



October 4, 2001

MEMORANDUM

TO: Montgomery County Planning Board

VIA: Charles R. Loehr, Director *CL*
Montgomery County Department of Park and Planning

FROM: Jeffrey Zyontz, Chief, County-wide Planning
John Carter, Chief, Community-Based Planning *JC*
Don Ostrander, Transportation Planning 301-495-4525 *DO*

SUBJECT: Planning Board Recommendations on Transit Purple Line

On October 18, the Montgomery County Council will take up a discussion of the most desirable alignment for circumferential transit for Montgomery County, often known as the future "purple line". The Council is asking for comments on two alignments, an inner and outer line. The purpose of the Board discussion is to provide recommendations to the Council for this upcoming session and future decision-making.

The Council's public forum information packet on this topic, containing summary information and providing a framework for the public presentations, is attached. It must be noted that this is not in any way a full project decision, but rather an effort by the Council to develop a position on the most desirable project, to guide further study and decision making by the Maryland Department of Transportation (MDOT). This further study can lead to a project that would be ready for funding in the Federal Transportation legislation expected to be adopted in the fall of 2003.

The information presented is generally drawn from MDOT working papers and public forum information, as well as staff analysis. No formal report has been prepared by MDOT yet. This Memorandum is structured to provide summary information on the alignments, and supporting materials. The following sections are included:

- Staff Recommendations
- Key Elements of the Alignment Recommendations
- Issues Not Yet Resolved
- Summary of MDOT Beltway Transit Study Process To Date
- Detailed Information on the Alignments
- Attachments include:
 - Montgomery County Council information packet on the inner and outer purple lines

- Memorandum from Community-Based Planning staff on the purple line alignments
- Testimony of DPWT at the October 2 hearing with the Montgomery County Council

STAFF RECOMMENDATIONS

Staff recommends the Board forward the following recommendation and discussion of key elements to the County Council for their consideration in the Beltway Transit Purple Line discussions.

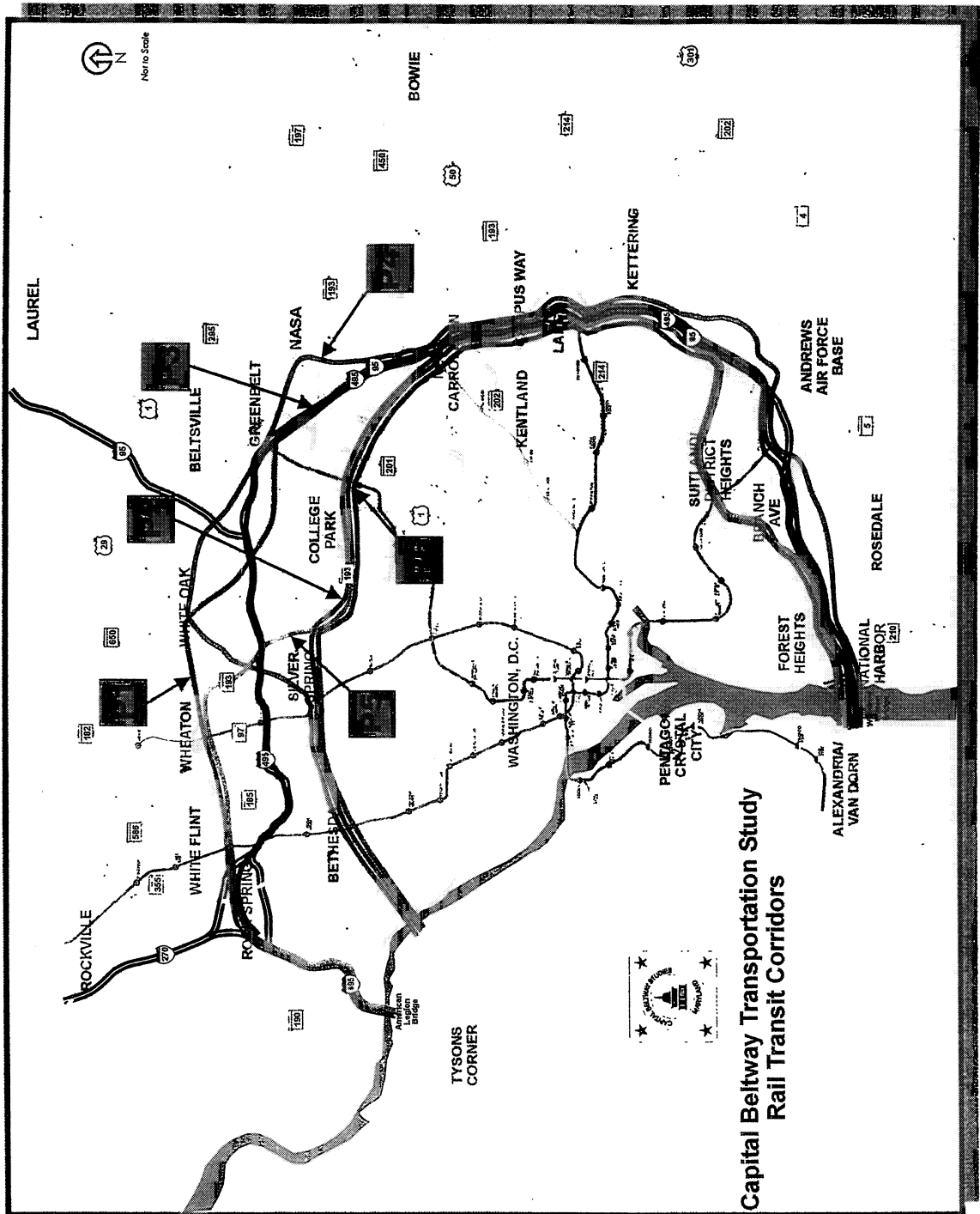
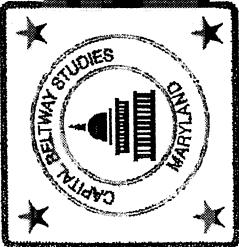
The Montgomery County Planning Board recommends that the Maryland Department of Transportation expedite further detailed evaluation of the Inner Purple Line Corridor from Bethesda to New Carrollton. This would include more detailed design of modes, alignments, station locations, potential costs and ridership, and identification of needed mitigation for traffic, environmental and community impacts. The issue of who would build and operate this portion of the regional system should be a part of the future review.

DESCRIPTION OF PURPLE LINE ALTERNATIVES

The following table summarizes the characteristics from the MDOT analysis thus far; the evaluation and recommendations are based upon this table. Both alternatives connect the two sides of the Metrorail Red Line together, reducing the need for travel on the inner parts of the rail network. They both also connect, in a circumferential manner, the Red Line with the Green Line in Prince George's County.

