

Lessons Learned from the Winter Cycling Congress

Anchorage, Alaska
January 24, 2017
Andrew Ooms, PE



Winter City Cycling

- Minneapolis is expanding its leading on-street cycling network
- Montreal maintains an increasing portion of its bike lane network in winter
- Oulu, Finland grooms its paths for winter cycling
- Madison prioritizes clearing and melting bike paths
- Detroit started Slow Roll winter encouragement rides
- The Dutch and Danes just keep riding

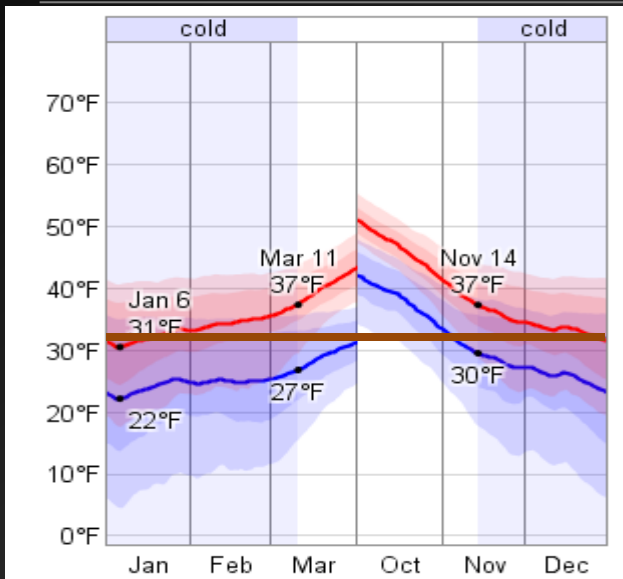
Presentation Overview

- Define “Winter”
- Define “Cycling”
- Winter bicycle facility maintenance
- Oak Street Case Study

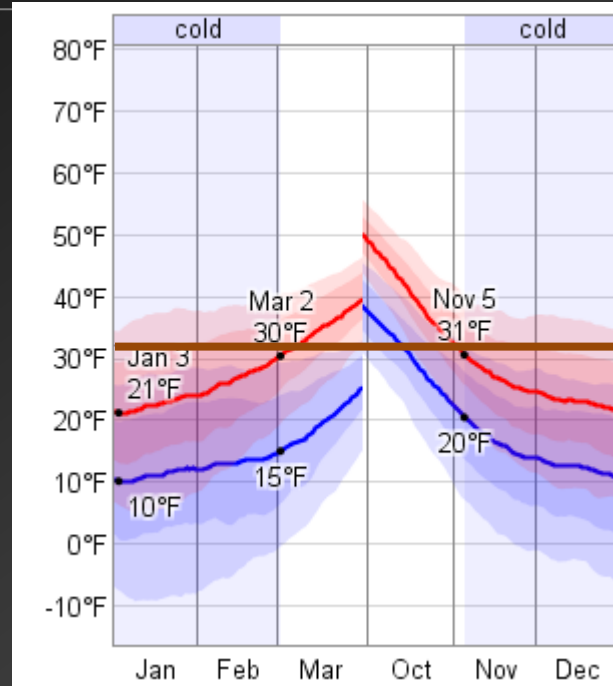
Define “Winter”

- Winter climate variation drives maintenance strategy
 - Melting proclivity
 - High temperature
 - Temperature variation
 - Sun angle
 - Season
 - Salting viability
 - Desired uses, maintained surfaces
- Winter severity contributes to ridership levels

