

Attachment 1 for Board Report -- Evaluation Report and Recommendations

**Off-Road Cycling Demonstration Project Evaluation
Report and Recommendations**

Minneapolis Park & Recreation Board
November 29, 2005
Jennifer B. Ringold, Citywide Planner
Tim Brown, Project Engineer

Acknowledgments

Minneapolis Off-Road Cycling Advocate (MOCA) Volunteers:

Over 130 volunteers have worked on the demonstration project. The following is a list of past and present board members as well as individuals who have volunteered over 33 hours in 2004 or 2005: Beckie Alexander, Tom Anderson, Pat Arneson, Jim Blaser, Peter Crabtree, Chris Druckenmiller, James Ford, Erik Gerrits, Gary Hakala, Shad Holland, Will Holway, Tom Huber, mara larson, Peter McKinney, Matt Moore, Adam Nordell, Bill O'Reilly, Cliff Owen, Jason Rowland, John Schmidt, Shawn Sheely, Reed Smidt, Miriam Taylor and Jason Voelkel

Minneapolis Park and Recreation Board Commissioners:

President Jon Olson, Vice President John Erwin, Rochelle Berry Graves, Walter Dziedzic, Bob Fine, Carol A Kummer, Marie Hauser, Vivian Mason and Annie Young

Minneapolis Park and Recreation Board Staff:

Jill Andrews, Keith Ehrenberg, Brad Erickson, Kelly Dennis, Joe Green, John Gronquist, Shanna Hendrickson, Marcia Holmberg, Mary Lerman, MaryLynn Pulscher, Mike Robinson, Matt Timinski, Jeff Van Guilder, Christine Wiencke and Theodore Wirth Golf Course Par 3 staff

Park Board Interns:

Shawn Dentice, Carlos Espinosa, Elizabeth Jacobson, Laura Johnson, Arik Rudolph and Julia Solomon

International Mountain Bike Association:

Tim Wegner and Erik Gerrits

Minnesota Off-Road Cyclists

Mayor RT Rybak

Table of Contents

Summary	4
Background	7
Trail Sustainability	11
Park Usage and User Satisfaction	14
Trail Maintenance and Monitoring	25
Promotion and Awareness	27
Points of Interest and Key Lessons	28
Recommendations	30
List of Attachments	31

Summary

Over the past 20 years off-road cycling has become a mainstream sport enjoyed by many urban residents throughout the United States, including New York City where trails recently opened. State-wide, cities report an increased demand for off-road cycling trails, and the metro cities rank it ninth among other recreational facilities needed to meet the demands of park visitors¹.

In Minneapolis, despite the lack of designated trails and bans on cycling in some areas, cyclists found their way to the Minneapolis park system (primarily in regional parks) and developed trails to ride by adapting existing informal hiking/walking trails and cutting unofficial trails. Consequently, the overlapping of informal, poorly designed, walking, hiking and cycling trails contributed to a landscape riddled with crisscrossing trails and damage in some areas.

To help land managers throughout the country successfully implement off-road cycling trails, the International Mountain Bike Association (IMBA), an organization of cyclists passionate about both their sport and the environment, introduced sustainable design guidelines for off-road trails. In 2003, Minneapolis Off-Road Cycling Advocates (MOCA) introduced the concept of IMBA standard trails to the Minneapolis Park and Recreation Board with the goal of integrating sustainable trails into the Minneapolis park system.

In April 2004, the Minneapolis Park and Recreation Board (MPRB) approved a Memorandum of Agreement (MOA) for the development of an off-road demonstration project in a section of Theodore Wirth Park. This project area was chosen because it had clearly defined boundaries, was an area where cycling was already occurring, had favorable soil types and provided enough space to demonstrate a wide range of building techniques.

The MOA between Minneapolis Park and Recreation Board (MPRB), Minneapolis Off-Road Cycling Advocates (MOCA) and Minnesota Off-Road Cyclists (MORC) outlines the parameters of the project and its evaluation. The resulting three-foot-wide trail that extends over 3.5 miles within the project area is open to bikers, walkers/hikers, trail runners/joggers and snow-shoers. The length of new trail constructed to complete the project is equal to the length of old trail closed/removed.

¹ 2004 Survey Results on Outdoor Recreation Facilities and Management Concerns of Minnesota Cities, Counties, and Schools, Minnesota Department of Natural Resources. Full report can be found on www.dnr.state.mn.us/aboutdnr/reports/index.html.

The MOA specifies that the pilot project will be evaluated “12 months from the time that the trails are established and ready to ride,” and sets the expectation that

“a successful demonstration project will lead to further negotiations between the MPRB and MOCA towards potentially establishing a larger trail network in portions of the Minneapolis park system, with the understanding that not all parks will be appropriate for off road trails due to soil types, competing uses and sensitivity of plant and animal communities.”

The MOA requires the evaluation of specific aspects of the project—trail sustainability, park usage and user satisfaction, trail maintenance and monitoring and promotion and awareness. These evaluation categories were developed in response to concerns voiced by staff and community (bikers and non-bikers) members during the development of the MOA. On-site visits, on-site user counts and surveys were used to evaluate these aspects of the project.

Overall, the project meets the requirements of the MOA. Park staff report that the trails have been built to sustainable standards and on-site user counts and surveys suggest that use increased by a factor of four during the demonstration project (with all user groups showing some level of increase). Furthermore, user satisfaction has remained strong, while reported conflicts have been out-paced by the suggested increase in visits. Therefore, MPRB Planning staff make the following recommendations:

That off-road cycling on designated trails be considered an approved activity in the Minneapolis park system and be considered in future master planning for Minneapolis parks, contingent on the following:

1. That trails be built using sustainable building methods as outlined by International Mountain Bike Association (IMBA).
2. That trails only be implemented in designated areas approved by the Park Board with input from park users and neighbors.
3. That trails be built with the goal of creating a system of trails utilizing paved paths as connectors where necessary versus creating many small pockets of unconnected trails.
4. That trails be built with the goal of providing beginner, intermediate and expert level experiences.
5. That those areas naturally prone to erosion, in close proximity to water/wetlands, designated as natural areas and/or containing cultural features be avoided.
6. That off-road cycling be considered an active, high-aerobic sport that is best implemented in areas where active sports are planned, anticipated or well integrated with other activities within the park.

7. That maps and directional signage be provided in relevant locations throughout the park system to direct off-road cyclists to designated trails.
8. That trails be built using hand building techniques, limiting the use of mechanized building techniques.
9. That maintenance and operational needs be addressed prior to the addition of new trails.
10. That trails be considered shared-use unless otherwise marked.
11. That trails be closed if they become unsustainable.

That off-road cycling continue to be permitted in the current demonstration project area of Wirth Park with the addition of an “expert loop,” contingent on the following:

1. That the existing MOA be extended until a new one can be drafted and approved.
2. That MOCA provide the MPRB with as-built drawings of the project area.

Background

Over the past 20 years off-road cycling has become a mainstream sport enjoyed by individuals throughout the United States. State-wide, cities report a greater demand for off-road cycling trails, and the metro cities rank it ninth among other facilities needed to meet the demands of park visitors². Despite the lack of designated trails and bans on cycling in some areas, cyclists found their way to the Minneapolis park system (primarily regional parks) and developed trails to ride by adapting existing informal hiking/walking trails and cutting unofficial trails. Consequently, the overlapping of informal, poorly designed, walking, hiking and cycling trails contributed to a landscape riddled with crisscrossing trails and damage in some areas

To help land managers throughout the country successfully implement off-road cycling trails, the International Mountain Bike Association (IMBA), an organization of cyclists passionate about both their sport and the environment, introduced sustainable design guidelines for trails. In 2003, Minnesota Off-Road Cyclists (MORC) organized locally to support trail development throughout the state using IMBA standards, and most recently Minneapolis Off-Road Cycling Advocates (MOCA) organized to advocate for IMBA designed trails within Minneapolis.

