and feedback. The community and stakeholders of Rosslyn have been involved in the County’s planning process from the Sector Plan through the Core Study and will continue with each project resulting from the Core Study as it moves through design and implementation. Larger scale projects will have larger scale engagement efforts, while smaller scale projects may be communicated through local engagement channels.
In 2017, Arlington County in partnership with the Rosslyn Business Improvement District (BID), began the Core of Rosslyn Study to examine how to implement the Rosslyn Sector Plan’s street network recommendations through horizon year 2030.

**SUMMER 2018 CONCEPT 1 ALTERNATIVE**
County staff utilize the transportation forecast model to test Concept 1, which includes all baseline conditions plus improvements based on the sector plan.

**WINTER 2018 EXISTING CONDITIONS & FUTURE DEVELOPMENT**
To begin the study, County staff review existing transportation conditions and anticipated redevelopment leading up to 2030. This information is used to develop 2030 population and employment estimates that will be used to predict travel patterns.

**2015 ROSSLYN SECTOR PLAN**
The Rosslyn Sector Plan, adopted in 2015, includes plans for street network changes to improve the neighborhood’s multimodal connections.

**FALL 2017 STUDY KICKOFF**
The Core of Rosslyn Transportation Study analyzes the changes recommended in the sector plan. The study will result in a list of projects to be built between today and 2030 to realize the neighborhood vision.

**WINTER 2019 CONCEPT 2 ALTERNATIVE**
County staff develop Concept 2 based on lessons learned and public feedback from Concept 1. Then staff tests the changes in the 2030 transportation forecast model.

**FALL 2018 STUDY PUBLIC MEETING #2**
In October 2018, County staff and the Rosslyn BID host a public meeting to present Concept 1 to the public and solicit community feedback.

**SUMMER 2018 STUDY PUBLIC MEETING #1**
The first public meeting for the study showcases the baseline analysis and calls for feedback on the existing conditions and future assumptions for the study area. The baseline transportation forecast model is used in analysis for different conceptual iterations.

**SPRING 2019 STUDY PUBLIC MEETING #3**
Arlington County and the Rosslyn BID host a public meeting in March 2019 to showcase the changes from Concept 1 to Concept 2.

**SPRING 2019 PREFERRED ALTERNATIVE**
County staff develop a preferred alternative that achieves the goals of the sector plan as best as possible by 2030.

**SUMMER 2019 STUDY PUBLIC MEETING #4**
Arlington County and the Rosslyn BID host a public meeting in summer 2019 to review the Preferred Alternative.

**SUMMER 2019 PHASING & PROGRAMING**
County staff assess costs and phasing for each project proposed in the Preferred Alternative.

**2019+ IMPLEMENTATION**
Implement the preferred alternative with a phased set of projects through 2030. Each project will require design analysis, funding allocation, and community engagement.

**ADDITIONAL ELEMENTS 2020+**
Upon completion of the Core Study, County staff continue to study sector plan elements and make recommendations for street network changes that could not be achieved by 2030.
Existing Conditions

This Core of Rosslyn Transportation Study has been informed, influenced, and enhanced by a long and rich history of strategic planning in Rosslyn and in Arlington County. The study team revisited the following source materials throughout the project:

- Arlington County Master Transportation Plan
- Rosslyn Briefing Book (2012)
- Rosslyn Multimodal Transportation Study (2012)
- Rosslyn Station Area Plan Addendum (1992)
- Rosslyn Transit Station Area Study (1977)

With this foundation of references, the critical first step of the Core of Rosslyn Transportation Study was for the study team to conduct an assessment of the existing conditions, needs, challenges, and opportunities with respect to transportation and mobility in Rosslyn.

The study team worked to summarize the overall state of transportation and urban design in the Core Street Reconfiguration Area of Rosslyn, including travel patterns, the transit network, the pedestrian network, the bicycle network, the vehicular network, parking and curbspace, and urban design.

- The Rosslyn transit network includes Metrorail service, local bus service, commuter bus service, intercity bus, and private shuttles.
- The sidewalk, crosswalk, and trail network in the study area represent the main components of the Rosslyn pedestrian network, which is in some places characterized by long block lengths and sidewalks adjacent to blank walls or building services entrances.
- Rosslyn is near regional trails such as the Custis Trail, the Mt. Vernon Trail, the Arlington Boulevard Trail, and bridge crossings on the Key Bride and Theodore Roosevelt Bridge. N. Lynn Street is the only street with marked on-street bike lanes within the study area and the bike lane is often blocked by idle vehicles. Protected bicycle lanes have been recently added along Wilson Boulevard west of the study and will ultimately connect the Courthouse neighborhood to the Custis Trail.
- During peak hours the vehicular network experiences long queues at critical intersections, a number of intersections that operate with significant delay, and several critical street segments with travel speeds that are less than 50 percent of posted speed limits.
- Various uses of curbspace exist in the study area, with signed ‘no parking’ areas taking up approximately half of the curbspace (by length). Other competing curbspace uses include on-street parking, carshare parking, bus stops, bikeshare docks, loading zones, taxi stands, bus parking, and pick-up and drop-off area for Transportation Network Companies such as Uber and Lyft.
- Rosslyn’s urban design features close spacing of street lights, streetscaping, and landscaping on most blocks. Large swaths of impervious areas do exist, however, and Arlington County emphasizes the reduction of impervious areas and the addition of streetscaping enhancements in new projects as vital to develop sustainable and desirable places to live, work, and play.

Future Conditions and Multimodal Design Concepts

2030 Baseline Scenario

To capture future network changes from existing conditions, the study team analyzed 2030 Baseline scenario conditions. Future 2030 Baseline conditions take into account funded transportation projects or approved redevelopment site plan conditions that are expected to occur separately from the Core of Rosslyn Transportation Study. Key elements of the 2030 Baseline scenario include:

- 2018: short-term improvements to the road network – restriping and additional roadway markings to help guide traffic along eastbound Lee Highway and Fort Myer Drive
- Multimodal improvements such as bike lanes, bus bay relocations, and improved sidewalks that will be built with development projects
- Transit route changes proposed in Arlington County’s Transit Development Plan
- Opening of the Central Place Transit Tunnel, eastbound from N. Moore Street to N. Lynn Street
- Capital Improvement Program (CIP) projects:
  - Lynn Street Esplanade and Custis Trail Improvements
  - Meade Street Bridge Design and Street Improvements
The 2030 Baseline conditions serve as a comparison point for the future 2030 Concept 1, 2030 Concept 2, and 2030 Preferred Alternative.

**2030 Concept 1**

The study team built upon the analyses of existing and future year conditions to develop Concept 1, conduct quantitative and qualitative analyses of Concept 1, and arrive at conclusions that guided the development of subsequent concepts. The 2030 Concept 1 scenario comes as close as possible to the transportation network design proposed in the Rosslyn Sector Plan; however, there are certain locations where there is not enough County-owned right-of-way to achieve the envisioned Rosslyn Sector Plan street cross sections. In these locations, the study team made tradeoffs to accommodate and balance the transportation modes in accordance with Rosslyn Sector Plan’s policies and vision.

Key elements of 2030 Concept 1 include:
- Conversion of N. Lynn Street, N. Moore Street, and Fort Myer Drive to two-way streets
- Strong emphasis on enhancing the bike network with the addition of protected facilities along northbound N. Lynn Street, southbound Fort Myer Drive, and westbound Wilson Boulevard
- Removal of the Fort Myer Drive tunnel under Wilson Boulevard, bringing the intersection of Wilson Boulevard and Fort Myer Drive entirely to-grade
- Removal of 17th Street N. access to N. Lynn Street and reallocating the previous ramp space along N. Lynn Street to sidewalk area
- Removal of the bus tunnel connection between N. Moore Street and N. Lynn Street (the two-way conversion of N. Lynn Street rendered the bus tunnel a less efficient route)
- Modified intersection of Fairfax Drive, Fort Myer Drive, and N. Lynn Street (including the removal of the slip lane access from Fort Myer Drive to N. Lynn Street).

**2030 Concept 2**

Taking lessons learned from the development and analysis of Concept 1, the study team developed Concept 2 and conducted similar quantitative and qualitative analyses of this concept. Whereas Concept 1 primarily focuses on one-way to two-way conversion of major north-south streets in the Core Street Reconfiguration Area, Concept 2 maintains one-way operations on N. Lynn Street and N. Moore Street and includes most other changes listed in the Rosslyn Sector Plan.

Key elements of 2030 Concept 2 include:
- N Lynn Street remains one-way with off-peak parking and a northbound protected cycle track at sidewalk level
- Protected bike lanes on N. Lynn Street northbound (south of Wilson Boulevard), Wilson Boulevard westbound, and Wilson Boulevard eastbound
- Conversion of Fort Myer Drive to two-way operations and removal of the tunnel under Wilson Boulevard, bringing the intersection of Wilson Boulevard and Fort Myer Drive entirely to-grade
- Addition of a signalized mid-block crosswalk on Fort Myer Drive
- Addition of a southbound protected cycle track at sidewalk level to Fort Myer Drive
- Modified intersection of Fairfax Drive, Fort Myer Drive, and N. Lynn Street (including the removal of the slip lane access from Fort Myer Drive to N. Lynn Street)
- Removal of 17th Street N. access to N. Lynn Street and reallocating the previous ramp space along N. Lynn Street to sidewalk area
- Addition of a protected bike lane on 19th Street N eastbound and bike lane on 19th Street N.
- Adjusted intersection of Meade Street and US Route 50 ramps to allow for vehicle to access northbound Fort Myer Drive from the off-ramps

2030 Concepts 1 and 2 are shown in Figure E.2, below.
2030 Concept 1

- Designed from recommendations from the Rosslyn Sector Plan with refinement based on public input and additional planning.
- Includes conversion of N. Lynn St., N. Moore St., and Fort Myer Dr. to two-way streets.
- Places strong emphasis on enhancing bike network with addition of protected facilities.

This concept comes as close as possible to the designs proposed in the Rosslyn Sector Plan given the available county-owned right of way. In places where not enough land was available for the proposed streetscape, tradeoffs were made to accommodate and balance multiple modes.

CONVERTED N. LYN ST. TO TWO-WAY STREET
CONVERTED FORT MYER DR. TO TWO-WAY STREET
REMOVED FORT MYER DR. TUNNEL
RELOCATED PARKWAY ACCESS TO FORT MYER DRIVE
CONVERTED N. MOORE ST. TO TWO-WAY STREET
ADDED PROTECTED BIKE LANES TO N. LYN ST. (NB), FORT MYER DR. (SB), WILSON BLVD (WB)
ADJUSTED INTERSECTION OF FAIRFAX DR., FORT MYER DR., AND N. LYN ST.
REMOVED 17TH ST. N ACCESS TO N. LYN ST.
REMOVED BUS TUNNEL

2030 Concept 2

- Includes conversion of Fort Myer Dr. to a two-way street.
- Places strong emphasis on enhancing bike network with addition of protected facilities.
- Applies lessons learned and public input from Concept 1 to better balance multimodal operations.

N LYN ST REMAINS ONE-WAY WITH OFF-PeAK PARKING
ADDED NB PROTECTED CYCLE TRACK AT SIDEWALK LEVEL TO N LYN ST
ADDED PROTECTED BIKE LANES TO N LYN ST NB, WILSON BLVD WB, AND WILSON BLVD EB (LYNN TO ARLINGTON RIDGE)
REMOVED FORT MYER DR TUNNEL (DETERMINED BEST FOR OPERATIONS)
ADDED SIGNALIZED MID-BLOCK CROSSWALK ON FORT MYER
ADDED SB PROTECTED CYCLE TRACK AT SIDEWALK LEVEL TO FORT MYER DR (CONNECTS TO MEADE ST BRIDGE)
REMOVED DARK STAR PARK SLIP LANE AND ADJUSTED INTERSECTION
REMOVED 17TH ST N ACCESS TO N LYN ST
ADDED PROTECTED BIKE LANE ON 19TH ST N (FORT MYER TO LYNX) AND BIKE LANE ON 19TH ST N (LYNN TO ARLINGTON RIDGE)
ADJUSTED INTERSECTION OF MEADE ST AND US-50 ON-RAMPS

Key Elements of 2030 Concept 1
- Designed from recommendations from the Rosslyn Sector Plan with further refinement based on more detailed planning.
- Includes conversion of N. Lynn St., N. Moore St., and Fort Myer Dr. to two-way streets.
- Places strong emphasis on enhancing bike network with addition of protected facilities.

Key Elements of 2030 Concept 2
- Includes conversion of Fort Myer Dr. to a two-way street.
- Places strong emphasis on enhancing bike network with addition of protected facilities.
- Applies lessons learned and public input from Concept 1 to better balance multimodal operations.
2030 Preferred Alternative

The Preferred Alternative was provided to the community for review and comment in June of 2019. The Preferred Alternative applies lessons learned and public input from Concepts 1 and 2 to better balance multimodal operations. The Preferred Alternative, shown in Figure E.3, includes the following major projects that stem directly from the Rosslyn Sector Plan to be constructed over the next 10 years:

- Removal of the Fort Myer Drive Tunnel to increase pedestrian crossing options (access to Metro) over Fort Myer Drive and to help reduce vehicle speeds in the Rosslyn urban core.
- Incremental conversion of Fort Myer Drive to a two-way street once the tunnel is closed.
- Emphasis on enhancing the bicycle network within the Rosslyn core by including continuous, protected bicycle/scooter facilities on Fort Myer Drive, North Lynn Street, Nash Street, and Wilson Boulevard. These connections within the Rosslyn core will also serve to enhance connections to major regional bike routes.
- Enhancing the pedestrian experience through the removal of slip lanes, enhancement of 18 existing or new crosswalks, and inclusion of wider sidewalks.
- Reconfiguration and signalization of the intersection of westbound US-50 and Meade Street to allow for northbound traffic flow on Fort Myer Drive and to improve pedestrian and bicycle access.

**Figure E.3: 2030 Preferred Alternative**

Key Elements of 2030 Preferred Alternative

- Includes removal of the Fort Myer Dr tunnel and incremental conversion of Fort Myer Dr to a two-way street.
- Places emphasis on enhancing the bicycle and pedestrian networks within the Rosslyn core, including wider sidewalks and continuous, protected facilities on Fort Myer Dr, N Lynn St, and Wilson Blvd.
- Includes reconfiguration and signalization of the intersection of westbound US-50 and Meade St to allow for northbound traffic flow on Fort Myer Drive.
- Applies lessons learned and public input from Concepts 1 and 2 to better balance multimodal operations.
What’s Next?

