

NOTE:

This presentation was developed to present to communities in the study area and is considered a high-level modeling/planning exercise.

None of the options should be considered recommendations for the study area at this time.

I-495 STUDY (I-90 TO I-290)

FOR DISCUSSION ONLY

CMRPC/MAPC

Presented to the 495/MetroWest Partnership

July 20, 2009

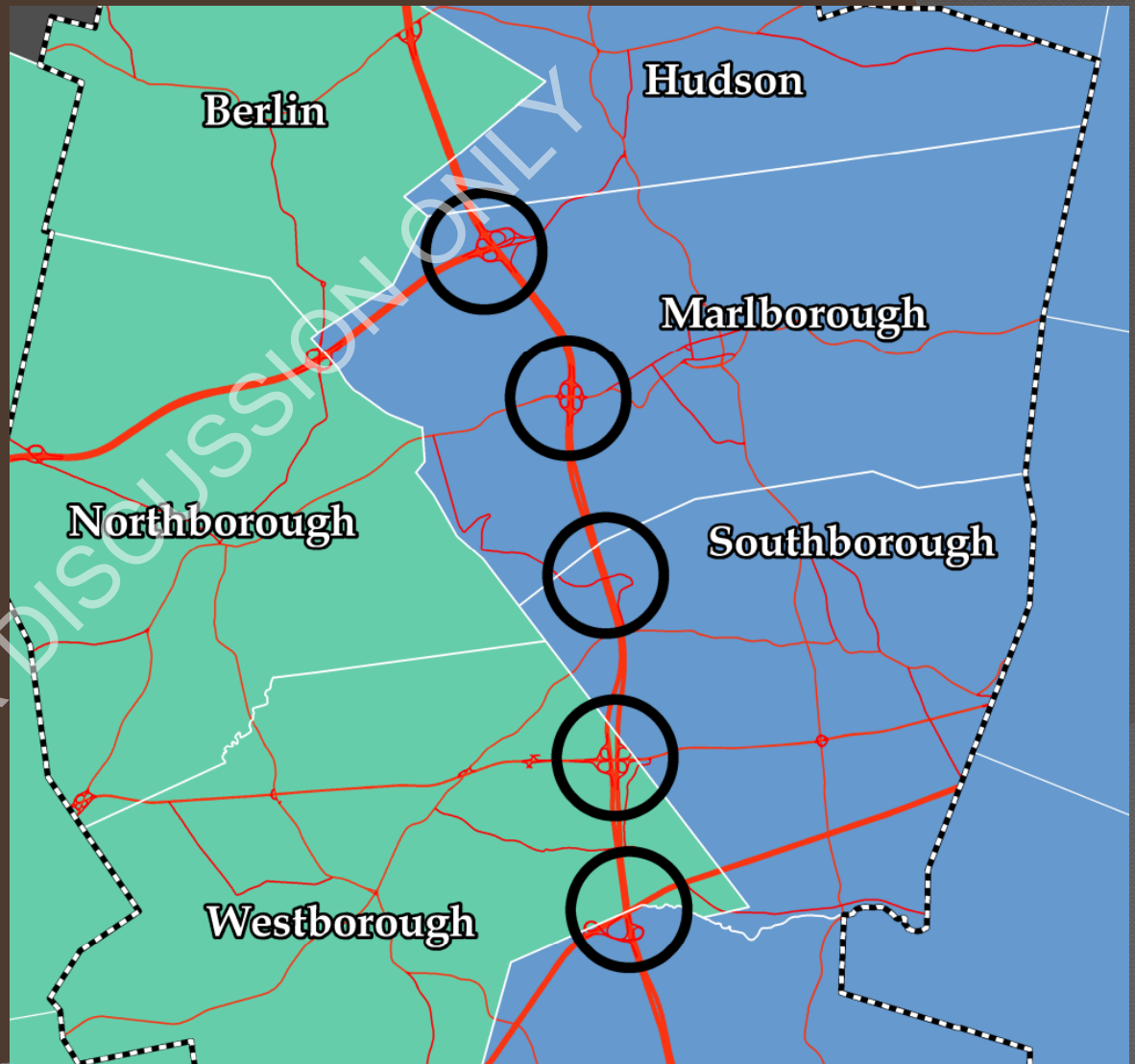
Study Goal

- Identify existing and future capacity constraints associated with the I-495 interchanges; and
- Identify
 - methods to move more people through the interchanges
 - strategies that might reduce the single auto trips that need to be moved through these interchanges through land use and transit options

Roadway Characteristics

Major Highway
Exits on I-495:

- I-290/Route 85
- Route 20
- Simarano Drive
- Route 9
- I-90



Current Growth Trends

Between 2007 and 2030:

- Population growth 15.4%
- Employment growth 9.7%.



Interchange Use (Estimated and Projected)

<i>Interchange</i>	<i>Year Opened to Traffic</i>	<i>Estimated Vehicles Moving through the Interchange (2007)</i>	<i>Projected Vehicles Moving through the Interchange (2030)</i>	<i>Percent Growth between 2007 and 2030</i>
I-290	1970	52,100 vpd	59,700 vpd	14.59%
Route 20	1964	50,700 vpd	68,300 vpd	34.71%
Simarano Drive	2001	7,400 vpd	18,300 vpd	147.30%
Route 9	1964	57,900 vpd	78,600 vpd	35.75%
I-90/MassPike	1969	53,800 vpd	76,400 vpd	42.01%

Source: Travel Demand Model

Average Weekday Traffic (AWDT) on I-495

	<i>Ground Counts</i>			<i>Model Projections</i>	
<i>Location</i>	<i>1980</i>	<i>1990</i>	<i>2000</i>	<i>2007</i>	<i>2030</i>
North of West Main Street, Hopkinton	28,000	60,000	98,000	105,700	139,600
North of MassPike, Westborough	30,000	66,000	100,000	111,700	150,200
North of Route 9, Southborough	32,000	66,000	98,000	101,500	131,600
North of Simarano Drive, Marlborough	32,000	66,000	95,000	98,300	123,900
North of Route 20, Marlborough	40,000	68,000	97,000	100,400	121,200
North of I-290, Hudson	48,000	80,000	110,000	113,800	134,100

Sources: "Ground Counts are from the Traffic Volumes on Major Highways in Massachusetts" CTPS Report, May 2007
Model Projections: Travel Demand Model

Existing Transit, Car/Vanpool and Park and Ride Options

- MWRTA
- MetroWest/495 TMA
- MBTA commuter rail
- Park and Ride Lots
 - Berlin (I-495 at Route 62)
 - Westborough (Route 9 – two lots)



Study Process

● Develop & refine travel demand model

- Incorporated MAPC towns into CMRPC model
- Revisited data inputs to travel demand forecasting process including:
 - Traffic counts from EIRs
 - Community population and employment growth
 - Land use