Alternatives	Stations	Construction Characteristics (grade)
Heavy Rail Outer Purple Line (P1)	Rock Spring Park Grosvenor Metro Station Wheaton Metro Station White Oak I-95 Park and Ride Lot Greenbelt Metro Station Baltimore/Washington Parkway New Carrollton Metro Station	Underground 85% Aerial 5% At-Grade 10% Fully underground except for a portion between Greenbelt and New Carrollton.
Light Rail Inner Purple Line (P6)	Bethesda Metro Station Connecticut Avenue Lyttonsville Silver Spring Metro Station Langley Park University of Maryland (2 stops) College Park Metro Station Riverdale New Carrollton Metro Station	Underground 35% Aerial 10% At-Grade 55% Largely at-grade between Bethesda and Silver Spring. Tunnel between Silver Spring and Langley Park. At-grade between Langley Park and University of MD. Tunnel between University of MD and College Park. Largely at-grade between College Park and New Carrollton.

Rail Transit Corridors



KEY ELEMENTS OF THE ALIGNMENT RECOMMENDATION

For several years, MDOT has been conducting a study of transit lines that would provide circumferential service in Maryland across both Montgomery and Prince George's Counties. There are reasons for both the inner or outer lines, and in a fiscally unconstrained world, both inner and outer lines could be built. In general, they serve somewhat different ridership markets and have different station access patterns. Review of initial ridership patterns also shows that, as on the Capital Beltway, trips tend to be relatively short and do not travel from one end to the other. Thus, riders will be using other lines to access their final destinations, so the better the connection between transit lines and to job and household activity centers, the more a future line will serve future ridership.

The analysis below looks at only the pure inner and outer lines, those the County Council has requested comments on. In addition to these, not discussed but still needing resolution later, is the question of HOV lanes on the Capital Beltway. The topics summarized below are further discussed in the Detailed Information section later in the memo.

Beltway Inner Purple Line

Staff recommends the Inner Purple Line from Bethesda to Silver Spring, then to College Park, and ultimately to New Carrollton. Staff finds that **the major benefits of the Inner Purple Line are that it:**

- best matches the General Plan vision of the County where both the highest density and highest transit accessibility are downcounty
- complements and capitalizes on the significant investment that is planned for the Georgetown Branch Light Rail Trolley/Trail and the Silver Spring Multi-modal Transit Center projects. These are well along in planning and will form an excellent first step for the longer line.
- has a much lower total cost and is more cost-effective per rider. When compared with the Outer Purple Line, the Inner Purple Line has only about 4% fewer daily total Metrorail trips and about 70% of the purple line ridership, with capital costs around \$1- \$3 billion less. The cost per new transit rider is lower than the outer line.
- provides high quality transit services to parts of the region that are less affluent and have denser development, where the additional jobs accessibility will be of potential benefit. It also ties the University of Maryland to the Bethesda and Silver Spring CBDs and the Metrorail Red Line stations in Montgomery County.
- has high potential for walk access to the light rail, reducing the need for expensive parking structures and the accompanying traffic concerns of adjacent neighborhoods. The table on page 5 indicates land-use activity in areas served by the Purple Lines. The Inner Purple Line will serve a

significantly greater number of jobs and households in Montgomery County in terms of existing and future levels.

- supports current and planned future land-use activity along the alignment. For example, the Inner Purple Line directly serves Bethesda and Silver Spring, which are high-density Central Business Districts that have a proven record of strong transit use, and even higher goals for future use.

TABLE 1

Current and Future Land Use Activity in the Vicinity of Existing or Future Transit Stations				
	Year 2000	Year 2025	Year 2000	Year 2025
	Jobs	Jobs	Households	Households
Inner Purple Line				
Bethesda CBD	39844	47769	4990	7655
Silver Spring CBD	33929	42490	5094	8804
Langley Park	8774	9324	10710	11180
Total	82547	99583	20794	27639
Outer Purple Line				
Rock Spring Park	23375	29917	0	1251
Grosvenor	570	583	2943	4783
Wheaton CBD	11336	11816	1952	3702
White Oak	11141	19538	4070	4235
Total	46422	61854	8965	13971

Source: M-NCPPC Research Division, 2001 (Traffic Zone Data, COG 6.2 Forecast)

**% Difference in Current and Future Land Activity:
Inner Purple Line vs. the Outer Purple Line**

	Year 2000	Year 2025	Year 2000	Year 2025
	Total Jobs	Total Jobs	Total Households	Total Households
	78%	61%	132%	98%

Percentages calculated from the table above

The attached memorandum from the Community-Based Planning Division conveys support for the Inner Purple Line with detailed findings and recommendations.

Arguments against the Inner Purple Line are:

- It does not have stations in areas where parking could easily be built, so walk and bus access will be critical to success. Parking shortages caused by drive access have been a continuing problem with the Metrorail system.

- It is more difficult to connect to a future Virginia circumferential line, and thus to Virginia centers such as Tysons Corner, from Bethesda than from the Rock Spring Park / Montgomery Mall area.
- The all-day projected ridership is somewhat lower than for a full outer line.

Beltway Outer Purple Line

The County Executive supports the Outer Purple Line, while his staff is stressing that the Georgetown Branch Light Rail could serve a different ridership and be built in addition to the outer line. **The key arguments for the Outer Line include:**

- The Beltway Outer Purple Line has higher ridership than the inner line, but is also significantly more expensive to build, regardless of heavy or light rail technology.
- It can intercept more auto trips and has a much higher auto-access percentage than the inner line. Many more parking spaces would need to be built -- a total of almost 12,000 in initial estimates. (These are very preliminary numbers, indicating the importance of auto access to the line use.)
- It provides a good potential connecting point into Virginia.
- Being primarily underground, it is not subject to traffic or other disruptions that would be an issue with above-ground services as planned for parts of the inner line. Being further upcounty, station access will be less influenced by Beltway and inside-the-Beltway traffic congestion.
- It directly serves the new Food and Drug Administration Headquarters in White Oak, although how it would fit onto what is expected to be a relatively secure campus setting has not been addressed.

Edgar Gonzalez, Deputy Director of the Montgomery County Department of Public Works and Transportation, will be making a presentation to the Board on the Outer Purple Line at their session. His October 2 testimony to the Council is attached for your reference.

Arguments against the Outer Purple Line are:

- It does not serve CBD-type densities. Proposed station areas such as Rock Spring Park are office park-type developments and are not planned to have compact, high-density, rail transit-supporting land use.
- Significantly fewer jobs and households will be served by the Outer Purple Line as shown previously in the table on page 5.
- The overall costs are very high and the ridership is predicated on full circumferential connections to the lines into Virginia on both the eastern and

western sides. These connections are in the very long-term at best, and the section from New Carrollton to the MD 5 area has very low ridership.

- It does not make a direct connection to the education resources at the University of Maryland main campus.

ISSUES NOT YET RESOLVED

It is important to address the impact of the alignment alternatives on the future downtown core capacity of the Metrorail system. Providing sufficient future core capacity for the system is a critical issue and the costs of addressing it may preclude or delay the implementation of other projects. An alignment in Montgomery County that would best reduce the need to travel on more downtown, crowded sections of the Metrorail would be a key consideration for future implementation. This information is not available.

