



## **I-64 HOV 2+ to HOT 2+ Conversion Norfolk/Virginia Beach/Chesapeake**

**James Utterback, PMP**  
Hampton Roads District Administrator

Presented to Commonwealth Transportation Board  
September 20, 2016

## History

**Aug 1992: CTB resolution designated HOV lanes in Hampton Roads as HOV-2: Monday - Friday 5:00am – 8:30 am; 3:00pm – 6:00pm and restricted trucks from operating on certain HOV lanes**

**Jan 1998: CTB resolution restricted trucks (except for pickup or 2 axle panel type trucks) from operating on any HOV lane in Hampton Roads**

**Feb 1999: CTB resolution effective May 1, 1999 modifying operational hours of all HOV lanes on I-564, I-264, I-64 and Route 44 to be Monday - Friday 6:00am – 8:00am; 4:00pm – 6:00pm**

**Jun 2008: U.S. Secretary of Transportation encouraged the conversion of HOV to HOT (allowed by SAFETEA-LU) in a response to Virginia Congressional request to convert to general purpose lanes.**

## Background

**Dec 2015: Letter from Secretary Layne to HRTPO initiating a feasibility study of a HOV to HOT conversion on I-64**

**Jan 2016: Briefed CTB on the beginning of feasibility study**

**Jan 2016: Briefed HRTPO on the beginning of feasibility study**

**May 2016: Briefed HRTPO on the initial study results**

**Jul 2016, Finalized the study and briefed to Secretary Layne**

### **Study Recommendations will require CTB Actions:**

- Convert HOV-2 to HOT-2 and change in operational hours
- Use the Toll Facility Revolving Account funds for initial capital costs

