Item #9A


# I-95 / I-395 Integrated Corridor Management Initiative

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**Operations and Security Division, VDOT**

**Commuter Connections Subcommittee Meeting**

**Metropolitan Washington Council of Governments**

**Washington DC, January 17, 2012**

# Project Overview

- Why
- What
- Where
- How

# Why

❖ Congestion management tool combining advanced technologies and innovative practices.

❖ Proactively manages available capacity across modes along a corridor optimizing the use of transportation infrastructure assets.

❖Corridor is managed as a system— multi modal, multi agency, multi-jurisdictional

# Today's Corridors: Independent Systems

| Arterial Signal Systems | Freeway Systems | Rail Systems | Bus Systems | Parking Systems |
|---|---|---|---|---|
|  |  |  |  |  |

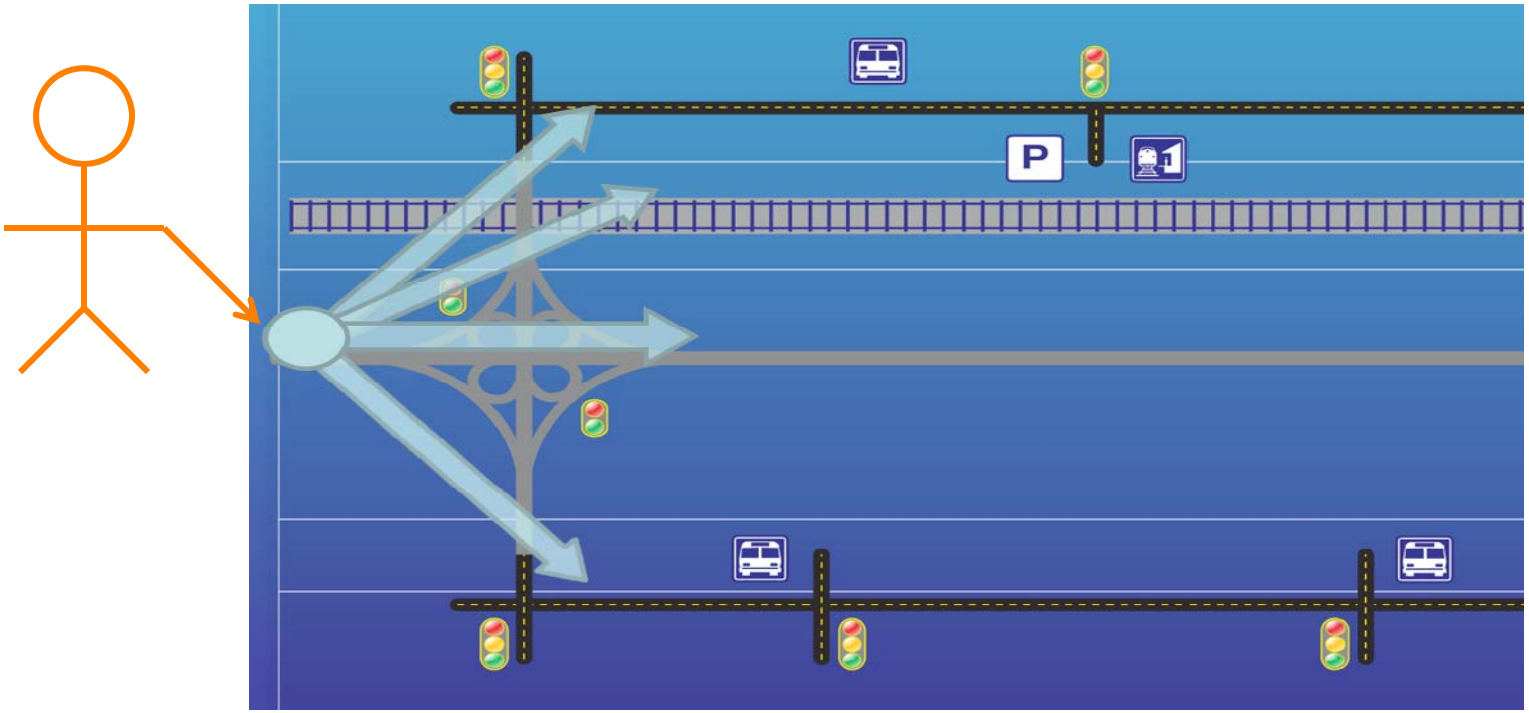
- Efforts to date to “reduce congestion” have focused on optimization of individual systems
- Significant investments in ITS
- Tremendous opportunities to integrate operations to manage total corridor capacity

