Docket Item #8
MASTER PLAN AMENDMENT #2007-0001
Route 1 Transit Lanes

Planning Commission Meeting
June 5, 2007

**ISSUE:** Consideration of a request to revise the transportation element of the City of Alexandria Master Plan to designate the location of dedicated transit lanes north of the Route 1 - Monroe Avenue Bridge to be within a central landscaped median.

**APPLICANT:** Department of Transportation and Environmental Services
Department of Planning and Zoning

**LOCATION:** Route 1/Jefferson Davis Highway, from East Glebe Road to the north end of the Monroe Avenue Bridge

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**CITY COUNCIL ACTION, JUNE 16, 2007:** City Council approved the Planning Commission recommendation and to designate the median area as the location for the dedicated transit lanes.

**PLANNING COMMISSION ACTION, JUNE 5, 2007:** On a motion by Mr. Robinson, seconded by Mr. Jennings, the Planning Commission voted to recommend approval of the request, subject to compliance with all applicable codes, ordinances and staff recommendations. The motion carried on a vote of 5 to 0. Mr. Dunn and Mr. Komoroske were absent.

Reason: The Planning Commission acknowledged that the location of dedicated transit lanes had been discussed and decided as part of the previous Master Plan. This proposed Master Plan amendment is to designate the location of the transit lanes curbside or within the central median. The Commission discussed elements of each proposal such as the vehicle turning movements, pedestrian crossing-circulation and the impacts on the central median with each option. The Commission also discussed how the dedicated transit lanes would impact the character of Route 1 as an urban boulevard as envisioned by the Potomac Yard approvals. The Commission agreed with the staff analysis that locating dedicated transit lanes within the median was a balance of transit, traffic, safety, pedestrian, landscaping and urban design elements and that the central median more effectively balanced each of these elements. The Commission acknowledged that while specific design and landscaping of the transit lanes within the median need to be discussed, the final design will require subsequent approval by the Planning Commission and City Council.

Speakers:

Van Van Fleet, representing Old Town Civic Association, expressed concerns that the proposed dedicated transit lanes would impact traffic circulation on Route 1, reduce traffic lanes and expressed concern about the location of dedicated transit lanes on Route 1 rather than other streets within Potomac Yard, such as Main Street. He also stated that a detailed traffic plan showing all the traffic in the future, including all the new development along Route 1 in addition to Potomac Yard, should be done for the median location alternative.

Julie Crenshaw Van Fleet, resident, wanted to know if the median option had been presented to the Transportation Planning Board, and said that the Transportation Analysis that staff was referring to should have been presented to the Planning Commission. She raised concerns about the community process and information presented at the hearing.

# I. SUMMARY

## A. *Proposal:*

The application requests an amendment to the Transportation Chapter of the City of Alexandria Master Plan to locate high-capacity transit lanes within the landscaped median of Route 1/ Jefferson Davis Highway. The final design, phasing, financing and implementation of any transit service will require considerable future input from the community, stakeholders and subsequent approval by the Planning Commission and City Council. This Master Plan amendment, for the purpose of identifying two center lanes in the Jefferson Davis Highway/Route 1 median for the exclusive use of mass transit, is intended to comply with the direction identified in the previous City Council action amending the Transportation Chapter of the Master Plan (MPA 2005-0006). The City Council approved this Master Plan amendment on April 22, 2006. This amendment designated dedicated transit lanes on Route 1 in Potomac Yard, and required additional community input, review of the Planning Commission, and review and approval of the City Council for the location of the Bus Rapid Transit (BRT) or transit lanes on Route 1/Jefferson Davis Highway.

*Figure 1. Proposed Transit Route in Potomac Yard*

## B. *Selection of Final Location of Dedicated Transit Lanes on Route 1*

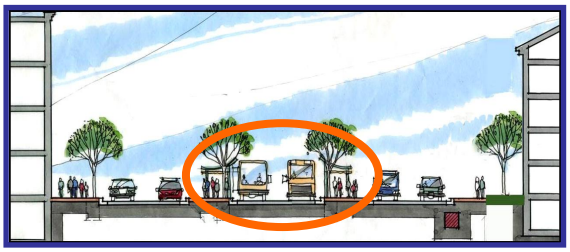
The last time the Planning Commission and the City Council considered the dedicated transit lanes on Route 1 involved an amendment to the Transportation Chapter of the Master Plan (MPA 2005-0006, April 4, 2006). The staff report for that amendment concluded that 2 alternative locations for the transit lanes on Route 1 were the top choices of the community and that additional community meetings are required to determine the best alternative. These alternatives are as follows:

Alternative 1: A two-lane, bidirectional transit travelway located in the median of Route 1;
Alternative 2: Two single-lane directional transit lanes, one located on each side of Route 1 adjacent to the curb.

