

Maine-New Hampshire Connections Study

Stakeholder Committee Meeting

September 11, 2009



Meeting Overview

- Welcome | Introductions - 10 minutes
- Study Data - 20 minutes
- Fatal Flaw Analysis: Discussion - 1 hour
- Brainstorm Alternatives (Solutions) - 1 hour
- Purpose and Need Statement Review - 30 minutes
- Upcoming Meetings: 5 minutes

Study Update/Schedule Review

- August: Baseline Data completed
- September: Traffic analysis and travel demand model forecasts complete for no-build conditions
- September: Fatal Flaw Analysis and process
- September: Brainstorm alternatives (solutions)
- December: Fatal Flaw Analysis yields list of feasible alternatives
- January: Analysis of feasible alternatives begins
- January/Feb: TIGER Grant results/Possible Study adjustment

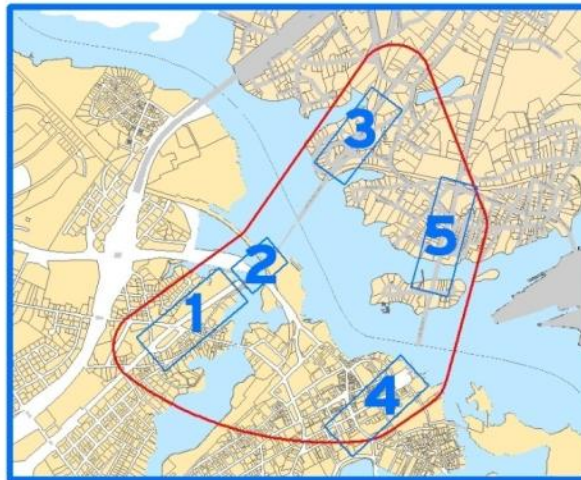
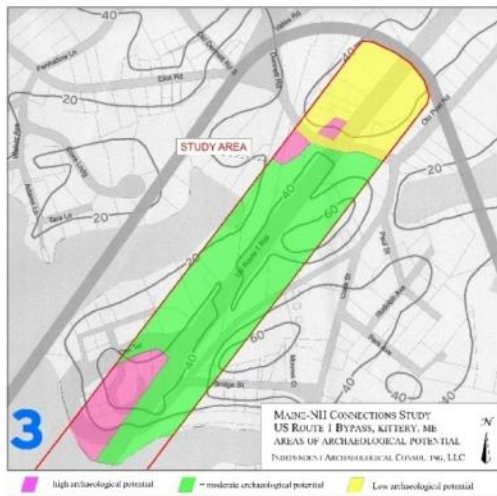
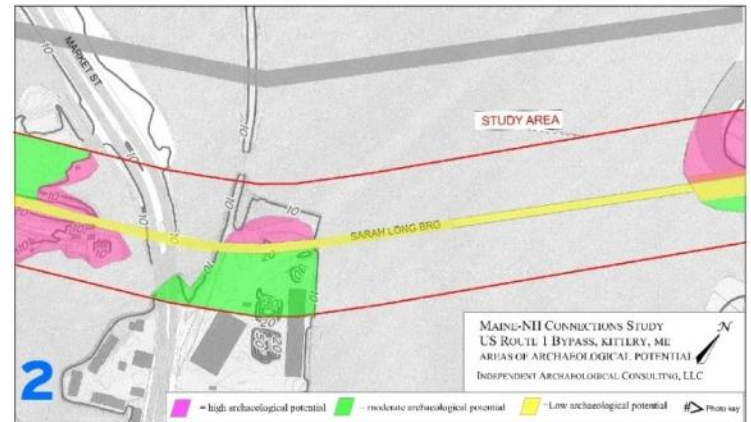
Baseline Conditions and Analysis

What did we learn??

Background Data Categories

- Cultural/Historic
- Natural Resource
- Land Use
- Transportation
- Origin-Destination

Cultural/Historic

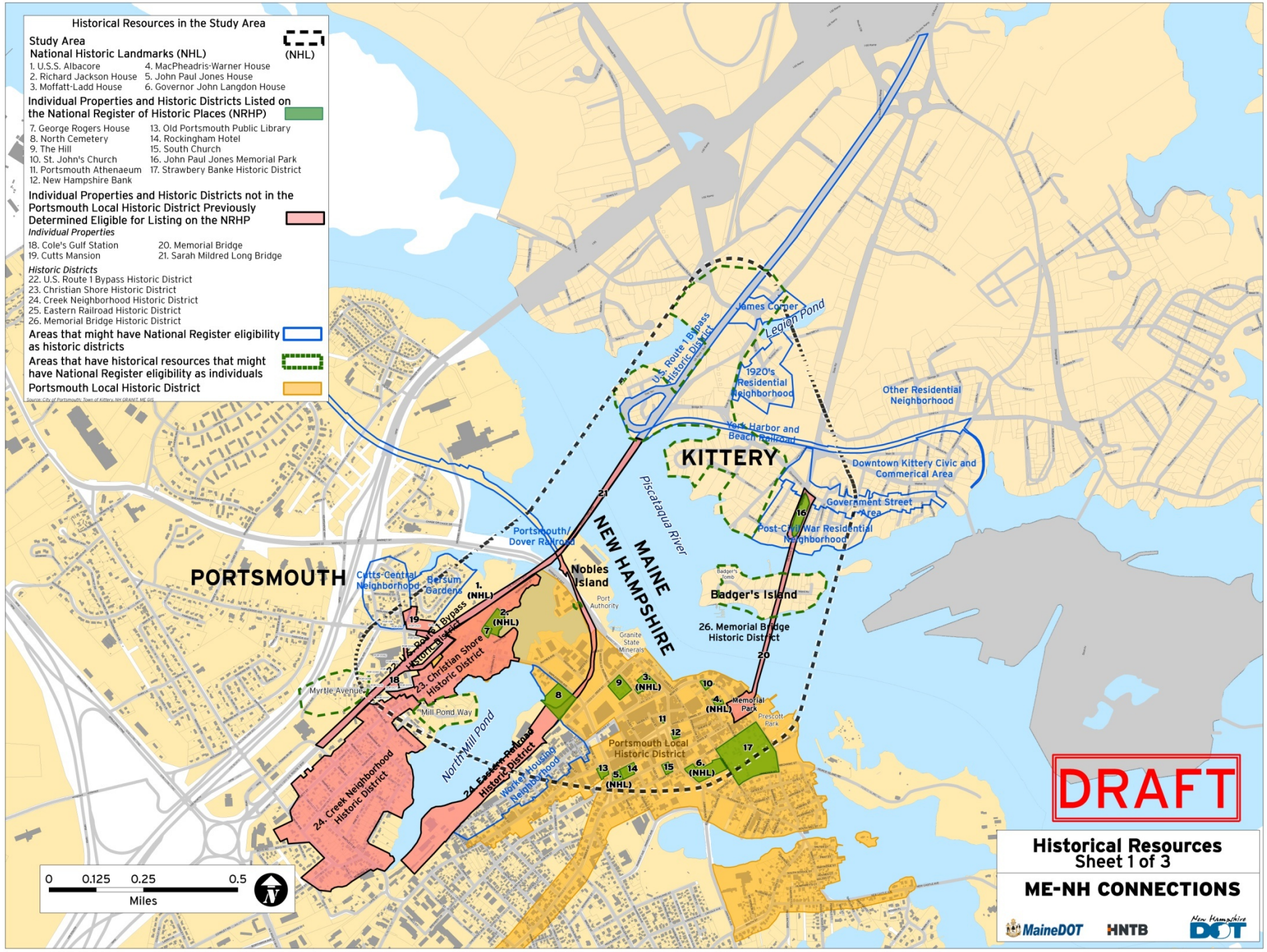


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Areas of Archaeological Potential
ME-NH CONNECTIONS
 08/17/09

- Historical Resources in the Study Area**
- Study Area**
- National Historic Landmarks (NHL)**
- | | |
|--------------------------|--------------------------------|
| 1. U.S.S. Albacore | 4. MacPheadris-Warner House |
| 2. Richard Jackson House | 5. John Paul Jones House |
| 3. Moffatt-Ladd House | 6. Governor John Langdon House |
- Individual Properties and Historic Districts Listed on the National Register of Historic Places (NRHP)**
- | | |
|--------------------------|--|
| 7. George Rogers House | 13. Old Portsmouth Public Library |
| 8. North Cemetery | 14. Rockingham Hotel |
| 9. The Hill | 15. South Church |
| 10. St. John's Church | 16. John Paul Jones Memorial Park |
| 11. Portsmouth Athenaeum | 17. Strawberry Banke Historic District |
| 12. New Hampshire Bank | |
- Individual Properties and Historic Districts not in the Portsmouth Local Historic District Previously Determined Eligible for Listing on the NRHP**
- Individual Properties*
- | | |
|-------------------------|-------------------------------|
| 18. Cole's Gulf Station | 20. Memorial Bridge |
| 19. Cutts Mansion | 21. Sarah Mildred Long Bridge |
- Historic Districts**
- | |
|---|
| 22. U.S. Route 1 Bypass Historic District |
| 23. Christian Shore Historic District |
| 24. Creek Neighborhood Historic District |
| 25. Eastern Railroad Historic District |
| 26. Memorial Bridge Historic District |
- Areas that might have National Register eligibility as historic districts**
- Areas that have historical resources that might have National Register eligibility as individuals**
- Portsmouth Local Historic District**

Source: City of Portsmouth, Dept. of Culture, 10/20/2017, 10/2/2018



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Historical Resources
Sheet 1 of 3