# With Integrated Corridor Management

***Significant Congestion*** ***ICM Systems*** ***Managing All Corridor Capacity***


multi-agency collaboration and coordination

# The Commuter's View of ICM


providing travel choices

# Supporting ITS Technologies

- Real-time traffic signal timing, control, and coordination, Transit signal priority
- Adaptive ramp metering
- ATM Tools – HSR, DLM, QW
- Multimodal traveler information / Actionable traveler information
- Integrated electronic payment
- HOT lanes/congestion pricing





connectivity is key

2035 VTrans

SAFE • STRATEGIC • SEAMLESS

## Vision

***Virginians envision a transportation system that is safe, strategic, and seamless.***

Travel for people and goods will be safe and uninterrupted. Transportation improvements will protect the environment and the quality of life in Virginia's communities while enhancing economic opportunity. Transportation improvements will respect and reflect the varied needs of Virginia's diverse communities and regions.

Investments in transportation will be adequate to meet current and future needs. Transportation decisions will be guided by sustained, informed involvement of Virginia's community leaders and citizens. Full accountability and enduring trust will be the hallmarks of transportation planning and investment decisions throughout the Commonwealth.

## Goals

**Safety and Security**

**System Maintenance and Preservation**

**Mobility, Connectivity, and Accessibility**

**Environmental Stewardship**

**Economic Vitality**

**Coordination of Transportation and Land Use**

**Program Delivery**

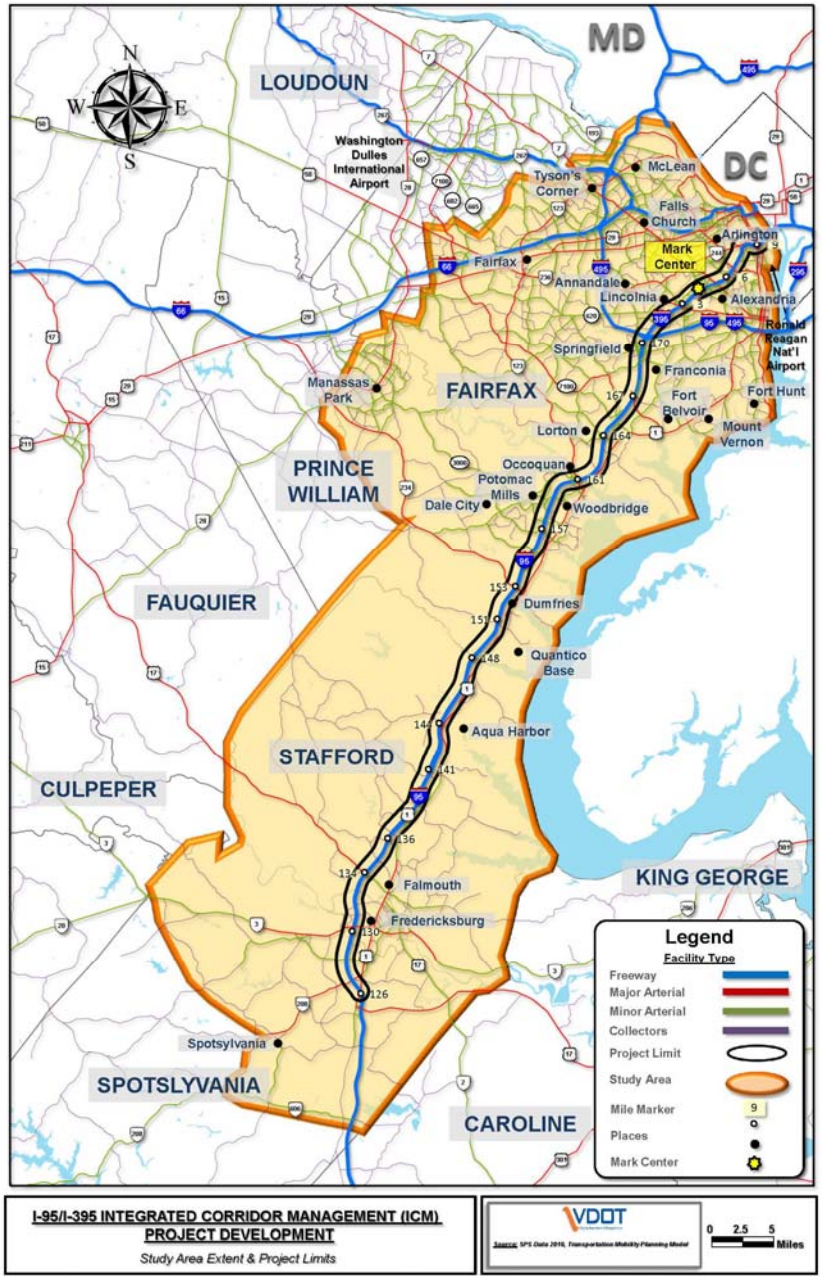
# What

- Address multi-modal commuting and through traffic issues in 95/395 corridor, including:
  - Auto, carpool, rail, bus, other options
  - Connectivity between modes
- Identify innovative technologies to facilitate multi-modal local, regional and national corridor travel
- Identify tools to provide Information related to travel times and parking
- Address tools to enhance capacity such as hard shoulder running, other active traffic management schemes

# Where

- Project Limits - Spotsylvania Interchange to 14th Street Bridge
- Project Segments
  I. US 1/17 to Rt 610 (MM126-144)
  II. Rt 610 to I-495 (MM144-170)
  III. I-495 to 14th St Br (I-395, MM0-8)
- ICM ConOps & Project Development Task in initiated in October, 2011
  - ✓ Kick Off Meeting on Oct 12
  - ✓ Mark Center Task Force WG #3 Meeting
- Develop ICM Applications, Operational Strategies and technology-based solutions

