

Transportation



5.1. Existing Transportation Conditions

Regional Context

The Landmark/Van Dorn Corridor is located at a transportation crossroads. Two interstates (I-395 and Capital Beltway), a commuter line rail, a heavy rail line, and two major arterial streets (Van Dorn Street and Duke Street) provide access to and through the Plan area. These major transportation corridors create regional access; however, regional through trips and spillover traffic during congestion on the regional expressway system can severely impact local traffic within the Plan area. The Van Dorn Metro Station is located in the southern section of the Plan area.

The regional demand for travel from points south in Virginia, to employment centers in Arlington and Washington, DC is substantial. The combined traffic on I-395 and US Route 1 is over 200,000 vehicles per day. As an alternative, many commuters use the north-south access of Van Dorn Street, which is the only non-interstate north-south route between Backlick Road and Telegraph Road, a distance of 6 miles. Therefore, the traffic volume along Van Dorn Street is very high during peak hours. When the I-395 and Capital Beltway function without congestion, through traffic has a high speed alternative to Duke Street or Van Dorn Street. However, when the interstates experience heavy congestion, through traffic spills onto Duke and Van Dorn streets.

Transit

The Plan area is served by both commuter rail and regional and local bus service. Transit usage for commuting is well above the region as a whole. As reported in the 2000 Census, 18.2% of those commuting from the Plan area used public transportation, compared to 16.4% for Alexandria as a whole and 9.3% for the Washington, D.C. metropolitan region.

The Plan area is served by Metro rail service at the Van Dorn Street Station on the Metro Blue Line. However, Backlick Run and the Norfolk-Southern rail line are barriers between the station and the rest of the Plan area.

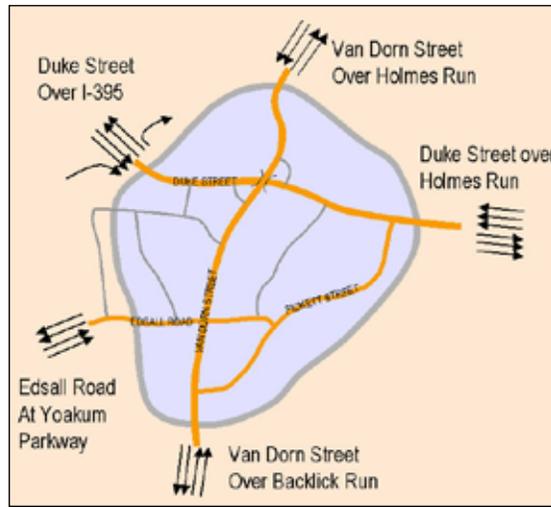


Figure 5-1. The existing street system limits access to the core of the planning area to five points, four of which are over bridges.

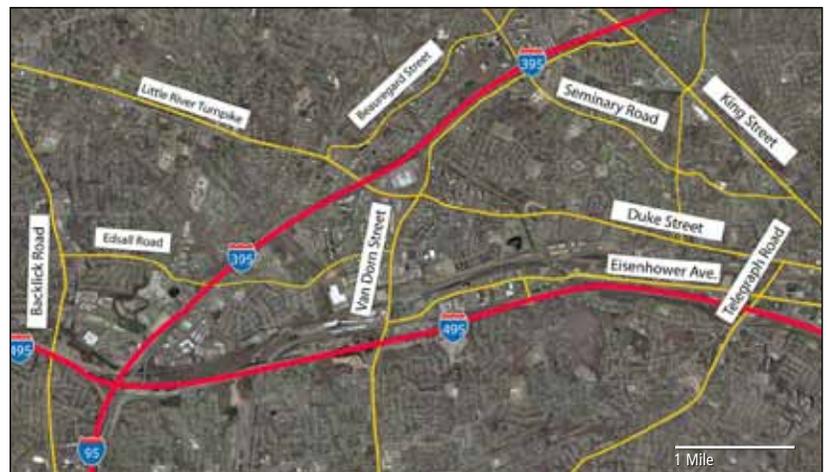


Figure 5-2. This figure illustrates the limitations of the local arterial roadway and expressway system in handling north-south traffic. Van Dorn Street is the only north-south link across the Capital Beltway between Telegraph Road and Backlick Road, a distance of six miles. Its location makes it a desirable short-cut for I-395 traffic to and from southeastern Fairfax County or across the Woodrow Wilson Bridge.



DASH bus at Van Dorn Street Metro Station



Backlick Run, industrial uses and rail lines separate the Van Dorn Street Metro Station from the Landmark/Van Dorn area.



Bus stop on Pickett Street has minimal amenities for riders.



Metro bus 25B on Pickett Street destined for Van Dorn Street Metro Station

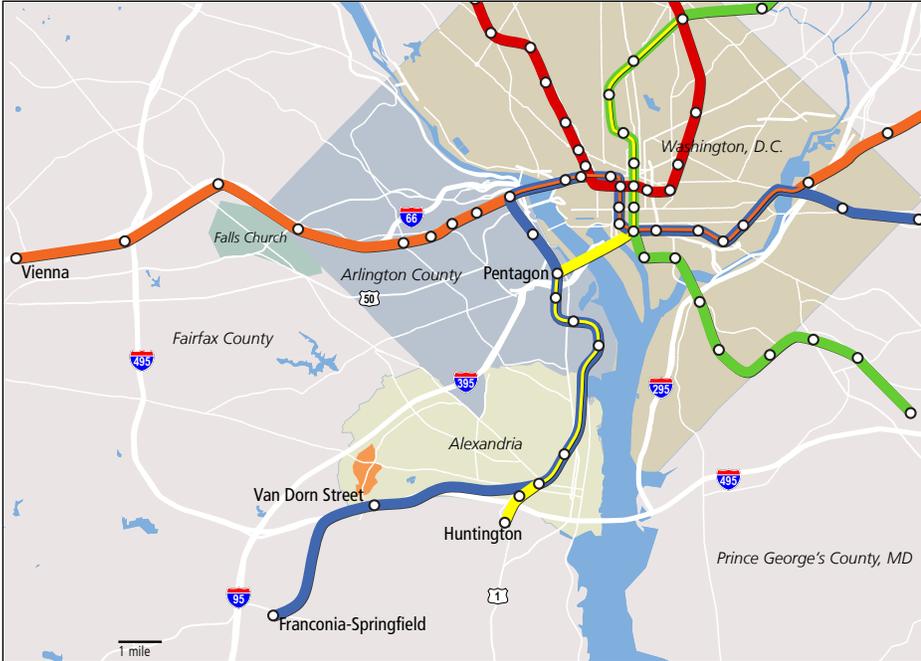
Although the nearest residents of Cameron Station are less than 2000 feet from the Metro station, the walking distance to the station is more than a mile over the Van Dorn Street bridge. An average of 3,910 daily boardings was reported at the Van Dorn Street Metro in the 2005 Metro statistics. This is less than half the average of all Metro stations in the system, and is more typical of an outer suburban station.

There is an abundance of bus service, with three systems serving the Plan area directly. Fairfax Connector buses stop at Landmark Mall, on a route that connects George Mason University and the Pentagon along Braddock Road and I-395. The Washington Metropolitan Transit Authority (WMATA) operates five lines through the Plan area. Alexandria's DASH system operates four lines that serve the Van Dorn Street Metro Station and Landmark Mall with connections to Old Town and the King Street Metro Station along different east-west streets. The DASH long-range plan expects two additional lines to be added in this area.

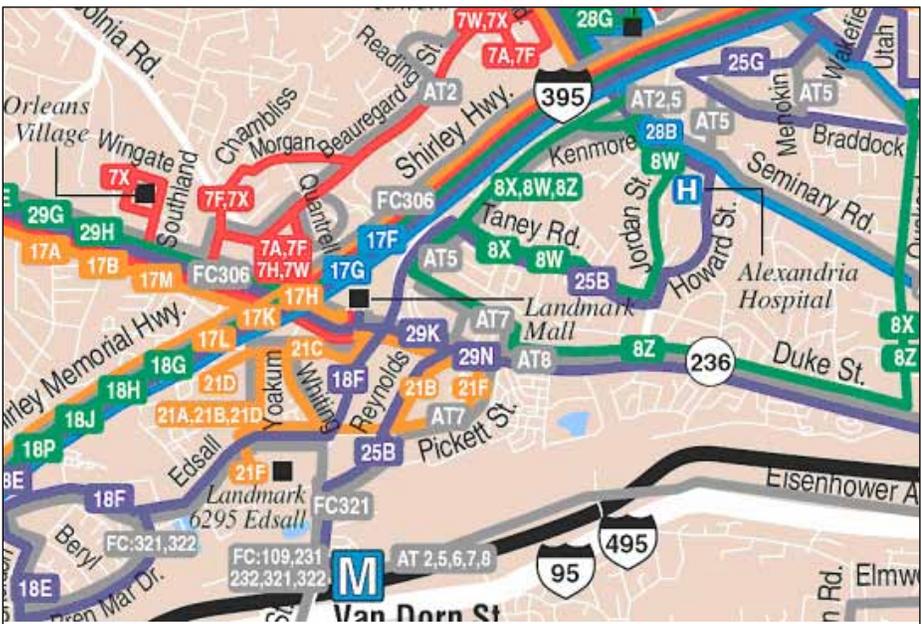
However, bus service has long headways and is generally uncoordinated. Peak-hour commuter service on each DASH bus route is typically every 20 to 30 minutes, providing 10-minute headways in many areas served by multiple routes. 30-minute to 1-hour headways are typical through the remainder of the day from 5:30 A.M. until 10:00 P.M. or later. WMATA and Fairfax Connector buses in the Plan area run less frequently. Service on all lines is less frequent on weekends. Landmark Mall is currently the most-used non-Metrorail station transit location in the City of Alexandria, reflecting its importance in the public transportation system as both a transit destination and a transit transfer point.

