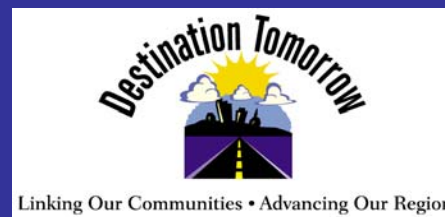


# **PACTS**

## **Destination Tomorrow Expansion Subcommittee**

### **Alternatives Analysis: Transit Findings**

**October 21, 2004**



# Existing Primary Bus Transit Services



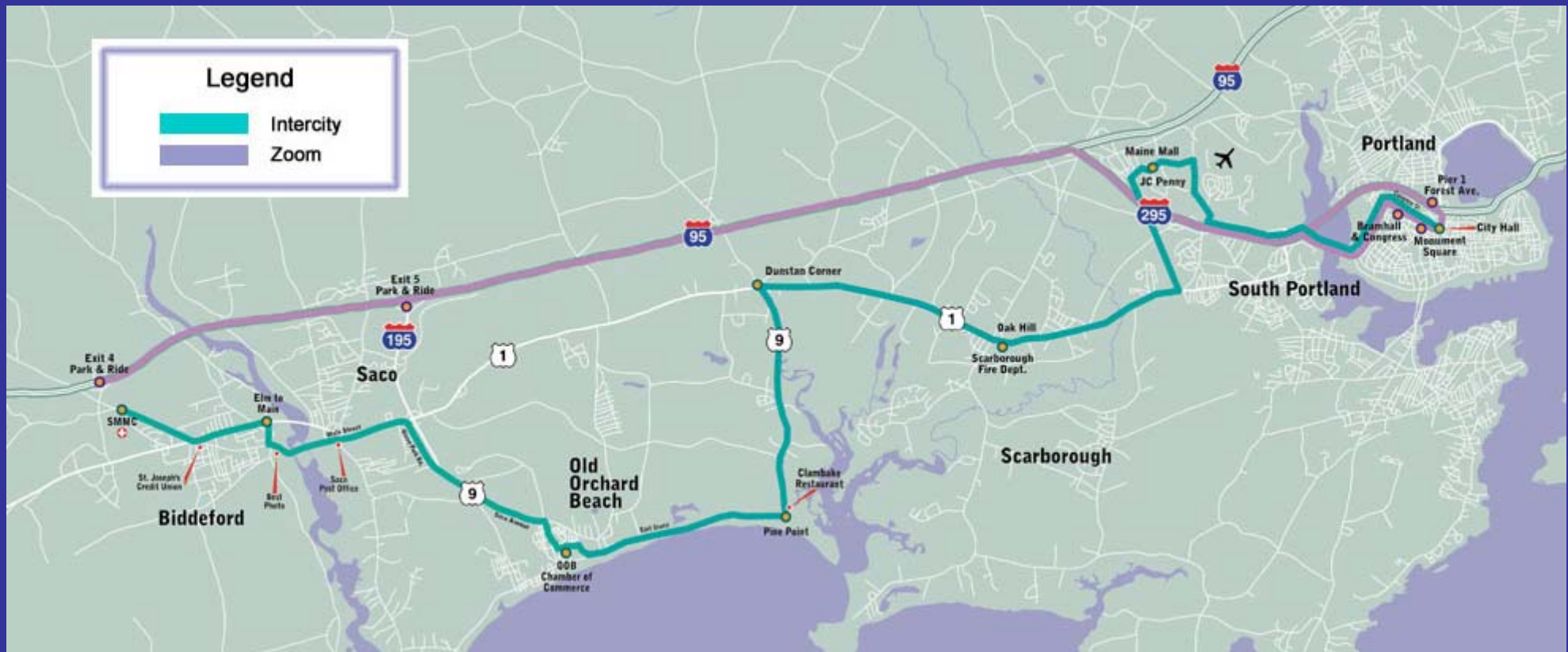
## Tri-Town Service: 2 Routes



# Existing Primary Bus Transit Services



## Shuttle Bus Intercity & Turnpike ZOOM



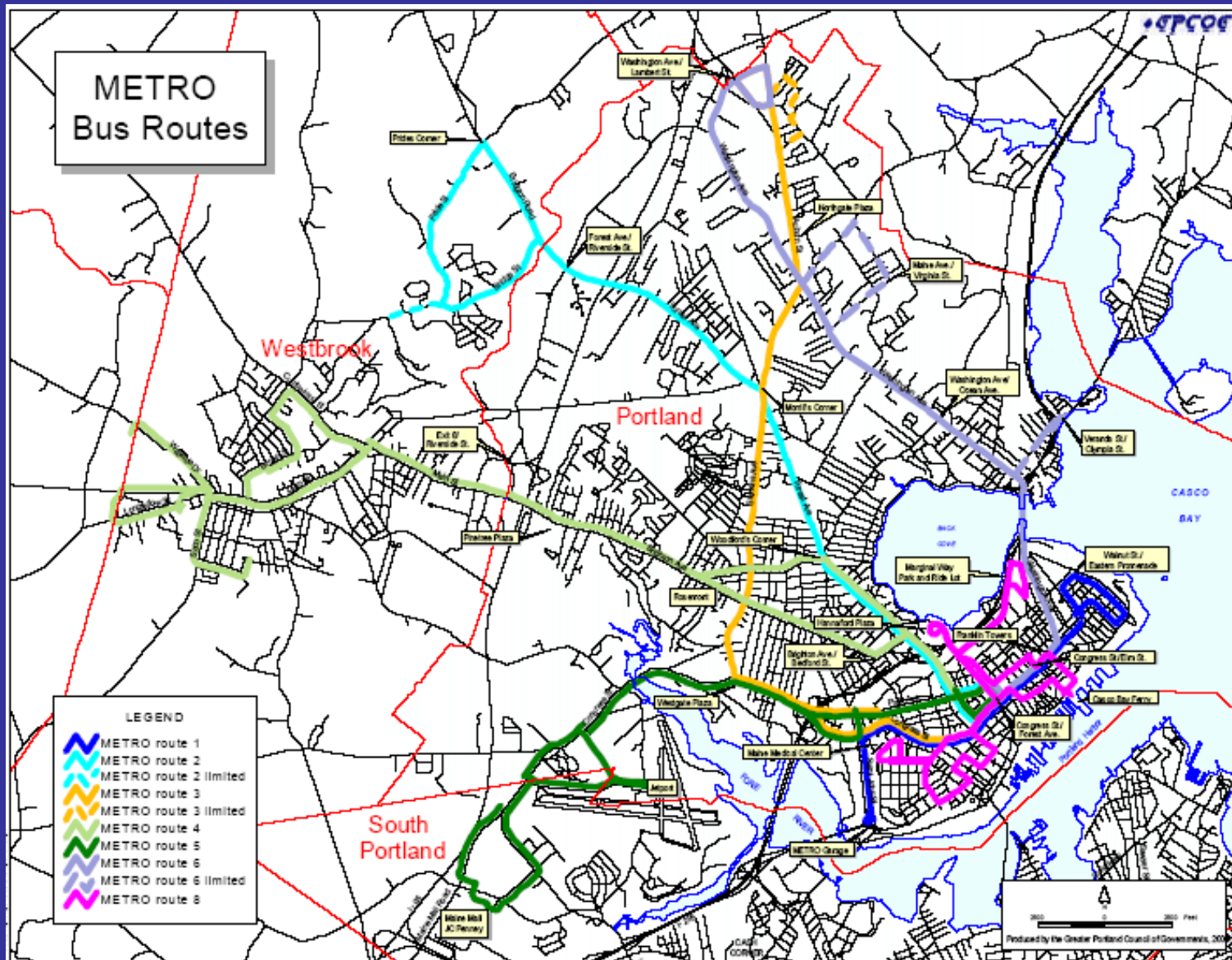


# Existing Primary Bus Transit Services



## METRO Bus Service: 8 Routes

(Plus new Falmouth Bus Service)



# Existing Primary Bus Transit Services



## Portland Explorer Service: Mall-Airport-Hotel-Transport Centers



## Three Transportation Packages Evaluated

- **Groups of Similar Strategies (Generally) In New PACTS Area Modeled Together in ‘Packages’**