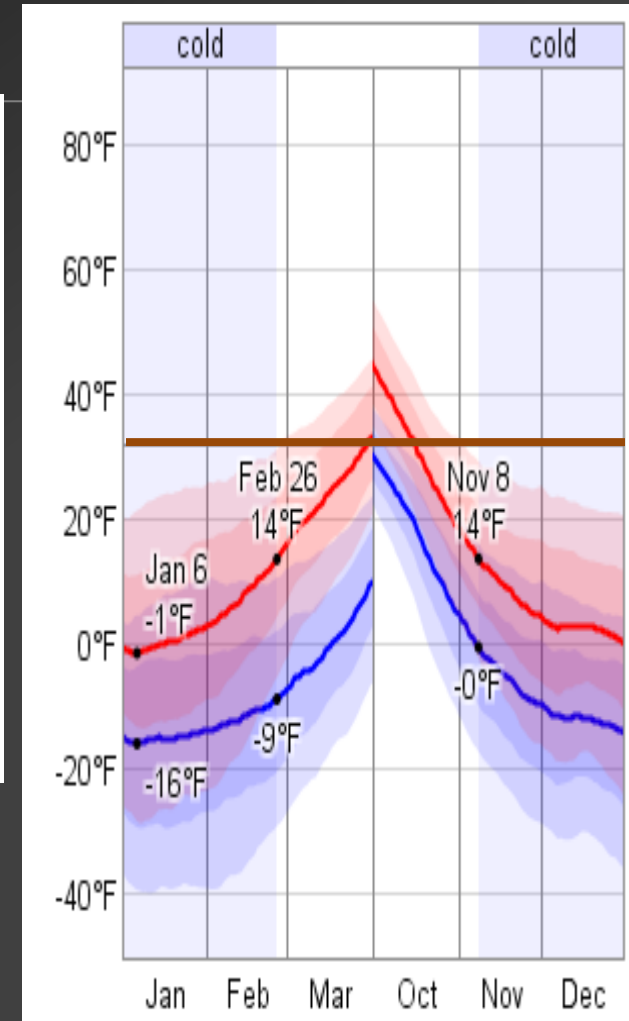
Alaska Winter Climate



Juneau

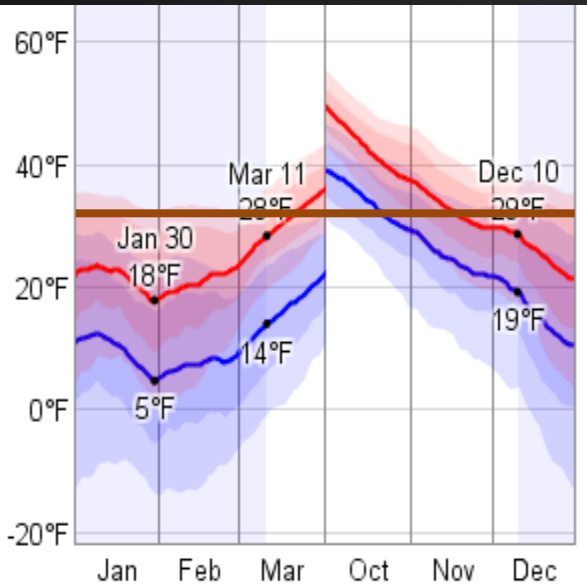


Anchorage

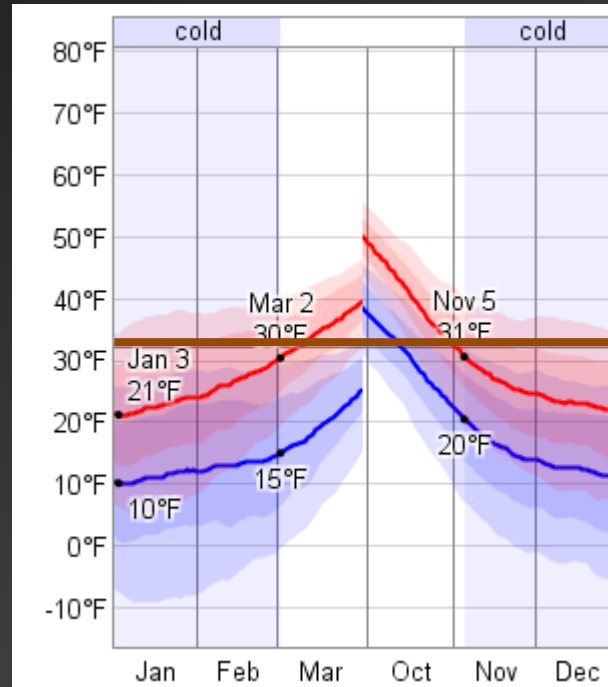


Fairbanks

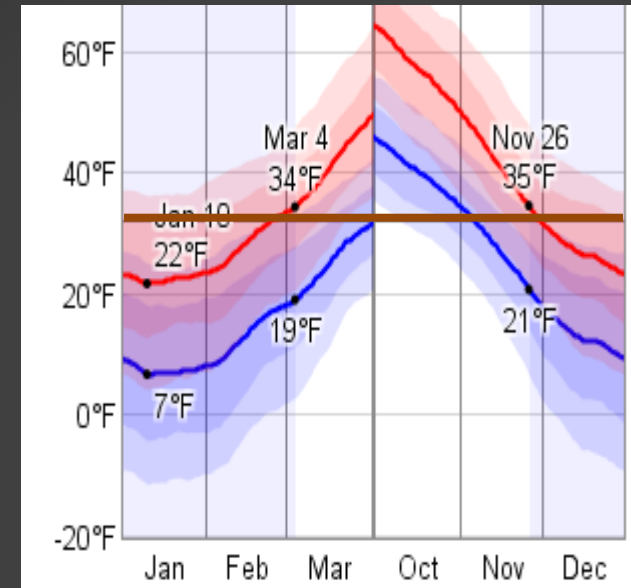
Anchorage vs. the World