Street System

The street system in the Plan area is a classic suburban design characterized by a few major arterials that handle most traffic, a series of disconnected local streets, and "superblocks" that feature low intensity development, considerable surface parking, and multiple curb cuts.



Metro rail system. Because the Van Dorn Street Metro Station is near the end of the Metro Blue Line, Metrorail does not provide service in the area where many of those who work in Alexandria live. Metrorail provides good access to employment in the core of the Washington, D.C. metropolitan area for residents of the planning area.



Bus Service in the Landmark/Van Dorn Area includes DASH, WMATA and Fairfax Connector buses. The area has many bus routes, but frequent service is limited to peak commute hours.



Figure 5-3. Existing street system serving the planning area.

The two major arterials are Van Dorn Street and Duke Street which cross at separate grades. Because the two arterials are not supported by a network of parallel streets, both through traffic and local traffic must use these two roads to travel through the area. Blocks are two to five times as long as traditional blocks in Old Town.

Street access to Landmark Mall is counter-intuitive and awkward, particularly the “flyover” from eastbound Duke Street into the Mall, which also creates a barrier between the mall and the rest of the Plan area and is a particular barrier to pedestrians. Access is further complicated by the need to accommodate considerable mall-bound traffic arriving from nearby I-395 as well as traffic exiting the mall bound for I-395. Circulation within the Mall is complicated, and it is difficult for first time visitors to navigate.

Currently, the area experiences traffic congestion during peak hours, with reduced speeds and longer wait times at signalized intersections. Under normal circumstances, traffic continues to flow and most signals clear during a normal cycle.

Pedestrians and Bicycles

The development pattern and transportation network in the Plan area places pedestrians at a disadvantage. Roadway characteristics, especially along Duke Street and Van Dorn Street, include wide vehicle travel lanes, wide turning radii and free right-turn lanes. These conditions lengthen the time needed by pedestrians to cross the street, put pedestrians out of drivers' zones of vision, and encourage high-speed turns that are a hazard to pedestrians.

The presence of the large superblocks means long distances between crosswalks (as much as 1/4 mile on Van Dorn Street and 1/2 mile on Duke Street) and long-way-around walks to local destinations. Compounding the problem of superblocks are parking lots located between the street and the building. The result is that pedestrians

must often walk substantial distances in driveways or through parking lots to reach residences or businesses from the street.

The sidewalk network is discontinuous, with examples Pickett Street in front of industrial uses in the southern part of the Plan area and across the Van Dorn Street Bridge over Duke Street. Where sidewalks do exist, they are often narrow, cluttered with utility poles and guy wires, and not well-maintained. These conditions further impede pedestrian access to the Van Dorn Metro.

The Plan area is less than 1.5 miles in length. While a lengthy walk, this distance is easily covered by bicycle in less than 15 minutes. However, the lack of bicycle infrastructure and the hilly terrain in the Landmark/Van Dorn Plan area create obstacles to bicycle and pedestrian travel. Relatively steep grades on north-south streets such as Van Dorn Street make operating bicycles in traffic more difficult on these routes. Holmes Run along the area's eastern edge does provide one dedicated bicycle route that is used mostly for recreational riding.



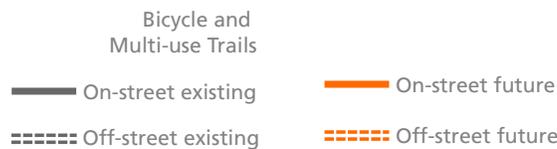
Bikes at Van Dorn Street Metro Station



Figure 5-4. Walking distance to Metro. This map shows the walking distance to the Van Dorn Street Metro Station for distances up to one mile. Only within one-half mile can a substantial share of workers or residents be expected to walk to a metro rail station as part of a commute trip. None of development sites in the planning area are within one-half mile of the station on foot.



Figure 5-5. Bicycle Paths in the Landmark/Van Dorn Area. This map shows the existing and proposed bicycle paths from the City's *Bicycle Circulation and Multi-Use Trail Master Plan*.





A wheelchair user negotiates three adjacent driveways on Van Dorn Street north of Pickett Street.



Pedestrians using the Van Dorn Street overcrossing of Duke Street must walk in the street.



Pedestrians must walk in the driveway to reach the Giant store at this site entrance from Van Dorn Street.



The intersection of Van Dorn Street and Pickett Street shows the gauntlet of high-speed right-turn lanes, large curb radii and driveways that challenge pedestrian travel.



Pedestrians have worn their own path to this auto-oriented restaurant set back from the street. From the other corner of the site, pedestrians enter via the driveway and cross one parking aisle and a passenger drop-off lane to reach the entry door.

Transportation Issues and Challenges

The following existing conditions make walking, bicycling, riding transit and driving challenging:

- Automobile-oriented development pattern of strip commercial and warehouse buildings with expanses of surface parking
- Large superblocks without controlled pedestrian crossings or pedestrian breaks mean long walks are required to nearby locations.
- The need for Landmark Mall access in the relatively short distance between I-395 and Van Dorn Street.
- Steep grades on parts of Van Dorn Street and Whiting Street make walking more difficult.
- Lack of a street grid means relying on busy arterial streets to make most local trips.
- Arterial streets with a high volume of traffic create a barrier to walkability
- Limited access into and out of the area helps manage through traffic, but means few choices if a route is slow because of accidents or construction.
- Proximity to I-395 provides a high degree of automobile accessibility, challenging the goal of a greater share of trips being made by transit.

5.2. Vision, Goals, and Principles

City of Alexandria Vision

In April 2008, the City adopted a comprehensive revision to its Transportation Master Plan. The Master Plan defines the City's vision and policies in six sections including Transit, Pedestrian, Bicycle, Streets, and Parking. The final section, Funding and Implementation, identifies process and policies to fund and implement the Plan.

As articulated in the Transportation Master Plan, the City of Alexandria envisions a transportation system that encourages the use of alternative modes of transportation and reduces dependence on the single-occupant vehicle. This system will lead to the establishment of transit-oriented, pedestrian friendly village centers, focused on neighborhood preservation and increased community cohesion, forming a more urban, vibrant and sustainable Alexandria. The City promotes a balance between travel efficiency and quality of life, providing Alexandrians with transportation choice, continued economic growth and a healthy environment.

Community Goals for Transit and Transportation in Landmark/Van Dorn

The Landmark/Van Dorn Advisory Group developed the following goals for transit and transportation in the Plan area:

- Create a more connected, urban grid system, with walkable blocks, to increase mobility for both pedestrians and vehicles.
- Increase transit ridership through reliable, convenient and coordinated transit services, with an emphasis on effective transit service on Van Dorn Street between Landmark Mall and the Van Dorn Street Metro Station
- Provide safe, convenient and attractive pedestrian and bicycle access to all transit nodes, centers and stations

- Provide off-street, dedicated pedestrian and bicycle paths to connect transit, activity centers, neighborhoods, open space, and community facilities.

Transportation Planning Principles

Based on the community's goals, the Advisory Group formed the following principles to guide the development of a multi-modal transportation system in the Landmark/Van Dorn area that will provide safe and convenient options for vehicles, pedestrians, bicyclists and transit:

- Address vehicular mobility through targeted capacity improvements and by developing a more interconnected street system.
- Develop a safe, pedestrian-friendly environment with walking connections from neighborhoods to activity centers.
- Develop a system of on-street lanes and off-street paths for bicyclists.
- Provide more frequent, reliable regional and local transit service, with connections to and between activity centers and the Van Dorn Street Metro.
- Ensure that the location and design of parking facilities support the transformation of Landmark/Van Dorn from a suburban, automobile-oriented to an urban, pedestrian-oriented environment:
- Place parking below grade to the greatest extent possible to minimize barriers to pedestrian movement, decrease the mass and bulk of buildings, and provide more ground-level open space.
- Locate any above-grade structured parking within a block lined with active uses.
- Limit surface parking where feasible to on-street parking or green parking courts.