Implementing all of the changes from the 2030 Baseline to the 2030 Preferred Alternative shown in the overall concept plan will require a series of street-by-street projects. The report describes each project, cost, and timeline, as shown in the example in Figure E.4.

As the implementation projects move forward into programming, design, and construction, additional efforts will be necessary to further realize the Preferred Alternative, including:

**Transit Stop Assessment.** As development increases and travel patterns evolve, the County will continue to assess locations of transit stops for ART and WMATA service. As Fort Myer Drive evolves, the County will assess opportunities to integrate new or relocate bus stops onto the streetscape.

**Curb space Management.** Transportation-related uses compete for a limited amount of curb space on many of the streets in Rosslyn. Parking, loading zones, taxis, transportation network companies (TNCs, i.e., Uber, Lyft, etc.), transit, bike share, scooters, mopeds, and even driveways and curb ramps are all possible needs along a street curb. Arlington will continue to optimize curbspace, meeting a balance of needs location by location as development and streetscape changes take place.

**Hired Ride Services.** Taxis, transportation network companies (TNCs, i.e., Uber, Lyft, etc.), and similar services will continue to need access to passengers. The County will continue to coordinate and evolve with developments in this aspect of transportation in Rosslyn, reacting with improvements in policies, regulations, and curb space management.

**Two-Way N. Lynn Street.** While this Core of Rosslyn Transportation Study concluded that converting N. Lynn Street to two-way traffic is not practical by 2030, the Rosslyn Sector Plan’s vision of a two-way N. Lynn remains. The County will continue to look for the right opportunity to convert this street.

**Connections to Gateway Park.** As the Gateway Park space and its uses continue to evolve to meet the needs of Arlington’s citizens, multimodal connections will also need to continue to improve with development opportunities.

![Figure E.4: Project Summary Sheet Example](image-url)
1. INTRODUCTION

In 2015, the Arlington County Board adopted the Rosslyn Sector Plan, which included a multimodal transportation vision set forth by the community. In 2017, Arlington County initiated the Core of Rosslyn Transportation Study to assess the feasibility and potential impacts of the proposed changes to the transportation network in Rosslyn through the year 2030 included in the Rosslyn Sector Plan.

The Core of Rosslyn Transportation Study and Implementation Plan examines the feasibility and potential impacts of permanent changes to the street network in the core of Rosslyn with the goals of improving safety and accessibility for all users—those walking, biking, using transit, and driving.

**Figure 1.1**: Projected Population and Employment Growth in Rosslyn

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>14,000</td>
<td>30,000</td>
</tr>
<tr>
<td>2020</td>
<td>20,000</td>
<td>45,000</td>
</tr>
<tr>
<td>2025</td>
<td>25,000</td>
<td>60,000</td>
</tr>
<tr>
<td>2030</td>
<td>30,000</td>
<td>75,000</td>
</tr>
</tbody>
</table>

Source: Arlington County, CPHD, Planning Division, Center for Urban Design and Research, December 2017

1.1 Rosslyn – Active, Urban, Accessible, Growing

Rosslyn is a highly urban neighborhood of Arlington County, home to 14,000 residents and more than 1,000 businesses employing over 30,000 highly educated workers, including industry-leading companies such as CEB, Deloitte, and Nestlé. The entirety of this population is situated within a compact ½ square mile with 6,000 residential units, 400,000 square feet of retail space, and 10 million square feet of office space. Between 2015 and 2030, Rosslyn is forecasted to see 42 percent population growth and 34 percent employment growth.

Rosslyn also is home to a dynamic and interconnected urban transportation system that offers those who live, work, and play in the neighborhood a wide range of choices for how they travel—and where they can go—using a diverse array of transportation modes. The neighborhood is walkable and has the highest foot traffic volumes in all of Arlington with active street-level spaces on many streets. Rosslyn’s central location within the Metropolitan Washington, DC area provides easy access to regional destinations via foot, bike, bus, rail, and car.

The Rosslyn Sector Plan, completed in 2015, created a consensus vision for Rosslyn that is progressive and forward-looking thanks to the investment of considerable time and effort by Arlington County, the Rosslyn community, and area stakeholders. This plan forms the foundation for the evolution of Rosslyn’s multimodal transportation system. Pivoting from that plan, Arlington County has developed this Core of Rosslyn Transportation Study and Implementation Plan to help the County and the many stakeholders of the Rosslyn Sector Plan realize the potential of Rosslyn’s transportation system in a 10-year period.

---

1 Rosslyn Business Improvement District, Business Advantages, [https://www.rosslynva.org/business/why-rosslyn](https://www.rosslynva.org/business/why-rosslyn)

2 Arlington County, CPHD, Planning Division, Center for Urban Design and Research, December 2017
horizon. This implementation plan recommends a balanced investment strategy that considers the many types of travelers and trips that contribute to the bustle that is Rosslyn, while at the same time enabling and catalyzing the greater Rosslyn vision.

1.2 Sector Plan: Realize Rosslyn

The Rosslyn Sector Plan planning process, “Realize Rosslyn,” kicked off in 2012 as the first in-depth review of planning in Rosslyn in 20 years. From public workshops, events, and one-on-one meetings to social media and virtual forums, the community worked together in a variety of ways to influence the vision of Rosslyn’s future.

The Rosslyn Sector Plan provides both a vision and a guide to growth and development over a 25-year timeframe. Some of The Plan’s transformative goals included:

- Transform Rosslyn’s street system into an enhanced grid network of complete streets.
- Enhance transit facilities, operations and connections serving Rosslyn, and make it one of the premier transit hubs in the region.
- Transform the pedestrian and bicycle network into a safer, more attractive and more accessible place to walk and bike.
- Coordinate and manage the most effective and efficient performance of Rosslyn’s transportation network to support the area’s future growth.

On July 23, 2015, the County Board unanimously voted to adopt the Rosslyn Sector Plan. This two-year community planning effort, which included input from a diverse group of residents, property owners, and business representatives, culminated in a comprehensive vision and plan to transform this economic hub of the County into a more walkable, dynamic, live-work-shop-play urban center and vibrant gateway to Arlington. The Sector Plan provided the springboard for this Core of Rosslyn Transportation Study.
1.3 Core of Rosslyn Transportation Study Initiation and Timeline

The Core of Rosslyn Transportation Study was initiated by the Arlington County Department of Environmental Services staff in 2017 to analyze travel patterns in Rosslyn and outline a plan for implementation of the Rosslyn Sector Plan’s transportation goals during the next 10 years. The analyses have enabled an informed evaluation of how the street changes proposed in the Rosslyn Sector Plan could feasibly be phased and implemented within the available to the public right-of-way.

The outcome of this study is a recommended program of projects that can be implemented by 2030. The projects are systematically phased for incorporation into the County’s Capital Improvement Program (CIP). The study also includes key transportation projects contingent on redevelopment in Rosslyn’s core, as well as projects that will require future study and analysis.

1.3.1 Study Area

As shown in Figure 1.3, the overall boundaries for the study extend from N. Rhodes Street to N. Arlington Ridge Road and between Arlington Boulevard (Route 50) to the George Washington Memorial Parkway/ Francis Scott Key Bridge. This overall area was considered for travel demand modeling scenarios which are further described in Section 2. The “Core of Rosslyn” area for implementing street reconfigurations introduced in the Rosslyn Sector Plan is bounded by the street connections to/from the Key Bridge and the George Washington Memorial Parkway on the north, the connections to the Meade Street Bridge and its interchange with Arlington Boulevard on the south, N. Oak Street and N. Nash Street on the west, and the Lynn Street corridor on the east.

High visibility markings for pedestrian crossings at the intersection of 19th Street and N. Lynn Street
Figure 1.3: Study Area
1.3.2 Study Timeline and Milestones

The Core of Rosslyn Transportation Study was initiated in the fall of 2017 and has proceeded through a logical sequence of tasks and milestones including major deliverables and meetings with stakeholders and the public. The following timeline provides an overview of actions the County has taken since the adoption of the Sector Plan:

### Sector Plan
- Adoption 2015

### Short-Term
- March 2017
  - Community Transportation Workshop
- 2017-2018
  - Neighborhood Improvement Projects
  - Tactical Urbanism Projects

### Long-Term (Core Study)
- Fall 2017: Study Kick-Off
- Winter 2018 Existing Conditions and Future Development
  - Spring 2018 Public Touchpoint 1 – Existing Conditions and Future Trends
- Summer 2018: Concept 1 Alternative Development and Assessment
  - Fall 2018 Public Touchpoint 2 – Review and Comment on Concept 1
- Winter 2019: Concept 2 Alternative Development and Assessment
  - Winter/Spring 2019 Public Touchpoint 3 – Review and Comment on Concept 2
- Spring 2019: Preferred Alternative Development and Detail
  - Summary 2019 Public Touchpoint 4 – Final Review and Comment on Preferred Alternative
- Summer 2019: Phasing and Programming of Study Recommendations
- 2019+ Implementation of Projects Set Forth Through this Study
- 2020+ Additional Studies and Analyses

Participants at the March 2017 Rosslyn Transportation Workshop
1.3.3 Study Goals and Objectives
The transportation goals for this study reflect those set forth in the Rosslyn Sector Plan and aim to:

- **Transform Rosslyn’s street system into an enhanced grid network of complete streets**
- **Enhance transit facilities, operations, and connections serving Rosslyn while transforming the area into one of the region’s premier transit hubs**
- **Transform the pedestrian and bicycle network into a safer, more attractive, and more accessible place to walk and bike**
- **Coordinate and manage the most effective and efficient performance of Rosslyn’s transportation network to support the area’s future growth**

The study’s objectives also reflect the goals of the Rosslyn Sector Plan and include:
- Evaluate multimodal design concepts (Concept 1 then Concept 2 then a Preferred Alternative)
- Measure how each concept achieves the Rosslyn Sector Plan goals
- Engage the public and stakeholders
- Adopt a 2030 Preferred Alternative concept composed of individual projects that will move through the County’s design process
- Sequence those projects to create a fluid network transition into 2030
- Identify improvements that go beyond 2030 to continue realizing the Rosslyn Sector Plan in the future

1.3.4 Focus Areas
With these goals and objectives as the foundation, the study team identified eight transportation study focus areas and specific strategies for these areas, as shown in Figure 1.4.
Figure 1.4: Transportation Study Focus Areas and Strategies

**Pedestrians**
- Enhance pedestrian experience and comfort
- Create a safer/easier street-crossing experience

**Bicycles**
- Increase the connectivity of Rosslyn's bicycle facilities to the County's large bike lane and trail network
- Provide protected and/or separated bike facilities

**Vehicles**
- Reduce impacts on vehicle delay and queuing at critical intersections
- Minimize impacts on travel time

**Transit**
- Increase accessibility of bus and rail transit
- Enhance transit operations

**Economic Development**
- Positively impact activity and growth

**Urban Design**
- Incorporate elements of sustainability (greenspace, pervious surface, etc.)
- Enhance streetscape and placemaking elements of the Rosslyn neighborhood
- Improve access to public spaces

**Parking and Curbspace**
- Improve public parking opportunities, on- and off-street
- Optimize curb space areas for multimodal use

**Implementation**
- Develop list of projects to be completed by 2030
- Establish high-level scopes, costs, and schedules
2. STUDY METHODOLOGY

2.1 Scope of Study

Building on the study’s goals, objectives, and focus areas, this Core of Rosslyn Transportation Study conducted numerous analyses addressing the multimodal elements shown in Figure 2.1. The study methodology began with collection and assessment of data, developing and evaluating multimodal transportation models, developing and applying performance measures, and then evaluating concepts against baseline conditions. The ultimate outcome of the analyses and comparative assessments has been the recommendation of a Preferred Alternative with a set of implementation projects that achieves an optimal street network by 2030 to advance the recommendations of the Rosslyn Sector Plan.

Figure 2.1: Multimodal Elements Addressed by Study
2.2 Data Sources and Uses

To complete the Core of Rosslyn Transportation Study, the study team collected and utilized a diverse set of data. The data collected for travel forecasting and traffic analysis consisted of traffic, travel pattern, mode share, socioeconomic, and development data. This traffic-related data accounted for all modes of transportation including vehicles, bicycles, pedestrians, transit, and parking. The study team also conducted field travel time runs and field reviews to identify traffic operational issues and bottlenecks.

Table 2.1 briefly describes the data collected for travel forecasting and traffic analyses. Further information about the data employed in this study is provided in Appendix B, Core of Rosslyn Transportation Study Existing Conditions Report.

<table>
<thead>
<tr>
<th>Tool</th>
<th>Use</th>
</tr>
</thead>
</table>
| Existing Data Counts, StreetLight, Parking, Surveys, Google Maps Application Programming Interfaces (API) | • Balanced volumes  
• Travel patterns  
• Mode share  
• Garage access |
| Traffic Counts                      | • Travel patterns and demand             |
| Travel Time Runs                    | • Average travel times and speeds  
• Stop delay                           |
| Field Observations                  | • Queue lengths and duration  
• Traffic and bus flow  
• Bicycle and pedestrian activities  
• Confirm study area intersection geometry |

2.2 Modeling Tools

With the travel data collected and assessed, the study team made use of a series of modeling tools to understand both existing and future conditions in Rosslyn. First, the team conducted travel demand modeling (forecasting) to determine regional vehicular trips and growth patterns relative to Rosslyn, as well as potential mode share. This forecasting process used the then currently adopted version of the Metropolitan Washington Council of Governments (MWCOG) travel demand model (Version 2.3.70). From the output of this modeling effort, the team extracted a subarea model using a program called VISUM (Version 16), which refined traffic volumes and turning movements and was used for high-level concept screening.

Finally, the study team completed three different VISSIM modeling efforts (for Concept 1, Concept 2, and the Preferred Alternative). VISSIM is a microscopic multimodal traffic flow simulation software package that simulates interactions of multiple types of traffic including vehicles (cars, buses, trucks), bicycles, and pedestrians. VISSIM is part of a software suite—which also includes VISUM-used for traffic analysis and forecasting.

These modeling tools and their uses are summarized in Figure 2.2.