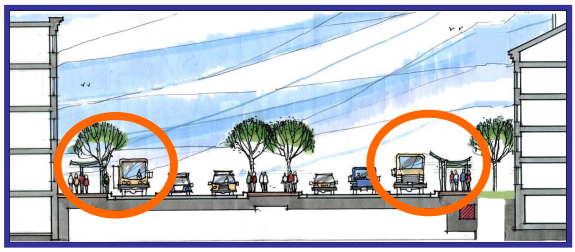
The last community meeting was held on March 8, 2007 where staff presented additional information for the two alternatives based on the community's three major goals:

- Improve transit accessibility
- Preserve the urban boulevard concept described by the Potomac Yard Design Guidelines for Route 1
- Provide a pedestrian-friendly environment for non-transit crossings of Route 1

A detailed discussion of the staff presentation is found in Chapter III, "Staff Analysis", of this staff report. A table listing the key considerations for the two alternatives is included as an attachment to this report (Attachment 1). As shown by the following summary table, staff concluded that the median transitway configuration is the preferred alternative.



Median Alternative



Curbside Alternative

| | | |
|---|---|---|
| ✓ | Transit service and performance | |
| ✓ | Least conflicts with vehicular traffic | |
| ✓ | Pedestrian access and crossings | |
| ✓ | Right-of-way/Width of Street | ✓ |
| ✓ | Implementation Timing and Cost | |
| ✓ | Boulevard/Streetscape | ✓ |

*C. Staff Recommendation*

After discussing the two alternative locations for the transit lanes on Route 1 with the community, and considering transit operations, traffic circulation, aesthetics, pedestrian safety, implementation schedule and compliance with the Potomac Yard Design Guidelines for Route 1, staff is recommending approval of the proposed amendment to the Transportation chapter of the Master Plan, to locate the dedicated transit lanes in a landscaped median along Route 1. This amendment maintains the requirement that the final design, phasing, financing and implementation of any transit service will require input from the community, stakeholders and subsequent approval by the Planning Commission and City Council.

The proposed text amendment to the Master Plan is as follows *(strike-throughs reflect existing text in the Master Plan proposed to be deleted, while the underlined text is proposed as part of the amendment):*

***"Route 1-Jefferson Davis Highway shall be designated as a transit corridor. Within the corridor, high-capacity transit service connecting Braddock Road Metrorail Station to the Crystal City/Pentagon area may be developed in general conformance with the Crystal City/Potomac Yard Transit Corridor Alternatives Analysis and compatible with the operation requirements of both bus rapid transit (BRT) and light rail transit (LRT). ~~If~~ The dedicated transit lanes ~~are~~ to be provided for the Crystal City/Potomac Yard Transit Corridor, ~~the lanes shall be provided~~ on Route 1 north of the Monroe Avenue bridge shall be provided within a central landscaped median, except that the transit lanes may connect to Potomac Avenue in the vicinity of the Town Center until sufficient right-of-way can be obtained. The final ~~location,~~ type, and design of any future dedicated transit service shall require approval by the Planning Commission and City Council. Any future transit lanes should maintain the character of Route 1 as an urban boulevard with a continual median, trees and street trees, and shall be reserved in perpetuity for exclusive public transit use."***

# II. BACKGROUND

## *A. Crystal City/Alexandria Transit Planning at Potomac Yard*

The City of Alexandria and Arlington County staff have been working jointly since 1999 to develop and implement improved transit services in the Crystal City/Potomac Yard area based on recommendations of the *Crystal City/Potomac Yard Area Transportation Study*. In March 2003, the *Crystal City/Potomac Yard Transit Corridor Alternatives Analysis* was completed, finding that the proposed transit corridor would benefit travel within the area and recommending that the project should be advanced with bus rapid transit (BRT) as the locally preferred alternative. This concept was further refined during the *Crystal City/Potomac Yard Transit Corridor Interim Transit Improvement Project*, completed in December 2005. The Transportation Task Force also recommended that designated transit lanes be provided on Route 1.