Oulu, Finland
65° N



Anchorage
61° N



Minneapolis
45° N

What is the Winter Maintenance Goal?



What is the Winter Maintenance Goal?

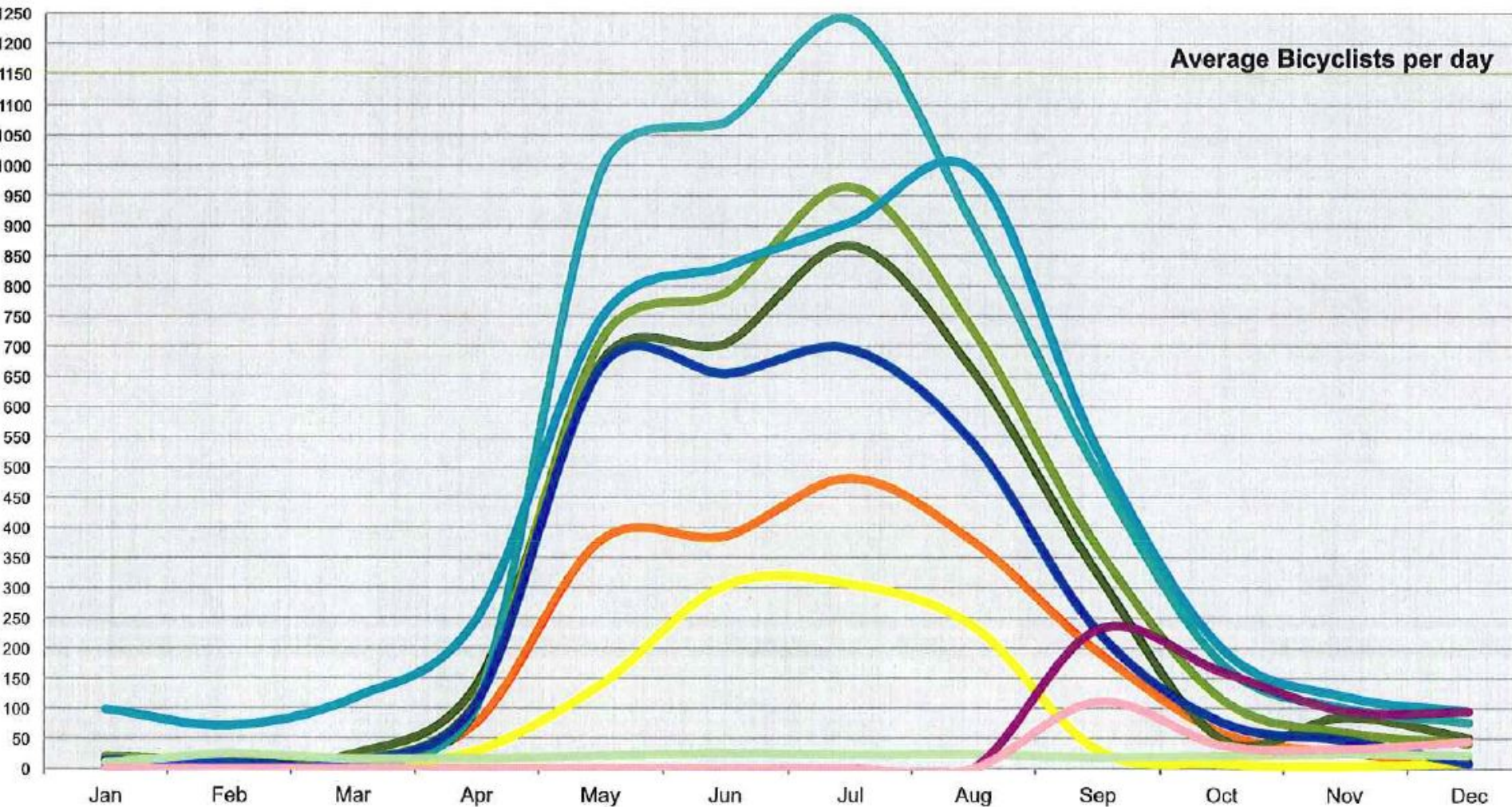


Source: Pekka Tahkola

Define Winter “Cycling”