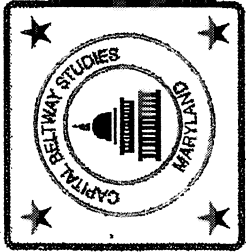
What agency would build and operate the purple line can be a major factor in design and funding. This line may well be a part of the Metrorail system, our regional transit network, built and operated by WMATA. Certainly, the key station connections would be part of the Metrorail system. However, the Maryland MTA built and operates the light-rail system in Baltimore; this provides another possibility for the purple line.

The MDOT Beltway Transit study has not even reached the point where detailed by-segment information is available. Completing the initial phases of this study, selecting an alignment, and beginning the more detailed analysis phases is an essential next task to resolve the many unanswered technical questions about the alignments. Current recommendations are based on the best available information as of now.

STATUS OF THE MDOT CAPITAL BELTWAY/PURPLE LINE STUDY

The study was initiated in the early 1990s to investigate the feasibility of introducing HOV lanes on the Maryland portion of the Capital Beltway (I-495). The scope of the study was later expanded to conduct a more comprehensive evaluation of the corridor's transportation needs by studying additional transportation strategies involving transit. Over the past few years preliminary alternatives, including HOV lanes on the Beltway, express bus on the proposed HOV lanes, express bus in mixed traffic and six rail transit corridors (labeled Alternative #4 Transit P1-P6 and described and shown on page 8) have been developed and evaluated.

The MDOT evaluation, to date, has concluded that both HOV and transit improvements are necessary given the high projected travel demand in the corridor. Current work on the study is determining the most appropriate, high priority segments of transit corridors to advance forward in detailed environmental studies. MDOT is seeking to advance the HOV alternative and selected high priority rail corridors on separate, parallel paths. The evaluation factors being used by MDOT in comparing alternatives and determining priority segments are shown on page 9. MDOT is currently finalizing a segmentation paper, which will assist in the identification of high priority corridors for future study.



Alternatives Under Consideration

Alternative #1 - Base Case (CLRP)

Alternative #2 - TSM/TDM

Alternative #3 - HOV

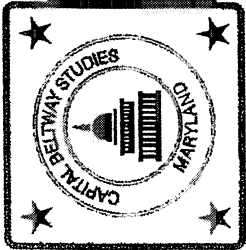
- Concurrent Flow
- Barrier Separated
- "HOT" Lane

Alternative #4 - Transit

- Heavy Rail
- Light Rail
- Express Bus

Heavy Rail
P1 - Outside Beltway
P2 - Inside Beltway
P3 - Along Beltway

Light Rail
P4 - Outside Beltway to Inside Beltway
P5 - Inside Beltway to Outside Beltway
P6 - Inside Beltway



Evaluation Factors

- ◆ Public Input
- ◆ Ridership
- ◆ Total Costs
- ◆ Cost Effectiveness
- ◆ Economic Development
- ◆ Natural Environmental Impacts
- ◆ Improved Mobility
- ◆ Transportation Supportive Land Use

- ◆ Community Impacts
- ◆ Accessibility
- ◆ Consistency with Local Plans, Policies and Programs
- ◆ System Connectivity
- ◆ Operating Efficiencies
- ◆ Congestion Relief
- ◆ Encourages Tourism

DETAILED INFORMATION ON THE PURPLE LINE ALIGNMENTS

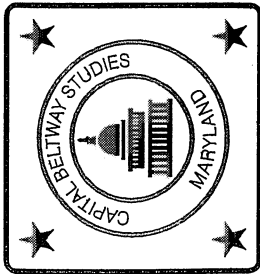
The MDOT study has produced ridership and cost estimates at a fairly general level. Staff has used this and other data in their analysis. The most recent ridership and cost data from MDOT are on pages 11 and 12.

Making comparisons of heavy rail alignments vs. heavy rail alignments and light rail vs. light rail are useful because the operating characteristics are the same. In comparing ridership for a heavy rail Outer Purple Line and a heavy rail Inner Purple Line, the Outer Purple Line has only about 2% more total Metrorail use and 90% of the purple line ridership, but has capital costs of about \$1 billion more according to preliminary MDOT estimates. In comparing a light rail Outer Purple Line with a light rail Inner Purple Line, the ridership and cost comparisons are similar. The light rail Outer Purple Line has about 3% more riders but with capital costs of about \$0.6 - \$1 billion dollars more. MDOT ridership estimates assume that the entire circumferential lines for each alternative are in place. Only portions of alternatives may ultimately be built. If so, ridership estimates would change.

The segment comparison table in the Council packet compared a heavy rail Outer Purple Line with a light rail Inner Purple Line. According to MDOT forecasts, the heavy rail Outer Purple Line has an average operating speed of 47 miles per hour, which is 20 miles per hour faster than the light rail Inner Purple Line. However, for total daily Metrorail ridership, the heavy rail Outer Purple Line carries only about 4% more riders and is about \$3 billion more expensive in terms of capital cost. The per-line ridership is higher on the outer line, in part due to the difference in speed. Staff does not have Montgomery County line segment ridership with an inner line heavy rail alternative, but would expect to see ridership higher than with the light rail assumption, with corresponding increases in capital costs.

Table I provides current and future land-use activity around existing and proposed future Purple Line stations. The Inner Purple Line has significantly greater current and future jobs and households in the station areas in comparison with the Outer Purple Line. For jobs in the year 2000 and year 2025, the Inner Purple Line has 78% and 61% more respectively. For households in the year 2000 and year 2025, it has 132% and 98% more respectively.

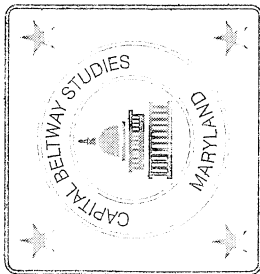
Concerning the Inner Purple Line, the Bethesda and Silver Spring Central Business Districts (CBD) have densities that support rail transit service and will have additional jobs and households in the future. In addition, the Georgetown Branch, the new Silver Spring Multi-modal Transit Center, and the proposed transit center at Takoma/Langley Park are significant master plan transit elements. For the Outer Purple Line, similar CBD-type densities are not prevalent and the relevant master plans do not include circumferential rail transit line considerations.