MOCA formed in response to a meeting initiated by Mayor RT Rybak and the Park Board as a call to action to increase the development of 'silent sports' facilities in Minneapolis parks. At the March 19, 2003 Park Board Planning Committee meeting, MOCA presented a proposal to develop designated off-road cycling trails in the Minneapolis park system. The proposal included a long-term plan to incorporate off-road bicycle trails in various locations, and a short-term plan to provide designated trails in and near Theodore Wirth Park. In response to MOCA's request, Park Commissioners directed staff to:

"Develop a formal agreement with MOCA that specifies how future maintenance costs, usage policies, overuse procedures and user conflict procedures will be addressed, and to ensure community support for the trail before parts of Wirth Park be designated as an off-road bicycle area."

Over the course of a year, Planning staff worked extensively with MOCA to develop a Memorandum of Agreement (MOA) (Attachment A). A number of Park Board staff contributed to the development of the MOA: Jill Andrews, Jennifer Ringold and Tim Brown from Planning; Brad Erickson and Randy Dennis from

² 2004 Survey Results on Outdoor Recreation Facilities and Management Concerns of Minnesota Cities, Counties, and Schools, Minnesota Department of Natural Resources. Full report can be found on www.dnr.state.mn.us/aboutdnr/reports/index.html.

Maintenance; Mary Lerman and Shanna Hendrickson from Environmental Operations; and Matt Timinski from Forestry. To assist with the development of the MOA, a specific project area was designated within Theodore Wirth Park - north of Highway 55, west of Theodore Wirth Parkway and Theodore Wirth Golf Course and east of Twin Lakes. The project area was chosen because it had clearly defined boundaries, was an area where cycling was already occurring, had favorable soil types and provided enough space to demonstrate a wide range of building techniques.

A community meeting was held on January 27, 2004 to seek comment on the proposed off-road cycling pilot project. Residents in both Minneapolis and Golden Valley within three blocks of the park received post card notification. A total of 60 people attended the meeting of which about 25 percent were non-cyclists. Meeting participants indicated good support for the demonstration project. Comments received were incorporated into the Memorandum of Agreement as appropriate.

In April 2004, the MPRB approved the MOA for the development of an off-road demonstration project at Theodore Wirth Park per the following Board action:

“That the Park Board approve the memorandum of agreement with the Minneapolis Off-Road Cycling Advocates for the implementation of an off-road cycling demonstration project at Theodore Wirth Park.”

In the MOA, MOCA and the MPRB set the following goals for the project:

MPRB Goals:

- To determine if sustainable, safe and low maintenance off-road trails can be established in the Minneapolis park system in a manner that both challenges local off-road cyclists and protects natural resources.

MOCA Goals:

- To conduct a successful off-road cycling demonstration project in Theodore Wirth Park, in accordance with the requirements of the Memorandum of Agreement, and as a result achieve the creation of an off-road cycling network in portions of the Minneapolis park system.

The approved MOA addresses a range of issues associated with conducting and evaluating an off-road cycling demonstration project at Theodore Wirth Park, including the project’s timeline, location, cancellation process, risk management provisions, permit requirements, trail design standards, monitoring and maintenance requirements, guidelines for trail alignment changes, trail closure process, education and awareness provisions, signage

needs, user conflicts, expenses and project evaluation. Furthermore, it sets the expectation that:

“a successful demonstration project will lead to further negotiations between the MPRB and MOCA towards potentially establishing a larger trail network in portions of the Minneapolis park system, with the understanding that not all parks will be appropriate for off road trails due to soil types, competing uses and sensitivity of plant and animal communities”.

Starting in April of 2004, MOCA and the MPRB worked to implement the MOA. Per the agreement, MOCA designed and built the existing trail system within Wirth Park. To coordinate the work, MOCA labeled the project area into eight work zones (Attachment B). With the exception of zone 6, a section intended to include an ‘expert loop’ that would be added upon approval of the project, the trail has been completed within zones 1-7. No designs or plans were made for zone 8.

In total, volunteers built 3.5 miles of three-foot-wide trail within the project area that is open to cyclists, walkers/hikers and trail runners/joggers. Much of the trail that existed prior to the project did not meet the design standards for sustainable trail and needed to be removed/closed. At the completion of the project, the amount of new sustainable trail built equaled to the amount of unsustainable trail removed/closed in the area. Cyclists use the existing paved bike paths to connect the new trail in two sections of the project area to create a 4.36 mile loop through the project area (Attachment C).

Throughout the project, MOCA volunteers contributed over 3,500 hours toward the construction of the trail, and with the exception of three specific locations, all of the work was completed with hand tools. In these three locations, MOCA hired a contractor to assist with trail development using a small bulldozer (a dingo or ditchwitch) under the supervision of MPRB staff.

In September of 2004, the trails were substantially complete and ready to ride. Construction took longer than expected and some projects were completed during the spring and summer of 2005, during this time trails remained open to riders. The grand opening celebration for the trail was held June 4, 2005. The opening received coverage from the local media and was featured in the StarTribune and on WCCO Channel 4 News. Over 200 cyclists attended the opening and a few were able to enjoy a ride on the trails before heavy rains made them too wet to ride. (Note: Due to the soil type in this section of the park, the trails drain well enough to ride within a day of a heavy rain.)

In August 2005, the final evaluation was initiated. The MOA specifies that the pilot project will be evaluated 12 months after the trails are established and

ready to ride. The trails were substantially complete by the end of September 2004, which allowed riders to begin using the trails. The celebratory grand opening of the trails was held on June 4, 2005. While 12 months have not passed since the opening celebration on June 4, 2005, the trails were open to riders during the evaluation period (Fall 2004 to Fall 2005).

The MOA requires a wide range of project variables be evaluated, including:

- Trail sustainability
- Park usage and user satisfaction
- Trail maintenance and monitoring
- Promotion and awareness

These categories reflect the concerns voiced by staff and the community (bikers and non-bikers) members during the development of the MOA. The evaluation included: assessments of the trail condition; distribution of a park user survey to local community groups, neighborhoods, those who had attended previous meetings or expressed interest, bike shops and park visitors; and on-site counts of visitors (hikers/walkers, joggers/trail runners, off-road cyclists and dog walkers).

Trail Sustainability

Methodology

The MOA specifies that trail sustainability, as defined by the Trail Design Standards in the MOA, be evaluated prior to trail construction, prior to commencing trail riding and after the demonstration project is complete. To fulfill this requirement, trail conditions at the completion of the demonstration project were compared to those prior to trail construction in Spring 2004 and prior to commencement of riding in Fall 2004.

Prior to the construction of the trails, the condition of the unofficial trails in the project area was noted and MOCA volunteers mapped all of the trails in the area using a Geographic Positioning System (GPS) unit (Attachment D). In September 2004 (prior to opening the new trails), MPRB staff evaluated six areas of the trail and two sections where trail had been closed to determine the baseline condition of the new trails. In September of 2005 (after the project was complete), the same trail locations were evaluated by staff. During both visits, the weather was sunny with no rain, but heavy rains had fallen within two days of the visit. Forestry, Environmental Operations, Operations and Planning staff participated in both site visits, and with a few exceptions, the same individuals conducted the review in 2004 and 2005. Staff evaluated the following characteristics of the trail sections during each visit:

Erosion (Is erosion occurring?)

Trail width (Is the trail widening?)

Vegetation (What plant materials are present?)

Tree impacts (Are there impacts to the roots, canopy or bark?)

Drainage (Can ruts, dips or standing water be seen?)

Overall sustainability rating

In the areas where trail had been closed, staff considered whether re-vegetation was occurring and if it was staying closed.

Findings

Prior to construction, the map of all the trails (Attachment D) showed many sections where trails crossed the park in an inefficient and disorganized manner. Additionally, an inspection of the initial trails showed that many of them were eroded and/or not built to sustainable design standards. When comparing the new trails to those that existing prior to construction, Planning staff made the following observations:

- Sections that were eroding or prone to erosion have been removed/closed or rebuilt using sustainable techniques.
- The previous pattern of crisscrossing trails that produced an inefficient use of the space has been replaced with an orderly trail system (Attachment E).