5.3. The Landmark/Van Dorn Corridor: Transportation and Transit Vision for 2030

With this vision for the future, the Landmark/Van Dorn Corridor is a great place to walk. New streets connect the West End Town Center with new mixed-use neighborhoods in Pickett Place. Streets, squares and parks are busy with residents, workers and shoppers out for a stroll or for lunch at a local restaurant.

Those commuting to work have a variety of routes and modes of travel to choose from, and many walk, bike or take transit. Traffic speeds on tree-lined boulevards are kept moderate. Excellent regional rail and express transit service reduces through traffic on local arterials, and dedicated transit lanes make transit an efficient way to travel to destinations within and beyond the area.

Building a New Kind of Place

Consistent with the goals, principles, and vision for the Plan area, the Landmark/Van Dorn plan's land use and urban design framework seeks to create a more pedestrian-oriented environment, minimize vehicular trips generated by new development, reduce vehicular trips generated by existing development, and minimize the effect of individual vehicle travel on the performance of the street network.

These measures include:

- Require neighborhood-serving retail uses to be included in both residential and office projects so that many trips for convenience goods and services do not require a car.
- Maintain a balance between jobs and housing within the City, with special attention to preserving and providing workforce housing, to minimize the need for long commutes to jobs in other areas.
- Encourage a mix of employment and residential uses in higher-density areas so that peak-period trips are balanced by direction.
- Focus new development and redevelopment at higher density in areas with the best transit service.

- Design new developments around the pedestrian, with orientation of buildings to the street, convenient walking connections, and a safe, comfortable and interesting pedestrian environment.

The land use plan for the Landmark/Van Dorn Corridor anticipates substantial new development in the period from now until 2030. Approximately 5,000 residential units and several million square feet of non-residential development are proposed. Mixed-use development will help reduce the growth in peak-period travel demand from these new uses by providing opportunities for residents and office workers to shop on-site or nearby without having to drive. Local shuttles and regional transit operating in dedicated lanes will bring employees to the area and take residents to work. A denser pattern of both employment and residences will mean more opportunities for people to work in the same area where they live. A grid of local streets will provide options for local circulation without driving on Duke Street or Van Dorn Street.

5.4. Improve the Street System

The Plan recommends the creation of a walkable, urban environment with a well-connected local street system that supports driving, transit, bicycling and walking within the Plan area and to adjacent neighborhoods and the Van Dorn Metro station.

Street network improvements in the Landmark/Van Dorn Plan are intended to make the existing street network more efficient for individual motor vehicles and transit by addressing existing bottlenecks and improving connectivity. These improvements are not intended to increase the capacity of the street system for through travel. Instead, they provide better connectivity and more choices for local mobility so that travel time and distance are reduced. A result of this emphasis on local connectivity is that through traffic in the Landmark/Van Dorn area is minimized

The grid of urban streets will be created over the long term as properties are redeveloped by their owners. In the short term, pedestrian circulation can be improved immediately by apartment and shopping center owners who open up pedestrian connections through their sites to benefit their tenants and their tenants' neighbors.

Town Center Access over Duke Street

Improving access between the Landmark Mall site and the rest of the Plan area was a strong theme of issue



Figure 5-6. At-grade alternative. Alignment of Duke Street and New High Street with at-grade intersection as main entrance to Landmark Mall site. Alignments would be similar to a bridge connecting the two sides at an upper level, with the at-grade entrance used to access below-grade parking.

identification and design exploration by the Landmark/Van Dorn Advisory Group and local residents in community workshops. A number of potential design solutions for access to the mall site were explored during the planning program including the following:

- A “Dupont Circle” model in which a large traffic circle and open space feature was located at the Van Dorn Street overcrossing of Duke Street, with local access on frontage roads on Duke Street at the upper level and through traffic below
- A bridge over Duke Street between the main at-grade mall entrance and Walker Street.
- A bridge over Duke Street above a lower-level entrance to the mall site, located opposite the ramp from Eastbound Duke Street up to Van Dorn Street.
- An at-grade intersection opposite the ramp from eastbound Duke Street.
- Pedestrian bridges at one or more of the bridge locations.
- A bridge incorporating retail development.
- Direct access from I-395 ramps into the mall site.

All of these options included removal of the existing flyover ramp and substantial pedestrian improvements at the existing Van Dorn Street bridge over Duke Street to



Figure 5-7. Frontage roads alternative. Alignment of Duke Street and New High Street with frontage roads along Duke Street at plaza level and through traffic operating at a lower level at the existing grade of Duke Street.

provide a safe and comfortable experience for pedestrians crossing to the mall site.

Important design criteria identified during the evaluation included the following:

- If a street is to have a continuous retail frontage, the grade should not exceed two percent. This element is a factor when comparing the at-grade mall entrance option with the option that includes a bridge over Duke Street, because the at-grade option produces grades well in excess of what is optimal for a retail street. This element is also a factor in designing the interior street network of the town center on the mall site.
- In order to provide adequate clearance for a bridge structure, the roadway surface of the bridge should be at least 25 feet above the roadway surface below. This requirement significantly limits options for locating the new bridge over Duke Street. The new bridge cannot be located much west of the ramp from eastbound Duke Street to Van Dorn Street ramp without causing the streets approaching the bridge to exceed a 2% grade.
- The changes in grade along Duke Street present significant challenges for entering and exiting ramps, requiring long transition areas for ramps serving more than one lane of traffic.
- Proximity to the I-395 interchange requires careful treatment of vehicular traffic arriving to and departing from the town center. The existing flyover ramp is counter-intuitive for drivers and creates a barrier for pedestrians.
- The changes in grade along Duke Street creates an opportunity to cut the parking costs for the redevelopment with a parking structure that, because of the topography, functions as underground parking.

These factors point strongly toward the preferred option, which is a bridge over Duke Street that is sited approximately at the location of the existing ramps to and from eastbound Duke Street at Van Dorn Street. This option

is preferred because it creates the functional retail and walking street that is needed to connect each side of the Town Center, because it allows the two transit lines to cross each other without conflict, and because it enables cost-effective underground parking solutions which may be needed to bring the redevelopment project to fruition.

An at-grade crossing at this location was determined to be an acceptable but significantly inferior option to make the connection because it does not provide any of the three benefits described above, and because the high traffic volumes, significant turning movements and dedicated transit lanes at this location would make it very difficult for pedestrians to cross Duke Street. In addition, the steeper grades would likely eliminate the possibility for retail along the cross street, further discouraging pedestrian use of that street. Pedestrian improvements to the Van Dorn Street bridge further east, while desirable, are not an effective substitute for the new bridge because the Van Dorn Street bridge is located on the edge, rather than in the center, of the new Town Center.

The concept of a bridge option with frontage roads along Duke Street (the “Dupont Circle” option) with bridge proved to be expensive to construct. It was also a less effective link between north and south because the frontage roads add to the perceived width of Duke Street

New High Street

“New High Street” is a major piece of new infrastructure that will connect the core of the Landmark Mall redevelopment to the balance of the West End Town Center across Duke Street. It then continues south to Pickett Street as a local-serving alternative to Van Dorn Street. Along the way, it greatly improves local connectivity while creating considerable market value for the adjacent parcels that will have additional street frontage. North of Stevenson Avenue, New High Street will also accommodate dedicated lanes for the new Van Dorn Street transit line as it makes its way through the core of the West End Town Center.

This new street is affectionately called “New High Street” in this Plan (there is already a High Street in Alexandria) because the term “high street” is sometimes used as a synonym for “main street” and because the street will cross one of the highest points in the Plan area.

New High Street may cross Duke Street on the new bridge or at grade. While the bridge is the preferred option, the at-grade option works for vehicular traffic but is problematic for pedestrians.

This street is intended to be used for transit, local traffic and for walking, a much calmer alternative to Van Dorn Street. Through traffic will be discouraged by narrow widths, on-street parking, and traffic controls.

Adding a Grid Network of Streets

While the street network of Landmark/Van Dorn will never resemble that of Old Town, the advantages of a grid network of streets can be achieved in the Plan area, which is critical to realizing the multiple transportation objectives of this Plan. In general, the new grid street pattern will emerge as part of the redevelopment process, as many of the new streets are either wholly contained or adjacent to parcels that are expected to redevelop. Of these, three are especially notable:

Pickett Place Main Street: This new main street will form the east-west spine for the Pickett Place neighborhood. In contrast to Van Dorn Street, this street will be relatively flat and ideal for a retail-lined walking street. The street intersects Pickett Square, halfway along its length, and is terminated to the east by a triangular plaza and the Armistead Boothe Park. To the west, the street is terminated by Van Dorn Street, where office buildings may be located, to take advantage of the exposure offered by the high traffic volumes along Van Dorn Street.

