

# PHASE II STUDY OF THE LONG -RANGE PLAN TASK FORCE

---

## An Assessment of Regional Initiatives for the National Capital Region

Ron Milone

Program Director, Travel Forecasting and Emissions Analysis

Travel Forecasting Subcommittee

March 23, 2018



# Phase II LRP Task Force Study: The message is getting out

WASHINGTON BUSINESS JOURNAL

February 6, 2018

com/washington/news/2018/02/06/viewpoint5-ideas-for-a-better-regional.html

## Viewpoint: 5 ideas for a better regional transportation system

Email Share in Share Tweet Save Print Order Reprints



D.C. Councilman Charles Allen was first elected to office in 2015. This year, he began a term as chair of the Transportation Planning Board of the Metropolitan Washington Council of Governments.

JOANNE S. LAWTON

By Charles Allen – D.C. Council  
Feb 6, 2018, 5:15pm EST Updated Feb 6, 2018, 5:34pm

### IN THIS ARTICLE

Metropolitan Washington  
Council of Governments  
Company

Transportation  
Industry

The metropolitan Washington region is changing the way it plans for the future of its transportation system following recent action by the Transportation Planning Board of the Metropolitan Washington Council of Governments. This year, I began a term as chair of the TPB, an organization that brings together representatives from 24 jurisdictions in the District of Columbia, Maryland and Virginia as well as transportation agencies to plan what transportation should look like in the future.

Services for  
privately held  
companies

Look again >

Deloitte.  
Private

### TRENDING

#### HEALTH CARE

Novavax CEO calls fourth  
quarter company's 'most  
significant'



#### RETAILING

Amazon opens its first  
bookstore in Greater



0 OF 3 ARTICLES REMAINING | To continue Create a FREE account or Sign in

climan Charles Alle... ALL\_AirTPB\_Psn\_Trip23x23.txt... Inbox - rmlone@mwcog.org ... Links for the 7 initiatives FY1 ... Document1 - Word



National Capital Region  
Transportation Planning Board

Phase II Study of the Long Range Plan Task Force  
March 23, 2018

# Motivation for the study:

## Dissatisfaction with future system's performance

---

**The region is forecast to continue to grow over the next 25 years**

- 1.20M more people (23% increase)
- 940K more jobs (29% increase)

**Recent evaluations of the region's CLRP have pointed to challenges:**

- Roadway capacity is planned to expand only by 7%
- Vehicle-hours of delay are forecasted to increase by 74%
- Geographic imbalances in highway accessibility ("East-West" divide)

**Funding is an issue**

- 83% of available funding (\$250 B) will go to maintenance and operations

# Background: Thinking beyond the “C” in CLRP

---

## The TPB’s Regional Transportation Priorities Plan or RTPP (2014)

### Calls for:

- Identifying current priorities
- A need to implement common-sense strategies to improve mobility and accessibility

### TPB discussions after 2014:

- Thinking beyond the financial restrictions of the CLRP
- A consensus-based approach for developing new regional strategies
- Formation of a **special working group** and a **three-phase work plan** to be implemented over the 2015-2018 period

# The 3 phases of the workplan

---

**Phase 1: Develop a Baseline report:** Analysis of the Plan under varying system conditions to better understand the relationship between the transportation system and it's performance (FY 2015/16)

**Phase 2: Identify a limited set of unfunded regional priority initiatives (projects, policies or programs);** the initiatives would enable significant progress towards achieving the goals established in TPB policy documents (FY 2017/18)

**Phase 3: Incorporate recommended regional priority initiatives into the region's LRP as an unfunded element;** promote their implementation



# Phase I: Develop a Baseline Report

---

Focused on three future (2040) alternative scenarios:

- **No-Build** – Included only those projects on the ground in 2015
- **Planned-Build** – Included planned projects to be built and implemented between 2015 and 2040 that are included in the CLRP
- **All-Build** – Included the Planned-Build plus **all** currently unfunded capital improvements listed in state and local plans; roughly \$100B in added highway and transit projects



# Phase I findings

---

Phase I was a “book-end” analysis of the system’s future performance; it provided useful insight

## Three key take-aways of the Phase 1 work:

1. Highway performance will continue to degrade in the future no matter what the regional Plan looks like
2. Seeking only to “Build our way out” of the congestion problem won’t work; and the cost of doing so will be too high
3. Any proposed system expansion works best with a **combination of policies, pricing mechanisms and land development**



# Phase II Study objective and approach

---

**Objective:** To identify a limited set of **projects, policies, or programs** (6-10) that have the **potential to improve the performance** of the region's transportation system (*Resolution R16-2017 March 15, 2017*); complete effort by December 2017.