Figure 2.2: Study Modeling Tools and Uses

3. VISSIM Models
- Detailed study area network analysis
- Evaluate multimodal traffic operations and reporting performance measures

2. VISSUM Subarea Model
- Traffic volume refinement
- High-level concept screening

1. MWCOG Travel Demand Forecasting Model
- Regional vehicular trips/growth patterns relative to Rosslyn
- Review mode share
More detail on the travel demand forecasting analysis is provided in of the Core of Rosslyn Transportation Study Existing Conditions Report (Appendix B).

### 2.3 Performance Measures

Along with the modeling effort, the study team also developed performance measures to evaluate potential street reconfiguration alternatives with respect to the transportation goals of the Rosslyn Sector Plan. These performance measures were organized by focus area and each considered several individual measures of effectiveness (MOEs), both quantitative and qualitative. Applying these measures, the study team conducted performance evaluations that were focused on a comparative assessment between the future no-build conditions and the alternatives as well as differences between the alternatives, themselves. The overarching goal of the performance evaluation process was to identify the tradeoffs between modes of transportation to arrive at the Preferred Alternative.

Performance measures and MOEs are shown in Table 2.2. A map of the study area with the geographic limits depicted for each MOE is shown as Figure 2.3. The study area is further stratified into sub-designations to meet the needs of various technical analyses and to focus the most detailed analyses on the streets under consideration for reconfiguration. These study area sub-designations are described below:

- **Modeling Context Area** – The broadest boundary for the study area; included immediate regional connections and allowed the travel forecasting to factor in regional travel patterns and the implications of decisions on the larger network.

- **Operational Analysis Area** – Smaller than the Modeling Context Area, this was the area in which operational (traffic) analyses were conducted.

- **Core Street Reconfiguration Area (or Core Area)** – This was the concentrated area in which the street network reconfiguration alternatives were focused. This area had the most detailed multimodal analysis.

- **Critical Intersections** – Within the Core Street Reconfiguration Area, pedestrian and bicycle operational data was analyzed for this subset of intersections.

Additional details on performance measures, MOEs, potential evaluation tools, and the geographic limits for the performance measures are provided in Appendix B, Core of Rosslyn Transportation Study Existing Conditions Report.
<table>
<thead>
<tr>
<th>Mode/Element</th>
<th>Performance Measures</th>
<th>Measures of Effectiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transit</strong></td>
<td>• Accessibility of bus and rail transit</td>
<td>a. Quantity of Transit Person Trips</td>
</tr>
<tr>
<td></td>
<td>• Transit operation</td>
<td>b. Quality of Bus Stop Locations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. Quality of Bus Stop Facilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d. Transit Average Speed</td>
</tr>
<tr>
<td><strong>Pedestrian</strong></td>
<td>• Pedestrian experience and comfort</td>
<td>a. Quantity of Pedestrian Person Trips</td>
</tr>
<tr>
<td></td>
<td>• Street-crossing experience</td>
<td>b. Pedestrian Experience and Comfort</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. Quantity of Enhanced Crosswalks/Pedestrian Crossing Times</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d. Pedestrian Delay (Seconds) at Critical Intersections</td>
</tr>
<tr>
<td><strong>Bicycle</strong></td>
<td>• Connectivity of bicycle facilities to trail network</td>
<td>a. Quantity of Bicycle Person Trips</td>
</tr>
<tr>
<td></td>
<td>• Provision of dedicated bicycle facilities</td>
<td>b. Bicycle Network Connections to Local/Regional Trails</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. Quantity of New or Improved Dedicated Bicycle Facilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d. Bicycle Delay (Seconds) at Critical Intersections</td>
</tr>
<tr>
<td><strong>Vehicles</strong></td>
<td>• Vehicle delay and queuing at critical intersections</td>
<td>a. Quantity of Vehicular Person Trips</td>
</tr>
<tr>
<td></td>
<td>• Travel time</td>
<td>b. Queues at Critical Intersections</td>
</tr>
<tr>
<td></td>
<td></td>
<td>c. Overall Vehicle Delay at Intersections</td>
</tr>
<tr>
<td></td>
<td></td>
<td>d. Peak Period Travel Time/Speed</td>
</tr>
<tr>
<td><strong>Parking and Curbspace</strong></td>
<td>• Public parking (on- and off-street)</td>
<td>a. Quantity of On-Street Parking Supply</td>
</tr>
<tr>
<td></td>
<td>• Curbside management</td>
<td>b. Quantity of New Multimodal Curb Space</td>
</tr>
<tr>
<td><strong>Urban Design</strong></td>
<td>• Green infrastructure (such as landscaping, permeable pavements, street trees, etc.)</td>
<td>a. Percentage of Impervious Area</td>
</tr>
<tr>
<td></td>
<td>• Streetscape elements (benches, decorative walls, sitting areas, wider sidewalks, bicycle racks, pocket parks, etc.)</td>
<td>b. Percentage of Street Tree Coverage/Landscaping</td>
</tr>
<tr>
<td><strong>Economic Development</strong></td>
<td>Qualitative analysis of how all transportation changes will affect economic activity and growth potential</td>
<td>a. Impacts to Existing ROW and Property Owners</td>
</tr>
<tr>
<td><strong>Implementation</strong></td>
<td>• Project costs and right-of-way (ROW) needs</td>
<td>b. Implementation Timeline (Years)</td>
</tr>
<tr>
<td></td>
<td>• Desired implementation schedule</td>
<td>c. Days of Construction (Months)</td>
</tr>
</tbody>
</table>
Figure 2.3: MOE Geographic Limits Map
2.4 Comparative Assessment

The performance measures and MOE evaluation process set the stage for a comparative assessment by the study team to identify and compare the study outcomes and tradeoffs. The results of this assessment are presented in this report independently for each concept by focus area. These results intentionally convey the inherent tradeoffs that are required to implement the concept and allowed the study team and the public to identify those elements that were most important to achieving the Sector Plan goals. For each concept, the performance results are presented on a sliding color scale from least change to greatest change.

Assessment Scale
The concepts are assessed comparatively

GREATEST CHANGE  LEAST CHANGE

Figure 2.4: Comparative Assessment Scale and Summary Example

A comparative analysis summary sheet, shown in Figure 2.4, demonstrates the performance of each concept and identifies key MOE results. Supporting information, such as data, analysis, and project examples, was used to develop the comparative results and included in public outreach materials to add further detail to the concepts. The outcome of the comparative assessment of concepts and the additional input from stakeholders and the public informed the development of the Preferred Alternative.
3. ENGAGEMENT STRATEGY

The Core of Rosslyn Transportation Study team’s engagement strategy was designed with the goal of generating meaningful dialogue between the study team, the public, and stakeholders on transportation issues related to the assessment and design processes. A diverse group of stakeholders and several engagement milestones and meetings helped to guide the study team in identifying community desires, generating solutions, and building acceptance for the transportation network improvements proposed through the study process.

3.1 Study Stakeholders

The County’s Transportation Division created a Stakeholder Strategy Group to aid in shaping improvements to the street network in the core of Rosslyn. Strategy Group members included residents, business representatives, and the Rosslyn BID. These members participated in meetings at key milestones throughout the transportation study process and shared information about these efforts with their respective community networks.

In addition, other stakeholders engaged through the study’s strategy included:

- Employees who work in Rosslyn
- Commuters in and through Rosslyn
- County Board and Manager’s Office
- County staff from all departments
- Virginia Department of Transportation (VDOT), which controls major roadways in/around Rosslyn including US-50, Lee Highway, I-66, VA-11
- National Parks Service (NPS), which owns the George Washington Memorial Parkway (GWMP) and Memorial Bridge and is impacted by Rosslyn traffic
- District Department of Transportation (DDOT), which maintains the Key Bridge and Theodore Roosevelt Bridge, runs the DC Circulator with routes in Rosslyn, and is impacted by Rosslyn traffic
- Washington Metropolitan Area Transportation Authority (WMATA), which owns and operates Metrorail in Rosslyn and Metrobus routes through Rosslyn
3.2 Engagement Milestones

The following public meetings served as key engagement milestones and occurred throughout the entire study process, spanning from the review of existing conditions to the presentation of the preferred alternative.

**April 2018 Public Meeting**
- Review of existing conditions and assumptions for 2030 redevelopment and infrastructure forecasts

**October 2018 Public Meeting**
- Discussed pros and cons of Concept 1 – an alternative including all the infrastructure changes listed in the Rosslyn Sector Plan based on what could be realistically built by 2030

**March 2019 Public Meeting**
- Discussed pros and cons of Concept 2 – an alternative that incorporated public feedback and lessons learned from Concept 1.

**June 2019 Public Meeting**
- Reviewed the Preferred Alternative, learned about the individual project elements, and provided input on the draft products of the study.

3.3 Additional Engagement Activities

Additional engagement activities and coordination meetings were held with the public and stakeholders during the study’s Existing Conditions, Concept 1, Concept 2, and Preferred Alternative milestones.

**Coordination Meetings Held with Existing Conditions Milestone**
- Thursday, January 18 – Coordination meeting with VDOT and DDOT
- Wednesday, March 14 – Meeting with Transit on Bus Stop Locations
- Tuesday, March 27 – Comments Received from VDOT on Existing Conditions Models and Network
- Monday, April 2 – Rosslyn Strategy Group Meeting
- Tuesday, April 10 – Coordination Meeting with the Rosslyn BID
- Tuesday, April 17 – Public Meeting at the Marriott in Rosslyn
- Wednesday, April 18 – Online Engagement Portal Opens

**Coordination Meetings Held with Concept 1 Milestone**
- Friday, July 20 – Comments Received from VDOT on Baseline Models and Network
- Wednesday, September 19 – Rosslyn Strategy Group Meeting
- Monday, October 1 – Internal Meeting Regarding Potential Property Redevelopment in Core
- Tuesday, October 2 – Public Meeting at the Alcove in Rosslyn
- Wednesday, October 3 – Online Engagement Portal Opens
- Wednesday, November 7 – Large Group Internal Stakeholders Meeting Focused on Moore Street
- Wednesday, November 7 – Coordination Meeting with the Rosslyn BID
- Monday, November 26 – Meeting with Department of Environmental Services (DES) Leadership
- Tuesday, November 27 – Large Group Internal Stakeholders Meeting
Coordination Meetings Held with Concept 2 Milestone

- Friday, February 22 – Meeting with DES Leadership
- Tuesday, February 26 – Rosslyn Strategy Group Meeting
- Wednesday, March 6 – Meeting with the Rosslyn BID
- Friday, March 8 – Meeting with Developer on Potential Property Redevelopment in Core
- Wednesday, March 13 – Public Meeting at the Observation Deck in Rosslyn
- Wednesday, March 13 – Pedestrian Advisory Committee Meeting
- Thursday, March 14 – Online Engagement Portal Opens
- Thursday, March 14 – Rosslyn BID Urban Design Committee
- Friday, March 15 – MWCOG Travel Forecasting Subcommittee
- Monday, March 18 – Coordination Meeting with VDOT at VDOT Fairfax
- Wednesday, March 20 – Briefing to Community Planning, Housing and Development (CPHD) at Regular Team Meeting
- Thursday, March 21 – Briefing to DDOT at Regular Coordination Meeting
- Friday, March 22 – Coordination Meeting with NPS/GWMP
- Tuesday, March 26 – Large-Group Internal Stakeholders Meeting
- Friday, March 29 – Intercept Outreach at the Central Place Plaza
- Wednesday, April 3 – Intercept Outreach Booth at National Walking Day in Rosslyn

Coordination Meetings Held at Preferred Alternative Milestone in the Core of Rosslyn Transportation Study

- Thursday, May 9 – Meeting with the Rosslyn BID
- Thursday, May 9 – Rosslyn Business Stakeholders Meeting
- Thursday, May 9 – Meeting with Developer on Potential Property Redevelopment in Rosslyn Core
- Friday, May 31 – Rosslyn Strategy Group Meeting
- Monday, June 10 – Public Meeting at the Observation Deck in Rosslyn
- Tuesday, June 11 – Online Engagement Portal Opens
- Tuesday, June 18 – Confirmation with VDOT and NPS on Preferred Alternative
- July - August – Internal Coordination on Final Study Products

3.4 Future Engagement

The Core of Rosslyn Transportation Study is not the end for public input and feedback. The community and stakeholders of Rosslyn have been involved in the County’s planning process from the Sector Plan through the Core Study and will continue with each project resulting from the Core Study as it moves through design and implementation. Larger scale projects will have larger scale engagement efforts, while smaller scale projects may be communicated through local engagement channels.
4. EXISTING CONDITIONS

This Core of Rosslyn Transportation Study has been informed, influenced, and enhanced by a long and rich history of strategic planning in Rosslyn and in Arlington County. The study team revisited the following source materials throughout the project:

- Arlington County Master Transportation Plan
- Rosslyn Briefing Book (2012)
- Rosslyn Multimodal Transportation Study (2012)
- Rosslyn Station Area Plan Addendum (1992)
- Rosslyn Transit Station Area Study (1977)

With this foundation of references, the critical first step of the Core of Rosslyn Transportation Study was for the study team to conduct an assessment of the existing conditions, needs, challenges, and opportunities with respect to transportation and mobility in Rosslyn.

The Core of Rosslyn Transportation Study Existing Conditions Report, (Appendix B) summarized below, provides a look at the configuration of the study area within the regional transportation network and introduced study area-specific characteristics. The report’s technical appendices contain detailed information regarding background data, model development, and model results.

4.1 Summary of System Operations and Conditions

The following paragraphs summarize the overall state of transportation and urban design in the Core Street Reconfiguration Area of Rosslyn, specifically incorporating key points identified in the Rosslyn Sector Plan and additional findings determined as part of the Core of Rosslyn Transportation Study Existing Conditions Report. The concepts subsequently developed as part of this study considered how the existing challenges can be addressed and opportunities can be realized.

N Lynn Street as seen from Freedom Park overpass.

Existing multimodal transportation choices in Rosslyn as seen from the lobby of Central Place Tower.
4.1.1 Travel Patterns

Rosslyn's unique location creates the need to balance local and regional mobility in considering modifications to Rosslyn's multimodal network. The Rosslyn neighborhood is adjacent to five vehicle facilities (highways and arterial streets) of regional and local significance, is served by three Metrorail lines, and provides a hub for a multitude of local, regional, and intercity bus services.

