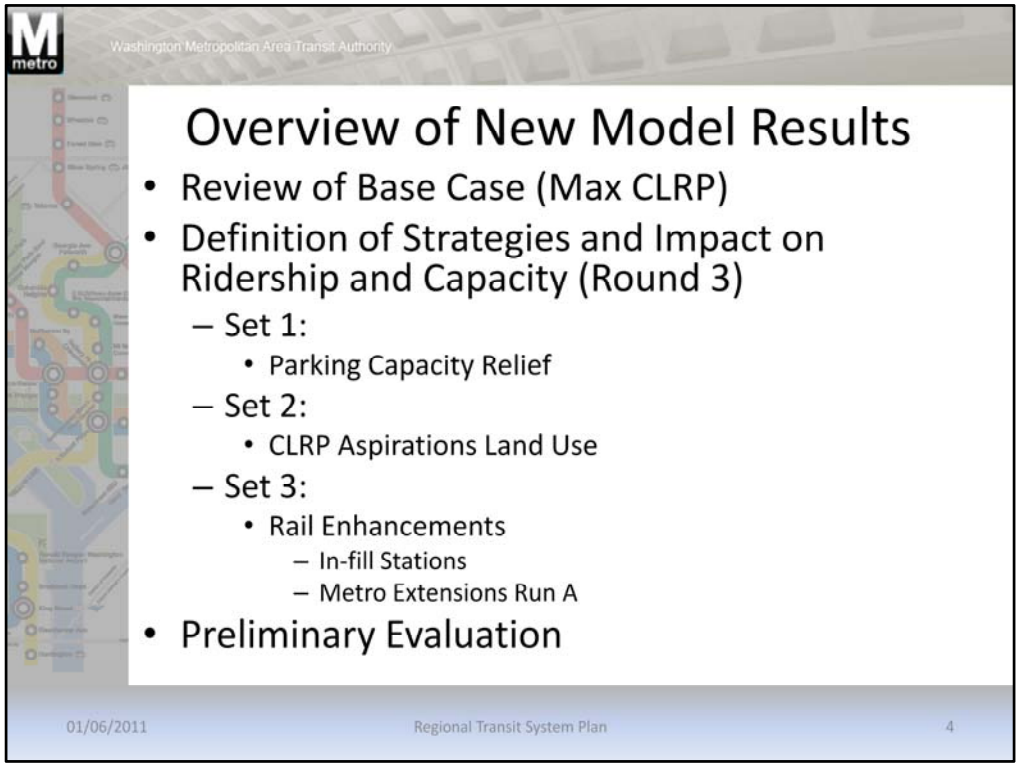

Washington Metropolitan Area Transit Authority
RTSP Metrorail Strategies:
Parking Capacity Relief, CLRP Aspirations Land Use, In-Fill Stations, Metro Extensions
Presentation to the Technical Advisory Group
January 6th, 2011

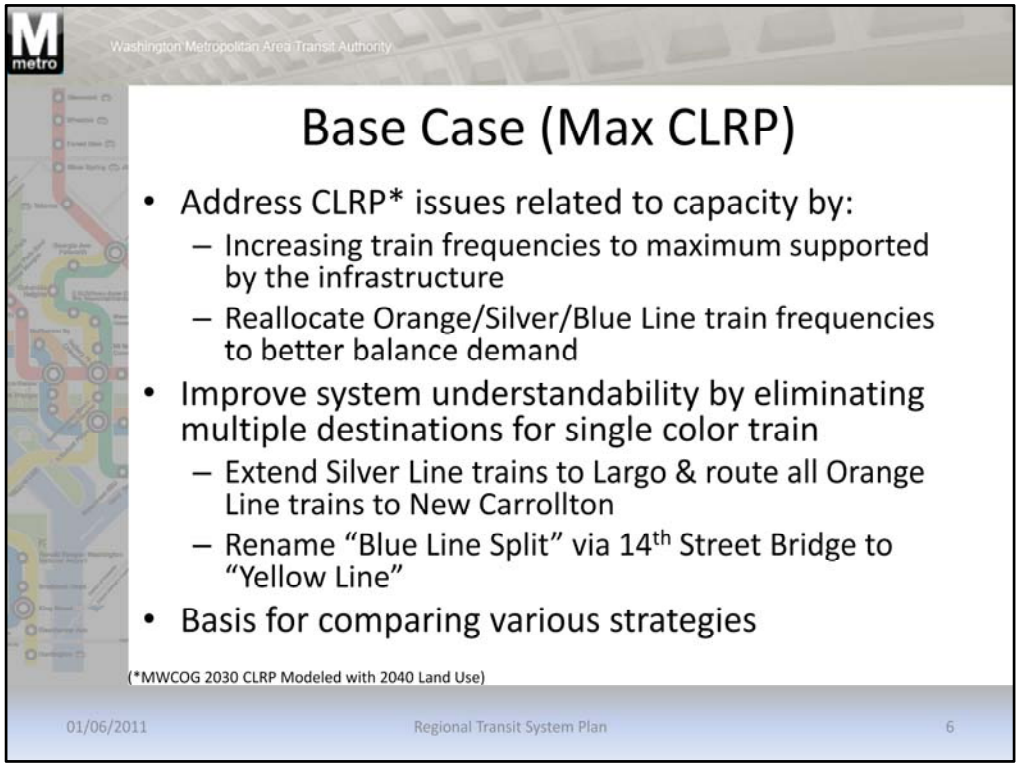
Meeting Agenda

Proposed Public Engagement Strategy for the RTSP

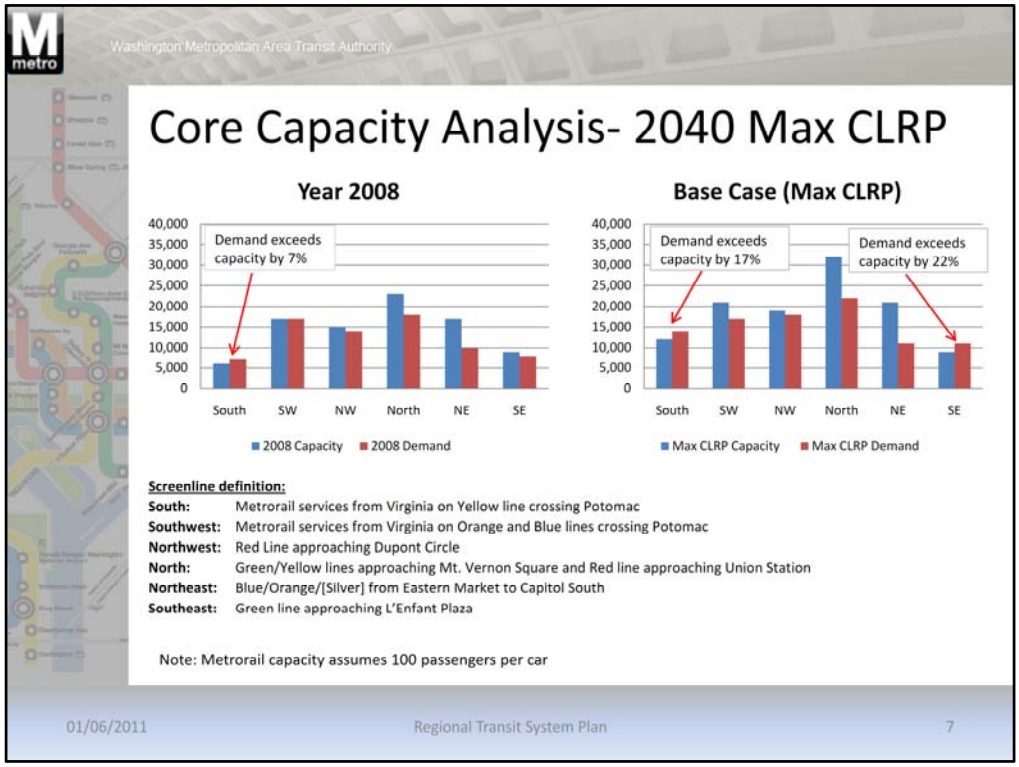


Overview of Recent Model Results and Preliminary Evaluation

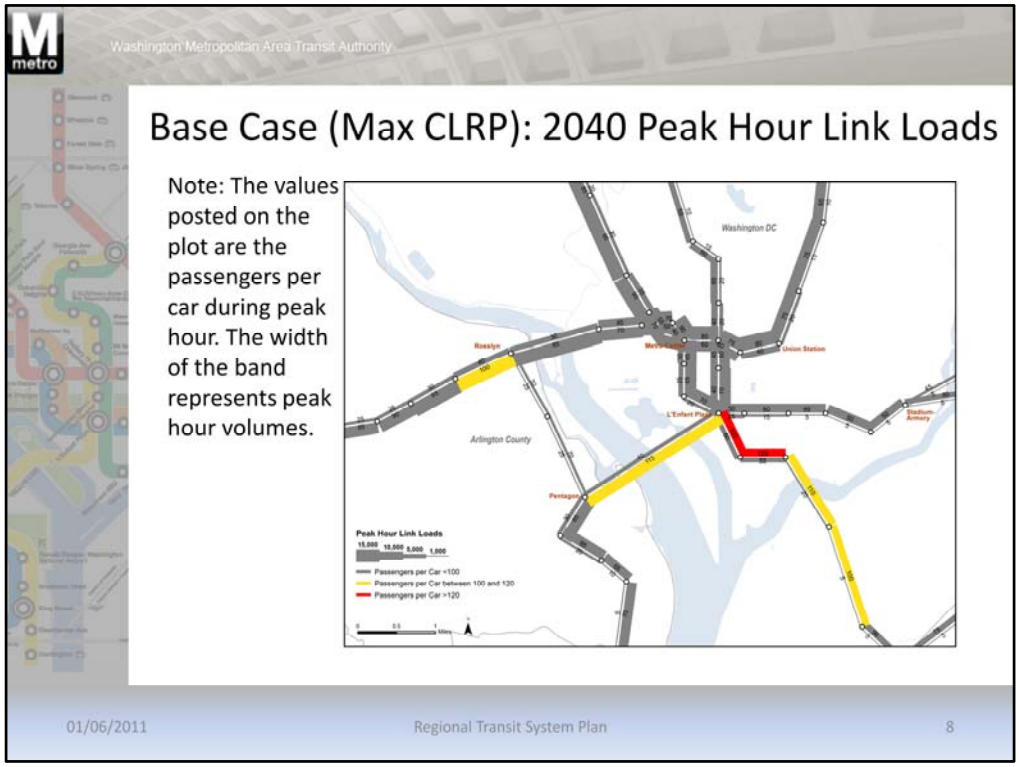
REVIEW OF BASE CASE (MAX CLRP)



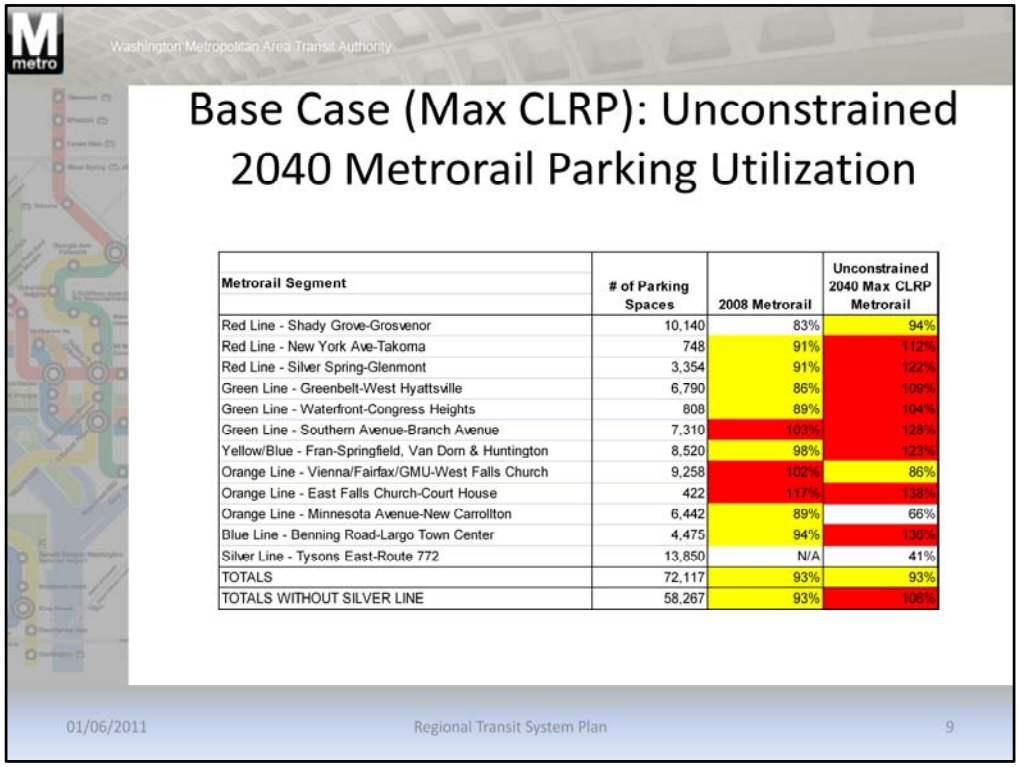
The Base Case (Max CLRP) of analysis included the assumptions above.



The graphics above show demand and capacity in 2008 and under the Max CLRP.

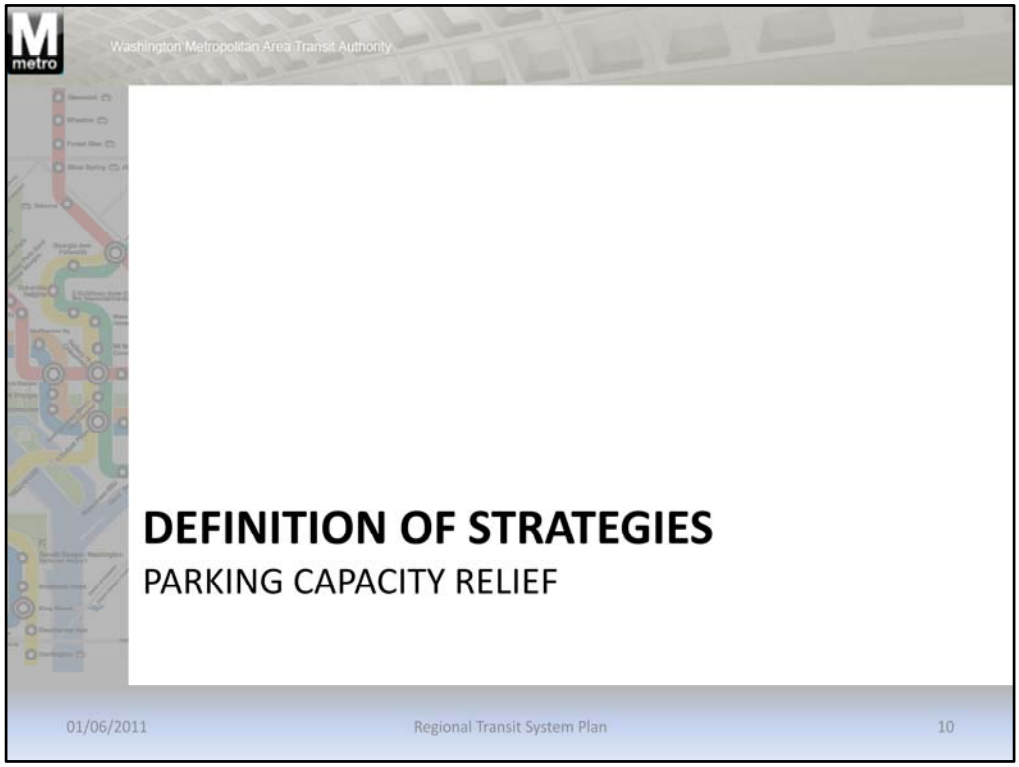


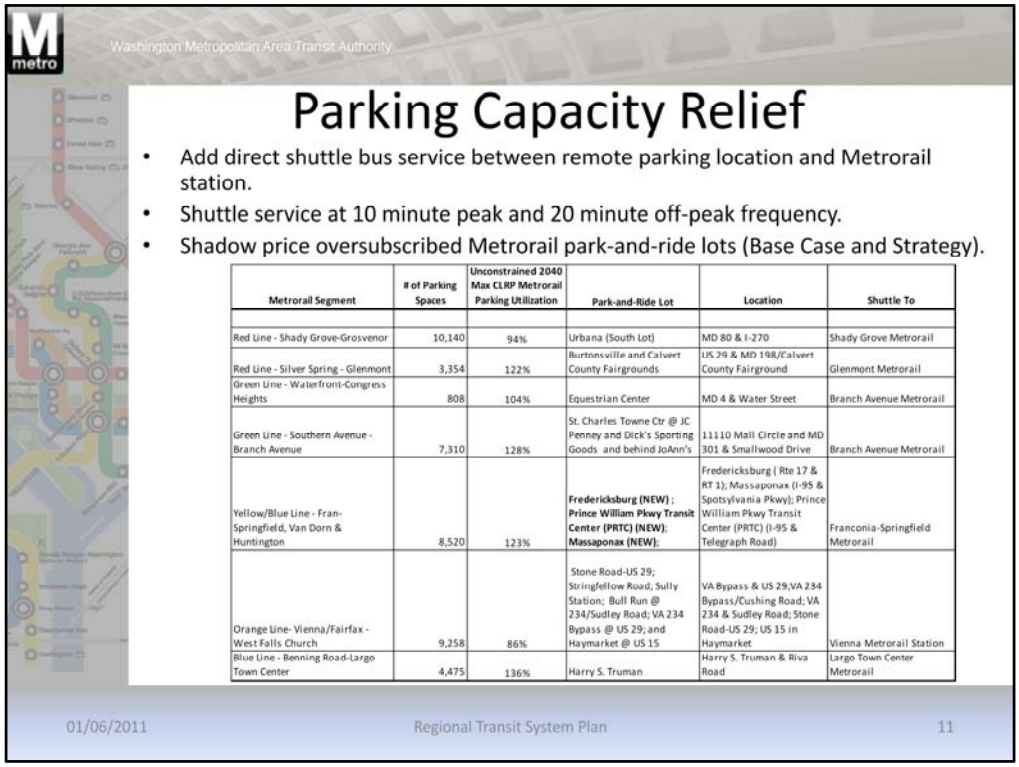
The graphic above shows the peak hour link loads on Metrorail trains in 2040. The gray color represents fewer than 100 passengers per car; yellow indicates between 100 and 120 passengers per car and the red represents over 120 passengers per rail car.