Metro Street: This new street runs perpendicular to Pickett Place Main Street and forms an important part of the overall street grid, by offering an alternative to Van Dorn Street for local traffic, and linking up

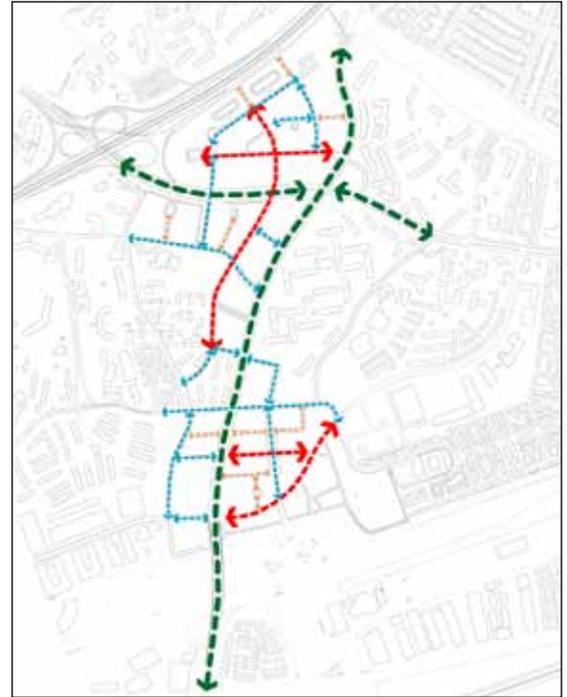


Figure 5-8. Red and blue lines show how additions to the local street network can provide alternatives to arterial streets (in green) and improve pedestrian connections throughout the planning area.

with a multi-modal bridge to the south that crosses over Backlick Run to connect to the Van Dorn Metro. The design intent for this street is for it to be a major pedestrian link to Van Dorn Metro, and in the future to a recovered Backlick Run. The street also offers access to Pickett Place Main Street and Pickett Square, the neighborhood’s major retail and open space amenities. In this area, the intersection of Edsall Road and Pickett Street has an awkward alignment and redevelopment provides an opportunity to improve the intersection’s geometry.

Landmark Mall Main Street: This new street connects from Van Dorn Street to Walker Street through the current Landmark Mall site, and serves as the primary retail shopping street for the north part of the West End Town Center. This street provides a parallel street to Duke Street to the north for local circulation and local transit within the Town Center.



The graphics showing the location of the new streets are illustrative and actual design will be finalized at the time of redevelopment. The Plan recommends that new streets provided through the development process be public streets. Exceptions are subject to the review, and require the approval, of the Director of Transportation and Environmental Services.

Reconstructed Duke Street and Van Dorn Street

Later in this chapter is a discussion of recommendations to reconstruct Duke Street and Van Dorn Street to become transit boulevards with enhanced bicycle and pedestrian. The success of these reconstructions will depend on developer and City commitments to both changing the character of development (from suburban to transit-oriented) and substantially enhancing transit service. The reconstruction projects will also require phased implementation to accommodate locations where structures or parking now occupy the space where bus lanes and sidewalks are proposed.

Additional Access to West End Town Center

The Landmark Mall site abuts an entrance ramp to northwest-bound I-395. The Mall's structured parking is immediately adjacent to the ramp. There is potential for a right-in, right-out access point along the entrance ramp to the mall site. This Plan recommends that this option be pursued during the redevelopment process because a significant fraction of the Mall's visitors arrive via I-395 and this access point would allow some of them to avoid adding to congestion of Duke Street.

Bicycling Enhancements

In addition to separated bicycle lanes along Van Dorn Street between the dedicated bus lane and the pedestrian sidewalk, this Plan recommends developing Backlick Run Trail as a regional multi-use trail connecting the Holmes Run Trail to Turkeycock Run in Fairfax County.

To further support bicycle use, all new development will be required to provide safe, secure on-site bicycle parking, and non-residential redevelopment projects within the Plan area will be required to include shower facilities for bike commuters.

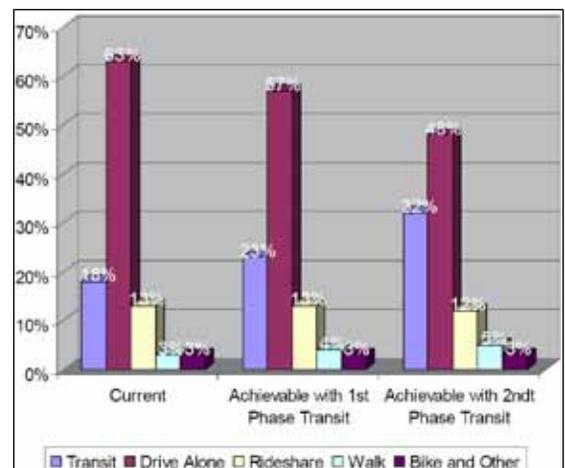


Figure 5-9. Travel mode share under existing conditions and future conditions estimated using regional transportation model.

5.5. Creating a Pedestrian Environment

Lack of walkability is the greatest obstacle to choice of modes in the Landmark/Van Dorn area. The pedestrian circulation plan for the Plan area will improve local access to local goods and services and transit, allowing residents and workers in existing and new developments to walk to services and transit easily. Design principles to achieve this objective include distributing local services better, providing pleasantly walkable neighborhood shopping areas, direct pedestrian connections, and minimizing conflicts between pedestrians and vehicles.

The principles for developing a pedestrian-oriented environment in the Plan area include the following:

- Develop a safe, pedestrian-friendly environment with convenient walking connections within neighborhoods and from neighborhoods to activity centers. Provide mid-block controlled pedestrian crossings on Van Dorn Street every 250-400 feet.
- Provide sufficient density and an appropriate mix of uses to ensure a high level of pedestrian activity in daytime and evening hours.
- Locate and design parking and parking access so that it does not interfere with walking, to support the transformation of Landmark/Van Dorn from a suburban, automobile-oriented to an urban, pedestrian-oriented environment.
- Place parking below grade to the greatest extent possible to minimize auto storage areas as an obstacle to ground-level pedestrian activities and connections.
- Limit surface parking to on-street parking.
- Provide pedestrian-level lighting along major pedestrian walkways and on retail streets.
- Provide regular, convenient pedestrian connections across streets.
- In retail and residential areas, design for low vehicle speeds and provide curb parking so pedestrians feel safe walking and crossing.

Figure 7-1 shows the proposed enhanced circulation grid in the Plan area, indicating both areas that have significant potential to redevelop in the short term, and areas that may or may not redevelop over the time horizon of the plan.

The pedestrian circulation system emphasizes the development of new streets that parallel Van Dorn Street and are located in the center of residential and in new mixed-use neighborhoods. These streets connect public open spaces and neighborhood shopping areas and provide a pedestrian focus for each neighborhood away from the traffic of Van Dorn Street. Regional pedestrian circulation and linkages between trail corridors are provided along Van Dorn Street in the enhanced boulevard setback area.

In the multi-family residential areas along Van Dorn Street and Whiting Street where redevelopment in the short term is unlikely, opportunities exist to substantially improve pedestrian connections. These pedestrian connections pass through existing garden apartment developments but are typically blocked by walls or fences at property lines. With the cooperation of property owners, these pedestrian barriers could be eliminated, providing greatly enhanced pedestrian access to transit and local destinations. The Plan recommends working with property owners to secure pedestrian access easements and to remove barriers to pedestrian movement.

The Plan recommends the following improvements to increase access and connectivity and pedestrian mobility:

- A new bridge over Duke Street between the Landmark Mall site at its new main entrance and the property now occupied by BJ's to the south will connect over Duke Street at a point where the street is approximately 20 feet below the current floor elevation of the stores on either side.
- Add sidewalk to existing Van Dorn Street bridge over Duke Street. The Van Dorn Street bridge currently does not provide space for pedestrians to cross the bridge safely, requiring them to take a half-mile

detour down to Duke Street at Walker Street or Ripley Street to cross. Pedestrian ways on both sides of the bridge, with well-marked pedestrian crossings of the ramps to Duke Street, are recommended.

- Multi-modal bridge from Eisenhower Avenue (near Van Dorn Street Metro Station) to Pickett Street. This link will connect the Metro station and activities on Eisenhower Avenue with Cameron Station and development along South Pickett Street.
- Ensure controlled pedestrian crossings every 300-500 feet along all streets.