# I-64 HOV to HOT Conversion

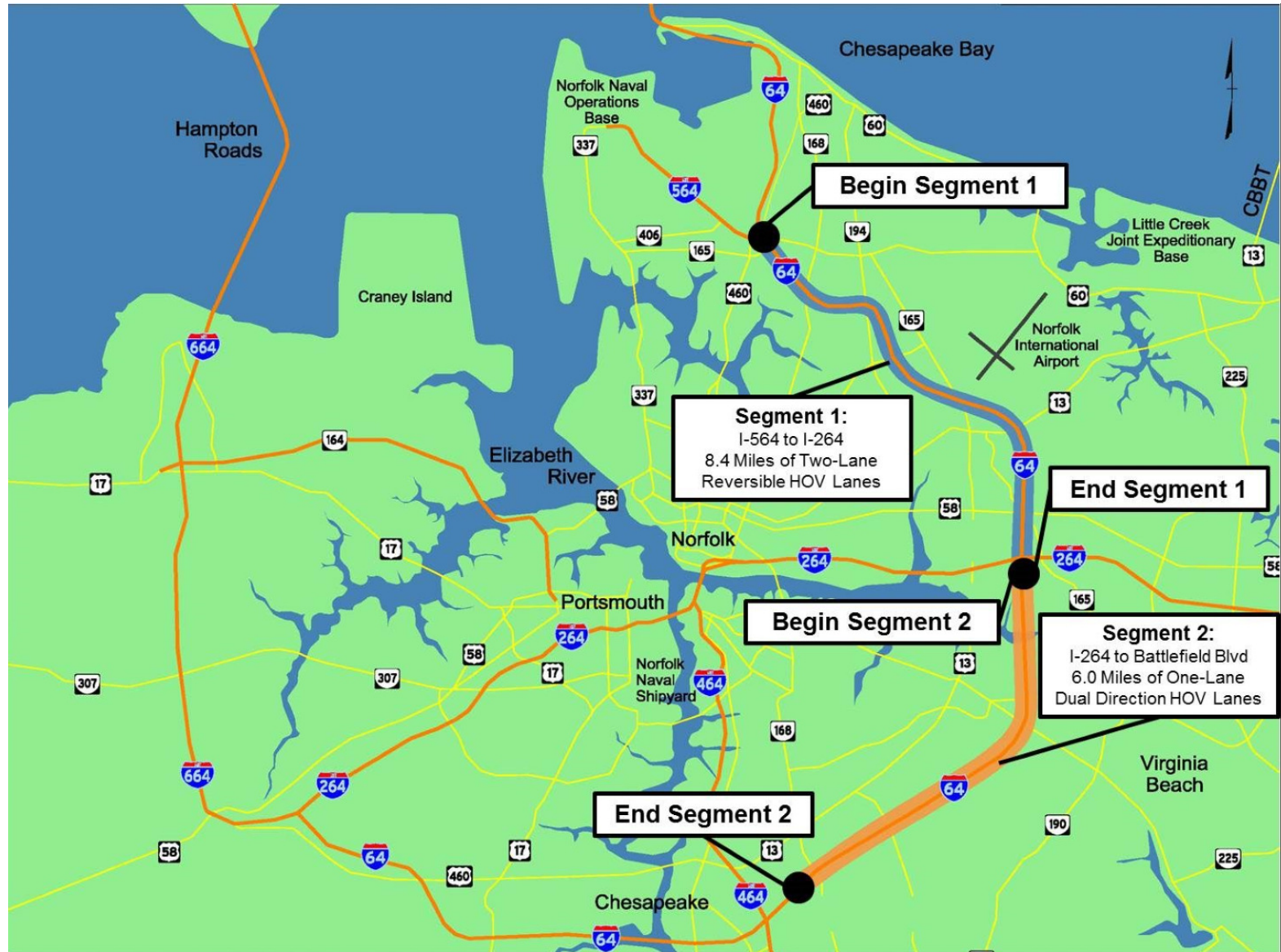
## Regional Opportunity

- 32 miles of HOV lanes in Hampton Roads are underused
- Opportunity to provide travel choices to reduce traffic congestion by using the underused HOV lanes
- Improve reliability and reduce congestion in both general purpose and HOV travel lanes

## Objective

- Determine the feasibility of converting portions of the existing HOV network to HOT lanes
- Identify the potential benefits and implications of a HOV to HOT conversion

# Study Scope -- Location Map



# I-64 HOV to HOT Conversion Policy Choices

## HOV/HOT Occupancy Requirements

- HOT 2+ or HOT 3+

## HOT Hours of Operation

- 2 hours in both the AM and PM peak period\*
- 4 hours in both the AM and PM peak period\*
- 24 hour operation

\*Includes HOT operation in off-peak direction on Segment 2

## HOT Days of Operation

- Weekday only
- Weekends

## Pricing Methodology

- Time of day pricing (pre-defined rate schedule)
- Dynamic pricing (toll rates based on traffic flow)

## Pricing Strategy

- Transaction based
- Trip based

## Four Elements Define Feasibility

### Improved corridor throughput and reduced congestion in the general purpose lanes

- Increased capacity and travel speeds in the General Purpose lanes and maintain minimum speeds in the HOT lanes during rush hour

### Revenues generated by HOT lanes exceed cost of operations

- Operations and Maintenance costs covered in year 1
- Capital costs paid back over 30 years or less

### Design layout of toll infrastructure feasible

- Lane configuration and geometry supports conversion of HOV to HOT

### HOT solution has flexibility to support potential future managed lane segments

## Feasibility Assessment Relative to Benchmarks

### Segment 1 (I-564 to I-264) is feasible

- HOT 2+
- 4 hours in both the AM and PM peak
- Weekday only
- Dynamic Pricing
- Transaction-based (single gantry)

### Segment 2 (I-264 to I-464) is NOT feasible financially\*

- HOT 2+
- 4 hours in both the AM and PM peak and non-peak
- Weekday only
- Dynamic Pricing
- Transaction-based

\* may be feasible, pending further study, if combined with managed lanes on High-Rise Bridge



