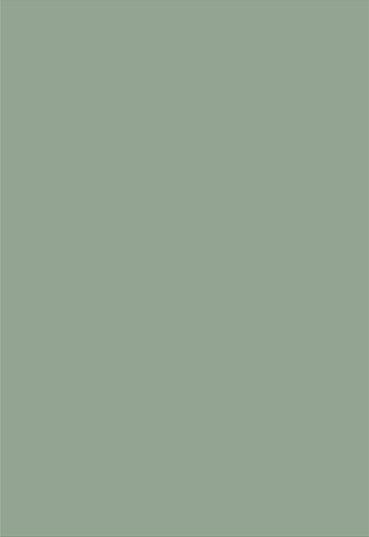




I-93 Transit Investment Study
Technical Advisory Committee

August 26, 2008

at



Southern New Hampshire Commission

Manchester, NH

Agenda

- Study conclusions – summary
 - Rail
 - Bus
- Ridership/benefits
- Bus on shoulder implementation plan
- Strategic implementation plan

I-93 Study Corridor



Key Study
Recommendations

Summary:

- Begin *phased* implementation of Manchester-Boston bus on shoulder (BOS) transit services.
- Preserve M&L right-of-way for future transit use.
- Pursue *bi-state* agreements for transit service.

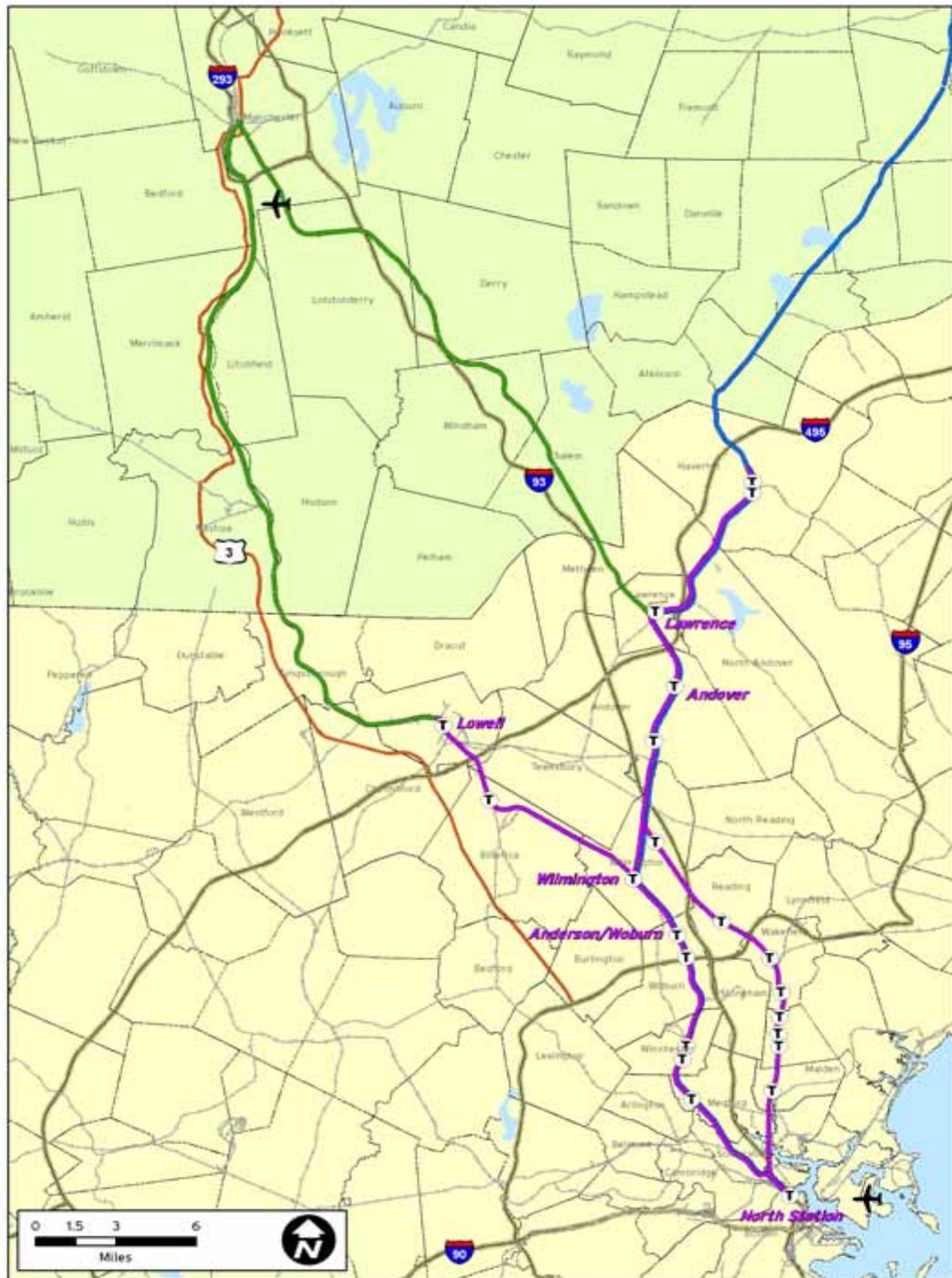
**Evaluation
Summary**

Option	M&L Boston to Exit 5	Bus on Shoulder
Capital Costs	\$197M	\$80M
O&M Costs	\$9.2M	\$4.9M
Passenger Revenue	\$8.8M	\$9.2M
Daily Trips	10,200	10,400
Negative Environmental Impacts	Low	Low
Positive Land Use Effects	High	Med-Low

Financial Requirements

	Bus on shoulder	M&L
Total capital	\$80M	\$197M
Federal share	\$40M	\$98.5M
Annual non-federal	\$2.5M	\$5.9M
Annual O&M	\$4.9M	\$9.2M
Total annual	\$7.4	\$15.1
Passenger Revenue	\$9.2M	\$8.8M
Total annual state and local funding		\$6.3 M

M&L Commuter Rail



