GEARY BUS RAPID TRANSIT
ENVIRONMENTAL ANALYSIS

TRANSPORTATION ANALYSIS
Geary BRT Citizens Advisory Committee
July 30, 2009
Overview of Modeling Process

- 3 step model process
Overview of Modeling Process

- Model outputs

- **CHAMP**
  - Transit Speeds
  - Auto Volume Growth
  - Transit Growth
  - Ped Growth

- **Synchro**
  - Signal Timings
  - Road Volumes

- **VISSIM**
  - Driver route choice (diversions)

- Citywide and regional travel demand forecasting model
  - Mode shares
  - Trip origins and destinations
  - Future changes in traffic volumes and transit ridership
Overview of Modeling Process

- Model outputs

Traffic operations model
- Intersection turning activity for autos
- Intersection delays for autos
- Queue lengths for autos
Overview of Modeling Process

- Model outputs

**Multimodal microsimulation model**
- Speeds for transit vehicles and auto
- Delays for transit vehicles, autos
- Person-delays for transit, auto passengers, and pedestrians
- Queue lengths
Study Areas for Models

- Model outputs

- CHAMP
  - Transit Speeds
  - Transit Growth
  - Ped Growth

- Synchro
  - Auto Volume Growth
  - Signal Timings
  - Road Volumes

- VISSIM
  - Geary Blvd

- Citywide trips modeled
- Regional trips included

- Spot locations outside the corridor along parallel streets
Geary BRT Study Area

33rd Avenue to Van Ness/Gough
- VISSIM model for Geary
- Synchro for key intersections in corridor

East of Van Ness/Gough
- VISSIM model for Geary & O’Farrell
Transportation Conditions

- Transit
  - Supply
    - Routes and Stops
  - Demand
    - Ridership
  - Performance
    - Travel times
    - Delays

- Traffic
  - Volumes
  - Travel times

- Parking
  - Occupancy

Source: mapjack.com
Evaluation Measures (motorized trips*)

- Transit Operations and Performance
- System Operations and Performance
- Mixed Traffic Operations and Diversions

* Pedestrian and Bicycle benefits and impacts will also be evaluated, but are not discussed in this presentation.
### Evaluation (summarized)

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<th>BENEFITS</th>
<th>IMPACTS</th>
<th>RAIL-READINESS</th>
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<tr>
<td><strong>Transit Performance</strong></td>
<td><strong>Traffic &amp; Parking</strong></td>
<td>Complies with rail ready mandate</td>
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<td><strong>Transit Rider Experience</strong></td>
<td><strong>Costs</strong></td>
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<td><strong>Urban Design</strong></td>
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<td><strong>Multimodal System Performance</strong></td>
<td><strong>Capital cost</strong></td>
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<td><strong>Operating &amp; maintenance costs</strong></td>
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<td><strong>Construction duration &amp; intensity</strong></td>
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**Complies with rail ready mandate**

**Improve transit speed & reliability**

**Attract & retain riders**

**Distribute benefits equitably**

**Improve ride quality**

**Improve waiting & boarding experience**

**Improve pedestrian safety & access**

**Enhance street identity, landscaping & integration with adjacent land uses**

**Strengthen the city’s Rapid Transit Network**

**Minimize time to benefits**

**Accommodate traffic & circulation access**

**Change in available on-street parking & loading areas**
## Modeled Scenarios – PM Peak Period

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<th></th>
<th>2008</th>
<th>2015</th>
<th>2030</th>
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<tr>
<td><strong>Existing Conditions</strong></td>
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<td><strong>No-Project / Baseline / TSM</strong></td>
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<td><strong>BRT Alternatives</strong>*</td>
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* As defined in the Screening and Description of Alternatives Report:
  - Curb Lane BRT
  - Center Lane BRT with Dual Medians / Right Side Loading
  - Center Lane BRT with Center Median / Left Side Loading
Next Steps

- Finalize analysis of existing conditions at intersections (Synchro and VISSIM models)
- Update & expand existing condition VISSIM microsimulation model
- Run SF-CHAMP No Project for years 2015 and 2030
- Use SF-CHAMP No Project growth factors to develop No Project Synchro and VISSIM
QUESTIONS or COMMENTS?

Zabe Bent
Principal Transportation Planner
415.522.4819
gearybrt@sfcta.org
www.GearyBRT.org
THANK YOU