ME-NH CONNECTIONS



Legend

-  Study Area
-  U.S. GOVT
-  STATE
-  MUNICIPAL
-  PUBLIC SCHOOL
-  NON-PROFIT
-  CHURCH
-  UNKNOWN
-  UTILITY

Source: City of Portsmouth, Town of Kittery, NH GRANIT, ME GIS



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Community Facilities

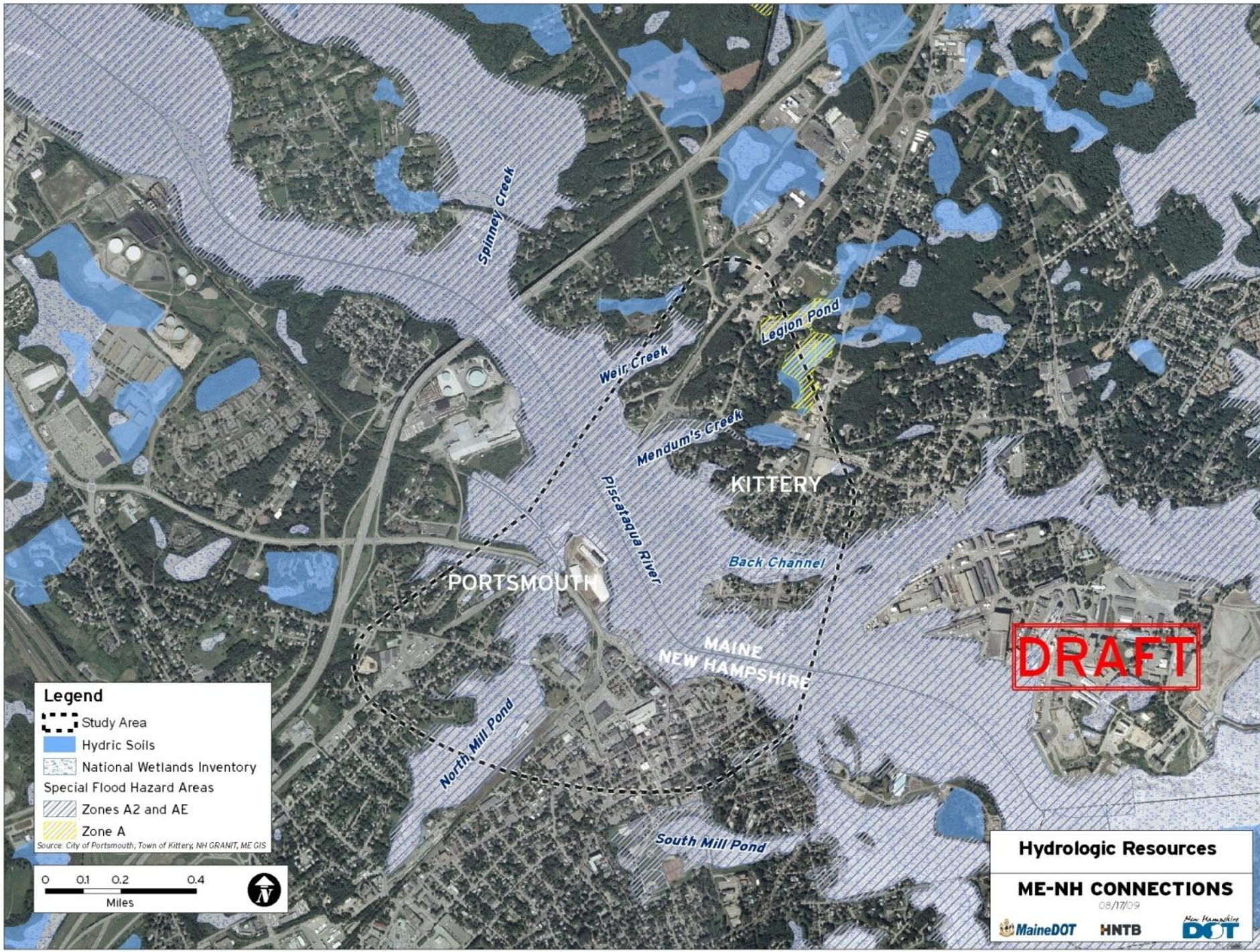
ME-NH CONNECTIONS

08/17/09





Natural Resources



Legend

- Study Area
- Hydric Soils
- National Wetlands Inventory
- Special Flood Hazard Areas
- Zones A2 and AE
- Zone A

Source: City of Portsmouth, Town of Kittery, NH GRANIT, ME GIS



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Hydrologic Resources

ME-NH CONNECTIONS

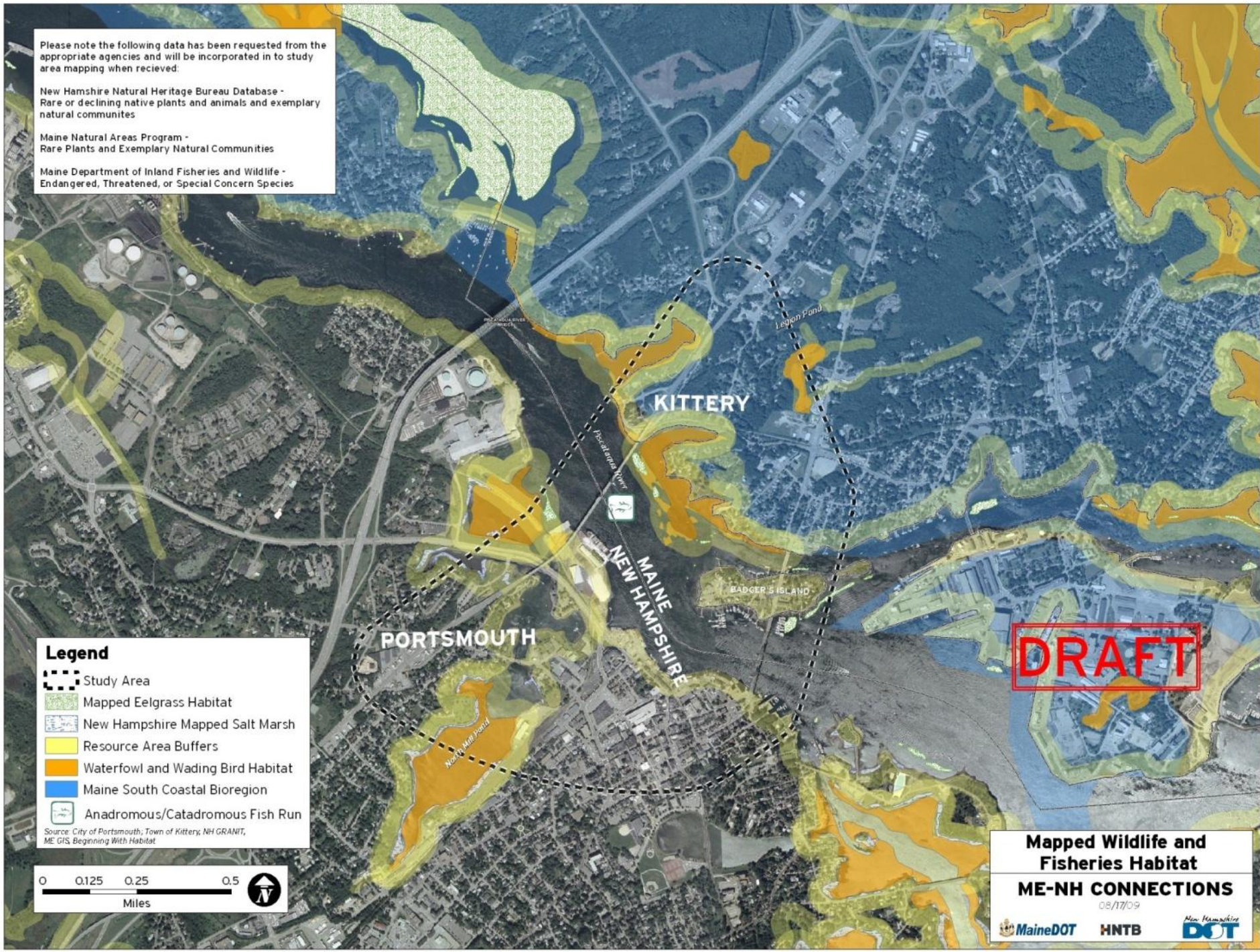
08/17/09

Please note the following data has been requested from the appropriate agencies and will be incorporated in to study area mapping when recieved.

New Hampshire Natural Heritage Bureau Database -
Rare or declining native plants and animals and exemplary natural communities

Maine Natural Areas Program -
Rare Plants and Exemplary Natural Communities

Maine Department of Inland Fisheries and Wildlife -
Endangered, Threatened, or Special Concern Species



Legend

- Study Area
- Mapped Eelgrass Habitat
- New Hampshire Mapped Salt Marsh
- Resource Area Buffers
- Waterfowl and Wading Bird Habitat
- Maine South Coastal Bioregion
- Anadromous/Catadromous Fish Run

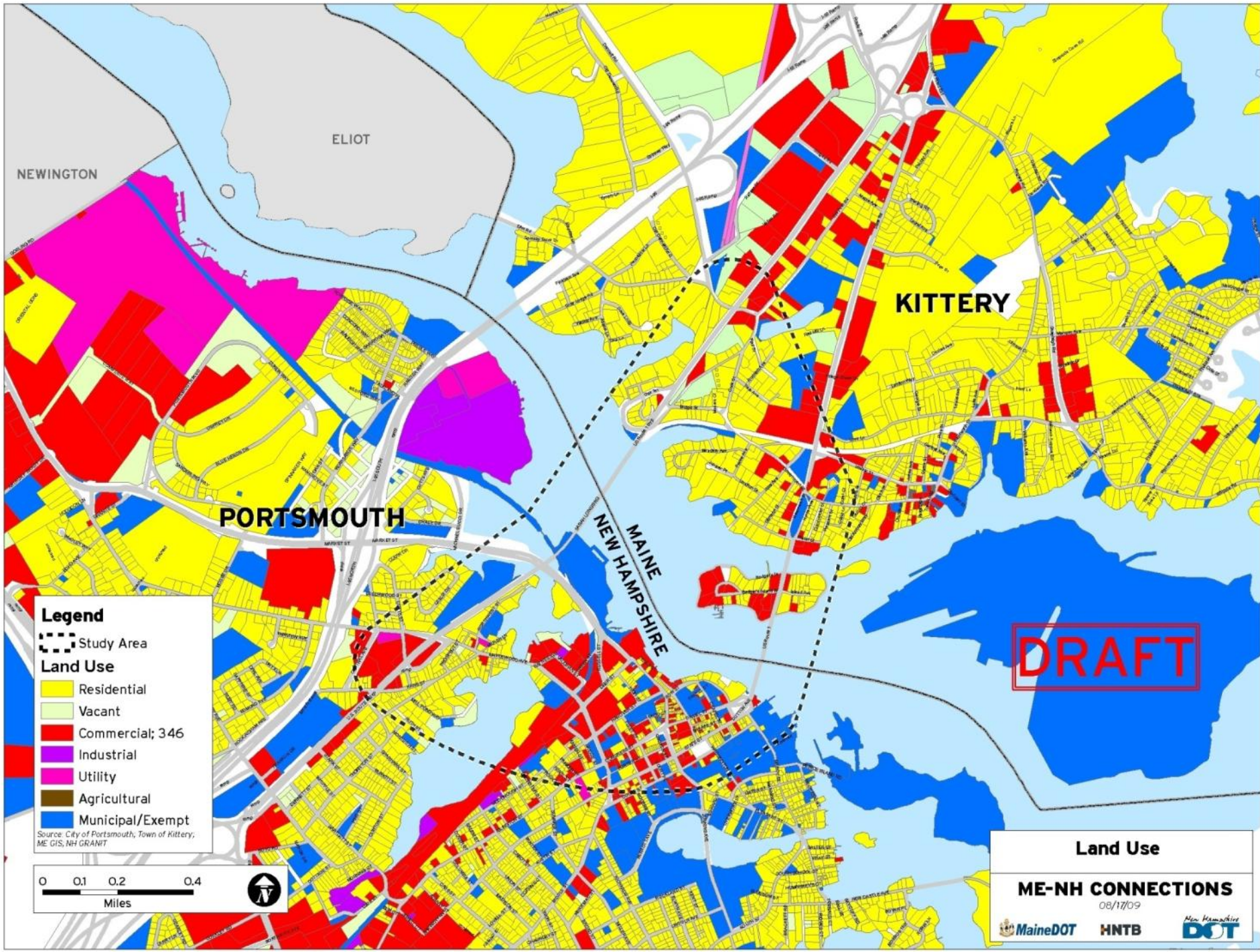
Source: City of Portsmouth, Town of Kittery, NH GRANIT, ME GIS, Beginning With Habitat