I-93 BOS Plan



Examples of BOS Operations

- Twin Cities, MN
 - 230 miles of shoulders
 - Buses travel at up to 35mph
 - Use of shoulders is by driver discretion
- Ottawa, CAN
 - 12 miles of highway shoulders in Transitway
 - Buses travel at posted speed limit (62mph)
- No serious safety concerns
 - MN experiences 20 annual minor accidents on 271 miles of highway BOS
 - Ottawa has experienced 1 accident over the past 15 years

**BOS
Ottawa**



BOS Twin Cities



Estimated Average Daily Demand (2030 Inbound Boardings)

Alternative	New Hampshire Stations								Massachusetts Stations					Total		
	Manchester	Exit 5/ Londonderry		Exit 4/ Derry		Exit 3/ Windham		Exit 2/ Salem		Methuen	Lawrence	Andover	Anderson / Woburn		Boston Ailightings (%)	
Commuter Rail on M&L	N/A ¹	475-525		485-540		N/A		830-910		760-840	1,310 – 1,450	550-610	460-500	94%	4,870 to 5,375	
Bus On Shoulder ²	650-725	865-965		260-315		360-410		560-620		2,250-2,510		N/A	N/A	N/A	100%	4,945 to 5,545
		55-65	810-900	50-55	210-260	10-20	350-390	0	560-620	100-120	2,150-2,390					
No Build	380-420	530-590		120-140		120-140		530-590		N/A	N/A	N/A	N/A	N/A	1,680 to 1,880	

