Development of a Behavior Change Campaign

Ursula Vogler and Brenda Dix
MTC
December 1, 2011
What is the Metropolitan Transportation Commission?

- MTC is the San Francisco Bay Area’s Metropolitan Planning Organization
- Bay Area covers 9 counties and 101 cities
- Regional planning and funding transportation agency for Bay Area
- MTC manages some operational projects including 511, Clipper fare card and FasTrak electronic toll collection system
- MTC adopts the 25 year Regional Transportation Plan, which is updated every four years
- SB 375, California’s law to encourage high density growth near transit corridors, mandates the inclusion of land use in the Bay Area’s transportation plan in order to reduce greenhouse gas emissions
History of Behavior Change Program

• Climate Initiatives part of MTC’s Regional Transportation Plan adopted in April 2009

• $80M programmed by MTC for Climate Initiatives Program in December 2009

• Program Objectives:
  – Make short-term investments that reduce transportation-related GHG emissions
  – Evaluate investments to determine the most effective strategies
Climate Initiatives Program

THE PROGRAM

MTC Climate Initiatives Program ($80M)

INITIATIVES

Innovative Grants ($33M)
Safe Routes to School ($15M)
Youth Education ($3M)
Public Outreach ($7M)

PROJECTS

Funded grant projects (i.e. Bike Share project, EV Charging Stations, Dynamic Car Sharing, etc.)
Funded infrastructure projects
TBD projects
Programs focused on inciting measurable behavior change (e.g. outreach campaigns or pilot programs)

TACTICS

Methods for increasing audience participation in projects (e.g. tools and outreach)
Steps to develop the campaign:

1. Identify targeted GHG-reducing transportation behavior(s)
2. Test tactics to influence behavior change
3. Implement on a larger scale and evaluate tactics
Identify Targeted GHG-reducing Transportation Behavior(s)

- Conducted primary and secondary research to identify target behaviors
- Identification of Target Behavior(s) based on:
  - Likelihood of Adoption
  - Scalability
  - GHG Impact
Purpose of Research

- Gather information to develop a behavior change campaign aimed at reducing travel-related GHGs
  - What are people’s existing transportation-related behaviors?
  - What are the perceived barriers to using alternative modes more often?
  - What types of behavior changes are Bay Area residents more/less willing to adopt?
  - What might motivate them to make these changes?
  - How do demographics, lifestyle attributes, psychographics shape the above? Helps with developing the brand, targeting & messaging

- Establish baseline metrics of attitudes and behavior that will factor into the evaluation of the effectiveness of the campaign
Primary Research: Telephone Poll

- 15-minutes in length
- English, Spanish, Mandarin
- In field Feb 1 to Feb 14, 2011
- RDD and cell phone sample of driving-age residents in Bay Area
- n=815, margin of error of ± 3.5%
Who is likely to change?

- Varies depending on the type of behavior change, but generally:
  - College educated
  - Higher income
  - 25-34 age group
  - Those who are already doing something desirable (e.g., not primarily solo driving)
Takeaways

- **All behavior changes are not equal**
  - **SMART driving** actions (modifying driving style or vehicle) are viewed as comparatively easy actions to take.
  - **Trip reduction/trip modification** actions are mixed – trip linking and reducing a trip are viewed as easy, other strategies like telecommuting and flex-schedules were difficult.
  - **Mode or vehicle shift** are perceived as the most difficult actions to take, with walking being a possible exception.

- **Themes & motivators**
  - **Altruistic factors** were the most compelling – keep Bay Area beautiful for future generations, protect the environment, protect public health.
  - **Self-interested factors** included better for their health, reduce energy use, save time & save money.
Barriers to Using Alternative Modes

- Availability of public transportation: 21.8%
- Length of commute too great: 15.6%
- Inconvenience / Driving is easier: 14.8%
- Type of work / Travel for work: 10.5%
- Takes too much time in general: 10.1%
- No other options near home: 8.5%
- Need personal vehicle: 6.7%
- Public transportation schedule: 5.9%
- Live too close for transit, too far to walk: 5.7%
- Work hours, schedules vary: 4.6%
- Have young children: 4.4%
- Availability of carpools: 4.2%

% Respondents Who Drive Alone as Primary Transportation Mode
Motivators

- Keep Bay Area beautiful for future generations: 53% very convincing, 34% somewhat convincing
- Be better for the environment: 51% very convincing, 36% somewhat convincing
- Protect public health now and in the future: 47% very convincing, 40% somewhat convincing
- Be good for your health: 51% very convincing, 36% somewhat convincing
- Reduce your use of gas and energy: 46% very convincing, 38% somewhat convincing
- Save you time: 50% very convincing, 34% somewhat convincing
- Save you at least $50 per month: 45% very convincing, 37% somewhat convincing
- Reduce our dependence on foreign oil: 45% very convincing, 36% somewhat convincing
- Reduce traffic congestion: 39% very convincing, 41% somewhat convincing
- Reduce your stress levels: 46% very convincing, 34% somewhat convincing
- Help you manage your weight: 33% very convincing, 40% somewhat convincing
- Set positive example that others would follow: 29% very convincing, 43% somewhat convincing
- Help improve national security: 36% very convincing, 34% somewhat convincing
### Ease of Modifying Vehicle or Driving Style