Transit and active transportation modes (walking/biking) are also important for Rosslyn residents and commuters. More than half (57 percent) of Rosslyn residents commute to work either by public transportation, walking, or biking. Half (51 percent) of all AM commute trips for employees in Rosslyn are via public transportation, walking, or biking.
4.1.2 Transit

Metrorail capacity serving Rosslyn is quickly reaching its limits. **Rosslyn is the second-busiest station in Virginia by ridership, averaging about 24,000 total daily boardings and alightings.**

N. Moore Street and the areas surrounding the Metrorail station must balance competing demands to facilitate intermodal transfers between Metrorail and buses, including pedestrian flow, bicycle access and parking, bus stops, and efficient bus operations. Five bus bays are located along N. Moore Street directly at the entrance to the Metrorail station. The Central Place Transit Tunnel has allowed for improved operations and reduced delays associated with multiple left turns on bus routes.
4.1.3 Pedestrians

High volumes of pedestrian activity occur on Rosslyn’s streets. Some intersection crossings have limited space and short pedestrian crossing times. The busiest intersections in Rosslyn have more than 2,200 pedestrians per hour and in multiple cases exceed the number of vehicles in the peak hour.

Seven out of 47 pedestrian crossings in the Core Street Reconfiguration Area lack sufficient pedestrian crossing time (when measured at 7 seconds of walk time followed by 3.5 feet per second of crossing distance). Five intersections in the Core Street Reconfiguration Area operate with failing Level of Service (LOS) (LOS E or F) for pedestrian levels of service. (LOS is a qualitative measure used to rate the quality of motor vehicle traffic service. LOS is used to analyze roadways and intersections by categorizing travel flow and assigning quality levels of traffic based on performance measures such as vehicle speed, congestion, etc.)

According to the Rosslyn Sector Plan, many sidewalks are too narrow to comfortably accommodate pedestrian volumes and many sidewalks are frequently interrupted by driveways. Driveways constitute about 11 percent of the curb space in the Core Street Reconfiguration Area. Long, uninterrupted street blocks hinder pedestrian access and can make streets more difficult to navigate for pedestrians. For example, the block between 19th Street North and Wilson Boulevard is approximately twice the length of peer neighborhood blocks. Additionally, many pedestrians have been observed crossing outside of marked crosswalks, especially on longer blocks.

Pedestrians walking along Wilson Boulevard at the intersection of Fort Myer Drive.
4.1.4 Bicycles

Rosslyn’s street grid creates gaps in the County’s extensive system of bike lanes and regional trails. Bicycle activity in Rosslyn is much more prevalent on the trail network as compared to local streets and intersections.

Rosslyn’s on-street bike lane network is limited, and unmarked routes have high traffic volumes, rendering these roadways unwelcoming and uncomfortable for bicyclists. Within the Core Street Reconfiguration Area, the only on-street bike lane is on N. Lynn Street.

Even in locations with bicycle lanes, on-street biking can be stressful due to street width, high traffic volumes, on-street parking, and pick-up/drop-off activity.

Eighty-five percent of segments in the Core Street Reconfiguration area are ranked with a Bicycle Level of Traffic Stress (BLTS) 3, which is uncomfortable for the average bicyclist. Only 6 percent of segments achieve BLTS 1, which is the most comfortable condition.
4.1.5 Vehicles

Vehicles remain the primary travel mode for trips of all purposes and the most direct source of travel congestion in Rosslyn. Automobile trips make up approximately 50 percent of all daily trips to and from Rosslyn.

According to the Rosslyn Sector Plan, much of the peak period traffic within Rosslyn’s vehicular network is passing through Rosslyn on its way somewhere else. **Approximately 80 percent of peak period traffic is moving through the Core Street Reconfiguration Area without stopping in Rosslyn.**

Rosslyn’s existing street and block pattern is characterized by long blocks that limit circulation patterns, complicate loading and service, and facilitate cut-through traffic. Vehicles traveling along three-quarters of analyzed street segments experience cumulative delays greater than the free flow speed during the AM or PM peak hour, resulting in more than double the travel time compared to free flow conditions.

Regional gateways into DC, such as the Key Bridge and Theodore Roosevelt Bridge, are often congested during the peak period, which results in congestion throughout Rosslyn. During the AM peak period, eastbound corridors are congested. This is directly related to congestion at the Theodore Roosevelt Bridge.

Northbound travel on N. Lynn Street experiences congestion throughout the core of Rosslyn due to congestion at the northern gateway, significant traffic on east-west crossing streets, and heavy pedestrian volume during the peak periods.

Southbound travel on Fort Myer Drive experiences congestion at the gateways on both ends of the corridor during the peak periods.
4.1.6 Curb Space

Mobility demands travel availability. Approximately half of the curb space in the area is designated as “no parking” due to the need for mobility (vehicular travel lanes), especially during peak periods.

A multitude of other multimodal uses compete for remaining curbspace that does not abut an active travel lane. These uses include parking, driveways, carshare parking, bus parking, bus stops, bikeshare docks, loading zones, taxi stands, transportation network company (TNC) pickup areas, and curb ramps.
4.1.7 Urban Design

Street trees and vegetation offer shade, scale, and beauty in certain areas of Rosslyn, but some streets still have little or no landscaping that is oriented to the pedestrian. **Approximately 81 percent of the streets in Rosslyn have landscaping features.**

Additionally, several blocks within the Core Street Reconfiguration Area have a low density of pedestrian-scale street lights, including blocks along N. Oak Street, Fort Myer Drive, and N. Lynn Street.

Several highways, steep grades, and other physical barriers significantly affect the look and feel of Rosslyn’s cityscape and limit convenient and comfortable access. Features like the Fort Myer Drive Tunnel and skywalks are barriers to street-level active transportation users.

Street trees, lighting, and other streetscape elements on Wilson Boulevard.
4.2 Conclusions on Existing Conditions

The analyses conducted of existing travel conditions within the Core Street Reconfiguration Area resulted in the study team’s knowledge and understanding of the challenges of traveling through and within the core area. Through the public engagement process, the team shared the results of the analyses, as well as potential ideas for overcoming the challenges. The study team then built upon this understanding to forecast future travel demand and to develop concepts to address existing and future travel challenges.
5. 2030 BASELINE SCENARIO

To capture future network changes from existing conditions, the study team analyzed 2030 Baseline scenario conditions. Future 2030 Baseline conditions take into account funded transportation projects or approved redevelopment site plan conditions that are expected to occur separately from the Core of Rosslyn Transportation Study. The 2030 Baseline conditions serve as a comparison point for the future 2030 Concept 1, 2030 Concept 2, and 2030 Preferred Alternative.

5.1 Overview of Proposed Developments

County forecasts estimate a 42 percent in population and 34 percent in employment by year 2030 in Rosslyn.\(^3\) Figure 5.1 shows future developments in Rosslyn that are forecasted to occur by 2030. This growth and infill development are included in the 2030 Baseline scenario assumptions.

\(^3\) Source: Arlington County, CPHD, Planning Division, Center for Urban Design and Research, December 2017
Figure 5.1: Future Developments in Rosslyn
5.2 Summary of System Operations and Conditions

A summary of findings from the analysis of the 2030 Baseline scenario is outlined below. For a full, detailed report of 2030 Baseline conditions, please refer to the Core of Rosslyn Transportation Study Future Conditions Report (Appendix C).

Key elements of 2030 Baseline scenario include:

- 2018: short-term improvements to the road network—restriping and additional roadway markings to help guide traffic along eastbound Lee Highway and Fort Myer Drive
- Multimodal improvements such as bike lanes, bus bay relocations, and improved sidewalks that will be built along with development projects
- Transit route changes proposed in Arlington County’s Transit Development Plan
- Opening of the Central Place Transit Tunnel, eastbound from N. Moore Street to N. Lynn Street
- CIP projects:
  - Lynn Street Esplanade and Custis Trail Improvements
  - Meade Street Bridge Design and Street Improvements
Figure 5.2: 2030 Baseline Scenario
<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>MEASURE</th>
<th>Baseline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRANSIT</strong></td>
<td>Peak Period Average Transit Speed - AM</td>
<td>9 MPH</td>
</tr>
<tr>
<td></td>
<td>Peak Period Average Transit Speed - PM</td>
<td>10 MPH</td>
</tr>
<tr>
<td><strong>PEDESTRIAN AND URBAN DESIGN</strong></td>
<td>Quantity of Sidewalks in Public Right-of-Way</td>
<td>154,000 sq ft</td>
</tr>
<tr>
<td></td>
<td>Number of New or Improved Pedestrian Crossings (Shortened or Added Median)</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>Pedestrian Delay at Critical Intersections - AM (Number of intersections with 40 or more seconds of delay)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Pedestrian Delay at Critical Intersections - PM (Number of intersections with 40 or more seconds of delay)</td>
<td>7</td>
</tr>
<tr>
<td><strong>BICYCLES</strong></td>
<td>Bicycle Network Connections to Local/Regional Trails</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Quantity of New or Improved Protected Bike Facilities</td>
<td>2,200 ft</td>
</tr>
<tr>
<td></td>
<td>(0.4 miles)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Percentage of Segments with ‘Low stress’ Biking Experience (Bike Level of Traffic Stress 1 or 2)</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>Bicycle Delay at Critical Intersections - AM (Number of intersections with 40 or more seconds of delay)</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Bicycle Delay at Critical Intersections - PM (Number of intersections with 40 or more seconds of delay)</td>
<td>2</td>
</tr>
<tr>
<td><strong>VEHICLES</strong></td>
<td>Total Network Queue Length – AM (Number of intersections with queues that exceed block length)</td>
<td>1,205 vehicles (17)</td>
</tr>
<tr>
<td></td>
<td>Total Network Queue Length – PM (Number of intersections with queues that exceed block length)</td>
<td>855 vehicles (16)</td>
</tr>
<tr>
<td></td>
<td>Overall Vehicle Delay at Intersections (Number of intersections operating with significant overall delay)</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Peak Period Average Travel Speed - AM</td>
<td>9 MPH</td>
</tr>
<tr>
<td></td>
<td>Peak Period Average Travel Speed - PM</td>
<td>9 MPH</td>
</tr>
<tr>
<td><strong>PARKING AND CURBSpace</strong></td>
<td>Quantity of On-Street Parking</td>
<td>98 parking spaces</td>
</tr>
<tr>
<td></td>
<td>Quantity of New Multimodal Curb Space (Includes bus, taxi, bike lanes protected by parking, loading zones, carshare/bikeshare)</td>
<td>11%</td>
</tr>
</tbody>
</table>
6. 2030 CONCEPT 1

The study team built upon the analyses of existing and future year conditions to develop Concept 1, conduct quantitative and qualitative analyses of Concept 1, and arrive at conclusions that guided the development of subsequent concepts.

6.1 Concept Development

The 2030 Concept 1 scenario concept assumes completion of the proposed projects identified in the 2030 Baseline conditions and additional network changes in support of study goals. The 2030 Concept 1 scenario comes as close as possible to the transportation network design proposed in the Rosslyn Sector Plan; however, there are certain locations where there is not enough County-owned right-of-way to achieve the envisioned Rosslyn Sector Plan street cross sections. In these locations, the study team made tradeoffs to accommodate and balance the transportation modes in accordance with Rosslyn Sector Plan’s policies and vision.

Key elements of 2030 Concept 1 include:

- Converts N. Lynn Street, N. Moore Street, and Fort Myer Drive to two-way streets
- Strong emphasis on enhancing bike network with addition of protected facilities along northbound N. Lynn Street, southbound Fort Myer Drive, and westbound Wilson Boulevard
- Removal of Fort Myer Drive tunnel under Wilson Boulevard, bringing the intersection of Wilson Boulevard and Fort Myer Drive entirely to-grade
- Removal of 17th Street N. access to N. Lynn Street and reallocating the previous ramp space along Lynn Street to sidewalk area
- Removal of the bus tunnel connection between N. Moore Street and N. Lynn Street (two-way of Lynn Street rendered the bus tunnel a less efficient route)
- Modified intersection of Fairfax Drive, Fort Myer Drive, and N. Lynn Street (including the removal of the slip lane access from Fort Myer Drive to Lynn Street)

The study team presented an initial Concept 1 at a public meeting in October 2018 and through a three-week online engagement effort. The study team made further refinements to the concept based on public input. The final version of Concept 1 is shown in Figure 6.1. An analysis of the revised 2030 Concept 1 is summarized below.

6.2 Summary of System Operations and Conditions

While the multimodal improvements analyzed in 2030 Concept 1 were effective in enhancing the pedestrian and bicycle experience, the disruptions to traffic operations were largely significant and changes were necessary to better balance the performance measures in the Rosslyn Core.

