Innovative Bus Schedule Format That Reduces Printing Costs

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Bus Schedule Redesign

1. Secure Internal Approval
2. Identify Required Design Changes
3. Design The New Materials
4. Market Test The New Materials
5. Introduce New Schedule Format To The Public
Phase 1: Secure Internal Approval
**Design Problems**

**User Comprehension Issues**
- Map / Schedule Layout
- Tabular Schedule Use
- Route Map Scaling Issues

**Operational Challenges**
- Maintain Up-To-Date Materials
- Obtain Transit Staff Acceptance
- Accommodate Additional Routes & Reduce Net Costs
1991 Route 1 Format

Orange Route 1

Provides northbound, half-hour service from Front Range Community College to Walmart, Pavilion, Target, Job Services, mall areas, Colorado State University, and Oak Street Plaza. Southbound, half-hour service is along the same route, excluding Foothills Fashion Mall loop.

1 — COLLEGE — NORTHBOUND
Starts at Front Range Community College (FRCC) at 6:15 AM; last run leaves at 6:15 PM
Selected Stops/Minutes Past Hour
FRCC (south side)/.:15 & .45
College & Troutman/
.:22 & .52
The Square/.:25 & .55
College & Columbia
(Uunv. Mall) /33 & .03
College & Pitkin/
.:36 & .66
College & Laurel/
.:37 & .67
Oak Street Plaza/
.:42 & .12

1 — COLLEGE — SOUTHBOUND
Starts at Oak Street Plaza at 6:45 AM; last run leaves Oak Street at 6:15 PM
Selected Stops/Minutes Past Hour
# Phase 2: Identify Required Design Changes

<table>
<thead>
<tr>
<th>PROBLEM</th>
<th>SOLUTION</th>
<th>CHANGED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Locating origins and destinations and the closest bus stops to these points.</td>
<td>Include points of interest (landmarks) on the map</td>
<td>YES</td>
</tr>
<tr>
<td>Knowing where to transfer</td>
<td>Provide transfer route numbers where multiple routes intersect.</td>
<td>YES</td>
</tr>
<tr>
<td>Many people had difficulty identifying the correct direction of travel on route maps and schedules</td>
<td>Provide alternatives to compass based directions, use landmarks, use an inbound/outbound approach</td>
<td>YES</td>
</tr>
<tr>
<td>(This is the hardest part of transit trip planning for most people)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General lack of public understanding on how to extract time information from a tabular schedule</td>
<td>Use an alternative format for presenting time information</td>
<td>YES</td>
</tr>
<tr>
<td>Matching direction of travel to correct section of the schedule</td>
<td>More concise direction labeling when routes travel in more than one direction</td>
<td>YES</td>
</tr>
</tbody>
</table>
"Overhaul" Objectives

1. Increase Comprehension Of Written Materials
2. Increase Ridership
3. Reduce Printing Costs
Phase 3: Design The New Materials

- Provision Of Spanish Translation
- Provision Of Transfer Information
- Directional Information
- Identification & Display Of Key Destinations
- Page Configuration
- System Map: Position
- System Map: The New Design
2007 Route 1 Format
Bus Schedule Redesign

2007 Route 1 Format
<table>
<thead>
<tr>
<th>TimePoints</th>
<th>Departure Times</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NORTHbound (NB)</strong></td>
<td></td>
</tr>
<tr>
<td>Front Range Community College</td>
<td>18:38:58</td>
</tr>
<tr>
<td>JFK &amp; Harmony</td>
<td>23:43:03</td>
</tr>
<tr>
<td>Monroe &amp; JFK</td>
<td>31:51:11</td>
</tr>
<tr>
<td>Transfer to 5, 6, 7, 16, FoxTrot</td>
<td></td>
</tr>
<tr>
<td>Transferencia a 5, 6, 7, 16, FoxTrot</td>
<td></td>
</tr>
<tr>
<td>College &amp; Drake</td>
<td>34:54:14</td>
</tr>
<tr>
<td>College &amp; Prospect</td>
<td>37:57:17</td>
</tr>
<tr>
<td>* DTC (ARRIVAL)</td>
<td>(51:11:31)</td>
</tr>
<tr>
<td>Continue to 15; Transfer to 5, 8, 9, 14, 18, 91, 92</td>
<td></td>
</tr>
<tr>
<td>Continúe a 15; Transferencia a 5, 8, 9, 14, 18, 91, 92</td>
<td></td>
</tr>
<tr>
<td><strong>SOUTHbound (SB)</strong></td>
<td></td>
</tr>
<tr>
<td>* DTC</td>
<td>00:20:40</td>
</tr>
<tr>
<td>College &amp; Prospect</td>
<td>06:26:46</td>
</tr>
<tr>
<td>College &amp; Drake</td>
<td>10:30:50</td>
</tr>
<tr>
<td>* STC</td>
<td>22:42:02</td>
</tr>
<tr>
<td>Transfer to 5, 6, 7, 16, FoxTrot</td>
<td></td>
</tr>
<tr>
<td>Transferencia a 5, 6, 7, 16, FoxTrot</td>
<td></td>
</tr>
<tr>
<td>College &amp; Troutman</td>
<td>26:46:06</td>
</tr>
<tr>
<td>Front Range C. C. (ARRIVAL)</td>
<td>(37:57:17)</td>
</tr>
</tbody>
</table>