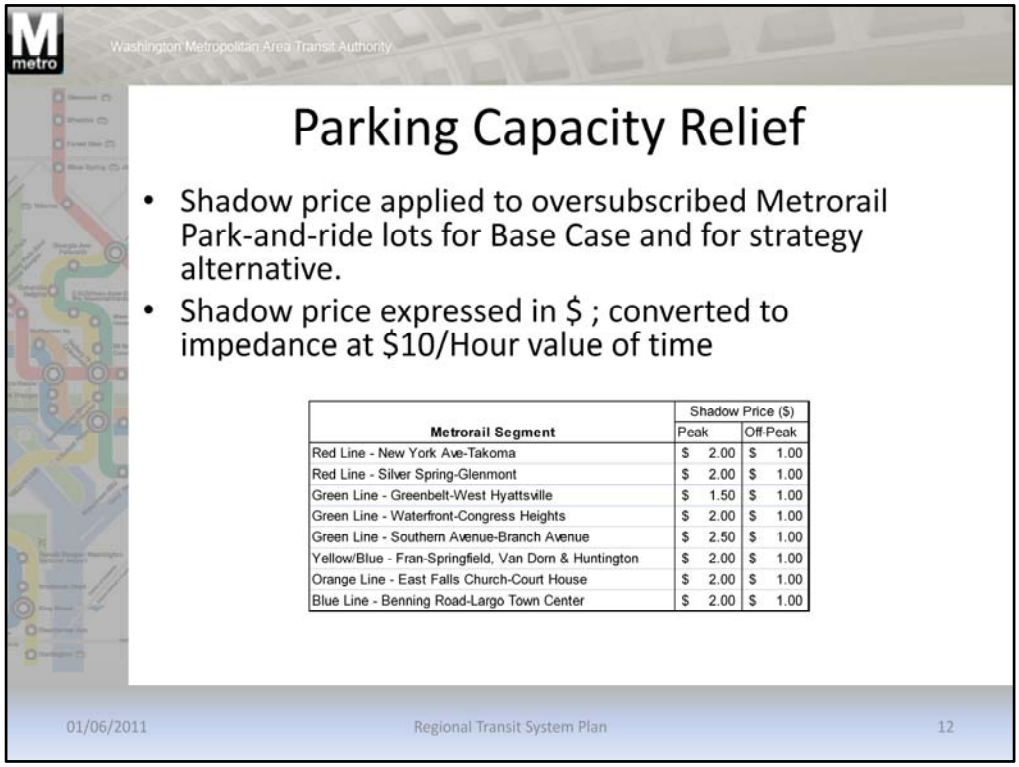
Metrorail Segment	# of Parking Spaces	2008 Metrorail	Unconstrained 2040 Max CLRP Metrorail
Red Line - Shady Grove-Grosvenor	10,140	83%	94%
Red Line - New York Ave-Takoma	748	91%	112%
Red Line - Silver Spring-Glenmont	3,354	91%	122%
Green Line - Greenbelt-West Hyattsville	6,790	86%	109%
Green Line - Waterfront-Congress Heights	808	89%	104%
Green Line - Southern Avenue-Branch Avenue	7,310	103%	128%
Yellow/Blue - Fran-Springfield, Van Dorn & Huntington	8,520	98%	123%
Orange Line - Vienna/Fairfax/GMU-West Falls Church	9,258	102%	86%
Orange Line - East Falls Church-Court House	422	117%	138%
Orange Line - Minnesota Avenue-New Carrollton	6,442	89%	66%
Blue Line - Benning Road-Largo Town Center	4,475	94%	136%
Silver Line - Tysons East-Route 772	13,850	N/A	41%
TOTALS	72,117	93%	93%
TOTALS WITHOUT SILVER LINE	58,267	93%	106%

The graphic above shows the Metrorail Parking Utilization on several Metrorail segments under the Base Case and the Unconstrained 2040 Max CLRP.

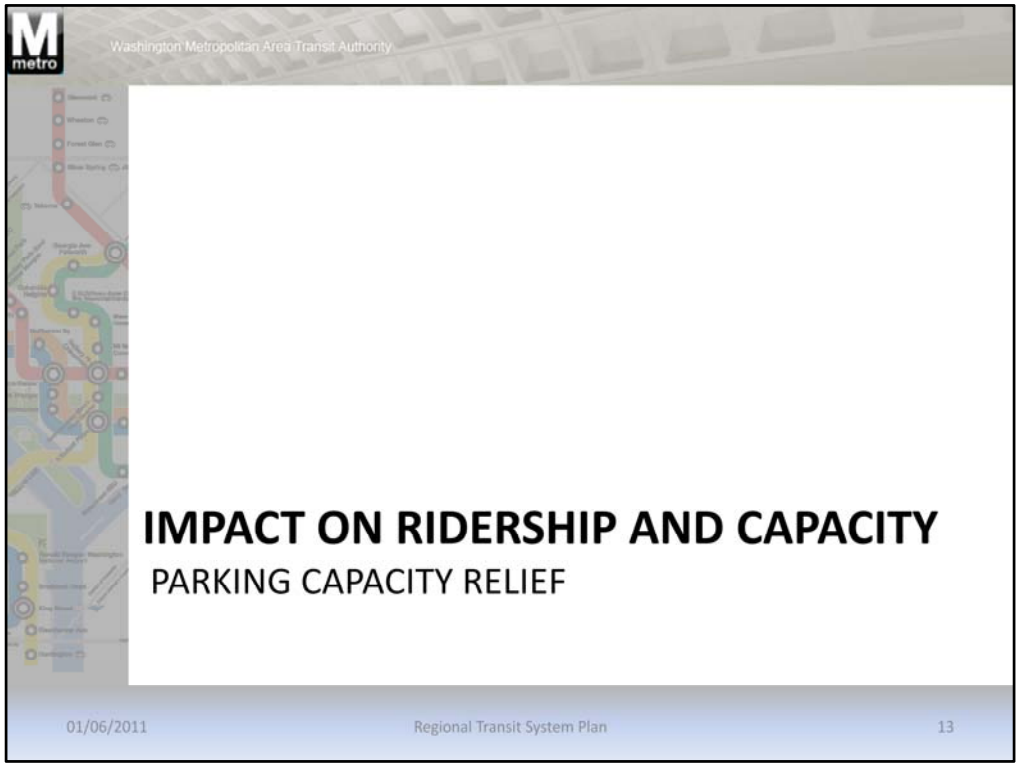

Washington Metropolitan Area Transit Authority
DEFINITION OF STRATEGIES
PARKING CAPACITY RELIEF
01/06/2011
Regional Transit System Plan
10

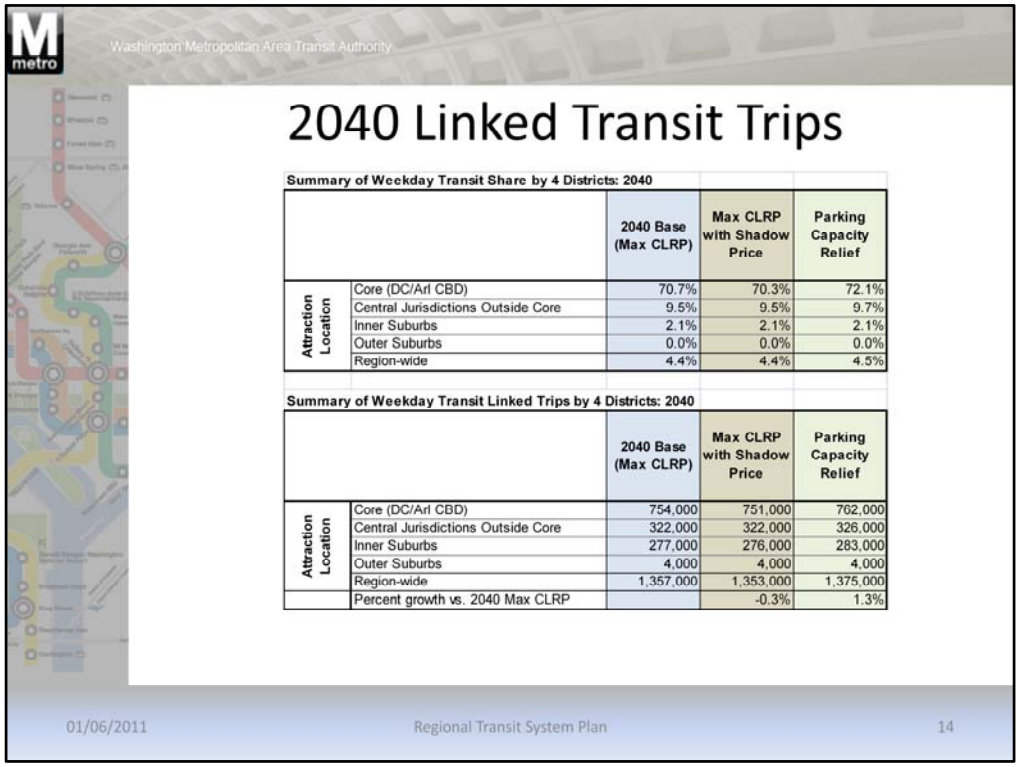


The Parking Capacity Relief Strategy consists of Metrobus shuttles with the above service frequencies between various park-and-ride lots and end-of-the-line Metrorail Stations.



The Shadow Price is applied to those Metrorail Park-and-Ride Lots which are oversubscribed. Another way to look at the shadow price is the use of congestion pricing policies.


Washington Metropolitan Area Transit Authority
IMPACT ON RIDERSHIP AND CAPACITY
PARKING CAPACITY RELIEF
01/06/2011
Regional Transit System Plan
13

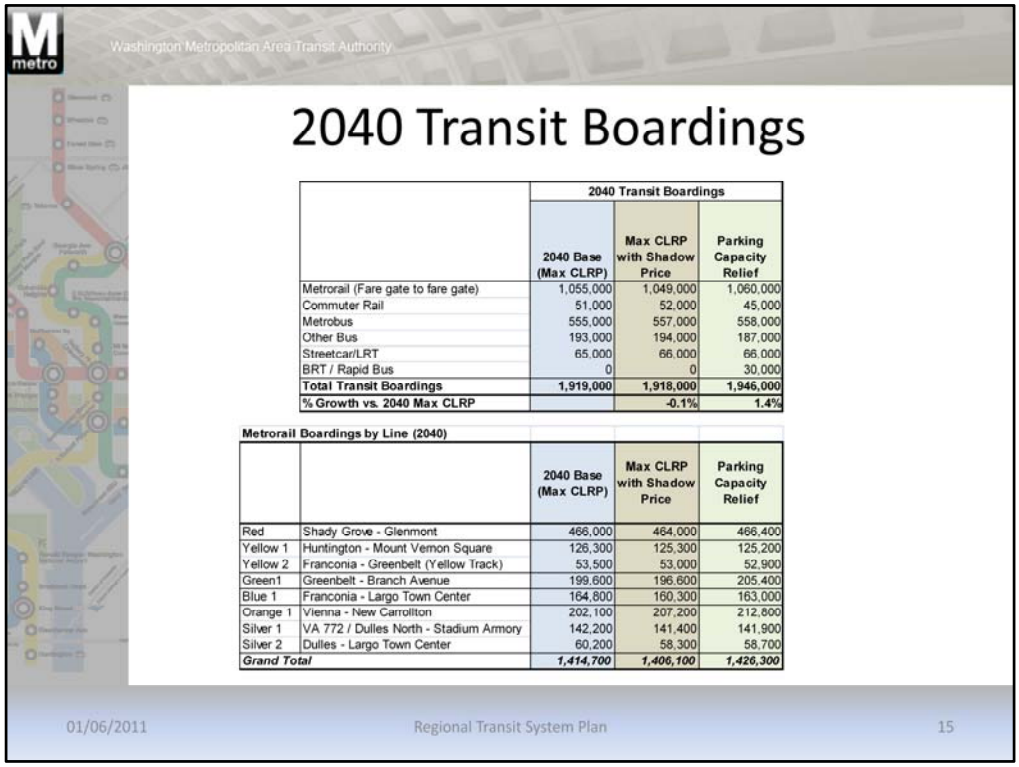


		2040 Base (Max CLRP)	Max CLRP with Shadow Price	Parking Capacity Relief
Attraction Location	Core (DC/Arl CBD)	70.7%	70.3%	72.1%
	Central Jurisdictions Outside Core	9.5%	9.5%	9.7%
	Inner Suburbs	2.1%	2.1%	2.1%
	Outer Suburbs	0.0%	0.0%	0.0%
	Region-wide	4.4%	4.4%	4.5%

Summary of Weekday Transit Linked Trips by 4 Districts: 2040

		2040 Base (Max CLRP)	Max CLRP with Shadow Price	Parking Capacity Relief
Attraction Location	Core (DC/Arl CBD)	754,000	751,000	762,000
	Central Jurisdictions Outside Core	322,000	322,000	326,000
	Inner Suburbs	277,000	276,000	283,000
	Outer Suburbs	4,000	4,000	4,000
	Region-wide	1,357,000	1,353,000	1,375,000
	Percent growth vs. 2040 Max CLRP		-0.3%	1.3%

The charts above show the number of linked transit trips for the Base Case, Base Case with Shadow Price and the Parking Capacity Relief.