- Shared-use trails are being provided for cyclists, walker/hikers and trail runners/joggers that are separate from the ski trails.
- The development of unauthorized bike trail within the project area has stopped.
- Authorized trail has been built to avoid potentially sensitive habitats and water features within the project area.
- The amount of new trail constructed equals the amount of trail that was closed/removed in the project area (3.5 miles).
- Trails used primarily by walkers and hikers have been difficult to close, because these user groups tend to re-open them. In some cases, the trails have been left open to accommodate major walking/hiking routes. These trails are being monitored to see if cyclists are using them. So far, cyclists seem to be avoiding most of them. (Trails used by cyclists are likely to show some tread marks in areas where fine soil particles settle.)
- Unofficial entrances into the park have also been difficult to close. These areas seem to be used by all user types. MOCA has been more aggressively attempting to close the unofficial entrances used by cyclists with some success.

Next, trail conditions at the completion of the project (Fall 2005) were compared to trail conditions prior to the commencement of riding (Fall 2004) (Table I). In general, the staff report that the trails are holding up well and fulfilling the qualifications of being sustainable. If the project is approved, additional work is recommended in a couple of areas to mitigate potential erosion problems.

Table I - Summary of Trail Condition Findings

Characteristic Reviewed	Results 2004	Results 2005
<i>New Trail Sections (6 Sites)</i>		
Erosion (Is erosion occurring?)	No erosion was reported	Erosion was reported in two areas. One area had been previously identified as a potential location for a small bridge, and the second is a location with low vegetation and a slope. These conditions were reported to MOCA. The first location will require either a trail reroute or MPRB approval to install a bridge to correct the condition. The second location is being corrected by MOCA volunteers.

Trail width (Is the trail widening?)	All of the trail sections were found to be three feet or less.	The trail width was shown to be moving or widening in two locations. These conditions were reported to MOCA and volunteers corrected the problems.
Vegetation (What is present?)	Most of the vegetation was noted to be invasive species.	No significant changes were reported in the vegetation.
Tree impacts (Are there impacts to the roots, canopy or bark?)	A few impacts were reported in one location; however, they required no action and no impacts were reported in the same location in 2005.	A few impacts were noted in two areas. One requires no further action and MOCA is addressing the problems in the other location.
Drainage (Can ruts, dips or standing water be seen?)	One site showed some signs of ruts. This is the location where a small bridge is recommended by MOCA.	One site showed ruts (same site as in 2004), and one site showed a few dips. The second area has been reported to MOCA and corrective measures are being implemented.
Overall Sustainability Rating	No sites were considered unsustainable.	No sites were considered unsustainable.
<i>Trail Closure Areas (2 Sites)</i>		
Closed trail remaining closed?	Both sites remained closed.	Both sites remained closed to bikers; however, one site showed some signs that walkers may be using it.
Closed trail re-vegetating?	Re-vegetation was not occurring.	Re-vegetation was occurring slowly in both locations. MOCA was asked to better camouflage the closed trails throughout the project area to prevent them from re-opening.

Discussion of Findings

Overall, MOCA has fulfilled the criteria established in the MOA for building sustainable trails. A review of the project area shows that by employing IMBA trail building techniques the trails made by MOCA are proving to be sustainable, and no damage to native plant species has been observed. In areas where problems were identified during trail visits, action steps have been identified and are being implemented to address the problems.

A critical component of the MOA is an evaluation of plant materials to determine if the project contributed to the spread of invasive species or damaged native plant materials. Staff did not find evidence of damage to native plants during trail construction, and within the roughly three-foot wide corridor cleared for the trail, invasive species are not re-establishing. MOCA, however, has only focused on the trail corridors and has not been considered responsible for removing invasive species or restoring habitat beyond the corridor. Additionally, MOCA volunteers have worked with the MPRB forestry department to ensure construction does not contribute to the spread of various tree diseases.

To further assist the MOCA volunteers in identifying invasive species and native plants and shrubs, and in understanding the urban forest, MPRB Environmental Operations and Forestry staff provided MOCA volunteers with on-site training. MOCA would like to have this training provided to its volunteers on a yearly basis, if the project continues past the demonstration period.

Park Usage and User Satisfaction

Methodology

The MOA specifies that the use of the project area - frequency and number of users - will be measured prior to the commencement of the demonstration project (Fall 2004) and at the completion of the demonstration project (Fall 2005) via on-site counts and a user survey. It also specifies that the level of user conflict and visitor satisfaction will be evaluated via on-site user surveys, surveys at bike shops and an online user survey on the MORC and MPRB websites. Impacts on park areas outside of the project area and MOCA's participation in the grievance procedure must also be considered. Finally, it requires a review of affected communities and local neighborhood groups be undertaken.

To fulfill these evaluation requirements, on-site counts were conducted and a park user survey was administered first in July, August and September of 2004, and then again in August and September of 2005. In 2004 baseline data was collected with the assistance of MPRB Planning interns, who counted park users in two-hour intervals on eight separate occasions. The counts were conducted at different times of day and on different days of the week at four specific locations within the project area (Attachment F). The interns counted park "visits," or the number of times a person crossed the area where counts were taken. For example, if an individual passed the location where counts were being tallied three times, three "visits" were recorded. In 2005, the counts were repeated on approximately the same dates, times and locations as 2004.

In both years, counts were not taken on rainy days, as trails are closed to cyclists when they are too wet to ride.

While the counts were being conducted, park users were offered the opportunity to complete a user satisfaction survey. Surveys were also sent to bike shops and local neighborhood and community groups and were available online via both the MOCA and MPRB web sites. In total, the surveys were distributed through the following:

- MPRB Website
- MOCA Website
- Local Bike Shops
- Bryn Mawr Neighborhood
- Friends of the Wild Flower Garden*
- Cedar Lake Park Association*
- Audubon Chapter of Minneapolis*
- Sweeney Lake Association*
- Minneapolis Municipal Hiking Club*
- Harrison Neighborhood Association
- Northside Residents Redevelopment Council**
- Mailing list (individuals who attended previous meeting or have asked to be kept informed of the project)*

*Groups that participated in the distribution of the survey in 2005, but not in 2004.

**Surveys were sent to this group, but distribution of them has not been confirmed.

In order to measure changes in usage, user satisfaction and reported conflicts, similar survey questions were asked in 2004 and 2005 (Attachments G and H). In 2005, a few survey questions were added to gain a better understanding of the recreational needs of the cyclist. Additionally, a question was included on the 2005 survey that allowed respondents to indicate how, in their experience, the amount of off-road cycling changed in Wirth Park outside of the demonstration project area during the pilot project. (The MOA requires a qualitative assessment of “whether the demonstration project has had an impact on decreasing cycling in other areas of Wirth Park that are in poor condition or more environmentally sensitive.” It states that this assessment should be part of the survey and community review process, and further notes that “the success, or not, of the pilot project will not rely on the outcome of this particular assessment.”)

The MOA also requires that MOCA’s participation in the grievance process be assessed as part of this evaluation criterion. The grievance process, however,

was not initiated during the demonstration project; therefore, this variable is not included in the evaluation.

Findings

Park Usage Count Results

The total number of recorded visits increased for all user types. Dog walker and walker/hiker visits doubled and off-road cycling visits increased by a factor of four (Table II).