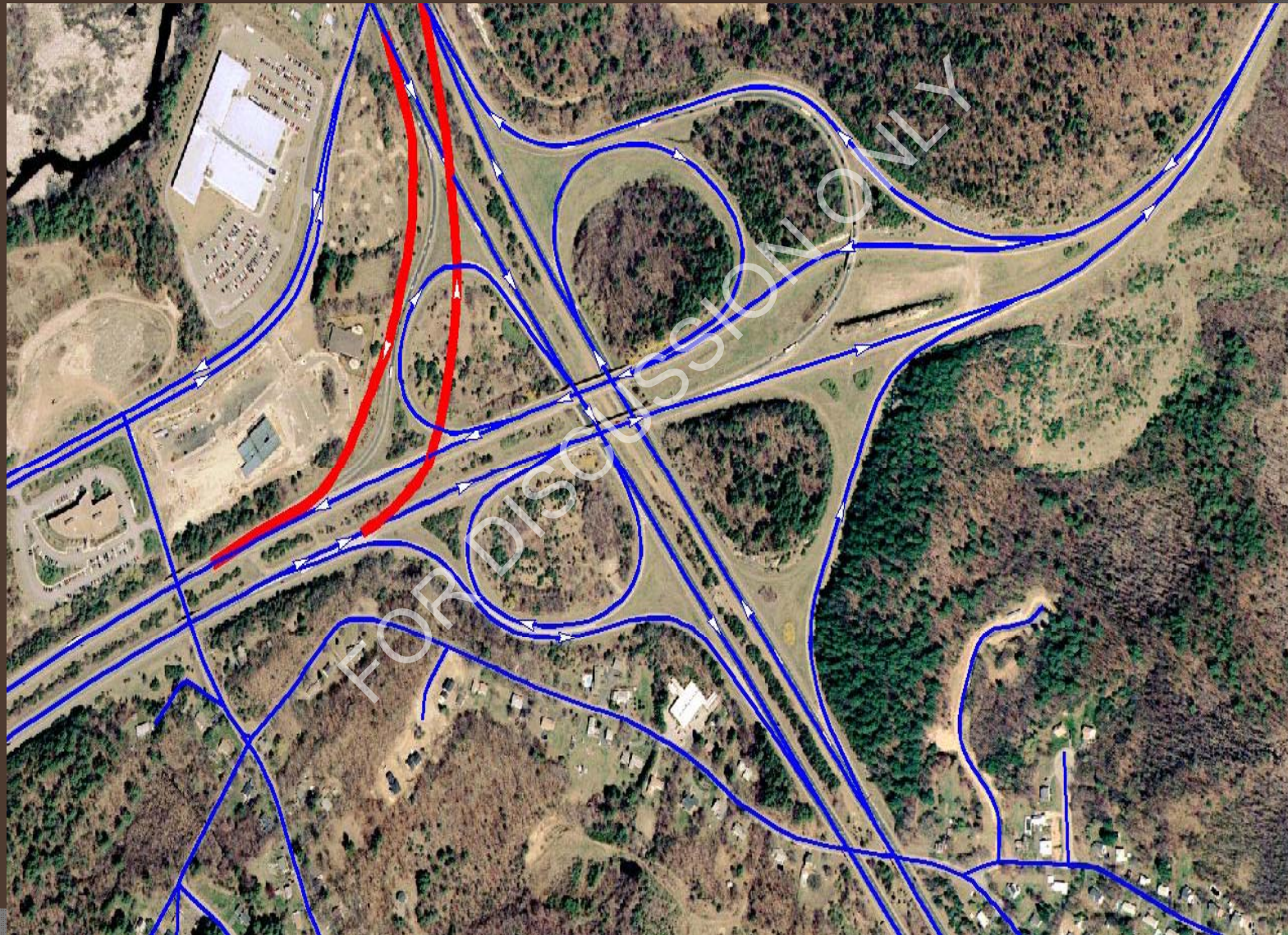
Study Process (cont)

- Gather alternatives input from community stakeholders
 - Technical
 - Land use
 - Highway infrastructure