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Mapped Wildlife and Fisheries Habitat
ME-NH CONNECTIONS
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Land Use



Legend

- Study Area
- Land Use**
- Residential
- Vacant
- Commercial; 346
- Industrial
- Utility
- Agricultural
- Municipal/Exempt

Source: City of Portsmouth, Town of Kittery, ME GIS, NH GRANIT



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Land Use

ME-NH CONNECTIONS
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Portsmouth Zoning

- | | |
|-------------------------------------|---|
| A: Apartments | M: Municipal |
| ABC: Airport Business Commercial | MRB: Mixed Residential Business |
| AI: Airport Industrial | MRO: Mixed Residential Office |
| AIR: Airport | NRP: Natural Resource Protection |
| B: Business | OR: Office Research |
| CBA: Central Business A | OR/MV: Office Research/ Mariner's Village |
| CBB: Central Business B | PI: Pease Industrial |
| GA/MH: Garden Apartment/Mobile Home | R: Rural |
| GB: General Business | SRA: Single Residence A |
| GRA: General Residence A | SRB: Single Residence B |
| GRB: General Residence B | WB: Waterfront Business |
| I: Industrial | WI: Waterfront Industrial |

Kittery Zoning

- | | |
|---------------------------|--------------------------|
| BI: Badgers Island Urban | LB-1: Local Business 1 |
| BP: Business Park | MU: Mixed Use |
| CF: Commercial Fishing | RC: Rural Conservation |
| C-1: Commercial 1 | RR: Rural Residential |
| C-2: Commercial 2 | SR: Suburban Residential |
| C-3: Commercial 3 | UR: Urban Residential |
| I: Industrial | VR: Village Residential |
| KF: Kittery Foreside | Water |
| KP: Kittery Point Village | Wet |
| LB: Local Business | |

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Legend

Study Area
 Source: City of Portsmouth, Town of Kittery, ME GIS, NH GRANIT

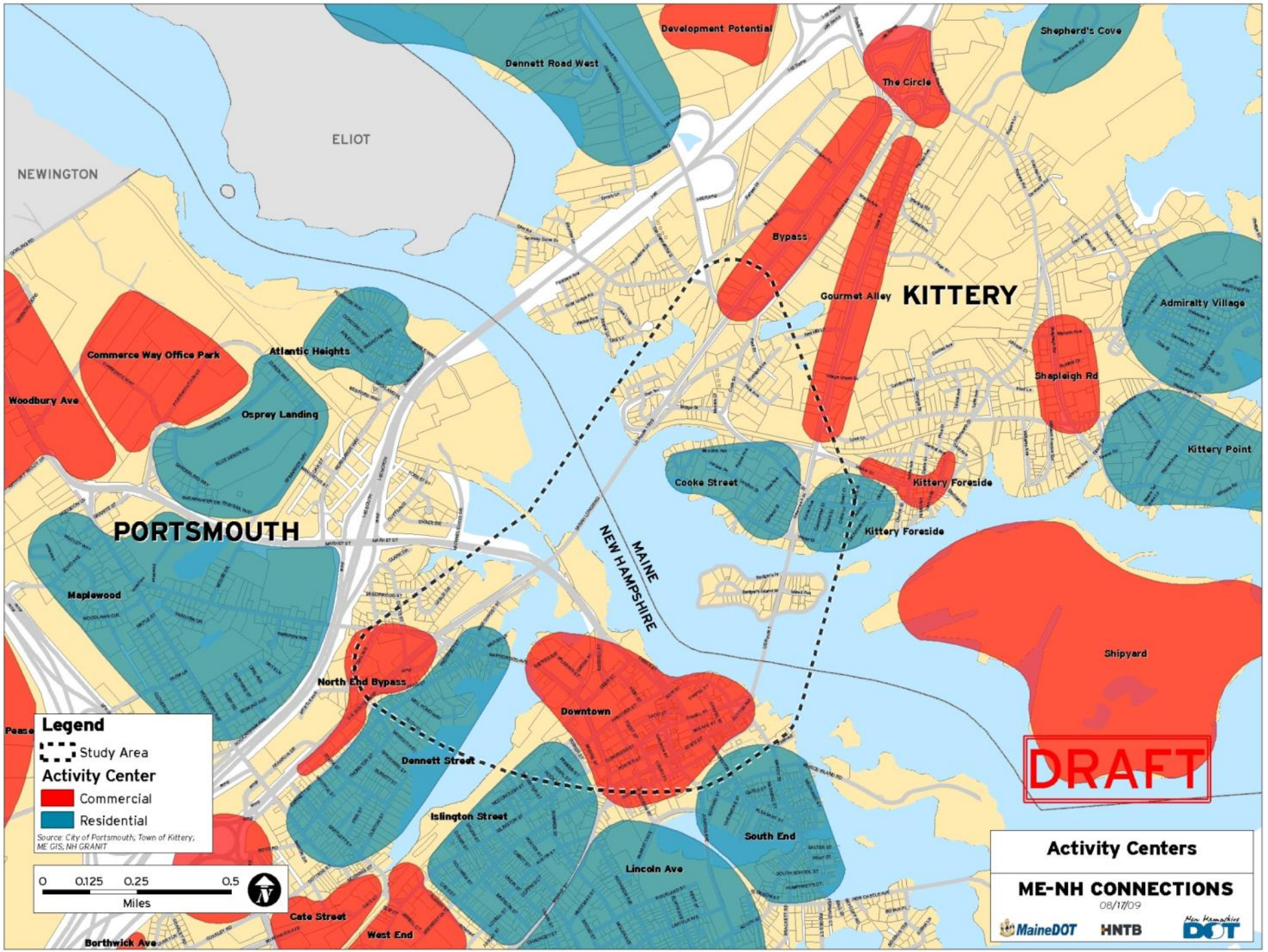


Zoning

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Legend

-  Study Area
- Activity Center**
-  Commercial
-  Residential

Source: City of Portsmouth, Town of Kittery, ME GIS, NH GRANIT

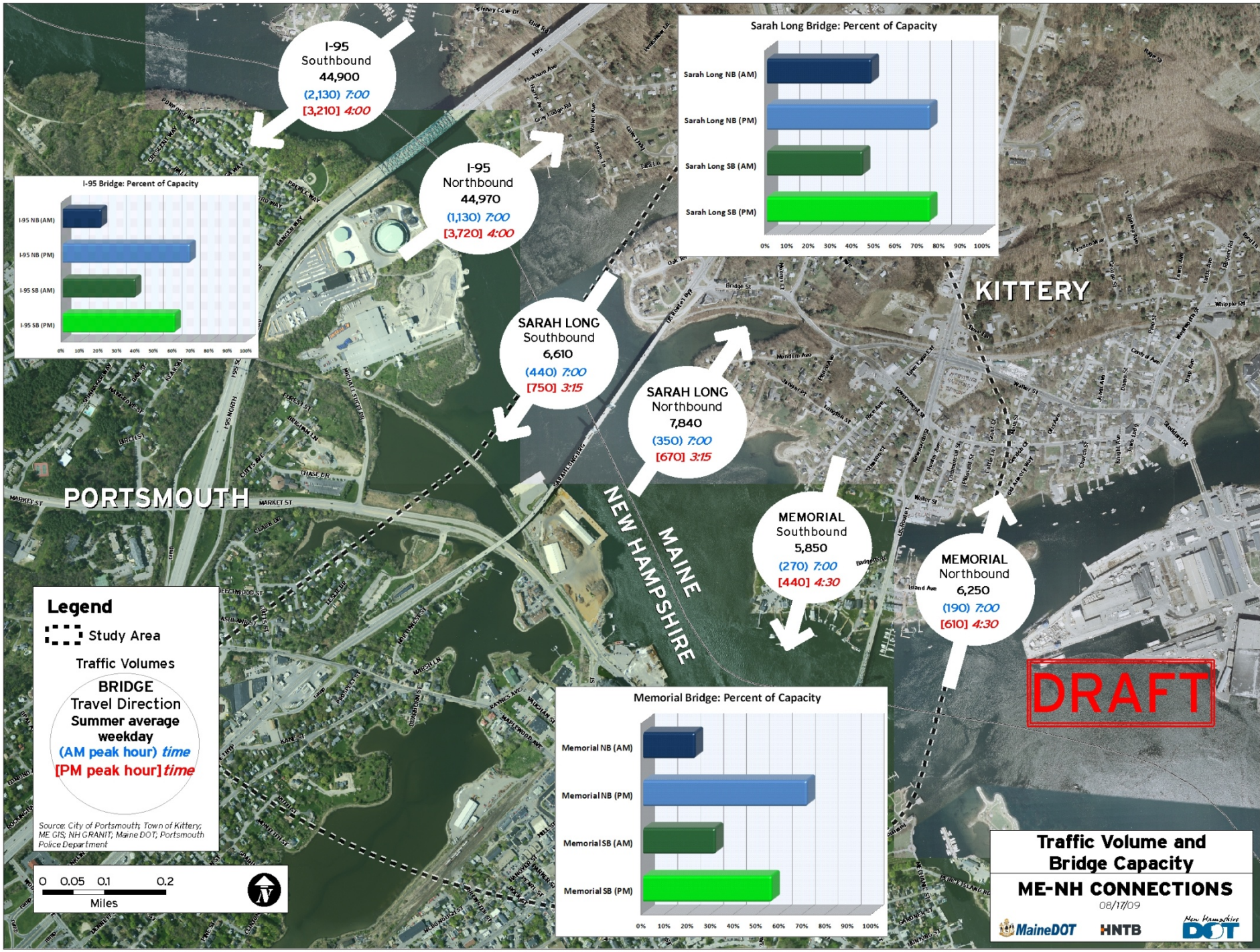


Activity Centers

ME-NH CONNECTIONS
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Transportation



I-95 Southbound
44,900
 (2,130) 7:00
 [3,210] 4:00

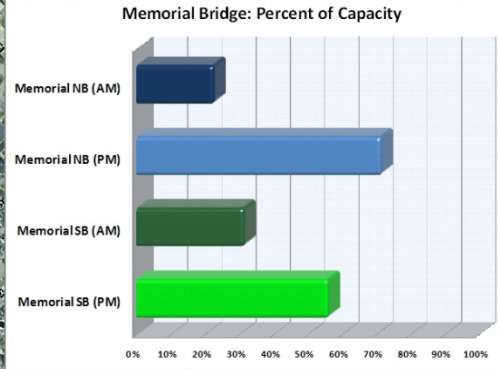
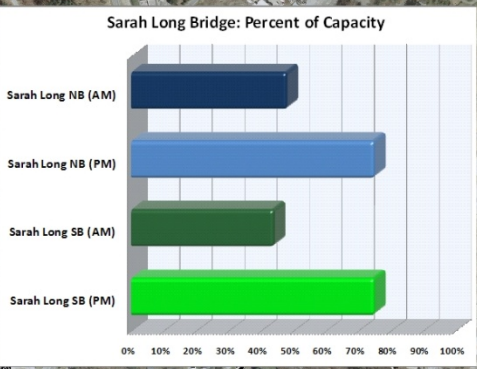
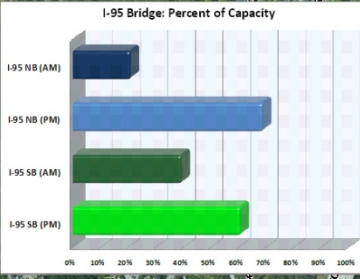
I-95 Northbound
44,970
 (1,130) 7:00
 [3,720] 4:00

