TDM in Boulder: a town-gown partnership

The University of Colorado
Boulder, Colorado, USA
Credits

• Many images in this slide show come from the City of Boulder Transportation Department
• Charlier Associates and LSA Associates provided analysis and modeling
• A number of slides come from the Boulder TMP Update
• One slide comes from CU TMP existing conditions report
• Thanks to Peter Roper for layout
Boulder and the University of Colorado
Boulder’s approach

- Traditional road-building focus until 1990
- Fiscal, political, and physical reality intervened!
- 1996 Transportation Master Plan
- Goal: Hold traffic to 1994 levels; reduce SOV mode share to 25%
Focus on travel choices

- Transit service
- Create demand for transit
- Bike system
- Pedestrian system
- Marketing and Information
- Land Use/Urban Design
- Parking pricing
- Partnership with University of Colorado
Partnership is key!

- University (CU), city, and transit district (RTD) are key partners
- CU provides transit passes for 29,000 students, 6,000 employees
- CU, city and RTD share funding for high frequency transit routes
High frequency transit routes
The community transit network
Pass programs

- Unlimited-use, photo-ID transit passes
- Provided to groups:
  - employees at a business
  - all downtown employees
  - neighborhoods
  - CU faculty, staff, students
- Proven to increase ridership & reduce single occupant vehicle travel
Transit pass funding

- CU students pay mandatory fee
- Faculty/staff passes paid by parking revenues + general fund + head tax on auxiliary departments
- Neighborhoods collect voluntary contributions or vote on property tax; 25% city investment
Downtown transit passes

- Parking revenues directly tied to services to downtown
  - marketing of business area
  - maintenance of pedestrian mall
  - transit passes for employees
- Builds political support for paid parking
Student campaign for bus pass

VOTE YES FOR THE BUS PASS
65,000 transit passes in town!

RTD Eco Passes and Discount Passes Issued as of Fall 2001

- CU Student: 3,800
- CU Faculty: 22,200
- BVSD: 6,500
- Business: 25,000
- Business Eco Pass Programs

Year


Bar graph showing the number of passes issued each year from 1991 to 2001.
Transit pass economics

- 14 transit users visible on this sidewalk.
- At $20,000/net new space, $280,000 to serve through parking.
- It is 3 times more expensive to add a space than to shift one person to transit!
Results: transit

- 65,000 people in the community have access to passes
- Student transit use increased 200% in first year of pass program (92); is now up 600%
- Faculty/staff ridership increased 85% in first year of pass program
- Average daily ridership on local transit has quintupled - 5173 in 1990 to nearly 28,000 today!
- % of trips made on transit by Boulder residents doubled from 1990-2000
Pedestrians are key!
Making cycling part of everyday life

- Bike routes, bike paths, bike lanes
- Bike actuated crossings at intersections
- Grade separated crossings
- Bike racks on all buses
- Funding sources; city transportation $, federal enhancements and CMAQ $, flood utility $, university parking dollars, university student transit pass program
Bear Creek before
..... and after
Free bicycle checkout program
Bike improvements can be cheap....

.....but controversial - removing parking!
Converting space from cars to bikes
5 acre parking lot; $10 million structure; or...
Comparative cost by mode

Estimated Cost per Faculty/Staff/Student trip by Mode

- Pedestrian
- Bicycling
- F/S EcoPass
- Student BusPass
- Parking

<table>
<thead>
<tr>
<th>Mode</th>
<th>Est. Cost per Round Trip Accomodated</th>
<th>Est. Cost Per Net new Round Trip Accomodated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian</td>
<td>$5</td>
<td>$2092</td>
</tr>
<tr>
<td>Bicycling</td>
<td>$10</td>
<td>$20</td>
</tr>
<tr>
<td>F/S EcoPass</td>
<td>$204</td>
<td>$597</td>
</tr>
<tr>
<td>Student BusPass</td>
<td>$304</td>
<td>$352</td>
</tr>
<tr>
<td>Parking</td>
<td>$439</td>
<td>$352</td>
</tr>
</tbody>
</table>

- Estimated cost per faculty/staff/student trip by mode is displayed in the chart.
Overall: measurable results

- 17% citywide shift from SOV work commute trips to other modes since 1990
- Shifted to bicycle (+10.6%) and transit (+5.8%)
Results: CU student travel

- In 1990 2% of student trips to campus were on transit; 17% in 2003
- 67% of student trips to campus by bicycle or walking
- 14% of trips by private automobile
<table>
<thead>
<tr>
<th>Mode</th>
<th>Boulder (%)</th>
<th>US (%)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walk</td>
<td>19.8%</td>
<td>5.4%</td>
<td>* 2000 resident diary</td>
</tr>
<tr>
<td>Bike</td>
<td>5.4%</td>
<td>10.0%</td>
<td>** 1995 NPTS</td>
</tr>
<tr>
<td>Transit</td>
<td>4.2%</td>
<td>1.8%</td>
<td></td>
</tr>
<tr>
<td>Bldr US Bus</td>
<td>0.7%</td>
<td>1.7%</td>
<td></td>
</tr>
</tbody>
</table>
## Census Mode Shares and Trip Lengths for Work Trips

<table>
<thead>
<tr>
<th></th>
<th>Boulder CBD</th>
<th>Denver CBD</th>
<th>I-25/ Tech Center</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total with Students</td>
<td>Total</td>
<td>Total</td>
<td>Total</td>
</tr>
<tr>
<td>Bicycle/Pedestrian Mode Share</td>
<td>29%</td>
<td>33%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>Total Alternate Mode Share</td>
<td>47%</td>
<td>54%</td>
<td>17%</td>
<td>20%</td>
</tr>
<tr>
<td>Average Travel Time to Work (min.)</td>
<td>18</td>
<td>22</td>
<td>20</td>
<td>27</td>
</tr>
</tbody>
</table>

Source: 2000 Census CTPP
Growth in Vehicle Miles Traveled

Potential VMT

TMP target: 1994 VMT of 2.4 million miles

Estimated VMT under the TMP
Current challenges

- Expanding transit pass programs - goal of 100,000 transit passes; future of transit pass programs
- Maintaining and expanding local and regional high frequency bus transit - different from regional transit authority funding priorities
- Creating countywide approach to transit
- Improving campus bicycle infrastructure
Lessons

• Well designed transit can increase ridership by large factors
• Shifting users to transit and bikes is cheaper than building parking
• Universities are key market for sustainable transportation modes
For more information:

• For more details, check out this book!

• It can be ordered at www.islandpress.org