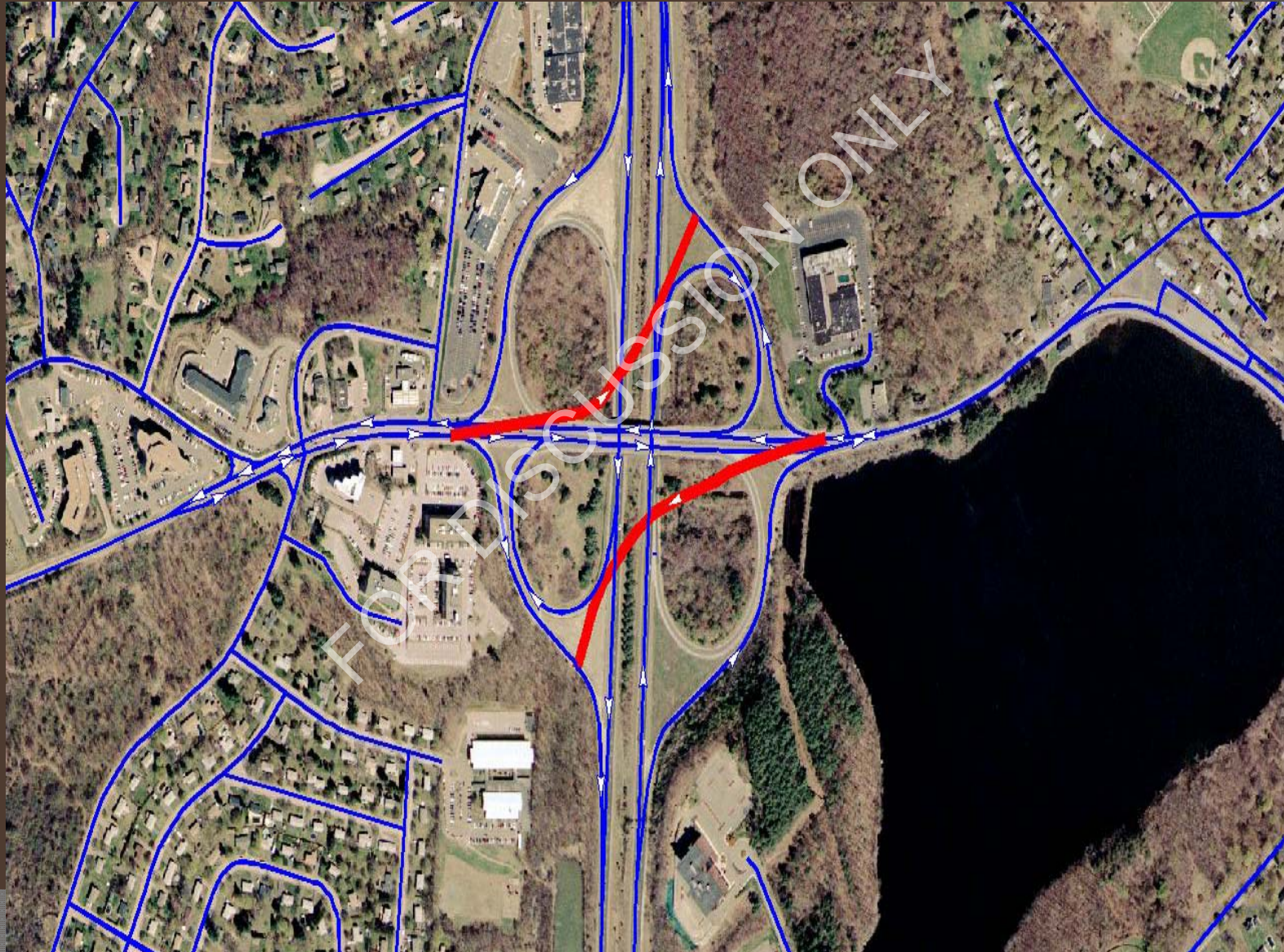
Highway Alternatives

FOR DISCUSSION ONLY

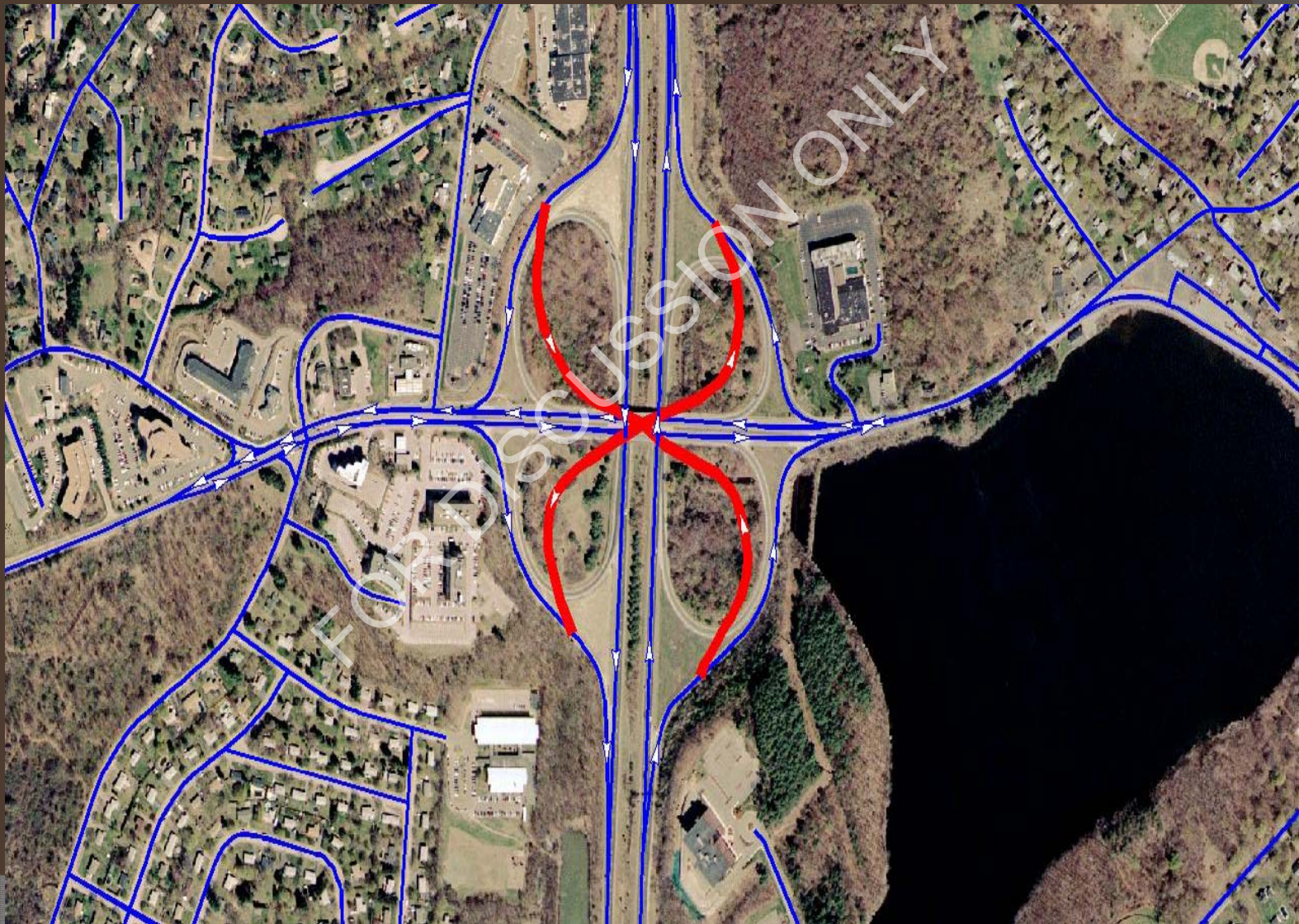
I-290/I-495 Interchange Improvement