5.6. Improved Regional and Local Transit

Another transportation principle expressed by the Advisory Group was the desire for more frequent, reliable regional and local transit service, with connections to and between activity centers and the Van Dorn Street Metro.

On average, 18% of those commuting from the planning area use transit. This is substantial for a non-urbanized area and higher than the 9% transit share in the region, however it is much lower than what could be achieved with higher density, transit oriented development and well-placed and reliable transit service. The recommendations in this Plan result in up to 27% share of commuters using transit in the Landmark/Van Dorn Corridor.

Consistent with the City’s Transportation Master Plan, the Plan proposes dedicated transitways on Duke Street and Van Dorn Street. The Plan also encourages citywide improvements such as smart stations, real time information and more frequent service.

The City Transportation Master Plan has designated Duke Street and Van Dorn Street as dedicated transit corridors for a Primary Transit Network (PTN). This service will operate within dedicated lanes, it will have short headways, and it will run most of the day. It will be convenient, reliable and heavily used. The Duke Street line will travel from Old Town Alexandria to the City of Fairfax on Duke Street and Little River Turnpike. The Van Dorn line will travel from the Kingstowne area of Fairfax County to the Pentagon, utilizing Van Dorn Street and Beauregard Street in Alexandria. The corridors are depicted below:

The Duke Street transit line is coordinated regionally with the Transportation Planning Board (TPB) and the Washington Metropolitan Area Transit Authority (WMATA). It is included in TPB’s Constrained Long Range Plan and is a “priority corridor” for WMATA, which means that it is recognized as a regional priority. The Van Dorn transit line is also included in regional plans for HOT lanes

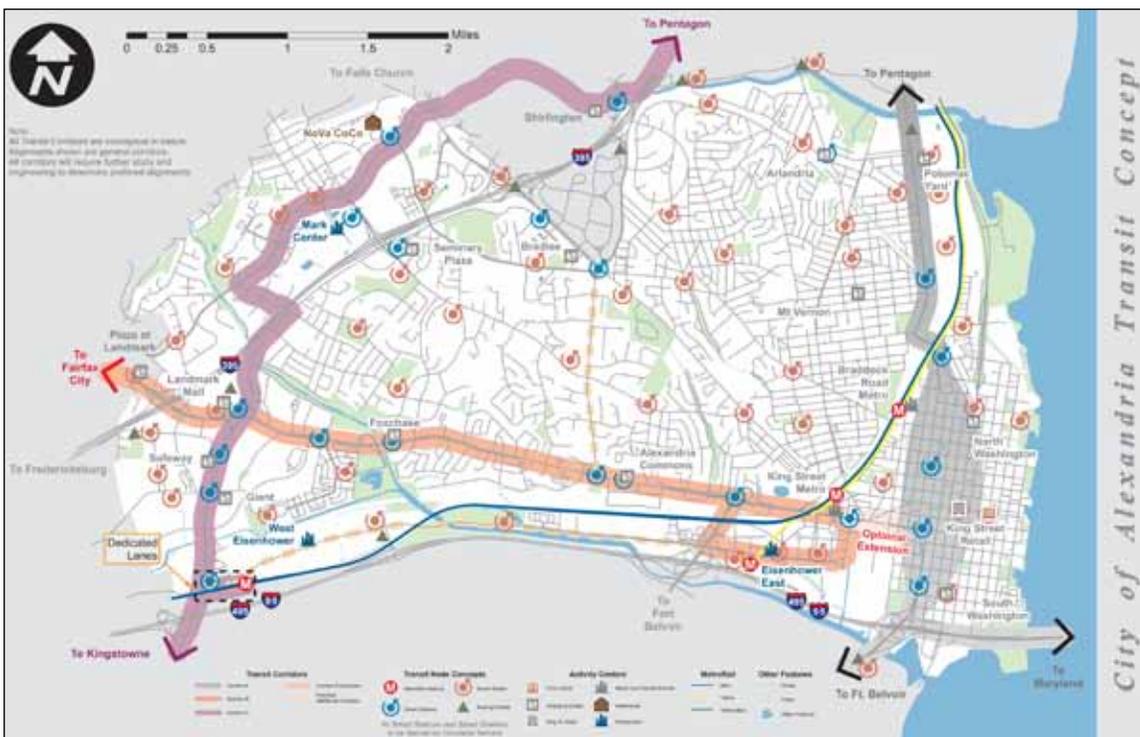


Figure 5-10. The recently adopted Transportation Master Plan provides for three transit corridors with dedicated lanes. Two of these corridors meet at Landmark Mall in the planning area.

on I-95/I-395, developed by Virginia's Department of Rail and Public Transportation and is indicated to be an emerging corridor in WMATA's "priority corridor" plan. The operating costs and equipment for the Van Dorn transit line will come from the High Occupancy Toll (HOT) lanes project.

The City is about to begin a study to determine how feasible exclusive transitways are on all three corridors listed in the City's Master Transportation Plan, including Duke Street from Old Town to the City boundary. This study will examine the technology or type of vehicle (light rail, bus, or other type) that will be used in these corridors. It will closely examine all engineering and community impacts of these services and will review possible technologies. This work will be closely coordinated with the adjoining jurisdictions through which the services will pass and with the transit agencies which may operate the service.

Van Dorn Street Transit Boulevard

The future transit service will travel on dedicated lanes in a mixed-mode corridor (see typical section). In addition to providing transit improvements, the landscaped boulevard will create a strong image for the Van Dorn



Figure 5-11. A local transit circulator could make stops at a number of employment and residential locations to take residents, employees and shoppers between Landmark Mall and the Van Dorn Metro station.

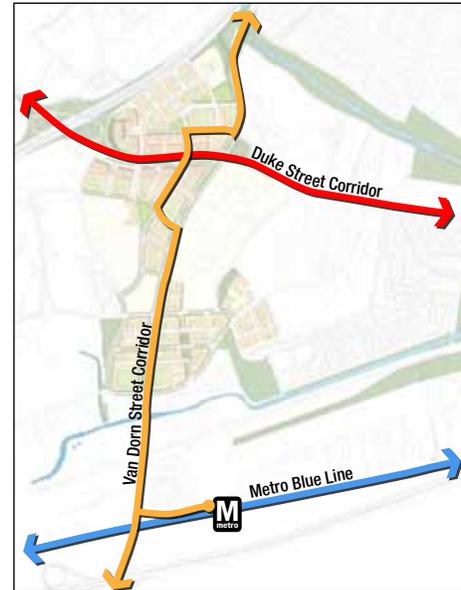


Figure 5-12. The primary transit network includes Metro and proposed transit service in dedicated lanes. Primary transit service is frequent and operates for extended hours both daily and on weekends.

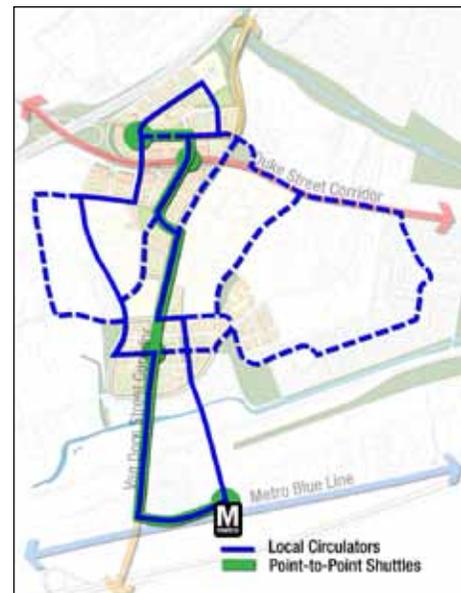


Figure 5-13. Secondary transit network. The secondary transit network provides local connections to employment, residential and retail centers, and connects to the primary transit network.

