MONTGOMERY COUNTY PLANNING DEPARTMENT
THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

June 5, 2009

MEMORANDUM

TO:	Montgomery County Planning Board
VIA:	Glen Kreger, Acting Chief - Vision Division Dan Hardy, Chief – Move Division DKH Sue Edwards, Supervisor – North Central Transit Corridor
FROM:	Tom Autrey (301-495-4533), Supervisor, Move Division TA
SUBJECT:	I-270 / U.S. 15 / Corridor Cities Transitway Multi-Modal Corridor Study Alternatives Analysis / Environmental Assessment (AA/EA) Worksession
STAFF RECOMMENDATION:	Discussion item only. No public testimony will be heard at this time.

BACKGROUND

The I-270 / U.S. 15 / Corridor Cities Transitway (CCT) Multi-Modal Corridor Study AA/EA was released by the Maryland Department of Transportation (MDOT) and its federal partners – the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) – on May 29, 2009.[1] The purpose of this work session is to review selected issues related to the study in advance of a scheduled Planning Board Public Hearing on July 2, 2009. The County Council Transportation, Infrastructure, Energy, & Environment (T&E) Committee is scheduled to consider the study on July 13, 2009.

This memorandum summarizes the project schedule and worksession objectives, followed by background information from the AA/EA and a summary of prior Planning Board actions during earlier study phases.

[1] See the project web site at: http://www.i270multimodalstudy.com/ for access to the complete document.

THE SCHEDULE

The upcoming tentative milestone dates associated with this study and a related but separate analysis of an alternative alignment for the CCT in the Life Sciences area include the following:

- May 29, 2009 – AA /EA made available by Maryland Department of Transportation (MDOT)
- June 11, 2009 – Planning Board Worksession
- June 16, 2009 – MDOT Montgomery County Public Hearing – Gaithersburg Middle School
- June 18, 2009 – MDOT Frederick County Public Hearing – Monocacy Middle School
- July 2, 2009 – Planning Board Public Hearing On AA/EA
- July 13, 2009 – T&E Committee Review of AA/EA
- July 31, 2009 – Planned 60-Day Public Comment Period Ends
- Late Summer or Early Fall 2009 – Maryland Transit Administration (MTA) Completes Analysis of Alternative CCT Alignment in Life Sciences area.
- Fall 2009 – Locally Preferred Alternative For I-270 and CCT Selected By State After Local Input

WORKSESSION OBJECTIVES

The purpose of the June 11 worksession with the SHA and MTA staff is to examine – in advance of the completion of the staff memo and consideration of a recommendation for a LPA – issues or questions related to technical items, process, or schedule that can assist technical staff in the review of the document and local decision-makers in the development of a recommended alternative.

Examples of these items include the following items below. The Planning Board has had several opportunities to interact with MTA staff on the CCT issues associated with the Gaithersburg West Sector Plan, so the June 11 worksession will be an opportunity to focus on the I-270 highway alternatives and think about CCT and I-270 alternatives in tandem.

- What does the latest research generally tell us about the overall effectiveness and experience of the different approaches (HOV, HOT, ETL) to managed lanes?
- Given the challenges of funding the improvements (especially the highway improvements) what consideration has been given to potential lower-impact or interim solutions such as the introduction of reversible lanes?

- Assuming no significant difference in net cost and performance why not adopt the HOT lane approach in order to be consistent with the approach in Northern Virginia?

- Can you update us on the schedule milestones and specifically, what analysis is to take place on both the highway and transit side (including the alternative alignment for the CCT in the Life Sciences area) after the completion of the public hearings but before the selection of the LPA? How should local decision-makers be included in those processes?

- Can you clarify the state position on the historic sites – the Belward property specifically?

The above questions are representative questions the staff would like to discuss in the work session. It is anticipated there will be additional questions from the Planning Board for both the MDOT team and staff. MDOT representatives expected to be present at the briefing include:

State Highway Administration	Mass Transit Administration
Russ Anderson	Rick Kiegel
Brian Horn (Consultant)	Jennifer Weeks (Consultant)

PROJECT OVERVIEW

Purpose and Need

The study purpose as identified in the recently released document is to …

"… investigate options to address congestion and improve safety conditions in the I-270 / US 15 Corridor."