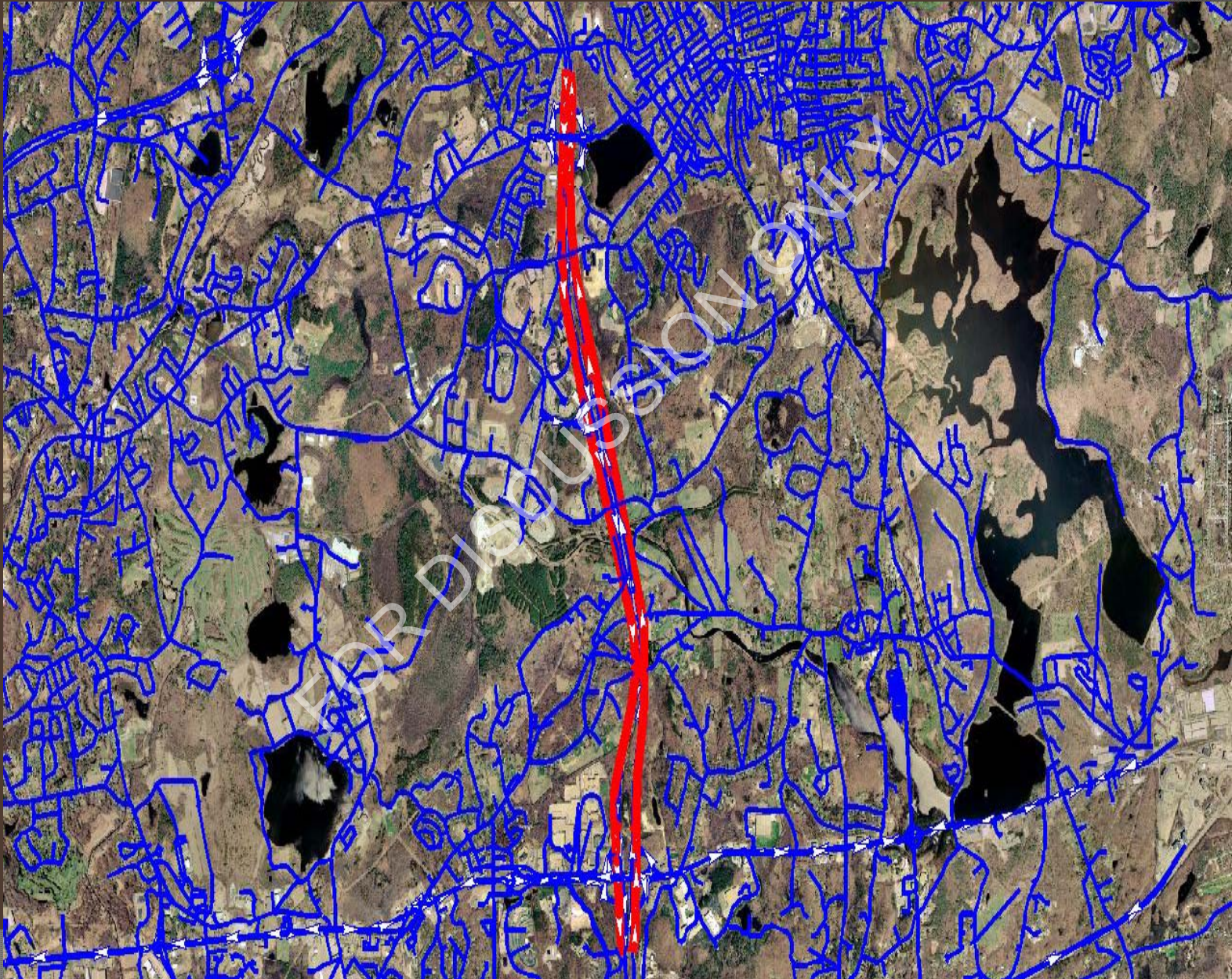
Rte 20/I-495 Interchange Improvement Option - 1



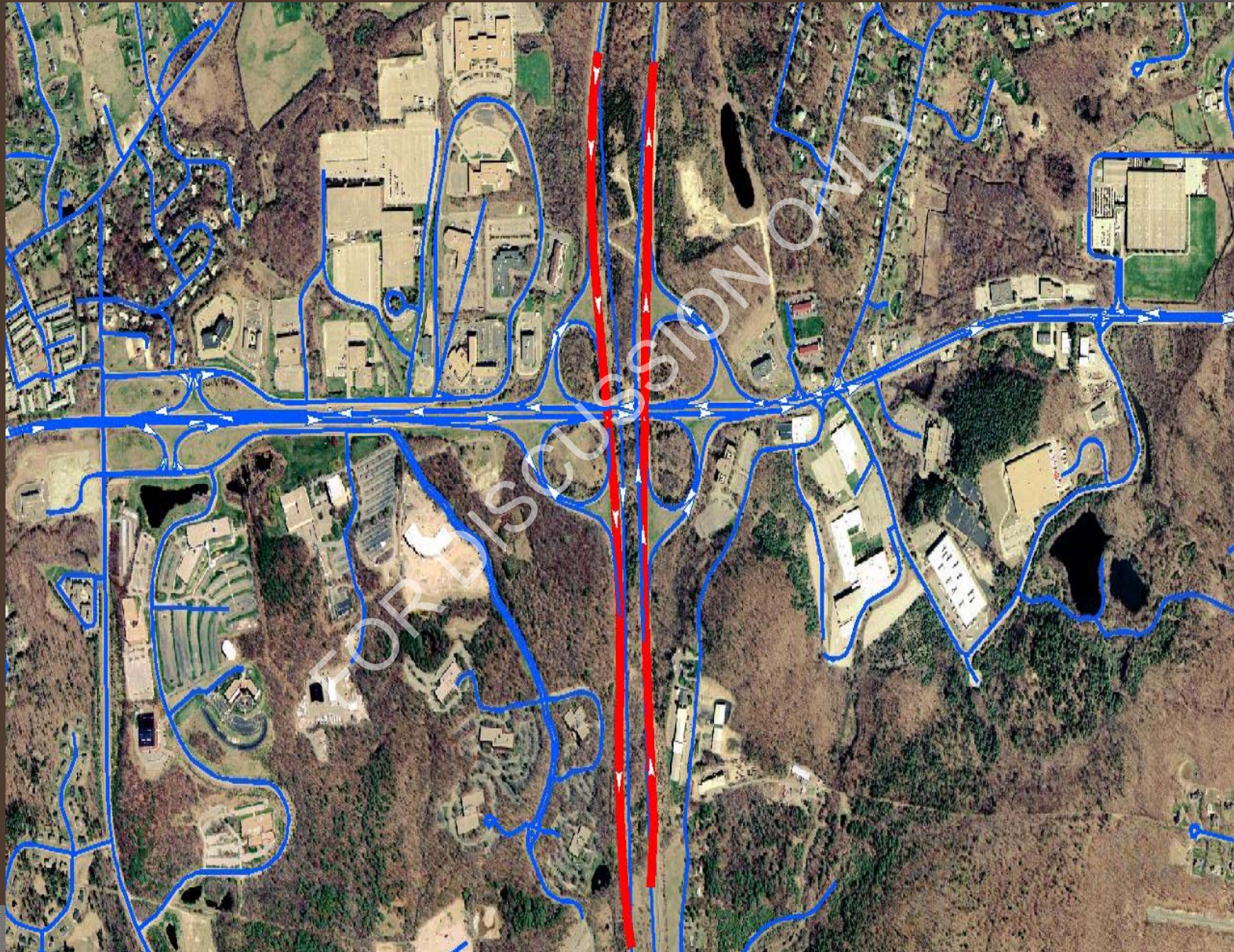
Rte 20/I-495 Interchange Improvement Option - 2