A summary of findings for 2030 Concept 1 is outlined in Table 7.1. A full, detailed summary of 2030 Concept 1 is provided in the Core of Rosslyn Transportation Study Future Conditions Report (Appendix C).
Figure 6.1: 2030 Concept 1
Table 6.1: 2030 Concept 1 Multimodal Measures of Effectiveness Summary

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>MEASURE</th>
<th>Baseline</th>
<th>2030 Concept 1 In Comparison to 2030 Baseline Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRANSIT</td>
<td>Transit Average Speed - AM</td>
<td>9 MPH</td>
<td>↓ 6 MPH</td>
</tr>
<tr>
<td></td>
<td>Transit Average Speed - PM</td>
<td>10 MPH</td>
<td>↓ 8 MPH</td>
</tr>
<tr>
<td>PEDESTRIAN AND URBAN DESIGN</td>
<td>Quantity of Sidewalks in Public Right-of-Way</td>
<td>154,000 sq ft</td>
<td>↑ 179,300 sq ft</td>
</tr>
<tr>
<td></td>
<td>Number of New or Improved Pedestrian Crossings (Shortened or Added Median)</td>
<td>–</td>
<td>↑ 14</td>
</tr>
<tr>
<td></td>
<td>Pedestrian Delay at Critical Intersections - AM (Number of intersections with 40 or more seconds of delay)</td>
<td>3</td>
<td>↑ 6</td>
</tr>
<tr>
<td></td>
<td>Pedestrian Delay at Critical Intersections - PM (Number of intersections with 40 or more seconds of delay)</td>
<td>7</td>
<td>↑ 8</td>
</tr>
<tr>
<td>BICYCLES</td>
<td>Bicycle Network Connections to Local/Regional Trails</td>
<td>5</td>
<td>↑ 5 (improved connections to Custis and Mt. Vernon Trails and Key Bridge)</td>
</tr>
<tr>
<td></td>
<td>Quantity of New or Improved Protected Bike Facilities</td>
<td>2,200 ft (0.4 miles)</td>
<td>↑ 6,900 ft (1.3 miles)</td>
</tr>
<tr>
<td></td>
<td>Percentage of Segments with ‘Low stress’ Biking Experience (Bike Level of Traffic Stress 1 or 2)</td>
<td>28%</td>
<td>↑ 56%</td>
</tr>
<tr>
<td></td>
<td>Bicycle Delay at Critical Intersections - AM (Number of intersections with 40 or more seconds of delay)</td>
<td>0</td>
<td>↑ 4</td>
</tr>
<tr>
<td></td>
<td>Bicycle Delay at Critical Intersections - PM (Number of intersections with 40 or more seconds of delay)</td>
<td>2</td>
<td>↑ 3</td>
</tr>
<tr>
<td>VEHICLES</td>
<td>Total Network Queue Length – AM (Number of intersections with queues that exceed block length)</td>
<td>1,205 vehicles (17)</td>
<td>↑ 1,563 vehicles (16)</td>
</tr>
<tr>
<td></td>
<td>Total Network Queue Length – PM (Number of intersections with queues that exceed block length)</td>
<td>855 vehicles (16)</td>
<td>↑ 1,419 vehicles (15)</td>
</tr>
<tr>
<td></td>
<td>Overall Vehicle Delay at Intersections (Number of intersections operating with significant overall delay)</td>
<td>8</td>
<td>↑ 17</td>
</tr>
<tr>
<td></td>
<td>Peak Period Travel Speed - AM</td>
<td>9 MPH</td>
<td>↓ 7 MPH</td>
</tr>
<tr>
<td></td>
<td>Peak Period Travel Speed - PM</td>
<td>9 MPH</td>
<td>↓ 7 MPH</td>
</tr>
<tr>
<td>PARKING AND CURBSPACE</td>
<td>Quantity of On-Street Parking Supply</td>
<td>98 parking spaces</td>
<td>96 parking spaces</td>
</tr>
<tr>
<td></td>
<td>Quantity of New Multimodal Curb Space (Includes bus, taxi, bike lanes protected by parking, loading zones, carshare/bikeshare)</td>
<td>11%</td>
<td>↑ 14%</td>
</tr>
</tbody>
</table>

Numbers are based off of readily available GIS information. This chart shows how Concept 1 performs according to the baseline.
6.3 2030 Concept 1 Feedback

The study team gathered feedback on Concept 1 from additional County staff, the Rosslyn BID, stakeholders, and the public. The study team then aggregated and summarized the most frequently provided feedback on 2030 Concept 1, which included the following:

- 2030 Concept 1 travel projections indicated that converting major streets to two-way operations would add significant vehicle delays; the community voiced concerns about the potential impact on traffic and congestion
- Public input showed a desire to keep N. Lynn Street one-way, close the slip lane at Dark Star Park, and maintain the slip lane at 19th Street and Fort Myer Drive
- The majority of public input preferred to maintain the Fort Myer Drive Tunnel to reduce perceived impacts on congestion
- Public comments voiced support for the pedestrian and bicycle network additions and enhancements in 2030 Concept 1
7. 2030 CONCEPT 2

Taking lessons learned from the development and analysis of Concept 1, the study team developed Concept 2 and conducted similar quantitative and qualitative analyses of this concept.

7.1 Concept Development

The 2030 Concept 2 scenario assumes completion of the proposed projects identified in the 2030 Baseline scenario. The development of Concept 2 built upon the public input received on Concept 1 and on the findings and conclusions from the analyses of Concept 1. Concept 2 was refined based on reviews by the County and other public agencies and feedback received during presentations to community groups and the public at large.

Key Elements of 2030 Concept 2 include:

- N Lynn Street remains one-way with off-peak parking and a northbound protected cycle track at sidewalk level to N. Lynn Street
- Incorporates protected bike lanes to N. Lynn Street northbound (south of Wilson Boulevard), Wilson Boulevard westbound, and Wilson Boulevard eastbound
- Converts Fort Myer Drive to two-way street and removes the tunnel under Wilson Boulevard, bringing the intersection of Wilson Boulevard and Fort Myer Drive entirely to-grade
- Adds signalized mid-block crosswalk on Fort Myer Drive
- Adds southbound protected cycle track at sidewalk level to Fort Myer Drive
- Modified intersection of Fairfax Drive, Fort Myer Drive, and N. Lynn Street (including the removal of the slip lane access from Fort Myer Drive to Lynn Street)
- Removal of 17th Street N. access to N. Lynn Street and reallocating the previous ramp space along Lynn Street to sidewalk area
- Adds protected bike lane on 19th Street N. eastbound and bike lane on 19th Street
- Adjusts intersection of Meade Street and US Route 50 ramps to allow for vehicle to access northbound Fort Myer Drive from the off-ramps
- Changes 19th Street N to a protected bike lane only in the eastbound direction to address vehicle capacity constraints

It should be noted that this concept includes most changes listed in the Rosslyn Sector Plan but maintains one-way operations on N. Lynn Street and N. Moore Street.

The study team presented Concept 2 at a public meeting in March 2019 and through a three-week online engagement effort. The final version of Concept 2 is shown in Figure 7.1.

7.2 Summary of System Operations and Conditions

The tweaks to the multimodal improvements incorporated into 2030 Concept 2 along with a less drastic change to the vehicular network resulted in more balanced performance measures. Vehicular queue lengths and overall vehicle delay at intersections in 2030 Concept 2 are higher than that of the 2030 Baseline scenario, but are improved from 2030 Concept 1. 2030 Concept 2 also provided more new or improved pedestrian crossings, protected bicycle facilities, and public on-street parking than 2030 Concept 1.

A summary of findings for 2030 Concept 2 is outlined in Table 7.1. A full, detailed summary of 2030 Concept 2 is provided in the Core of Rosslyn Transportation Study Future Conditions Report (Appendix C).
Figure 7.1: 2030 Concept 2
### Table 7.1: 2030 Concept 2 Multimodal Measures of Effectiveness Summary

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>MEASURE</th>
<th>Baseline</th>
<th>2030 Concept 2 In Comparison to 2030 Baseline Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRANSIT</strong></td>
<td>Transit Average Speed - AM</td>
<td>9 MPH</td>
<td>8 MPH</td>
</tr>
<tr>
<td></td>
<td>Transit Average Speed - PM</td>
<td>10 MPH</td>
<td>8 MPH</td>
</tr>
<tr>
<td><strong>PEDESTRIAN AND URBAN DESIGN</strong></td>
<td>Quantity of Sidewalks in Public Right-of-Way</td>
<td>154,000 sq ft</td>
<td>164,900 sq ft</td>
</tr>
<tr>
<td></td>
<td>Number of New or Improved Pedestrian Crossings</td>
<td>–</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Pedestrian Delay at Critical Intersections - AM</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Pedestrian Delay at Critical Intersections - PM</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td><strong>BICYCLES</strong></td>
<td>Bicycle Network Connections to Local/Regional Trails</td>
<td>5</td>
<td>5 (improved connections to Custis and Mt. Vernon Trails and Key Bridge)</td>
</tr>
<tr>
<td></td>
<td>Quantity of New or Improved Protected Bike Facilities</td>
<td>2,200 ft (0.4 miles)</td>
<td>9,700 ft (1.8 miles)</td>
</tr>
<tr>
<td></td>
<td>Percentage of Segments with ‘Low stress’ Biking Experience</td>
<td>28%</td>
<td>62%</td>
</tr>
<tr>
<td></td>
<td>Bicycle Delay at Critical Intersections - AM</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Bicycle Delay at Critical Intersections - PM</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>VEHICLES</strong></td>
<td>Total Network Queue Length – AM (Number of intersections with queues that exceed block length)</td>
<td>1,205 vehicles (17)</td>
<td>1,321 vehicles (15)</td>
</tr>
<tr>
<td></td>
<td>Total Network Queue Length – PM (Number of intersections with queues that exceed block length)</td>
<td>855 vehicles (16)</td>
<td>1,185 vehicles (15)</td>
</tr>
<tr>
<td></td>
<td>Overall Vehicle Delay at Intersections (Number of intersections operating with significant overall delay)</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Peak Period Travel Speed - AM</td>
<td>9 MPH</td>
<td>8 MPH</td>
</tr>
<tr>
<td></td>
<td>Peak Period Travel Speed - PM</td>
<td>9 MPH</td>
<td>7 MPH</td>
</tr>
<tr>
<td><strong>PARKING AND CURBSPACE</strong></td>
<td>Quantity of On-Street Parking Supply</td>
<td>98 parking spaces</td>
<td>137 parking spaces (includes off-peak parking)</td>
</tr>
<tr>
<td></td>
<td>Quantity of New Multimodal Curb Space (Includes bus, taxi, bike lanes protected by parking, loading zones, carshare/ bikeshare)</td>
<td>11%</td>
<td>13%</td>
</tr>
</tbody>
</table>

This chart shows how Concept 2 performs according to the baseline.

Numbers are based off of readily available GIS information.
7.3 2030 Concept 2 Feedback

The study team developed 2030 Concept 2 based on public feedback and lessons learned from 2030 Concept 1, therefore, the March 2019 public engagement effort focused on collecting additional feedback to integrate in the 2030 Preferred Alternative concept. The study team gathered feedback offered by additional County staff, the Rosslyn BID, stakeholders, and the public regarding 2030 Concept 2, which included:

**General Feedback**
- General positive feedback for the multimodal transportation improvements
- Concern for congestion resulting from new or planned development
- For each mode/design category, at least 56% of the respondents were satisfied with the proposed changes (most categories showed satisfaction in the 60% range)
- For each mode/design category, no more than 32% of the population was dissatisfied with the proposed changes (most categories showed dissatisfaction in the 20% range)
- Overall, respondents seemed most satisfied with the Pedestrian Network and Urban Design elements of 2030 Concept 2
- Overall, respondents voiced the most concern regarding the changes in the Vehicle Network, Bike Network, and Curbspace/Multimodal Network

**Vehicle Network Feedback**
- Concern for increased congestion levels resulting from proposed changes
- Some desire for encouragement of alternative forms of transportation and carpooling
- Some desire for additional vehicle capacity in the urban core
- Suggested removal of slip lanes where feasible
- Concern for pedestrian safety and crossing conflicts with the proposed traffic patterns

**Pedestrian Network Feedback**
- Concern for pedestrians with slip lanes and/or long crossing distances
- Desire for longer pedestrian signal timing
- Desire for wider sidewalks
- Interest in better access to public spaces like Gateway Park
- Desire for more greenspace on sidewalks

**Bicycle Network Feedback**
- Concern for bike-vehicle conflict points at intersections
- Concern for bicycle/pedestrian conflict points (e.g., where pedestrians cross bike lane)
- Concern that the plan dedicates too much space to the bike network
- Desire for more protection for bicycles than in the proposed concept
- Desire for more regional bicycle network connections
- Concern for e-scooters and how they will use the bike network

**Transit Network Feedback**
- Desire for dedicated transit lanes in Rosslyn and options for transit priority
- Concerns for buses being caught in congestion
- Desire for Moore Street to continue to function as a centralized transit hub and to include additional stops at the center of the urban core
- Desire for improved bus stop amenities

**Urban Design Feedback**
- Desire for more greenspace in the streetscape
- Fear of increased congestion and that it will deter people from using Rosslyn’s streets
- Suggestions for streetscape amenities (benches, tables, trash receptacles, etc.)

**Curbspace/Multimodal Feedback**
- Desire for designated pick-up/drop-off/loading areas throughout the urban core
- Some desire for increased focus on transportation demand management strategies
- Some desire for additional on-street parking
- Interest in additional details regarding accessibility for those with disabilities
8. 2030 PREFERRED ALTERNATIVE

8.1 Preferred Alternative Development

The study team developed the 2030 Preferred Alternative, which further refined Concept 2 and proposed project implementation phasing. The concept underwent a high-level qualitative screening by the study team as well as review and comment by public agencies. The 2030 Preferred Alternative was presented at a public meeting in June 2019. The study team gathered feedback offered by additional County staff, the Rosslyn BID, stakeholders, and the public.

The 2030 Preferred Alternative assumes completion of the proposed projects identified in the 2030 Baseline scenario. The study team made refinements based on the public input received on 2030 Concepts 1 and 2, as well as findings from the 2030 Concepts 1 and 2 analyses. The final version of the 2030 Preferred Alternative is shown in Figure 8.1, and includes the following key elements:

- N. Lynn Street remains one-way with off-peak parking
- Adds northbound protected bicycle facility at sidewalk level on N. Lynn Street
- Adds westbound protected bicycle facility and eastbound bicycle lane on Wilson Boulevard
- Converts Fort Myer Drive to two-way operations from Fairfax Drive to Lee Highway eastbound
- Removal of Fort Myer Drive tunnel
- Adds signalized mid-block crosswalk on Fort Myer Drive
- Adds bidirectional protected bicycle facility on Fort Myer Drive, connecting the Key Bridge to Meade Street
- Removal of Dark Star Park slip lane and adjusted intersection
- Removal of 17th Street N. access to N. Lynn Street
- Adjusts intersection of Meade Street and US 50 on-ramps
- Removal of slip lane from N. Nash Street to Fort Myer Drive
- Excludes bike lanes from 19th Street N to address vehicle capacity constraints as the east-west connection is now provided on Wilson Boulevard

8.2 Summary of System Operations and Conditions

Overall, the 2030 Preferred Alternative shows improvement over the 2030 Baseline scenario. While vehicular queue lengths and intersection delays remain increased from the 2030 Baseline scenario, the 2030 Preferred Alternative results in positive change in the areas of pedestrian and urban design, bicycles, and parking and curbspace management by applying lessons learned and public input from 2030 Concepts 1 and 2 to better balance multimodal operations.