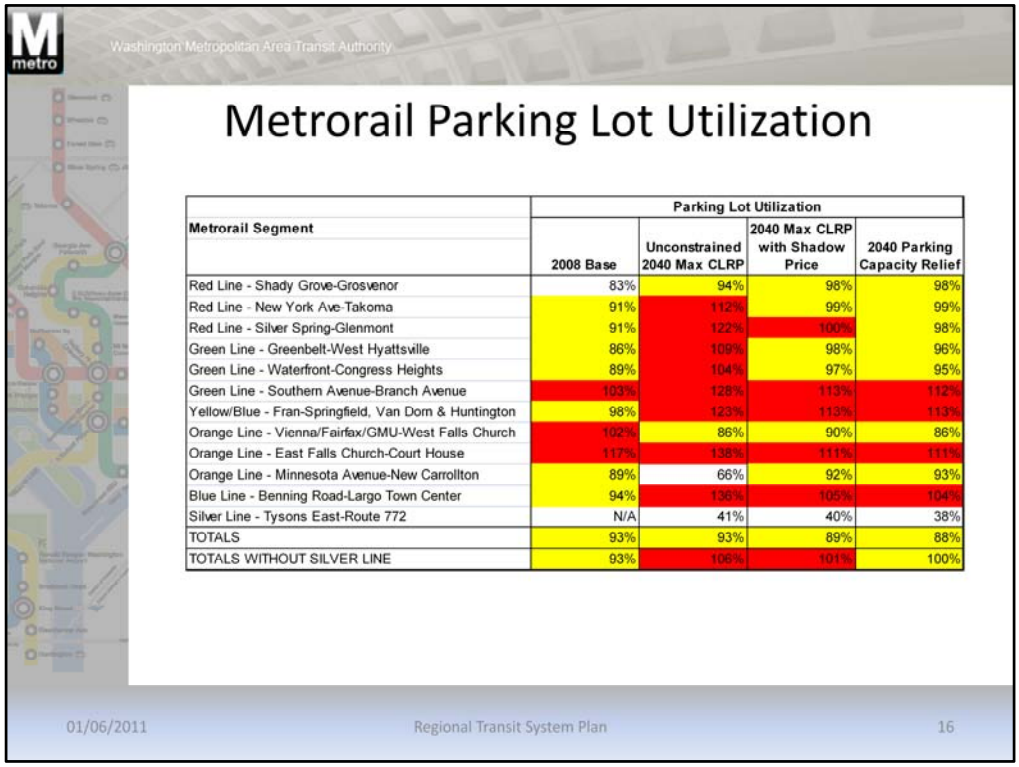


	2040 Transit Boardings		
	2040 Base (Max CLRP)	Max CLRP with Shadow Price	Parking Capacity Relief
Metrorail (Fare gate to fare gate)	1,055,000	1,049,000	1,060,000
Commuter Rail	51,000	52,000	45,000
Metrobus	555,000	557,000	558,000
Other Bus	193,000	194,000	187,000
Streetcar/LRT	65,000	66,000	66,000
BRT / Rapid Bus	0	0	30,000
Total Transit Boardings	**1,919,000**	**1,918,000**	**1,946,000**
% Growth vs. 2040 Max CLRP		**-0.1%**	**1.4%**

Metrorail Boardings by Line (2040)

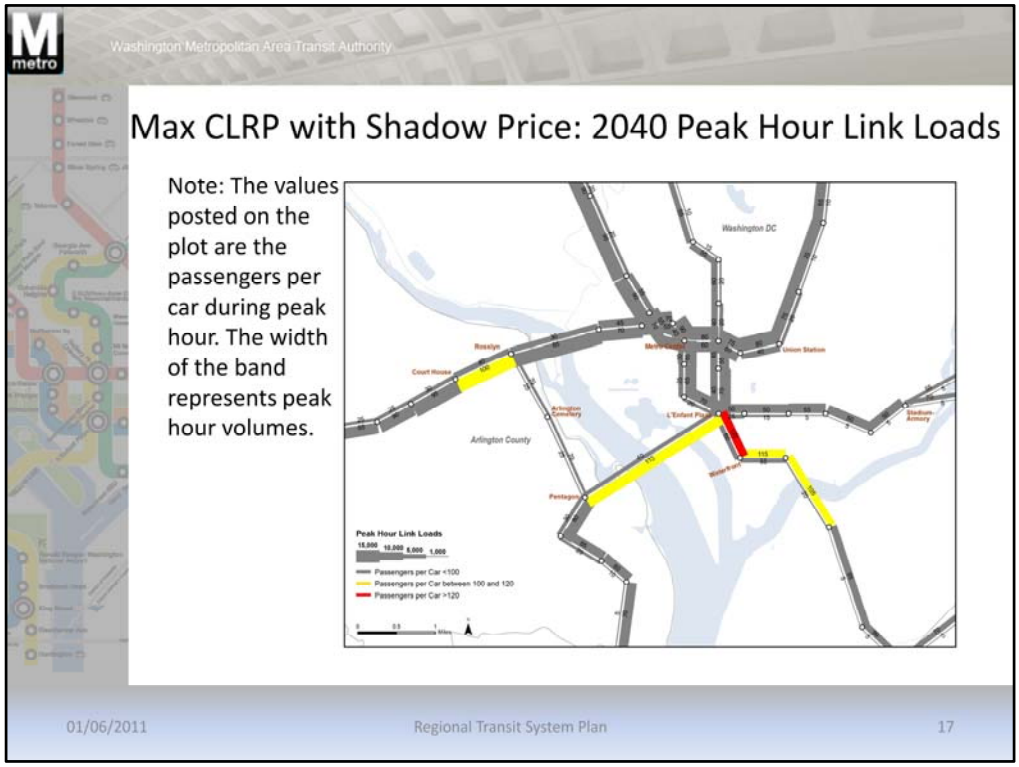
		2040 Base (Max CLRP)	Max CLRP with Shadow Price	Parking Capacity Relief
Red	Shady Grove - Glenmont	466,000	464,000	466,400
Yellow 1	Huntington - Mount Vernon Square	126,300	125,300	125,200
Yellow 2	Franconia - Greenbelt (Yellow Track)	53,500	53,000	52,900
Green1	Greenbelt - Branch Avenue	199,600	196,600	205,400
Blue 1	Franconia - Largo Town Center	164,800	160,300	163,000
Orange 1	Vienna - New Carrollton	202,100	207,200	212,600
Silver 1	VA 772 / Dulles North - Stadium Armory	142,200	141,400	141,900
Silver 2	Dulles - Largo Town Center	60,200	58,300	58,700
Grand Total		***1,414,700***	***1,406,100***	***1,426,300***

The charts above show the number transit boardings for the 2040 Base Case, Base Case with Shadow Price and the Parking Capacity Relief.

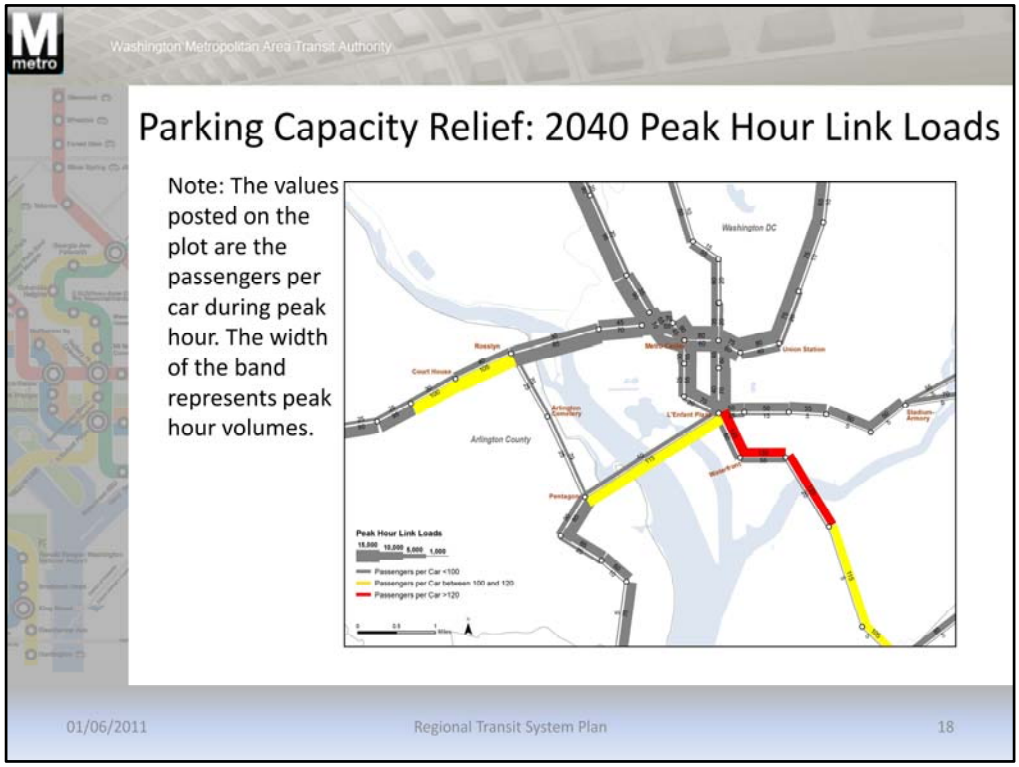


Metrorail Segment	Parking Lot Utilization			
	2008 Base	Unconstrained 2040 Max CLRP	2040 Max CLRP with Shadow Price	2040 Parking Capacity Relief
Red Line - Shady Grove-Grosvenor	83%	94%	98%	98%
Red Line - New York Ave-Takoma	91%	112%	99%	99%
Red Line - Silver Spring-Glenmont	91%	122%	100%	98%
Green Line - Greenbelt-West Hyattsville	86%	109%	98%	96%
Green Line - Waterfront-Congress Heights	89%	104%	97%	95%
Green Line - Southern Avenue-Branch Avenue	103%	128%	113%	112%
Yellow/Blue - Fran-Springfield, Van Dorn & Huntington	98%	123%	113%	113%
Orange Line - Vienna/Fairfax/GMU-West Falls Church	102%	86%	90%	86%
Orange Line - East Falls Church-Court House	117%	138%	111%	111%
Orange Line - Minnesota Avenue-New Carrollton	89%	66%	92%	93%
Blue Line - Benning Road-Largo Town Center	94%	136%	105%	104%
Silver Line - Tysons East-Route 772	N/A	41%	40%	38%
TOTALS	93%	93%	89%	88%
TOTALS WITHOUT SILVER LINE	93%	106%	101%	100%

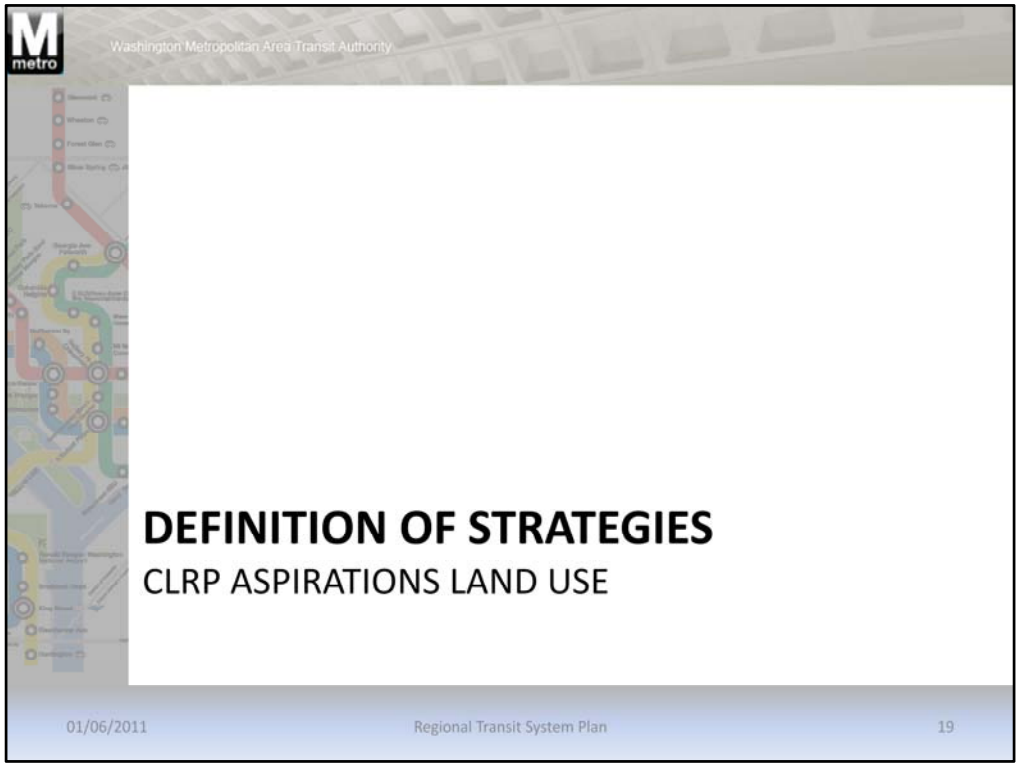
The graphic above shows the Metrorail Parking Utilization on several Metrorail segments under the Base Case, Base Case with Shadow Price and with the Parking Capacity Relief.

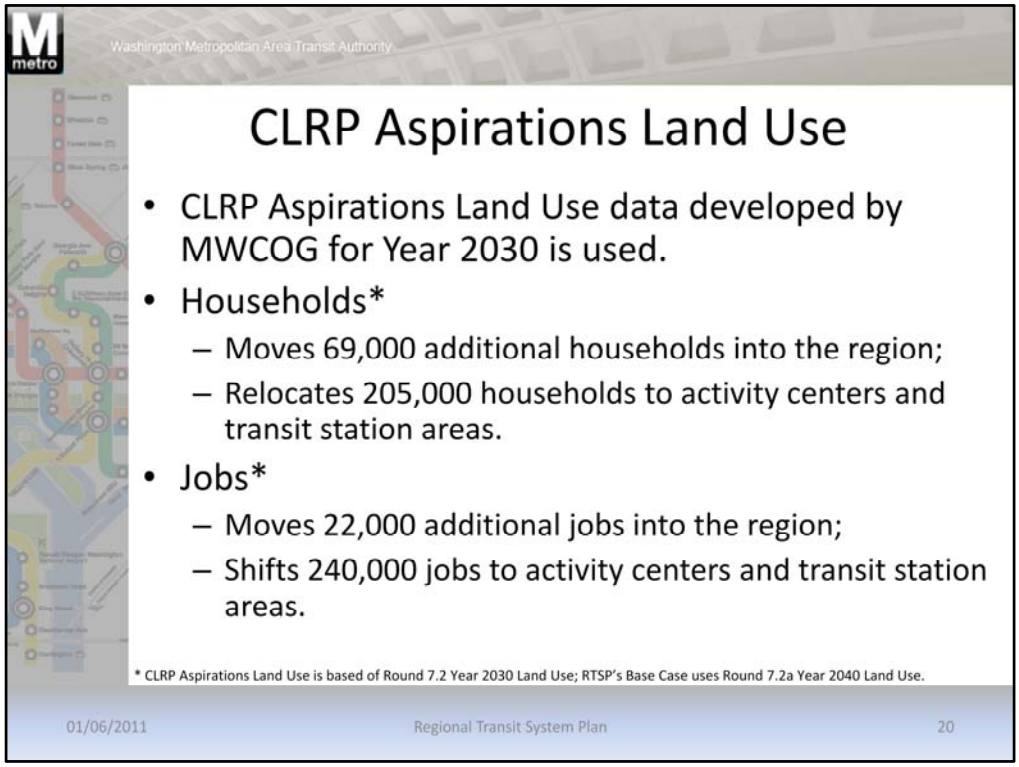


The graphic above shows the peak hour link loads on Metrorail trains in 2040 with the Shadow Price. The gray color represents fewer than 100 passengers per car; yellow indicates between 100 and 120 passengers per car and the red represents over 120 passengers per rail car.

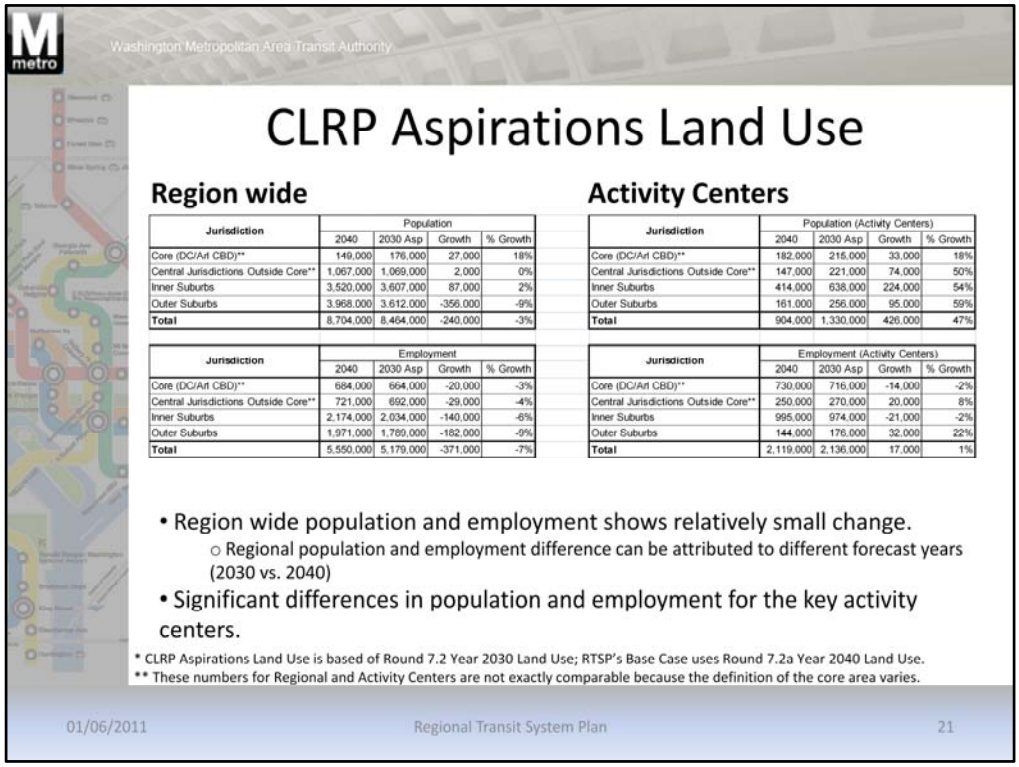


The graphic above shows the peak hour link loads on Metrorail trains in 2040 with the Parking Capacity Relief. The gray color represents fewer than 100 passengers per car; yellow indicates between 100 and 120 passengers per car and the red represents over 120 passengers per rail car.


Washington Metropolitan Area Transit Authority
DEFINITION OF STRATEGIES
CLRP ASPIRATIONS LAND USE
01/06/2011
Regional Transit System Plan
19



The CLRP Aspirations Land Use Strategy uses the Land Use data developed by the MWCOG for the Year 2030 and attempts to balance the regions jobs and housing using the above assumptions.