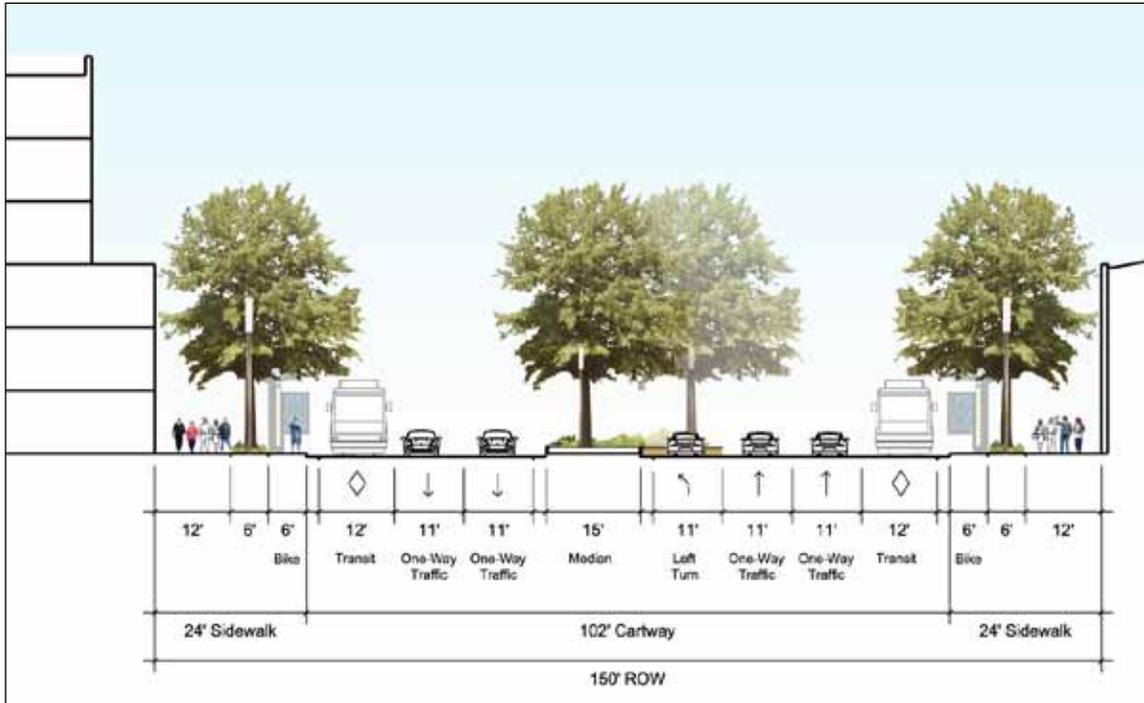


Figure 5-14. Van Dorn Street Transit Boulevard. This figure shows the proposed cross-section of Van Dorn Street north of Edsall Road with full development as a transit boulevard. The section is 10 feet wider south of Edsall to provide a second northbound left-turn lane at Edsall Road.

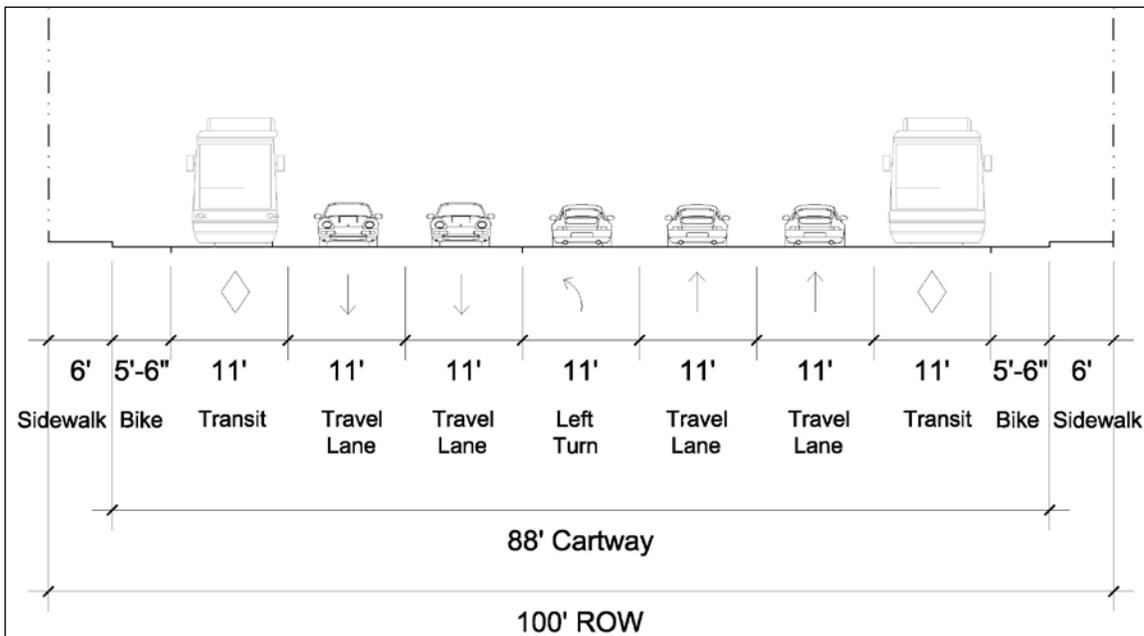


Figure 5-15. Dedicated transit lanes could be added within the existing street cross-section on Van Dorn Street if the median were eliminated and power lines relocated.

Street corridor from the Capital Beltway, as viewed along Van Dorn Street and from cross streets at intersections.

Because the travel lanes and median needed to create this strong boulevard appearance cannot fit within the existing 100-foot right-of-way, additional space on each side of the street is required for sidewalks and landscaping. To create an urban boulevard as a character-defining street for the area, a 25-foot setback area for sidewalks, bike lanes, street trees, landscaping and street-side activity spaces is proposed. The Plan envisions that completion of improvements in this setback area will occur at the time of site redevelopment.

Phased Implementation: It would be possible to add dedicated transit lanes within the existing 88-foot curb-to-curb width of Van Dorn Street, except where dual left-turn lanes are required. If dedicated transit lanes are to be provided in this phase, the existing median would need to be demolished and the overhead power line would be relocated. These changes, although limited, would require an expensive reconstruction of Van Dorn Street and the desired boulevard appearance would not be achieved. New developments along Van Dorn Street will be expected to dedicate right-of-way to accommodate the ultimate widening with a boulevard median, proposed transit lanes and boulevard setback at the time of redevelopment. The street would again be reconstructed with a median and widened to the new curb-to-curb width when the necessary right-of-way is obtained through a significant continuous section of the street.

Single Reconstruction Option: An alternative program would involve only one reconstruction of Van Dorn Street. Under this option, the new transit system would operate in mixed traffic on Van Dorn Street until the street is reconstructed to the full curb-to-curb width of just over 100 feet north of Edsall Road and just over 110 feet south of Edsall Road.

Because not all parcels along Van Dorn Street are expected to redevelop during the planning horizon, the City will need to reconstruct the street through much of the

Plan area in order to develop the dedicated transit lanes. In order to minimize cost and disruption to existing residential areas, a reduced sidewalk setback without bike lanes could be used along those parcels until they are redeveloped. Figure 5-11 shows the anticipated interim section and implementation strategy for Van Dorn Street. Along Van Dorn Street, there is expected to be at least one left turn lane at every median opening.

Transit Transfer Center

There is presently an ad hoc transit transfer center at Landmark Mall that serves local DASH and regional buses allowing riders to transfer between DASH, WMATA and Fairfax Connector buses to access a number of regional destinations. Direct bus service is provided to the regional transit center and Metro station at the Pentagon. Buses currently use the rear of the mall for the transit stop, requiring a circuitous route through the parking structure to reach the stop and adding substantial time to schedules.

An important goal of this Plan is to take full advantage of the opportunity created by the intersection of two new dedicated transit lanes at the core of the new West end Town Center. The Plan recommends a new, centrally-located transfer station to accommodate local, regional and future dedicated transit service, and that this station be constructed near the proposed bridge over Duke Street. A transit transfer location at this location will support redevelopment at both the Landmark Mall site and on the Bluffs. It will provide convenient access to and from Duke Street and Van Dorn Street, reduce the travel time on bus routes that stop at Landmark Mall, and make transfers more convenient for passengers. The center should be located such that transit riders have a comfortable place to wait and access to convenience retail areas while waiting for transfers

While the details of transit center design will be determined at the time of development and further investigation of the system to serve the dedicated transit corridors, a concept for the local transit center was developed by Alexandria Transit Company. This concept

includes 2,500 square feet of interior space to accommodate present and future transit needs, with room for 8 to 10 individual bus bays. Amenities for transit riders should include a heated and ventilated enclosed waiting area with seating for 30-40 passengers, 700 square feet of retail space for an on-site transit store to provide transit information and sell fare media, customer restrooms, real-time bus information displays, safety and security features, and a public address system. A covered outdoor seating area should also be included, as should covered spaces for bike racks.

Current service alone would result in 400 daily bus departures from the center. The center should be located as close as possible to the location for transfers between the dedicated transit corridors. A conveniently located center easily accessed by local buses from the intersection of Van Dorn Street and Walker Street could save five minutes or more of travel time per trip for each of these departures, improving transit travel time for a significant number of transit riders and providing operational savings for the transit providers and the City.