## **Technical Approach:**

- Governed by the short timeframe (~8 months)
- Initiatives were studied at the broad, sketch-planning level of analysis to obtain “order of magnitude” comparisons relative to the CLRP



# Phase II oversight and support

---

## Oversight: Long-Range Plan Task Force

- 18-member group of TPB members representing diverse agencies and jurisdictions plus representatives from two other TPB committees
- Leadership: Bridget Newton (Mayor of Rockville) and Jay Fisette (Arlington County Board)

## Staffing: COG/TPB staff and a consultant team lead by ICF International

- Facilitation of initiative development
- Travel demand forecasting and scenario analysis performed by TPB staff and the consultant team



# The essential steps undertaken

---

1. Review of regional planning documents
2. Establishment of regional challenges and performance measures
3. Development and “bundling” of transportation initiatives
4. Technical analysis of the initiatives
  - TPB staff and consultant team employed sketch-planning techniques
  - Results showed each initiative’s performance at the regional scale relative to the CLRP
  - A qualitative assessment was completed for how well each initiative addressed the 14 challenges
5. Evaluation & selection of recommend initiatives for TPB endorsement

# Assumptions and approach driving the development of initiatives

---

1. **State of Good Repair:** Assumed future condition of Metrorail, other transit services, and all highway and bridge infrastructure would be satisfactory
2. **Supportive Land-use Policies:** Assumed land-use policies would be altered to support significant new infrastructure investments
3. **Supportive Bicycle and Pedestrian Infrastructure:** Assumed transit investments would be supported by bike/walk accessibility
4. **Rather extreme assumptions used:** Many assumptions regarding pricing and operations were purposefully aggressive in nature, without regard to implementation challenges

*All initiatives were meant to represent conceptual depictions*



# LRP Task Force arrived at 10 initiatives falling into 3 general types

---

**1. Multimodal Initiatives**

**2. Transit-Focused Initiatives**

**3. Policy-Focused Initiatives**



# Multimodal Initiatives

---

## **Initiative 1: Regional Express Travel Network**

- Regional Express Toll Lane system
- Express bus service on the system connecting activity centers

## **Initiative 2: Operational Improvements and Hotspot Relief**

- Technology-assisted operations management (e.g., ICM, ATM)
- Capacity enhancements to address congested “hotspots”

## **Initiative 3: Additional Northern Bridge Crossing**

- New northern Potomac River bridge connecting Route 28 in Virginia to the ICC in Maryland
- Express bus service included on new bridge



# Transit-focused Initiatives

---

## **Initiative 4: Regionwide Bus Rapid Transit and Transitways**

- BRT in DC & the “inner” suburbs

## **Initiative 5: Regional Commuter Rail Enhancements**

- Expanded commuter rail service including “through” service

## **Initiative 6: Metrorail Regional Core Capacity Improvements**

- 100% 8-car trains, 2<sup>nd</sup> Rosslyn station with new tunnel

## **Initiative 7: Transit Rail Extensions**

- Metrorail and Purple line extensions, station improvements



# Policy-focused Initiatives

---

## **Initiative 8: Optimize Regional Land-use Balance**

- Assume 130K additional HHs to the forecasts (which reduces long-distance commute trips)
- Optimize Job/HH balance regionwide

## **Initiative 9: Transit Fare Policy Changes**

- Reduce fare for peak period Metrorail fares where spare capacity exists (in the reverse-peak direction, and on under-utilized segments)

## **Initiative 10: Amplified Employer-based Travel Demand Management**

- Policies and programs aimed at reducing SOV commuting (TDM: telecommuting, employer-based parking cash-out, carpool incentives, flex-scheduling and increased parking costs)



# Approach for the evaluation of initiatives





# 14 Challenges

---

1. Road congestion
2. Transit crowding
3. Inadequate bus service
4. Access to bike/ped. options
5. Development around Metrorail
6. Housing and job location
7. Metrorail repair needs
8. Roadway repair needs
9. Incidents and safety
10. Bike/ped. safety
11. Environmental quality
12. Open space development
13. Bottlenecks
14. Reliable access to intercity hubs