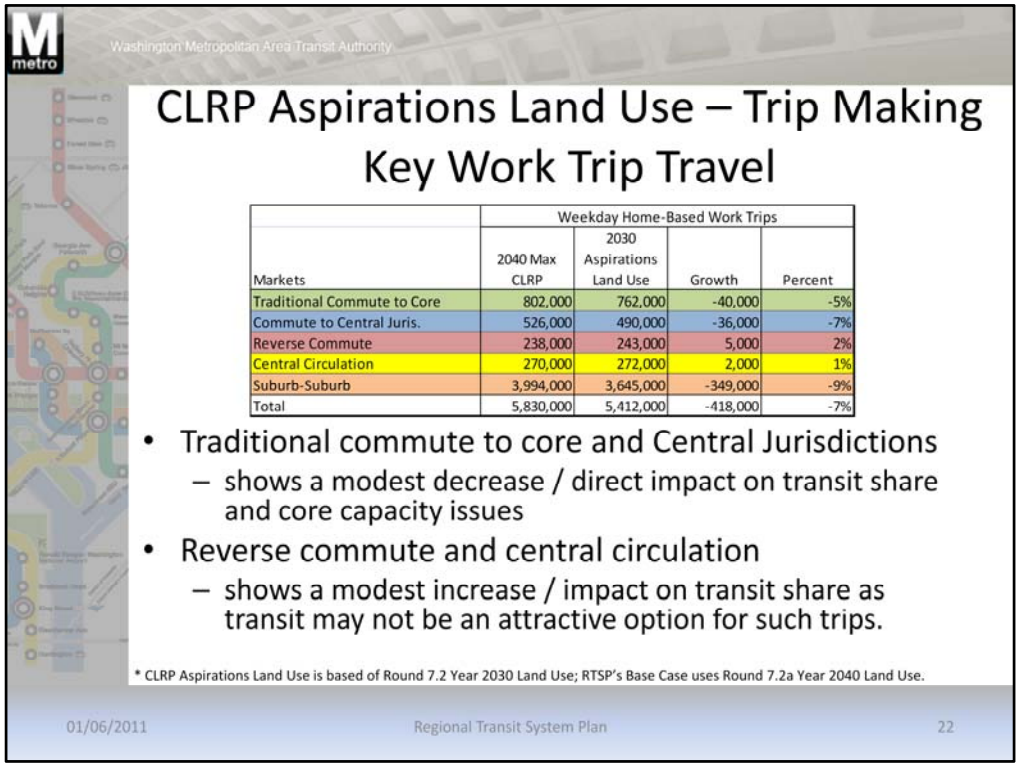
Jurisdiction	Population			
	2040	2030 Asp	Growth	% Growth
Core (DC/Art CBD)**	149,000	176,000	27,000	18%
Central Jurisdictions Outside Core**	1,067,000	1,069,000	2,000	0%
Inner Suburbs	3,520,000	3,607,000	87,000	2%
Outer Suburbs	3,968,000	3,612,000	-356,000	-9%
Total	8,704,000	8,464,000	-240,000	-3%

Jurisdiction	Population (Activity Centers)			
	2040	2030 Asp	Growth	% Growth
Core (DC/Art CBD)**	182,000	215,000	33,000	18%
Central Jurisdictions Outside Core**	147,000	221,000	74,000	50%
Inner Suburbs	414,000	638,000	224,000	54%
Outer Suburbs	161,000	256,000	95,000	59%
Total	904,000	1,330,000	426,000	47%

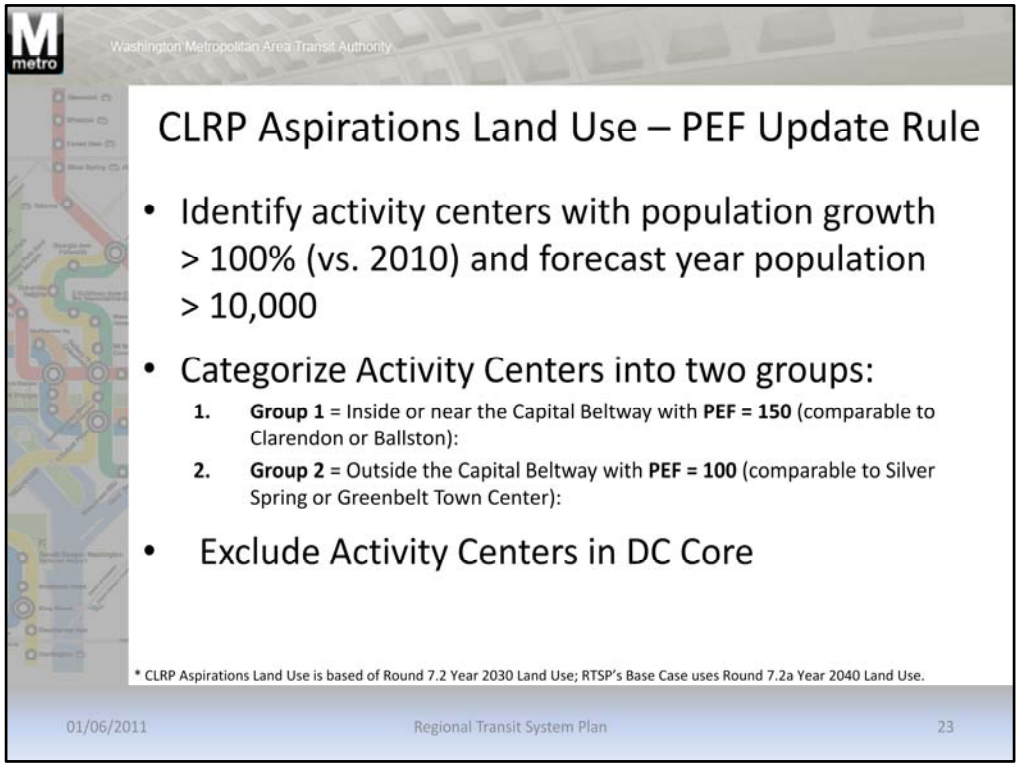
Jurisdiction	Employment			
	2040	2030 Asp	Growth	% Growth
Core (DC/Art CBD)**	684,000	664,000	-20,000	-3%
Central Jurisdictions Outside Core**	721,000	692,000	-29,000	-4%
Inner Suburbs	2,174,000	2,034,000	-140,000	-6%
Outer Suburbs	1,971,000	1,789,000	-182,000	-9%
Total	5,550,000	5,179,000	-371,000	-7%

Jurisdiction	Employment (Activity Centers)			
	2040	2030 Asp	Growth	% Growth
Core (DC/Art CBD)**	730,000	716,000	-14,000	-2%
Central Jurisdictions Outside Core**	250,000	270,000	20,000	8%
Inner Suburbs	995,000	974,000	-21,000	-2%
Outer Suburbs	144,000	176,000	32,000	22%
Total	2,119,000	2,136,000	17,000	1%

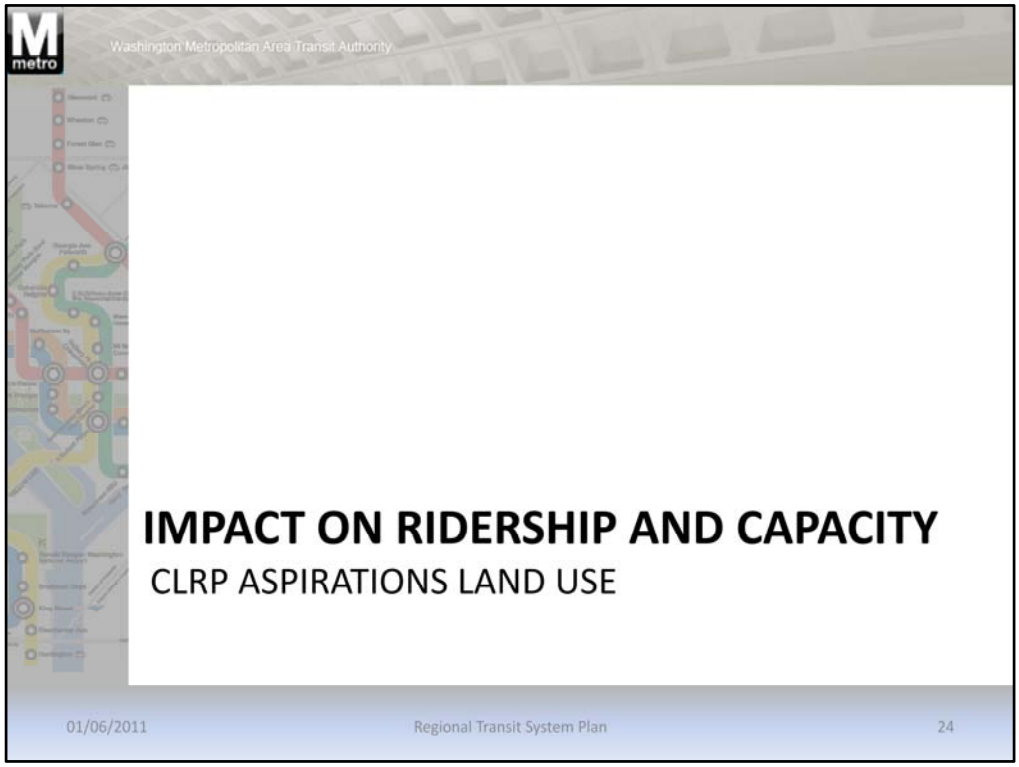
The slide above shows the region's population, employment and activity center growth for the 2030 and 2040 forecast years.

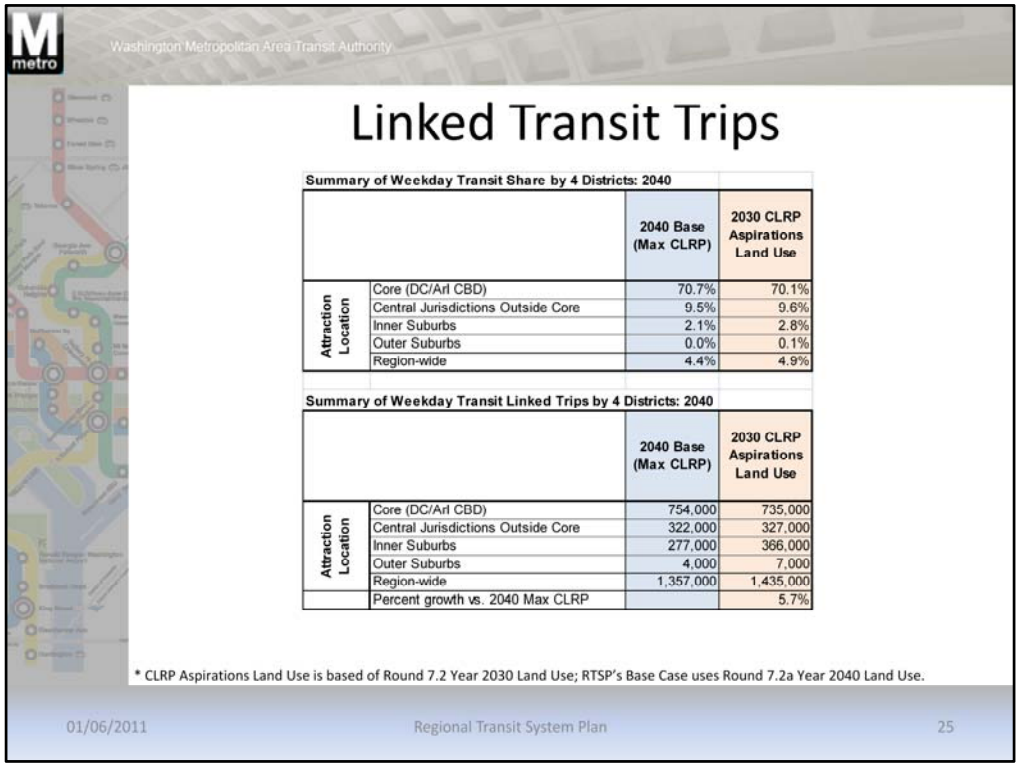


The chart above shows the Key Work Trip Travel for the 2030 CLRP Aspirations Land Use Study and the 2040 Max CLRP.

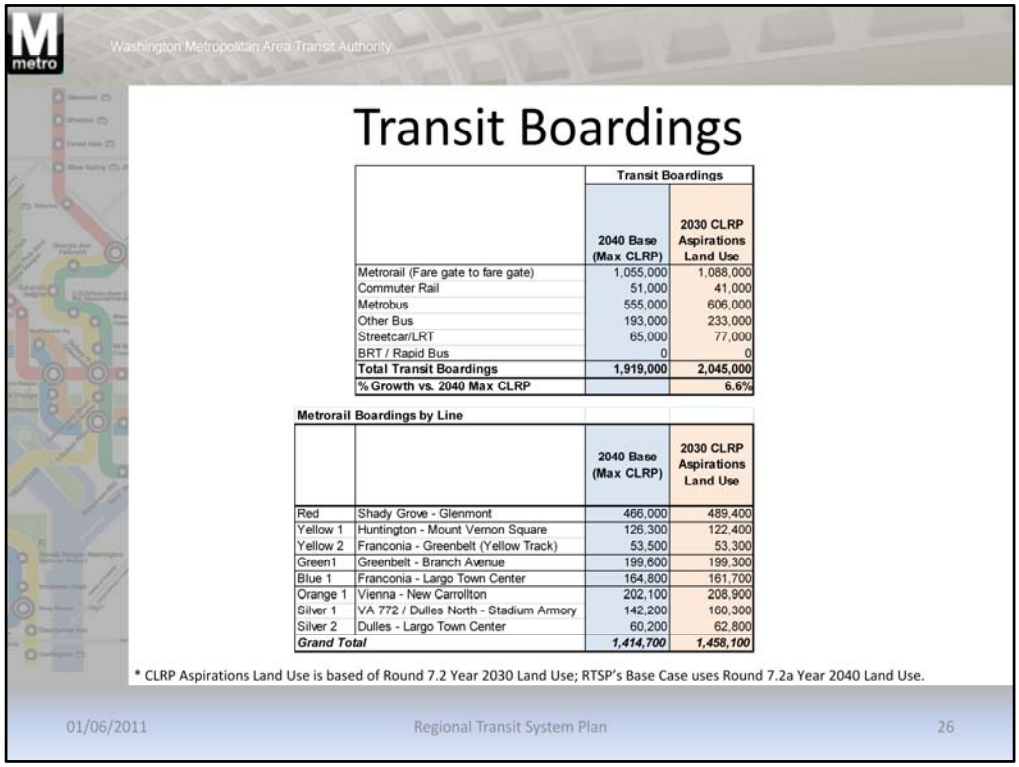


The CLRP Aspirations Land Use Strategy was also analyzed using the Pedestrian Environment Factor (PEF) Update.

