BRT Technical Studies Update
Streets and Freeways Committee
March 16, 1017
December 2013 – Completed Los Angeles County Bus Rapid Transit Study (CBRT)
  • Recommended nine potential corridors for BRT including North Hollywood to Pasadena and Vermont Avenue

July/October 2014 – Board directed staff to begin advanced technical work on North Hollywood to Pasadena and Vermont Corridors

July 2015 – Contracts awarded and studies officially kicked off
  • Anticipated completion in March 2017

June 2016 – Board directed staff to begin environmental planning work on the North San Fernando Valley BRT project within six months of the passage of Measure M
North Hollywood to Pasadena Corridor Overview

16-mile corridor from North Hollywood to Pasadena
There Are Two Distinct Travel Markets

- 700,000 daily trips
- Travel markets:
  - Trips passing through the study area
  - Trips beginning or ending in the study area
Initial Alignment Concepts
Concept 1: Primary Street Alignment

- Approximately 18 miles connecting the Metro Gold Line and Orange/Red Line via Colorado, Broadway, Brand, Glenoaks, Olive, and Lankershim
- Dedicated bus lanes along majority of alignment
- Street alignment options:
  - Green/Union Couplet (Pasadena)
  - Central (Glendale)
  - Chandler (Burbank)
  - Magnolia (Burbank)
  - Alameda (Burbank)
Concept 2: Primary Freeway Alignment

- Approximately 16 miles of BRT connecting the Metro Gold Line and Red/Orange Line via SR-134
- Freeway alignment option: access to Burbank Airport via the SR-134/I-5 Freeways
## Assessment of Preferred BRT Concepts

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Primary Street Running</td>
<td>77</td>
<td>18,000</td>
<td>$274 - $448</td>
<td>$14</td>
</tr>
<tr>
<td>Primary Freeway Running</td>
<td>52</td>
<td>10,300</td>
<td>$123 - $246</td>
<td>$10</td>
</tr>
</tbody>
</table>

Measure M funding includes $267 million

The Street Running Concept has the potential to attract more riders because it has more stations that serve key activity centers
North Hollywood to Pasadena Key Findings

> Substantial untapped transit market in the study area
> A premium bus service has the potential to capture more choice riders
> The Street Running and Freeway Running concepts serve different market segments
> Both concepts are feasible BRT options to improve transit service and increase ridership in the study area
Vermont Corridor Overview

> Second busiest bus corridor in Metro system
  • 45,000 daily boardings

> Heavy traffic congestion and/or recurring bottlenecks resulting in:
  • Slow bus speeds
  • Poor on-time performance
  • Uneven headways
  • Overcrowding

> Connects to:
  • Several rail and bus lines
  • Key activity centers
Four (4) Preliminary BRT Concepts Were Identified

> **Concept 1:** End-to-End Side Running BRT

> **Concept 2:** Combination Side and Center Running BRT

> **Concept 3:** Curbside Running BRT

> **Concept 4:** Peak Period Curbside Running BRT
Concept 1: End-to-End Side Running BRT

- Side running BRT for entire 12.4 mile corridor
- Converts traffic lanes next to parking to dedicated bus lanes
- Total parking loss: 446 all-day spaces (22% of all on-street parking)
Concept 2: Combo Side / Center Running BRT

> 8.2 miles of side running BRT; 4.2 miles of center running BRT

> North of Gage, converts traffic lanes next to parking to bus lanes

> In wider segment south of Gage, creates center running bus lanes by converting two center traffic lanes
  • Faster travel times
  • Reduced friction with other vehicles

> Total parking loss: 464 all-day spaces (23% of all on-street parking)
Concept 3: Curbside Running BRT

- 7.3 miles of curbside dedicated bus lanes; 5.1 miles in mixed-flow (due to ROW constraints)
- Converts existing on-street parking, where wide enough, to bus lanes
- Total parking loss: 1,100 all-day spaces (55% of all on-street parking)
- Right-turning cars would interfere with bus lanes at intersections