# Study Area


MD
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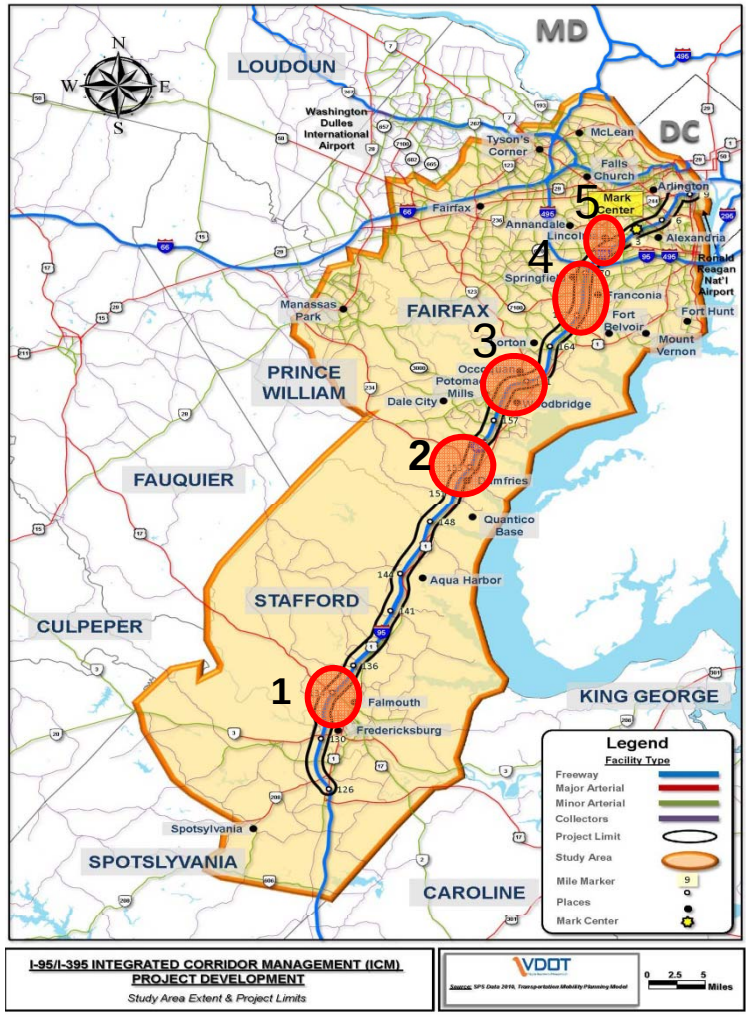
Tyson's Corner
McLean
Falls Church
Arlington
Mark Center
Fairfax
Annandale
Lincolnia
Alexandria
Ronald Reagan Nat'l Airport
Springfield
Franconia
Fort Belvoir
Fort Hunt
Mount Vernon
Manassas Park
Lorton
Occoquan
Potomac Mills
Dale City
Woodbridge
Dumfries
Quantico Base
Aqua Harbor
Falmouth
Fredericksburg
Spotsylvania
Legend
Facility Type
Freeway
Major Arterial
Minor Arterial
Collectors
Project Limit
Study Area
Mile Marker
Places
Mark Center
I-95/I-395 INTEGRATED CORRIDOR MANAGEMENT (ICM) PROJECT DEVELOPMENT
Study Area Extent & Project Limits
VDOT
0 2.5 5 Miles

