Geary Bus Rapid Transit Transportation Analysis: Traffic Conditions

Geary Citizens Advisory Committee
June 19, 2014

SAN FRANCISCO COUNTY TRANSPORTATION AUTHORITY
June 19, 2014
Geary BRT Analysis Study Area
Scenarios:

**Five Alternatives**

- 1 – No Build
- 2 – Side Running
- 3 – Center Running
- 3C – Center Running; Consolidated Routes
- Hybrid – Combination of Alt 2 and 3C

**Two Future Analysis Years**

- 2020
- 2035
Geary BRT Analysis Methodology

CHAMP
Regional travel demand forecasting

Dynameq
Dynamic traffic assignment

Synchro
Intersection traffic operations

VISSIM
Multimodal microsimulation

CHAMP
Land Use
Transportation System

Dynameq
Auto Demand in Subarea

Synchro
Intersection Volumes (Off-Geary)

Off-Geary Roadway Performance

VISSIM
Geary Transit & Non-Motorized Demand

Geary Blvd Roadway Performance
Transit Performance
Geary BRT Analysis Methodology

- **VISSIM Model: Van Ness to 25th Avenue**
Geary BRT Analysis Methodology

- Synchro Model
Performance Metrics

• **Transit Performance**
  • Travel time
  • Reliability
  • Ridership

• **Circulation/System Performance**
  • Average person delay
  • Congestion hotspots

• **Environmental, Social Effects**
  • Preservation of on-street parking

• **Pedestrian Access and Safety**
  • Access to stops, transfers
  • Crossing, waiting conditions
Traffic Operations (2020) Auto Volumes

Eastbound

- Geary at Park Presidio
- Geary at Arguello
- Geary at Divisadero

Legend:
- No Build
- Alternative 2
- Alternative 3
- Alternative 3C
- Hybrid Alternative
Traffic Operations (2020) Auto Volumes

Westbound

![Traffic Operations Diagram](image-url)

PM peak hour traffic on parallel Geary corridor streets

Total diversions between 200 and 700 vehicles per hour

- No Project
- LPA

- Park Presidio
- Arguello
- Masonic
- Divisadero
- Webster
- Park Presidio
- Arguello
- Masonic
- Divisadero
- Webster

Westbound

Eastbound

2020 Alt 2

2020 Alt 3

- LOS A-D; Unsignalized
- LOS A-D; Signalized
- LOS E-F; Unsignalized
- LOS E-F; Signalized
• Impact criteria based on SF Planning Department and CEQA guidelines

• Five intersections experience LOS E or F during PM peak hour – locations vary by alternative
  • 3 intersections on Geary
  • 2 off-corridor intersections

• Mitigation strategies
  • Turn restrictions
  • Parking removal
  • Optimize signal timing
  • Add turn lanes

• Not every intersection traffic impact can be fully mitigated
• Approximately 6-8 intersections experience LOS E or F during PM peak hour under
  • 2-6 intersections on Geary (Build Alternatives)
  • 1-6 off-corridor intersections (Build Alternatives)

• Most, but not all, intersection traffic impacts can be mitigated
Pedestrian Improvements

1) **Safety benefits:** shorter crossings, signal phasing

2) **Access improvements:** new crossings, new curb ramps

3) **Benefits to senior and disabled access:** accessible street crossings, new connections, improved safety features, universal design features

4) **Improvements to pedestrian conditions:** urban design and streetscape features, improved bus stops areas

2020 Eastbound Autos

direction of travel

No Build
Alt 2
Alt 3
Alt 3C
Hybrid

Speed (mph)

25th Street
Park Presidio
Stanyan
Masonic
Broderick
Laguna
Polk

2020 Westbound Autos

<table>
<thead>
<tr>
<th>Speed (mph)</th>
<th>25th Street</th>
<th>Park Presidio</th>
<th>Stanyan</th>
<th>Masonic</th>
<th>Broderick</th>
<th>Laguna</th>
<th>Polk</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Build</td>
<td></td>
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<tr>
<td>Alt 2</td>
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<td>Alt 3</td>
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<tr>
<td>Alt 3C</td>
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<tr>
<td>Hybrid</td>
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</tbody>
</table>

Direction of travel

DRAFT

Travel Time (min)

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Westbound (Polk Street to 25th Avenue)</th>
<th>Eastbound (25th Avenue to Polk Street)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Build</td>
<td>20:00</td>
<td>20:00</td>
</tr>
<tr>
<td>Alt. 2</td>
<td>22:00</td>
<td>20:00</td>
</tr>
<tr>
<td>Alt. 3</td>
<td>22:00</td>
<td>20:00</td>
</tr>
<tr>
<td>Alt. 3c</td>
<td>22:00</td>
<td>20:00</td>
</tr>
<tr>
<td>Hybrid Alt.</td>
<td>24:00</td>
<td>20:00</td>
</tr>
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</table>
Future Traffic Operations: Key Findings

- **Automobile travel times** heading eastbound tend to be faster than westbound.
  - Travel time reliability is similar amongst all alternatives
- **Automobile speeds** vary by direction, but tend to be faster in the eastbound direction.
  - All build alternatives have faster eastbound travel speeds than No Build conditions
  - Heading westbound, speeds are better than No Build conditions for some alternatives, but slightly higher than the Hybrid Alternative.
- **Automobile levels of service** result in impacts at several locations – while improvements are possible to reduce or eliminate some impacts, some intersections will experience higher traffic delays.
For More Information:
www.gearybrt.org