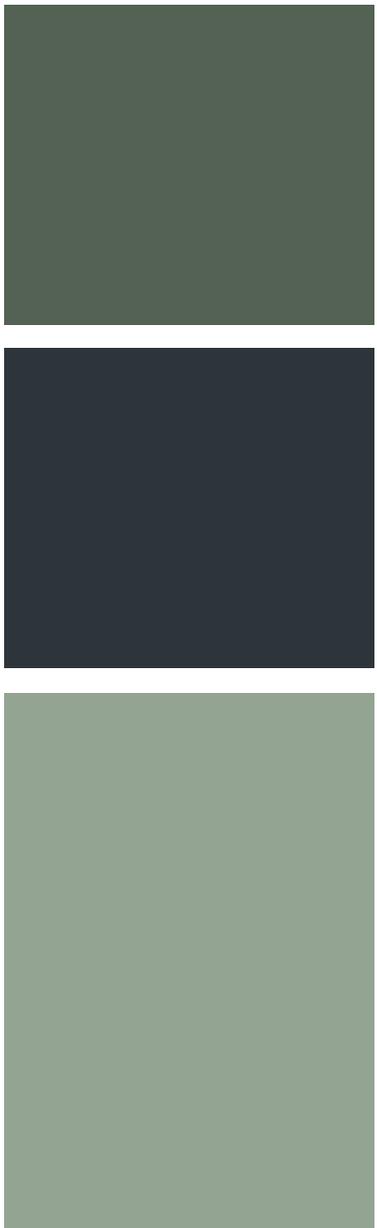
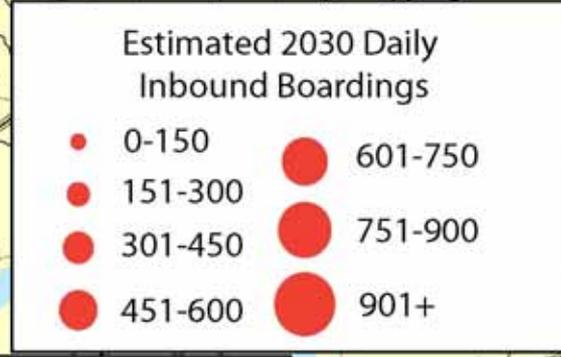
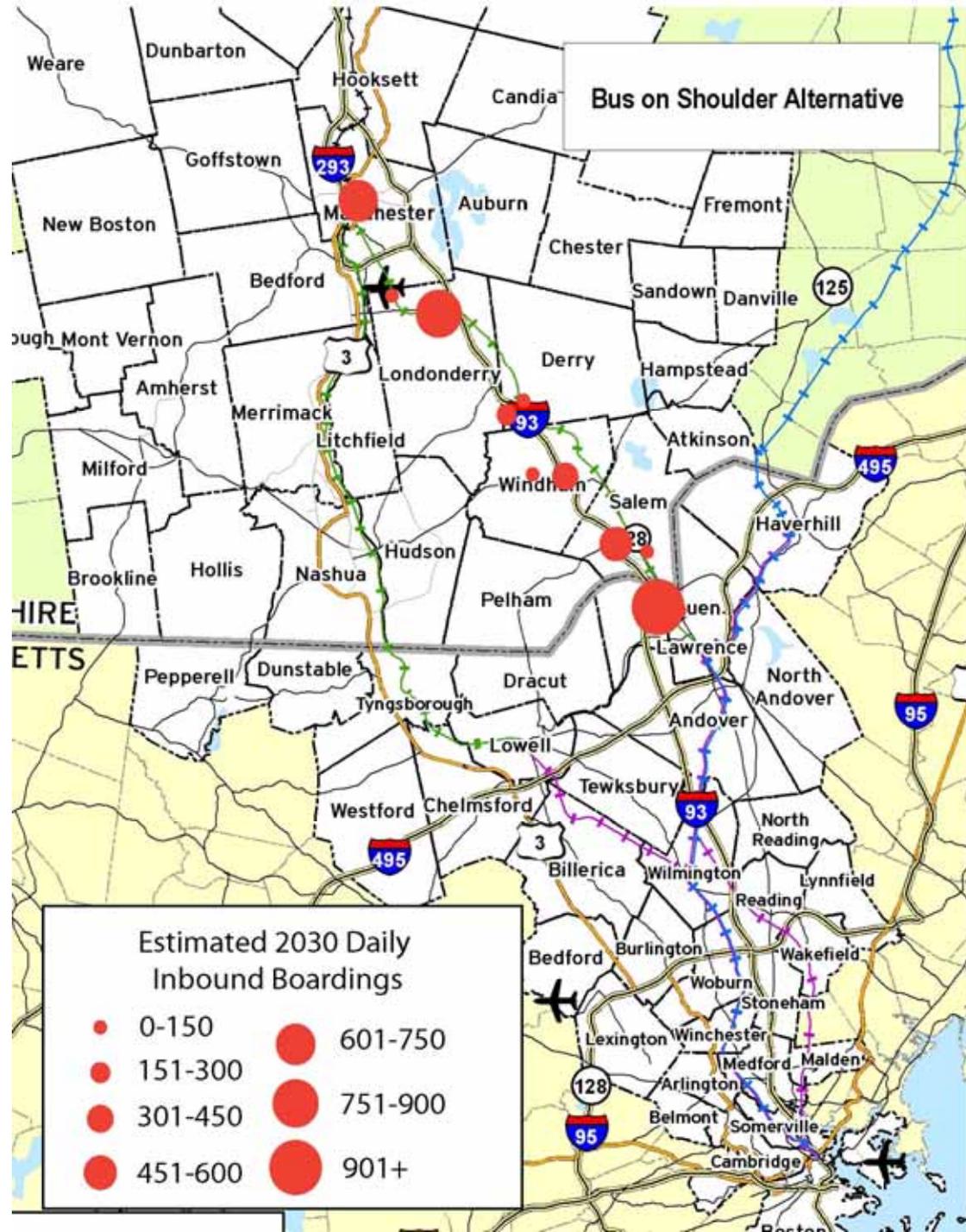
Notes:

1. – Concord Trailways service from Manchester (operating as it does today) is estimated to have 700 daily inbound boardings

2 – Ridership for specific bus stops are included. Number to left is “town center” (or Airport) stop, number to right is Park and Ride stop.



Bus on Shoulder Alternative



I-93 Corridor Ridership Forecasts

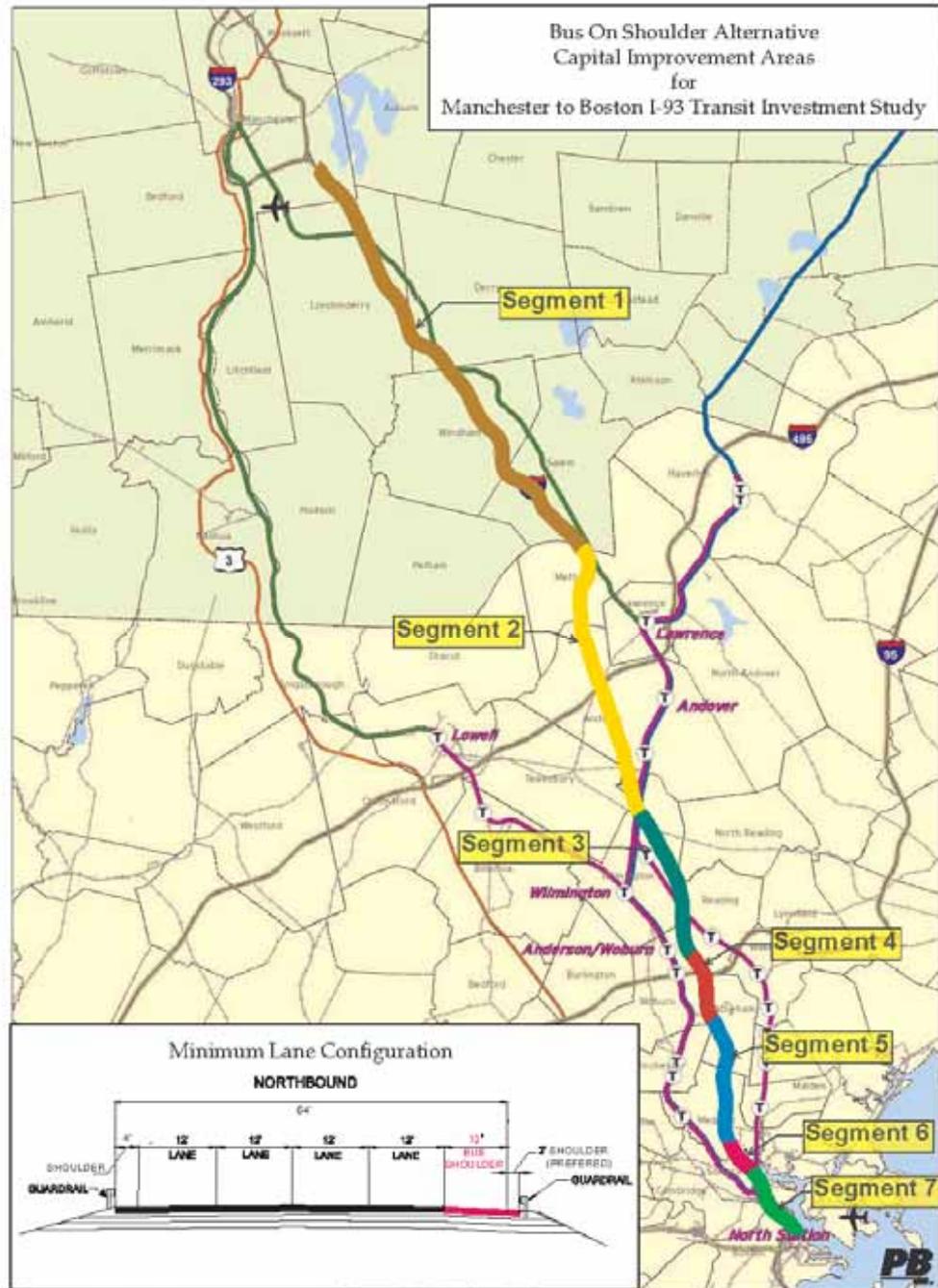
Key Findings

- **Ridership demand for bus on shoulder alternative and M&L rail are equivalent.**
- **Bus on shoulder ridership from town centers is low; this is essentially a park-and-ride strategy.**
- **Extending M&L service from Exit 5 through the airport to downtown Manchester, adds about 700 boardings, increase of eight percent.**

I-93 Transit Investment Study

- **As expected, rail alternative is strongly Boston-oriented; 89% of southbound alightings are at North Station.**
- **Neither rail nor bus on shoulders serves I-495 and 128 corridors well, an expected finding.**
- **A high percentage of rail benefits accrue to Massachusetts residents; 67 percent of southbound boardings are at Massachusetts stations.**
- **No alternative will divert enough traffic from the I-93 roadway in NH to affect levels of service.**

Bus On Shoulder Capital Improvements



**Bus On
Shoulder
Implementation
Plan**

- Phase 1 (2008-2013)
 - Incorporate BOS into design of projects:
 - Route 110/113 Rotary
 - Lowell Junction
 - I-93/I-95 Interchange
- Phase 2 (2009-2013)
 - Medford to I-95 Improvements - \$25-30 mil.