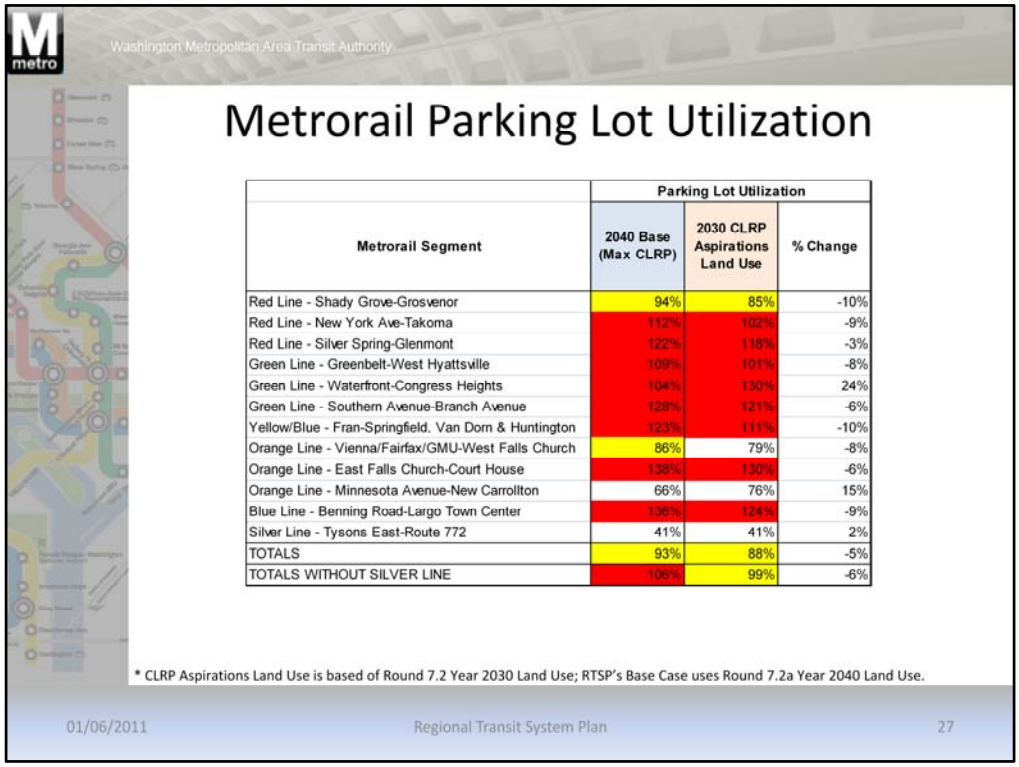

Washington Metropolitan Area Transit Authority
IMPACT ON RIDERSHIP AND CAPACITY
CLRP ASPIRATIONS LAND USE
01/06/2011
Regional Transit System Plan
24



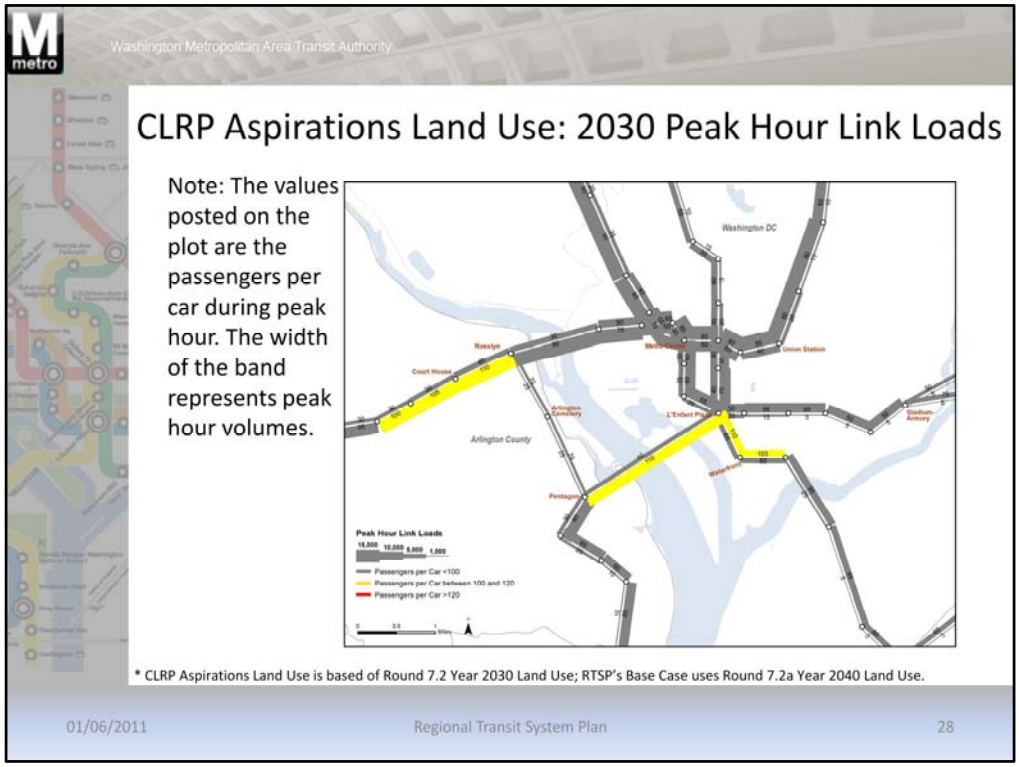
The charts above show the number of linked transit trips for the Base Case and the 2030 CLRP Aspirations Land Use.



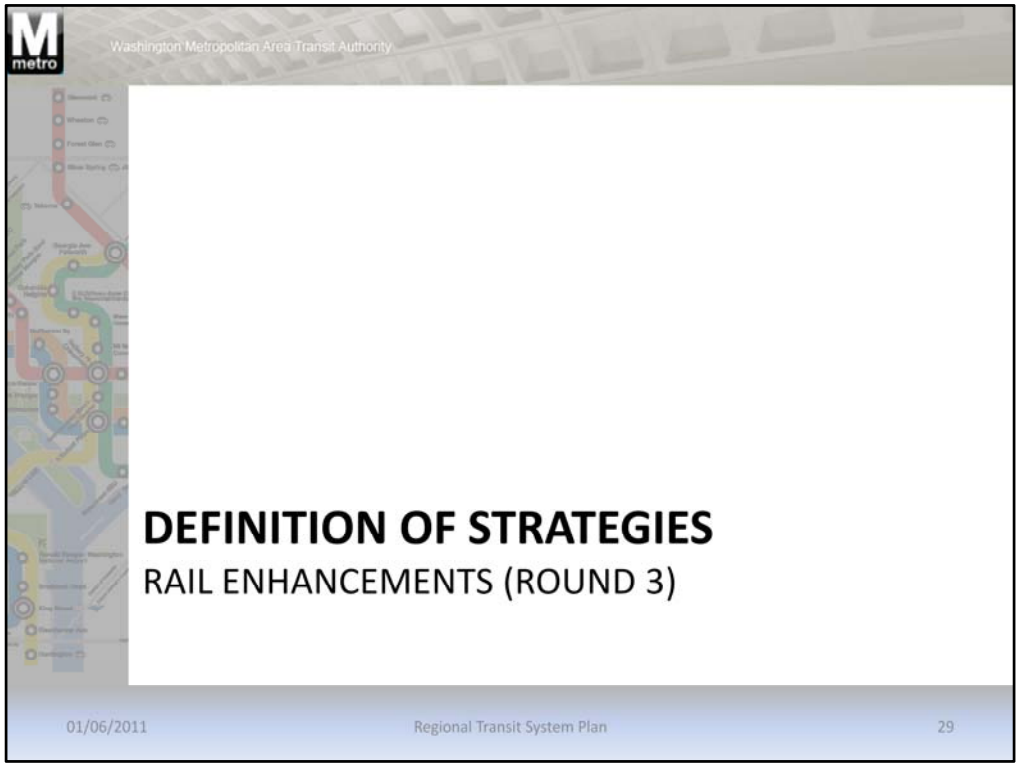
The charts above show the number of transit boardings for the Base Case and the 2030 CLRP Aspirations Land Use.

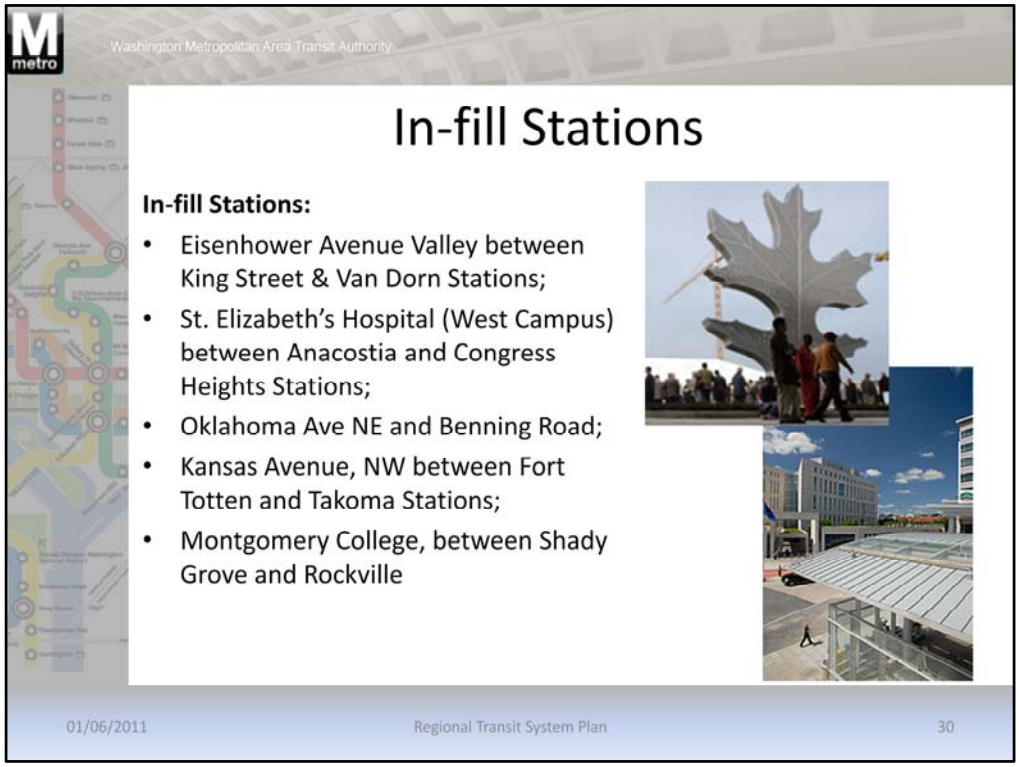


The graphic above shows the Metrorail Parking Utilization on several Metrorail segments under the Base Case and the 2030 CLRP Aspirations Land Use and the percentage change in parking lot utilization between the two.

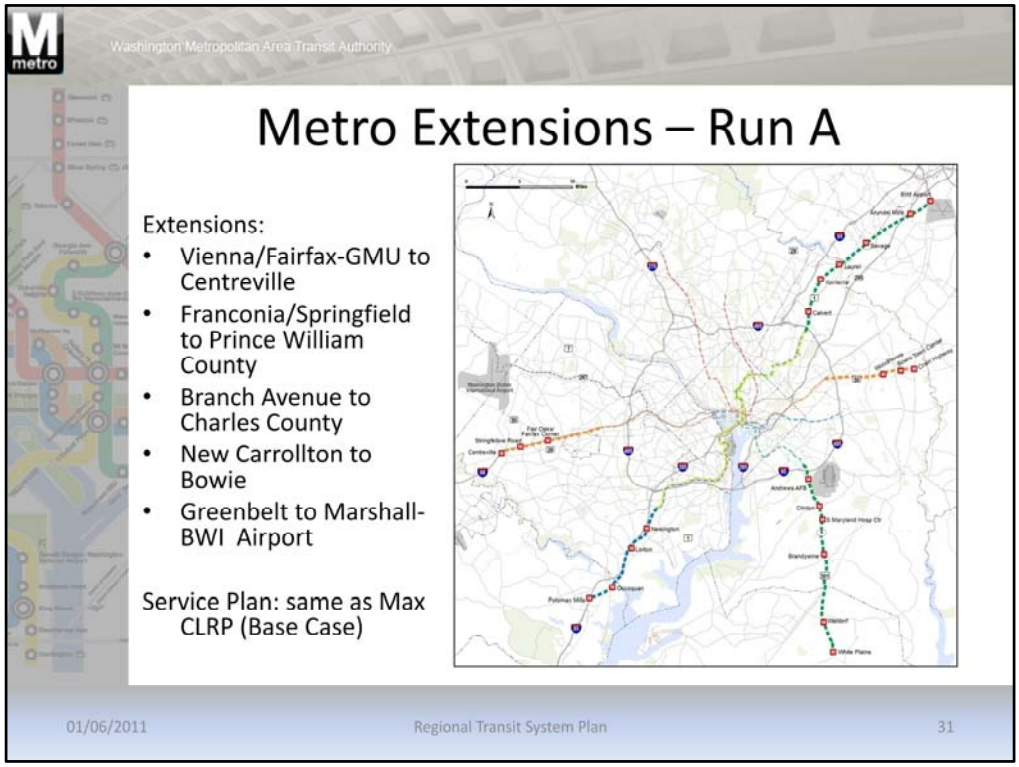


The graphic above shows the peak hour link loads on Metrorail trains in 2030 for the CLRP Aspirations Land Use Strategy. The gray color represents fewer than 100 passengers per car; yellow indicates between 100 and 120 passengers per car and the red represents over 120 passengers per rail car.

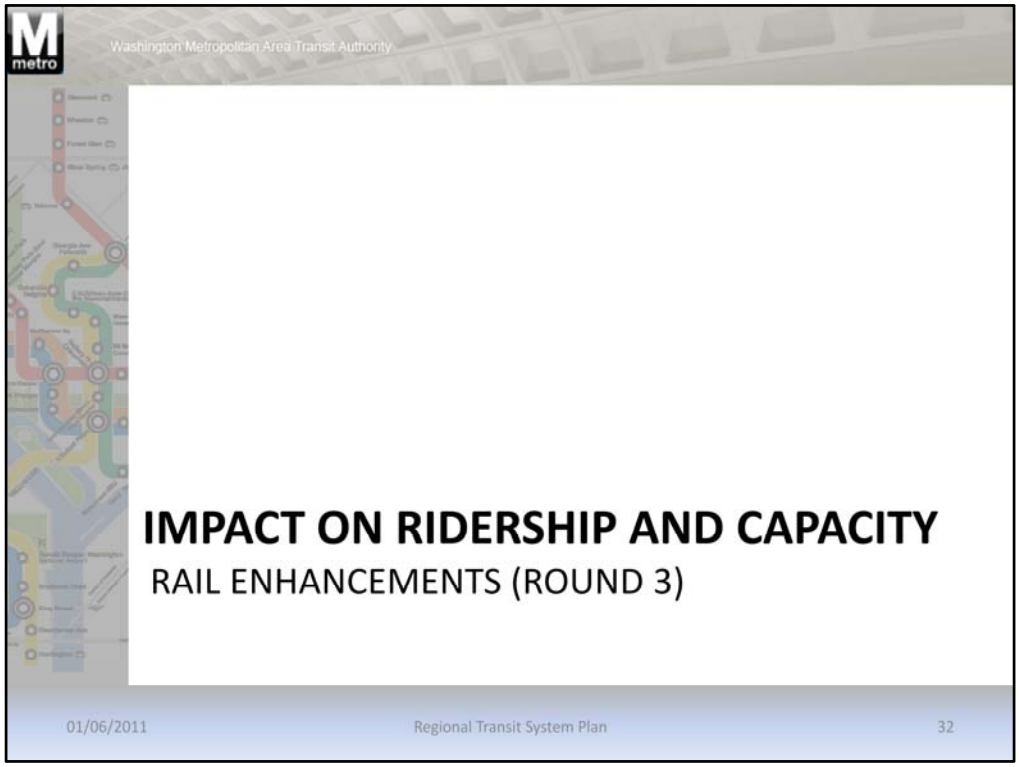

Washington Metropolitan Area Transit Authority
DEFINITION OF STRATEGIES
RAIL ENHANCEMENTS (ROUND 3)
01/06/2011
Regional Transit System Plan
29

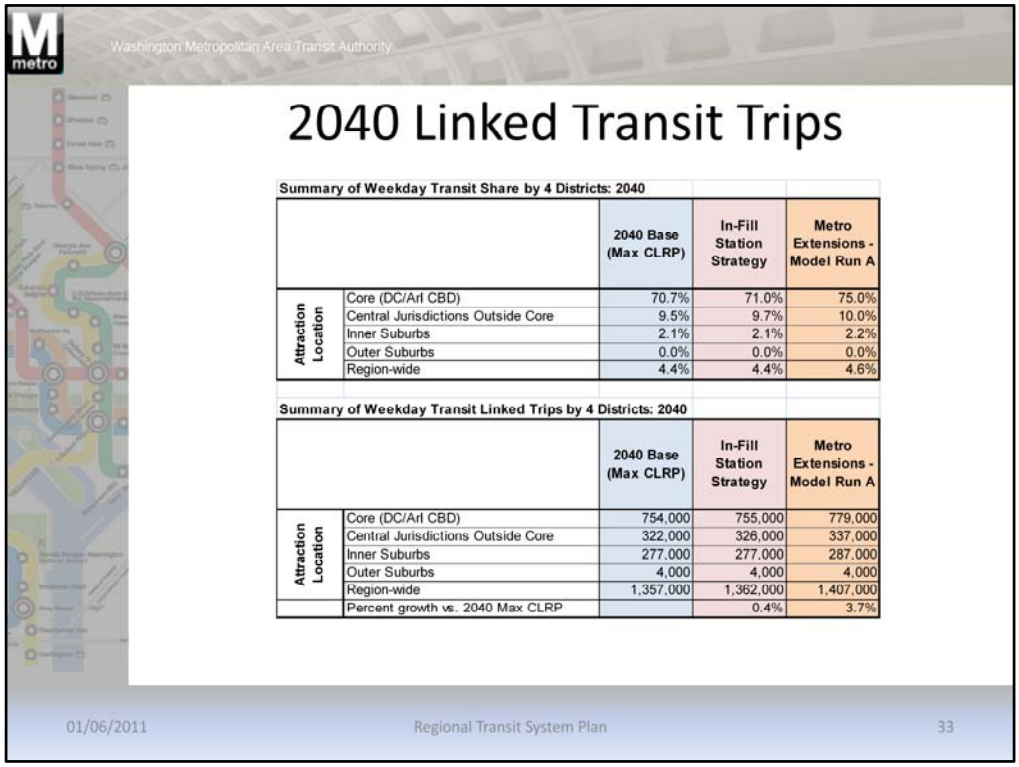


The In-fill Station Strategy is designed to increase access by incorporating a new rail station between two existing rail stations. The locations listed above are potential in-fill stations.