Times represent “minutes past the hour”
Bus Schedule Redesign

TIME POINT KEY EXAMPLE

6:37 am  FIRST DEPARTURE
:37      
:57      STOPS AT MINUTE
17      ON THE HOUR
6:37 pm  LAST TIME DEPARTURE

NB     DIRECTION OF TRAVEL

2008 Route 1 Format
Phase 4: Market Test The New Materials

I think the header provides me with quick and useful information about the

Overall, I think that this map and bus

I think that the transfers and continues listed on the table are useful.

I like that this map includes landmarks.
Phase 5: Introduce New Schedule to the Public
Bus Schedule Distribution

**New Schedules**
Bi-annually

**Secondary Distribution**
Bi-annually

**Primary Distribution**
Monthly
### Post Implementation Survey Results

<table>
<thead>
<tr>
<th>Service</th>
<th>Very Satisfied</th>
<th>Satisfied</th>
<th>Somewhat Satisfied, but Needs to Improve</th>
<th>Dissatisfied</th>
<th>No Opinion</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service on Time</td>
<td>35%</td>
<td>78%</td>
<td>43%</td>
<td>18%</td>
<td>3%</td>
<td>100%</td>
</tr>
<tr>
<td>Helpfulness of Drivers</td>
<td>46%</td>
<td>87%</td>
<td>41%</td>
<td>8%</td>
<td>2%</td>
<td>100%</td>
</tr>
<tr>
<td>Ease of Transfers</td>
<td>34%</td>
<td>66%</td>
<td>32%</td>
<td>10%</td>
<td>3%</td>
<td>100%</td>
</tr>
<tr>
<td>Convenience</td>
<td>39%</td>
<td>78%</td>
<td>39%</td>
<td>14%</td>
<td>5%</td>
<td>100%</td>
</tr>
<tr>
<td>Safe Operation of Bus</td>
<td>49%</td>
<td>91%</td>
<td>42%</td>
<td>5%</td>
<td>1%</td>
<td>100%</td>
</tr>
<tr>
<td>Cleanliness / Comfort of Bus</td>
<td>43%</td>
<td>88%</td>
<td>45%</td>
<td>8%</td>
<td>1%</td>
<td>100%</td>
</tr>
<tr>
<td>Location of Bus Stops</td>
<td>36%</td>
<td>76%</td>
<td>40%</td>
<td>17%</td>
<td>5%</td>
<td>100%</td>
</tr>
<tr>
<td>Access to Key Destinations</td>
<td>31%</td>
<td>71%</td>
<td>40%</td>
<td>19%</td>
<td>6%</td>
<td>100%</td>
</tr>
<tr>
<td>Hours of Operation</td>
<td>15%</td>
<td>35%</td>
<td>20%</td>
<td>26%</td>
<td>35%</td>
<td>100%</td>
</tr>
<tr>
<td>Frequency of Service</td>
<td>15%</td>
<td>35%</td>
<td>20%</td>
<td>26%</td>
<td>35%</td>
<td>100%</td>
</tr>
<tr>
<td>Average</td>
<td>34%</td>
<td>36%</td>
<td>15%</td>
<td>10%</td>
<td>5%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Post Implementation Survey Results

- Other
- High Gas Prices
- Parking Problems
- Bus is convenient
- Traffic is bad
- Car not Available
- Bus is economical
- I Don't Drive

Relative Response Rates

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Do You Ride The Bus Now More Than A Year Ago?
Post Implementation Survey Results

2008 Transport Bus Schedules

Relative Response Rate

- Other
- Utility Bill Insert
- Newspaper
- Email Announcement
- Word-of-Mouth
- Mailing/Flyer
- Radio
- Other Website
- Sign on Bus
- Bus Schedule
- TV
- City Website
Conclusions

1. Increase Comprehension Of Written Materials
2. Increase Ridership
3. Reduce Printing Costs
Recommendations

- Consult Transit Staff & Riding/Non-Riding Populations
- Gain Staffs’ Support In The Success Of The Redesign Process
- Recruit Front-line Staff Like Bus Operators To Become Your Ambassadors For The New Material
- Include A Marketing Campaign That Publicizes Upcoming Changes & Explains Why Changes Were Made
THANK YOU!

Lavelle Consulting Group

your transit marketing experts

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