Table II - Total Recorded Visits to Demonstration Project Area in 2004 and 2005

Year	Total Number of Visits Recorded Per User Type			
	Off-Road Cyclist	Walker/Hiker	Jogger/Trail Runner	Dog Walker
2004	73	19	8	5
2005	285	43	10	11

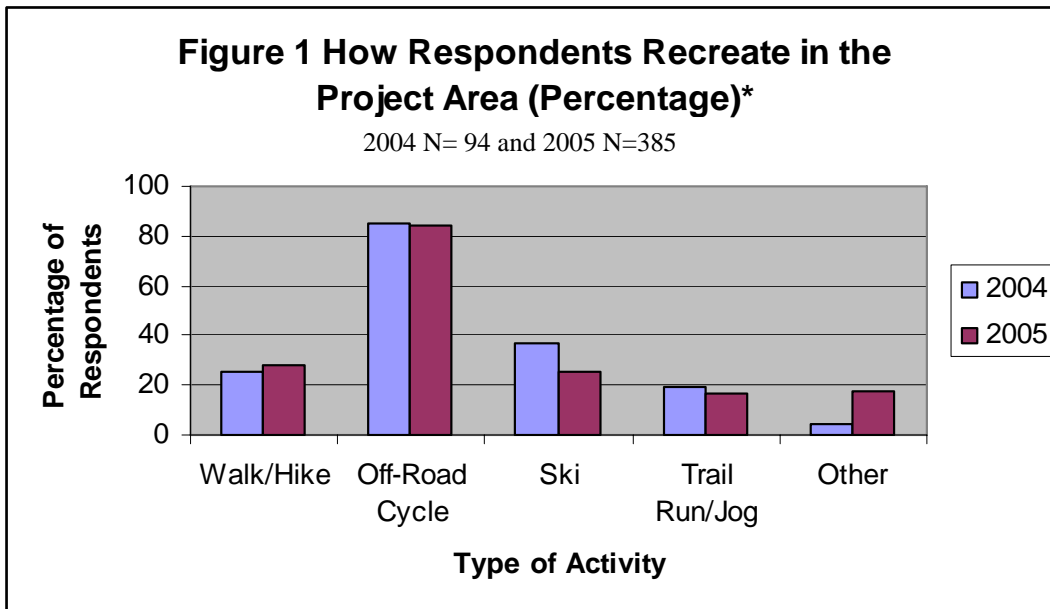
User Satisfaction Survey Results

In 2004, the MPRB received 94 completed surveys from respondents, and in 2005, it received 385. Total survey responses increased by a factor of four.

In both surveys, park visitors were asked how they recreate in the demonstration project area. The survey included a list of potential recreational activities and respondents were asked to circle all those that apply to them. If the respondent's recreational activity wasn't listed on the survey, they had the option to select "other" and list their activity on the survey. Most respondents indicated that they engage in more than one recreational activity at the park.

When comparing the responses between 2004 and 2005, the total number of respondents participating in each activity increased, with off-road cycling being the activity selected most. The percentage of respondents indicating that they cycle decreased slightly in 2005 in comparison to the all activity options, while the percentage indicating that they walk/hike increased (Fig 1). Additional changes in percentages included a decrease in respondents indicating that they ski, and an increase in the percentage of individuals participating in "other" activities. Many of respondents who selected "other" indicated that they snow-shoe, swim or bird watch in the project area.

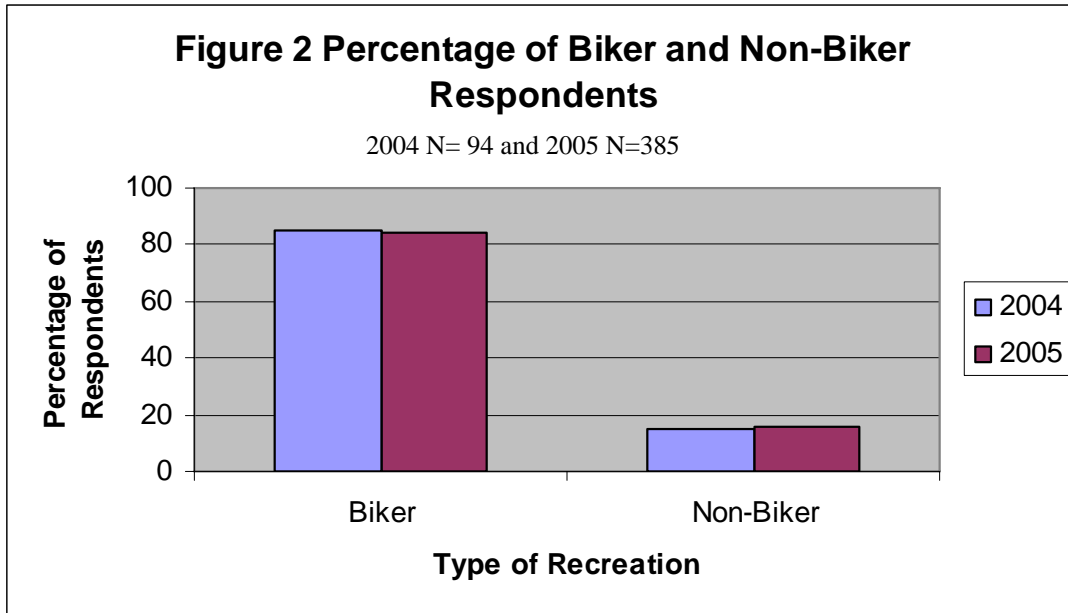
In 2005, dog walking was added as an activity respondents could choose on the survey. This activity choice was not provided on the 2004 survey, so dog walking responses were included in the "other" category in 2005. In 2005, nine percent of respondents indicated that they walk their dogs in the project area.



* Respondents were allowed to select more than one recreational activity, so the percentages do not equal 100.

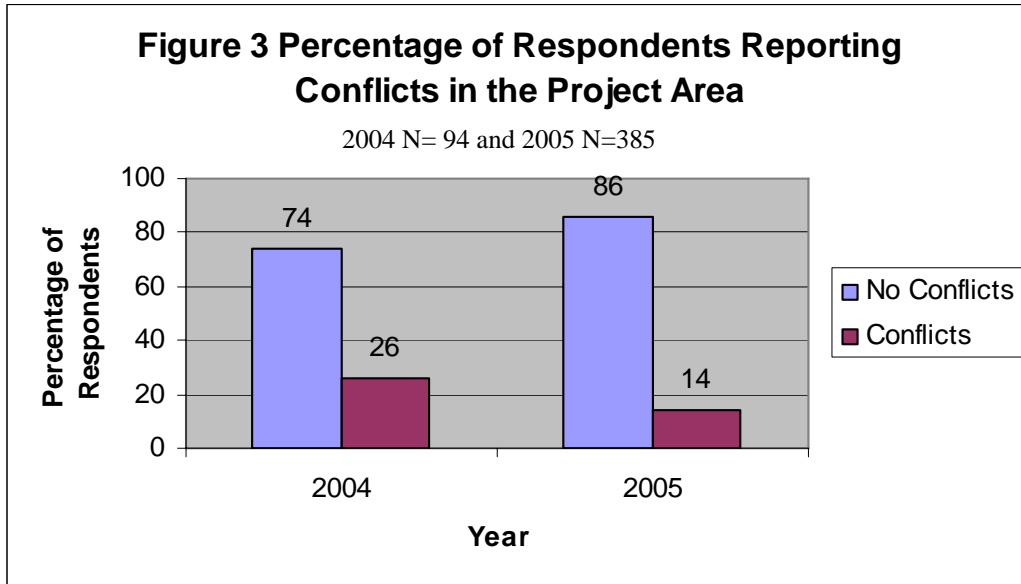
The respondents can be divided into “bikers” and “non-bikers” based on the recreational activities they reported participating in at the park. Respondents who indicated that they off-road cycle, regardless of the other activities they selected on the survey, were considered bikers. Similarly, respondents who did not select off-road cycling, regardless of the other activities they selected, were considered non-bikers.

When comparing the respondents who indicated that they off-road cycle in the park (bikers) to those who did not list off-road cycling as an activity (non-bikers), similar percentages were observed in both years with bikers representing 85 percent (80 of 94 respondents) of the survey respondents in 2004 and 84 percent (323 of 385 respondents) in 2005 (Fig 2). The number of bikers and non-bikers who completed a survey increased by 303 and 343 percent, respectively.