# Hot Spots

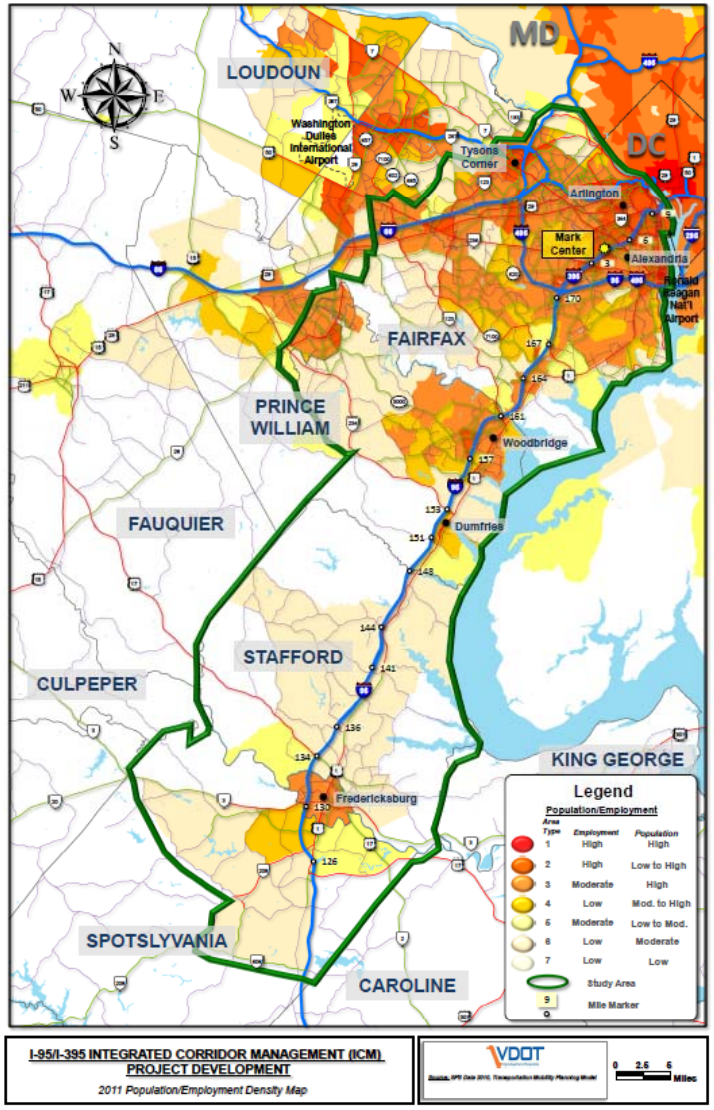



## Hot Spots - Summary

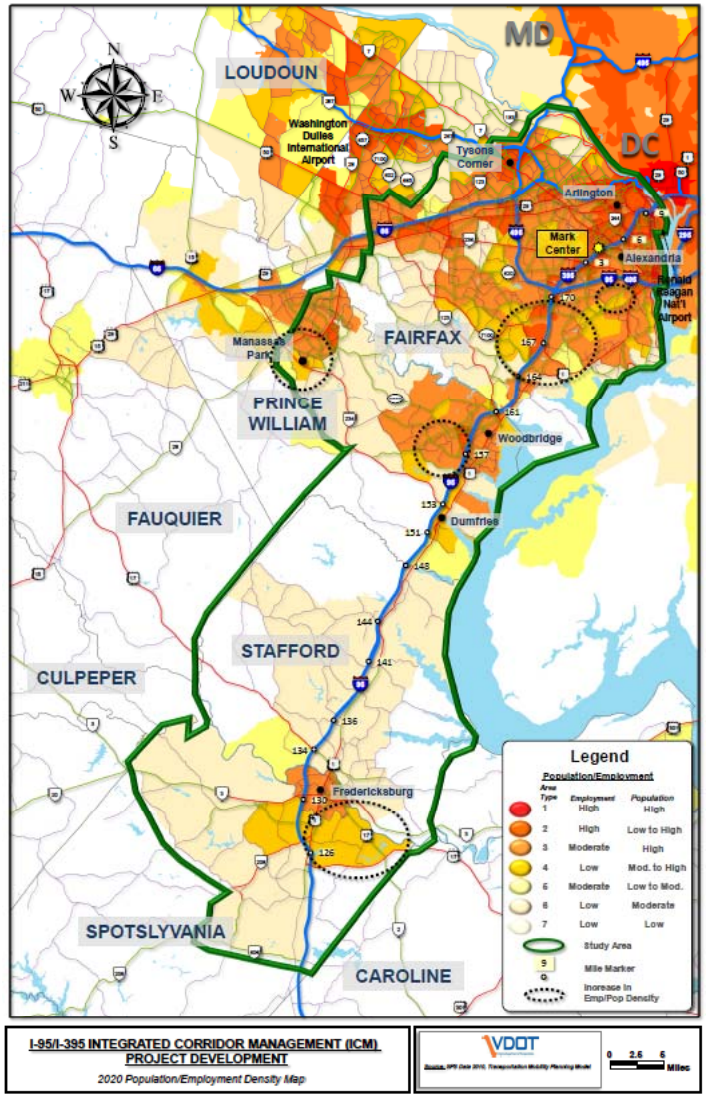
| Hot Spot Location | Volume/Capacity | | Speed Index (%): Ratio of Operating to Free flow Speed | | Crashes |
|---|---|---|---|---|---|
| | AM (NB/SB) | PM (NB/SB) | AM (NB/SB) | PM (NB/SB) | |
| 1 | 0.8/0.9 | 0.92/0.88 | 70/60 | 48/65 | 165 |
| 2 | 0.88/0.8 | 0.93/0.88 | 62/73 | 49/66 | 276 |
| 3 | 1.0/0.82 | 0.92/1.02 | 25/67 | 53/21 | 390 |
| 4 | 1.1/0.93 | 0.94/1.04 | 20/30 | 27/23 | 644 |
| 5 | 1.04/0.8 | 1.05/1.15 | 20/56 | 25/14 | 388 |