The need for the project results from the …

"… mobility challenges from the growing traffic congestion in the I-270 and US 15 corridors. Population and employment growth in Montgomery and Frederick counties is expected to cause peak period travel congestion along the I-270 / US 15 Corridor to worsen."

Two Studies – May 2002 and May 2009

The recently released study is both an update and expansion of earlier work completed in May 2002. The May 2002 study also evaluated combinations of highway alternatives and transit alternatives. The highway alternatives included different combinations of General Purpose (GP) and High Occupancy Vehicle (HOV) lanes. The transit alternatives included three different alternatives (Premium Bus, Bus Rapid Transit (BRT), and Light Rail (LRT)). This more recent study was required in large part as a result of MDOT determining a need to examine the potential for Express Toll Lanes (ETL) on I-270. ETL lanes largely differ from HOV lanes in that a single occupant vehicle can use an ETL by paying a toll (collected electronically at highway speeds) that will vary in price throughout the day - so as to insure a level of service exists in that lane that attracts users and helps allocate the roadway capacity in as efficient of manner as possible while

at the same time generating additional revenue. A third type of managed lane combines the HOV and ETL concepts into a high-occupancy toll (HOT) lane in which low-occupancy vehicles pay a toll but high-occupancy vehicles ride for free.

Alternatives under Consideration

There are two tables in the study that summarize the alternatives under consideration. The alternatives in the 2002 study are shown below:

ALTERNATIVE	DESCRIPTION
1	No-Build Alternative
2	TSM/TDM Alternative
3A	Master Plan[1] HOV/LRT Alternative
3B	Master Plan[1] HOV/BRT Alternative
4A	Master Plan[1] General-Purpose/LRT Alternative
4B	Master Plan[1] General-Purpose/BRT Alternative
5A	Enhanced[2] Master Plan HOV/General-Purpose/ LRT Alternative
5B	Enhanced[2] Master Plan HOV/General-Purpose/ BRT Alternative
5C	Enhanced[2] Master Plan HOV/General-Purpose/ Premium Bus Alternative

[1] Master Plan refers to proposed alignments along I-270 and US 15 included in the current Frederick and Montgomery County approved master plans.

[2] Enhanced Master Plan refers to proposed improvements that are greater than those called for in the Montgomery County Clarksburg Area.

ALTERNATIVE	DESCRIPTION
1: No-Build	No-Build Alternative carried from the 2002 DEIS; includes latest Metropolitan Planning Organization (MPO) demographic forecasts
6A	Master Plan[1] ETL/LRT Alternative
6B	Master Plan[1] ETL/BRT Alternative
7A	Enhanced[2] Master Plan ETL / LRT Alternative
7B	Enhanced[2] Master Plan ETL / BRT Alternative

[1] Master Plan refers to alignments along I-270 & US 15 included in current Frederick and Montgomery County approved master plans.

[2] Enhanced Master Plan refers to proposed improvements that are greater than called for in the Montgomery County Clarksburg Area Master Plan.

Some key aspects of the alternatives retained for analysis in the 2002 study include the following:

- Alternatives 3 through 5 are the "build alternatives". Alternatives 1 and 2 are required to be reviewed as part of the study methodology.
- While not stated, alternative 3 includes additional GP lanes as well
- An extensive expansion of bus service operating within the HOV lanes but not over a (CCT) transitway is included as Alternative 5C
- Alternative 5 is not consistent with existing adopted Master Plans (see footnote to table).

The alternatives included in the 2009 study are shown to the left. Important specifics related to this chart include the following:

- The demographic forecast has been updated from the 2002 study and now includes Round 6.4 of the Council of Governments Cooperative forecast.

- Alternative 7 is not consistent with existing adopted Master Plans in Montgomery County (see footnote to table).