# Benefits

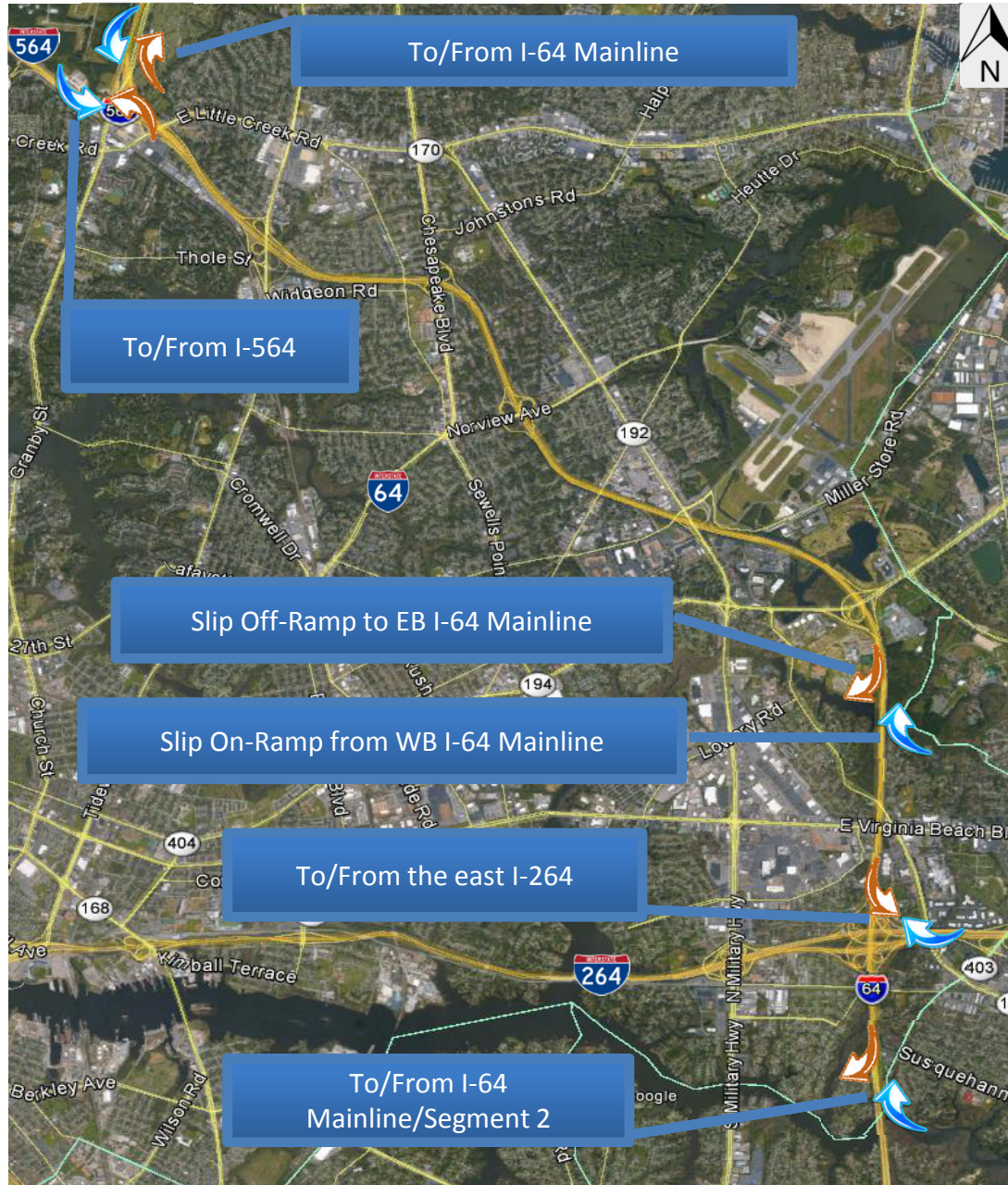
## Segment 1 (I-564 to I-264)

- Average utilization during 2 Hour AM & PM HOV restricted periods
  - **AM: 1603 (existing), 4325 (2018), 4825 (2034)**
  - **PM: 2348 (existing), 5275 (2018), 5725 (2034)**
- GP utilization decreases **17% - 20%** due to shifts to HOT lanes
- Free flow capacity = 6000+ vehicles  
(1,500 vehicles / lane x 2 lanes x 2 hours)

## Segment 2 (I-264 to I-464)

- Average utilization during 2 Hour AM & PM HOV restricted periods
  - **AM: 1335 (existing), 2315 (2018), 2805 (2034)**
  - **PM: 1651 (existing), 2450 (2018), 2925 (2034)**
- GP utilization decreases **3% - 10%** due to shifts to HOT lanes
- Free flow capacity = 3000+ vehicles  
(1,500 vehicles / lane x 1 lane x 2 hours)

# Segment 1 Access



- Ingress Point
- Egress Point

# Segment 1 Toll Zone & Read Points



-  Ingress Point
-  Egress Point

## Anticipated CTB Action:

**Based on the results of the feasibility study, VDOT will recommend the CTB take two actions:**

- Convert Segment 1 (I-564 to I-264) from HOV-2 to HOT-2 and extend the operating hours to Monday - Friday 5:00am – 9:00am; 2:00pm – 6:00pm
- Authorize VDOT to use of the Toll Facility Revolving Account funds for initial capital costs

**NOTE: Segment 2 (I-264 to I-464) is currently being evaluated in conjunction with the I-64 High Rise Bridge (I-464 to I-264) analysis**

## Implementation Schedule

Activities	Dates
Anticipate CTB Action	Oct 2016
RFP Development	Oct - Nov 2016
Civil Design	Oct – Dec 2016
Integrator Procurement	Nov 2016- Mar 2017
Public Outreach	Feb – Dec 2017
Civil Construction	Mar – Jun 2017
Integrator Implementation	Apr – Aug 2017
Open to Tolls	Summer/Fall 2017



## **I-64 HOV 2+ to HOT 2+ Conversion Norfolk/Virginia Beach/Chesapeake**

**James Utterback, PMP**  
Hampton Roads District Administrator

Presented to Commonwealth Transportation Board  
September 20, 2016