In April 2006, Planning Commission considered and recommended an amendment to the Master Plan adding the Crystal City/Potomac Yard Transit Corridor to the transportation element of the plan and designating Route 1 (Jefferson Davis Highway) as the preferred corridor location north of Monroe Avenue Bridge (MPA #2005-0006). This amendment was subsequently adopted by City Council in April 2006 and enacted by Ordinance Number 4450 on May 20, 2006. An unresolved issue during adoption of this master plan amendment was the preferred location and configuration of the transit corridor within the Route 1 right-of-way.

Following adoption of the master plan amendment, the *Crystal City/Potomac Yard Transit Improvements Environmental Review* was completed and notification has been received of Federal Transit Administration's concurrence with the finding that under National Environmental Protection Act (NEPA) regulations the project qualifies as a documented categorical exclusion, which will shorten the required federal review process. Additionally, the Crystal City/Potomac Yard transit corridor project has been submitted to the National Capital Region Transportation Planning Board (TPB) as a proposed new project for the 2007 update of the regional Constrained Long Range Plan (CLRP) and the FY 2008-2013 Transportation Improvement Program (TIP). The project will be included in TPB's upcoming regional air quality conformity analysis.

Since the 2006 addition of the Crystal City/Potomac Yard Transit Corridor to the City's Master Plan, significant progress has been made in completing the necessary project development studies. In order to proceed and maintain progress toward timely initiation of transit service, it is now necessary to determine the preferred location and configuration of the transit corridor within the Route 1 right-of-way between the north end of Monroe Avenue Bridge and East Glebe Road.

*B. Community Input*

Staff has met with the community throughout the process, beginning with an outreach meeting for the Crystal City/Potomac Yard Area Transportation Study in the fall of 1999. In 2002 to 2003, the City met with the Chamber of Commerce and five civic associations in the area for the preparation of the Crystal City/Potomac Yard Corridor Transit Alternatives Analysis. There were also a number of civic associations meetings, a public workshop and an open house in June 2005 to get feedback and suggestions during the preparation of the Crystal City/Potomac Yard Corridor Interim Improvement Project, and a public hearing in October 2006 for the Crystal City/Potomac Yard Transit Improvements Environmental Review. Additionally, staff has presented to PYDAC (Potomac Yard Design Advisory Committee) on May 16, 2005 and February 13, 2006, the Federation of Civic Associations on January 25, 2006, and hosted a community workshop on March 2, 2006.

The most recent community meeting was held on March 8, 2007 at the George Washington Middle School Auditorium. The City presented an analysis of the pros and cons of the center median versus the curbside options and the preferred alternative was the center median.

Concerns raised by some community members include pedestrian and motorist safety, traffic flow on Route 1 and the continued provision of left turn lanes on Route 1. In response to the concerns regarding safety, staff reviewed the operations of "center" lane BRT in several comparable cities and, further explained that new pedestrian crosswalks at signalized intersections will safely encourage pedestrians to access the transit platforms/bus stops. All-way stops for pedestrian crossing of Route 1 (all 4 quadrants of the intersection) may be employed at framework signalized intersections. Strategically placed shrubs and other landscaping elements will deter transit users and other pedestrians from mid-block crossings. Additionally, the nose of the median will extend 4 feet beyond the crosswalk to increase pedestrians' perception of safety from turning vehicles. The distance between the crosswalk and the bus-station will typically be 75 to 100 feet, and the width of the median in this section will accommodate an ADA compliant sidewalk with landscaping on both sides to protect the transit rider from traffic on Route 1 and the buses in the transit lanes. The bus station will be raised 14 inches above the adjacent street pavement and will be enclosed on the vehicular traffic side of Route 1.

A number of community members expressed their support for the median option on Route 1, most significantly based on the higher efficiency of service anticipated as compared with the curbside alternative, as well as the perception of a more intimate, pedestrian-friendly roadway. The median transit lanes break up the "sea of asphalt" into three smaller "streets" instead of two big "streets" separated by a swath of green. This helps connect the existing neighborhoods east

of Route 1 with the new neighborhoods west of Route 1 better. The fact that the limited right-of-way on the west side of Route 1 defers BRT implementation for the foreseeable future is another major consideration for the supporters of the median alternative. Staff also reassured the community that protected left turns on Route 1 will be maintained as planned previously.