Initial Findings: Transit

Changes	2020 No Build	P1	P2	P3	P4	P5	P6	Express Bus	TSM Bus
Total Daily Regional Metro Trips	977,000	1,058,000	1,039,000	1,049,500	1,025,900	1,044,900	1,017,100	976,400	982,900
New Daily Regional Metro Trips	N/A	81,000	62,000	72,500	48,900	67,900	40,100	-600	5,900
% Increase in Metro Trips over 2020 No Build	N/A	8.3%	6.3%	7.4%	5.0%	7.0%	4.2%	-0.1%	0.1%
Daily Line Trips	N/A	233,000	205,000	173,500	195,600	197,300	160,250	80,200	52,850
New Daily Transit Trips	N/A	64,000	53,800	58,700	45,900	52,300	34,000	22,200	12,000

Total Daily Regional Metro Trips = number of daily trips from origin station to destination station; transfers are not counted as additional trip.
 New Daily Regional Metro Trips = Alternative Metro Trips - Baseline Metro Trips
 Daily Line Trips = number of trips on the Alternative Line for a portion of trip; transfers are counted as additional trip.
 New Daily Transit Trips = number of person trips diverted from automobile



Cost Estimate Ranges

Alternative Package	Range of Capital Costs	Range of Annual Operations and Maintenance Costs
Base Case	N/A	N/A
TSM/TDM	\$500,000 to \$50 million	\$50,000 to \$100,000
HOV	\$750 million to \$1.2 billion	\$200,000 to \$300,000
Transit (Heavy Rail)		
P1	\$6.3 to \$7.5 billion	\$75 to \$90 million
P2	\$5.5 to \$6.6 billion	\$75 to \$90 million
P3	\$6.0 to \$7.3 billion	\$75 to \$90 million
Transit (Light Rail)		
P4	\$2.7 to \$3.2 billion	\$40 to \$50 million
P5	\$3.1 to \$3.6 billion	\$40 to \$50 million
P6	\$2.5 to \$3.0 billion	\$40 to \$50 million
Transit (Express Bus)	\$750 million to \$1.2 billion	\$90 to \$100 million

Transportation Policy Report (TPR) Status Report: Purple Line

As part of the Round 1 and Round 2 phases of analysis in the TPR study, various alternatives were tested that included segments of the Inner and Outer Purple Lines. The Georgetown Branch segment was included in all Round 2 scenarios and all but one of the Round 1 scenarios. The Inner Purple Line alternatives included extensions of the Georgetown Branch line to Tysons Corner and New Carrollton. The Outer Purple Line alternatives included were from Tyson Corner to White Oak in Round 1, and from Tysons Corner to White Flint and to Wheaton in Round 2.

While the Inner Purple Line was tested exclusive of an Outer Purple Line segment, all of the Outer Purple Line tests assumed that the Georgetown Branch was built. The Inner and Outer Lines are close enough together that they would compete for some of the same riders if both were built particularly in the segments between the two ends of the Red Line. Staff has completed some additional tests of the Outer Purple Line to eliminate the impact of either the Georgetown Branch or full Inner Purple Line. These tests allow for a more consistent comparison of alternatives.

The TPR analysis has found the following:

Georgetown Branch

- The link between Bethesda and Silver Spring removes the need for a circuitous Metrorail trip on the rail line. A trip that takes 35 minutes through downtown Washington today, would take 9 minutes on the Georgetown Branch.
- Projected ridership for the line is good, with about 7,000 to 10,000 peak period passengers (approx. 25,000 daily riders) by the year 2025. The demand in the peak direction would require buses running on East-West highway at less than 2-minute headways to meet demand levels.
- Roughly two-thirds of the riders are expected to have at least one transfer to/from the Red Line. Requiring riders to transfer will limit demand for the line.

Inner Purple Line

- The segment between Bethesda and Silver Spring continues to have the highest passenger demand, however, the segment from Silver Spring to Langley Park also had strong demand, with volumes decreasing along the line east of College Park.
- Extensions of the Georgetown Branch to either the US-29 corridor or Langley Park to the east would significantly increase demand for the line. One disadvantage of only building the Bethesda to Silver Spring section is that it would connect two CBDs, but not allow access from large residential areas.

The addition of the US-29 LRT in scenario 5 nearly doubles demand for the Georgetown Branch.

Outer Purple Line

- When both lines are included, ridership on the Outer Purple Line was comparable with ridership on the Inner Purple Line.
- Because transit riders are unlikely to transfer more than one in a trip, if auto access from home is used, then walk access at the job end is important. A second transfer to another transit mode will be resisted. Much of the development around the outer line stations is not reachable by walk access.

Master Plan Recommendations

Concerning circumferential transit lines in the Capital Beltway corridor area, only the Georgetown Branch and the North Bethesda Transit way are specified in our master plans. The limits of the Georgetown Branch rail line are from Bethesda to Silver Spring, although the recently completed East Silver Spring Master Plan noted that a transit extension from Silver Spring is contemplated and would require a Master Plan update to guide the detailed planning once the line extension concept was adopted. The North Bethesda Transit way is designated as a high capacity transit connection between the Grosvenor Metrorail station and Rock Spring Park, extending to Montgomery Mall and further west to the neighboring multi-family residential areas. Additional transit lines requiring rights-of-way and station sites would require master plan amendments if they are the selected alignment.

DO:kcw

mno to mcpb on Purple Line.doc

MEMORANDUM

September 28, 2001

TO: County Council

FROM: Glenn Orlin, Deputy Council Staff Director

SUBJECT: **Public Forum—Purple Line**

For the last few years the Maryland Department of Transportation has been studying various options for a circumferential rail transit line, commonly known as the Purple Line. MDOT has informed County officials that the State needs to select one generic route very soon to have enough time to complete a Draft Environmental Impact Statement by early 2003. The next Federal transportation authorization bill is likely to be written in early 2003, and—if the experience of TEA-21 is the model—the funding for each new rail transit project will be earmarked in the bill. Unless a well-defined Purple Line project is ready by early 2003 it cannot be a candidate for an earmark. If it is not earmarked, the next opportunity for Federal authorization will not occur for another six or seven years. Therefore it is incumbent on the State to decide very soon which Purple Line option should proceed for detailed study. Governor Glendening will select a route in the next few weeks. Two primary options have emerged:

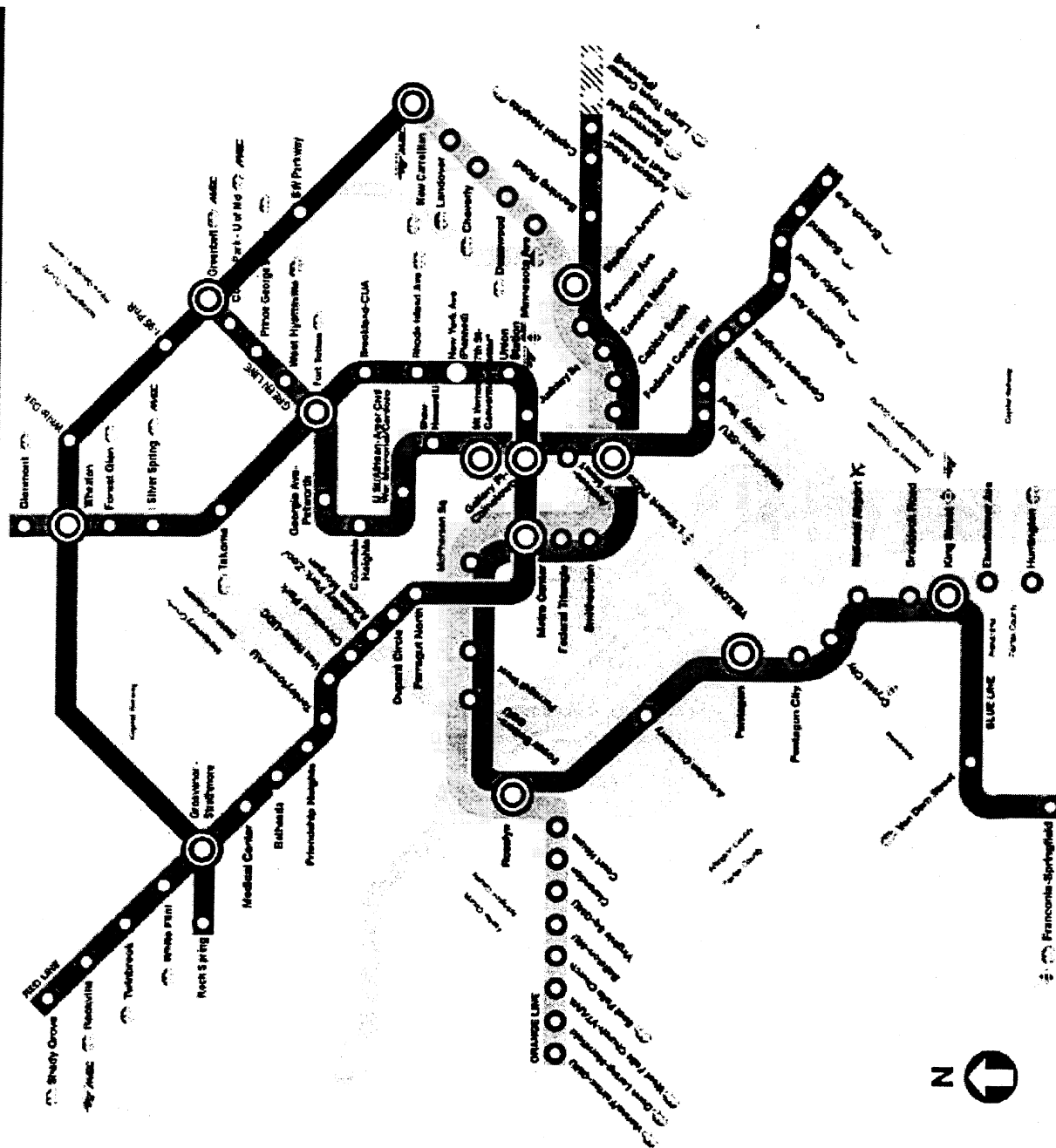
- A 'heavy' rail line outside the Beltway (also known as P-1) connecting Rock Spring Park, the Grosvenor Metro Station, the Wheaton Metro Station, White Oak, the I-95/495 Park and Ride, Greenbelt Metro Station, the Baltimore/Washington Parkway, and the New Carrollton Metro Station. With the exception of part of the segment between Greenbelt and New Carrollton along the Beltway, the concept (the basis of its cost estimate) would have the line run fully underground. A schematic of a future Metrorail system showing the route of P-1 is on ©1.
- A light rail line inside the Beltway (P-6) connecting the Bethesda Metro Station, Connecticut Avenue, Lyttonsville, the Silver Spring Metro Station, Langley Park, two stops at the University of Maryland, the College Park Metro Station, Riverdale, and the New Carrollton Metro Station. The concept calls for the line to run largely at grade between Bethesda and Silver Spring, in tunnel between Silver Spring and Langley Park, at grade between Langley Park and the University of Maryland, in tunnel beneath the University of Maryland and College Park, and largely at grade again between College Park and New Carrollton. A schematic showing the route of P-6 is on ©2.

The chart on ©3 contains information from MDOT about the physical features, performance characteristics, capital cost, and cost effectiveness of P-1 and P-6. The chart also notes the statements of support the Council has received in the past from municipalities and the University of Maryland.

The purpose of the forum is to solicit community feedback—pro or con—on both of these routes. The Planning Board will meet during the evening of October 11 to form its recommendation, and the full Council is scheduled to form its position on October 16, which will be conveyed to the Governor.

Legend

- Purple Line - Rock Spring to New Carrollton (PI)
- Red Line - Glenmont to Shady Grove
- Orange Line - New Carrollton to Vienna/Arden-Croft
- Blue Line - Franconia-Springfield to Largo Town Center
- Green Line - Branch Avenue to Greenbelt
- Yellow Line - Huntington to Mt Vernon Sq/7th St-Com

