

# Feeding the Alligator: Bike-Rail Safety in Portland



Alexis Grant  
PSU/PBOT Traffic and Transportation  
December 3, 2009

# Objective: Safe, comfortable cycling



**Bicycle Boulevards  
Plan 2009**

"Safe for Families,  
Seniors, People with  
Disabilities"

**Draft Portland  
Bicycle Plan for  
2030**

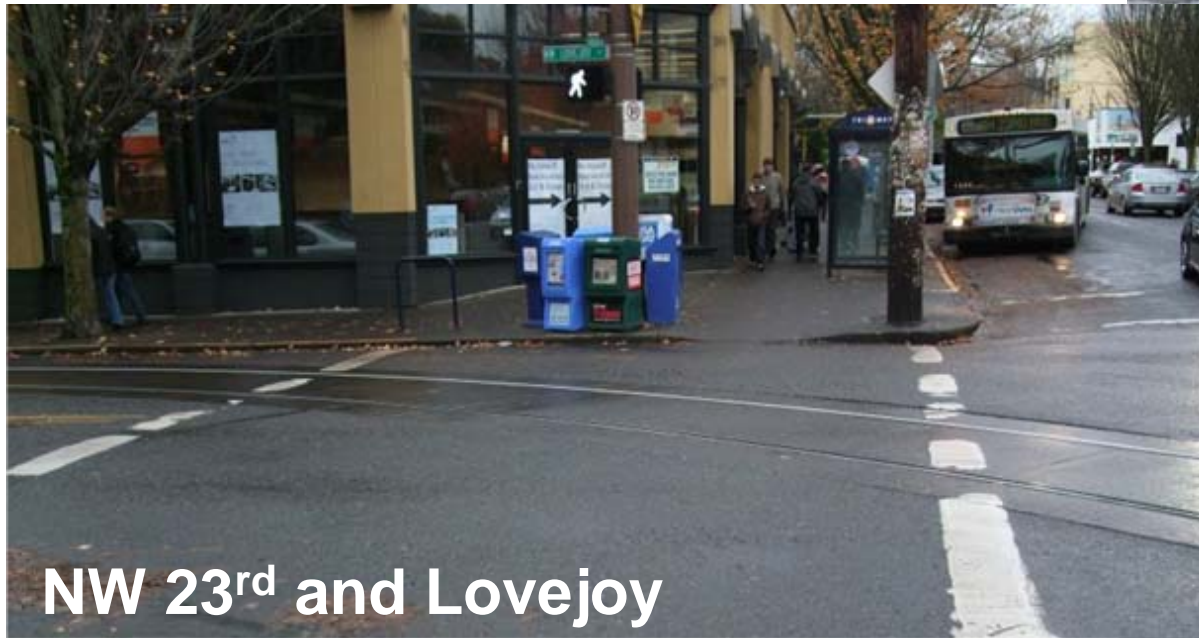
"All Portlanders have  
equal access to the  
benefits of bicycling."



# Obstacle: Dangerous Rail



NW 17th and Upshur



NW 23<sup>rd</sup> and Lovejoy



NW Naito Under Steel Bridge

- Rail and crossings on or near bicycle routes and destinations
- In poor repair and/or at less than 90-degree angle to route