## III. STAFF ANALYSIS

As part of the ongoing planning and implementation of the dedicated transit lanes on Route 1, staff followed the City Council's direction to work on the location, design and implementation of the transit lanes. The following discussion focuses on the location and configuration of the transit corridor within the Route 1 right-of-way which was approved by the City Council as part of the 2006 Master Plan amendment.

### *A. Alternative Transitway Configurations*

During the planning of the Crystal City/Potomac Yard Transit Corridor, a number of location and configuration alternatives were considered for the segment between Monroe Avenue Bridge and East Glebe Road. Among these alternatives were :

- curbside transit lanes not physically separated from general traffic lanes;
- contra-flow transit lanes adjacent to the street median;
- directional transit lanes located on adjacent parallel streets;
- curbside transit lanes physically separated from adjacent general traffic lanes; and
- bi-directional transit travel ways located adjacent either side of the street or in the median.

For reasons ranging from "fatal flaws" (e.g. not providing a dedicated transit travelway) to adverse impacts on transit and general traffic operations, and transit service inconsistency, many alternatives were eliminated during the planning process and only two remained under consideration in 2006 when the master plan was amended to include the Crystal City/ Potomac Yard Transit Corridor project. As illustrated below, these were: (1) a two-lane, bidirectional transit travelway located in the median of Route 1; and (2) two single-lane directional transit lanes, one located on each side of Route 1 adjacent to the curb. Both alternatives provide physical separation between the transit lanes and the general traffic lanes.

*Figure 2. Two-Lane Transitway Located in Median*

This alternative (depicted above) provides two transit lanes, one for each direction of travel, located in the median of Route 1. Landscaped median areas separate the transit travelway from the general purpose traffic lanes. Transit stops are located in the median areas flanking the travelway. All transit stops are located immediately downstream of signal-controlled intersections.

The following graphics show similar median transitway configurations that have been implemented in Vancouver, BC (left) and proposed in Washington, DC (right).

*Fig. 3. Median transitway in Vancouver, BC*

*Fig. 4. Median transitway in Washington, D.C.*

*Fig. 5. Single-Lane Transitways Located Adjacent to Curbs*

This alternative (depicted above) provides one transit lane adjacent to the curb on each side of Route 1 for directional transit movement concurrent with the flow of general traffic. Curbs or comparable elements will separate the transit lanes from the adjacent general lanes. Transit stops are located in the sidewalk/landscape area adjacent to the street. All transit stops are located adjacent to signal-controlled intersections.

The graphics below show similar curbside transit lane configurations that have been implemented in Los Angeles, CA (left) and Orlando, FL (right).

*Figure 6. Curbside transitway in Los Angeles, CA*

*Figure 7. Curbside transitway in Orlando, FL*

*B. <u>Comparison of Transitway Design Features</u>*

Since the addition of this project to the City's Master Plan in April 2006, staff has continued to refine the design concepts for both the median and curbside transitway alternatives. In addition to interdepartmental work sessions, a multidisciplinary design charette was conducted in November 2006, with participation by several street, transit and urban design consultants, Dan Burden, a community walkability consultant, transit service providers, traffic operations experts, and staff of stakeholder city departments

(transportation; transit services; development; neighborhood and community planning; recreation, parks and cultural activities; police and code enforcement). As a result of these efforts, a number of refinements to the two design concepts were developed, as discussed below.

1. *Right-of-way and street width:*
Adjustments to the design widths of several street/ transitway cross-section elements and changes in the street drainage design resulted in the typical sections (shown below) for both alternatives. Both the initially required right-of-way and the curb-to-curb street widths for the median and curbside alternatives are the same at 118 feet and 100 feet, respectively.