Anchorage Coastal Trail 2014 Counts



Winter Bicycle Facility Maintenance

- Maintenance approach
 - Melt
 - Clear
 - Groom
 - Store
 - Haul
- Surface traction
- Striping visibility
- Striping longevity
- Equipment needs
- Vision and funding
- Agency coordination

Winter Bicycle Facility Maintenance

- Maintenance approach
- Surface traction
 - Bare pavement
 - Thaw cycles: pre-treat, salting, ice treatment
 - Add grit
 - Ski grooming
- Striping visibility
- Striping longevity
- Equipment needs
- Vision and funding
- Agency coordination

Winter Bicycle Facility Maintenance

- Maintenance approach
- Surface traction
- Striping visibility
- Striping longevity
- Equipment needs
- Vision and funding
- Agency coordination





Summer



Winter



Winter Bicycle Facility Maintenance

- Maintenance approach
- Surface traction
- Striping visibility
- Striping longevity
- Equipment needs
- Vision and funding
- Agency Coordination

Latex paint – After installation



Latex paint – First winter



Preformed Thermoplastic



Source: Simon Blenski

Preformed Thermoplastic

4 years after initial application

- Not perfect
- Results vary based on quality of installation
- Generally, much better than paint

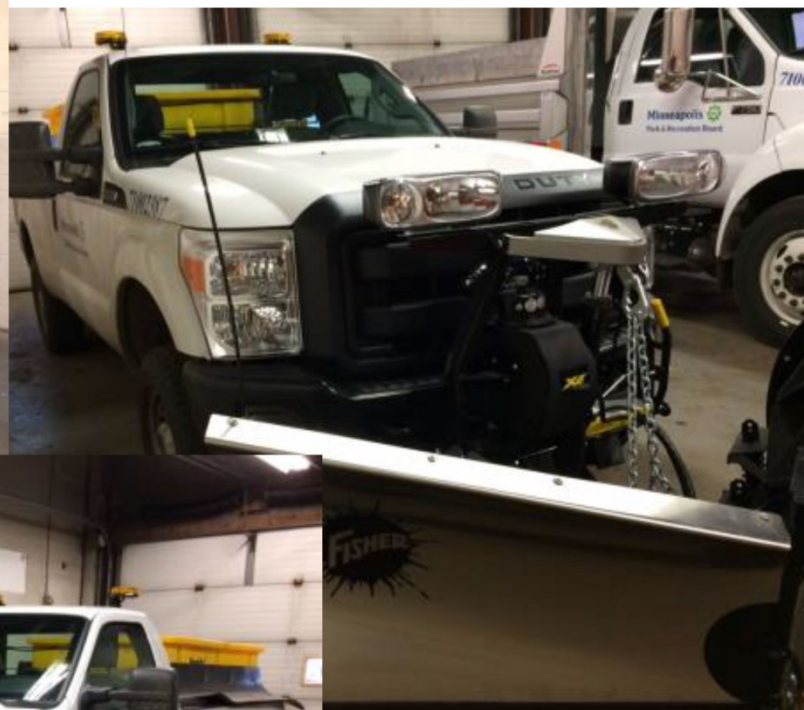


Winter Bicycle Facility Maintenance

- Maintenance approach
- Surface traction
- Striping visibility
- Striping longevity
- Equipment needs
- Vision and funding
- Agency coordination



Ford 350 4x4 and Plow



ToolCat by BobCat





Winter Bicycle Facility Maintenance

- Maintenance approach
- Surface traction
- Striping visibility
- Striping longevity
- Equipment needs
- Vision and funding
 - Top-down sharing of agency priorities
 - Two-way communication of M&O costs
 - M&O design review
 - M&O cost added to budget for new capital projects
- Agency coordination