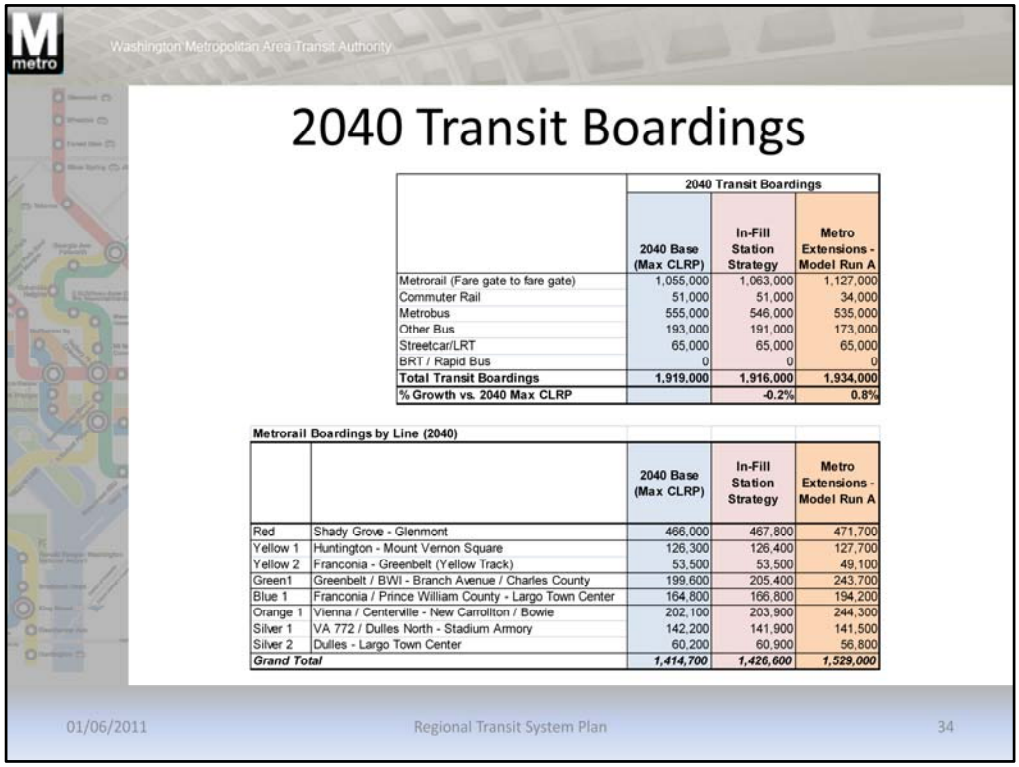


The map above represents the first model run of the Metrorail Extensions Strategy - Run A - which identifies several potential extensions of Metrorail Service from the existing end-of-the-line stations.


Washington Metropolitan Area Transit Authority
IMPACT ON RIDERSHIP AND CAPACITY
RAIL ENHANCEMENTS (ROUND 3)
01/06/2011
Regional Transit System Plan
32



The charts above show the number of linked transit trips for the Base Case, In-Fill Station and Metro Extensions – Model Run A Strategies.

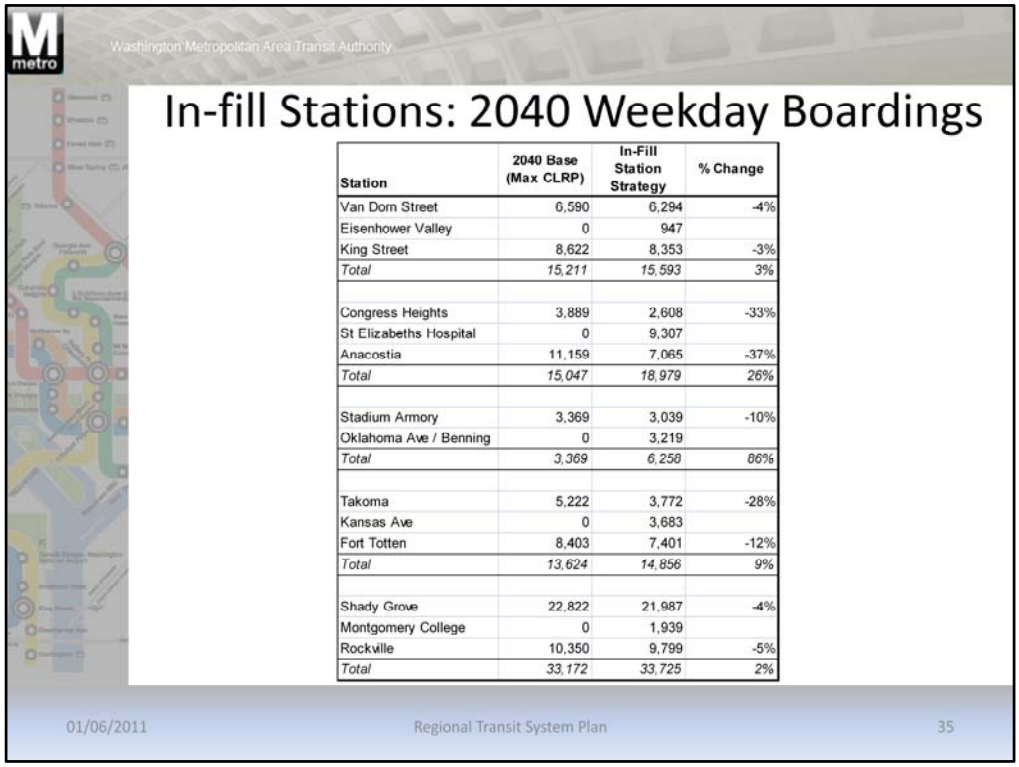


	2040 Transit Boardings		
	2040 Base (Max CLRP)	In-Fill Station Strategy	Metro Extensions - Model Run A
Metrorail (Fare gate to fare gate)	1,055,000	1,063,000	1,127,000
Commuter Rail	51,000	51,000	34,000
Metrobus	555,000	546,000	535,000
Other Bus	193,000	191,000	173,000
Streetcar/LRT	65,000	65,000	65,000
BRT / Rapid Bus	0	0	0
Total Transit Boardings	**1,919,000**	**1,916,000**	**1,934,000**
% Growth vs. 2040 Max CLRP		**-0.2%**	**0.8%**

Metrorail Boardings by Line (2040)

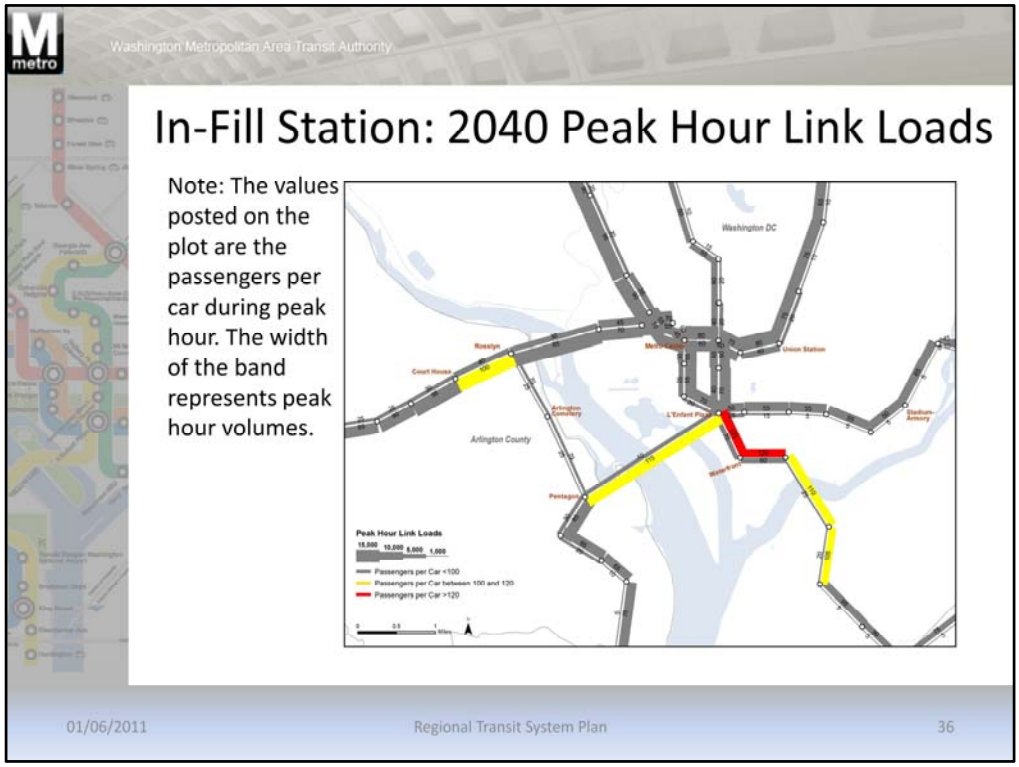
		2040 Base (Max CLRP)	In-Fill Station Strategy	Metro Extensions - Model Run A
Red	Shady Grove - Glenmont	466,000	467,800	471,700
Yellow 1	Huntington - Mount Vernon Square	126,300	126,400	127,700
Yellow 2	Franconia - Greenbelt (Yellow Track)	53,500	53,500	49,100
Green1	Greenbelt / BWI - Branch Avenue / Charles County	199,600	205,400	243,700
Blue 1	Franconia / Prince William County - Largo Town Center	164,800	166,800	194,200
Orange 1	Vienna / Centerville - New Carrollton / Bowie	202,100	203,900	244,300
Silver 1	VA 772 / Dulles North - Stadium Armory	142,200	141,900	141,500
Silver 2	Dulles - Largo Town Center	60,200	60,900	56,800
Grand Total		***1,414,700***	***1,426,600***	***1,529,000***

The charts above show the number of transit boardings for the Base Case, In-Fill Station and Metro Extensions – Model Run A Strategies.

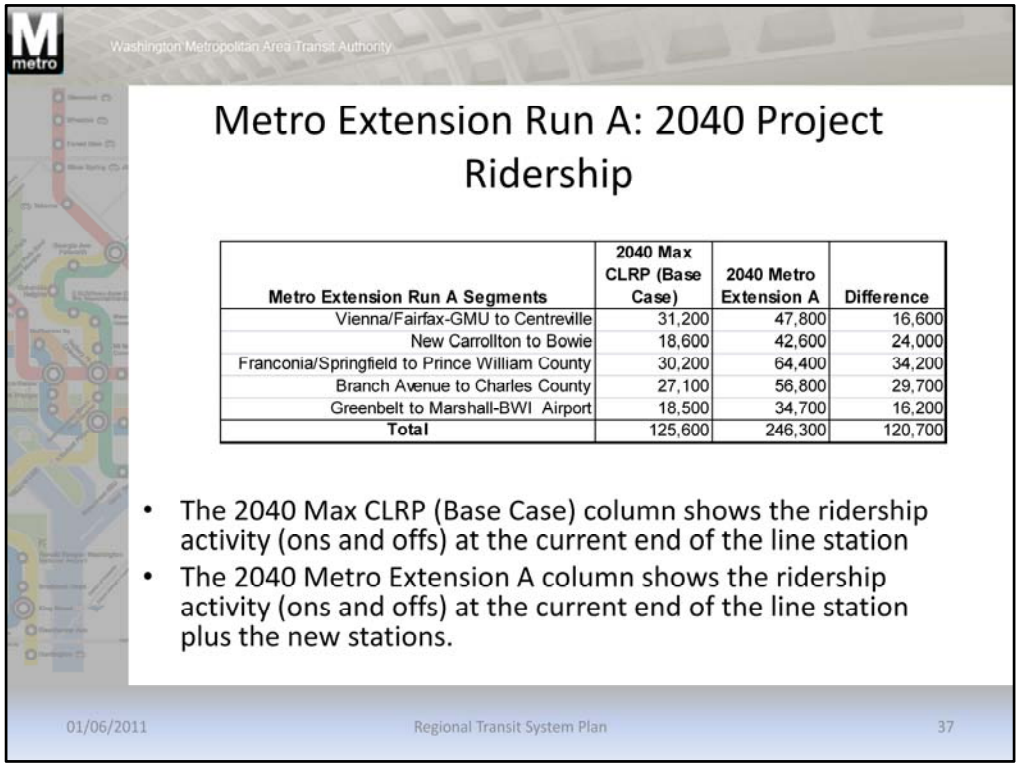


Station	2040 Base (Max CLRP)	In-Fill Station Strategy	% Change
Van Dorn Street	6,590	6,294	-4%
Eisenhower Valley	0	947	
King Street	8,622	8,353	-3%
Total	*15,211*	*15,593*	*3%*
Congress Heights	3,889	2,608	-33%
St Elizabeths Hospital	0	9,307	
Anacostia	11,159	7,065	-37%
Total	*15,047*	*18,979*	*26%*
Stadium Armory	3,369	3,039	-10%
Oklahoma Ave / Benning	0	3,219	
Total	*3,369*	*6,258*	*86%*
Takoma	5,222	3,772	-28%
Kansas Ave	0	3,683	
Fort Totten	8,403	7,401	-12%
Total	*13,624*	*14,856*	*9%*
Shady Grove	22,822	21,987	-4%
Montgomery College	0	1,939	
Rockville	10,350	9,799	-5%
Total	*33,172*	*33,725*	*2%*

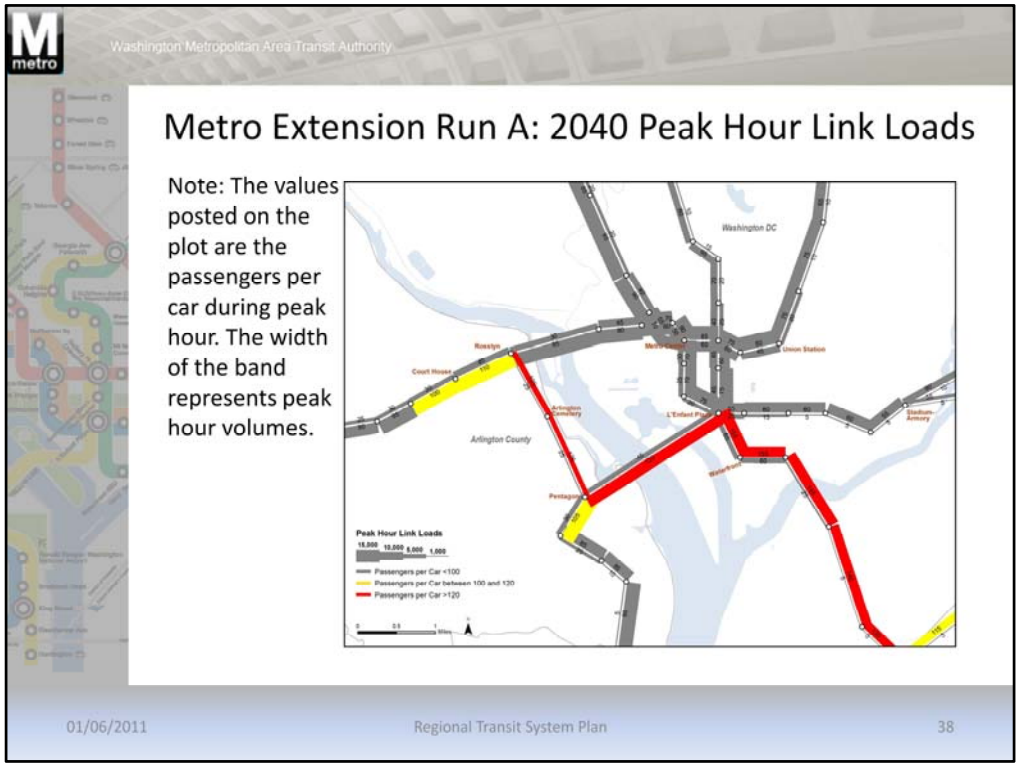
The graphic above shows the number of weekday boardings for the Base Case and the In-Fill Station Strategy at the proposed in-fill station locations.