# 18 Measures of Effectiveness (MOEs)

---

## Included:

- Mode-specific average travel times
- Mode-specific accessibility measures
- Mode-specific mode shares
- Pct. of passenger miles on reliable modes
- VMT, VMT per capita
- Share of HHs/Jobs in areas served by high-capacity transit
- Mobile emissions (air pollution from vans and trucks)



# Study Approach: Quantitative Assessment

---

- The initiatives were analyzed using either complete travel modeling executions or sketch planning methods (for example partial model runs or “pivot” analyses)
- MOEs were reported at the regional level as a percent change with respect to the CLRP
- 18 Measures of Effectiveness (MOE) were developed for each initiative and compared against MOE’s of the existing CLRP



# Study Approach: Qualitative Assessment

---

- ICF developed a simple model to qualitatively assess how well each initiative addressed each challenge based on the MOE analysis
- The model was used to develop a “Consumer Reports”-type summary indicating:
  - A desired/favorable impact (**high, medium, or low**)
  - No impact or a negligible impact (**neutral**)
  - An adverse impact (**negative**)
- The presentation of results in this format proved useful for translating technical information into results that were understandable for decision-makers and the public

## Summary MOE assessment of 10 initiatives

- First column shows absolute MOE performance of the CLRP
- Next columns display percentage difference in MOE performance of each initiative, relative to the CLRP
- Other MOE's (not shown) were qualitatively assessed

QUANTITATIVE MEASURES OF EFFECTIVENESS	BASE	I1	I2	I3	I4	I5	I6	I7	I8	I9	I10
	2040 CLRP	Express Travel Network	Operational Improvements & Hot Spot Relief	Add'l North Bridge	BRT and Transitways	Commuter Rail	Metrorail Core Capacity	Transit Rail Extensions	Regional Land-Use Balance	Transit Fare Policy Changes	Travel Demand Management
Travel Time (SOV)	50.7	-2%	-4%	0%	-1%	-1%	-2%	-1%	-5%	0%	-4%
Travel Time (HOV)	58.9	-5%	-4%	-1%	-1%	-1%	-1%	-1%	-6%	<1%	-6%
Travel Time (Transit)	53.9	-1%	-2%	<1%	-1%	<1%	-6%	<-1%	-5%	1%	<1%
Daily Vehicle Hours of Delay	1.85 million	-11%	-8%	-3%	-2%	-2%	-9%	-3%	-18%	-2%	-24%
Jobs Accessible by Transit	523,000	2%	2%	<1%	4%	1%	19%	10%	10%	0%	0%
Jobs Accessible by Auto	876,000	5%	8%	1%	1%	<1%	2%	1%	10%	<1%	10%
Mode Share: SOV	58.1%	<1%	3%	<1%	-1%	-1%	-4%	-1%	-2%	<1%	-8%*
Mode Share: HOV	11.6%	-1%	-7%	0%	-1%	-1%	-5%	-3%	-4%	-2%	24%*
Mode Share: Transit	24.6%	1%	-4%	<1%	4%	2%	11%	5%	<1%	2%	6%*
Mode Share: Non-Motorized	5.6%	0%	0%	0%	<1%	<1%	<1%	<1%	29%	0%	16%*
Travel on Reliable Modes**	11.5%	42%	-5%	-2%	6%	2%	9%	6%	0%	3%	-3%
VMT daily	141.91 million	<1%	2%	1%	<-1%	<-1%	-1%	-1%	-3%	-1%	-6%
VMT daily per capita	21.17	<1%	2%	1%	<-1%	<-1%	-1%	-1%	-6%	-1%	-6%
Share of Households in Zones with High-Capacity Transit	39.9%	0%	0%	<1%	25%	<1%	<1%	17%	9%	0%	0%
Share of Jobs in Zones with High-Capacity Transit	57.7%	0%	0%	<1%	15%	<1%	0%	13%	2%	0%	0%
VOC Emissions	18.9	0%	-3%	1%	-1%	0%	-2%	-1%	-4%	-1%	-8%
NOx Emissions	18.8	0%	0%	1%	0%	0%	-2%	-1%	-4%	-1%	-7%
CO <sub>2</sub> Emissions	47,082	0%	-1%	1%	-1%	0%	-2%	-1%	-4%	-1%	-7%

## “Consumer Reports”- type summary of initiative’s ability to addressing challenges

### Findings:

- No single initiative addressed all challenges
- Results prompted discussion and a desire for more detailed data
- The selection of final initiatives involved subjective opinions and values