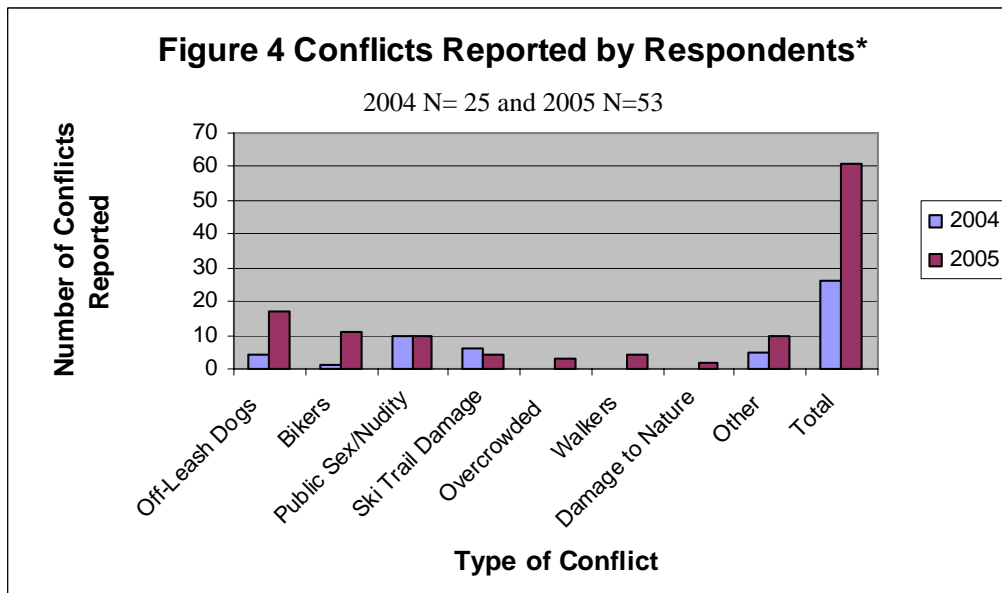


In both years, participants were asked to estimate how many visits they make to the park per season. On average, participants of both years estimated that they travel to the park 10 times in the summer, seven times in the fall and four times in the winter. In 2005, participants on average estimated that they make one additional visit to the park in the spring (6 visits versus 5).

Respondents in both years were also asked whether they experience conflicts while recreating in the park. If conflicts were experienced, respondents were asked to provide information about the type of conflict and how often it occurs. In 2004, 26 percent of respondents (25 total respondents) indicated that they experience conflicts in the project area (Fig 3). In 2005, this decreased to 14 percent, but the total number of respondents who reported experiencing a conflict increased to 53. Of the 25 respondents who reported conflicts in 2004, 20 were bikers and 5 were non-bikers. In 2005, this shifted to 35 bikers and 18 non-bikers.

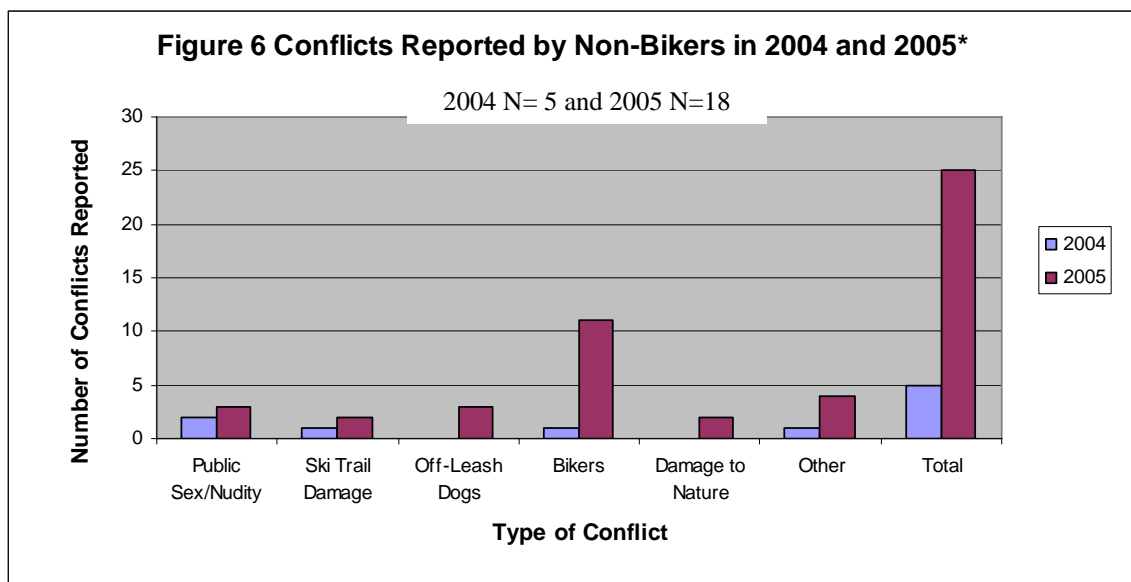
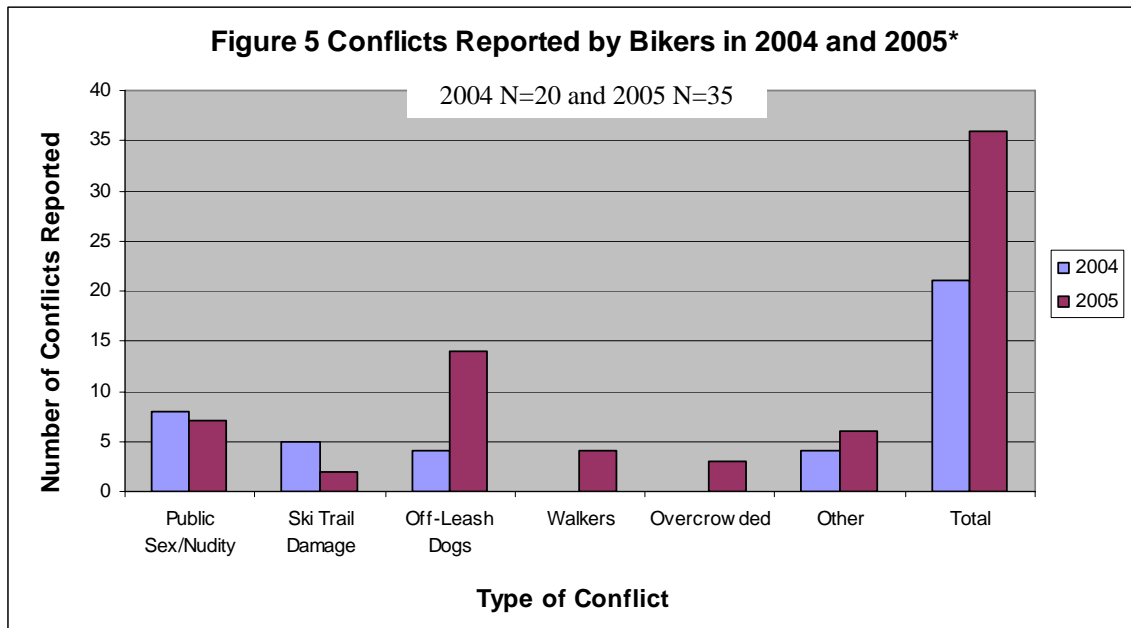


Written comments by survey respondents show a wide range of conflicts are occurring in the project area (Attachment I). Similar conflicts were grouped together producing seven categories. These categories include conflicts related to bikers, public sex/nudity, off-leash dogs, walkers, ski trail damage, overcrowding, damage to nature and other (Fig 4). Some respondents reported more than one type of conflict and each type was recorded, therefore, the total number of conflicts reported is greater than the total number of respondents who indicated they experience conflicts.