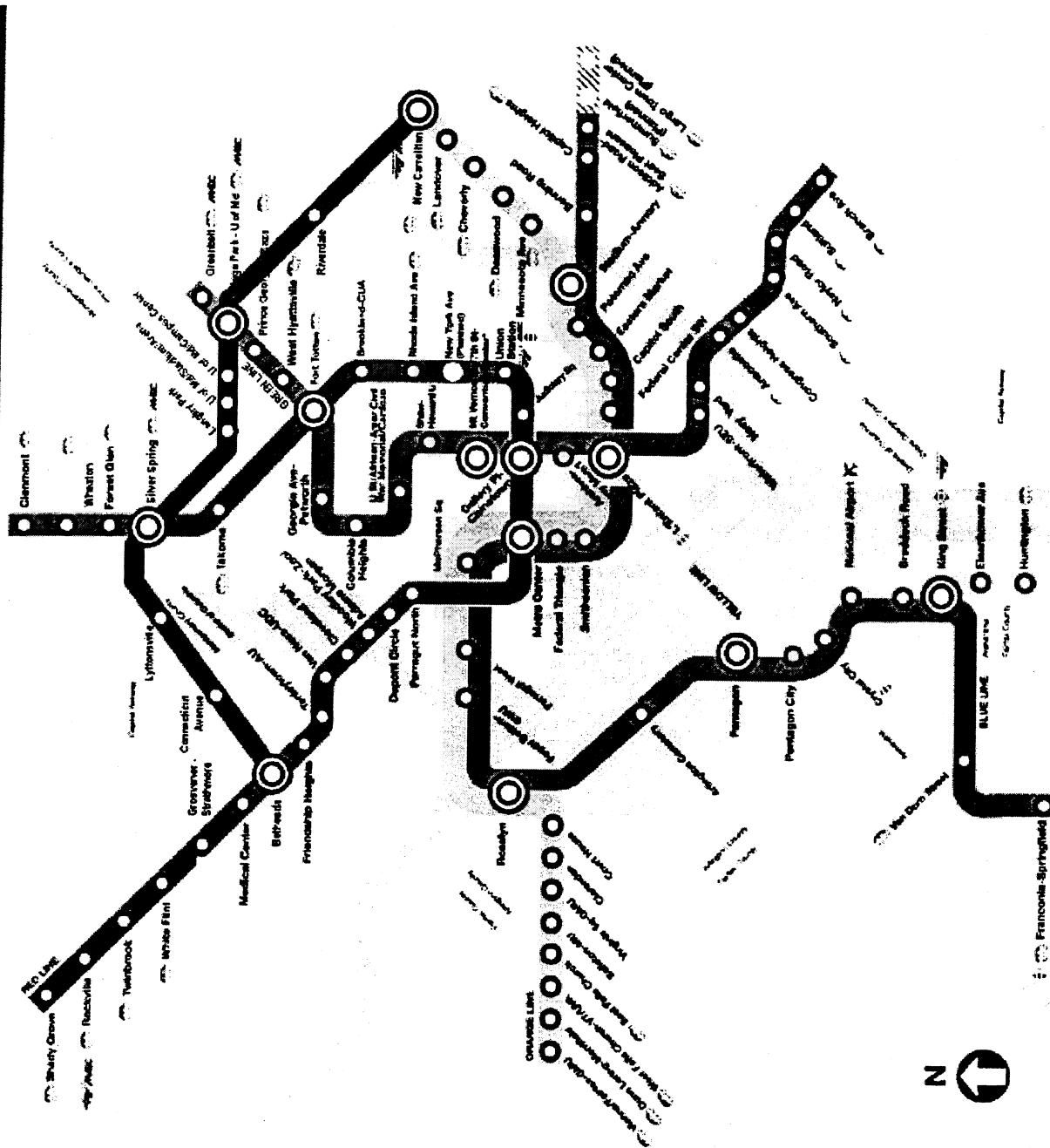


Proposed System Map



Legend

- Purple Line - Bethesda to New Carrollton (PS)
- Red Line - Glenmont to Shady Grove
- Orange Line - New Carrollton to Washington Union Station
- Blue Line - Franconia-Springfield to Largo Town Center
- Green Line - Branch Avenue to Greenbelt
- Yellow Line - Huntington to Mt Vernon Sq/7th St-Convention Center



P6

**The Capital Beltway/Purple Line Study
Segment Comparison – I-270/Bethesda to New Carrollton**

Item		Outer Purple Line (P1): Rock Spring Park to New Carrollton	Inner Purple Line (P6): Bethesda to New Carrollton
A. Physical Features			
Transit Mode		Heavy Rail (Metrorail)	Light Rail (w/ Trail from Bethesda – Silver Spring)
Main Access Modes to Stations		Drive/Bus	Walk/Bus
Major Land Uses Directly Served by Stations		Major employment centers at Rock Spring & White Oak Commercial centers at Wheaton & White Oak Residential – Grosvenor & Wheaton	Major employment centers at Silver Spring & Bethesda Major University center at College Park Commercial center at Langley Park Residential – Bethesda, Connecticut Avenue, Rosemary Hills
Construction Characteristics		Underground 85% Aerial 5% At-Grade 10%	Underground 35% Aerial 10% At-Grade 55%
Length (miles)		19.8	14.0
Conformance to Master Plans		Rock Spring Park – Grosvenor: Master Planned Grosvenor – I-95/I-495: Not in Master Plan	Bethesda – Silver Spring: Master Planned Silver Spring – Takoma/Langley: Possibility acknowledged in Master Plan
Projected Parking Demand (number of spaces)		Rock Spring 1,000 White Oak 3,600 I-95/I-495 7,000 The modeling work assumed unconstrained parking at new stations in order to avoid artificially limiting potential ridership. Local conditions may constrain the number of spaces below the numbers listed above, which may result in a commensurate reduction in ridership.	Langley Park 2,800 The modeling work assumed unconstrained parking at new stations in order to avoid artificially limiting potential ridership. Local conditions may constrain the number of spaces below the number listed above, which may also result in a commensurate reduction in ridership.
New Maintenance Yards		A new maintenance yard or expansion of an existing maintenance yard may be required. Initial estimates indicate 60 cars would be added to the system.	Need a new yard
B. Performance Characteristics			
Daily Riders per Segment		Rock Spring – Grosvenor - 15,700 Grosvenor – Wheaton – 36,400 Wheaton – White Oak – 32,500 White Oak – Greenbelt - 20,400	Bethesda – Silver Spring: 23,100 Silver Spring – Takoma: 21,700 Takoma – University of Maryland: 22,700
Total Daily Metrorail Ridership		1,007,500	991,200
Average Operating Speed		47 mph	27 mph
Effect on Beltway		Negligible: -0.3% (800 trips)	Negligible: -0.2% (400 trips)
C. Cost			
Capital Cost		\$4 billion	\$1.2 billion
Cost per Mile		\$202 million	\$85 million
D. Cost Effectiveness (cost per new rider)			
		Rock Spring – New Carrollton: \$52.30	Bethesda – New Carrollton: \$29.38
E. Statement of Support on Record			
			Cities of Takoma Park & College Park University of Maryland

October 3, 2001

MEMORANDUM

TO: Rick Hawthorne, Chief
Transportation Planning Unit

FROM: John Carter, Chief *JAC*
Community-Based Planning Division

Glenn Kreger, Team Leader *GK*
Silver Spring/Takoma Park Team

SUBJECT: Purple Line Alignments

Community-Based Planning supports the Purple Line conceptually as a way to provide east-west transit between the two legs of the Metro Red Line. We have assessed the alternative alignments in the context of master planned development and wish to convey our support for the proposed Inner Purple Line.

Findings

Proposed alignments P1 and P6 have significant similarities. Both provide east-west connections between the two legs of the Red Line. The points where they cross the Red Line (Grosvenor and Wheaton for the Outer Purple Line; Bethesda and Silver Spring for the Inner Purple Line) are separated by only two Metro stops. Each alignment would serve two significant employment centers (Rock Spring Park and FDA/White Oak vs. Bethesda and Silver Spring); one secondary employment center (Chevy Chase Lake/Connecticut Avenue vs. the Walter Reed Annex in Lyttonsville); and one significant commercial area (Wheaton vs. Langley Park/East Silver Spring). The Outer Purple Line would serve one significant residential concentration, Grosvenor, but the Inner Purple Line would provide improved access to a major public facility, the University of Maryland in College Park.

It has been argued that the Outer Purple Line would do more to support future growth than would the Inner Purple Line. Our assessment indicates that planned development is going to occur at all of the proposed stations (assuming positive market conditions, of course) in accordance with the County's master plans regardless of which alignment is selected, or even without a Purple Line. In other words, the Purple Line is not going to determine whether or not growth takes place.

Future master plan amendments might be necessary to increase development around proposed station areas. The extent of potential changes to current plans cannot be predicted by us at this time.