### **1. Interstate Packages (2 groups of strategies)**

- **Strategies related to I-295**
- **Strategies related to the Maine Turnpike**

### **2. Arterial Package (1 group of strategies)**

### **3. Transit Packages (2 groups of strategies)**

- **Strategies to Expand Existing Transit**
- **Strategies to New Transit Service Improvements**

## 'Best Of' Package of Strategies from Destination Tomorrow

- **Strategies Carried Forward as the 'Best Of' from Destination Tomorrow**
  - **Roadway**
  - **Transit**
- **These 'Best Of' Strategies are Added to those in the 2025 No Build Network (Presented at Previous Meeting) and are Part of All of the Five Packages Tested for DTx**

# Alternatives Analysis



- **Try to Assess Benefits / Impacts of Each Strategy Individually (even though part of a package)**
- **All Packages Are Tested With Trend 2025 Population and Employment Forecasts**

## What's Modeled In The Theme Packages?

**No Build** + **'Best of'** + **New Theme**  
**2025** + ***DT*** + **Package**  
**Network** + **Strategies** + **Strategies**

## ‘Best of’ Project Package from Destination Tomorrow

### Highway Network Strategies

- Rebuild 295/Forest Ave interchange in Portland
- Relocate existing NB entry ramp to 295 from Westbrook St in South Portland
- New NB exit ramp from 295 to Route 1 at Exit 4
- Add 3rd lane on NB and SB 295 between Forest and Franklin interchanges in Portland
- Add 3rd lane on NB and SB 295 between Westbrook St and Route 1 interchanges in South Portland
- Modify Route 703 ramps at Maine Mall Rd
- Extend Route 703 across Turnpike to intersect with Running Hill Road (full access from both directions to/from Turnpike)
- Widen Running Hill to 4 lanes (Spring to SR 114)
- Widen Cummings/Spring to four lanes (Payne to Eisenhower)
- Extend Larrabee Road to Eisenhower/Spring intersection; at-grade intersection with Westbrook/Stroudwater St
- New Industrial Park Rd from Saco/Eisenhower Dr to Moshers Corner (Route 25)
- Widen Congress St to 5 lanes between Sewall and Stevens

## ‘Best of’ Project Package from Destination Tomorrow

### Transit Network Strategies

- Extend METRO service to Falmouth/Exit 10
- Extend METRO service to Walmart/Payne Rd in Scarborough
- Double frequency on all existing METRO and South Portland Bus routes
- New bus service between Gorham and Portland via Westbrook
- New bus service between Portland and Dunstan Corner
- New commuter bus service between North Windham and Portland via Westbrook

# Alternatives Analysis



## Transit Theme #1

### Expand Existing Routes (or new routes in No Build)

- Double Tri-Town Service bus frequency (to 15 minute frequency) in Biddeford-Saco-Old Orchard Beach
- Double bus frequency (to 30 minute frequency) for Biddeford-Sanford (60 minute frequency new service in No Build Network)
- Double bus frequency for Biddeford-Kennebunk (to 30 minute frequency) (60 minute frequency new service in No Build Network)
- Double bus frequency for Biddeford-Portland Service (to 30 minutes)

# Alternatives Analysis



## Transit Theme #2 New Transit Service

- New passenger rail service
  - Windham to Portland (replaces bus)
  - Portland to Lewiston-Auburn
- New Biddeford-Saco-Old Orchard Beach bus service to Waterboro
- New commuter bus between Portland and Pineland

# Alternatives Analysis



## Evaluation Steps

- 1. Look at Change in Trips & Mode Share**
- 2. Look at System-wide Total Vehicle Miles Traveled (VMT) & Vehicle Hours Traveled (VHT) Measures**
  - **Reductions in VMT and VHT are desirable/‘good’**
- 3. Look at System-wide Changes in Traffic Volumes for the Theme Package Networks versus Traffic Volumes in**
  - **Existing 2000**
  - **2025 No Build**
  - **2025 ‘Best Of’**