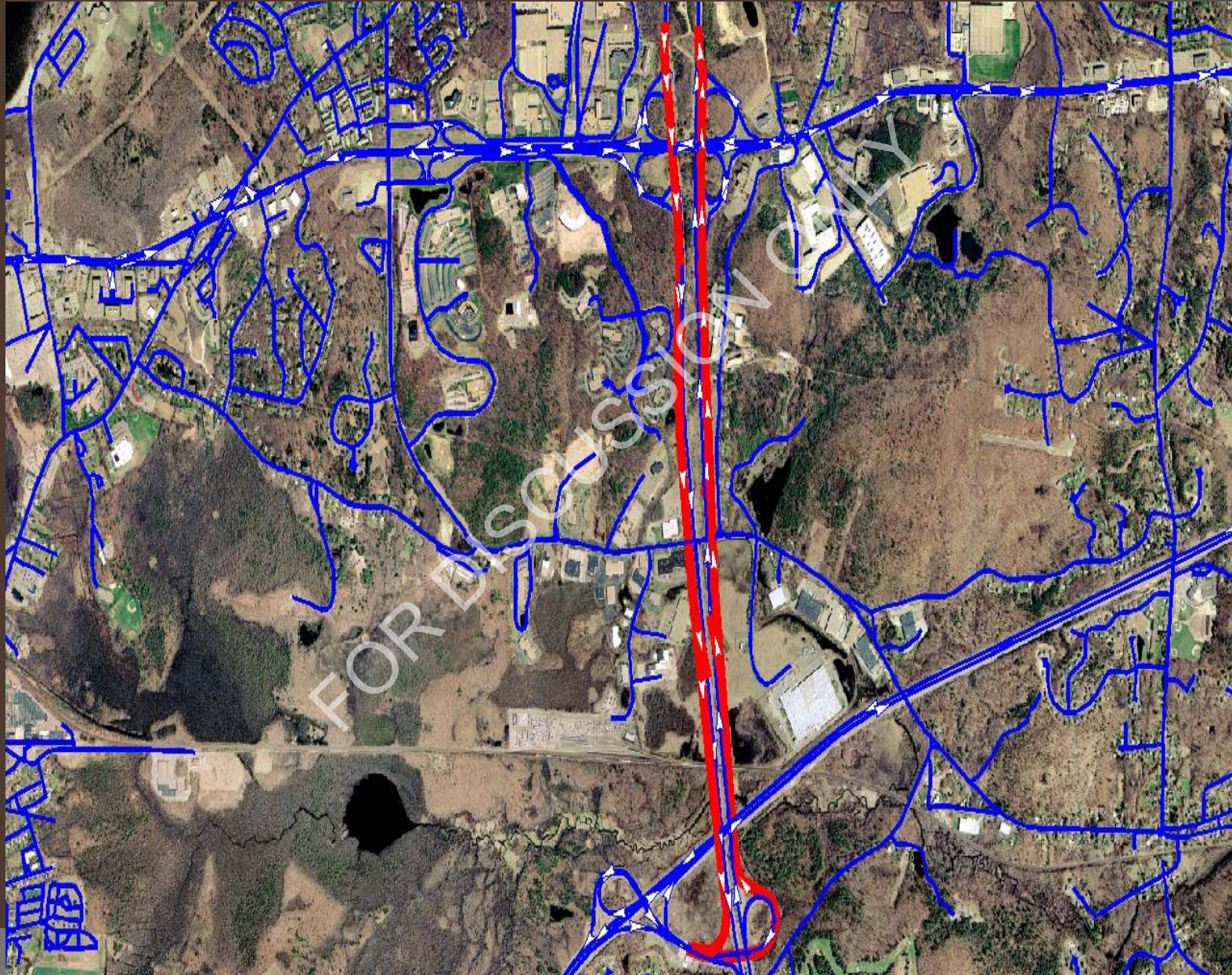
CD ROAD RTE 20 TO RTE 9



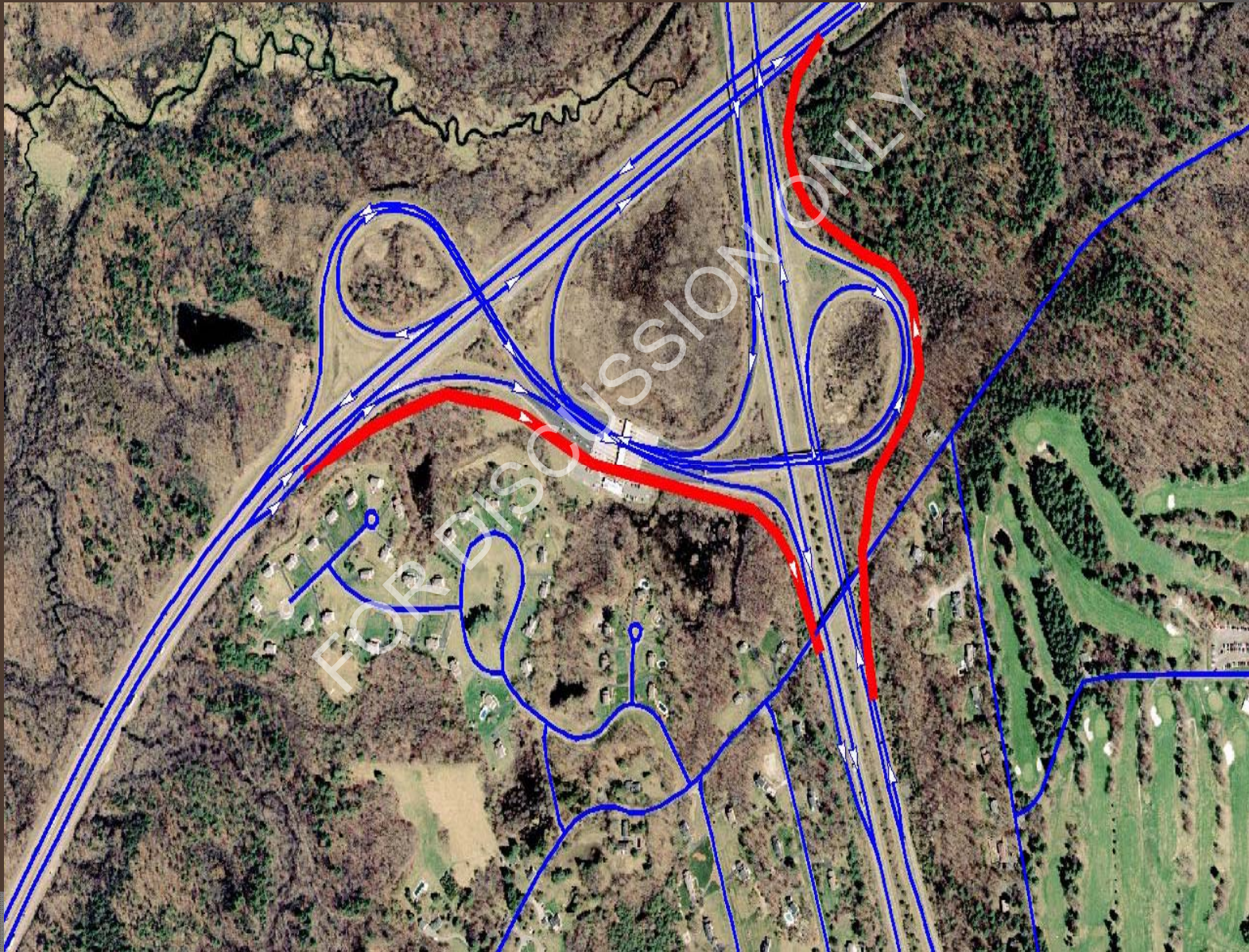
RTE 9 INTERCHANGE IMPROVEMENT



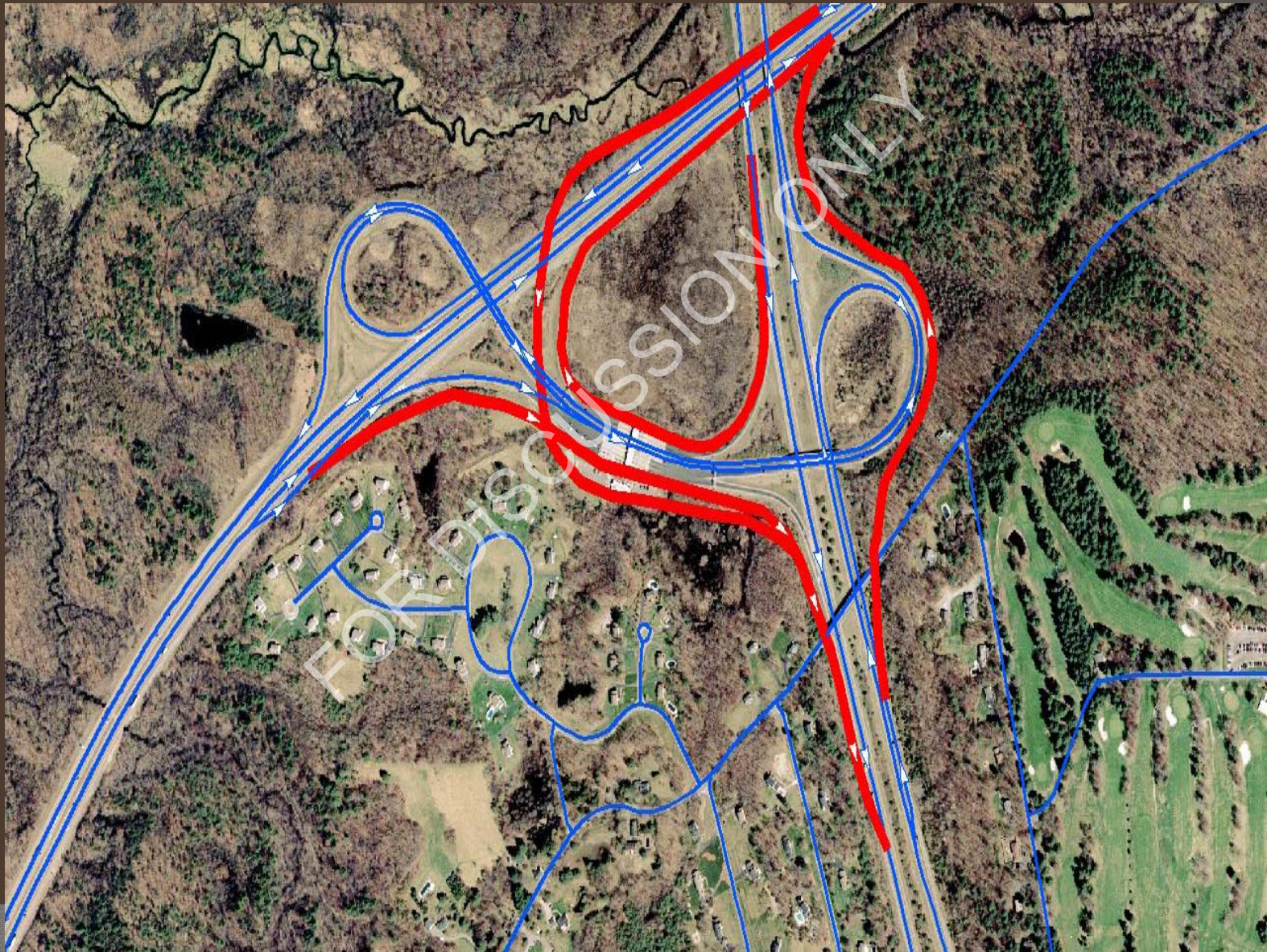
CD ROAD RTE 9 TO I-90



I-90/I-495 Interchange Improvement Option - 1



I-90/I-495 Interchange Improvement Option - 2



ALTERNATIVES COMPARISON

HIGHWAY ALTERNATIVES	Total VMT	Total VHT	VMT comparison with No Build	VHT comparison with No Build	Avg. System Speed
NO BUILD	7,043,704	184,042	n/a	n/a	38.27
I-290/I-495 INTERCHANGE IMPROVEMENT	7,051,185	184,419	7,481	377	38.23
RTE 20/I-495 INTERCHANGE IMPROVEMENT OPTION 1	7,045,628	184,125	1,924	83	38.27
RTE 20/I-495 INTERCHANGE IMPROVEMENT OPTION 2	7,045,280	184,073	1,576	31	38.27
CD ROAD FROM RTE 20 TO RTE 9	7,039,152	183,836	-4,552	-206	38.29
RTE 9/I-495 INTERCHANGE IMPROVEMENT	7,042,202	183,950	-1,502	-92	38.28
CD ROAD FROM RTE 9 TO I-90	7,035,068	183,483	-8,636	-559	38.34
I-90/I-495 INTERCHANGE IMPROVEMENT OPTION 1	7,020,082	183,096	-23,622	-946	38.34
I-90/I-495 INTERCHANGE IMPROVEMENT OPTION 2	6,948,745	181,021	-94,959	-3,021	38.39