SARAH LONG Southbound
6,610
 (440) 7:00
 [750] 3:15

SARAH LONG Northbound
7,840
 (350) 7:00
 [670] 3:15

MEMORIAL Southbound
5,850
 (270) 7:00
 [440] 4:30

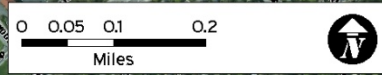
MEMORIAL Northbound
6,250
 (190) 7:00
 [610] 4:30



Legend

- Study Area
- Traffic Volumes
- BRIDGE
- Travel Direction
- Summer average weekday
- (AM peak hour) time
- [PM peak hour] time

Source: City of Portsmouth, Town of Kittery, ME GIS, NH GRANIT, Maine DOT, Portsmouth Police Department



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Traffic Volume and Bridge Capacity
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Legend

- Study Area
- Rail
- Wildcat (Route 4)
- COAST BUS**
- COAST (Route 2)
- COAST TROLLEY**
- Lafayette Southbound (Route 41)
- Lafayette Northbound (Route 41)
- Pease Outbound (Route 40)
- Pease Inbound (Route 40)

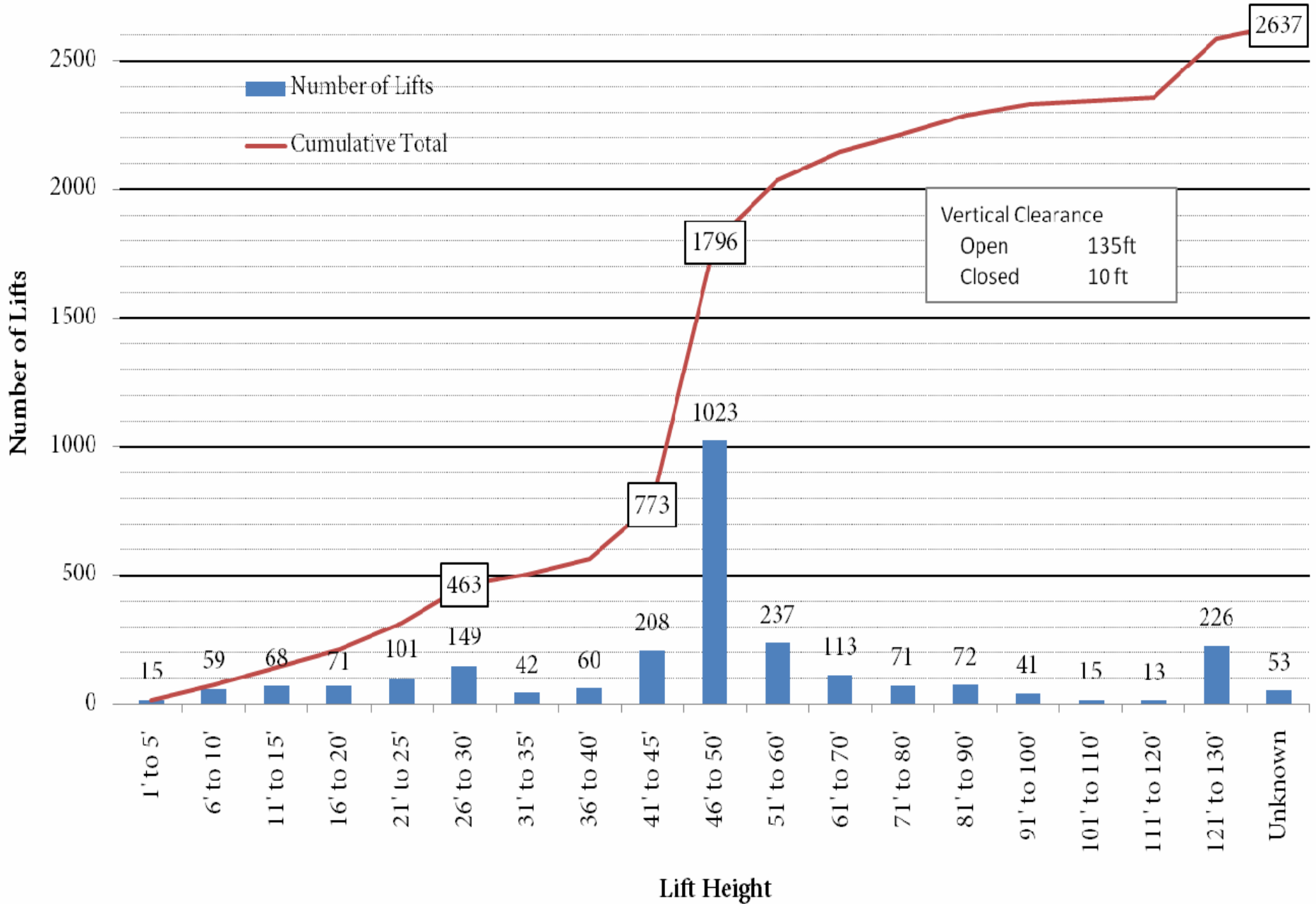
Source: City of Portsmouth, Town of Kittery, ME GIS, NH GRANIT, Strafford Regional Planning Commission, Rockingham Planning Commission



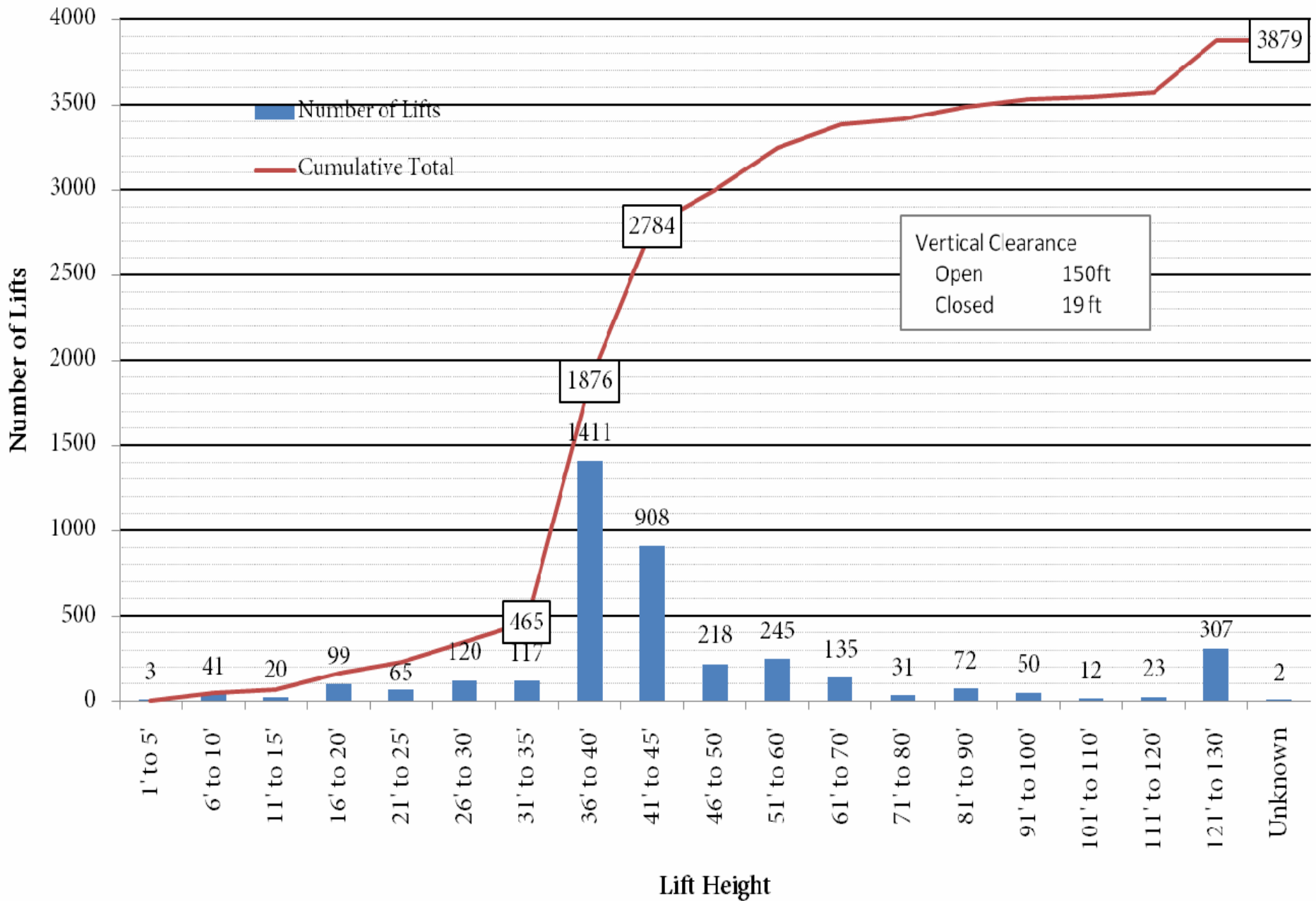
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Multi-Modal Transportation Services & Facilities
ME-NH CONNECTIONS
 08/17/09