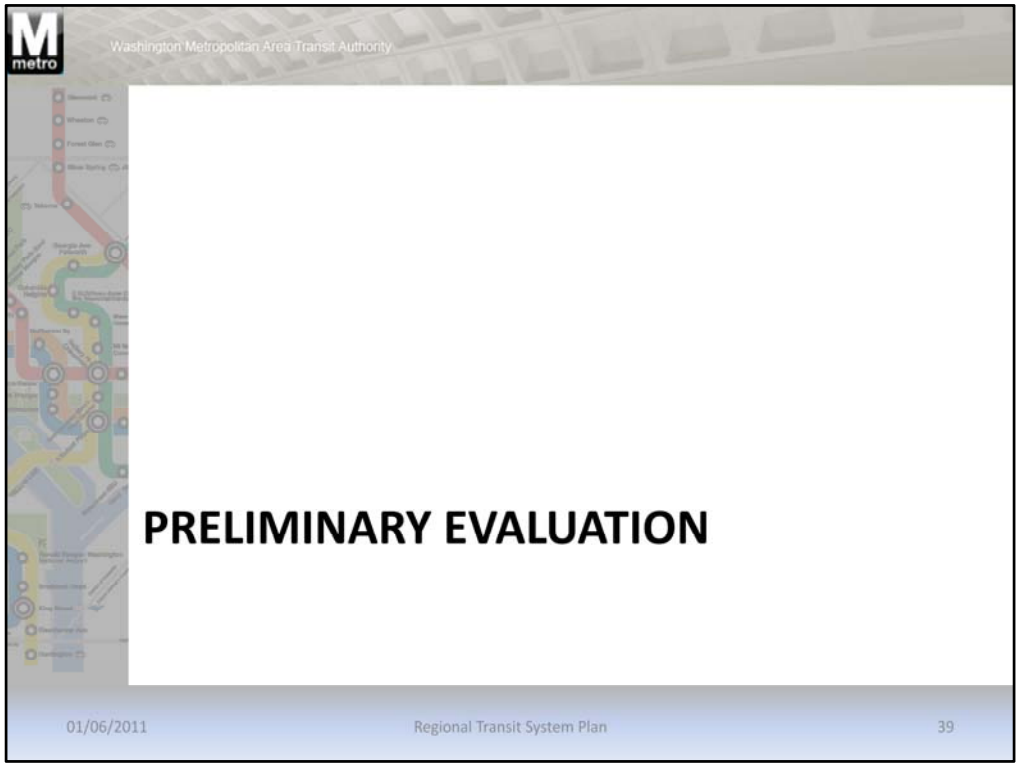
The graphic above shows the peak hour link loads on Metrorail trains for the In-fill Station Strategy. The gray color represents fewer than 100 passengers per car; yellow indicates between 100 and 120 passengers per car and the red represents over 120 passengers per rail car.

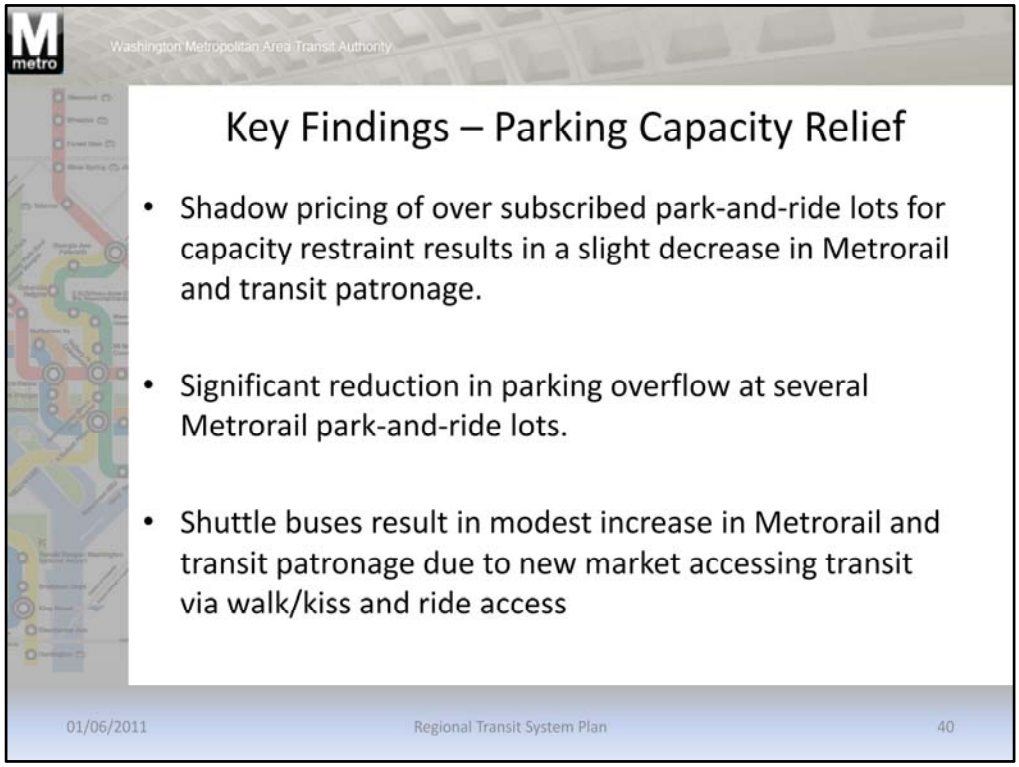


The chart above shows the ridership activity for several segments under the Base Case and the Metrorail Extensions Strategy.

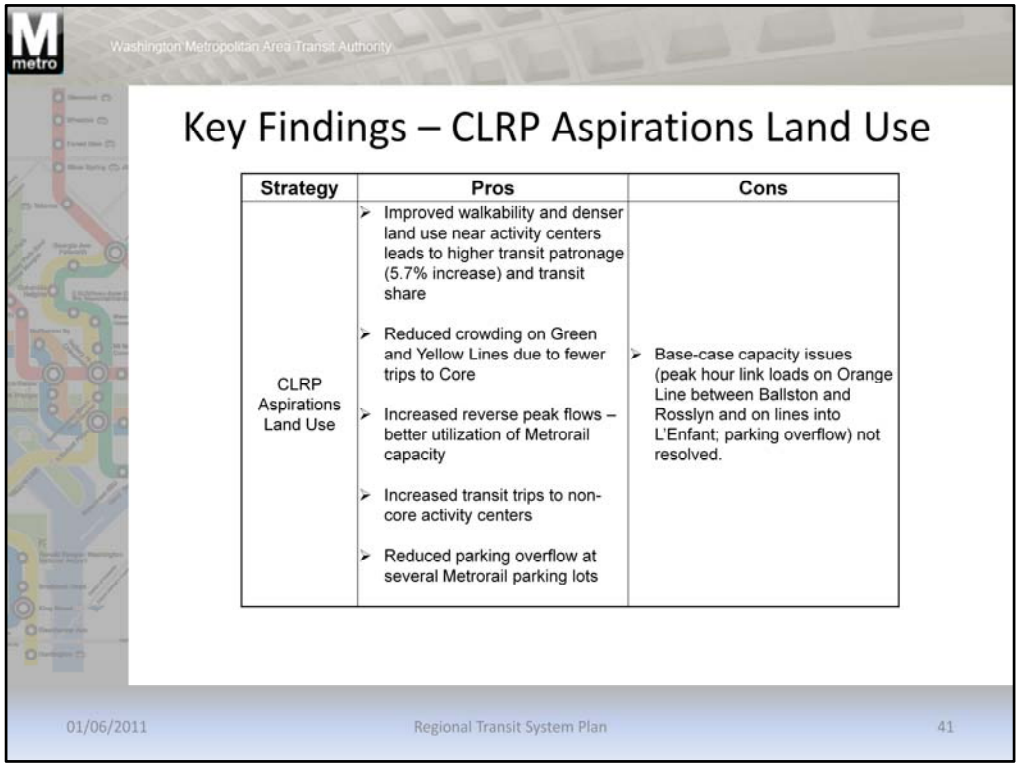


The graphic above shows the 2040 peak hour link loads on Metrorail trains for the Metro Extension - Model Run A Strategy. The gray color represents fewer than 100 passengers per car; yellow indicates between 100 and 120 passengers per car and the red represents over 120 passengers per rail car.

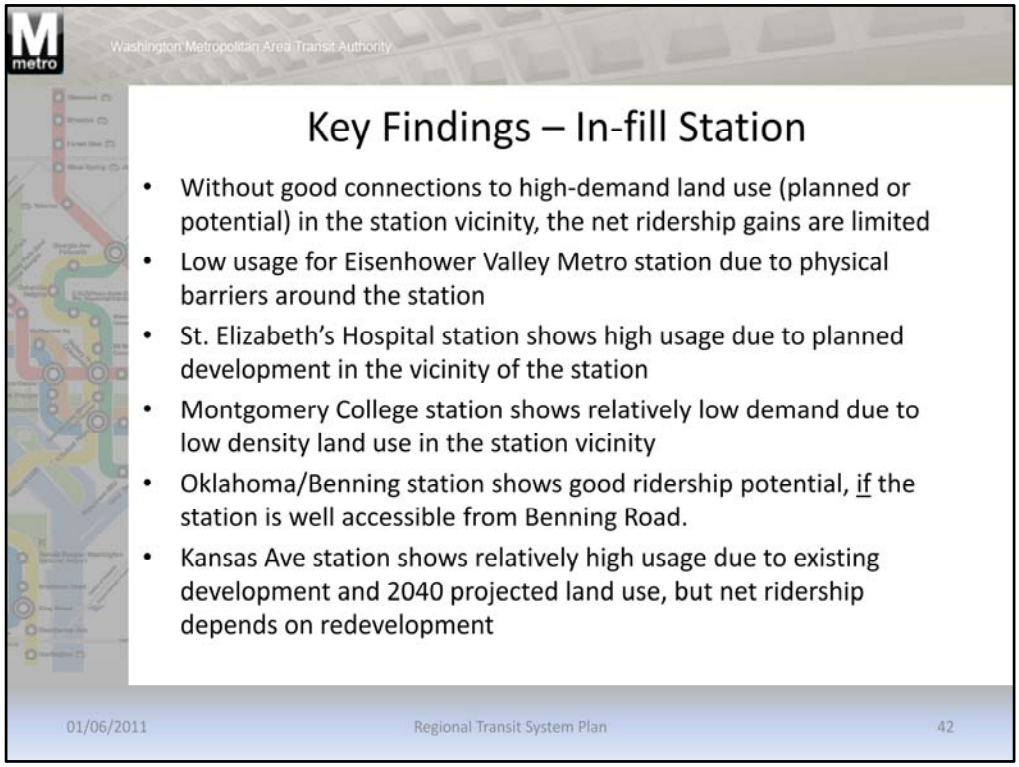

Washington Metropolitan Area Transit Authority
PRELIMINARY EVALUATION
01/06/2011
Regional Transit System Plan
39



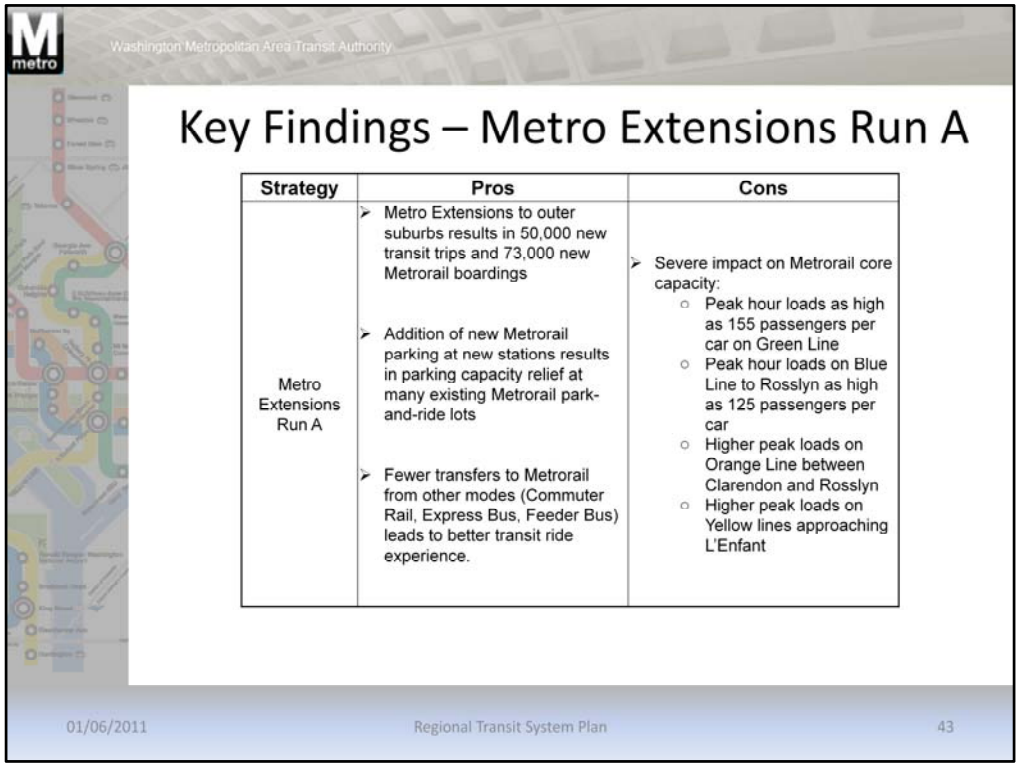
The above slide lists some of the key findings related to the Parking Capacity Relief Strategy.



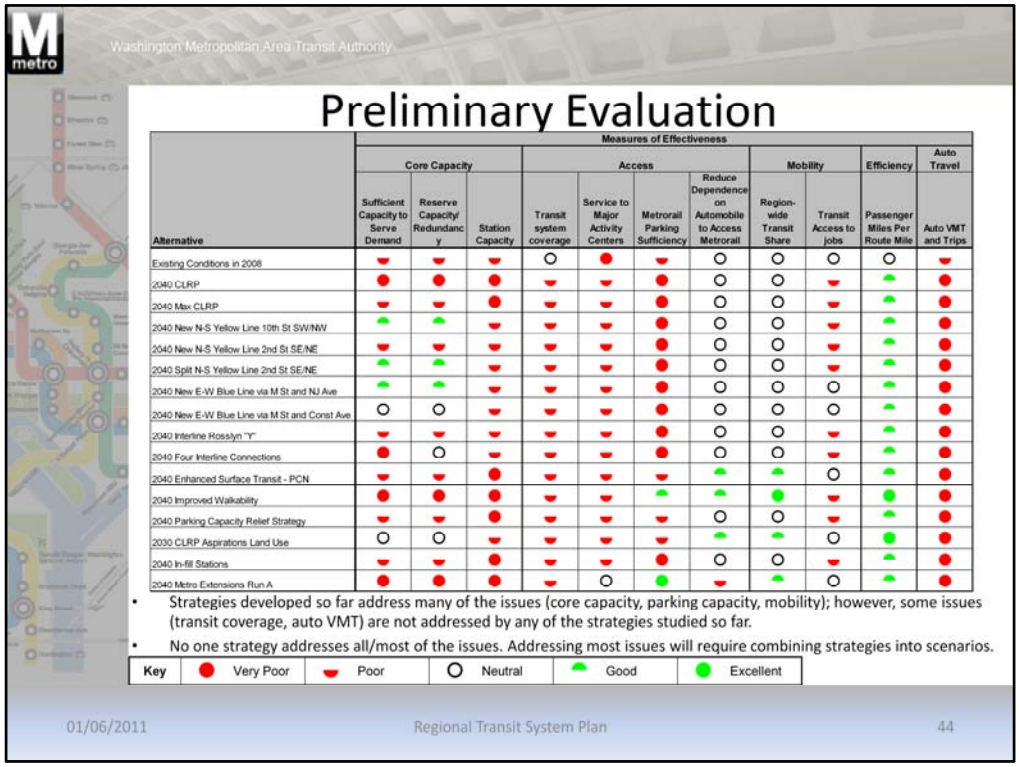
The above slide lists some of the key findings related to the CLRP Aspirations Land Use Strategy.



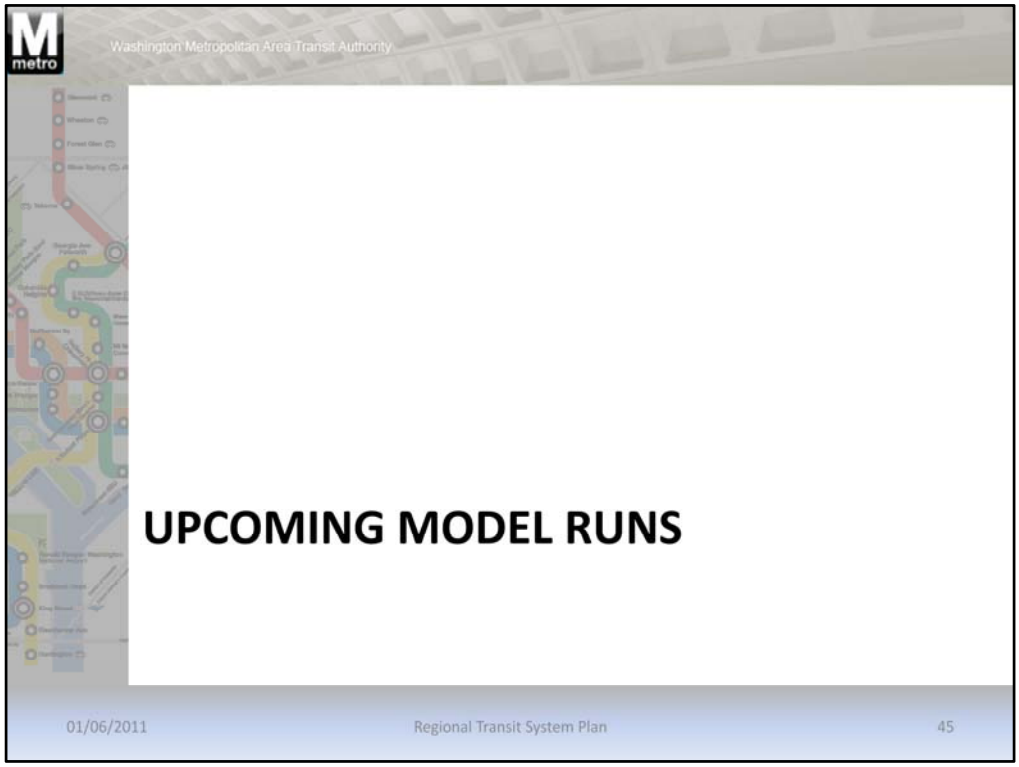
The above slide lists some of the key findings related to the In-fill Strategy.