Land Use Alternatives

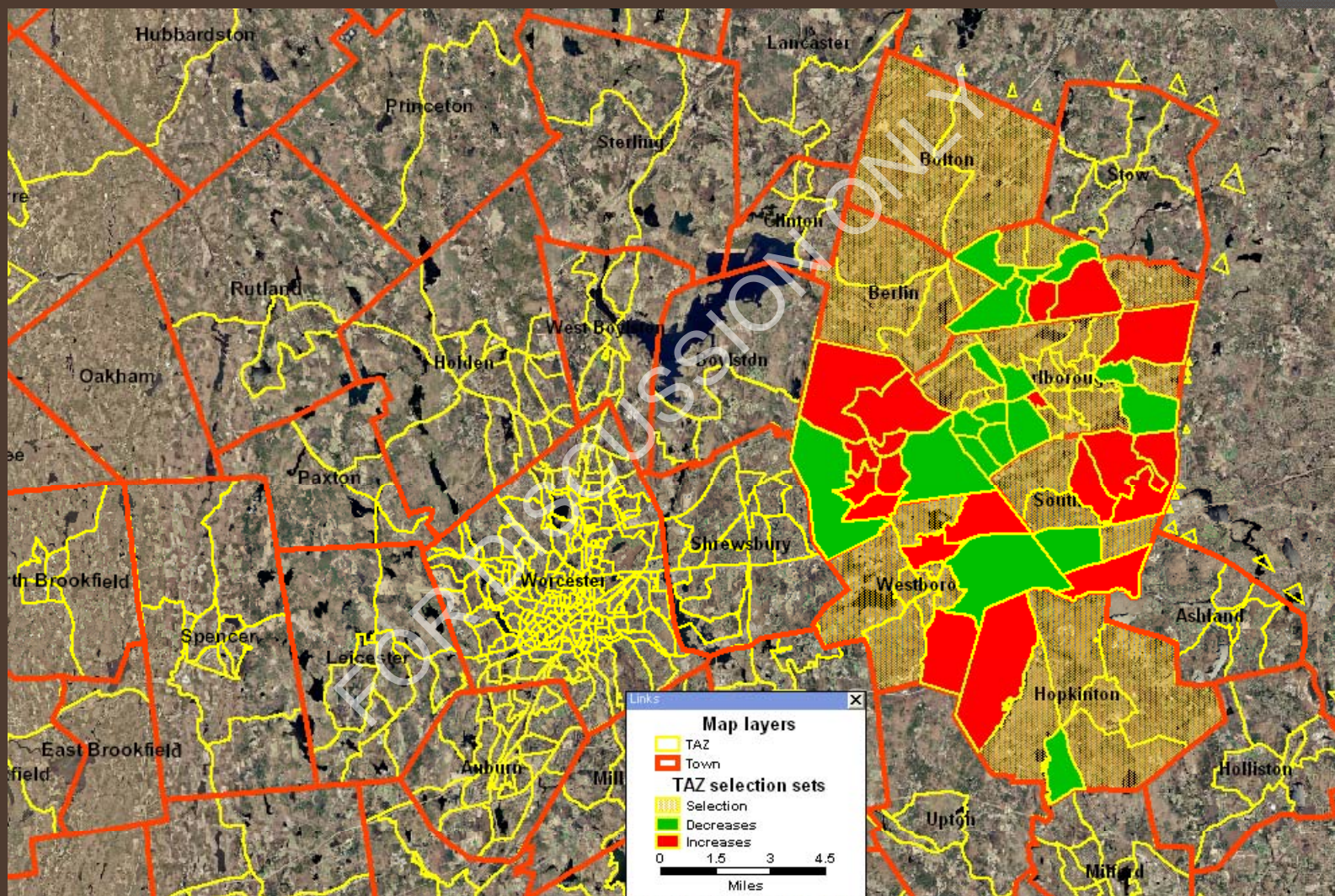
FOR DISCUSSION ONLY

Internal Capture Rates for Multi-Use Development

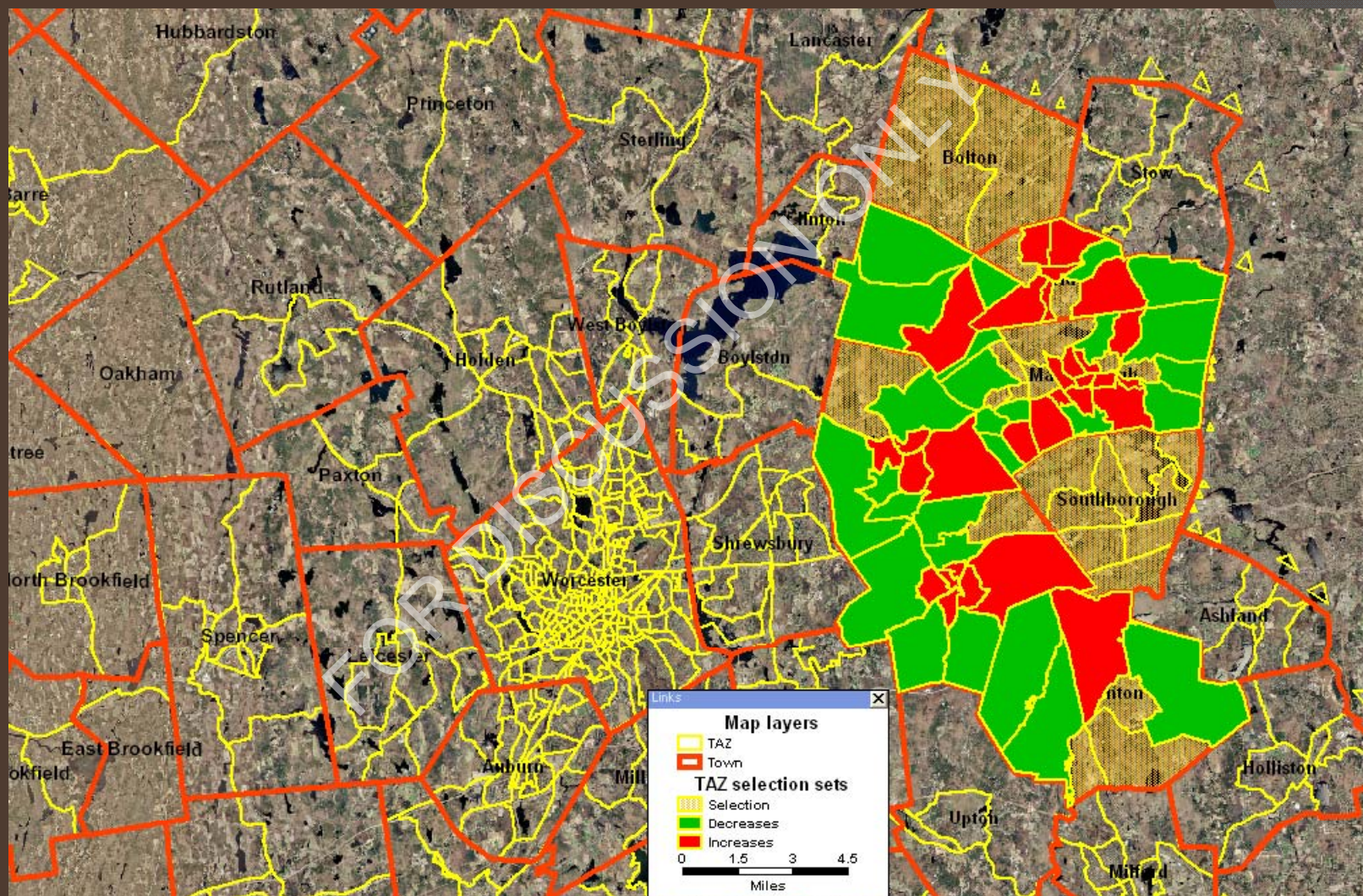
From land use	To Land Use	Daily Internal Capture
Office	Office	2%
Office	Retail	22%
Office	Residential	2%
Retail	Office	3%
Retail	Retail	30%
Retail	Residential	11%
Residential	Office	NA
Residential	Retail	38%
Residential	Residential	NA