[Diagram of curbside running BRT with metrics]
Concept 4: Peak Period Curbside Running BRT

- Bus lanes would exist during peak hours only (7-9 AM and 4-7 PM); BRT would operate in mixed-flow all other times
- 2.7 miles of curbside peak hour dedicated bus lanes; 9.7 miles in mixed-flow (due to lack of existing restricted peak period parking and ROW constraints)
- Total parking loss: 83 all-day spaces (4% of capacity)
- Right-turning cars would interfere with bus lanes at intersections
### Summary of Project Benefits

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Average Travel Time (PM Peak, SB, in Minutes)</th>
<th>Average Bus Speed</th>
<th>Total Corridor Ridership (weekday)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Current Metro Rapid Line 754 (2015)</td>
<td>Post Project (2035)</td>
<td>% Change</td>
</tr>
<tr>
<td></td>
<td>No Build (2035)</td>
<td>Build (2035)</td>
<td>% Change</td>
</tr>
<tr>
<td>Concept 1</td>
<td>51</td>
<td>27%</td>
<td>37%</td>
</tr>
<tr>
<td>Concept 2</td>
<td>50</td>
<td>28%</td>
<td>39%</td>
</tr>
<tr>
<td>Concept 3</td>
<td>62</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td>Concept 4</td>
<td>64</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>63,850</td>
<td></td>
<td></td>
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</tbody>
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Concepts 1 and 2 offer the greatest improvements in travel time, bus speed, and ridership.
## Summary of Project Impacts

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Travel Lane Impacts (by direction)</th>
<th>Person Throughput (per lane)</th>
<th>Parking Impacts (reduction)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concept 1</td>
<td>1-2</td>
<td>2,005</td>
<td>-446</td>
</tr>
<tr>
<td>Concept 2</td>
<td>2-3</td>
<td>1,400-1,600</td>
<td>900</td>
</tr>
<tr>
<td>Concept 3</td>
<td>2-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concept 4</td>
<td>2-3</td>
<td></td>
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Concept 3 has the largest on-street parking loss.
### Estimated Project Costs

<table>
<thead>
<tr>
<th>Concepts</th>
<th>Capital Cost</th>
<th>Increase in Annual O&amp;M Costs</th>
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<tbody>
<tr>
<td>Concept 1</td>
<td>$322M</td>
<td>$3.4M</td>
</tr>
<tr>
<td>Concept 2</td>
<td>$332M</td>
<td>$3.4M</td>
</tr>
<tr>
<td>Concept 3</td>
<td>$235M</td>
<td>$3.8M</td>
</tr>
<tr>
<td>Concept 4</td>
<td>$145M</td>
<td>$4.1M</td>
</tr>
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</table>

Dedicated bus lanes for the entire corridor (Concepts 1 and 2) result in a higher upfront Capital Cost but lower annual Operating & Maintenance Costs.
Vermont Corridor Key Findings

Concepts 1 and 2 stand out as the most promising options for improving bus service on Vermont for several reasons:

- Yield largest improvement in operational performance
- Result in highest ridership increase
- Best improve the customer experience
- Minimize impact on parking

Concept 1

Concept 2
North San Fernando Valley

> Provide a high-capacity east-west BRT transit service in the North San Fernando Valley
  • Serve California State University, Northridge as well as other key activity centers
  • Improve connectivity between the North San Fernando Valley and the regional transit system

> Pre-environmental technical study exploring potential routes, stop locations and operations underway
Next Steps

All three projects included in Measure M Expenditure Plan/Schedule

> North Hollywood to Pasadena
  • Ground breaking date 2020 / Opening date 2022
  • Upon Metro Board approval, initiate environmental process

> Vermont
  • Ground breaking date 2024 / Opening date 2028
  • Funding for potential rail conversion after FY 2067
  • Phase II of the study will look at how BRT could be converted to rail in the future

> North San Fernando Valley
  • Ground breaking date 2019 / Opening date 2023
  • Upon Metro Board approval, initiate environmental process

> BRT design guidelines/criteria and performance measures also being developed
Thank You