We offer the following observations:

1) Inner Purple Line:

On the Inner Purple Line, development in Bethesda is already far along. The revitalization of Silver Spring is under way and it should be far along well before any Purple Line ever gets built. Silver Spring will also have a new state of the art intermodal transit center to facilitate access whether or not the Georgetown Branch continues on to the east. The development in Bethesda also includes a station for the Georgetown Branch. Langley Park and East Silver Spring need revitalization, but this will come via infill development and redevelopment, not from massive growth. A portion of the Inner Purple Line, the Georgetown Branch, has already been included in the approved area Master Plans.

2) Outer Purple Line:

On the Outer Purple Line, Rock Spring Park is far along already. Grosvenor will be mostly residential. The FDA has committed to White Oak whether or not there is going to be a Purple Line. Wheaton might benefit from the Outer Purple Line, but it already has Metro access via the Red Line and it is not planned for the kind of employment center that we have in Bethesda or Silver Spring. The Outer Purple Line has not been included in any area Master Plans. A "people mover" is included in the North Bethesda Master Plan that connects Rock Spring Park to the Grosvenor Metro Station.

There is nothing illogical about providing new transit facilities to serve existing residents and workers located closer in (as opposed to more distant "growth areas"). In fact, the proposed Silver Spring Transit Center and the aborted Hampshire Langley bus terminal indicate a willingness to do just that. Upgraded transit facilities inside the Beltway would be entirely consistent with the themes of the recently adopted master plans for communities inside the Beltway in Silver Spring and Takoma Park.

From our point of view, the most relevant data is the Research Division projections for the year 2025 which indicate that projected jobs and households (existing development *plus projected growth*) in the areas served by the proposed Inner Purple Line will be significantly greater than the corresponding figures for the Outer Purple Line. It is clear to us that more people will be served by the Inner Purple Line.

Recommendation

Despite our belief that either Purple Line alignment will not ultimately determine future growth patterns, we join the City of Takoma Park in supporting the Inner Purple Line for the following reasons:

- 1) The Inner Purple Line would be a logical extension of the Georgetown Branch transitway that has already been approved repeatedly by the County Council through several master plans.
- 2) It does a superior job of moving workers to our two primary employment centers, Bethesda and Silver Spring.
- 3) The Inner Purple Line would provide an important transit connection at the proposed intermodal Silver Spring Transit Center, thereby enhancing use of the entire facility.
- 4) It provides much needed transit service to the people who need it most, the people in East Silver Spring/Langley Park who have the lowest car ownership rates in the area. This is particularly true in light of the County's failure to provide the promised bus terminal in this area. It is critical that we enable the transit-dependent people in this area to get to employment centers.
- 5) While we are committed to the Wheaton revitalization, we do not believe that the Wheaton revitalization hinges upon the future development of the Purple Line. In any case, Wheaton will never be the kind of employment center that Bethesda and Silver Spring will be.
- 6) As noted above, people in both Wheaton and Grosvenor would only need to travel two stops south on the Red Line should they need to access the Inner Purple Line.
- 7) The FDA has committed to the Federal Research Center in White Oak whether or not there is an Outer Purple Line. Development on this large site may also be fairly spread out; this could reduce the usefulness of the Outer Purple Line as a convenient travel option for some who may work there in the future. The same could be said about development at Rock Spring Park, which also has major vehicular access from interstate highways.
- 8) The Inner Purple Line would provide enhanced access to the largest public university in the State, the University of Maryland, through two stations in College Park.
- 9) Since master planned development is expected to occur at each of the proposed station areas regardless of the alignment that is selected, we feel that *the alignment decision should be based on an evaluation of potential total ridership relative to cost, i.e., operational criteria*. That is, we should seek to serve the greatest number of riders at the lowest relative cost. As noted above, significantly more jobs and households will ultimately be served by the Inner Purple Line. The comparison provided by the Council staff indicates that the cost per new rider would be significantly less for the Inner Purple Line.

Finally, it should be noted that Community-Based Planning would be even more enthusiastic about the Inner Purple Line if the proposed alignment included a stop or two in East Silver Spring, thereby enhancing revitalization in the Long Branch area. We would urge that additional consideration be given to providing a station in between Silver Spring and Langley Park.

Current and Future Land Use Activity in the Vicinity of Existing or Future Transit Stations				
	Year 2000	Year 2025	Year 2000	Year 2025
	Jobs	Jobs	Households	Households
Inner Purple Line				
Bethesda	39844	47769	4990	7655
Silver Spring	33929	42490	5094	8804
Langley Park	8774	9324	10710	11180
Total	82547	99583	20794	27639
Outer Purple Line				
Rock Spring Park	23375	29917	1	1251
Grosvenor	570	583	2943	4783
Wheaton	11336	11816	1952	3702
White Oak	11141	19538	4070	4235
Total	46422	61854	8966	13971

Source: M-NCPPC Research Division, 2001

% Increase in Land Activity for the			
Inner Purple Line vs. the Outer Purple Line			
Year 2000	Year 2025	Year 2000	Year 2025
Total Jobs	Total Jobs	Total HH	Total HH
78%	61%	132%	98%

The Capital Beltway/Purple Line Study Segment Comparison – I-270/Bethesda to New Carrollton

Transit Mode		Heavy Rail (Metrorail)		Light Rail (w/ Trail from Bethesda – Silver Spring)	
Main Access Modes to Stations		Drive/Bus		Walk/Bus	
Major Land Uses Directly Served by Stations		Major employment centers at Rock Spring & White Oak Commercial centers at Wheaton & White Oak Residential – Grosvenor & Wheaton		Major employment centers at Silver Spring & Bethesda Major University at College Park Commercial center at Langley Park Residential – Bethesda, Connecticut Avenue, Rosemary Hills	
Construction Characteristics		Underground 85% Aerial 5% At-Grade 10%		Underground 35% Aerial 10% At-Grade 55%	
Length (miles)		19.8		14.0	
Conformance to Master Plans		Rock Spring Park – Grosvenor: Master Planned Grosvenor – I-95/I-495: Not in Master Plan		Bethesda – Silver Spring: Master Planned Silver Spring – Takoma/Langley: Possibility acknowledged in Master Plan	
Projected Parking Demand (number of spaces)		Rock Spring 1,000 White Oak 3,600 I-95/I-495 7,000 The modeling work assumed unconstrained parking at new stations in order to avoid artificially limiting potential ridership. Local conditions may constrain the number of spaces below the numbers listed above, which may result in a commensurate reduction in ridership. A new maintenance yard or expansion of an existing maintenance yard may be required. Initial estimates indicate 60 cars would be added to the system.		Langley Park 2,800 The modeling work assumed unconstrained parking at new stations in order to avoid artificially limiting potential ridership. Local conditions may constrain the number of spaces below the number listed above, which may also result in a commensurate reduction in ridership.	
New Maintenance Yards				Need a new yard	
Daily Riders per Segment		Rock Spring – Grosvenor - 15,700 Grosvenor – Wheaton – 36,400 Wheaton – White Oak – 32,500 White Oak – Greenbelt - 20,400		Bethesda – Silver Spring: 23,100 Silver Spring – Takoma: 21,700 Takoma – University of Maryland: 22,700	
Total Daily Metrorail Ridership		1,007,500		991,200	
Average Operating Speed		47 mph		27 mph	
Effect on Beltway		Negligible: -0.3% (800 trips)		Negligible: -0.2% (400 trips)	
Capital Cost		\$4 billion		\$1.2 billion	
Cost per Mile		\$202 million		\$85 million	
		Rock Spring – New Carrollton: \$52.30		Bethesda – New Carrollton: \$29.38	
				Cities of Takoma Park & College Park University of Maryland	

TESTIMONY ON THE PURPLE LINES

October 2, 2001

Good evening Mr. Ewing, members of the County Council, ladies and gentlemen.