A summary of findings for the 2030 Preferred Alternative is shown in Table 8.1. A full, detailed summary of findings from the 2030 Preferred Alternative is included in the following sections for the modes of transportation and design categories of Street Network, Transit Network, Pedestrian Network, Bicycle Network, Vehicle Network, and Parking and Curbspace Network.
Figure 8.1: 2030 Preferred Alternative
<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>MEASURE</th>
<th>Baseline</th>
<th>2030 Preferred Alternative In Comparison To 2030 Baseline Scenario</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TRANSIT</strong></td>
<td>Peak Period Average Transit Speed - AM</td>
<td>9 MPH</td>
<td>8 MPH</td>
</tr>
<tr>
<td></td>
<td>Peak Period Average Transit Speed - PM</td>
<td>10 MPH</td>
<td>8 MPH</td>
</tr>
<tr>
<td><strong>PEDESTRIAN AND URBAN DESIGN</strong></td>
<td>Quantity of Sidewalks in Public Right-of-Way</td>
<td>154,000 sq ft</td>
<td>182,245 sq ft</td>
</tr>
<tr>
<td></td>
<td>Number of New or Improved Pedestrian Crossings (Shortened or Added Median)</td>
<td>–</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Pedestrian Delay at Critical Intersections - AM (Number of intersections with 40 or more seconds of delay)</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Pedestrian Delay at Critical Intersections - PM (Number of intersections with 40 or more seconds of delay)</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td><strong>BICYCLES</strong></td>
<td>Bicycle Network Connections to Local/Regional Trails</td>
<td>5</td>
<td>5 (Improved connections to Custis and Mt. Vernon Trails and Key Bridge)</td>
</tr>
<tr>
<td></td>
<td>Quantity of New or Improved Protected Bike Facilities</td>
<td>2,200 ft (0.4 miles)</td>
<td>11,400 ft (2.1 miles)</td>
</tr>
<tr>
<td></td>
<td>Percentage of Segments with ‘Low stress’ Biking Experience (Bike Level of Traffic Stress 1 or 2)</td>
<td>28%</td>
<td>64%</td>
</tr>
<tr>
<td></td>
<td>Bicycle Delay at Critical Intersections - AM (Number of intersections with 40 or more seconds of delay)</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Bicycle Delay at Critical Intersections - PM (Number of intersections with 40 or more seconds of delay)</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td><strong>VEHICLES</strong></td>
<td>Total Network Queue Length – AM (Number of intersections with queues that exceed block length)</td>
<td>1,205 vehicles (17)</td>
<td>1,269 vehicles (14)</td>
</tr>
<tr>
<td></td>
<td>Total Network Queue Length – PM (Number of intersections with queues that exceed block length)</td>
<td>855 vehicles (16)</td>
<td>1,515 vehicles (16)</td>
</tr>
<tr>
<td></td>
<td>Overall Vehicle Delay at Intersections (Number of intersections operating with significant overall delay)</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Peak Period Average Travel Speed - AM</td>
<td>9 MPH</td>
<td>8 MPH</td>
</tr>
<tr>
<td></td>
<td>Peak Period Average Travel Speed - PM</td>
<td>9 MPH</td>
<td>7 MPH</td>
</tr>
<tr>
<td><strong>PARKING AND CURBSPACE</strong></td>
<td>Quantity of On-Street Parking</td>
<td>98 parking spaces</td>
<td>162 parking spaces (Includes off-peak parking)</td>
</tr>
<tr>
<td></td>
<td>Quantity of New Multimodal Curb Space (Includes bus, taxi, bike lanes protected by parking, loading zones, carshare/bikeshare)</td>
<td>11%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Numbers are based off of readily available GIS information. This chart shows how the Preferred Alternative performs according to the baseline.
8.3 Transit Network

2030 Baseline

Within the Core Street Reconfiguration Area, there were no changes in the number of bus stops. Considering the proposed transit improvements in Arlington County’s Transit Development Plans, the study team incorporated changes to the bus routes into the Baseline Concept. The study team rerouted bus routes to use the new bus-only Central Place Transit Tunnel between N. Moore Street and N. Lynn Street. The intercity bus connection point remains in the 2030 Baseline scenario.

2030 Preferred Alternative

In the 2030 Preferred Alternative, shown in Figure 8.2, transit routes do not change from the Baseline due to the assumption that the Central Place Transit Tunnel remains in operation.

The study team did not recommend specific changes to transit stops or services because the changes on N. Lynn Street and Fort Myer Drive did not provide better conditions for service in 2030. Opportunities for new or relocated bus stops will be assessed as the streets and services evolve in the Rosslyn Core.

The study team is recommending multimodal enhancements to N. Moore Street as part of the Preferred Alternative to assist in making the street more pedestrian friendly and to improve existing bus services. Improvements will include bus-only lanes and pedestrian crossing enhancements.
Figure 8.2: 2030 Preferred Alternative Transit Network

Legend
- Core Street Reconfiguration
- Rosslyn MetroRail Station
- Metrorail
- Bus Stops
  - Local Bus Stops
  - Commuter Bus Stops
- Northeast InterCity Bus Connections

Bus Routes
- WMATA Metrobus
- ART Bus
- DC Circulator
- Regional Commuter Bus
  - Potomac and Rappahannock Transportation Commission (PRTC)
  - Loudoun County Transit (LCT)

The following changes from existing are according to the Arlington County Transit Development Plan:
- *ART 61A/61B replaced by ART 63
- *Metrobus 4A replaced by ART 77
- *Metrobus 4B replaced by ART 31
Transit Conditions

The number of bus stop locations does not vary between the Baseline and the Preferred Alternative. Bus stops are maintained on N. Moore Street in combination with multimodal street improvements. ART and WMATA will reassess bus stop locations as new transportation projects are phased into the Rosslyn street network.

Traffic modeling and analysis revealed that the Preferred Alternative resulted in slightly lower average transit speeds throughout the network as compared to the Baseline, most significantly in the PM peak period, as shown in Table 8.2. Slower transit speeds are a trade-off for the incorporation of enhanced nonmotorized improvements.

<table>
<thead>
<tr>
<th>Measure of Effectiveness</th>
<th>Evaluation Metric</th>
<th>Baseline</th>
<th>Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantity of Bus Stop Locations</td>
<td>Number of existing stops in Core Street Reconfiguration Area</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Transit Average Speed</td>
<td>Average travel speed for representative bus routes between entry and exit points to the modeled network</td>
<td>AM Peak: 8.9 MPH PM Peak: 9.7 MPH</td>
<td>AM Peak: 7.5 MPH PM Peak: 8.0 MPH</td>
</tr>
</tbody>
</table>

*Source: Study VISSIM model. Transit travel times were collected from the study VISSIM model and describe the total time it takes for each route to enter the study area, travel along its route, stop where designated, and then exit the study area. The average travel speed for these segments is presented in the table for summary purposes.*
8.4 Pedestrian Network

2030 Baseline

Streets in Rosslyn currently provide semi-narrow pedestrian facilities with sidewalks along long street blocks, crosswalks at most legs of intersections, and two major mid-block crossings at N. Lynn Street and N. Moore Street.

2030 Preferred Alternative

New or enhanced pedestrian infrastructure in the 2030 Preferred Alternative as compared to the 2030 Baseline is shown in Figure 8.3. The Preferred Alternative includes the following for the pedestrian network:

- 18 new or improved pedestrian crosswalks (improvements include either shortening crossing distances or adding median refuge islands)
- 8 removed crosswalks:
  - to close and fill in vehicular slip lanes to expand and improve pedestrian space (for example, at Dark Star Park and the southwest corner of Fort Myer Drive and N. Nash Street)
  - in poor locations or conditions (for example, the crosswalk across Wilson Boulevard at N Moore Street is removed due to high traffic volumes and poor placement)
- Support for the development of the 18th Street Pedestrian Corridor with new mid-block crossings on N. Nash Street and Fort Myer Drive
Pedestrian Conditions

The 2030 Preferred Alternative results in increased area of sidewalk in the public right-of-way due to street reconstruction. The 2030 Preferred Alternative includes crossing improvements such as shortened crossing distances, removed slip lanes, or added pedestrian refuge islands and contributes positively to the development of the 18th Street Pedestrian Corridor by adding new mid-block crossings (See Table 8.3).

Table 8.3: Future Conditions Pedestrian Measures

<table>
<thead>
<tr>
<th>Measure of Effectiveness</th>
<th>Evaluation Metric</th>
<th>2030 Baseline</th>
<th>2030 Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian Experience and Comfort</td>
<td>Area of sidewalk in the public right-of-way (Core Street Reconfiguration Area)</td>
<td>154,900 square feet</td>
<td>182,200 square feet</td>
</tr>
<tr>
<td></td>
<td>Quantity of Enhanced Crosswalks</td>
<td>0</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>Number of intersections with 40 or more seconds of pedestrian delay (LOS E or F)</td>
<td>AM: 3 out of 13 intersections</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM: 7 out of 13 intersections</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>AM Peak: 3 out of 13 intersections</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PM Peak: 5 out of 13 intersections</td>
<td></td>
</tr>
</tbody>
</table>

Source: Study VISSIM model. The study VISSIM model was used to simulate pedestrian crossings at study area intersections. The average pedestrian delay waiting to cross an intersection can be related to a level of service threshold based on the methodology of the 2000 Edition of the Highway Capacity Manual (HCM 2000). This threshold indicates the likelihood of a pedestrian not complying with the “WALK” and “DON’T WALK” traffic indications based on the amount of time that they are delayed in crossing the intersection.
8.5 Bicycle Network

2030 Baseline
In the 2030 Baseline Scenario, four segments of bike lanes along Fort Myer Drive, 19th Street N, N. Nash Street, and Key Boulevard are included based on programmed development projects. Improvements to the Lynn Street Esplanade and Custis Trail also are included.

2030 Preferred Alternative
The bicycle network in the 2030 Preferred Alternative includes bicycle facilities on Fort Myer Drive and N. Lynn Street that are off-street, protected, and at the sidewalk level. The Fort Myer Drive facility is proposed to be two-way, while the N. Lynn Street facility is proposed to be one-way northbound—both of which would be between the street and the sidewalk and surrounded on both sides by street trees or landscaping.

While the original concepts included bicycle facilities on 19th Street N. between Fort Myer Drive and N. Lynn Street, traffic analysis did not find these additions feasible until additional space can be integrated into the street cross section through redevelopment.

Figure 8.4 compares the on-street bicycle facilities, bicycle level of stress (BLTS), and Capital Bikeshare locations around the study area between the 2030 Baseline scenario and the 2030 Preferred Alternative.

Figure 8.5 illustrates a draft design of a protected intersection for bicycles at Fort Myer Drive and Wilson Boulevard as part of the Preferred Alternative.
Figure 8.4: 2030 Preferred Alternative Bicycle Network

2030 Baseline Scenario

2030 Preferred Alternative

Legend
- Core Street Reconfiguration
- Rosslyn Metrorail Station
- Capital Bikeshare Stations
- Potential Bike Box
- Trail Network
- Bike Facility (Bike lane, buffered or protected bike lane, sharrows)
- Street with no bike facility

Bicycle Level of Traffic Stress
- 1 - Most Comfortable
- 2
- 3
- 4 - Most Uncomfortable

LTS guidance uses prevailing speeds. This analysis used existing posted speed limits.
Figure 8.5: Draft Fort Myer Drive and Wilson Boulevard Protected Intersection with Floating Bus Stop
Bicycle Conditions

The 2030 Preferred Alternative increases the presence of protected or buffered bike lanes compared to the 2030 Baseline, adding approximately 1.7 miles. These additional facilities increase the comfort level of biking in the study area, as measured by BLTS. In the 2030 Preferred Alternative, there is a 35 percent increase in the quantity of “low stress”—or BLTS 1 and 2—street segments compared to the 2030 Baseline. The 2030 Preferred Alternative also has the potential to add additional bike boxes at intersections, which provide cyclists with a safe and visible way to get ahead of traffic during a red signal (see Table 8.4).

Table 8.4: Future Conditions Bicycle Measures

<table>
<thead>
<tr>
<th>Measure of Effectiveness</th>
<th>Evaluation Metric</th>
<th>2030 Baseline</th>
<th>2030 Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicycle Network Connections to Local/Regional Trails</td>
<td>Number of connection points in the modeling context area to major trails (Custis Trail, Mount Vernon Trail, and Arlington Boulevard Trail)</td>
<td>5 N. Scott Street, N. Lynn Street, N. Meade Street, Arlington Boulevard, and Arlington Ridge Road bike lanes</td>
<td>5 N. Scott Street, N. Lynn Street, N. Meade Street, Arlington Boulevard, and Arlington Ridge Road bike lanes (improved connections to Custis and Mt. Vernon Trails and Key Bridge)</td>
</tr>
</tbody>
</table>
| Quantity of New or Improved Dedicated Bicycle Facilities | Existing BLTS segments (Core Street Reconfiguration Area)                         | Distributions of level of stress by directional street centerline mileage: | • BLTS 1: 12%  
• BLTS 2: 16%  
• BLTS 3: 71%  
• BLTS 4: 1% | • BLTS 1: 61%  
• BLTS 2: 3%  
• BLTS 3: 37%  
• BLTS 4: 0% |
| Bicycle Delay at Critical Intersections              | Number of critical intersections with 40 or more seconds of bicycle delay (LOS E or F) | AM: 0 out of 13 intersections  
PM: 2 out of 13 intersections | AM: 2 out of 13 intersections  
PM: 0 out of 13 intersections |

6 Source: Study VISSIM model. The study VISSIM model was used to simulate bicycle movements along study area streets. The average bicycle delay at each critical intersection was collected as shown below. HCM 2000 provides a methodology for relating bicycle delays at signalized intersections to level of service.
8.6 Vehicle Network

The 2030 Preferred Alternative includes converting Fort Myer Drive to two-way operations and maintains one-way operations on N. Lynn Street and N. Moore Street.

Additional key elements of the 2030 Preferred Alternative include:

- N. Lynn Street remains one-way with off-peak parking
- Adds northbound protected bicycle facility at sidewalk level on N. Lynn Street
- Adds westbound protected bicycle facility and eastbound bicycle lane on Wilson Boulevard
- Converts Fort Myer Drive to two-way operations from Fairfax Drive to Lee Highway eastbound
- Removal of Fort Myer Drive tunnel
- Adds signalized mid-block crosswalk on Fort Myer Drive
- Adds bidirectional protected bicycle facility on Fort Myer Drive, connecting the Key Bridge to Meade Street
- Removal of Dark Star Park slip lane and adjusted intersection
- Removal of 17th Street N. access to N. Lynn Street
- Adjusts intersection of Meade Street and US-50 on-ramps
- Removal of slip lane from N. Nash Street to Fort Myer Drive

Preferred Alternative Traffic Volumes

Using the 2030 Baseline volumes, the study team distributed future volumes throughout the roadway network with the Preferred Alternative network adjustments. The conversion of Fort Myer Drive from a one-way to a two-way street results in shifts in traffic within the study.
area. Having a northbound lane on Fort Myer Drive allows for better circulation in the Rosslyn Core.