Source: ITE Trip Generation Manual

Smart Growth Population Change



Smart Growth Employment Change



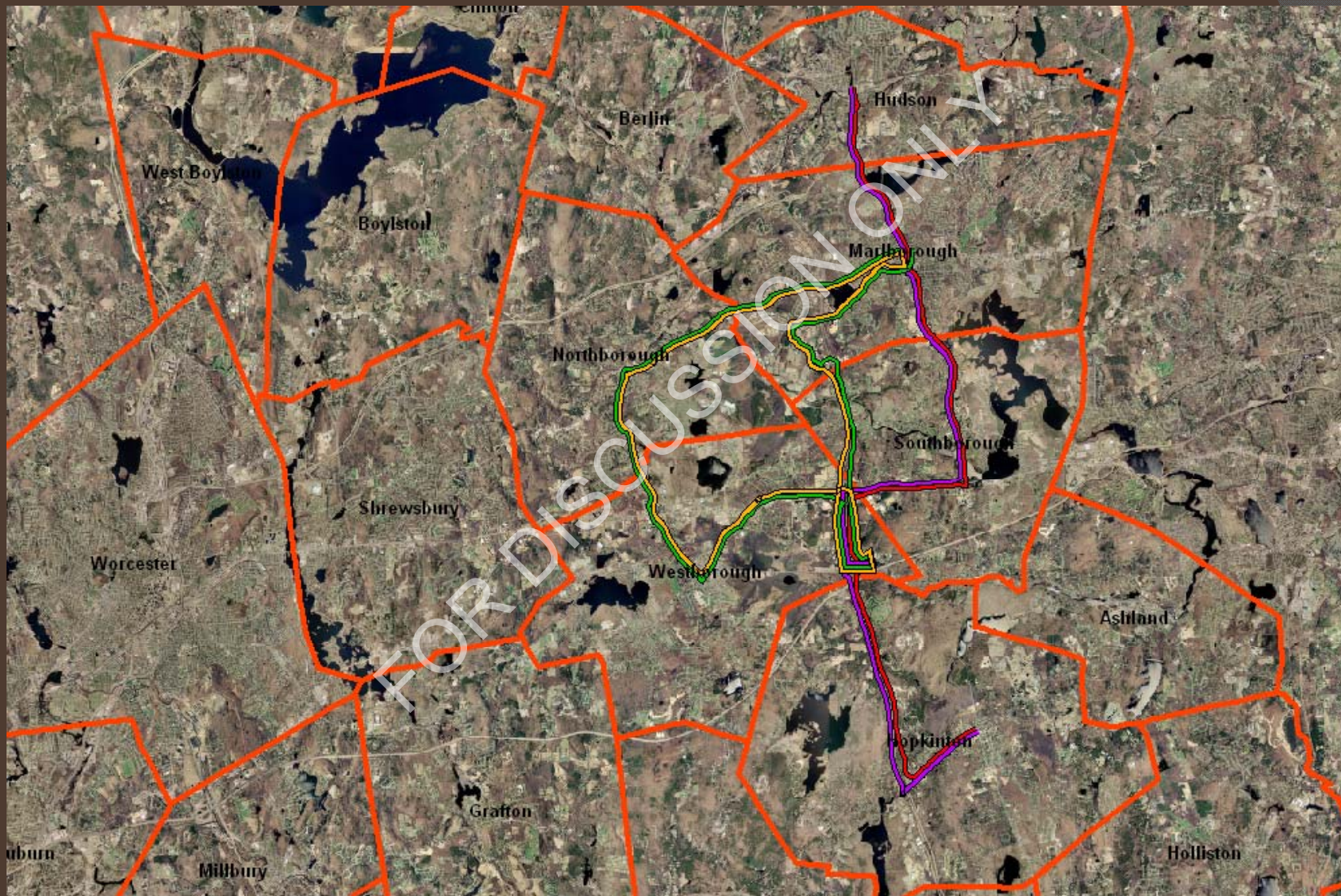
Transit Alternatives

FOR DISCUSSION ONLY

Transit Alternatives

1. Local Fixed Route Bus Service in Hudson, Marlborough, Northborough, Southborough, Westborough, and Hopkinton.
2. I-90 Commuter Rail Mega Station.
3. I-90 Mega Station combined with Local Fixed Route Bus.
4. Option 3 with Commuter Rail connection at Green Line Riverside.

Local Fixed Route Bus



I-90 Commuter Rail Station



Transit Alternatives

- 1) Local Fixed Route Bus Service in Hudson, Marlborough, Northborough, Southborough, Westborough, and Hopkinton.

Approximately 2,900 Weekday Daily Boardings based on 2030 Land Use.

Approximately 3,300 Weekday Daily Boardings based on 2030 Smart Growth Land Use.

Smart Growth achieves 14% increase in transit usage.

Transit Alternatives

2) I-90 Commuter Rail Mega Station.

Approximately 5,300 Daily Commuter Rail Boardings at I-90, when implemented as a stand alone transit station.

However, only 600 of these are new users, 4,700 are diverted from other existing commuter rail stations.

Transit Alternatives

3) I-90 Mega Station combined with Feeder Bus.

Approximately 6,800 Daily Commuter Rail Boardings at I-90, an increase of approximately 1,500 Boardings over stand alone Commuter Rail Station.

Also Local Fixed Route Bus (Smart Growth option) ridership would increase from 3,300 to 4,800.

Transit Alternatives

- 4) I-90 Mega Station combined with Feeder Bus and a direct connection between the Commuter Rail and Green Line at Riverside.

Approximately 7,200 Daily Commuter Rail Boardings at I-90, an increase of approximately 400 Boardings due to Riverside connection.

Discussion

- Highway
- Land Use
- Transit

FOR DISCUSSION ONLY

Next Steps

FOR DISCUSSION ONLY

Follow-up this month

- Meeting with Secretary Bialecki (EOHED), Commissioner Paiewonsky (EOT/MassHighway) and Deputy Secretary Mohler (EOT/MassHighway) this Thursday
- I-495/Route 9 efforts
- Final report – end of July (we need your contact information)
- Survey to community officials

Future Efforts?

- Ongoing regional discussion:

- Land use changes
- Regional development
- Local regulatory changes

- Impacts on mobility & transportation infrastructure