Joyride:
Pedaling Toward a Healthier Planet

Mia Birk, President
Alta Planning + Design
Plan for a network of bike routes faces adamant resistance

Residents love bicycles - until they’re forced to give up parking in front of their houses

Commuting by bicycle remains stuck in low gear
Short-term bicycle parking examples:
Poor Rack Placement
Long way to go...
Our first reconnaissance mission to the blue planet indicates that the rectangular creatures in photo #1 are the dominant life forms, and feed primarily on the creatures in photo #2.
Enter the Bike Program
Portland Master Plan

• Master Plan Adopted 1996:
  – Policies
  – Benchmarks (semi-annual report to Council)
  – Bikeway network (Bridges, bike lanes, boulevards, paths)
  – Maintenance, intersections, and spot improvements
  – Bike parking
  – Bikes & transit integration
  – Education/encouragement
  – Bikeway standards
Development of Portland’s Bikeway Network
Development of Portland’s Bikeway Network
Development of Portland’s Bikeway Network

1990
Development of Portland’s Bikeway Network

1995
Development of Portland’s Bikeway Network
Portland Bike Plan Vision, adopted 1996:
630 mile network
Development of Portland’s Bikeway Network

Existing Bikeways

- 32 mi. boulevards
- 28 mi. pathways
- 75 mi. pathways
- 187 mi. bicycle lanes

Existing
Expanding Portland’s Network

Full Build Out 2030 Plan
Bicycle Lanes

• Arterial streets
  – > 3,000 vpd
• Allow bicyclists safe access to main streets
  – quick transport
  – commercial districts
  – safe crossings
• 187 street miles
Narrowing Lanes

Before

After
Narrowing Lanes
Removing a Lane – “Road Diet”
Restricting Parking

Before

After
Restricting Parking
Bicycle Boulevards

Developed on low traffic volume streets that already work well for bicycles

Priority for Bikes Improvements:
- crossings
- continuous travel
- traffic diversion

• 29 miles
Bicycle Boulevards: Diversion
Bicycle Boulevards: Traffic Calming
Bicycle Boulevards: Crossing Enhancements

Cars can not turn left nor cut through.
• Portland’s Bicycle Boulevards Become Neighborhood Greenways: www.streetsfilm.org
Innovations in Design

Colored Lanes
Bike Boxes
Buffered Bike Lanes
Signing & Marking
Scramble Signal
HAWK Signal
Cycle track
Shared Use Paths

- Multiple non-motorized users
- Completely off-road – except crossing
- Primarily developed by Parks Bureau, ODOT, Metro
  - I-205
  - Springwater
  - Waterfront
  - Eastside Esplanade
- 55 miles
Springwater Corridor
SW - OMSI

Before

After
Focus on Bridges
Hawthorne Ramp from Naito with conflicts

Bikes make 70% deg. turn, yield to motor vehicles, which are often queued in crosswalk. (see photo page 8)

Bike/ped share 6' sidewalks

No bike lanes connect to roadway entry

Sidewalks widened to 10.5'

Bike lanes connect to roadway entry (off photo)

Ramp from Naito Closed

Bike/ped movement split, motorists stop, cyclist has through movement priority (see photo on page 8)
After: Eastbound Hawthorne Bridge access to sidewalks – bicyclists proceed straight, motorists yield, Note 10.5’ wide sidewalks.
Hawthorne

Eastbound, eastside, connecting to Hawthorne St. bike lanes

Blue area on eastbound viaduct at off-ramp

Eastbound, westside

Westbound, eastside
Steel Bridge

Before: Steel Bridge, upper deck. Bicyclists and pedestrians sharing one 5’ sidewalk with guardrail.