**Figure 8.6** shows the peak hour demand by link for the AM and PM time periods. Compared with the 2030 Baseline, the 2030 Preferred Alternative generally increases the volume of vehicular traffic on Fort Myer Drive and Wilson Boulevard.

During the AM peak period, the greatest traffic demand occurs along N. Lynn Street, Wilson Boulevard eastbound, and Lee Highway eastbound. During the PM peak period, the greatest traffic demand occurs along N. Lynn Street, Fort Myer Drive southbound, and Lee Highway eastbound.

Additionally, the study team modeled peak period traffic counts at intersections, both signalized and unsignalized, in the Rosslyn study area. Figures showing the peak hour traffic volumes at specific study area intersections are provided in **Appendix C, Core of Rosslyn Transportation Study Future Conditions Report.**
Figure 8.6: Preferred Alternative Peak Hour Traffic Demand

Legend
- Core Street Reconfiguration Area
- Rosslyn Metrorail Station
- Metrorail Entrances
- Trail Network

Traffic Demand
PM Peak Hour Volumes
- 0 - 250
- 250 - 500
- 500 - 750
- 750 - 1000
- 1000 - 1250
- 1250+

AM

PM
2030 Preferred Alternative Vehicle Traffic Operations Analysis

The study team modeled average travel speed for the AM and PM peak periods using the study VISSIM model. They modeled travel time along six critical segments in the Core of Rosslyn Transportation Study area:

- Northbound N. Lynn Street (Arlington Boulevard to George Washington Memorial Parkway)
- Southbound Fort Myer Drive (George Washington Memorial Parkway to Arlington Boulevard)
- Eastbound Clarendon Boulevard (N. Rhodes Street to N. Arlington Ridge Road)
- Westbound Wilson Boulevard (N. Arlington Ridge Road to N. Oak Street)
- Eastbound 19th Street N. (Key Boulevard to N. Kent Street)

Figure 8.7 and Figure 8.8 show vehicular average travel speeds along these corridors during the AM and PM peak periods, respectively.

During the AM peak period, compared with the 2030 Baseline, the 2030 Preferred Alternative introduced new congestion hot spots along Fort Myer Drive at the intersections of Wilson Boulevard and Fairfax Drive. The greatest increase in travel times occurred southbound from Georgetown to westbound Route 50 (increase of four minutes from Baseline) and eastbound from N. Rhodes Street to N. Arlington Ridge Road (increase of three minutes from Baseline).

During the PM peak period, new congestion hot spots were introduced on Fort Myer Drive at the intersections of Wilson Boulevard and Fairfax Drive. The greatest increases in travel times occurred southbound from Georgetown to westbound Route 50 (increase of two minutes from Baseline). Other travel times were approximately within one minute of the Baseline conditions. I-66 eastbound is congested between N. Lynn Street and DC (40 percent of posted speed). A summary of future conditions vehicle measures is provided in Table 8.5.

Additional detailed VISSIM results (i.e., simulated delays, average queuing, and maximum queuing by movement and approach as well as additional simulated travel times for freeways) are provided in Appendix C, Core of Rosslyn Transportation Study Future Conditions Report.
**Figure 8.7: Preferred Alternative Vehicular Traffic Flow – AM**

**2030 Baseline Scenario***

- SB travel time from Georgetown to WB Route 50: 6 min. (+1 min.)
- EB travel time from Lee Hwy to Georgetown: 13 min. (+4 min.)
- WB travel time from N. Arlington Ridge Rd to N. Rhodes St: 2 min. (equal)
- NB travel time from Route 50 to N. County Rd: 8 min. (+3 min.)

**2030 Preferred Alternative**

- SB travel time from Georgetown to WB Route 50: 10 min. (+4 min.)
- EB travel time from Lee Hwy to Georgetown: 13 min. (equal)
- WB travel time from N. Arlington Ridge Rd to N. Rhodes St: 5 min. (+3 min.)
- NB travel time from Route 50 to Georgetown: 16 min (+1 min.)

**Legend**
- Core Street Reconfiguration Area
- Rosslyn Metrorail Station
- Metrorail Entrances
- Trail Network

**Average Travel Speed**
- Less than 5 mph
- 5 to 10 mph
- 10 to 15 mph
- 15 to 20 mph
- 20 to 25 mph
- 25 to 30 mph
- 30 to 40 mph
- 40 to 50 mph
- 50 to 60 mph
- Greater than 60 mph

**Travel time differences reference**
- Change from existing conditions
- Change from 2030 Baseline Scenario

**Congestion Hot Spots**

**Study Area Speed Limits**

<table>
<thead>
<tr>
<th>Rosslyn Core Streets</th>
<th>Lee Highway</th>
<th>Arlington Boulevard</th>
<th>I-66</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPEED 25</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPEED 30</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPEED 45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPEED 55</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Figure 8.8: Preferred Alternative Vehicular Traffic Flow – PM

**2030 Baseline Scenario***

- SB travel time from Georgetown to Route 50: 6 min. (+1 min.)
- EB travel time from Lee Hwy to Georgetown: 11 min. (+2 min.)
- WB travel time from N. Arlington Ridge Rd to N. Rhodes St: 3 min. (+1 min.)
- NB travel time from Arlington Blvd to Georgetown: 15 min. (+5 min.)

**2030 Preferred Alternative**

- SB travel time from Georgetown to WB Route 50: 8 min. (+2 min.)
- EB travel time from Lee Hwy to Georgetown: 12 min. (+1 min.)
- WB travel time from N. Arlington Ridge Rd to N. Rhodes St: 3 min. (equal)
- NB travel time from Arlington Blvd to Georgetown: 16 min. (+1 min.)

**Travel Time Differences**

- Reference change from existing conditions
- Reference change from 2030 Baseline Scenario

**Legend**

- Core Street Reconfiguration Area
- Rosslyn Metrorail Station
- Metrorail Entrances
- Trail Network

**Average Travel Speed**

- Less than 5 mph
- 5 to 10 mph
- 10 to 15 mph
- 15 to 20 mph
- 20 to 25 mph
- 25 to 30 mph
- 30 to 40 mph
- 40 to 50 mph
- 50 to 60 mph
- Greater than 60 mph

**Congestion Hot Spots**

- Lee Highway
- Arlington Boulevard

**Study Area Speed Limits**

- Rosslyn Core Streets 25 mph
- Lee Highway 30 mph
- Arlington Boulevard 45 mph
- I-66 55 mph
Vehicle Conditions

In general, the impact of the 2030 Preferred Alternative street reconfiguration on the major regional roadways is consistent with that observed due to the volume growth of the baseline conditions. The proposed changes to the transportation network and signal operations from Concept 2 generally have a positive impact to the multimodal operations in the Core of Rosslyn except for locations where trade-offs were made with the vehicle network for improved bus access or pedestrian and bicyclist safety. At an overall network level, the 2030 Preferred Alternative has similar levels of traffic throughput, but higher vehicular delays compared to baseline conditions while providing safer facilities for bicyclists and pedestrians and better access for vehicular traffic. It also has greater throughput and less delays compared to Concept 2 due to improved signal timing.

<table>
<thead>
<tr>
<th>Measure of Effectiveness</th>
<th>Evaluation Metric</th>
<th>2030 Baseline</th>
<th>2030 Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Queues at Critical Intersections Approaches&lt;sup&gt;7&lt;/sup&gt;</td>
<td>Number of critical intersection approaches with queues that exceed available block length during peak hours</td>
<td>AM: 17 out of 18 approaches PM: 16 out of 18 approaches</td>
<td>AM: 14 out of 18 approaches PM: 16 out of 18 approaches</td>
</tr>
<tr>
<td>Overall Vehicle Delay at Intersections&lt;sup&gt;8&lt;/sup&gt;</td>
<td>Number of intersections operating with significant overall delay (LOS F) during peak hours (VISSIM analysis area)</td>
<td>8 out of 43 intersections during the AM and/or PM peak hours</td>
<td>10 out of 43 intersections during the AM and/or PM peak hours</td>
</tr>
<tr>
<td>Peak Period Travel Time/Speed&lt;sup&gt;9&lt;/sup&gt;</td>
<td>Number of critical segments with travel speeds less than 50 percent of posted speed limit during peak hours</td>
<td>AM: 5 out of 6 critical segments PM: 5 out of 6 critical segments</td>
<td>AM: 6 out of 7 critical segments PM: 7 out of 7 critical segments</td>
</tr>
</tbody>
</table>

<sup>7</sup> Source: Study VISSIM model
<sup>8</sup> Source: Study VISSIM model
<sup>9</sup> Source: Study VISSIM model
8.7 Parking and Curbspace Network

2030 Baseline
The 2030 Baseline scenario parking and curbspace assumptions are very similar to existing conditions, except for changes to the curb space associated with approved development projects. The 2030 Baseline network has approximately 98 on-street parking spaces within the Core Street Reconfiguration Area. On-street parking is primarily concentrated on the north-south streets, especially on N. Lynn Street. Other primary curb space uses include:

- Curb ramps
- Driveways
- No parking zones
- Multimodal curb space
  - Freight loading zones
  - Bus loading and unloading
  - Carshare
  - Bikeshare
  - Bike lanes buffered by parking

2030 Preferred Alternative
The 2030 Preferred Alternative adds additional on-street parking spaces along Fort Myer Drive, N. Moore Street, and portions of N. Lynn Street. Parking spaces on east side of N. Lynn St and west side of Fort Myer Drive are off-peak spaces only that prohibit parking during morning and evening rush hour periods to provide additional travel lanes. In some locations, space currently allocated to on-street parking is repurposed and offset from the curb to create dedicated, parking-protected bicycle facilities. Bus stops for transfers to and from the Metrorail station are unchanged and remain on the west side of N. Moore Street.
Parking and Curbspace Conditions

The 2030 Preferred Alternative resulted in an increase of 64 additional spaces compared to Baseline Scenario, including off-peak parking, as shown in Figure 8.9. Table 8.6 compares the 2030 Preferred Alternative parking supply to that of the 2030 Baseline.

Demand for curb space is evolving dramatically due to new transportation options and, as such, the study team is not prescribing specific curb space purposes (parking, taxi stands, bus parking, etc.). The County will revisit curbspace allocation as new transportation projects resulting from this study are implemented.
Figure 8.8: 2030 Preferred Alternative Parking and Curbspace

- **2030 Baseline Scenario**
- **2030 Preferred Alternative**

**Legend:**
- Core of Rosslyn Area Boundary
- Existing Building: Per Arlington County GIS
- Proposed Approved Development: Per Arlington County
- Traffic Signal
- One-Way Cycle Track
- Multi-Use Path
- Direction of Travel
- Bike Lane / Buffered Bike Lane
- Parking Lane
- Off-Peak Parking
- Bus Lane
- Metro Station

- **Legend Notes:**
  - BUS STOP
  - Street Parking Removed With Preferred Alternative
  - New Street Parking With Preferred Alternative
  - Unchanged Street Parking Compared to 2030 Baseline

- **Parking Spaces:**
  - Parking spaces on east side of Lynn St and west side of Fort Myer Dr are off-peak spaces only (no parking during rush hour periods)
### Table 8.6: Future Conditions Parking and Curbspace Measures

<table>
<thead>
<tr>
<th>Measure of Effectiveness</th>
<th>Evaluation Metric</th>
<th>2030 Baseline</th>
<th>2030 Preferred Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quantify of On-Street Parking Supply</td>
<td>Existing number of on-street parking (Core Street Reconfiguration Area)</td>
<td>Approximately 98 on-street parking spaces</td>
<td>Approximately 162 parking spaces (includes off-peak parking)</td>
</tr>
<tr>
<td><strong>Quantity of New Multimodal Curbspace</strong></td>
<td>Existing multimodal curbspace&lt;sup&gt;10&lt;/sup&gt; (Core Street Reconfiguration Area)</td>
<td>Approximately 2,240 feet of multimodal curbspace, or 11% of the total curbspace</td>
<td>Approximately 2,900 feet of multimodal curbspace, or 15% of the total curbspace</td>
</tr>
</tbody>
</table>

<sup>10</sup> Assumed to include car share, bike share, loading zone, taxi, bus parking areas shown in existing conditions
8.8 Investigation of Rosslyn Bypass Options

The study team conducted a follow-up task of performing a ramp select link analysis. This analysis was completed as a way to assess the potential of diverting traffic around the Core of Rosslyn rather than traffic using the roads in the Rosslyn Core as a pass through. The analysis examined three potential ramps, conducted a two-step modeling process, and drew conclusions from the analysis.

The three ramps were:

1. An on-ramp from eastbound Lee Highway to eastbound I-66 between Veitch Street and Nash Street
2. A ramp from southbound Key Bridge to southbound George Washington Memorial Parkway
3. A ramp from eastbound Arlington Boulevard (US 50) to southbound Route 110

The two-step analysis process involved running the MWCOG model with the ramp added as a new network link, running the select link analysis as a “rerun” of the final traffic assignment to calculate, and recording the trips using the new link.

The analysis revealed the following:

1. An on-ramp from eastbound Lee Highway to eastbound I-66 between Veitch Street and Nash Street reduces volumes moving through Rosslyn (via Lee Highway across Fort Myer Drive and N. Lynn Street) to access I-66.
   - Estimated 2030 AM peak hour demand = 1,150 vehicles per hour (vph)
   - Estimated 2030 PM peak hour demand = 600 vph

2. A ramp from southbound Key Bridge to southbound George Washington Memorial Parkway (while geometrically challenging to design and construct) would connect Key Bridge traffic coming into Virginia to Arlington Boulevard and other connections south of Rosslyn without going through the Rosslyn core area.
   - Scenario 1 (this ramp only)
     - Estimated 2030 AM peak hour demand = 150 vph
     - Estimated 2030 PM peak hour demand = 350 vph
   - Scenario 2 (this ramp implemented also with ramp from eastbound US Route 50 to southbound Route 110)
     - Estimated 2030 AM peak hour demand = 550 vph
     - Estimated 2030 PM peak hour demand = 1,050 vph

3. A ramp from eastbound Arlington Boulevard (US Route 50) to southbound Route 110 would potentially reduce congestion on N. Lynn Street caused by vehicles going from eastbound US Route 50 to N. Lynn Street to eastbound Wilson Boulevard to access Route 110.
   - Scenario 1 (this ramp only)
     - Estimated 2030 AM peak hour demand = 900 vph
     - Estimated 2030 PM peak hour demand = 700 vph
   - Scenario 2 (this ramp implemented also with ramp from eastbound US Route 50 to southbound Route 110)
     - Estimated 2030 AM peak hour demand = 1,050 vph
     - Estimated 2030 PM peak hour demand = 800 vph

The study team summarized the analysis in Appendix D. The study team recommends further analysis of these Rosslyn bypass options, as well as additional evaluation or a ramp from eastbound US Route 50 to northbound Route 110 as a N Lynn Street bypass and a ramp from westbound I-66 to southbound George Washington Memorial Parkway to avoid extra turning movements over the Meade Street Bridge.
9. NEXT STEPS FOR IMPLEMENTATION

With the selection of the 2030 Preferred Alternative for this Core of Rosslyn Transportation Study, the study team examined the findings from the analyses and laid out steps for implementation of specific projects that, over time, will result in realizing the Preferred Alternative. The team also looked ahead and examined additional courses of action to take in the coming years to further realize the vision of the Rosslyn Sector Plan.