*Figure 8. Curb-to-Curb Width – Median Transitway*

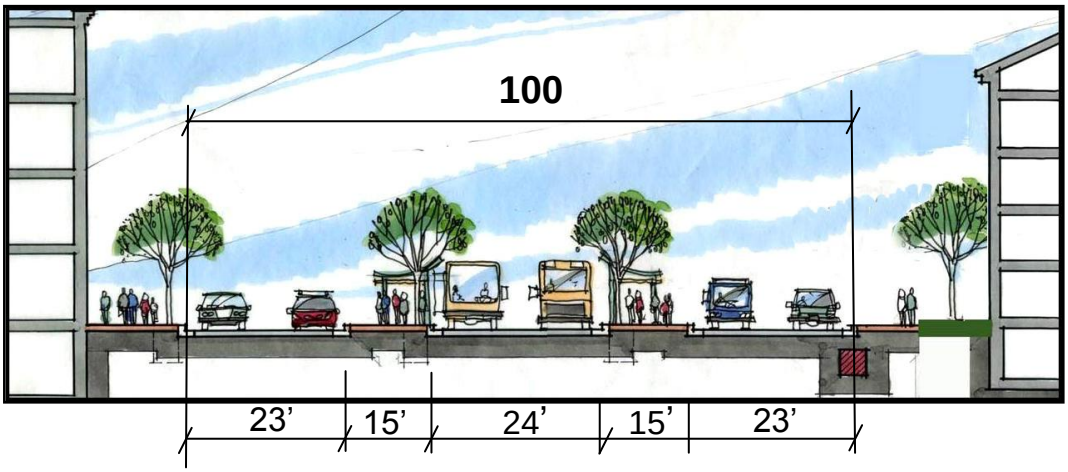
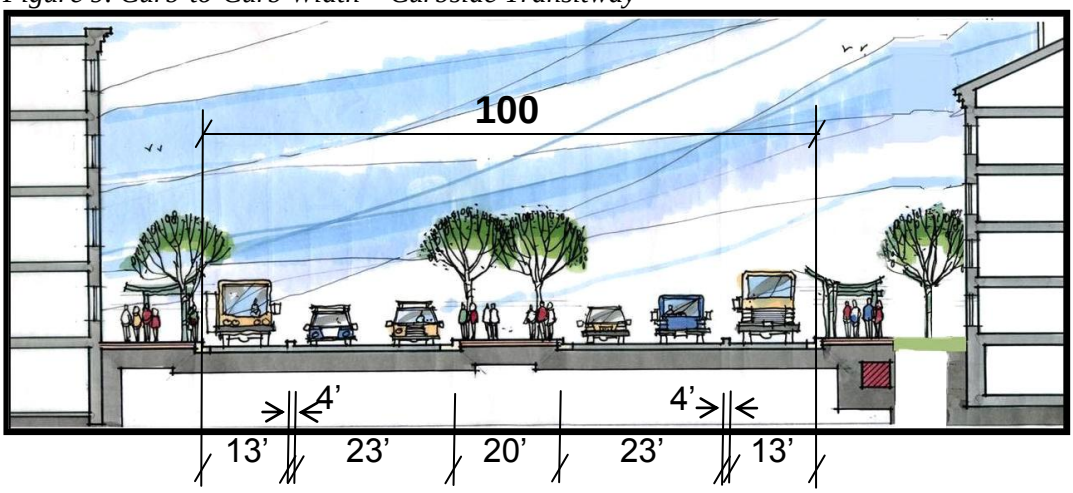



*Figure 9. Curb-to-Curb Width – Curbside Transitway*




2. *Transit elements:*

   a. Dedicated transit lanes

   In both alternatives, dedicated transit lanes separated from general traffic lanes by physical barriers are desirable for enhanced performance of the

proposed transit service. The median alternative provides separated transit lanes for the full length of the corridor from the north end of the Monroe Avenue Bridge to East Glebe Road, except at signal-controlled intersections. The curbside alternative provides separation along the full length only on the east side of Route 1 (Potomac Yard side). On the west side, the openings in the separating barrier will be necessary to maintain access to intersecting streets at non-signalized intersections and to some adjacent properties, unless these properties are acquired as part of project implementation.

b. Transit Station Design

For both alternatives, transit stations can be of similar design, providing dual-door boarding/alighting capability and the same passenger amenities. Level-boarding platforms at stations, a desired feature of the transit system, require that the platforms be approximately 14 inches above the adjacent street pavement. While this can be readily provided with the median alternative, a curbside station encroaching into the sidewalk on a raised platform with ADA-compliant access ramps will significantly disrupt both the sidewalk and perimeter landscape areas. This is especially true for the west side of Route 1, where the existing curb and sidewalk conditions and the limited setbacks of the existing buildings preclude the opportunity to locate transit stations with adequate clearances for unobstructed and ADA-accessible sidewalks. In some cases, existing sidewalks are as narrow as six feet. The existing overhead power line poles within the existing sidewalks are additional obstructions that could be relocated or placed underground. However, the cost to relocate or underground utility poles is prohibitively expensive. This creates a significant obstacle for the curbside option. Staff anticipates that when redevelopment occurs on the west side, utilities will be located below grade and the sidewalks will be widened at the time of redevelopment. As part of planning efforts for Route 1, staff is currently evaluating existing and possible land uses on the western portion of Route 1.