# Population & Employment Density

2011




2020



# Major Assets

## Roadway

- 6-8 general purpose freeway lanes (I-95/395)
- 2 lanes for reversible HOV operation (expansion to 3 lanes in future for HOT)
- US 1 is relatively convenient alternate route between Spotsylvania and Woodbridge
- I-95/395 TMS (from Dumfries north)
- Some TMS Elements in Fredericksburg area

## Transit

- Commuter rail (VRE) the length of corridor – but some segments lie far from I-95
- Metro rail from Franconia-Springfield north
- Bus services
  - WMATA
  - Fairfax Co
  - PRTC
  - Local (F'burg, ALX, ARL)
  - Intercity

# Major Assets

## Park-and-Ride in Corridor

- 40,771+ spaces
  - 9494 at transit stations
    - 5069 of these at Franconia-Springfield, others VRE only
    - Utilization ranges from 64% at Lorton to 90-100% between Stafford and Fredericksburg
  - 25,972 owned by VDOT NoVA District
  - 5305 owned by VDOT Fredericksburg District
  - Average utilization 43%
- 3000 more spaces proposed by 2015

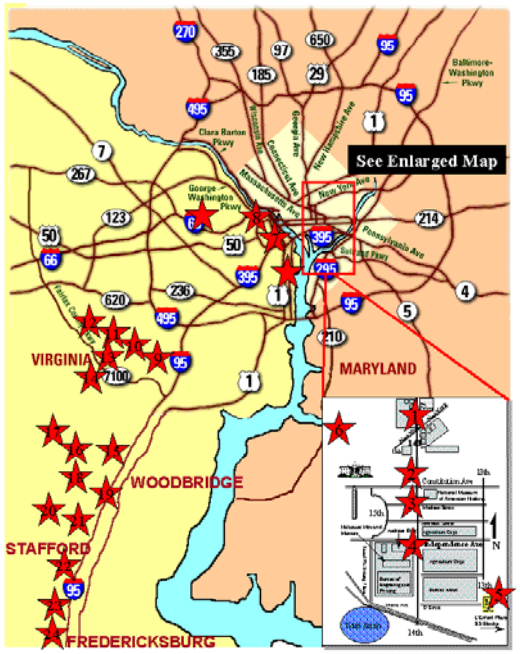
## Other Modes

- US Bicycle Rt 1 (north-south)

# Major Assets

## Transportation Demand Management

- Commuter Connections
  - 1000 vanpools daily
  - 4000 carpools daily
- 6400 “slugs” daily (2008)
- Real-Time Ridesharing Pilot (NVRC)
  - 6 month pilot
  - Est. 500 drivers, 1000 riders
  - Aim for sustainability beyond pilot
- Telework Centers
  - Woodbridge