2008 Sarah Mildred Long Bridge Lift Data Summary



2008 Portsmouth Memorial Bridge Lift Data Summary

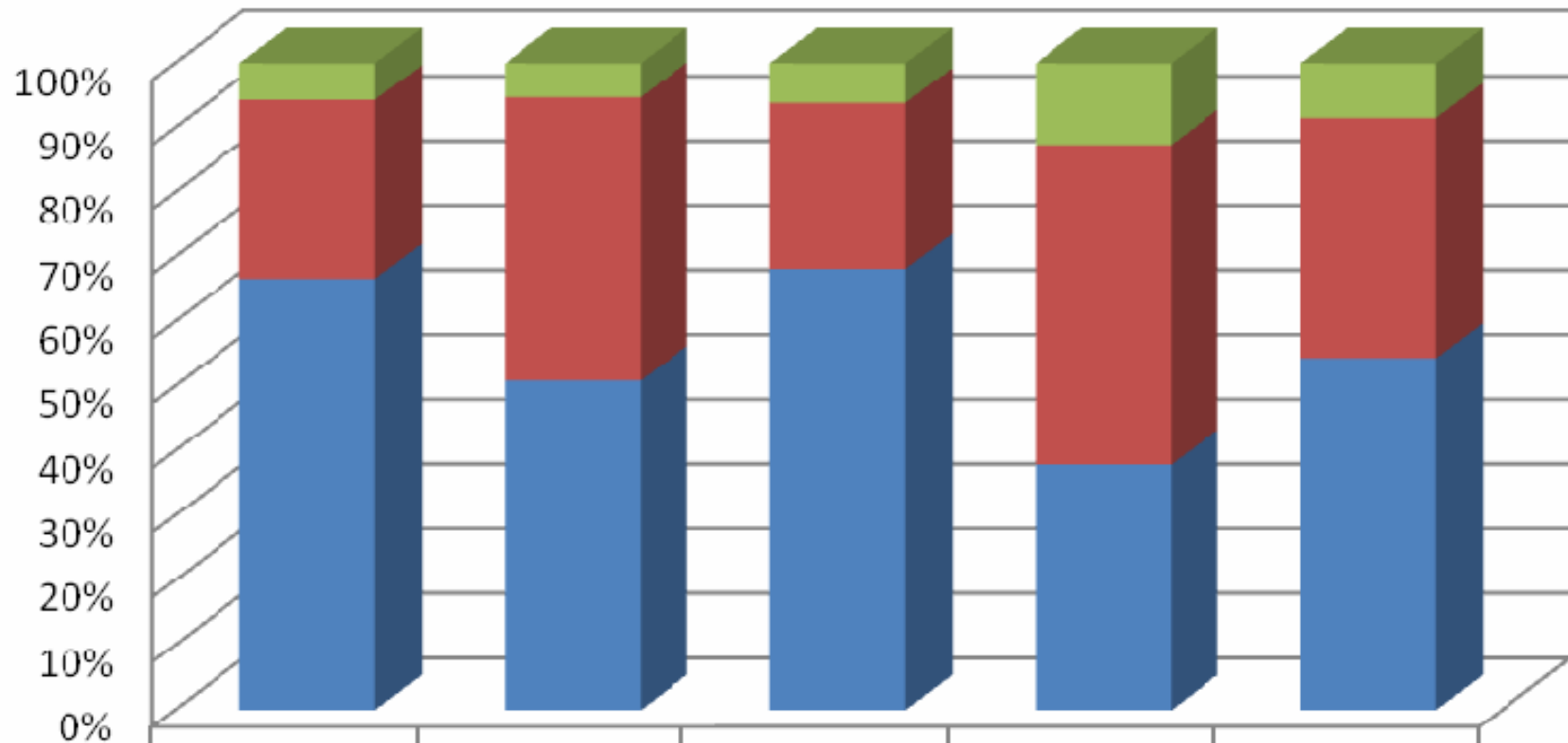


Origin Destination Survey Highlights

Vehicle Survey – May 2009

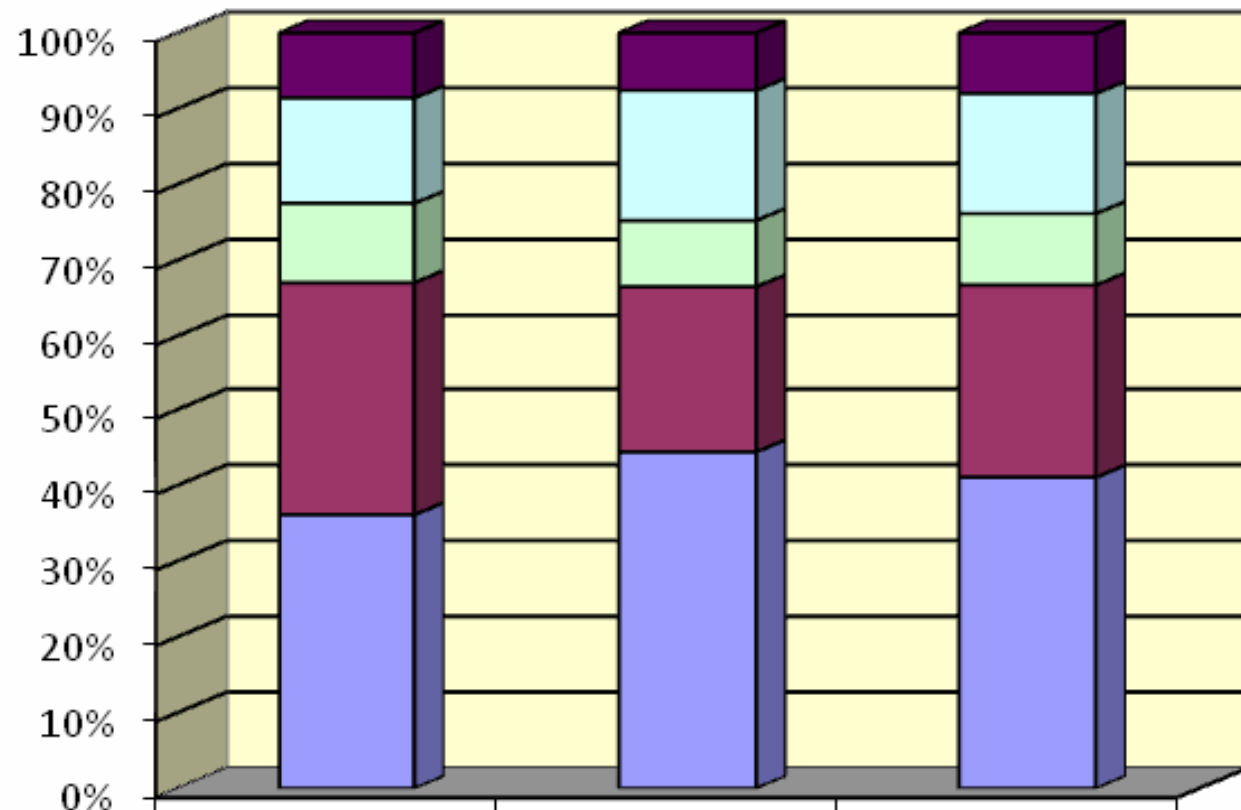
Bicycle/Pedestrian Survey – July 2009

State of Vehicle Registry



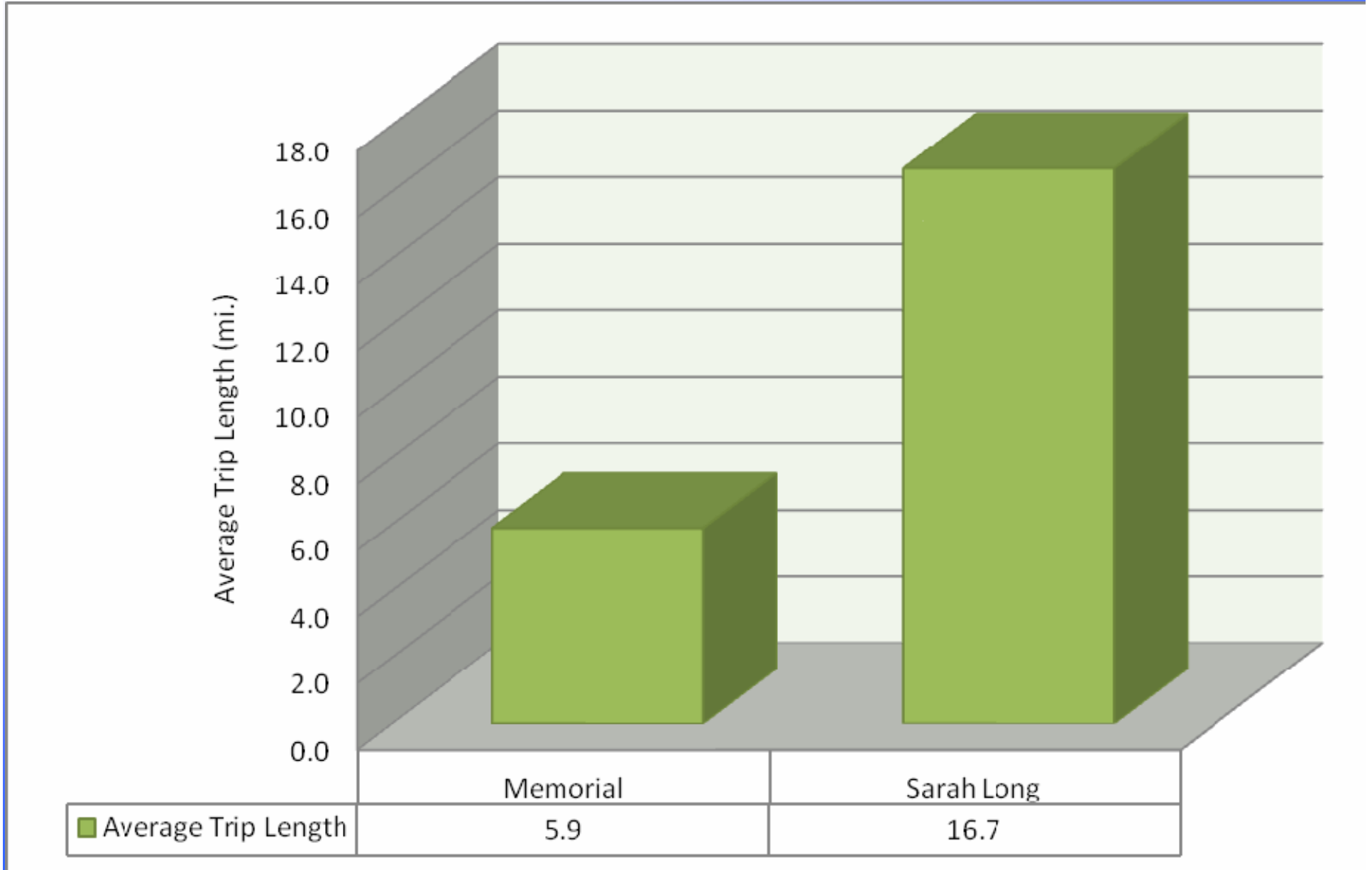
	Memorial NB	Memorial SB	Sarah Long NB	Sarah Long SB	Overall
OTHER	6%	5%	6%	13%	8%
NH	28%	44%	26%	49%	37%
ME	67%	51%	68%	38%	54%

Vehicle Trip Purpose



	Memorial Bridge	Sarah Long Bridge	Overall
Other	9%	8%	8%
Work-based	14%	17%	16%
Home-to-Recreation / Leisure	10%	9%	9%
Home-to-Shopping / Personal Business	31%	22%	26%
Home-to-Work	36%	44%	41%

Average Vehicle Trip Length



Most Common

Origins:

External 105: 36.2%

External 106: 21.0%

Most Common

Destinations:

External 111: 66.7%

Subarea 9: 7.5%

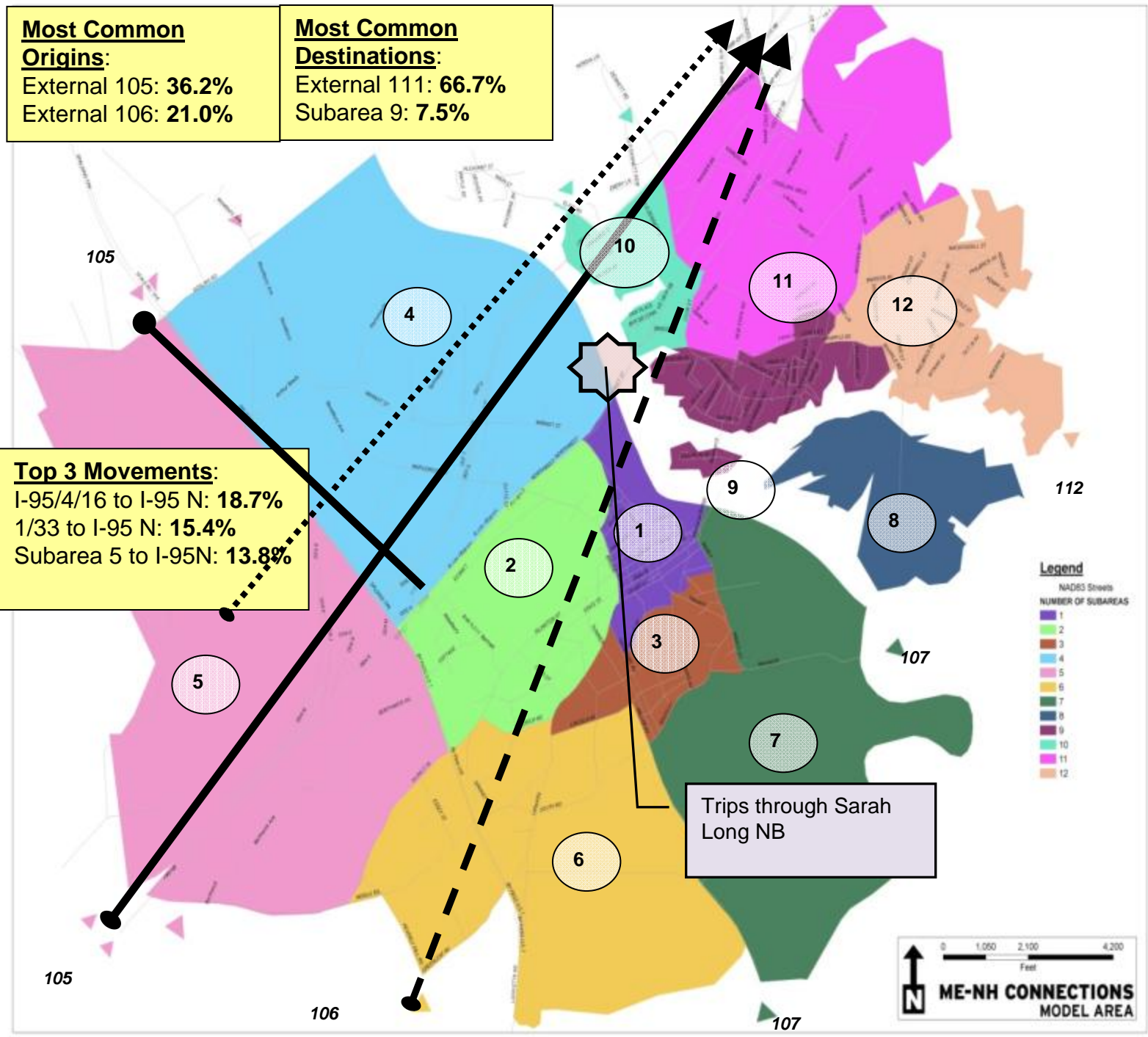
Top 3 Movements:

I-95/4/16 to I-95 N: 18.7%

1/33 to I-95 N: 15.4%

Subarea 5 to I-95N: 13.8%

Trips through Sarah Long NB



Most Common

Origins:

Subarea 8: 40.6%
External 111: 33.3%

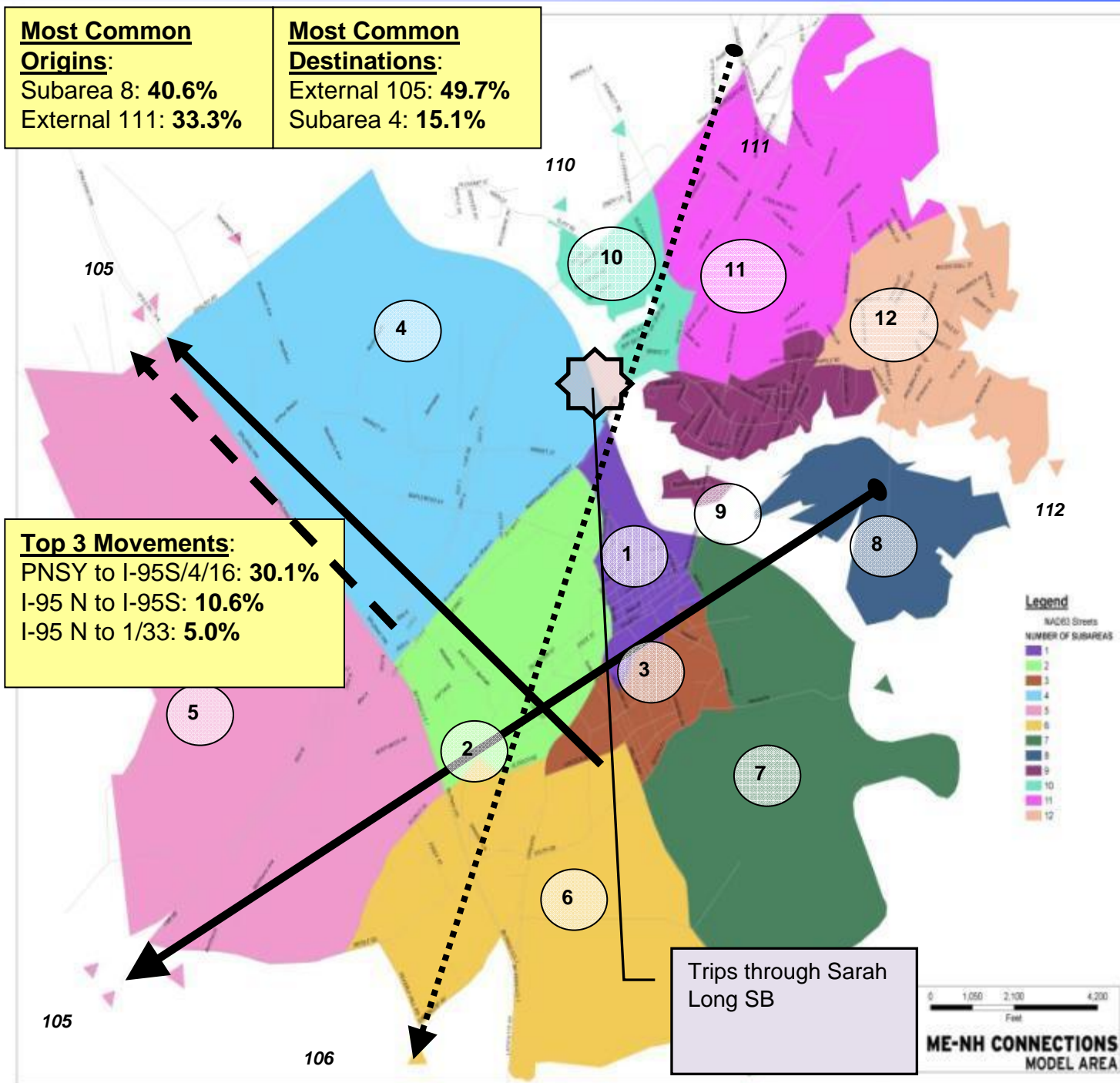
Most Common

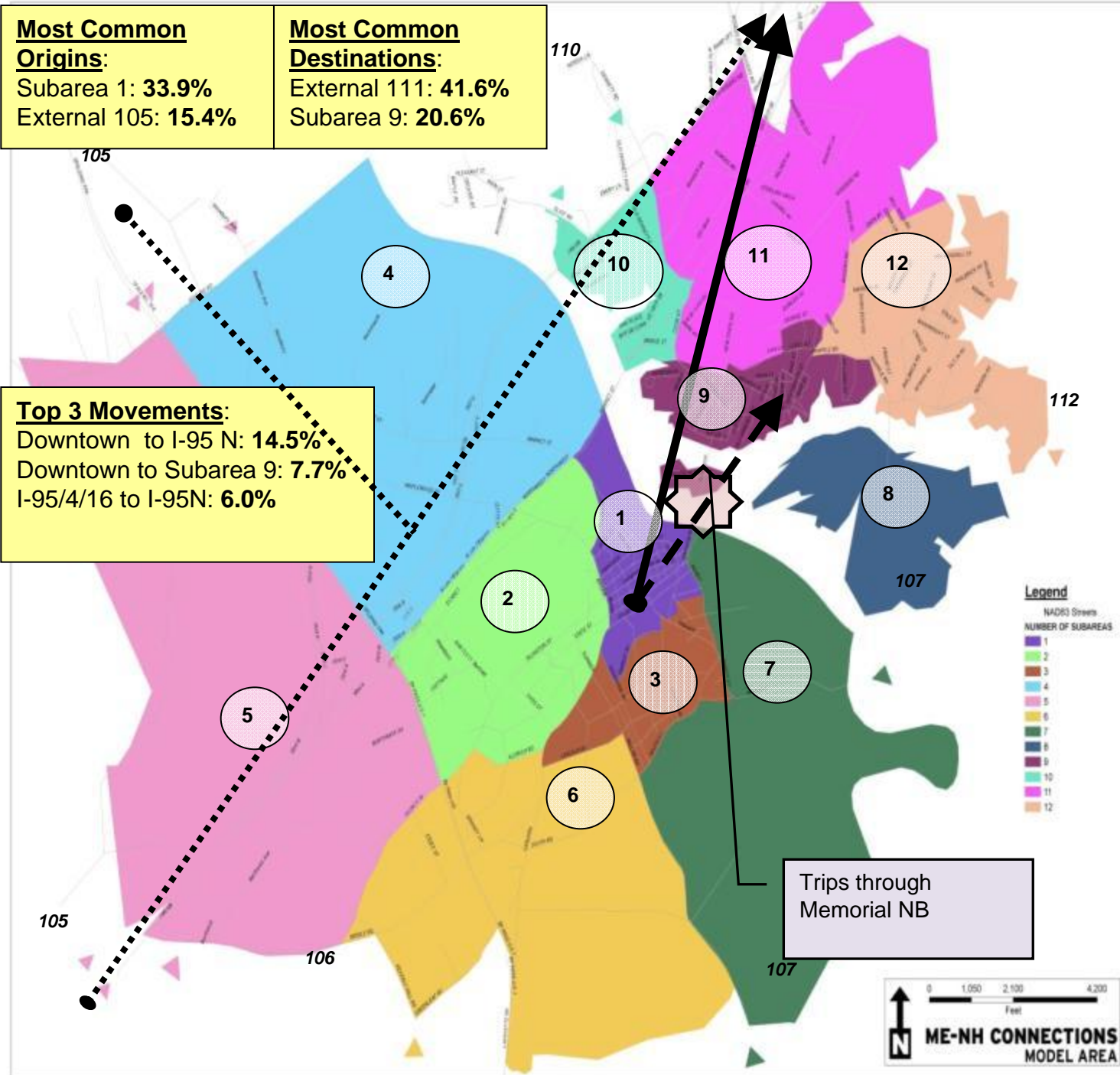
Destinations:

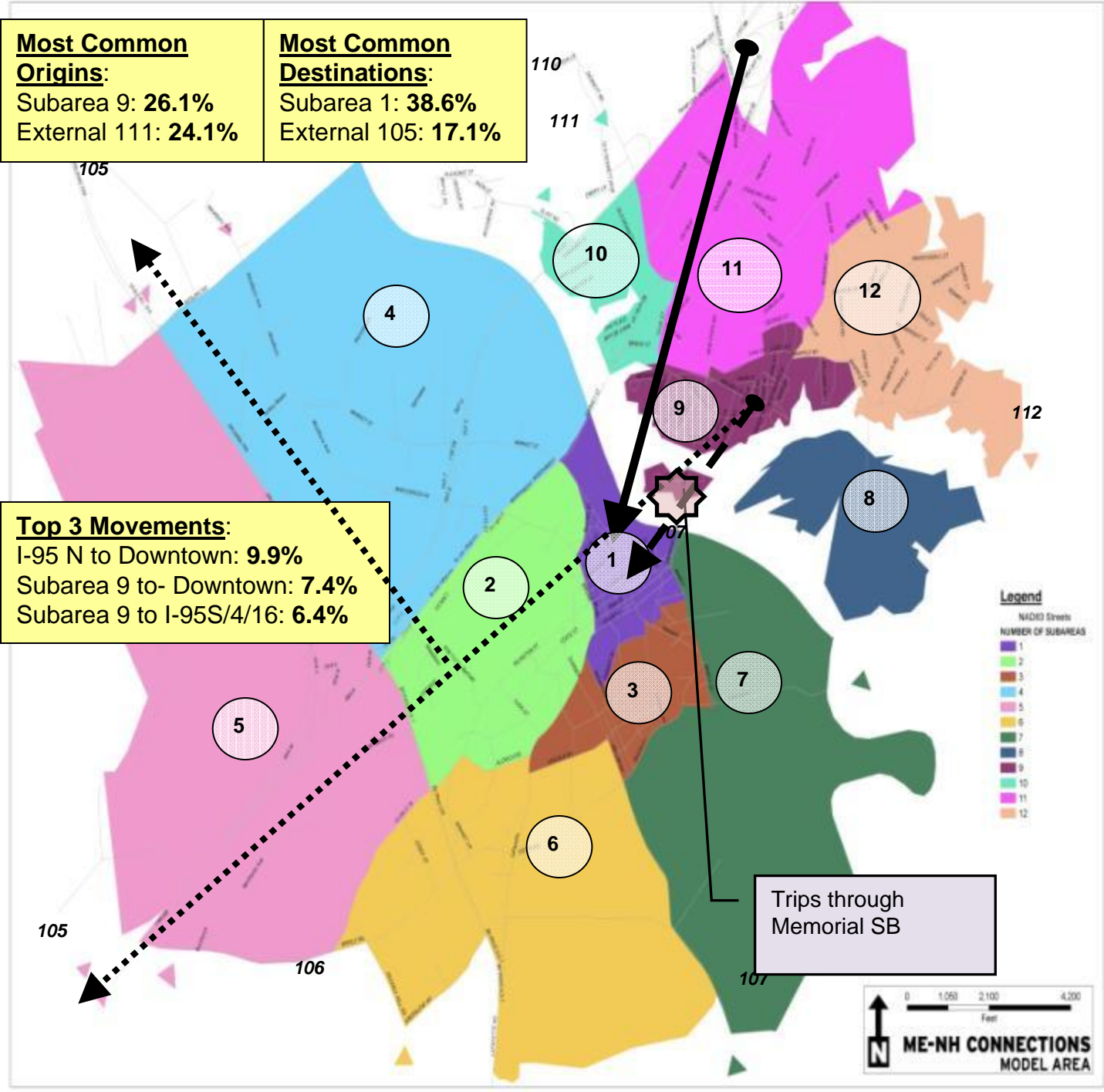
External 105: 49.7%
Subarea 4: 15.1%

Top 3 Movements:

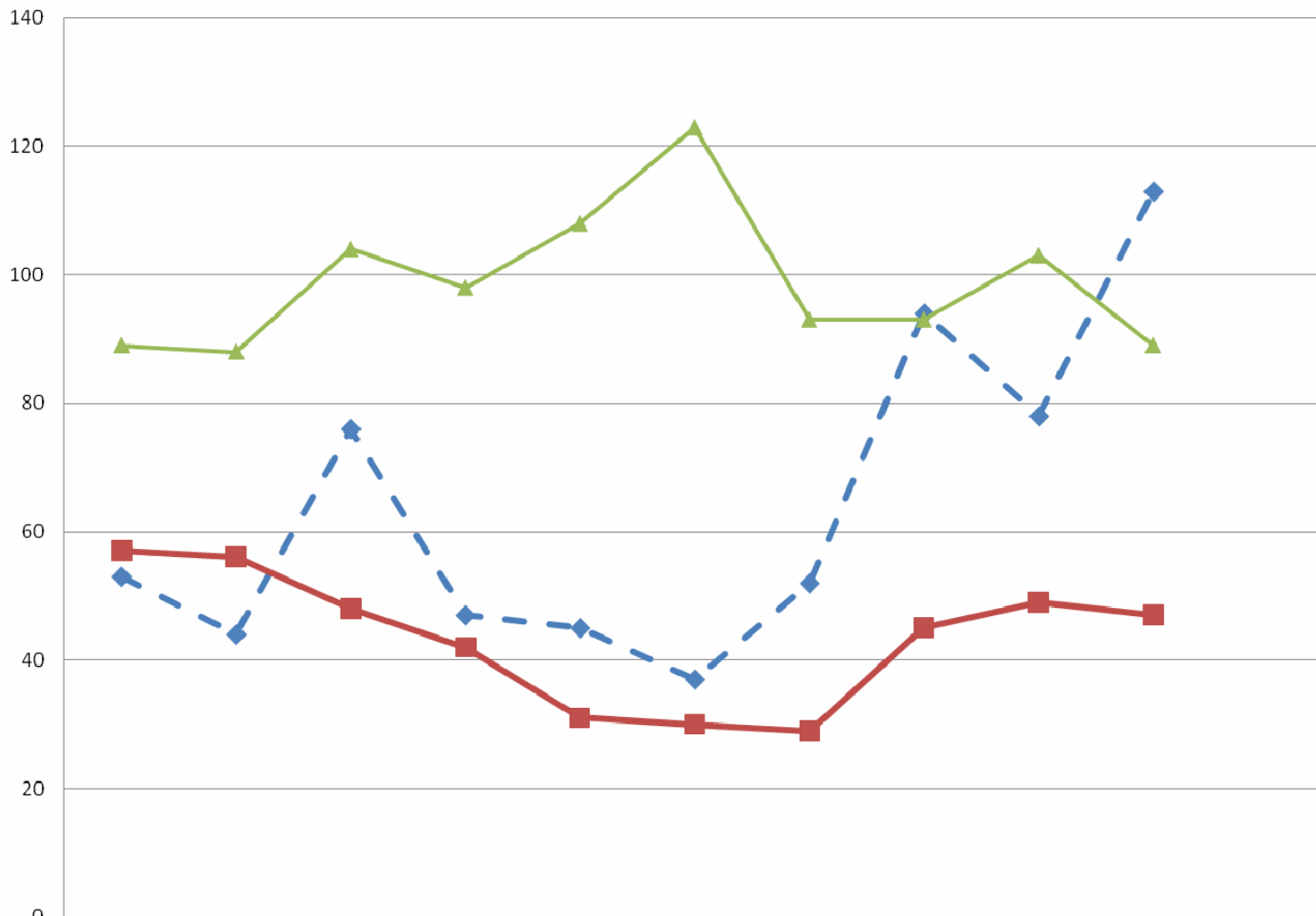
PNSY to I-95S/4/16: 30.1%
I-95 N to I-95S: 10.6%
I-95 N to 1/33: 5.0%





