San Francisco
Transportation Plan Update

PART 2.4: Needs Assessment (continued)

Spring 2013

January 19, 2011
SFTP Needs Assessment

• Planned Growth
• Existing and Future Transportation Conditions
• Aspirational Scenarios: “What would it take to...”
  • Achieve a state of good repair
  • Get to approximately 50% below 1990 greenhouse gas emissions
  • Achieve a non-auto mode share above 50%
  • Accommodate population/employment growth with no change in commute
• Focused Sector Analyses
  • Visitor Trips
  • Goods Movement Trips
  • School Trips
• SoMa Core Circulation Analysis
• Institutional Challenges
Core Network Circulation Study
Core Network Circulation Study Goals and Purpose

- Core Network Circulation Study is a focused Study to analyze cumulative impact of growth and changes to transportation network
- Identify transportation performance problems and proposed recommendations:
  - Support for work already underway
  - Call for additional studies/planning
- Incorporate into SFTP
  - Investment strategy (Financially constrained and Vision)
  - Policy recommendations

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Map of Projects Affecting the Core
Growth in Population and Jobs

Need to serve emerging job centers as well as downtown

- Central Corridor south of I-80
- Mission Bay
- Van Ness corridor
Increase in core trips ends are predominantly from new trips to/from/within SoMa/Mission Bay

SOMA / Mission Bay generates the greatest growth in auto trips...

But Downtown still generates the most auto trips in absolute terms.

Source: SF CHAMP 4.3, Focused Growth
Pass-through trips are a more significant share of overall SoMa travel, but their share is forecast to decrease.

### SOMA Vehicle Trips, pm peak
Regional vs. local, trip ends vs. pass-through

<table>
<thead>
<tr>
<th></th>
<th>2011 Base</th>
<th>2035 Baseline</th>
<th>2035 Planned Future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local Trip End</td>
<td>53%</td>
<td>47%</td>
<td>43%</td>
</tr>
<tr>
<td>Regional Trip End</td>
<td>19%</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>Local Pass Through</td>
<td>11%</td>
<td>22%</td>
<td>15%</td>
</tr>
<tr>
<td>Regional Pass Through</td>
<td>17%</td>
<td>25%</td>
<td>25%</td>
</tr>
</tbody>
</table>

Although share of pass-through trips declines, pass-throughs are still 60% of the total.

= estimated share that stays on highway (doesn’t touch local SoMa streets)

Source: SF CHAMP 4.3, Focused Growth
Where are SoMa auto trip ends coming from/go to? (East Bay, South Bay, Downtown, Mission, Bayview)

- For auto trips, largest markets and largest growth markets are the same
- Exception is growth in internal SOMA auto trips (an opportunity!)

Distribution of SoMa auto trips, baseline prime, pm peak

Distribution of increase in SoMa auto: 2011 vs. baseline prime, pm peak

Source: SF CHAMP 4.3, Focused Growth
Where are SoMa pass-through trips headed to/from?

Distribution of SoMa auto pass-through auto trips, baseline prime, pm peak

Distribution of increase in SoMa pass-through auto trips: 2011 vs. baseline prime, pm peak

Source: SF CHAMP 4.3, Focused Growth
Three Key Problems Revealed

1. Planned Future “breaks” the core network
2. Even with functioning network, transit performance issues are present
3. The increase in overall trip-making and vehicle trips exacerbates existing multi-modal conflicts
Problem 1: Planned Future “breaks” the core network

27% reduction in PM peak SoMa private vehicle traffic needed to maintain a “saturated” network

Gridlock

Saturated

Carnageeldon represents oversaturation of the network, resulting in breakdown i.e. gridlock conditions for motorists and transit vehicles.

The saturation point of the network was determined by reducing baseline prime forecasts until gridlock ceased. Characteristics of the saturated network are long delays, high V/C ratios, poor progression, and queues that often extend to adjacent intersections.