# What's the danger?



Bike wheel slips into tracks  
Cyclist cannot steer and falls

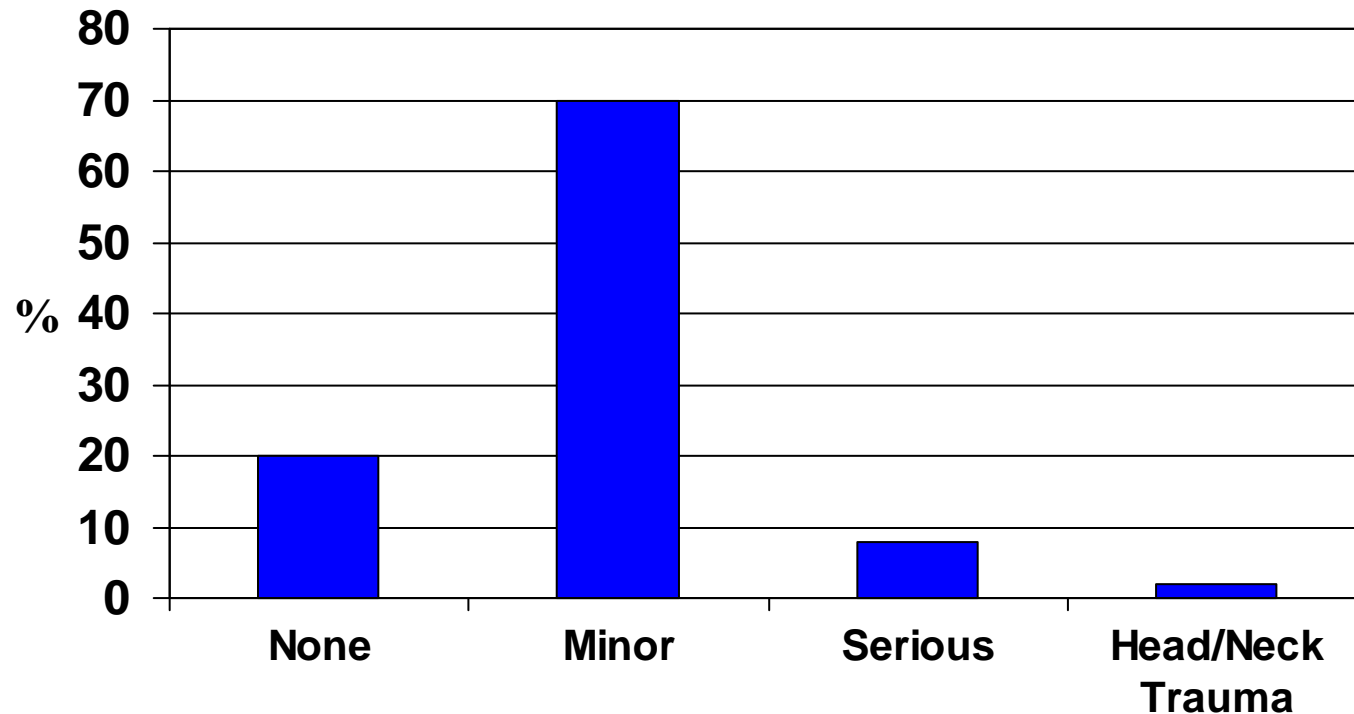


# How big a problem?

“Bike-track crashes are a major and underreported problem for Portland-area bicyclists.”

--Alta Planning & Design, “Bicycle Interactions and Streetcars”

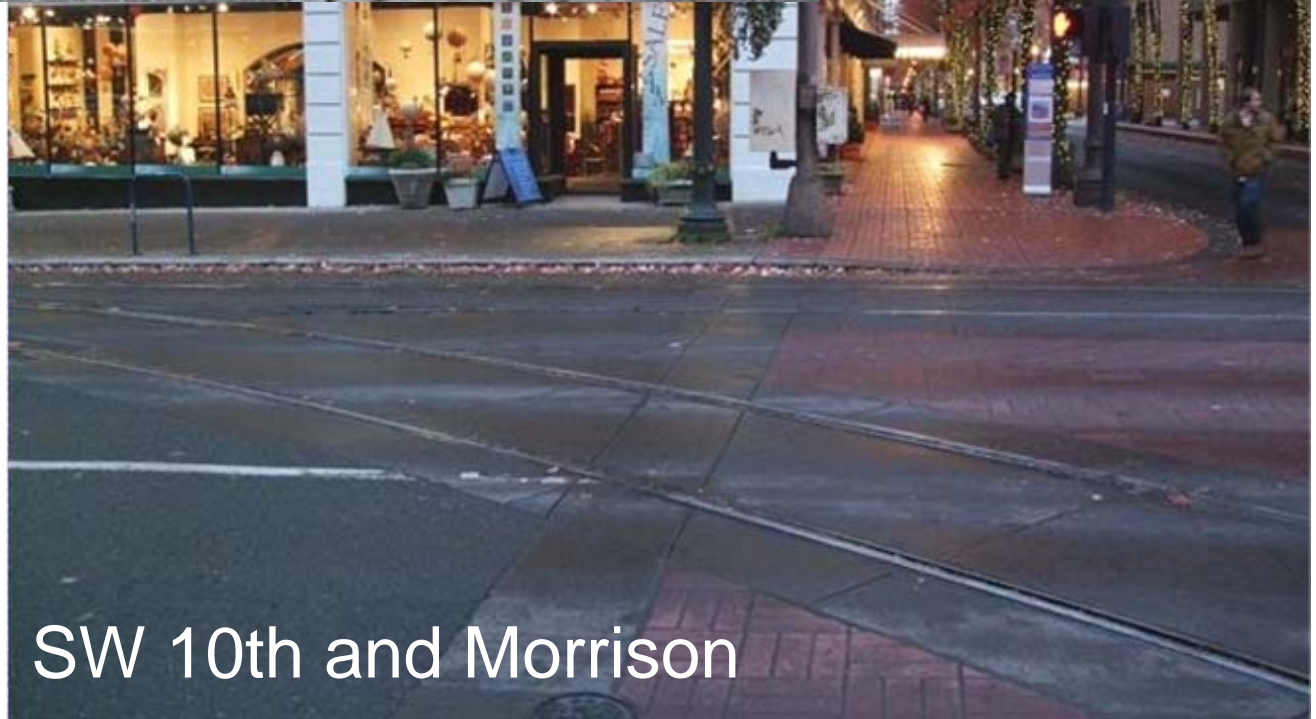
**Track Crash Injuries, 2008 BTA Survey**





NW 23rd and Northrup

**How do you  
cross safely  
in these  
situations?**



SW 10th and Morrison



# What are the solutions?

1. Rubber flange groove inserts
2. Crossing surface improvement and removal of unused crossings
3. Road configuration and traffic flow changes
4. Alternate routes
5. Improved signage and road markings