Local Transit Circulators

The DASH Draft Long Range Plan identifies expanding local transit circulator routes to a number of areas in the City, including the Landmark/Van Dorn Area. Local transit circulators running regular short loops between Van Dorn Street Metro, residential areas, Landmark Mall, and other local destinations have the potential to reduce



The Old Town Trolley is a popular local circulator that serves King Street from the waterfront to the King Street Metro Station.

total travel times for trips by DASH by 5 to 20 minutes compared to scheduled DASH service from locations within the Plan area. Transit circulators can provide nonstop trips to the Van Dorn Street station from key trip generators and the proposed transit transfer center, and can provide more frequent service to supplement DASH and Metro buses along neighborhood routes. Local transit circulators can be funded by an area wide Transportation Management Program in which a number of stakeholders participate.

DASH may replace some current fixed route bus service serving the residential areas in and near the Plan area with a Van Dorn – Landmark Area Circulator. Cost savings from fixed route transit operations may help offset the cost of circulator service. An increased level of local DASH service could provide much of the benefit of circulators.

Multi-modal bridge connection to Van Dorn Street Metro

This proposed walkway and auto/transit bridge located at or just west of Armistead Boothe Park would cut the current one-mile walk from the western end of Cameron Station to the Van Dorn Street Metro Station in half. Some Cameron Station residents have expressed strong support for this bridge. The location away from Van Dorn Street would provide a much quieter and more pleasant pedestrian and bicycle route than the existing sidewalk on the Van Dorn Street bridge. This connection could also be developed as a pedestrian/transit bridge with either one lane or two lanes for buses. If a bus connection is provided, transit circulator buses could avoid Van Dorn Street during congested periods to provide local circulation to Metro.

Figure 5-16 shows two possible conceptual alignments for the bridge that were investigated in the transportation analysis. The final design and alignment would be determined through a feasibility analysis and conceptual design study prior to construction.

Figure 5-16. Alternative routes for connecting bridges between Pickett Street and the Van Dorn Street Metro Station. The western alignment would link pedestrians to the existing concourse under Eisenhower Avenue and connect directly to the new north-south street through Pickett Place. The eastern alignment is adjacent to Armistead Boothe Park and would provide more convenient access from Cameron Station and other areas to the east, and could be designed to connect directly to Pickett Place Main Street. The eastern alignment could join Cameron Station Boulevard as an alternative to directly intersecting Pickett Street. These alternative alignments are conceptual and not final. The final location will be determined at a later date after further study.



5.7. Expected Transportation System Performance

Although the Plan area will make alternatives to the auto both available and desirable, many trips will still be made by individual motor vehicles, and through traffic will continue to grow in the region as outlying areas continue to be developed. A transportation analysis of existing and expected future conditions was conducted by Burgess & Niple to develop and verify the effectiveness of the street system, transit, and travel demand management initiatives proposed in the plan.

Travel demand was estimated and trips distributed to major regional destinations and the transportation network using the Metropolitan Washington Council of Governments' regional transportation model. This model provides the estimates of growth in through traffic and has the ability to assign trips to the streets providing the best travel times. The model also can be used to estimate transit share based on transit system performance characteristics.

A measure of the impact of both regional travel and local demand is the total number of trips using the Plan area. Using the regional model, the estimated 24-hour trips using the Plan area was 210,306 under the 2008 base case, 249,017 with buildout of existing zoning by 2030, and 288,105 with buildout of the Plan by 2030. The Plan buildout resulted in 15.7% more trips than the existing zoning, and 37.0% more trips than the existing condition.

Trips through the Plan area without a local origin or destination accounted for 110,731 trips in existing conditions, but only 96,726 in the 2030 case with

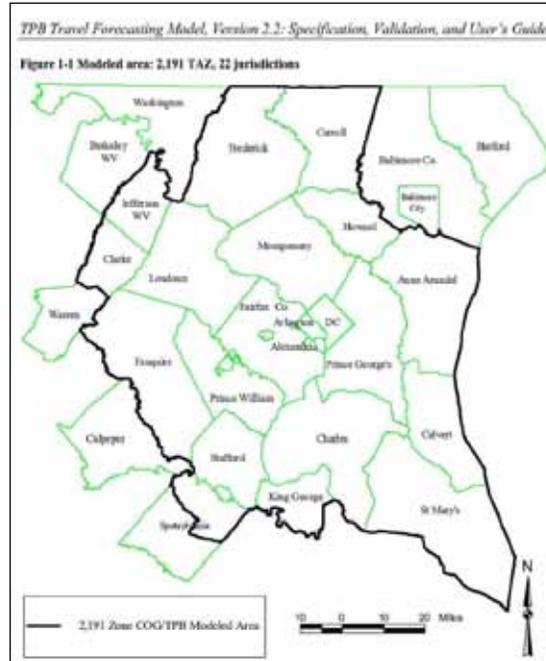


Figure 5-17. The regional transportation model considers development and travel patterns throughout the entire region when routing employees and residents to and from the planning area today and in the future.

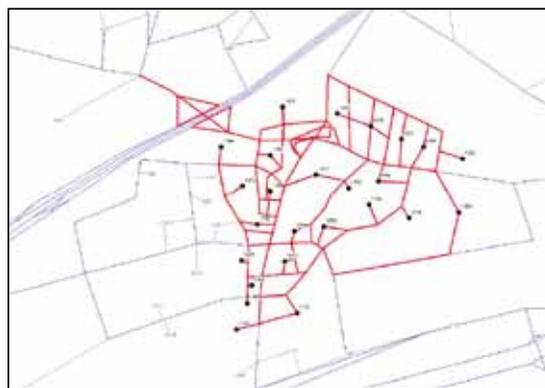


Figure 5-18. The planning area was divided into a number of subzones, and additional links were added to the street system for analysis of future conditions.

Table 5-1
Trips In Transportation Planning Area

24-Hour Trips	Existing	2030 With Current Zoning	2030 With Plan
Daily Trips	210,306	249,017	288,105
Through Trips	110,731	113,366	96,726
% Through Trips	53%	46%	34%

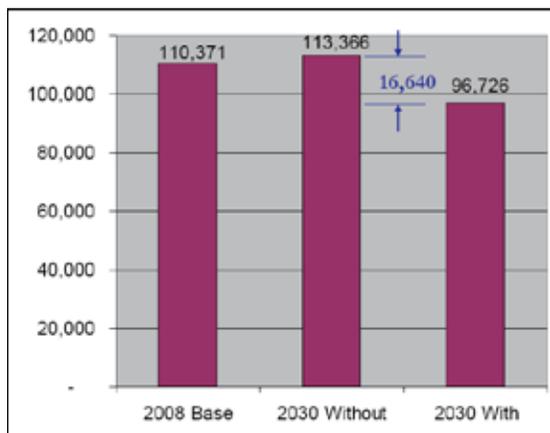


Figure 5-19. Through trips for existing and future conditions. The total number of trips through the area without a destination here rises under the zoning buildout option, and falls slightly under the proposed plan.

the proposed plan, a reduction of 15%. It is likely that through travel was reduced because of the substantial increase in local travel in the Plan area. Through travelers usually have a number of options in selecting routes, while those with a local origin or destination must travel in the Plan area.

Transit share of commute trips is estimated to increase from 19% in the 2008 base condition up to 27% in the

Table 5-2
Changes In Travel Time From Existing Conditions Under Future Alternative Development And Circulation Plans

Street Segment	Travel Time (Minutes:seconds)		
	Existing	2030 Zoning Buildout	2030 Plan Buildout
Duke Westbound	2:14	2:16	3:16
Duke Eastbound	3:24	4:57	5:39
Van Dorn Northbound	3:26	4:21	4:23
Van Dorn Southbound	4:08	4:58	7:29

Duke Street: Between South Pickett Street and Walker Street
 Van Dorn Street: Between South Pickett Street and Holmes Run Parkway

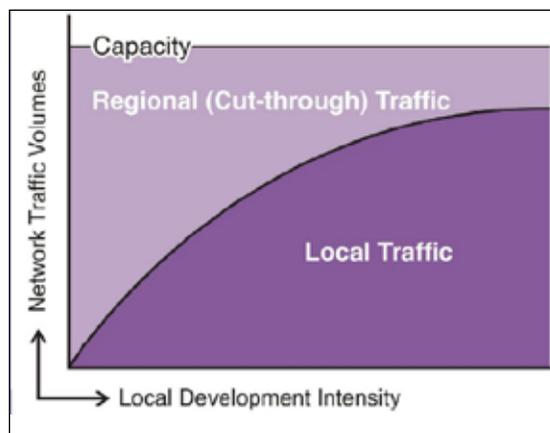


Figure 5-20. Local traffic forces out through traffic, which has choices of ways to get around the area, as local traffic grows.

2030 condition with improved transit and development under the Plan.

Once these trip assignments were balanced in the local system, a micro-simulation model that simulates the behavior of individual drivers and produces a realistic visual output was used to observe how the system would be expected to function, to identify potential problems and explore alternative solutions.