- Phase 3 (2013-2025)
 - Construction of projects listed in Phase 1
- Phase 4 (2025-2030)
 - I-95 to State Line - \$60-75 mil.
(Incorporation of BOS into MVPC I-93 widening)
- Phase 5 (2025-2030)
 - New Hampshire Improvements \$45-65 mil.

- Of the options considered, the M&L corridor has the potential to provide **highly effective future transit services** that will provide direct benefits to the I-93 corridor,
 - Potential for more sustainable land use pattern
 - Limited adverse environmental effects
 - Transit services comparable to BOS with greater capacity
 - Benefits clearly bi-state (and MA improvements would allow for enhanced Downeaster (ME) service)
- However, the corridor also has the **highest challenges to implementation** in terms of cost and cost effectiveness.
 - Capital cost (Exit 5-North Station): \$197 million (vs. \$80 million for BOS)
 - Operating cost: approximately \$9 million per year (vs. \$5 million for BOS)
 - Cost effectiveness: probably limited ability to utilize federal funding in near term due to low cost effectiveness

**Strategic
Implementation
Plan**
Study Team
Recommendations

- In addition, there are significant challenges to **community acceptance**.
 - Impacts to alternative uses, such as multiple bicycle paths
 - Safety, including numerous grade crossings
 - Noise

- The Study Team anticipates that *at some future time* (possibly after study's 2030 horizon year) conditions will support implementation of rail service on the M&L corridor.