# Rubber Flange Inserts



Completely fill gap;  
depressed only by  
weight of train

Safe to ride across  
at any angle

Not always suitable  
for heavy traffic

Higher cost, lower  
lifespan

Cherry Avenue Bridge, Chicago

Photo Credit: Steven Vance



# Crossing surface improvement

## Removing unused tracks

Good for overall maintenance

Resolves issue

*No good for active tracks*



NW 15<sup>th</sup> and Johnson

## Smoothing surfaces

Improves experience for all users

Safer, comfortable for cyclists



NW Naito Under Steel Bridge



NW 16th and Northrup

# Road configuration and traffic flow

Improved in-street facility designs:

- Separated cycletrack or bike lane
- Left- or center-running tracks
- Separated signal phases at difficult intersections



Possible ways to create space:

- Discouragement of motor vehicle traffic
- Removal of parking

## Broadway Cycletrack

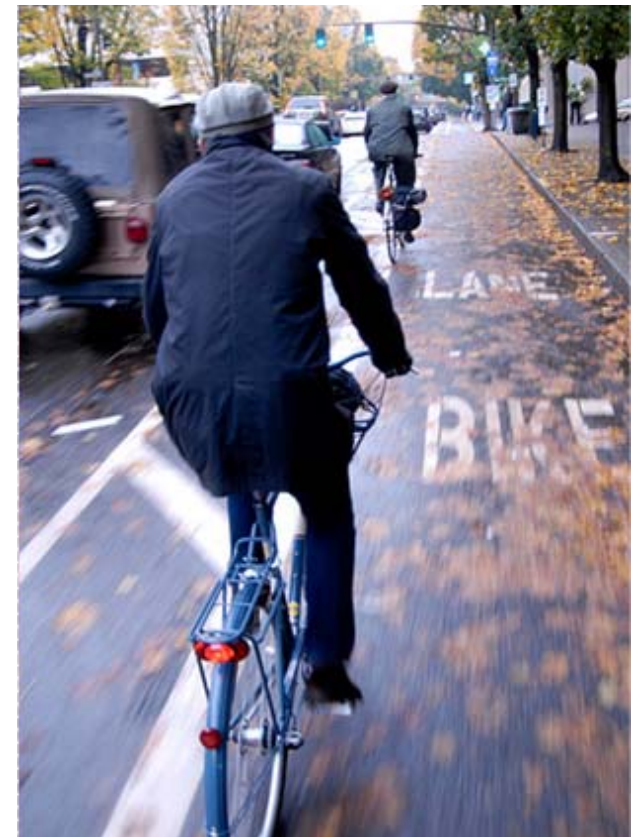


Photo credit: Jonathan Maus



# Parallel Alternate Routes

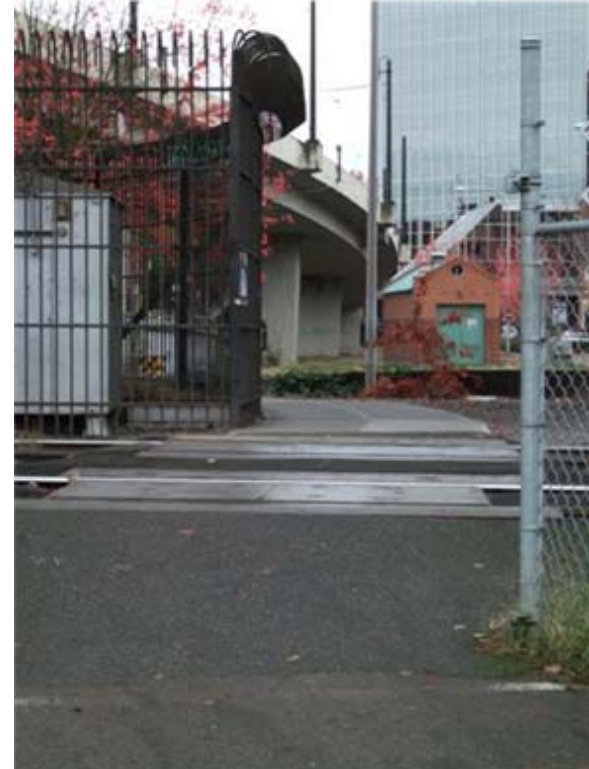
Preferred by most cyclists in BTA survey

## Streetcar

- 9th and 12th have no special accommodation now
- Marshall is slated to be a bicycle boulevard
- S. Waterfront area is limited in alternate routes

## Railroad (Naito undercrossing)

- Alternate route not signed





# Signs and road markings

Naito crossing lacks signs for alternate route



Current signs are not very helpful



VS.



photo credit: Brian Ellison



# Eliminate rail obstacles to achieve 2030 vision of safe, happy cyclists



photos: (L) Amsterdam, Antoine Walker (R) Portland Bike Plan

Use as many solutions as are feasible to create a network comfortable for everyone