Travel time on the major through routes was used as an indicator of the performance of the street system. Travel times increase for two reasons. First, the new more urban street system on both Duke Street and Van Dorn Street has new intersections that may require vehicles to stop where they did not before, and an increased emphasis on pedestrians may increase the stop time at signals. Second, increased traffic volumes on some segments mean increased delays at some intersections and slower travel between them. Table 5-2 shows the street system performance for the PM peak period of the street system. Travel times in the segments of Duke Street and Van Dorn Street increased by about a minute in the non-peak travel direction and up to two and a half minutes in the peak travel direction as a result of these changes.

While these increases in travel time are a substantial percentage increase from today's conditions, they involve a maximum of an additional three minutes and 21 seconds to travel through the Plan area in the peak travel direction on Duke Street, where two additional intersections are proposed to handle traffic into the Landmark Mall site. During the A.M. peak period, intersection levels of service improve under this Plan for three intersections and decline for four intersections. Intersection levels of service improve for one intersection (Van Dorn at Pickett) and decline for the other major intersections during the P.M. peak. Only one intersection in the A.M. peak period (Duke and Pickett) and one intersection in the P.M. peak period (Van Dorn and Edsall) is expected to operate with an average delay of greater than 120 seconds. It is in part this increase in travel time that results in the expectation that fewer drivers will choose to travel through the Plan area on longer regional trips.

This level of performance is achieved without providing additional vehicular lanes on Duke Street or Van Dorn Street except for dedicated lanes for transit vehicles.

Adding through lanes on Duke Street and Van Dorn Street for cars would be likely to result in lower future intersection delays and shorter future travel time through the area than estimated for the proposed arterial street sections. However, higher speeds would attract substantially more through traffic and would further compromise the ability of pedestrians to move comfortably across and along these arterial streets. Adding through lanes would be contrary to the objectives of creating a walkable place and encouraging transit as an alternative to the individual motor vehicle.

Although travel times will increase on the major arterials through the Plan area, transportation choice will be substantially increased for residents, employees and others using the Plan area, consistent with the City's Transportation Master Plan. A combination of additional modes of travel and a walkable local environment with greater availability of goods and services for residents

and employees at mixed-use sites will provide alternatives to the single-occupant vehicle. An improved network of parallel and interconnected streets will provide alternatives for local trips within the Plan area without using Duke Street or Van Dorn Street. Access to the Landmark Mall site will be significantly improved for pedestrians, transit riders, and drivers.

These improvements in transportation choice will support a vital Landmark Town Center and Landmark/Van Corridor that provides substantial employment, interesting shops and recreational and cultural activities, and a quality mixed-use residential environment. Transportation mobility and accessibility will be typical of successful urban places throughout the region.

5.8. Transportation Demand Management

Transportation Demand Management (TDM) is a set of specific strategies that influence travel behavior by mode, frequency, time, route, or trip length in order to help achieve a maximally efficient and sustainable use of transportation facilities, along with other Alexandria goals such as promoting access for all transportation system users, improving mobility, and minimizing the negative impacts of vehicular travel.

For the past twenty years, the City of Alexandria has had a program called the Transportation Management Plan (TMP) program which expressly identifies and funds TDM projects in new developments. In order that the impacts of vehicles only occupied by a driver can be mitigated during the peak hour, the City's TMP ordinance states that all developments larger than specific sizes have to incorporate TMP plans. These plans set specific goals for the percentage of single-occupant vehicles originating from or going to the development. An annual amount of money is raised by the development which must be used to fund individually tailored programs to meet the TMP goals. Some of the activities include subsidizing existing transit use, providing preferential parking for car and van pools, subsidizing shuttles to rail stations, promoting carsharing, and encouraging people to use the programs of the region's Commuter Assistance Program, run by the Washington Metropolitan Region Council of Governments, such as the Guaranteed Ride Home program. Progressed towards this goal is gauged by annual surveys of occupants of these developments and funding reports. In addition to this program, the City offers the services of its Transportation Demand Coordinator to assist those living and working in TMP projects in meeting their goals.

The City has recently been reviewing the effectiveness of the TMP program, and has determined that the existing approach of developing individual TMPs for projects as they are constructed is not an optimal way to advance TMP goals in subareas of the City. Since this is a large area, which is likely to be completely rebuilt over the next 20 to 30 years, it is important that a TMP district be

set up for the Landmark/Van Dorn area. The TMP district would be re-sponsible for:

- Developing a program of TDM strategies for implementation by district employers and residential developments.
- Developing performance measures, including annual modal share targets, on which to evaluate effectiveness of TDM strategies;
- Collecting travel data via surveys and evaluate compliance with the modal share targets;
- Adjusting strategies, including allocation of transportation impact fees, based on results;
- Marketing the program's intents and benefits to all district employers, utilizing websites, printed materials, and on-site training and information sessions; and
- Assisting employers in identifying demand-management strategies for achieving performance measures.

The City will use all of the current methods of trip-reduction such as guaranteed ride home, ridesharing, car sharing, and transit subsidy programs and will work with members of the TMP district to aggressively promote these and other TMP actions to mitigate the impact of new developments on the performance of the areas streets.

Participation in a coordinated TMP district would be a condition of approval for redevelopment in the Plan area.

5.9. Right Size Parking

The price and availability of parking are important factors in any individual's choice of travel mode. The following strategies, therefore, can be used as a way to make optimal use of the existing parking supply, and to manage demand for additional parking generated by future growth.

Charging the right price for curb parking near commercial land uses.

Most areas in the Study Area currently have ample on-street parking at all times of day. Future growth may put pressure on this supply, especially where commercial development will occur to support mixed-used areas. Managing parking prices to ensure that there are available curb parking spaces at all times of day is an important strategy for reducing search traffic.

Updating parking requirements.

Requiring development to provide off-street parking plays a powerful role in increasing the number of vehicle trips and worsening traffic congestion. Minimum parking requirements worsen traffic congestion through a simple three step process:

- Minimum parking requirements are set high enough to provide more than enough parking even when parking is free, even at isolated suburban locations with little or no transit.
- Parking is then provided for free at most destinations, and its costs hidden.
- Bundling the cost of parking into higher prices for everything else skews travel choices toward cars and away from public transit, cycling and walking.

Reducing the existing minimum off-street parking requirements to meet local conditions, instead of general standards, reduces the effects of providing excess parking. Utilization becomes more efficient and travelers investigate all travel options.

Table 7-1 in Chapter 7 outlines existing and proposed parking standards tailored for mixed-use projects in

redevelopment areas for use as a short-term local parking policy. For initial phases, parking is proposed to be somewhat reduced from current standards because of the potential for mixed-use development and greater pedestrian traffic to reduce parking needs for convenience retail uses. Uses competing regionally, such as mid-box stores or larger shopping centers, will need more parking initially in order to compete with other centers in the region.

Once improved transit is available, further reductions in parking will be possible because employees, residents and shoppers will become increasingly reliant on transit for travel. In addition, as new streets are constructed, new on-street parking will be provided, thereby increasing the supply of on-street parking over what exists today.

In addition to the benefit of reducing travel demand, reducing the number of parking spaces permitted has a number of other benefits for the Plan area. Lower parking ratios make it less expensive for developers to provide parking for projects, making it more possible to provide other community benefits including open space. Fewer parking spaces means it is easier for developers to provide parking underground rather than reducing the floor area to accommodate parking, or building above-grade structures that contribute to building mass and create obstacles to retail continuity and pedestrian circulation.

Unbundling parking costs.

Parking costs in the Study Area are typically subsumed into the sale or rental price of housing and commercial space. But although the cost of parking is often hidden in this way, parking is never free, and hiding its cost results in higher vehicle ownership and more traffic.

To reduce the number of unneeded vehicles housed within the Study Area, the full cost of providing parking can be “unbundled” from the cost of multifamily housing units (both rental and condominium); commercial space;

and from the costs of other goods and services, with limited exceptions.

Parking cash-out as a TDM strategy

The majority of employers in the Study Area provide free or reduced price parking for some employees as a fringe benefit. Under a parking cash-out requirement, employers are allowed to continue this practice on the condition that they offer the cash value of the parking subsidy to any employee who does not drive to work. While the cost of providing parking may currently be very low in areas with a large supply of under-utilized parking, the value of this benefit may increase if future growth creates demand for more parking.

5.10. Conclusion

The vehicular traffic expected from 20 years of future development in the Landmark/Van Dorn area can be expected to slow arterial traffic in peak periods to speeds more typical of successful urban areas, pushing out through traffic and creating an environment more friendly to pedestrians and bicycles. A new network of local streets, a mix of uses, improved transit service and transportation demand management strategies will work together to provide more and better choices of destination, route and travel mode for residents, and will support the walkable, attractive environment desired by the community.

