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 HRTPPO 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 HRTPPO on the beginning of feasibility study

May 2016: Briefed HRTPPO 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
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

Segment 1:
I-564 to I-264
8.4 Miles of Two-Lane Reversible HOV Lanes

Segment 2:
I-264 to Battlefield Blvd
6.0 Miles of One-Lane Dual Direction HOV Lanes
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

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

*Includes HOT operation in off-peak direction on Segment 2
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
  
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 2 lanes x 2 hours)
Segment 1 Access

- To/From I-64 Mainline
- To/From I-564
- Slip Off-Ramp to EB I-64 Mainline
- Slip On-Ramp from WB I-64 Mainline
- To/From the east I-264
- To/From I-64 Mainline/Segment 2

Ingress Point

Egress Point
Segment 1 Toll Zone & Read Points

- Toll Zone 1
- WB On-Ramp Read Point
- WB I-264 On-Ramp Read Point
- WB On-Ramp Read Point
- 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

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<th>Activities</th>
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<td>Anticipate CTB Action</td>
<td>Oct 2016</td>
</tr>
<tr>
<td>RFP Development</td>
<td>Oct - Nov 2016</td>
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<tr>
<td>Civil Design</td>
<td>Oct – Dec 2016</td>
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<td>Integrator Procurement</td>
<td>Nov 2016- Mar 2017</td>
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<td>Integrator Implementation</td>
<td>Apr – Aug 2017</td>
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<td>Open to Tolls</td>
<td>Summer/Fall 2017</td>
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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