After: Steel Bridge Riverwalk on lower deck. It’s a cantilevered 10’ shared use path connecting to paths on either side.
Bicycle Parking

At schools

On-street & in garages
Signage

PSU
1 mi 5 min

ROSE QUARTER TRANSIT CTR
3 mi 15 min

BELMONT
0.5 mi 3 min

Photo credit: Jonathan Maus, bikeportland.org
Encouragement
Community-Run Events
Bike Fest
Institutionalization

Encouragement Programs
Institutionalization
Institutionalization

Transit improvements

- Bike racks
- Bikes on MAX w/permits & restrictions
- Elimination of permits
- Elimination of MAX restrictions
- Hanging racks on MAX
Institutionalization

Parking Code: Bike parking as part of new and existing building construction
Institutionalization

Working closely with the maintenance bureau

Bike lanes during routine resurfacing
Institutionalization

Encouragement Programs

Travel Smart
www.GettingAroundPortland.org
Institutionalization
Coordination with Other Jurisdictions: ODOT, Counties, Metro
Institutionalization

Internal Programs/Support
Average Daily Bicycle Traffic
4 Main Willamette River Bicycle Bridges

Year

Based on either 24-hour hose counts or extrapolated from 4-6 pm counts

* Broadway Bridge closed for construction during time of count.
Bicycle Traffic across Four Main Portland Bicycle Bridges Juxtaposed with Bikeway Miles

<table>
<thead>
<tr>
<th>Year</th>
<th>Bridge Bicycle Traffic</th>
<th>Bikeway Miles</th>
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</thead>
<tbody>
<tr>
<td>1991</td>
<td>2,850</td>
<td>79</td>
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<tr>
<td>1992</td>
<td>3,555</td>
<td>84.5</td>
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<tr>
<td>1993</td>
<td>3,885</td>
<td>87</td>
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<tr>
<td>1994</td>
<td>3,830</td>
<td>104</td>
</tr>
<tr>
<td>1995</td>
<td>3,207</td>
<td>114</td>
</tr>
<tr>
<td>1996</td>
<td>4,520</td>
<td>144</td>
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<tr>
<td>1997</td>
<td>5,225</td>
<td>167</td>
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<td>1998</td>
<td>5,690</td>
<td>183</td>
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<tr>
<td>1999</td>
<td>5,910</td>
<td>214</td>
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<tr>
<td>2000</td>
<td>6,015</td>
<td>222.5</td>
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<tr>
<td>2001</td>
<td>7,686</td>
<td>236</td>
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<tr>
<td>2002</td>
<td>8,250</td>
<td>253</td>
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<tr>
<td>2003</td>
<td>8,562</td>
<td>256</td>
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<tr>
<td>2004</td>
<td>8,875</td>
<td>262</td>
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<tr>
<td>2005</td>
<td>10,192</td>
<td>265.5</td>
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<tr>
<td>2006</td>
<td>12,046</td>
<td>269</td>
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<tr>
<td>2007</td>
<td>14,563</td>
<td>272</td>
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<tr>
<td>2008</td>
<td>15,749</td>
<td>274</td>
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<tr>
<td>2009</td>
<td>17,576</td>
<td>281</td>
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<tr>
<td>2010</td>
<td>324</td>
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</tr>
</tbody>
</table>

Extrapolated from peak period counts
Annual Increase in Bicycle and Automobile Traffic Compared to 1991 Volumes
4 Main Willamette River Bicycle Bridges

% Increase Compared to 1991

<table>
<thead>
<tr>
<th>Year</th>
<th>Percent Bike Increase</th>
<th>Percent Auto Increase</th>
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<tbody>
<tr>
<td>1991</td>
<td>25%</td>
<td>2%</td>
</tr>
<tr>
<td>1992</td>
<td>36%</td>
<td>0%</td>
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<tr>
<td>1993</td>
<td>34%</td>
<td>2%</td>
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<td>1994</td>
<td>14%</td>
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<td>1995</td>
<td>59%</td>
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<td>1996</td>
<td>83%</td>
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<td>1997</td>
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<td>1999</td>
<td>111%</td>
<td>10%</td>
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<tr>
<td>2000</td>
<td>167%</td>
<td>10%</td>
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<tr>
<td>2001</td>
<td>189%</td>
<td>2%</td>
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<tr>
<td>2002</td>
<td>200%</td>
<td>1%</td>
</tr>
<tr>
<td>2003</td>
<td>211%</td>
<td>1%</td>
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<tr>
<td>2004</td>
<td>257%</td>
<td>0%</td>
</tr>
<tr>
<td>2005</td>
<td></td>
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</tr>
</tbody>
</table>