Implementing all of the changes from the 2030 Baseline to the 2030 Preferred Alternative shown in the overall concept plan will require a series of street-by-street projects. Section 9.2 summarizes the contingencies associated with the projects and describes the timing and priorities of the projects. Appendix E, Implementation Projects, provides detail for projects that require dedicated funding. Each of the projects includes a description, a comparison of the 2030 Baseline and 2030 Preferred Alternative conditions for that project, a summary of probably costs, anticipated timeline, and other project assumptions.
9.1 Implementation Categories

Based on input from key stakeholders and considering the goals of the County’s Capital Improvement Program (CIP), the proposed future projects described in Appendix E have been grouped into implementation categories, which are described in Tables 9.2 through 9.8 and shown in Figures 9.2 through 9.8 on the following pages. The “fulcrum” project—the one project that needs to be built to allow the Preferred Alternative to be realized—is Fort Myer Drive, especially the first element of the Fort Myer Drive project, which is to convert the existing tunnel. Following the tunnel conversion, the rest of Fort Myer Drive can be improved and many other projects can be implemented.

Table 9.1: Project Index from Core of Rosslyn Transportation Study Implementation Projects Document

<table>
<thead>
<tr>
<th>PROJECT INDEX</th>
<th>Fort Myer Drive Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Independent of Fort Myer Drive Tunnel Conversion</strong></td>
<td></td>
</tr>
<tr>
<td>A. Dark Star Park Expansion</td>
<td></td>
</tr>
<tr>
<td>B. 17th Street: Ramp Closure and Multimodal Improvements</td>
<td></td>
</tr>
<tr>
<td>C. N. Lynn Street: Protected Bike Lanes</td>
<td></td>
</tr>
<tr>
<td>D. Fort Myer Drive: Western Sidewalk Improvements</td>
<td></td>
</tr>
<tr>
<td>E. N. Lynn Street: Cycle Track</td>
<td></td>
</tr>
<tr>
<td>F. Wilson Boulevard: Protected Bike Lanes</td>
<td></td>
</tr>
<tr>
<td>G. Wilson Boulevard: Eastbound and Westbound Protected Bike Lanes</td>
<td></td>
</tr>
<tr>
<td>H. 19th Street N.: Bike Lanes</td>
<td></td>
</tr>
<tr>
<td>I. Key Boulevard: Bike Lanes</td>
<td></td>
</tr>
<tr>
<td><strong>Fort Myer Drive Tunnel Conversion</strong></td>
<td></td>
</tr>
<tr>
<td>J. Fort Myer Drive Tunnel Conversion</td>
<td></td>
</tr>
<tr>
<td>K. Fort Myer Drive Restriping and CurbSpace Improvements</td>
<td></td>
</tr>
<tr>
<td><strong>Dependent on Fort Myer Drive Tunnel Conversion</strong></td>
<td></td>
</tr>
<tr>
<td>L. 18th Street Corridor: Signalized Crossing</td>
<td></td>
</tr>
<tr>
<td>M. N. Meade Street: Ramp Intersection Redesign</td>
<td></td>
</tr>
<tr>
<td>N. Fort Myer Drive: Cycle Track</td>
<td></td>
</tr>
</tbody>
</table>
9.2 Implementation Priorities and Tentative Timeline

This section identifies the funding priorities for each of the implementation projects. The project team allocated High Priority Funding to the major projects that will be the most transformative in realizing the Sector Plan vision. Priority Funding projects are also pivotal projects in achieving Sector Plan goals and multimodal objectives. Lower Priority Funding projects are those that will further the vision of the Sector Plan but are not as critical to the operations or functionality of the transportation system. It is important to remember that the implementation projects cannot be built all at once, as each will involve a detailed design process, public engagement, dedicated funding, and time for construction. The County will move forward with each project as resources are available; all timelines are tentative and subject to change.

Unfunded Projects are on a long-term timeline and will be considered for funding by the County as opportunities become available in the future. These projects are key elements of the Sector Plan but either require a level of financial investment not currently available or are follow-up projects to the projects resulting from this study.

Developer-led projects are funded through the site planning process and built as part of redevelopment. These are divided into Developer-Led Near-Term projects, which are site plans that are in the County’s Site Plan Review Committee (SPRC) process and Developer-Led Long-Term, which are site plans that are either stalled or have yet to go through the SPRC process. The timelines for these projects are subject to change based on site plan design and construction processes. Commercial property owners and developers often deliver transportation improvements adjacent to their development. This is a long-standing process that has been successful in delivering transportation infrastructure projects.

More detail on the projects slated for County-led funding is provided in Appendix E, Implementation Projects.
**Table 9.2: Short Term/Low Cost Improvements**

<table>
<thead>
<tr>
<th>A</th>
<th>Multimodal Enhancements to N Moore St</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Tactical Closure of the Dark Star Park Slip Lane</td>
</tr>
<tr>
<td>C</td>
<td>Fort Myer Dr Tactical Cycle Track (Lee Highway to N. Fairfax Drive)</td>
</tr>
</tbody>
</table>
| D | N. Lynn St Tactical One-Way Cycle Track (Wilson Boulevard to Eastbound Lee Highway)  
  - New Curbspace Allocation (Pick-Up/Drop-Offs, Tour Bus Parking, Taxi Stands, etc.) |

**Figure 9.2: Short Term/Low Cost Improvements**
### Table 9.3: High Priority Funding Projects (target for implementation in mid-2020s)

<table>
<thead>
<tr>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Fort Myer Dr Tunnel Fill-In &amp; Intersection Redgrade</td>
</tr>
<tr>
<td>B. Fort Myer Dr Multimodal Improvements (from 18th St Corridor to 17th St N Crossing)</td>
</tr>
<tr>
<td>C. N Meade St Ramp Intersection Redesign</td>
</tr>
<tr>
<td>D. 18th St Corridor Signalized Crossing (over Fort Myer Dr)</td>
</tr>
</tbody>
</table>

- Analysis of Regional Connections and Bypass Options to Reduce Rosslyn Through-Traffic

More detail on the projects slated for County-led funding is provided in **Appendix E**, Implementation Projects.
**Table 9.4:** Priority Funding Projects  
(target for implementation in mid- to late-2020s unless funding can be secured sooner)

| A | N Lynn St Cycle Track Build Out (from Lee to Wilson) |
| B | Fort Myer Dr Cycle Track Build Out (from Wilson to Fairfax) |
| C | Fort Myer Dr Western Sidewalk Improvements (at Gateway Park Area) |
| D | N Lynn St Protected Bike Lanes (from Wilson to Fairfax) |
| E | Wilson Blvd Protected Bike Lanes Westbound (from Kent to Oak) and Eastbound (from Lynn to Kent) and Eastbound Bike Lane (Oak to Lynn) |

- Transit Stop and Curbspace Evaluation and Assessment

More detail on the projects slated for County-led funding is provided in **Appendix E**, Implementation Projects.
Table 9.5: Lower Priority Funding Projects
(Target for implementation in late-2020s unless funding can be secured sooner)

<table>
<thead>
<tr>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>17th St N Ramp Closure &amp; Multimodal Improvements</td>
</tr>
<tr>
<td>Dark Star Park Expansion</td>
</tr>
<tr>
<td>19th St N Bike Lanes (from Lynn to Arlington Ridge Rd)</td>
</tr>
<tr>
<td>Key Blvd Bike Lane (Connection from Nash to Key)</td>
</tr>
</tbody>
</table>

More detail on the projects slated for County-led funding is provided in Appendix E, Implementation Projects.
Table 9.6: Unfunded Long-Term Projects (target for implementation beyond 2030)

Unfunded Long-Term Projects (target for implementation beyond 2030)

- A Gateway Park Connectivity Improvements
- B Meade St Bridge Improvements
- C Further Assessment of Two-Way Lynn St (Study)
  - Design and Construction of Bypass Ramps or Regional Connections Identified in Study

Unfunded Projects are on a long-term timeline and will be considered for funding by the County as opportunities become available in the future. These projects are key elements of the Sector Plan but either require a level of financial investment not currently available or are follow-up projects to the projects resulting from this study.
### Table 9.7: Developer-Led Near-Term Projects
(target for implementation in early- to mid-2020s, subject to change based on development)

<table>
<thead>
<tr>
<th>Project Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Fort Myer Drive Multi-Use Path Improvements (Key Bridge to WB Lee Highway)</td>
</tr>
<tr>
<td>B Fort Myer Drive Cycle Track (EB Lee Highway to 19th St N)</td>
</tr>
<tr>
<td>C Fort Myer Drive Cycle Track (19th St N to Wilson Blvd)</td>
</tr>
<tr>
<td>D 18th St Corridor Pathway Connections (between N Oak St and N Moore St)</td>
</tr>
<tr>
<td>E Removal of Slip Lanes along Fort Myer Dr (at N Nash St and EB Lee Highway)</td>
</tr>
</tbody>
</table>

Developer-led projects are funded through the site planning process and built as part of redevelopment. The plans, designs, and timelines for these projects are subject to change based on site plan design and construction processes.
Table 9.8: Developer-Led Long-Term Projects (target for implementation in mid- to late-2020s or beyond, subject to change based on development)

<table>
<thead>
<tr>
<th>Developer-Led Long-Term Projects (target for implementation in mid- to late-2020s or beyond, subject to change based on development)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>D</td>
</tr>
<tr>
<td>E</td>
</tr>
<tr>
<td>F</td>
</tr>
<tr>
<td>G</td>
</tr>
<tr>
<td>H</td>
</tr>
<tr>
<td>I</td>
</tr>
<tr>
<td>J</td>
</tr>
</tbody>
</table>

Developer-led projects are funded through the site planning process and built as part of redevelopment. The plans, designs, and timelines for these projects are subject to change based on site plan design and construction processes.
9.3 Future Actions

As the implementation projects move forward into programming, design, and construction, additional efforts will be necessary to further realize the Preferred Alternative, including:

Transit Stop Assessment. As development increases and travel patterns evolve, the County will continue to assess locations of transit stops for ART and WMATA service. As Fort Myer Drive evolves, the County will assess opportunities to integrate new or relocate bus stops onto the streetscape.

Curb space Management. Transportation-related uses compete for a limited amount of curb space on many of the streets in Rosslyn. Parking, loading zones, taxis, transportation network companies (TNCs, i.e., Uber, Lyft, etc.), transit, bike share, scooters, mopeds, and even driveways and curb ramps are all possible needs along a street curb. Arlington will continue to optimize curbspace, meeting a balance of needs location by location as development and streetscape changes take place.

Hired Ride Services. Taxis, transportation network companies (TNCs, i.e., Uber, Lyft, etc.), and similar services will continue to need access to passengers. The County will continue to coordinate and evolve with developments in this aspect of transportation in Rosslyn, reacting with improvements in policies, regulations, and curb space management.

Two-Way N. Lynn Street. While this Core of Rosslyn Transportation Study concluded that converting N. Lynn Street to two-way traffic is not practical by 2030, the Rosslyn Sector Plan’s vision of a two-way N. Lynn remains. The County will continue to look for the right opportunity to convert this street.

Connections to Gateway Park. As the Gateway Park space and its uses continue to evolve to meet the needs of Arlington’s citizens, multimodal connections will also need to continue to improve with development opportunities.

Investigation of Rosslyn Bypass Options. The study team recommends a future in-depth analysis of Rosslyn bypass options to assess the potential of diverting traffic around the Core of Rosslyn rather than traffic using the roads in Rosslyn Core as a pass through. This includes further analysis of the ramp options evaluated in Section 8.8 in partnership with regional partners including VDOT, NPS, and DDOT.

Advancement of Meade Street Bridge Project. The study team recommends revisiting the preferred concept plan developed for Meade St Bridge in 2012. This bridge is a critical linkage for both the Rosslyn neighborhood and the region. Improving pedestrian and bicycle connections over the bridge will fill an existing gap in the region’s active transportation network. Enhancing the roadway network and signalization over the bridge will also serve to improve traffic flow.
10. ACKNOWLEDGEMENTS

Arlington County Board

- Christian Dorsey, Chair
- Libby Garvey, Vice Chair
- Katie Cristol, Member
- Erik Gutshall, Member
- Matt de Ferranti, Member

Core of Rosslyn Transportation Study Strategy Group

- Kael Anderson, National Capital Planning Commission
- Gillian Burgess, Bicycle Advisory Commission
- Douglas Plowman, Rosslyn Business Improvement District
- Patricia Darneille, Resident
- Eric Goldstein, Pedestrian Advisory Commission
- Kingdon Gould III, Gould Property Company
- Mary O’Connor, Resident
- Tim Friemel, Snell Properties
- Wil Machen, Meridian Group
- Nicole Merlene, Resident
- Frank Poli, Penzance
- Christopher Raines, Dittmar
- Gregory Rowles, American Real Estate Partners
- Mary Schmelzer, Resident
- James Schroll, Transportation Commission
- Chris Slatt, Transportation Commission
- Suzette Timme, Weissberg Corp.
- Andrew Van Horn, JBG

Rosslyn Business Improvement District

- Mary-Claire Burick
- Victor Carcamo
- Douglas Plowman
- Alli Henry
- Santya Lanman

Arlington County Core Study Team

- Daniel Nabors
- Christine Sherman
- Kelly Cornell
- Eric Balliet
- Matt Mattauszek
- Dennis Leach
- Ritch Viola

Study Consultants

- Kimley-Horn
# APPENDICES

A. List of References  
B. Existing Conditions Report  
C. Future Conditions Report  
D. Ramp Select Link Analysis  
E. Implementation Projects  
F. Study Area Cross Sections