Winter Bicycle Facility Maintenance

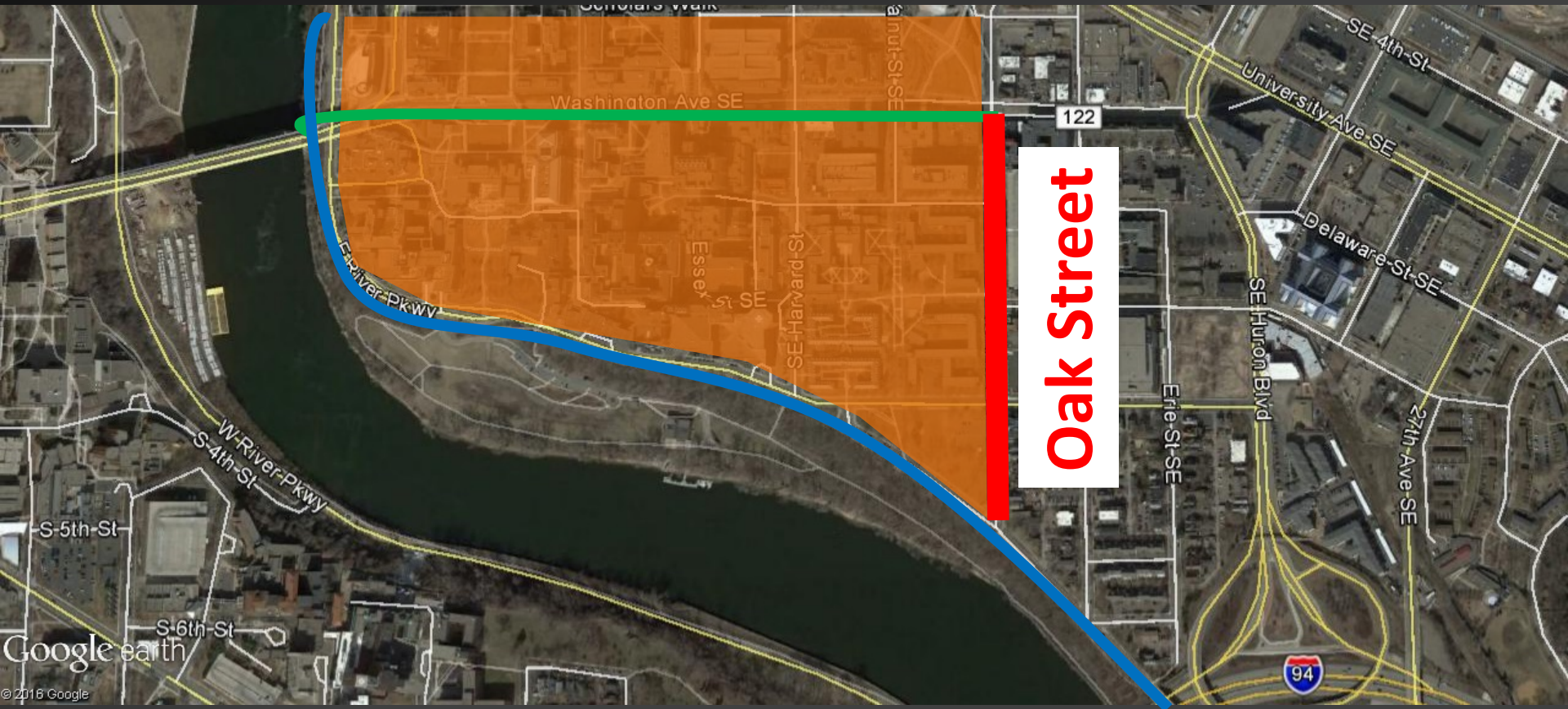
- Maintenance approach
- Surface traction
- Striping visibility
- Striping longevity
- Equipment needs
- Vision and funding
- Agency coordination



How It All Comes Together: Oak Street Case Study

- Key “last mile” connection between trail, transit corridor, and UM campus
- More direct and better access than nearby bike boulevard

Oak Street Bikeway Overview



Oak Street Design

- Two-way protected bike lane on collector
 - Parked cars and concrete curb stops provide buffer
 - Two-way
 - Trail connection
 - Heavy bicycle movements
 - Integration to light rail/bike route
- Part of 48-mile planned protected bike network by 2020
 - Encourage cyclists beyond ~10% “confident” riders

Oak Street Bikeway Without Snow Cover







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VEHICLES

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AND 

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JAPANESE PATRO

STATION

STADIUM
VILLAGE



Conclusion

- With the proper...

- Vision
- Design
- Funding
- Maintenance
- Equipment

...winter isn't stopping cities from installing bicycle infrastructure

Questions?



Source: Nick Falbo