A closer look at how highway Alternatives 6 and 7 vary is highlighted in the chart below. Alternative 7 provides an additional lane in each direction north of MD 121 in Clarksburg (and extending to I-70 in Frederick):

From	To	Highway Alt. 6	Highway Alt. 7	Notes
Biggs Ford Road	I-70	3 General Purpose Lanes In Each Direction	3 General Purpose Lanes In Each Direction	
I-70	Park Mills Road (North of MD 80)	**3** General Purpose Lanes In Each Direction	**4** General Purpose Lanes In Each Direction	
Park Mills Road (North of MD 80)	MD 121	2 General Purpose Lanes and 1 ETL in Each Direction	2 General Purpose Lanes and **2** ETL in Each Direction	ETL's terminate north of MD 80 in vicinity of Park Mills Road
MD 121	Proposed Newcut Road	3 General Purpose and **1** ETL in Each Direction	3 General Purpose and **2** ETL's in Each Direction	
Proposed Newcut Road	MD 124	3 General Purpose and 2 ETL's in Each Direction	3 General Purpose and 2 ETL's in Each Direction	
MD 124	Shady Grove Road	4 General Purpose and 2 ETL's in Each Direction	4 General Purpose and 2 ETL's in Each Direction	ETL's southern terminus is Shady Grove Road

PRIOR RELATED PLANNING BOARD REVIEW AND RECOMMEDNATIONS

The Planning Board was last briefed on this project on April 30, 2009. The briefing included a project overview and slide presentation. The slide presentation is available for review at:

http://www.montgomeryplanning.org/Transportation/projects/corridor.shtm

Other briefings included the following:

- October 2, 2003

  This briefing included an update on the status of the project. The staff memo can be found at:

  http://www.montgomeryplanningboard.org/meetings_archive/03_meeting_archive/agenda_100203/item16_100203_opt.pdf

Representative issues examined at that time included:

- The anticipated selection of a Locally Preferred Alternative in later that same calendar year.

- The need to develop a managed lane concept that is consistent with adopted master plans.

- July 18, 2002

  This briefing also included an update on the status of the project. The staff memo can be found at:

  http://www.montgomeryplanningboard.org/meetings_archive/02_meeting_archive/agenda_071802/item15_071802.pdf

  Key issues examined at that briefing included the following:

  - Travel forecasts and cost estimates that do not point conclusively to either BRT or LRT being the preferred mode.
  - How far north should the respective components of the build alternatives be extended?
  - How should the impacts be mitigated?
  - Will Master Plan amendments be required to accommodate the recommended alternative?
  - How suitable is the COMSAT site as a terminal station?
  - How should the recommended improvement program be phased?
  - Where should the yard and shop be located?

It is important to note that while the process to date has not resulted in any recommendation on a Locally Preferred Alternative, the Planning Board has (through the Transportation Policy Report and subsequent review of the alternatives) generally indicated support for HOV or HOT lanes as the preferred managed lane concept. The Planning Board has not in the past formally indicated a preference for either BRT or LRT.

SUMMARY OF EVALUATION OF ALTERNATIVES

Highway Alternatives

While each build alternative consists of both a highway and transit component, the performance and impacts of each component can be examined separately. Summary results of the impact of the two "new" highway alternatives on traffic flow are presented in the following table.

	ALTERNATIVE 1: NO-BUILD	ALTERNATIVE 6A/B	ALTERNATIVE 7A/B
Total Miles of Roadway Lanes	64	64	64
Number of Miles with LOS F (peak direction)	43	31	17
Total Roadway Segments Analyzed	42	48	48
Number of Segments with LOS F	23	14	7

The AA/EA also notes:

"Following the AA/EA Alternatives public meetings, the traffic growth in the corridor for all 2002 DEIS and 2009 AA/EA alternatives will be reexamined for their traffic performance characteristics."

The state also recently released an "HOV versus Express Toll Lane Travel Demand Sensitivity Analysis". This technical paper is not part of the AA/EA document. The analysis was conducted as a means of bringing the level of analysis of the HOV alternative in the 2002 study and the ETL alternatives in the 2009 study up to a comparable level (i.e., using Round 7.0 Regional Cooperative Forecasts). The results of this analysis indicate that person throughput among the alternatives varies somewhat at specific points along the corridor but not that much overall. The highest throughput for both peak periods and weekday for year 2030 is under Alternative 3 – the HOV alternative. The technical paper concludes by noting:

"From bringing Alternatives 3A/B, 6A/B, and 7A/B in this Sensitivity Analysis up to Round 7.0 land use within the MWCOG model …, the study team feels it will have the analysis and evaluation tools available after the 2009 AA/EA document public hearing to make an informed choice on the transportation operations and performance factors and determine a LPA from amongst the DEIS and AA/EA alternatives."