# List of recommended initiatives by the Task Force

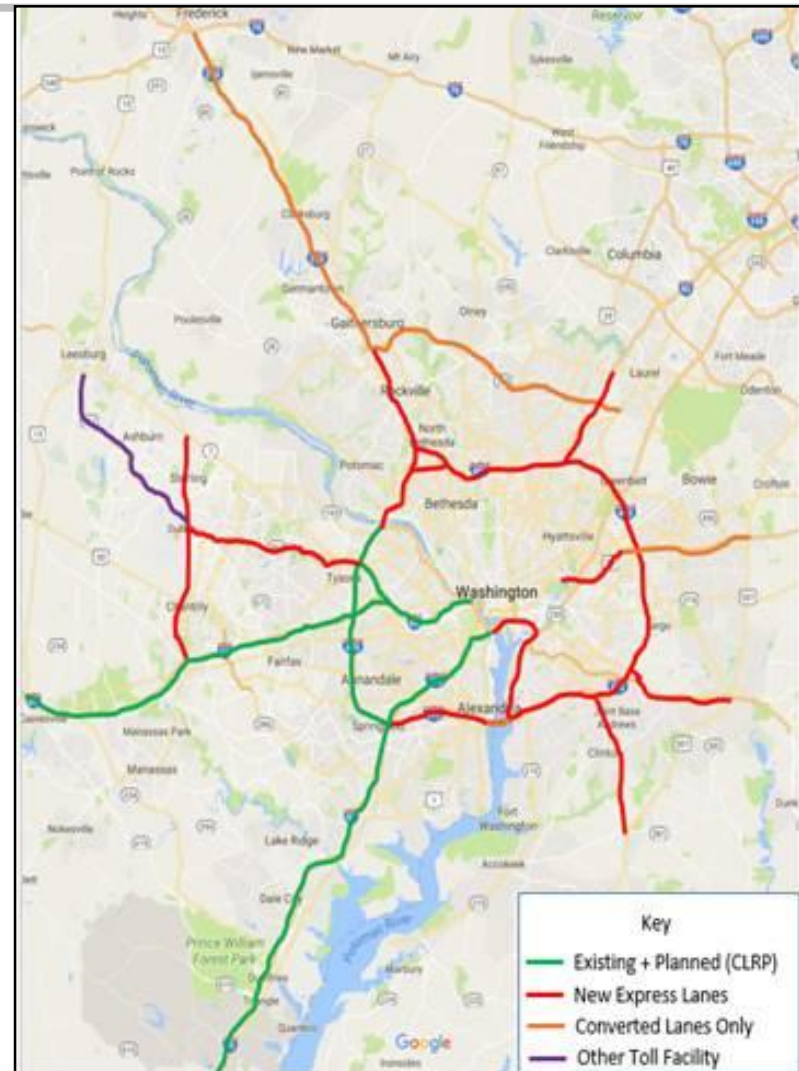
---

- Initiative 1: Express Travel Network
- Initiative 4: Regionwide Bus Rapid Transit and Transitways
- Initiative 6: Metrorail Regional Core Capacity Improvements
- Initiative 8: Optimize Land-Use Balance
- Initiative 10: Amplified Employer-based Travel Demand Management