<table>
<thead>
<tr>
<th>Action</th>
<th>Already do</th>
<th>1 (Very easy)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 (Very difficult)</th>
<th>Does not apply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have your vehicle serviced at least once every three months</td>
<td>10</td>
<td>42</td>
<td>14</td>
<td>13</td>
<td>5</td>
<td>4</td>
<td>13</td>
</tr>
<tr>
<td>Reduce vehicle idling</td>
<td>7</td>
<td>43</td>
<td>14</td>
<td>13</td>
<td>3</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Use trip planning applications</td>
<td>7</td>
<td>42</td>
<td>15</td>
<td>13</td>
<td>6</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Adjust your driving habits to reduce your use of gas</td>
<td>7</td>
<td>40</td>
<td>16</td>
<td>14</td>
<td>6</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>Remove unneeded items from vehicle to improve gas mileage</td>
<td>7</td>
<td>41</td>
<td>7</td>
<td>8</td>
<td>2</td>
<td>9</td>
<td>25</td>
</tr>
<tr>
<td>Purchase accessories to help improve gas mileage</td>
<td>3</td>
<td>17</td>
<td>12</td>
<td>26</td>
<td>12</td>
<td>13</td>
<td>16</td>
</tr>
</tbody>
</table>

% Respondents
Ease of Reducing or Modifying Trips

- At least once per week, link several trips together:
  - Already do: 10%
  - Very easy: 45%
  - Difficult: 15%
  - Very difficult: 11%
  - Does not apply: 4%

- Reduce the amount that you drive at least one day per week:
  - Already do: 4%
  - Very easy: 27%
  - Difficult: 12%
  - Very difficult: 15%
  - Does not apply: 18%

- Adopt a flexible work schedule so you can avoid rush hour traffic:
  - Already do: 6%
  - Very easy: 20%
  - Difficult: 9%
  - Very difficult: 8%
  - Does not apply: 22%

- Work from home at least once per week:
  - Already do: 5%
  - Very easy: 21%
  - Difficult: 4%
  - Very difficult: 7%
  - Does not apply: 30%
Next Steps to Determine Targeted Behavior

\[ \text{Impact Score} = \frac{\text{Average Annual GHG Emissions Reductions} \times \text{Ease of Adoption}}{\text{Outreach Factor}} \]

- Assess the GHG reduction impacts of various actions to help identify target behaviors for campaign
  - Average Annual GHG Emissions Reduction = The estimated CO\textsubscript{2} emissions reduction for one person adopting the behavior for one year
  - Ease of Adoption = Percent of survey respondents that indicated adopting the behavior would be “very easy” or “easy”
  - Outreach Factor = Perceived difficulty (1-4 scale) of a campaign’s ability to create the behavior change
  - Impact Score = Estimated effectiveness of running a campaign for a specific behavior
Calculating Impact Scores

\[
361 = \frac{602 \times 0.60}{1}
\]

\[
\text{Impact Score} = \frac{\text{Average Annual GHG Emissions Reductions} \times \text{Ease of Adoption}}{\text{Outreach Factor}}
\]

- **Example calculation:**
  - **Behavior:** “Reduce the number of SOV trips through trip linking”
  - **Assumptions/Calculation of Emissions Reduction:**
    - Behavior adopters link half of all shopping trips, thus reducing shopping trips by 25%
    - The average number of shopping trips and trip lengths were determined from the MTC travel model
    - The reduction in vehicle miles eliminated were converted into reductions in GHG emissions using the current average fuel economy in the Bay Area
  - **Ease of Adoption:** 60% of survey respondents stated that trip linking would be very easy or easy
  - **Outreach Factor:** There are few barriers to adoption of trip linking and it would be fairly easy to promote so the outreach factor was set to one
## Targeted Behavior Selection

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Average Annual GHG Emissions Reduction</th>
<th>Ease of Adoption</th>
<th>Outreach Factor</th>
<th>Impact Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduce the number of SOV trips through trip linking</td>
<td>602</td>
<td>60%</td>
<td>1</td>
<td>361</td>
</tr>
<tr>
<td>Replace a conventional vehicle with an electric vehicle</td>
<td>7,911</td>
<td>17%</td>
<td>4</td>
<td>336</td>
</tr>
<tr>
<td>Drive the speed limit</td>
<td>538</td>
<td>56%</td>
<td>1</td>
<td>301</td>
</tr>
<tr>
<td>Accelerate and decelerate smoothly</td>
<td>536</td>
<td>56%</td>
<td>1</td>
<td>300</td>
</tr>
<tr>
<td>Replace a conventional vehicle with a hybrid vehicle</td>
<td>6,983</td>
<td>17%</td>
<td>4</td>
<td>297</td>
</tr>
<tr>
<td>Three times a week, replace a commute trip with a vanpool trip</td>
<td>3,840</td>
<td>21%</td>
<td>3</td>
<td>269</td>
</tr>
<tr>
<td>Remove roof racks from vehicle</td>
<td>556</td>
<td>48%</td>
<td>1</td>
<td>267</td>
</tr>
</tbody>
</table>
Thank you!

Contact information:

Ursula Vogler
MTC
uvogler@mtc.ca.gov

Brenda Dix
MTC
bdix@mtc.ca.gov