# Alternatives Analysis



## Change in System Transit Trips & Mode Share

	2025									
	2000 Base		Future 'No Build'		'DT Best of'		Transit #1		Transit #2	
	# of Trips	Mode Share	# of Trips	Mode Share	# of Trips	Mode Share	# of Trips	Mode Share	# of Trips	Mode Share
Vehicles	114,796		140,927		140,735		140,700		140,735	
Person Vehicles	138,712	92.8%	170,062	92.6%	169,644	92.4%	169,541	92.3%	169,432	92.3%
Walk/Bike	9,811	6.6%	12,240	6.7%	12,214	6.7%	12,203	6.6%	12,214	6.7%
Bus	1,013	0.7%	1,360	0.7%	1,804	1.0%	1,918	1.0%	2,016	1.1%
			+350 trips		+800 trips		+900 trips		+1000 trips	
Total Trips	149,536		183,662		183,662		183,662		183,662	

**+34,125 trips**  
**+23%**

**Transit Remains @ ~ 1% of  
Total Regional Peak Hour Trips**

# Alternatives Analysis



## Change in System VMT & VHT Compared to 2025 No Build

	VMT Redux	VHT Redux
Transit #1	-0.4%	-0.8%
Transit #2	-0.7%	-1.4%

Essentially negligible from a system/modeling standpoint.

Source: PACTS Model, 2004

# Alternatives Analysis



## Current Peak Hour Ridership

Service	PM Peak Hour Ridership
METRO	400
SPBS	80
Tri-Town	45
VIP: USM	180
ShuttleBus	15
ZOOM	30
RTP: BIW	80
	830

**Typical Rule of Thumb:**  
**(Service Elasticity)**  
**Doubling Service (+100%)**  
**=**  
**+50% in Ridership**

PACTS Model estimates ~1000 peak hour transit trips

# Alternatives Analysis



## Assessing Transit/Alternative Mode/TDM Effectiveness At Reducing Congestion

I-295: Yarmouth (as sample section)		Current	10-Year	20-Year
Year		2000	2010	2020
Annual Average Daily Traffic (AADT)		50,000	62,500	75,000
Design Hour Volume (DHV, 30th Highest Hour, one direction)		3000	3750	4500
Volume/Capacity Ratio (V/C)		0.75	0.94	1.13
Level of Service		C-D	E	F
% Reduction in Volume to Reach LOS B (borderline B-C)		29%	43%	53%
% Reduction in Volume to Reach LOS C (borderline C-D)		1%	21%	34%
% Reduction in Volume to Reach LOS D (borderline D-E)		n/a	5%	21%
% Reduction in Volume to Reach LOS E (borderline E-F)		n/a	n/a	11%
Reduction in Design Hour Volume to Reach LOS B (borderline B-C)		880	1630	2380
Reduction in Design Hour Volume to Reach LOS C (borderline C-D)		40	790	1540
Reduction in Design Hour Volume to Reach LOS D (borderline D-E)		n/a	190	940
Reduction in Design Hour Volume to Reach LOS E (borderline E-F)		n/a	n/a	500

# Alternatives Analysis



## Passenger Rail: Order of Magnitude Potential Ridership

I-295: North Corridor	Annual		Weekday Daily		Note
	2008	2026	2008	2026	
Ptld-Brunswick: Standalone	40,000	57,000	160	230	2 R/T per day
Ptld-Brunswick: via Rockland Branch	<u>33,000</u>	<u>72,500</u>	130	300	2 R/T per day
	73,000	129,500	290	530	
Maine Turnpike: North Corridor					
Lewiston-Auburn	131,000	185,000	525	740	2 R/T per day
Maine Turnpike: South Corridor					
	2009	2026	2009	2026	
Downeaster	<u>Corrected: Was 250,000</u> 130,000 * current	174,200	350	475	assumes +2%/yr; 4 R/T
Add'l from Ptld-Brunswick	54,000	92,000	220	370	2 R/T per day
Add'l from L-A	<u>13,100</u>	<u>18,000</u>	50	75	2 R/T per day
	317,100	445,000	620	920	