# Initiative 1: Express Travel Network

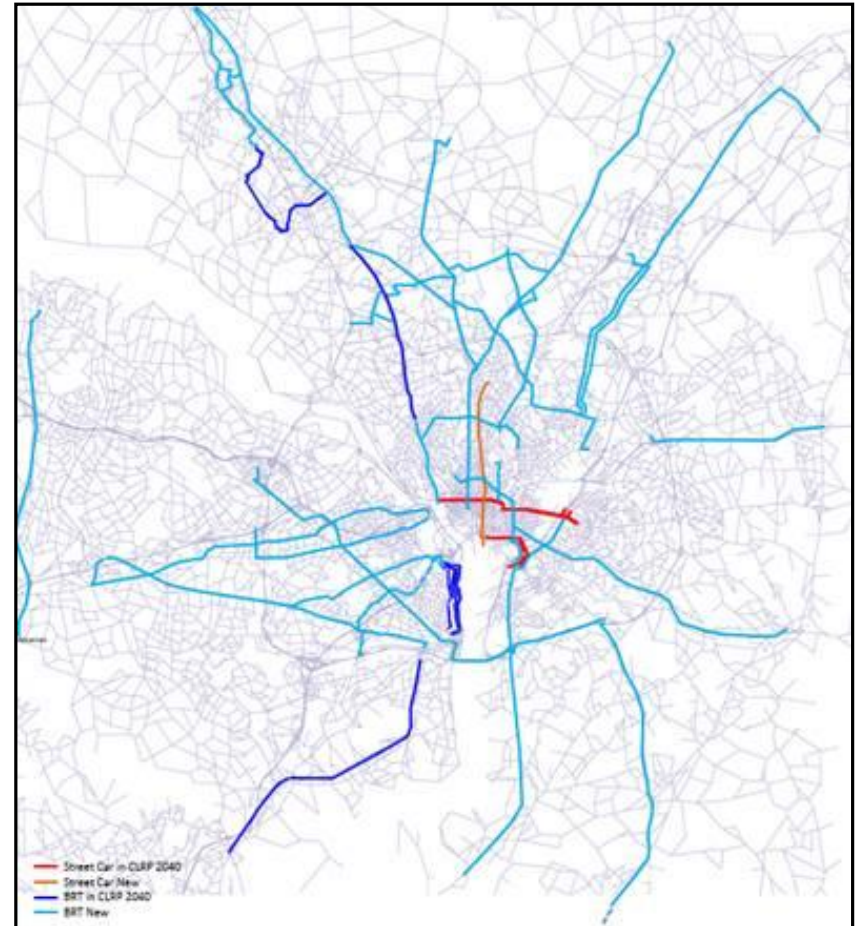
- Expand existing toll lane system to include most limited-access highways in the region
- New express bus service connecting Activity Centers
- Analysis shows a reduction in average highway times and vehicle hours of delay
- Expanded express-lane system provides more reliable travel options





# Initiative 4: Regionwide Bus Rapid Transit and Transitways

- Expansion of BRT and streetcar systems mainly the regional core and inner suburbs
- Includes bicycle and pedestrian access improvements to transit stations
- Increases reliable transit options and promotes increased job accessibility via transit
- Addresses the region's challenge of inadequate bus service by providing increased and more reliable service on region's heavily travelled arterial corridors



# Initiative 6: Metrorail Core Capacity Improvements

---

- Ensures 100% 8-car trains while substantially improving Metrorail system's infrastructure (expanding high-volume stations, and adding a second Rosslyn station and a new tunnel)
- Substantially reduces vehicle hours of delay
- Substantially increases accessibility to jobs via transit
- Analysis indicates that transit mode share would notably increase



# Initiative 8: Optimize Land-use Balance

---

- Increase overall number of households in the region
  - Reduces long-distance commuting from outside the region
- Reallocate future job and household growth occurring between 2025 and 2040 to underutilized Metrorail stations and Activity Centers served by high-capacity transit
  - Improves regional jobs-housing balance
  - Reduces imbalances in commuter flows in region
- Yields the second largest reduction in vehicle hours of delay
- Substantially increases both highway and transit access to jobs
- Provides the largest increase in non-motorized travel



# Initiative 10: Amplified Employer-based Travel Demand Management

---

- Encourages region-wide workplace programs and policies to reduce single-occupant vehicle commuting
- Programs include employer-based parking cash-out, expanded transit and carpooling benefits, a large increase in telecommuting, and allowing for flexible schedule options
- Initiative also increases parking costs in Activity Centers
- Yields the largest reduction in VMT due to the increase in telecommuting
- Produces substantial increases in the number of jobs accessible by auto
- Yields the largest reduction in mobile-source emissions



# Where do we go from here?

---

- **2 Bike/Ped initiatives** have been **added** to the 5 initiatives recommended for endorsement
  1. Complete a network of bicycle/pedestrian trails encircling the region's core (a.k.a., the "Bicycle Beltway")
  2. Improved foot or bike to access Metrorail (or other transit) stations
- The seven (5+2) endorsed initiatives will be integrated into the regional Plan (**Visualize 2045**) as an unfunded element that will be promoted for further study



Thanks to **Erin Morrow** for her assistance with this presentation



## Ron Milone

Program Director, Travel Forecasting and Emissions Analysis

(202) 962-3283

[rmilone@mwcog.org](mailto:rmilone@mwcog.org)

[mwcog.org/tpb](http://mwcog.org/tpb)

---

Metropolitan Washington Council of Governments

777 North Capitol Street NE, Suite 300

Washington, DC 20002



National Capital Region  
**Transportation Planning Board**