Based on either 24-hour hose counts or extrapolated from 4-6 pm counts
Increase in Bicycle and Automobile Traffic and Population 1991-2000*

On the Broadway, Steel, Burnside and Hawthorne Bridges

% Increase Compared to 1991*

Year

Bicycle Use on 4 Bridges 257%
Auto Use on 4 Bridges 0%
Portland’s Population 21%

*Population increase based on values from 1990 and 2000 US Census.
Increasing Bicycle Commute Mode Split

With 1990 bikeway network...
Bicycle Commute Mode Split 1990

With 1990 bikeway network...

...and 1990 mode splits (by census tract)
Bicycle Commute Mode Split 2000

With 2000 bikeway network...

...and 2000 mode splits

Bike Commute Mode Split

- 0 - 2%
- 2 - 3%
- 3 - 5%
- 5 - 8%
- 8 - 10%
- 10+%
Bicycle Commuting in Portland

People Reporting the Bicycle as Their Primary or Secondary Commute Vehicle

2008

Citywide: 18%

Source: City of Portland Office of the Auditor: Service Efforts & Accomplishments Report 2007-08
Rising Bicycle Use in Portland
Bridge Counts, US Census, City Auditor’s Reports

Percentage

- US Census & American Community Survey (bicycle as primary means of commuting)
- City Auditor’s Office (bicycle as primary commute vehicle)
- Bikes as percentage of all vehicles on 4 Central City bike-friendly bridges
- City Auditor’s Office (bicycle as primary and secondary commute vehicle)
Combined Bicycle Traffic over Four Main Portland Bicycle Bridges Juxtaposed with Bicycle Crashes

<table>
<thead>
<tr>
<th>Year</th>
<th>Bridge Bicycle Traffic</th>
<th>Reported Bicycle Crashes*</th>
<th>Indexed Bicycle Crash Rate (Trend Line)</th>
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<tbody>
<tr>
<td>1991</td>
<td>2,850</td>
<td>155</td>
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<td>1992</td>
<td>3,555</td>
<td>163</td>
<td>459</td>
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<td>16,711</td>
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<td>2009</td>
<td>17,941</td>
<td>287</td>
<td>182</td>
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</tbody>
</table>

*Crash Rate" represents an indexing of annual reported crashes to daily bicycle trips across the four main bicycle bridges.

*2008, 2009 Reported Bicycle Crashes data reflects increased crash reporting requirements.
PDOT’s Bicycle Capital Funding 2000-2007

Total Actual Expenditures: $383 million

0.7% of PDOT’s capital budget!

$379,968,494 99.3%

$2,759,610 0.7%

Legend:
- Bicycle Capital Expenditures
- All Other Capital Expenditures
$100 million bike industry
Bike Industry Growth
Bicycling: Cost-Effective, Win-Win Solution
Portland’s success reflects a community commitment to making bicycling an integral part of daily life!
Increase professional capacity
Initiative for Bicycle & Pedestrian Innovation:
www.ibpi.usp.pdx.edu/
Public Bike Sharing

Washington, D.C.
Vancouver BC
Key: More low stress, separation
Washington DC

Pennsylvania Ave, Washington DC
Berkeley, CA
NACTO Urban Bikeway Design Guide
www.CitiesforCycling.org

Free APBP Webinar 5/25
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- ibpi
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- Hosford Middle School
- Abernethy
- apbp
- Alliance for Biking & Walking
- Oregon COMMUNITY FOUNDATION
- Oregon FOOD BANK
- BICYCLE TRANSPORTATION ALLIANCE
- The Douggy Center

Community Cycling Center

The bicycle is a tool for empowerment and a vehicle for change