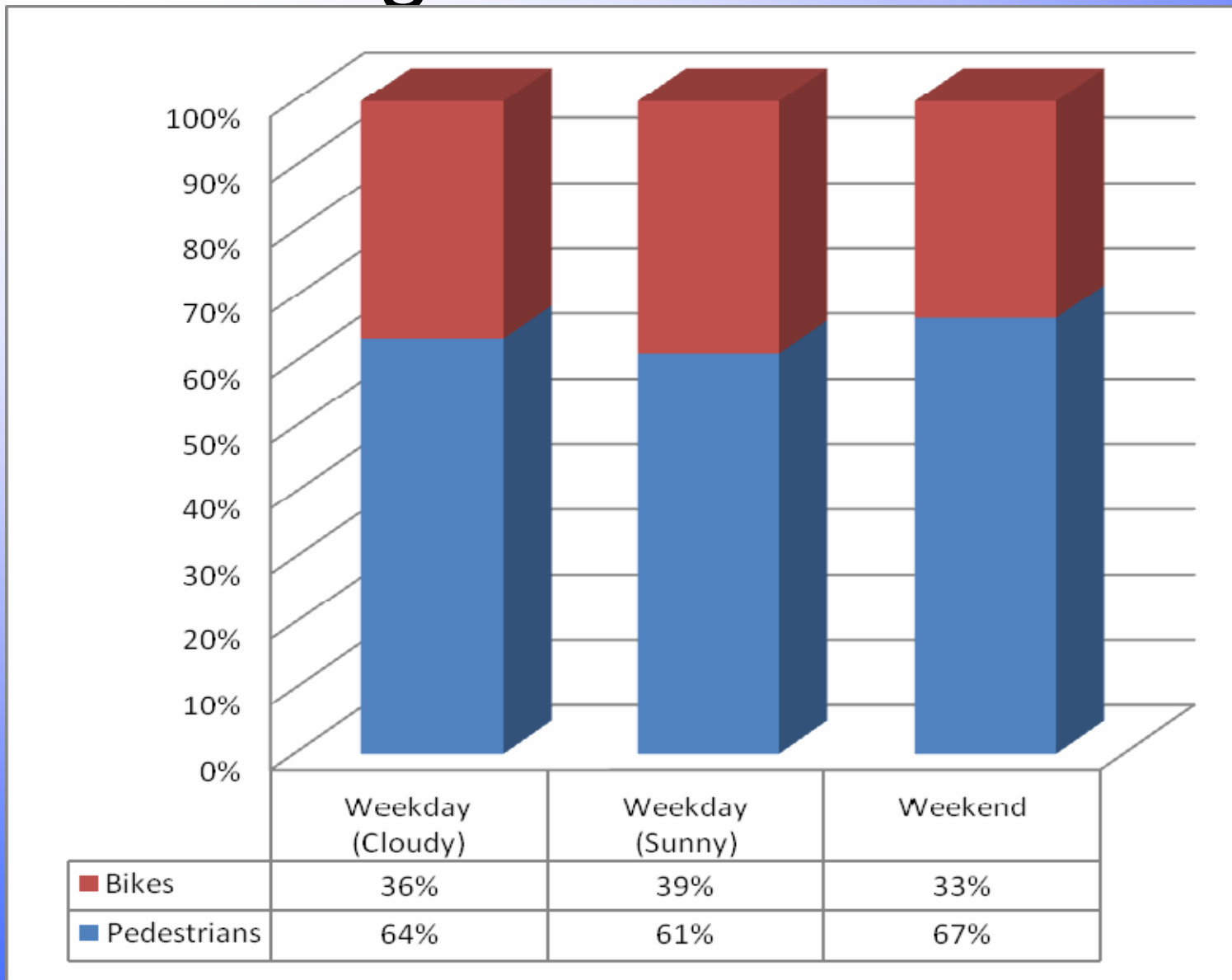


Summer Bike/Ped Volumes

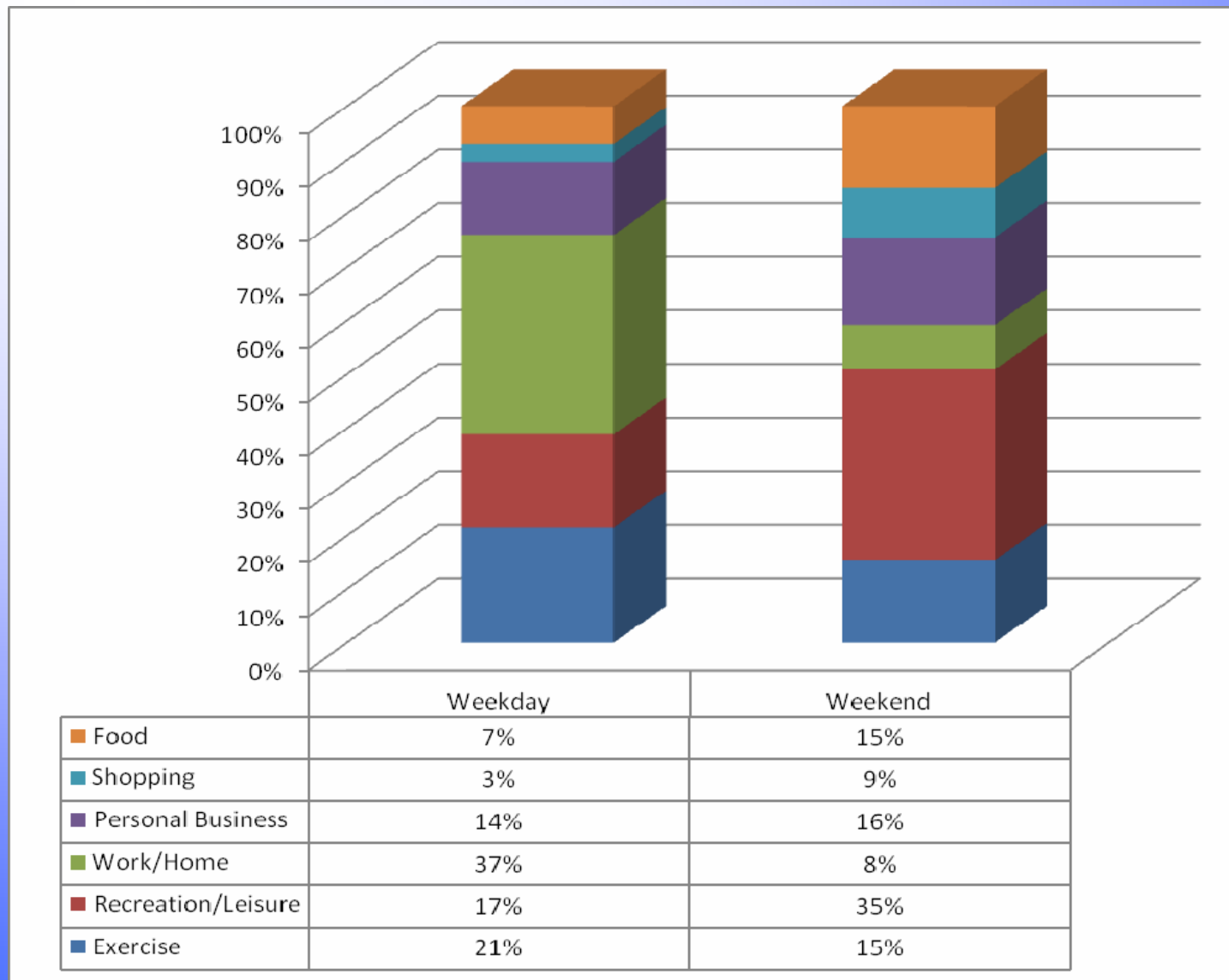


	8:00-9:00	9:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	Total
7/15/2009	53	44	76	47	45	37	52	94	78	113	639
7/16/2009	57	56	48	42	31	30	29	45	49	47	434
7/25/2009	89	88	104	98	108	123	93	93	103	89	988

Percentage of Bikes vs. Peds



Bike/Ped Trip Purpose Summary



Fatal Flaw Analysis

Fatal Flaw Analysis: How it works

- Used to evaluate and screen full range of alternatives (solutions) identified
- Remaining feasible alternatives receive “Higher” level of analysis
- Fatal flaw screening:
 - Does alternative satisfy purpose, need and goals?
 - Does alternative have significant impacts?
 - Is alternative permittable?
 - Is alternative financially/physically feasible?
 - Is alternative clearly inferior to other alternatives?

Fatal Flaw Analysis



All Alternatives
identified by
Steering and
Stakeholder
Committees,
Public,
Agencies



Fatal Flaw
Analysis



Evaluate
Feasible
Alternatives

Draft Alternatives in Scope

Alternative #	# of Crossings	Sarah Mildred Long Rehab	Sarah Mildred Long Replacement	Sarah Mildred Long Eliminated	Memorial Rehab	Memorial Replacement	Memorial Eliminated	I-95 High Level Rehab
Alternative 1	3	X			X			X
Alternative 2	3		X		X			X
Alternative 3	3	X				X		X
Alternative 4	3		X			X		X
Alternative 5	2			X	X			X
Alternative 6	2			X		X		X
Alternative 7	2	X					X	X
Alternative 8	2		X				X	X
Alternative 9	2+	X			Bike/Ped only			X
Alternative 10	2+		X			Bike/Ped only		X

Note – rail is assumed to be maintained under all Sarah Mildred Long bridge rehab or replacement alternatives. If eliminated, alternate rail options will be evaluated.

Fatal Flaw Draft Matrix

- Tool to “funnel” all alternatives (solutions)
- Criteria based on Purpose and Need Statement and regulatory requirements
- This analysis less detailed than for final feasible alternatives
- At this point do not have detailed information on such categories as aesthetics and economic impact. These will be applied later to feasible alternatives
- Today’s hypothetical exercise: Your choice!

Fatal Flaw Draft Matrix

Brainstorming Session: Full Range of Alternatives

Draft Alternatives in Scope

Alternative #	# of Crossings	Sarah Mildred Long Rehab	Sarah Mildred Long Replacement	Sarah Mildred Long Eliminated	Memorial Rehab	Memorial Replacement	Memorial Eliminated	I-95 High Level Rehab
Alternative 1	3	X			X			X
Alternative 2	3		X		X			X
Alternative 3	3	X				X		X
Alternative 4	3		X			X		X
Alternative 5	2			X	X			X
Alternative 6	2			X		X		X
Alternative 7	2	X					X	X
Alternative 8	2		X				X	X
Alternative 9	2+	X			Bike/Ped only			X
Alternative 10	2+		X			Bike/Ped only		X

Note – rail is assumed to be maintained under all Sarah Mildred Long bridge rehab or replacement alternatives. If eliminated, alternate rail options will be evaluated.

Additional Alternatives

Purpose and Need

Purpose and Need Statement: The Process

- Gathered initial feedback from Public – April 09
- Draft presented to Stakeholder Committee June 30
- Comments incorporated - revised P&N to Steering Committee and Stakeholder Committee on July 7
- Federal agencies commented on format
- SC met to discuss in early August and agreed to revised format with adjustments
- Revision sent to SHC on August 11
- Conference call with SHC on August 17 and 19
- Feedback solicited at August 20 Public Meeting
- Version 9 includes that feedback

Purpose and Need Statement

Statement of Purpose

- The purpose of the Maine-New Hampshire Connections Study is to identify and evaluate feasible long-term (2035) transportation strategies that facilitate the safe, secure and effective multi-modal movement of people and goods across and upon the Piscataqua River between Kittery, Maine and Portsmouth, New Hampshire and which support the region's **objectives with respect to** economic, cultural, historic, archeological and natural resources and its community quality of life.

Statement of Need: *Transportation Deficiencies*

The Need for the Study is based on present and future transportation deficiencies, specifically:

- a) Structural deficiencies exist that threaten accessibility and mobility to the region and require load postings on the Memorial Bridge and the Sarah Mildred Long Bridge,
- b) Decreased reliability of the lift spans and increasing maintenance needs of the Memorial and Sarah Long bridges are causing unnecessary delays to marine and land transportation, including response times of emergency vehicles
- c) **These two bridges are functionally obsolete and** include outdated design features **that may** affect marine and land transportation safety,
- d) Multi-modal (*pedestrian, bicycle, rail, maritime traffic, vehicular*) opportunity is limited by inadequate or outdated facilities.

Study Goals:

In order to achieve the stated Purpose and Need, the Study will strive to achieve the following goals:

- Improve local and regional economic growth and stability, tourism and recreational opportunities
- Maintain or improve access to Portsmouth and Kittery downtowns and Portsmouth Naval Shipyard
- Improve local connections to regional transportation modes, **for example the Portsmouth International Airport at Pease**
- Minimize long-term costs for the regional transportation system

Study Goals

- Improve bicycle and pedestrian access across the Piscataqua River Reduce operational and maintenance costs (currently \$1.1+ M per year per bridge)
- Avoid or minimize detrimental impacts to the historic significance and integrity of the Kittery-Portsmouth area
- Conserve the aesthetic setting of the Piscataqua River
- Conserve the environmental quality of the Piscataqua River

Study Goals

- Avoid or minimize detrimental impacts to residential neighborhoods in Kittery, Portsmouth and neighboring areas.
- Reduce or maintain emissions of pollutants, including greenhouse gases
- Maintain or improve emergency evacuation efficiency across the Piscataqua River.
- Do not preclude future transportation opportunities, for example, providing for passenger rail service or bus service across the Piscataqua River.

Upcoming Meetings: Fatal Flaw Analysis

- Sept. 17: Steering Committee Meeting
- Sept. 24: Public Meeting
- Oct./Nov.: Possible Stakeholder Committee Meeting to check in on Fatal Flaw Analysis