Potential effectiveness of a range of strategies

10% - 15%
- Congestion Pricing
- Slow Growth Scenario Test

3% - 5%
- Central Corridor Parking Supply Restriction
- Carsharing**

1% - 3%
- Dynamic Ridesharing
- Shuttles*

0.5% - 1%
- Vanpools

<0.5%
- Bike/Ped Program
- Safe Routes to School
- Bikeshare
- Added Transit Capacity

*Baseline Adjustment
**includes Baseline Adjustment
^Scenario Test for Reference

Baseline adjustment means the strategy’s contribution was applied as a given and is reflected in the net 27% needed beyond our “Planned Future” scenario. Each strategy listed in bar would individually contribute the range shown (e.g. Congestion pricing on its own would contribute 10-15% reduction, as would a scenario with slower growth).
Recommendation for Problem 1: We need to do all of these (and more)

Not yet analyzed
- Manage freeway-access related VMT through converting on/off-ramps and freeway lanes to transit and/or HOV-only
- Improve connections between grids (Mission Bay to SoMa, Mission Bay to Mission/Potrero)

Each strategy listed in bar would individually contribute the range shown (e.g. Congestion pricing on its own would contribute 10-15% reduction, as would a scenario with slower growth)
If ALL auto trips under two miles to/from SoMa/Mission Bay were shifted to other modes, 7% out of the 27% would be achieved*

*assumes no new auto vehicle trips are induced as a result of capacity created

Source: SF-CHAMP 4.3, 3 hour pm peak
Problem 1 Finding: A 27% Reduction Might Not Be Achievable

- Many strategies induce new trips of all modes rather than reduce auto traffic

Recommendations for Problem 1

- Package of demand management and mobility improvements are essential but cannot get us all of the way
- Focus should be on making transit/cycling/walking trips work in congested conditions
  - More sophisticated signaling, “Don’t block the box” intersection enforcement, automated camera enforcement
  - Self-enforcing transit-only lanes, cycletracks, wider sidewalks
  - Transit/bike/walk-only streets
  - Grade-separated transit (e.g. subways)
Problem 2: Even with a functioning network, transit performance issues are present

Slow bus speeds (1-hour pm peak)

Crowding (3-hour pm peak, 2035 baseline with development)

Source: SF-CHAMP 4.3 volumes for 2035 Baseline with Development, (source: SimTraffic Fehr + Peers, 2012)

Near Crowding: Muni: 0.75-0.85 load; Regional=0.85 load
Crowded: Muni: 0.85-1.5 load; Regional=1-1.5 load; Overcrowded: Muni/Regional: >1.5 Load

Source: SF-CHAMP 4.3
**Recommendations for Problem 2**

1. **Significantly more transit-only lanes:**
   - Additional SoMa N-S pair
   - E-W pair south of freeways
   - Upgraded connection from south (e.g. Bayshore-Potrero)

2. **Higher capacity and more frequent service** is needed to address crowding

3. **Protection for transit on freeways and freeway ramps** are needed (HOV lanes)
Problem 3: increase in overall trip-making exacerbates existing multi-modal conflicts

New Trips by Mode,
2011 vs. 2035 baseline with developments, pm peak

- Auto
- Transit
- Non Mtr

Source: SF-CHAMP 4.3
1. Widen sidewalks to BSP standards, upgrade Class II and III bikeways to higher treatment and fill connectivity gaps.

2. “Program-level” improvements (e.g. bike parking, mid-block pedestrian crossings, education as per SFMTA Bike, Pedestrian strategies)
Next Steps Recommendations

- **Support work already underway, including:**
  - Central Corridor transportation, Better Market Street
  - Pedestrian, Bicycle Strategy & Arterial-focused Traffic Calming
  - TEP/Fleet Plan
  - TDM Partnership Project, Citywide Parking Pricing and Regulation Study
  - Caltrain Electrification/Downtown Extension, HSR

- **Need for new studies/additional work**
  - Freeway/Ramp Planning study
  - Transit Performance Initiative conceptual planning
  - Grid repair/connections conceptual planning
  - Advance congestion pricing (EIR)
  - Long-range Transit Network/Capacity Study (Muni, BART)
Policy Linkages to the SFTP

• **Strategic Policy Initiatives**
  - Local to Regional Connections
  - Transportation Demand Management
  - Project Delivery
  - Revenue strategy

• **SFTP Investment Scenarios: Financially Constrained and Vision**
  - SoMA Core Circulation Program
  - Long-range rail and rapid network development
  - FPI, TPI, TDM/parking and pricing, bike/ped/traffic calming
  - Priority Development Area: Transportation Investment & Growth Strategy