*Figure 10. Example of a Narrow Sidewalk on the west side of Route 1*

c. Traffic Control Plan

Traffic controls for transit vehicles and automobiles at the signalized intersections along the corridor differ for the two alternatives. The median alternative can operate with a simpler, more efficient traffic control plan. By allowing transit vehicles to traverse the intersections at any time during the signal phase for through traffic on Route 1, no special "transit only" phases are necessary, and both transit and general traffic flows are more efficiently served. The curbside alternative does not eliminate the conflict between through transit vehicles and right-turning traffic at intersections during the signal phase for through traffic on Route 1. To manage this conflict, either right turns will have to be restricted or special "transit only" signal intervals will be required. Both strategies result in less efficient traffic signal operation, and increased transit and general traffic delays.

3. *Transit station access and pedestrian crossings:*

The proposed locations of transit stations between the north end of the Monroe Avenue Bridge and East Glebe Road are all at intersections controlled by traffic signals. To enhance both transit access and pedestrian crossings of Route 1, the concepts for both alternatives include design and operational elements to improve the pedestrian environment. These include:

Figure 11. High-visibility Thermoplastic Crosswalk

- Transit stations and pedestrian crossings located at signal-controlled intersections;
- High-visibility crosswalk treatments;
- Countdown and ADA-compliant audible pedestrian displays;
- Pedestrian refuge area(s) with extended median noses;
- Leading pedestrian "WALK" intervals; and
- Well-lit sidewalks and pedestrian crossings.

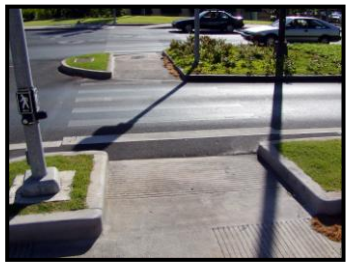


*Figure 12. Refuge area with extended median*

The curbside alternative entails longer pedestrian crossings in order for a rider to catch transit vehicles travelling in the opposite direction of Route 1. This means a person has to cross the whole width of Route 1 (six lanes). For the median location, a rider need only cross half of the width of Route 1 (four lanes), regardless of the direction of transit vehicle. The shorter width for pedestrian crossings is most advantageous to people with mobility problems**.** The diagrams below show the difference in travel distance for a rider given the two alternatives.

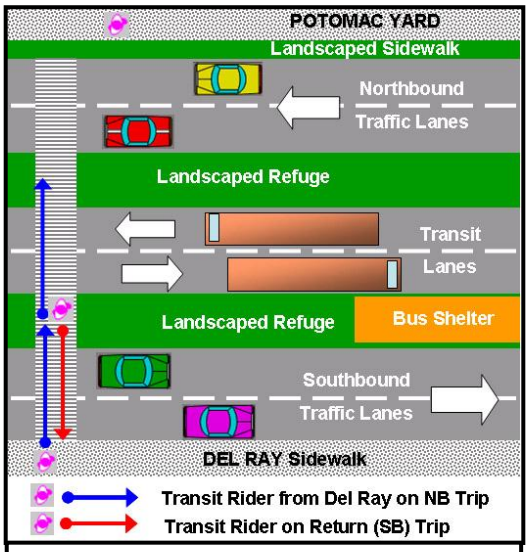



*Figure 13. Pedestrian Crossings Required with the Median Option*

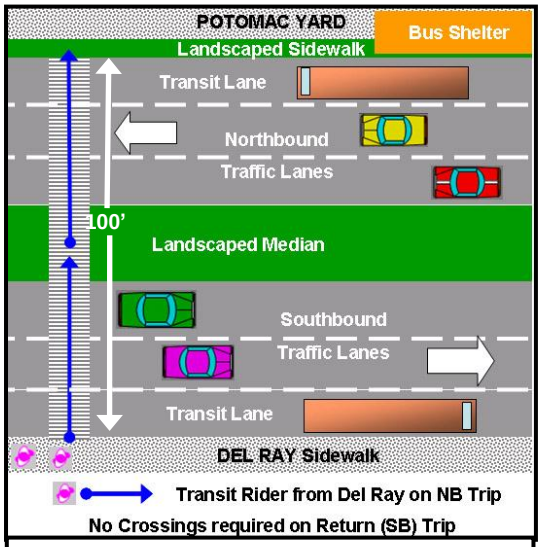



*Figure 14. Pedestrian Crossings Required with the Curbside Option*

4. *Streetscape and "urban boulevard" concept:*

*Figure 15. Artist sketch of median transitway in front of Potomac Yard Landbay H on Route 1*