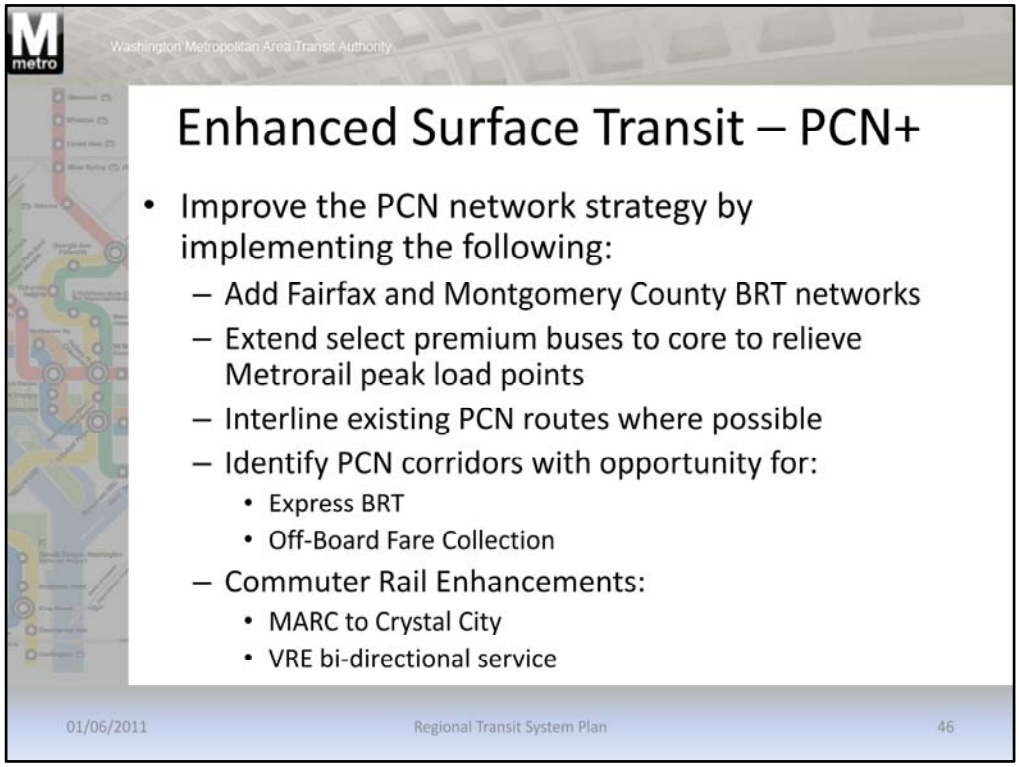


The above slide lists some of the key findings related to the Metro Extensions Run A Strategy.

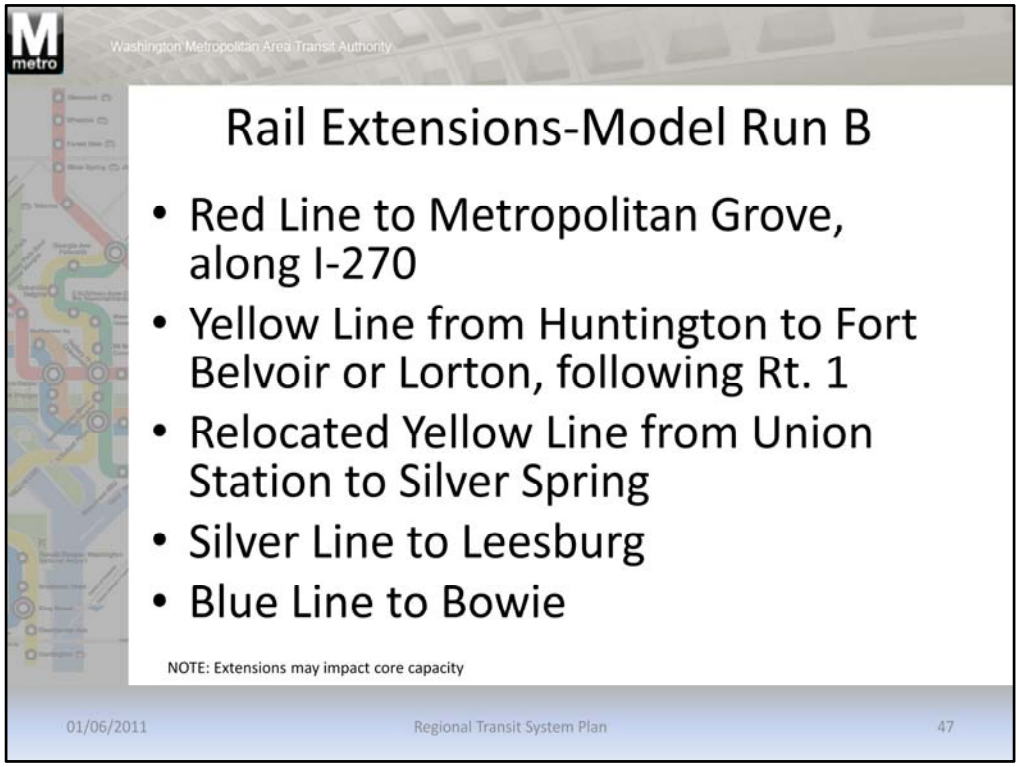


The chart above reflects the preliminary evaluation of the strategies against the Measures of Effectiveness.

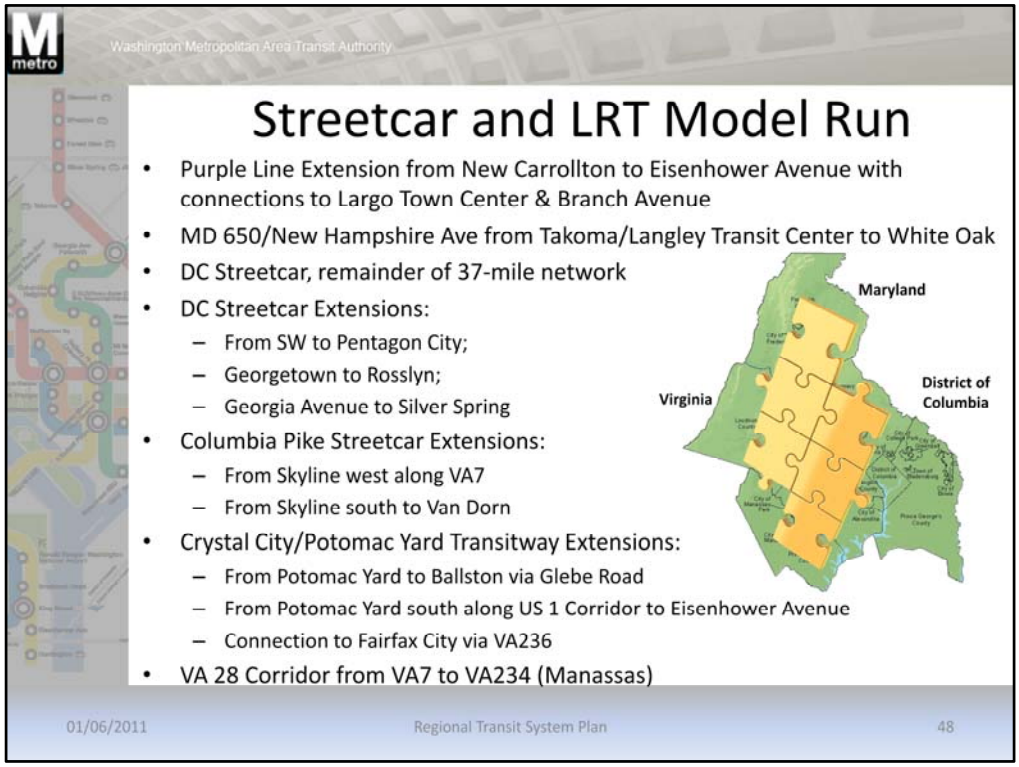

Washington Metropolitan Area Transit Authority
UPCOMING MODEL RUNS
01/06/2011
Regional Transit System Plan
45



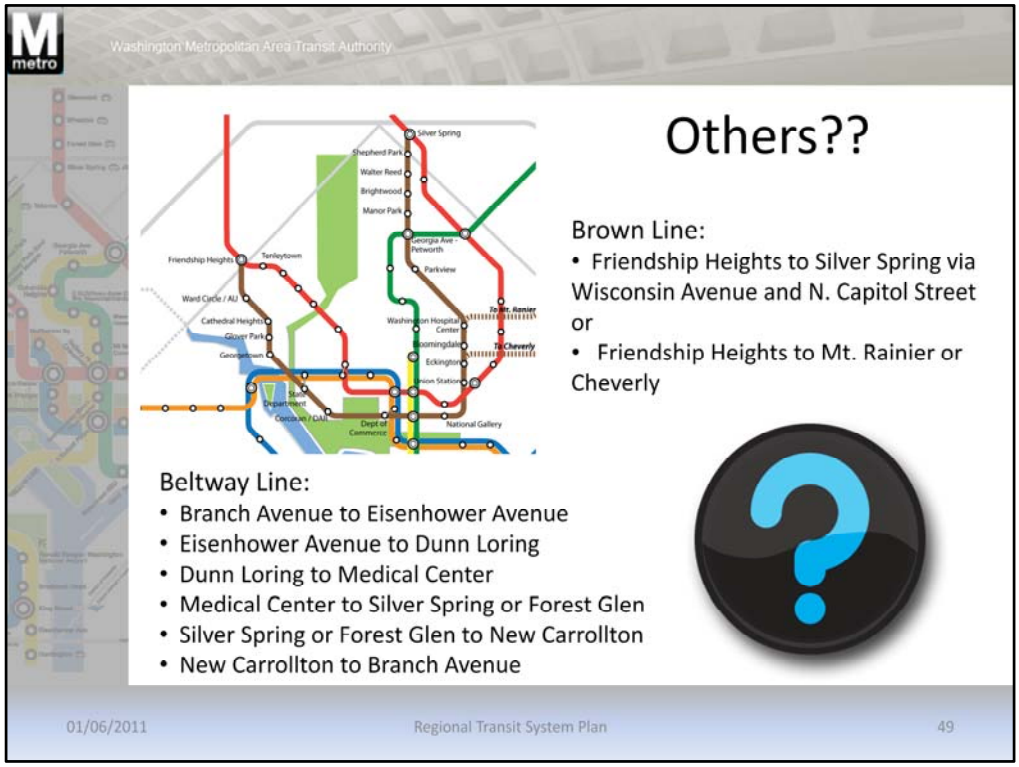
The Enhanced Surface Transit – PCN+ Strategy model run will include the assumptions above.



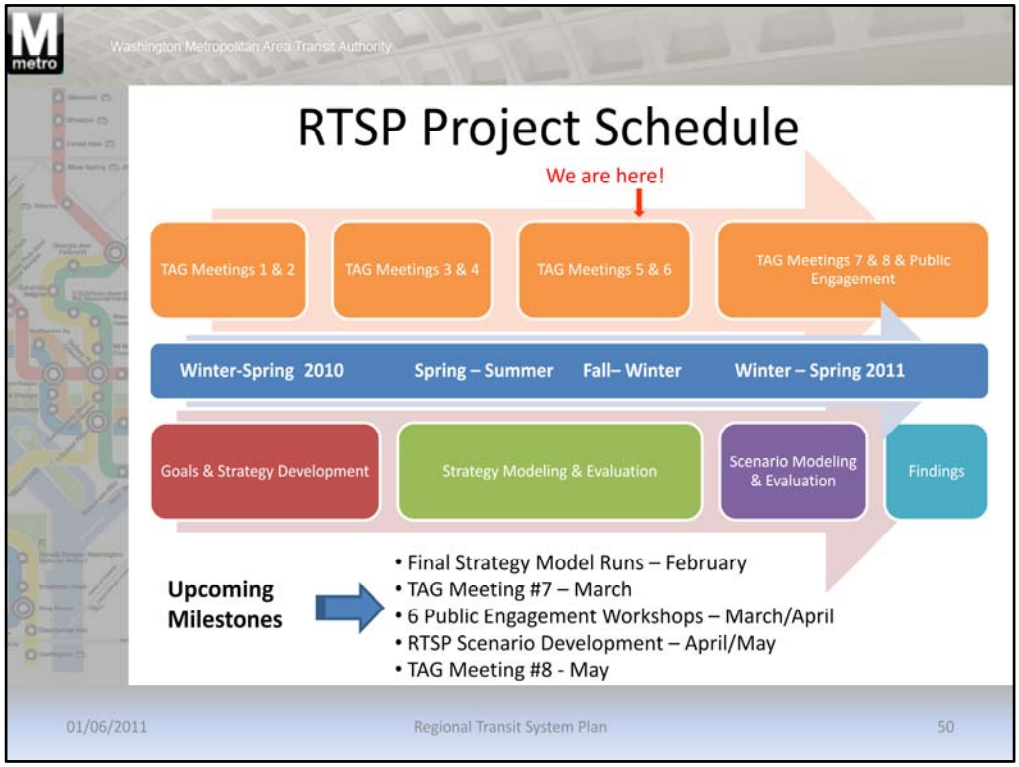
The Rail Extensions – Model Run B will include the above extension segments.



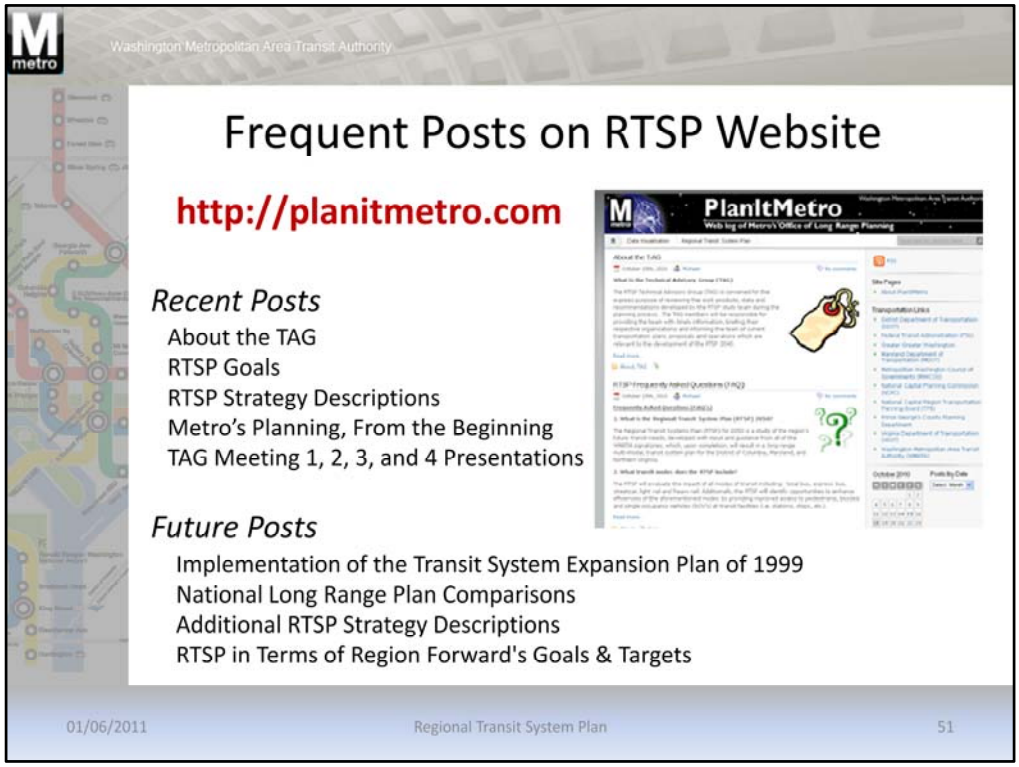
Streetcar and LRT modes will be included in the PCN+ Model Strategy.



We solicited other Model Runs from the TAG to reflect other potential transit services they were interested in analyzing.



The schedule above reflects upcoming RTSP Milestones. This schedule is subject to change without notice.



Future RTSP Blog Posts and links to PlanitMetro.com for additional information.