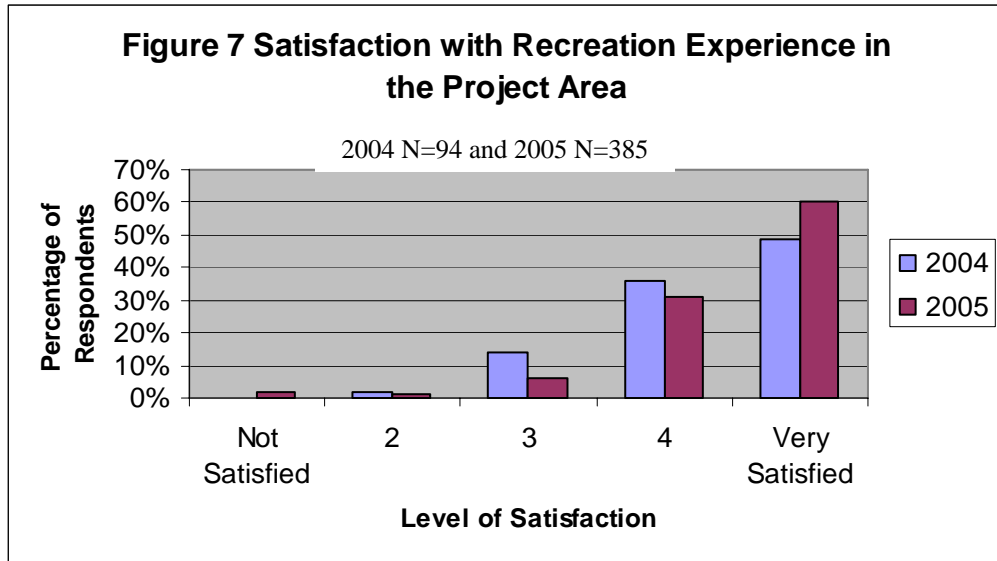
* Some respondents reported more than one type of conflict, so the total number of conflicts reported is greater than the total number of respondents who indicated they experience conflicts.

The top three conflicts in 2004 were related to public sex/nudity, ski trail damage and off-leash dogs. In 2005, the top three conflicts were related to off-leash dogs, bikers and public sex/nudity. In 2004, the top three conflicts for bikers were public sex/nudity, off-leash dogs and ski-trail damage, and non-bikers reported minimal conflicts. In 2005, this shifted and the top three conflicts for bikers were off-leash dogs, public sex/nudity and walkers, while the top two for non-bikers were conflicts with bikers and off-leash dogs (Figs 5 and 6). According to the survey results, the total number of biker related conflicts increased to eleven 2005.

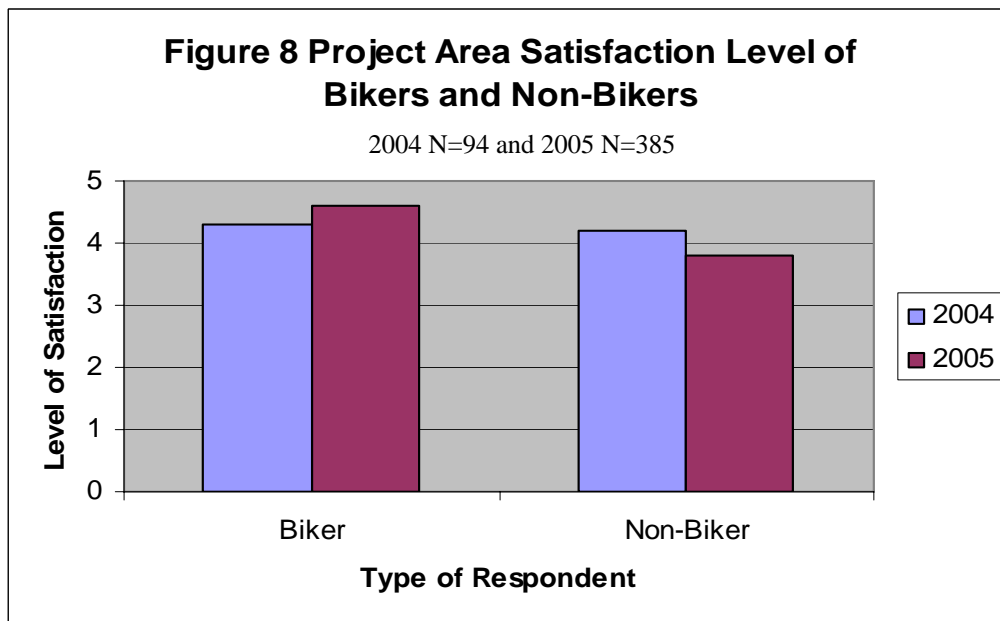


* Some respondents reported more than one type of conflict, so the total number of conflicts reported is greater than the total number of respondents who indicated they experience conflicts.

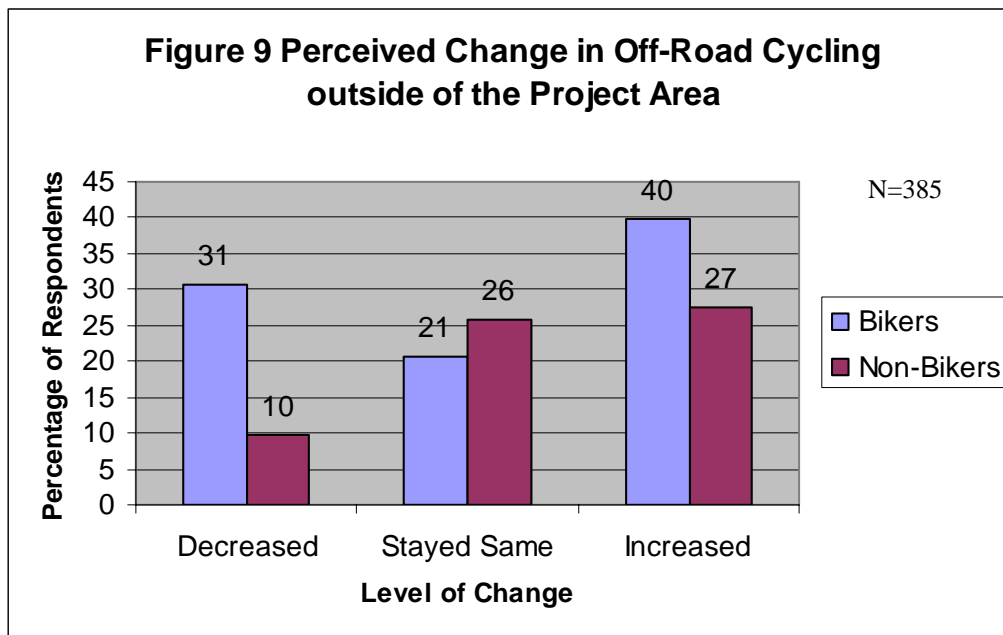
On a scale of one (not satisfied) to five (very satisfied) respondents were asked to express their level of satisfaction with the project area. The 2005 survey results show that over 90 percent of the respondents are satisfied at a level of average or higher and 59 percent are very satisfied. In 2004, 98 percent of respondents indicated that they are satisfied at an average level or higher and 48 percent indicated that they are very satisfied (Fig 7).



Bikers and non-bikers reported being more satisfied than unsatisfied in both 2004 and 2005. When comparing the biker to the non-biker group, the satisfaction level of the non-biker dropped slightly between 2004 and 2005 and the biker group increased (Fig 8).



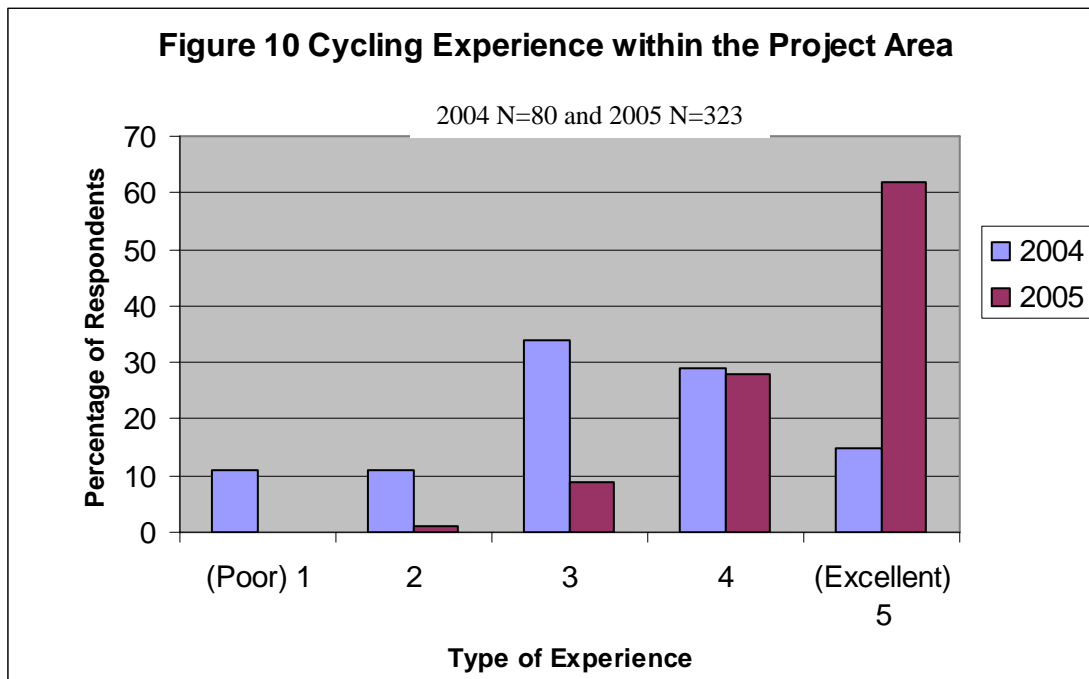
The MOA requires a qualitative assessment of “whether the demonstration project has had an impact on decreasing cycling in other areas of Wirth Park that are in poor condition or more environmentally sensitive.” Therefore, 2005 respondents were asked whether the level of off-road cycling increased, decreased or stayed the same in areas of Wirth Park outside of the demonstration project area. Forty percent of bikers and 27 percent of non-bikers believed that cycling increased in areas of the park outside of the project area. Almost the same percentage of non-bikers (26 percent) felt that it stayed the same, while 21 percent of the bikers believed it stayed the same. Finally, 31 percent of bikers and 10 percent of non-bikers felt that off-road cycling in other areas of the park decreased (Fig 9).