One issue to examine in the work session is the extent to which additional information on the alternatives will be available after the public hearings and how that information informs the decision on a LPA.

Transit Alternatives

Transit alternatives (BRT and LRT) are evaluated based upon guidelines established by the FTA. The table below presents a comparison of the cost-effectiveness of the two modes.

	ALTERNATIVE 6-TSM	ALTERNATIVE 6A	ALTERNATIVE 6B	ALTERNATIVE 7A	ALTERNATIVE 7B
Capital Costs	$86,860,000	$777,530,000	$449,920,000	$777,530,000	$449,920,000
Equivalent Annual Capital Costs*	$7,440,700	$62,202,400	$36,443,500	$62,202,400	$36,443,500
Equivalent Annual Capital Costs above TSM		$54,761,700	$29,002,800	$54,761,700	$29,002,800
Net Change in Operating Costs	$14,793,000	$28,129,000	$26,859,000	$28,129,000	$26,859,000
Operating Costs above TSM		$13,336,000	$12,066,000	$13,336,000	$12,066,000
Daily User Benefit Hours	6,300	13,200	13,700	13,300	13,800
Benefit Hours above TSM		6,900	7,400	7,000	7,500
Annual Benefit Hours		2,070,000	2,220,000	2,100,000	2,250,000
Cost-Effectiveness Index		$32.90	$18.50	$32.43	$18.25

** These are the one-time capital costs expressed as an annualized stream of payments over 20 years, much as the value of a mortgage can be expressed in terms of annual payments.*

Costs represent a "snapshot" in time for comparison. Project costs are subject to change based on world and local financial markets and will be reevaluated for the Final Environmental Impact Statement.

The cost-effectiveness index for the Alternatives 6A and 7A (the LRT alternatives) exceed the level that FTA has identified as being acceptable for consideration for federal funding.

Summary of Costs

The following table presents a summary of the capital costs associated with the alternatives – both highway and transit.

COST COMPONENT	ALTERNATIVE 6-TSM	ALTERNATIVE 6A OR 7A	ALTERNATIVE 6B OR 7B
Highway			
Project Planning	$17.37	$17.37	$17.37
Engineering Design	$476.03	$476.03	$476.03
Right-of-Way	$378.65	$378.65	$378.65
Construction	$3,006.85	$3,006.85	$3,006.85
Subtotal – Highway	***$3,878.90***	***$3,878.90***	***$3,878.90***
Transit			
Construction	$49.22	$455.82	$281.93
Right-of-Way	$7.38	$35.00	$35.00
Vehicles	$11.36	$112.20	$25.66
Other*	$18.90	$174.51	$107.33
Subtotal – Transit	***$86.86***	***$777.53***	***$449.92***
TOTAL COST	**$3,965.76**	**$4,656.43**	**$4,328.82**

** Includes professional services and contingency.*
Cost estimates in $million 2007
Costs represent a "snapshot" in time for comparison. Project costs are subject to change based on world and local financial markets.

The report acknowledges the need for additional – as yet unidentified – funding sources for both the highway and transit improvements.

Summary of Selected Impacts

The following table presents a summary of selected impacts as contained in the study.

Alternative	3A/B	4A/B	5A/B	5C	6A/B	7A/B
Forest	183	183	199	180	296	296
Historic Properties	7	7	7	5	7	7
Public Parks (Acres)	37	37	44	48	43	43
Right of Way – Highway (Acres)	392	392	422	446	578	578
Right of Way – Transit (Acres)	170	170	170	N/A	170	170
Residential Displacements[2]	64-127	64-127	64-128	127-385	256-260	256-260
Business Displacements	4-11	4-11	4-12	2-11	13-43	13-43
Noise -Residential Impacts	26	26	26	35	27	26
Noise – Non Residential Impacts	10	10	9	9	13	13

[2] Minimization efforts could reduce this estimate significantly – see page S-7 of document. Of the total of 256 -260, it is estimated that 244 are in areas considered potential Environmental Justice areas – see page S-8. The areas are between I – 370 and MD 117 in Brighton West, London Derry and Caulfield.