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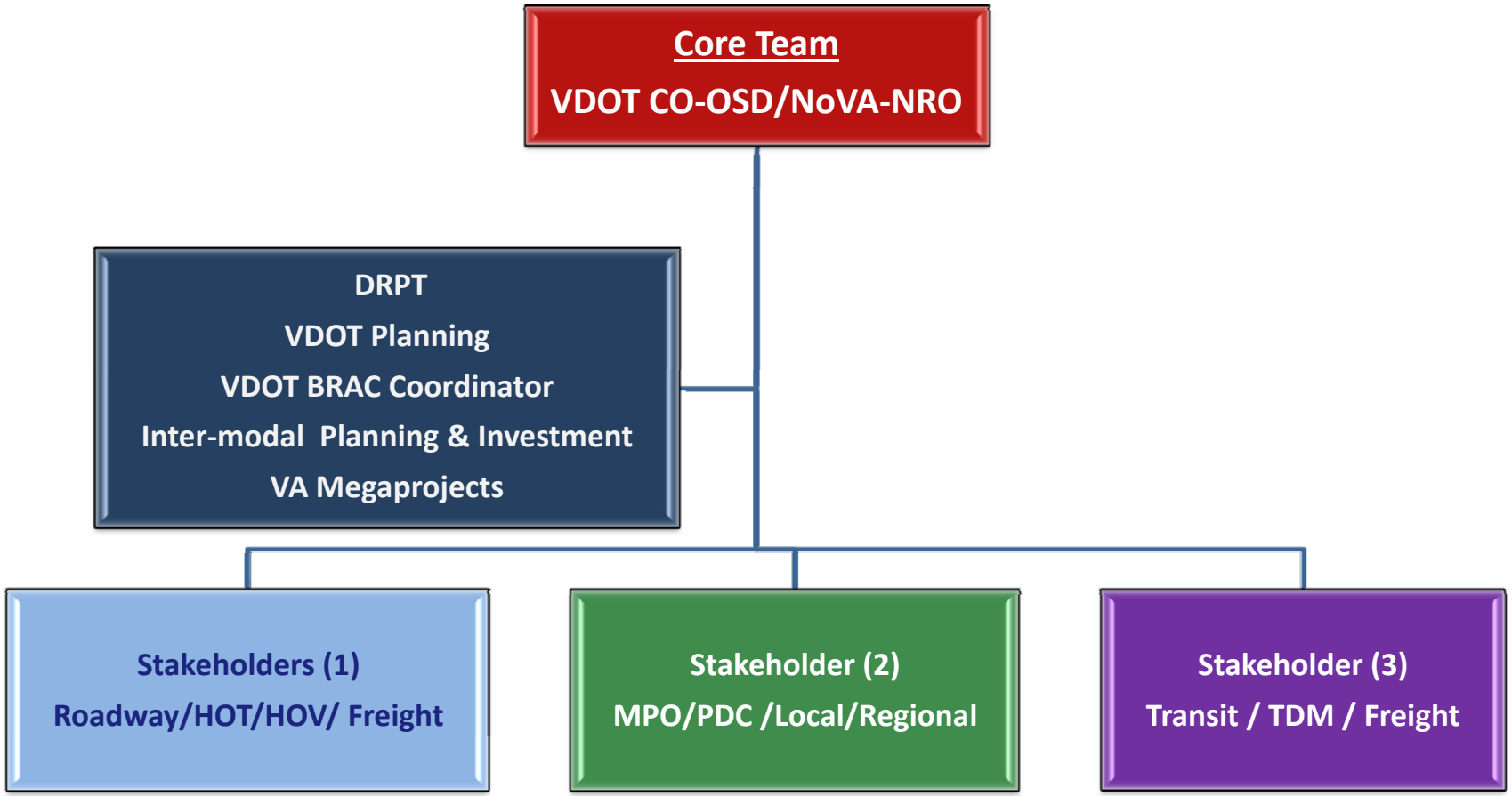
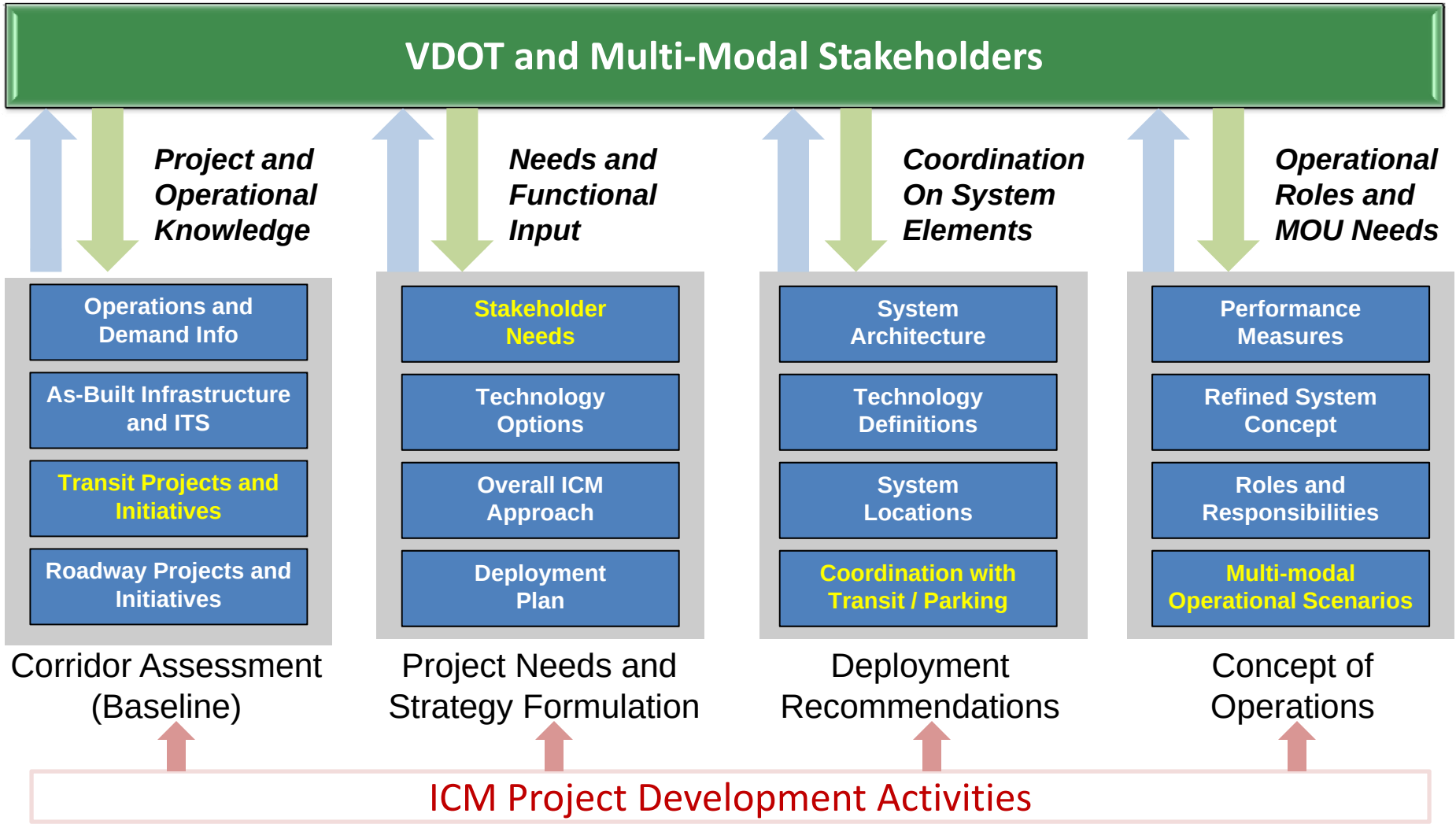
# How - Stakeholder Engagement

## Stakeholders



# Stakeholder Engagement Activities



# Inputs

Information capture across modes

- Existing Transportation Infrastructure
- Land Use, Travel and Traffic Characteristics
- On-Going/Programmed/Planned Improvements
- TDM Strategies
- Other

| Project Milestone | Date |
|---|---|
| Corridor Operational Assessment Summary | December 9, 2011 (draft)<br>December 16, 2011 (internal review)<br>December 23, 2011 (final) |
| ICM Project Development Report | January , 2012 (stakeholder engagement – meetings and table top exercises)<br>February 15, 2012 (draft ICM Strawman)<br>February 22, 2012 (presentation to stakeholders)<br>March 29, 2012 (finalization of ICM Strawman) |
| ICM Deployment Recommendations Report | April 15, 2012 (draft)<br>April 30, 2012 (final) |
| Systems Engineering Management Plan & Concept of Operations | March 4, 2012 (draft SEMP)<br>March 25, 2012 (estimated – ConOps and Deployment workshop)<br>April 15, 2012 (draft ConOps)<br>April 30, 2012 (final SEMP and ConOps documents) |