In both 2004 and 2005, survey respondents were asked to provide their zip code to help determine where park users live. Over 80 percent of the respondents are from Minneapolis in both years. St. Paul is the second highest point of origin. The 2005 respondents were also asked how they travel to the park. Fifty-nine percent bike to the park, 25 percent drive and the remaining individuals arrive by running/jogging, hiking/walking or other means.

Cyclists were asked specific questions about the trails in both years. In 2004 and 2005, respondents were able to rank their experience on a scale from one (poor experience) to five (excellent experience). In 2004, respondents were asked to rank their experience with the unofficial trails in the project area prior to the construction of sustainable trails. The majority of the respondents rank their experience as a three or four, or from average to just above average. In 2005, respondents were asked to rank their experience with the trails in the project area since the opening of the official sustainable trails.

Ninety percent of the respondents rank their experience as a four or five, with over 60 percent ranking it a five (Fig. 10).



In both years cyclists were also asked how many times they ride in the project area. This number increased from five to six times per month on average.

In 2005, cyclists were asked additional questions to help determine how they perceive the new trail system and to provide some guidance on what type of changes should be made if the project is approved beyond the demonstration period. Cyclists were asked to rate the difficulty of the existing trails as beginner, intermediate or advanced. The majority of the riders rate it as intermediate. They were also asked to articulate how they would change the difficulty of the trails. Fifty percent of the respondents said they would keep it the same and 47 percent said they would make it more difficult.

Cyclists, in 2005, were also asked two questions to help determine the ideal length of the trail. The first question asked how long they typically ride the existing trail; on average cyclists ride the trail for 73 minutes. They were then asked how long they'd like the trail to be and how long they'd like to ride. On average cyclists would like the trail to be 13 miles long and to allow for 90 minutes of riding.

Finally, all participants were given the opportunity to share additional comments (Attachment J). In 2004, 57 respondents shared extra comments and in 2005, 207 additional comments were received. The percentage of comments that show support for the project increased by four percent (82 percent in 2004

to 86 percent in 2005), and the comments that are not supportive of the project increased by one percent (5 percent in 2004 and 6 percent in 2005).

Discussion of Findings

The on-site user counts and user survey both suggest that the total use of the park has increased, and while biker related conflicts have increased during the demonstration project, overall user satisfaction in the area has remained high for cyclists and non-cyclists groups alike. Non-bikers reported a slightly lower level of satisfaction, whereas bikers reported a higher level of satisfaction than in 2004. While a complete elimination of user conflicts is desirable, the results are favorable and suggest the project has successfully increased use while minimizing potential conflicts and maintaining a high level of user satisfaction.

In 2005, the number of bikers and non-bikers who completed a survey increased, with non-bikers increasing slightly more. It is assumed that the increase of off-road cyclists in the park is the result of the new trails and the promotion of these trails. It is probable that the number of non-bikers increased as a result of greater awareness of the project (and perhaps even the park) due to the promotion of the trails. Since the data suggests increases in all types of park users, it does not appear that the off-road cycling project is contributing to a decline in non-bike related recreational activities in the park.

While the percentage of conflicts reported decreased in 2005, the total number reported increased. Of the conflicts reported, it appears that two distinct categories—conflicts related to bikers and off-leash dogs—are related to the off-road cycling project and would need to be addressed if off-road cycling continues in this area. When reviewing the conflicts reported about bikers it appears that many of the concerns focus on unexpected or sudden encounters with bikers by non-bikers. Further understanding of the nature of the conflicts between bikers and non-bikers will help address these concerns. Potential solutions include better signage for cyclists to warn them to yield before crossing walking or ski trails, education of cyclists that walkers are permitted on bike trails and design modifications at trail intersections to allow better sight lines for all park users. Concerning off-leash dogs, the primary staff concern regarding the project is that dogs and cyclists will collide. Park Police are currently working to educate park users that the area is not a designated off-leash recreation area.

The qualitative assessment of how the level of off-road cycling was changing in undesignated areas (outside of the project area) of Wirth Park showed that both cyclists and non-cyclists felt cycling was increasing in undesignated areas. Cyclists, however, were more likely than non-cyclists to say that it decreased and non-cyclists were more likely than cyclists to say that it stayed the same. While the evaluation is not meant to rely on this factor, the results suggest a need to further investigate the potential impacts on undesignated areas. If

cycling is increasing in undesignated areas and the project is approved, measures will need to be implemented to reduce and/or eliminate impacts on undesignated areas of Wirth Park. In contrast, a review of the project area shows that cycling on unofficial trails within the project area has greatly decreased and MOCA is taking steps to stop it completely.

When focusing specifically on the recreational needs of the cyclists, the survey results show an increase in satisfaction level, with the majority of riders rating their experience on the trails as excellent. This shows sustainable, safe and low maintenance off-road trails can be established in the Minneapolis park system and still be challenging to local cyclists.

Trail Maintenance and Monitoring

Methodology

The evaluation of trail maintenance and monitoring was based on MOCA's ability to fulfill and/or complete specific tasks and guidelines outlined in the MOA.

Findings

The MOA indicates that MOCA's ability to maintain the trails will be evaluated according to how successfully they achieved the maintenance guidelines detailed in the maintenance and monitoring section of the MOA. The guidelines and a report of MOCA's performance are below.

1. MOCA and MPRB will periodically inspect the trails to determine maintenance needs monthly or as required.

The MOCA Trail Steward is responsible for providing monthly trail condition reports. This has been organized and initiated by MOCA. Ongoing reports are being received on a monthly basis. Throughout construction, MPRB Planning staff have inspected the trails at least once per month to monitor progress toward completion and identify maintenance needs.

2. MOCA will be responsible for the maintenance of established off-road cycling trails in Theodore Wirth Park.

Throughout the demonstration project, MOCA has taken full responsibility for maintaining established trails in the demonstration project area of Theodore Wirth Park.

3. MOCA will notify maintenance and forestry of any volunteer trail maintenance it intends to carry out and will receive approval to maintain the trails as proposed prior to commencing work.

MOCA has established regular trail work and maintenance sessions at Wirth Park and kept the MPRB informed of the dates and times of all sessions. Updates about future projects and work completed in the sessions are submitted to the MPRB on a regular basis.

4. MPRB staff will contact a MOCA representative to report maintenance needs (e.g., damage to existing trails and removal of undesignated trails).

When MPRB staff have reported a concern about trail conditions, MOCA staff have addressed the concern appropriately.

5. MOCA will complete minor repairs within two weeks of the request and major repairs within one month.

All repairs or concerns have been addressed within the required time limit.