My name is Edgar Gonzalez, Deputy Director for Transportation Policy in the Department of Public Works and Transportation. I am speaking tonight on behalf of County Executive Douglas Duncan.

For the past couple of months Mr. Duncan has been involved in an effort to meet with every one of the council members to examine, review and discuss the latest available data from the MTA on this matter. One of his goals has been to ensure the two branches of government are using the same set of numbers in our decision making process. Staff from the Council have been working with their counterparts in the Executive Branch, and we have kept each other informed of the constantly changing numbers to ensure we all are using the latest available data.

We all know the importance of approaching the State with a unified County position. Experience tells us that only a united front from the local elected officials will result in the advancement of key transportation projects in the County. We believe it would be detrimental to approach the State with differing positions on this important project. We urge that the County Executive and County Council continue to develop a formal, unified position for transmittal to the State.

Our citizens understand what our respective positions are on the Georgetown Branch light rail connection between Bethesda and Silver Spring. I urge the Councilmembers to separate their support for the transit connection between our two main Central Business Districts from the decision of what alignment to support in the case of the Purple Line. These two issues are very different and separable. If the State holds to its current schedule for the Georgetown Branch study, we could see operations between Silver Spring and Bethesda by 2007. In contrast, we are not likely to see passengers on any of the Purple Lines until 2020. Our choice of Purple Line alignments, therefore, must be made based on the needs to the County two decades from now. This is a choice between today's needs and the needs of the future.

A review of the existing and forecasted population and employment data reveals that outside of the CBDs of Bethesda and Silver Spring, there is very little potential for economic development or residential growth along the Inner Purple Line. In fact, based on MNCPPC forecasts for 2025, fewer than 550 employees and fewer than 400 new households will be added to this transit corridor outside of Bethesda and Silver Spring in the next 25 years. The Council of Governments already includes a project to connect these two major activity centers in its Constrained Long Range Plan.

We have yet to adequately address the transit needs of the White Oak Area, where the Food and Drug Administration will be bringing 6,000 new employees within a few years. The FDA consolidation is likely to trigger other economic development in the same general area that would also be best served by an Outer Purple Line. Traffic relief will be needed in this area of the County. The same Outer Line would also provide interconnectivity with the Blue and Green Lines in Prince George's County and thus to the University of Maryland. It will similarly connect the Wheaton and Grosvenor stations of the Red Lines, including service to Wheaton, our third major CBD. The Outer Line will also provide mass transit service to Rock Spring Park, one of the major economic development areas in the County. In fact, based on the same MNCPPC forecasts, the Rock Spring area will add more than 6,500 new jobs and 1,250 new households by 2025. This is a ratio of 11 times more employment growth and 8 times more residential growth for this area alone, than for all other areas served by the Inner Purple Line combined, outside of Silver Spring and Bethesda CBD's.

Our citizens know very well the current traffic problems and congestion experienced on the American Legion Bridge. This bridge is our only land connection to the technology centers in Northern Virginia, and its two major airports. Based on Park & Planning traffic forecasts, unless we do something to relieve this congestion, our citizens will be experiencing 14 hours of congestion per day in this corridor by 2020. Hear me again, every hour from 6am to 8pm, we will experience the same levels of congestion that we experience for 4 hours today. A close examination of the two Purple Line alignments will clearly reveal how much more advantageous and environmentally sensitive it would be to extend the Outer Purple Line into Tyson's Corner. In contrast, the Inner Purple Line not only will have a new crossing of the Potomac River, but it plans its alignment and a station at the CIA headquarters. We had doubts that this would be permitted even before the tragic terrorist acts of September 11. We now believe it would not be possible to obtain approvals for such an extension for national security reasons.

The Outer Line clearly has the better prospects for future extensions to Virginia along the Capital Beltway. Not only that, based on MTA's projections the ridership on this segment will be about 30,000 passengers per day, many of whom will be diverted from the Capital Beltway. In contrast, the Inner Purple Line projects slightly over 10,000 passengers to Tyson's Corner, if its construction was feasible and permissible.

The Outer Line will also have other traffic operations advantages over the Inner Line. Since its stations in Montgomery County will all be outside the Capital Beltway, access to the stations will avoid the traffic tie-ups at all the Beltway Interchanges. Traffic will be "captured" outside I-495, thus avoiding additional traffic delays and operating complications on the Capital Beltway itself.

A major factor used by some to favor the Inner Purple Line is cost. I ask you to closely examine the assumptions developed to date for this comparison. The Inner alignment is mostly underground and on previously acquired right of way in Montgomery County. In contrast, MTA assumes construction mostly at-grade in Prince George's County, using some of the County's scarce east-west traffic lanes. This proposal to

construct a surface facility in Prince George's County reeks of inequality. Once this fact is presented to the community and elected officials in our sister County, the pressure to construct most, if not all of the Inner alignment underground will be tremendous. The cost differences between the two alignments will then be significantly diminished.

A final factor used to favor the Inner Purple Line is cost-effectiveness, or the cost to attract new transit riders to the lines. Here again, a close examination of the facts indicates that the Inner Line segment between Silver Spring and Bethesda has a cost effectiveness value of \$20.60 per new transit rider. However, the segment between Silver Spring and New Carrollton, the eastern leg of the Inner Line, is estimated at \$42.82, even assuming at-grade construction. Should the MTA consider underground work for this segment, the cost effectiveness of the Inner Line will be even more questionable.

The entire Outer Line will have a cost effectiveness factor of \$52.30 per new transit rider.

In summary,

- let's make sure that the two branches of Government involved in this issue can approach the State with a unified position;
- we need to differentiate the issue of the Silver Spring to Bethesda connection from the longer term issue of Inner vs. Outer Purple Lines;
- we must plan for the long term future, not just for the next 10 years as we develop our coordinated recommendation to the State; and
- we must be cognizant of the political tolerability of the construction assumptions that are being used to estimate project costs.

Thank you for the opportunity to testify tonight. We look forward to working with the entire Council in presenting a unified position to the State following this Forum.