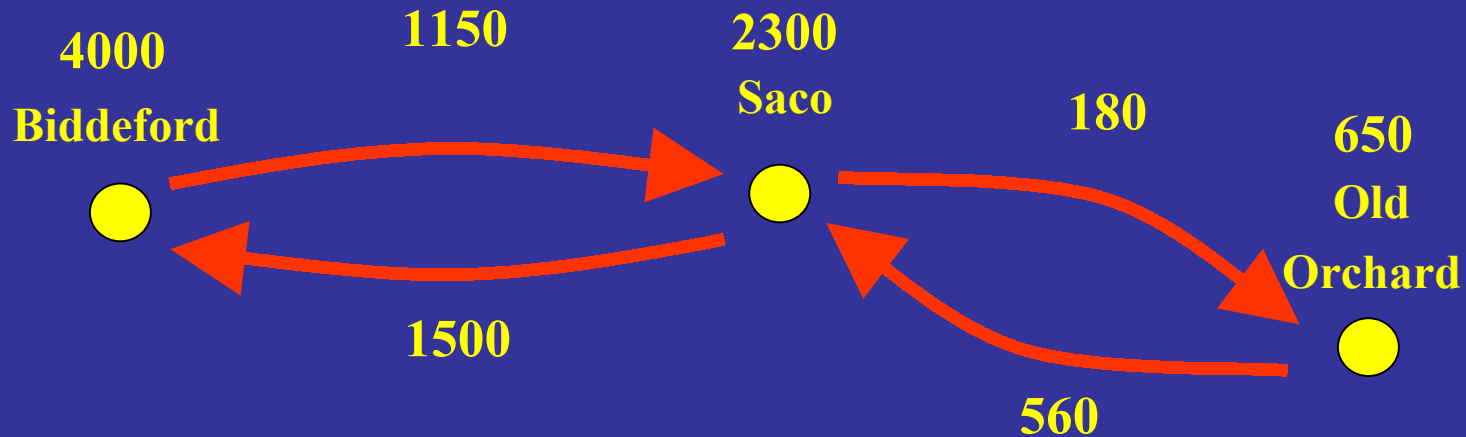
Source: VHB/MaineDOT, 2003; WSA interpretation.