6. MOCA will be responsible for following the Minneapolis Park and Recreation Board volunteer guidelines in carrying out trail maintenance. In addition, volunteer activities must have at least one MPRB paid staff on site.

MOCA has adhered to MPRB volunteer guidelines. MPRB staff have not been able to attend all volunteer work sessions, due to staff time constraints and the amount of time required to build trail sections (throughout most of the spring, summer and fall, crews are working two days per week for three to four hours each session). Instead staff have worked closely with MOCA's Trail Steward and President to review trail sections prior, during and after construction to ensure the MOA guidelines are being met. While MPRB staff on-site is preferred, this process allowed MOCA and the MPRB to complete the project in a reasonable time period.

7. MOCA will notify operations and forestry of major tree or limb falls and any other maintenance requiring power tools in a timely manner.

MOCA has made proper notifications.

8. MPRB will remove major tree or limb falls and conduct maintenance requiring power tools, or close the trail.

MPRB has made proper removals.

9. MOCA will arrange for the North Central Mountain Bike Patrol to patrol the demonstration project area on a regular basis.

This guideline has not been achieved.

Discussion of Findings

Except for arranging to have the North Central Mountain Bike Patrol, MOCA has followed the guidelines set out in the MOA for trail maintenance and monitoring.

(Note: Since the initial draft of the evaluation, MOCA has contacted the North Central Mountain Bike Patrol and reports that the Patrol is interested in developing an agreement with the MPRB to monitor the off-road cycling trails.)

Promotion and Awareness

Methodology

The evaluation of trail promotion and awareness was based on MOCA's ability to fulfill and/or complete specific tasks and guidelines outlined in the MOA.

Findings

The MOA required that MOCA install signage at the location of the demonstration project and provide a map/pamphlet. All of these requirements have been met. The signage that was developed complements the Grand Rounds signage program and was installed at four locations throughout the park, including the kiosk at Hwy 55 and Wirth Parkway (Attachment K). The brochure/map is available at the kiosk, the Theodore Wirth Golf Course Par 3, the front desk of the MPRB Headquarters, the MPRB website and the MOCA website (Attachment L).

Discussion of Findings

MOCA successfully implemented the signage requirements. In addition, they were able to secure good media coverage for the grand opening. MOCA also provides some ongoing education for cyclists on an as needed basis through its website. Additionally, when the level of awareness of the trails increased after the grand opening, it became evident that at least some cyclists did not know where the official trails were located within the park and assumed that the trails throughout the park were official. MOCA felt this might lead to an increase in cycling in un-authorized areas, so MOCA volunteers addressed this problem by setting up a booth in the park to help direct cyclists to the demonstration project. The booth was set up a total of six times at various locations in the park (Hwy 55 and Wirth Parkway, Glenwood Avenue and Wirth Parkway, and Wirth Beach parking lot). In total, 131 riders stopped by the tent, 28 being new riders. An action plan to install signage that would direct cyclists to designated areas has also been developed.

In addition to providing demonstration project maps and brochures, the Par 3 staff worked with MOCA volunteers to provide replacement inner tubes for bikes and a tire pump. The brochure informed cyclists that these items were available at the Par 3.

Points of Interest and Key Lessons

While the MOA requires specific items be evaluated, the project revealed some additional items worthy of mention. They are as follows:

1. Volunteer commitment and organization strength: The level of volunteer commitment to the project met the expectations of MPRB staff and allowed the project to be completed. Throughout the project, volunteers have been steadily involved in the development of the trails. Furthermore, the strength of the organization allowed MOCA to successfully replace retiring leadership to keep a consistent relationship with the MPRB during the project.
2. Building methods: Two different types of construction were used during the demonstration project - hand building and mechanized building. When comparing the sections of trail where these methods were used, the hand building provided an end product that required less clean up and re-vegetation, and tends to look more "natural" within the landscape. The mechanized tools provided an end product that required additional clean-up, may require additional vegetation, appears to be less sustainable when used along steep slopes and tends to look more "sculpted" within the landscape.
3. Events: Since the pilot project began, numerous requests for events have been received. The site poses a number of challenges for events, and damage to the trail or surrounding environments is a concern for the MPRB and MOCA. Conversations with local event sponsors and hosts have provided insight into the types of events that would be suitable for the area. In general, the area is suited for small, speed trial events that don't exceed 200 riders or require passing zones within the system. Preliminary research on guidelines for events has been completed. If the project is approved beyond the demonstration period, appropriate guidelines and policies would be developed to set limits and expectations for events.
4. Parking: Parking has been a growing concern as the park draws more users. In early design phases, it was assumed that most trail users would arrive by bike, indeed only 25 percent of the survey respondents indicated that they drove to the park. However, the official parking lot of the project is at Wirth Beach, which requires cyclists to park a considerable distance from the entrance of the trail. While the distance is an easy bike, the lack of proximity makes it difficult for cyclists to know that the parking exists or to associate that parking lot with the project. Consequently bikers are parking at the Par 3 parking lot, which can conflict with the parking needs of golf course patrons. Golf and Planning staff are working to discern whether the additional parking is causing problems for the golf operation, and additional signage to help cyclists locate the parking at Wirth Beach is being considered.

5. Expenses: As the MOA requires, MOCA and MORC funded the project. The MPRB contributed staff time and necessary expenses for public meeting notification. Comparable projects with the City of Bloomington, Three Rivers Park District, Inver Grove Heights and Red Wing are being financed fully or in part by the jurisdiction.
6. As-built drawings: Providing as-built drawings is a requirement of the construction process and MOCA is required to provide them to the MPRB. These drawings have not been received, but MOCA has confirmed that they will be provided to the MPRB.

Recommendations

Overall, the project meets the requirements of the MOA. Park staff report that the trails have been built to sustainable standards and on-site user counts and surveys suggest that use increased by a factor of four during the demonstration project (with all user groups showing some level of increase). Furthermore, user satisfaction has remained strong, while reported conflicts have been out-paced by the suggested increase in visits. Therefore, MPRB Planning staff make the following recommendations:

That off-road cycling on designated trails be considered an approved activity in the Minneapolis park system and be considered in future master planning for Minneapolis parks, contingent on the following:

1. That trails be built using sustainable building methods as outlined by International Mountain Bike Association (IMBA).
2. That trails only be implemented in designated areas approved by the Park Board with input from park users and neighbors.
3. That trails be built with the goal of creating a system of trails utilizing paved paths as connectors where necessary versus creating many small pockets of unconnected trails.
4. That trails be built with the goal of providing beginner, intermediate and expert level experiences.
5. That those areas naturally prone to erosion, in close proximity to water/wetlands, designated as natural areas and/or containing cultural features be avoided.
6. That off-road cycling be considered an active, high-aerobic sport that is best implemented in areas where active sports are planned, anticipated or well integrated with other activities within the park.
7. That maps and directional signage be provided in relevant locations throughout the park system to direct off-road cyclists to designated trails.
8. That trails be built using hand building techniques, limiting the use of mechanized building techniques.
9. That maintenance and operational needs be addressed prior to the addition of new trails.
10. That trails be considered shared-use unless otherwise marked.
11. That trails be closed if they become unsustainable.

That off-road cycling continue to be permitted in the current demonstration project area of Wirth Park with the addition of an “expert loop,” contingent on the following:

1. That the existing MOA be extended until a new one can be drafted and approved.
2. That MOCA provide the MPRB with as-built drawings of the project area.

List of Attachments

Attachment A - Memorandum of Agreement

Attachment B - Work Zones for Demonstration Project Construction

Attachment C - Map of Completed Trails within the Project Area

Attachment D - Trail Composition in Project Area Prior to Construction

Attachment E - Trail Composition in the Project Area after Construction

Attachment F - On-site User Count Locations and Project Area

Attachment G - 2004 Park User Survey

Attachment H - 2005 Park User Survey

Attachment I - Conflicts Reported by Survey Respondents in 2004 and 2005

Attachment J - Comments of Survey Respondents in 2004 and 2005

Attachment K - Project Signage

Attachment L - Demonstration Project Brochure/Map