Consistent with the *Potomac Yard/Potomac Greens CDD Design Guidelines*, both alternatives provide significant median areas for tree plantings and landscaping, and comparable sidewalk widths. The design guidelines envision Route 1 as an urban boulevard with a landscaped median 20 feet in width. Either alternative will require an adjustment to the urban boulevard landscaping on Route 1. As currently configured, the median transitway alternative provides two median areas, each 15 feet wide, and the curbside alternative provides a single median area 20 feet wide. The median alternative will require a reduced landscaped area for the Potomac Yard landbays. This possibility was factored into the design of Landbay H, which was approved by City Council in October 2006. The illustration above shows a conceptual sketch of the landscaping for the median and in the Potomac Yard side of Route 1 for the median alternative. Existing conditions on the west side of Route 1 preclude any boulevard landscaping for both alternatives due to the limited right-of-way and the existence of overhead utility lines.

5. *Implementation:* The two alternatives differ distinctly in terms of their respective implementation challenges in key areas. Among these are:

   a. Right-of-way Acquisition at the west side of Route 1.

   Although the overall street width and initial right-of-way needs are the same for both alternatives, the available right-of-way on the west side of Route 1 is limited and is likely to remain so until such time as the abutting properties may be redeveloped. Neither alternative provides opportunity to improve the sidewalks and streetscape on the west side of Route 1. While this does not materially impact implementation or operation of the transit corridor for the median location alternative, it does present significant challenges to providing transit stations and reasonable access to those stations for the curbside alternative.

   b. Timing

   The transitway facilities can be constructed sooner and at lower cost for the median configuration alternative than for the curbside alternative. The latter alternative will require reconstructing the entire Route 1 roadway between Monroe Avenue Bridge and East Glebe Road in one phase whereas the median alternative can be implemented in phases as additional right-of-way becomes available. Given the limited building setbacks and the multiple property owners at the west side of Route 1, the curbside alternative is cost prohibitive and unpredictable.

   c. Funding Availability.

   The median transitway supports project eligibility for federal funding as a "fixed guideway" system. The mid-block openings necessary to maintain access to some properties along the west side of Route 1 is likely to compromise that funding eligibility designation.

A comparison of the median and curbside transitway alternatives reflecting the above discussion is included as an attachment to this report.

## IV. NEXT STEPS

This is an important gateway and future boulevard for the City of Alexandria; hence, the future design of the transit lanes on Route 1 should balance the transit operation and safety with the landscape and urban design vision for Route 1. If approved, the proposed amendment will allow staff to proceed with working with the community on the design of the transit lanes in the median of Route 1, which will include landscaping, lighting, pedestrian crossings, shelter designs, etc. The final design of the transit lanes will require subsequent review and approval by the Planning Commission and City Council.

## V. STAFF RECOMMENDATION

Staff recommends approval of the proposed amendment to the text in the transportation chapter of the City of Alexandria Master Plan to permit dedicated transit lanes to be located in the central landscaped median of Route 1 from East Glebe to north of the Monroe Avenue Bridge.

The proposed text amendment to the Master Plan is as follows *(strike-throughs reflect existing text in the Master Plan proposed to be deleted, while the underlined text is proposed as part of the amendment):*

> ***"Route 1-Jefferson Davis Highway shall be designated as a transit corridor. Within the corridor, high-capacity transit service connecting Braddock Road Metrorail Station to the Crystal City/Pentagon area may be developed in general conformance with the Crystal City/Potomac Yard Transit Corridor Alternatives Analysis and compatible with the operation requirements of both bus rapid transit (BRT) and light rail transit (LRT). ~~If~~ The dedicated transit lanes ~~are~~ to be provided for the Crystal City/Potomac Yard Transit Corridor, ~~the lanes shall be provided~~ on Route 1 north of the Monroe Avenue bridge shall be provided within a central landscaped median, except that the transit lanes may connect to Potomac Avenue in the vicinity of the Town Center until sufficient right-of-way can be obtained. The final ~~location,~~ type, and design of any future dedicated transit service shall require approval by the Planning Commission and City Council. Any future transit lanes should maintain the character of Route 1 as an urban boulevard with a continual median, trees and street trees, and shall be reserved in perpetuity for exclusive public transit use."***