# Alternatives Analysis



## Are We Reaching our Trip Reduction Potentials?

### Daily Journey to Work Data, 2000



### Also

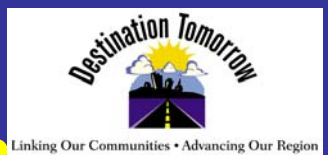
Biddeford -> Portland: 1175

Saco -> Portland: 1660

Portland -> Biddeford: 300

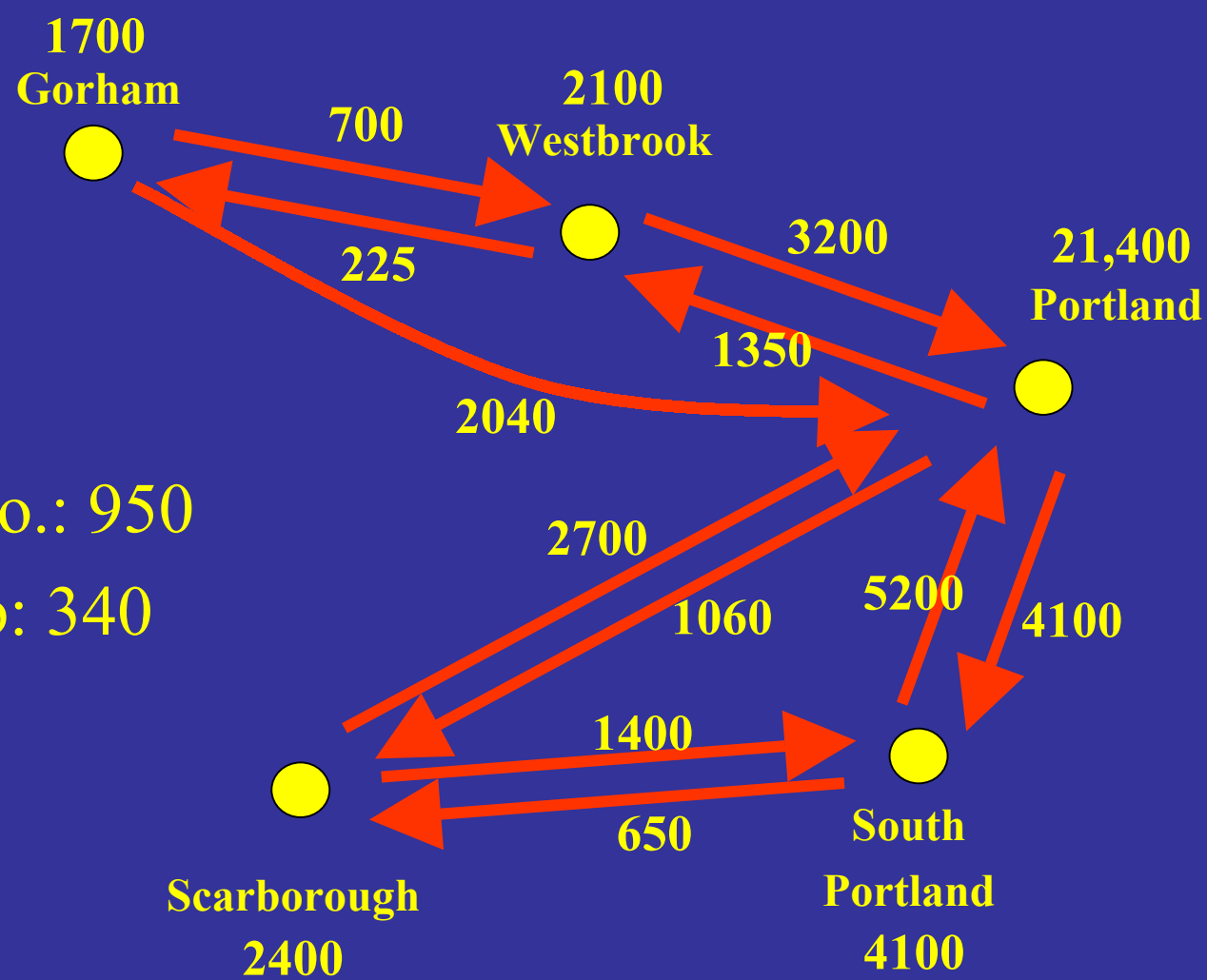
Portland -> Saco: 250

# Alternatives Analysis



## Are We Reaching our Trip Reduction Potentials?

### Daily Journey to Work Data, 2000



Also

West->So. Po.: 950

Gorh->Scarb: 340

