Planning for Better Bikeway Maintenance

Center for Transportation Studies
Research Conference 11.2.2017

Photo Credit: City of Rochester, MN and City of Brooklyn Park, MN

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Hennepin County Bicycling Vision:
“Riding a bicycle for transportation, recreation, and health is a comfortable, fun, routine part of daily life throughout the county for people of all ages and abilities.”

Maintenance Goal:
“Protect the county’s and the park district’s investments in the bikeway system and reduce seasonal hazards through partnerships.”
Total Bikeways: 650 miles

- Off-street trails or sidepaths: 66%
- Standard bicycle lanes or bike boulevards: 33%
- Protected/separated/tracks on-street: 1%
Maintenance Issues

• Snow and ice removal concerns factored heavily into the decision by 49% of survey respondents to not bike at all during the winter
• Poor riding surface was cited by 25% as a barrier to bicycling more
Study Scope

- Task 1: Literature search
- Task 2: Local interviews
- Task 3: National and international interviews
- Task 4: Cost estimates
- Task 5: Final recommendations

Photo Credit: City of Rochester, MN
Best practices for cycle path winter maintenance processes

Kaisa Karhula

Part of PYKALÄ II research project

Tampere University of Technology, Transport Research Centre Verno
Tampere 2014
**Before taking any action**

- The contractors decide themselves when to start the maintenance actions. The City monitors the quality of the work.

**During maintenance actions**

- Field reviews are used to monitor the level of maintenance whenever possible. Customer feedback, in particular, is one criteria used to review possible quality issues.

**Follow-up**

- There is a monthly site meeting held between the City and contractors
- Contractors are required to follow the requirements stated in the quality cards when carrying out their duties.
Local Interviews

• **Cities:** Minneapolis, Brooklyn Park, Eden Prairie, Richfield

• **Park Districts:** Minneapolis and Three Rivers (suburban communities)

• **Hennepin County**
  – Transportation Operations
  – Road and Bridge
  – Transportation Planning
  – Design
  – Right of Way

• **MnDOT**
Local Maintenance Themes

• Agencies understand the importance of bikeway maintenance
• Bikeway networks are expanding, yet funding is limited
• Consistency across agency lines can be improved
• Design has a major impact on bikeway maintenance
• Separated bicycle lanes are an emerging issue
• Unique preferences should be honored

Photo Credit: Three Rivers Park District, Minnesota
# Nat'l & Int'l Interviews

- Aarhus, Denmark
- Anchorage, AK
- Arlington County, VA
- Blaine County, ID
- Broward County, FL
- Boulder, CO
- Calgary, Alberta
- Cambridge, MA
- Cedar Falls, IA
- Denver, CO
- Duluth, MN
- Fort Collins, CO
- Huron-Clinton Metro Authority, MI
- Howard County, MD
- Jeffersonville, IN
- Lake County, IL
- Madison, WI
- Madison County, IL
- Montreal, Quebec
- Oulu, Finland
- Park City, UT
- Pima County, AZ
- Rochester, MN
- St Louis County, MN
- Santa Barbara, CA
- Seattle, WA
- Urbana, IL

Photo Credit: St Louis County, Minnesota
The best winter maintenance practices were found in Oulu, Finland. Counties across the U.S. have a wide array of bikeway maintenance responsibilities. Many North American cities maintain street-level separated bike lanes in winter. Prioritized bikeway networks for winter maintenance exist in several locales. Several agencies have advanced pavement preservation evaluation and maintenance techniques for trails. Regional agreements have resulted in improved bikeway maintenance across administrative boundaries.

Photo Credit: Pekka Tahkola
Targets

- Double the ratio of bike commuters who bike through the winter by 2040 (with a 25% increase by 2020, and 50% by 2030)
- Maintain 67% of bikeway riding surfaces at “good” or “better” ratings.
Winter maintenance and pavement preservation are the biggest need.

The focus is on off-street trails and separated bicycle lanes.

Maintenance work can be scaled from “basic” to “enhanced” (USD $0.5 million to $5.8 million).

The county may share costs with the 45 municipalities and 2 park districts.

30% of the bikeway network becomes “priority”.

14 snowfall events of one inch or more occur annually.

Photo Credit: City of Eden Prairie, Minnesota
Cost Estimate Averages

- Crack sealing
  - $2,200-$5,500 per mile
  - Or $0.47 to $1.17 per square yard
- Fog sealing
  - $1,700-$4,700 per mile
  - Or $0.35 to $1.00 per square yard
- Microsurfacing
  - $15,700-$19,000 per mile
  - Or $3.35 to $4.00 per square yard
- 2” Bituminous Overlay
  - $53,000 per mile
  - Or $100 per ton
- Reconstruction
  - $350,000-$550,000 per mile
  - Or $75 to $125 per square yard
- Plowing off-street trails
  - $25 - $250 per mile, per snow event
Trail Pavement Maintenance

Pay Now or Pay More Later

- Excellent: Preventive Maintenance $1.50/sy
- Good: Minor Rehabilitation $19/sy
- Fair: Major Rehabilitation $32/sy
- Poor: Reconstruction $95/sy

Source: LRRB

Image Credit: Minnesota Local Road Research Board
Overall Recommendations

- A **prioritized** multi-use path and on-street protected bicycle lane network
- A County Bikeway Maintenance Commission that pools resources for bikeway maintenance
- A new and expanded **system for tracking the pavement surface quality** of multi-use paths, with the aim of reducing expensive reconstructions

Image Credit: Ramboll Finland Oy
Overall Recommendations

- **A bikeway design guide** which focuses on reducing maintenance costs and drainage issues
- **Evaluation** of winter maintenance of **standard bicycle lanes**
- **An annual or biennial conference on bikeway maintenance**
2040 Bicycle Transportation Plan

Plan Strategy 2.3 calls for the planning and designation of “an enhanced bicycle network composed of high comfort bikeways that provide physical separation from motor vehicles.”
Bikeway Types Addressed in this Study

Curb Protected/ Cycle Track

On-Street Protected
• Develop a comprehensive review of county roadways to determine the suitability for enhanced bicycle infrastructure.
• Evaluate the estimated construction and maintenance costs and provide recommendations for changes to the County’s Cost Participation Policy.
• Develop a draft Enhanced Bikeway Network map and supporting report for board review.
Thank you!

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