## STAFF

Rich Baier, Director, Transportation and Environmental Services
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Raka Choudhury, Urban Planner, Development, Planning & Zoning
Alexandra Schnell, Urban Planner, Neighborhood Planning, Planning & Zoning

ATTACHMENT 1

# COMPARATIVE ANALYSIS OF ROUTE 1 TRANSITWAY CONFIGURATION ALTERNATIVES

| CONSIDERATION | MEDIAN | CURBSIDE |
|---|---|---|
| **Overall transit performance** | Better overall performance | Reduced, even with barriers between transit & vehicular lanes |
| **Transit travel delay** | Lower due to increased "green time" at signal-controlled intersections (shares Rte 1 phase) | Higher due to reduced "green time" at signals (special phase) |
| **Overall Vehicular Traffic Safety** | • Less conflicts between transit and other vehicular traffic mean less potential for accidents | • Increased potential for vehicular accidents |
| **Conflicts between transit and vehicular traffic** | • Less potential for conflicts with vehicles<br>• Left-turns from Rte 1 limited to protected movement only<br>• Left turns from side streets not restricted<br>• Right turns from Rte 1 not restricted<br>• Right turns from side streets not restricted | • More potential for conflicts with vehicles<br>• Could potentially allow permissive left turns from Rte 1 with restricted transit green time<br>• Left turns from side streets not restricted<br>• Right turns from Rte 1 permitted only with exclusive transit phasing on both sides<br>• No Right Turn on Red (both sides) |
| **General vehicular traffic flow** | • Minimal impact<br>• No conflicts with left or right turning traffic (transit vehicles move concurrently with Rte 1 through traffic) | • Reduces level of service at some intersections<br>• Additional phase or Intelligent Traffic System (ITS) required<br>• Conflicts between through transit movements and general traffic (right turns at intersections and mid-block curb cuts) |

| CONSIDERATION | MEDIAN | CURBSIDE |
|---|---|---|
| **Use of transit lanes by vehicular traffic** | General traffic less likely to use transit lanes | Significant enforcement required to control use by general traffic |
| **Implementation timing and cost** | • Can be constructed concurrent with Rte. 1 improvements<br>• Required ROW available | • Requires reconstructing northbound lanes/sidewalk on west side of Rte 1<br>• Additional Right-of-way needed on west side of Rte. 1 |
| **FTA funding implications** | Supports New Starts/Small Starts eligibility as "fixed guideway" | Not considered "fixed guideway" without physical barrier separation |
| **Landscaping** | • Increases median landscape width<br>• Reduces landscape area between curb and building line on east side of Rte. 1<br>• Requires adjustments to design of urban boulevard prescribed by the Potomac Yard CDD design guidelines | • No effect on median landscaping area prescribed by the Potomac Yard CDD design guidelines<br>• Transit stations encroach on pedestrian and landscape areas<br>• No room for Stations in many blocks on west side of Route 1 due to narrow sidewalks |
| **Pedestrian crossings of Rte 1**<br>Crossings at intersections only (well-lit and signalized with crosswalks, countdown timers, leading pedestrian intervals, etc.) | • Full crossing = 3 lanes + median + transitways + median + 2 lanes (equal distance to curbside, stage lengths are different)<br>• Crossing is broken into three 23' to 33' stages | • Full crossing = transitway + 3 lanes + median + 2 lanes + transitway (equal distance to median, stage lengths are different)<br>• Crossing is broken into two 40' to 50' stages |
| Pedestrian access to transit | • In one direction, pedestrians cross only one direction of vehicular travel lanes to median (23' to 33')<br>• In other direction, pedestrians cross transitways & buffer in addition to one direction of vehicular travel lanes (62') | • In one direction, pedestrians board/disembark curbside (0')<br>• In other direction, pedestrians cross all lanes, median refuge & transitways on Rte 1 (both directions of travel) (100') |