# Alternatives Analysis



## Are We Reaching our Trip Reduction Potentials?

### Daily Journey to Work Data, 2000

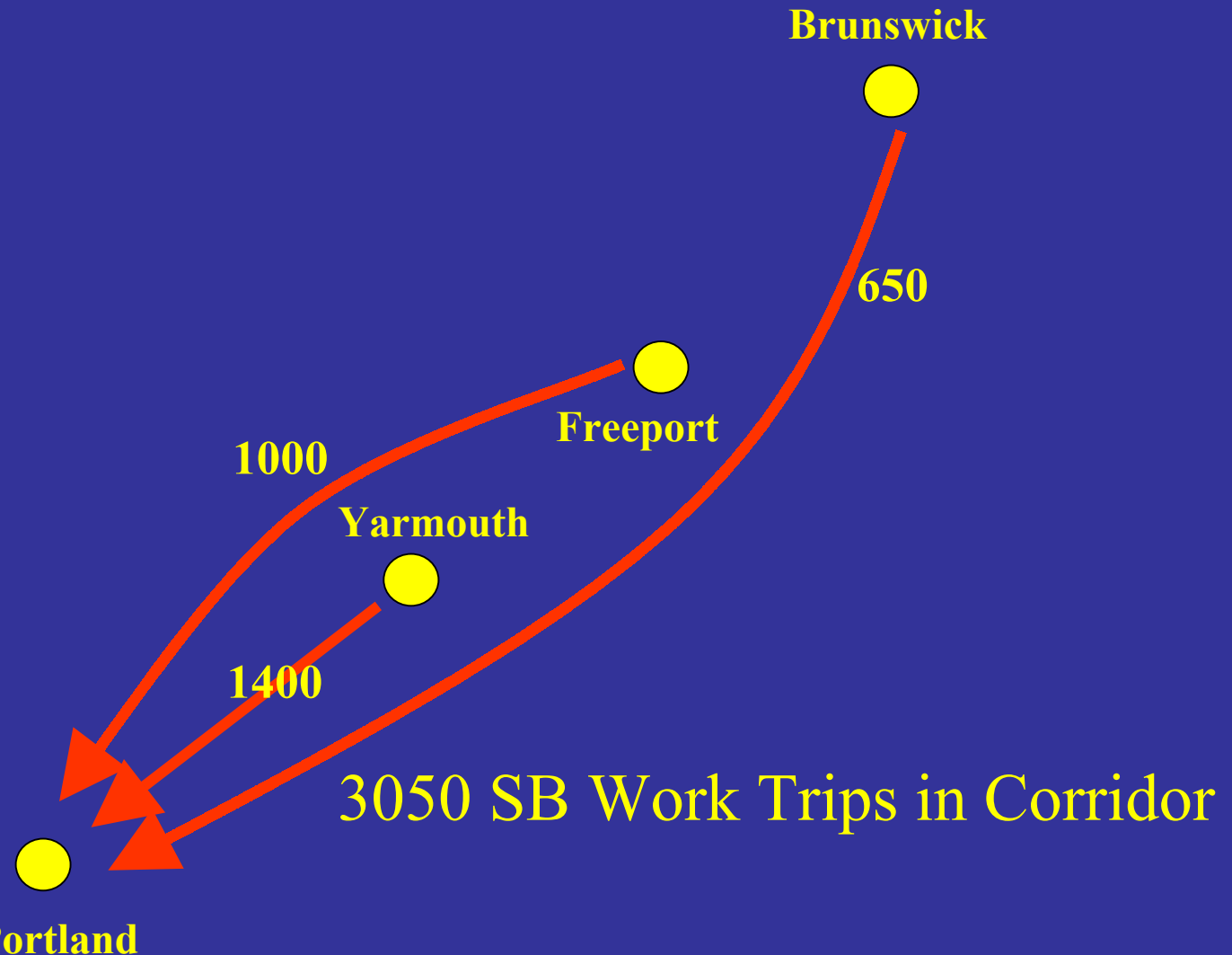
#### NB Portland to:

Brunswick: 600

Freeport: 500

Yarmouth: 440

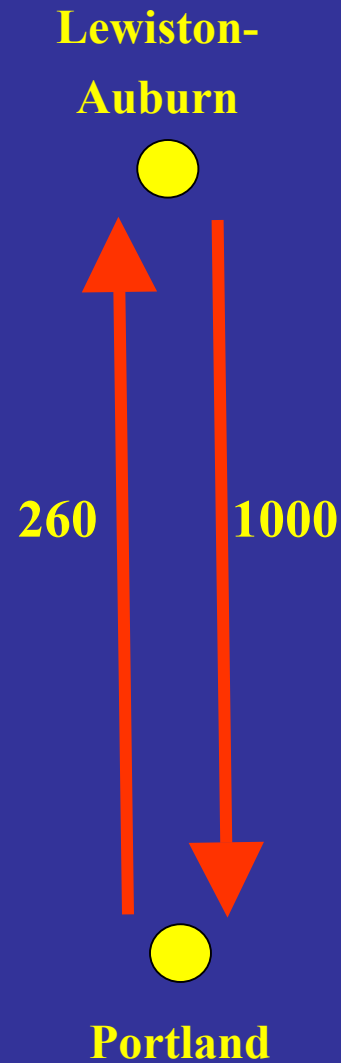
1540



# Alternatives Analysis



## Are We Reaching our Trip Reduction Potentials?



# Alternatives Analysis



## (Some) Reasons for Transit Service

- Equity
- Choice
- Economic Development
- Energy
- Environment
- One Part of a Comprehensive Congestion Reduction Strategy