**Strategic
Implementation
Plan**
Study Team
Recommendations

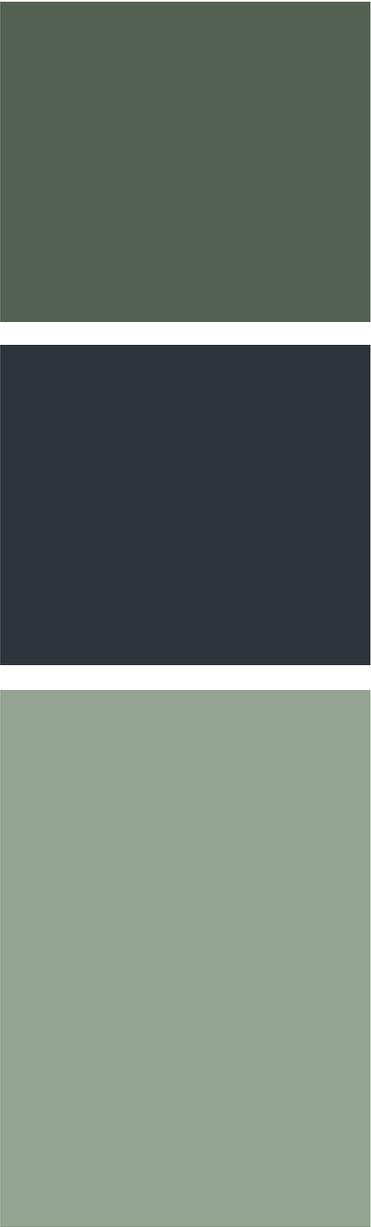
- Due to the fact that rail service along the M&L is not feasible in the near-term, service along the New Hampshire Main Line (**Boston-Nashua-Manchester**) should be maintained as the primary focus for implementation of commuter rail service in New Hampshire.
 - Easiest line to implement due to existing conditions/operations
 - Capital and Operating costs are more modest
 - Cost-effectiveness indicates potential for federal funding
 - Can provide access to downtown Manchester
 - Has community acceptance in host communities
 - Success could facilitate service on additional routes

- In order to quickly address mobility issues in the I-93 corridor New Hampshire and Massachusetts should begin **phased implementation of bus services using a BOS strategy** between Manchester and downtown Boston. During implementation, conditions should be periodically reassessed to determine if potential for M&L service implementation is possible.
 - M&L assessment decision points built into BOS implementation plan
 - Avoid unnecessary duplication of service, facilities

- Begin now to **implement Manchester-Boston BOS.**
 - Agreement(s) among NHDOT, MAEOT, MHD
 - Implementation task force: NHDOT, EOT, MHD, transit agencies and operators, FTA, FHWA, RPCs
 - Facilities, equipment, operating plans, phasing
 - Benefits (again, clearly bi-state), distribution of benefits, financial plan(s)
 - Environmental Assessment

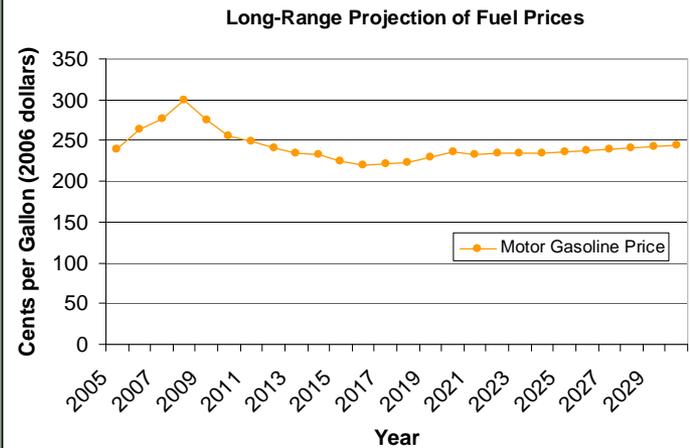
- **Steps to preserve M&L** for future transit use will be necessary.
 - Develop public education program for towns, RPCs about ROW preservation
 - Review, agree upon conceptual engineering details with MAEOT, MBTA for future rail use
 - Address identified unauthorized encroachments
 - Work to prevent additional encroachments

- The Study Team recommends that **funding** sources be identified to support operating both capital and operating costs.
 - The study will include alternative financial options.
 - Typical sources of funding in US
 - Potential options in NH/MA
 - Assumption for rail service in NH: general revenue source
- NHDOT and MAEOT **next steps**
 - Take steps toward a transit implementation agreement between NHDOT and MAEOT
 - Establish transit funding task force (legislative study committee?)
 - Begin environmental assessment for BOS
 - Hold project briefing with each M&L town, RPC
 - Establish M&L preservation/future use understanding with MAEOT, MBTA
 - Identify protection steps for M&L right-of-way



Discussion

Gas Price Sensitivity Analysis Background



Note: Sales weighted-average price for all grades. Includes Federal, State, and local taxes.

Source: Energy Information Administration, Annual Energy Outlook 2008

