



Assessing Use and Users

On the Little Traverse Wheelway, the Northwest State Trail and the North Central State Trail

**Dr. Charles M. Nelson, Jenni S. Lee,
Christine A. Vogt**

Department of Community Sustainability

Michigan State University

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By

Charles M. Nelson, Associate Professor and MSUE Specialist

nelsonc@msu.edu (517)432-0272

Jenni S. Lee, Ph. D. Student

Christine A. Vogt, Professor

Department of Community Sustainability

Michigan State University

East Lansing, MI 48824

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INTRODUCTION

Trails are an increasingly important economic development asset of communities and regions as they attract tourists to a sustainable venue and an enjoyable set of activities. At the 2014 Michigan Governor's Tourism Conference, bicycle tourism was identified as one of the major tourism marketing thrusts for Michigan in the coming years. In addition, trails enhance the local quality of life, promote an active, healthy lifestyle that improves and restores cardio vascular and joint health and provide convenient transportation without using a car to many community assets. Finally, they are a valued social "front porch" for residents, visitors, groups, businesses and organizations to meet and interact while enjoying the outdoors across communities.

To better understand how to enhance these qualities in Northern Lower Michigan, the Department of Community Sustainability of Michigan State University (MSU) partnered with Emmet County, the Top of Michigan Trails Council, the Michigan Department of Natural Resources, MSU Extension and the MSU Center for Regional Economic Innovation to assess trail use and users from Memorial Day weekend 2014 through Labor Day weekend 2014 on the Little Traverse Wheelway (LTW) in Emmet County, the Northwest State Trail (NWST) in Emmet County and the North Central State Trail (NCST) in Cheboygan County. The assessment provides observational data of trail use and users and responses from a sample of the adult users to a self-administered questionnaire modeled after others used by Drs. Nelson and Vogt with non-motorized trail users across Michigan.

The LTW is 23.4 mile trail with the study section being the 16.1 miles in Emmet County from Townline Road in Resort Township to Harbor Springs. It is paved for its entire length and ranges from 10' wide asphalt to 6' wide concrete pavement in the City of Petoskey. A portion of the trail from Charlevoix to Bay Harbor is a rail-trail, while the rest of the trail is not. The study section of the NWST goes from M119 to Alanson. It is a rail-trail that is 7.5 miles in length and 10' wide and was paved in 2013. Beyond Alanson to Mackinaw City, the NWST was not studied and is currently a gravel trail primarily used for snowmobiling. The NCST is 61.9 miles long rail-trail from Gaylord to

Cheboygan. The section studied in Cheboygan County stretches from Wolverine to Cheboygan for 26.9 miles. Unlike the two trails in Emmet County, it is surfaced with packed, crushed limestone fines. It is a year round trail providing an important north/south snowmobile connector between Gaylord and Mackinaw City, as well as non-motorized use during the snow-free months.

Objectives

The study profiles trail use and users in the following ways:

Observation

- Summer trail use with segmentation by use types

Un-weighted Survey Data

- Demographics by trail use
- Purposes and primary purpose of trail use
- Dimensions of trail use
- How users accessed the trail
- User spending during trail experiences
- Satisfaction with trail use experience

Weighted Survey Data

- Most important improvement to be made to the trail or its management
- Sense of safety and security of users during their trail experiences
- Trail user demographics
- Trail equipment ownership

METHODS

Sampling on all trails was conducted in three hour time blocks of 8-11AM, 11AM-2PM, 2-5PM and 5-8PM. On the LTW, there were three sampling sites: East Park, Bayfront Park and Little Traverse Township Park. Surveying and observations were conducted 36 times, with 12 times at each site, four on weekends and eight on weekdays. This amounted to 108 hours of observation and surveying on the LTW. On the NWST, because there was only one sample site at the Fisheries Interpretive Center, a slightly higher sampling rate was used with 19 sample periods, with 14 on weekdays and five on weekends. This amounted to 57 hours of observation and surveying on the NWST. On the NCST, with four sampling locations (Cheboygan trailhead, Topinabee trailhead, Indian River trailhead and the Rondo Road Access Site), surveying was conducted 48 times with 12 times at each site, four on weekends and eight on weekdays. This amounted to 144 hours of observation and surveying on the NCST. The questionnaires for each trail can be found in Appendix A.

Sample days and times were systematically selected to be representative of all times and days across the study period of the Saturday before Memorial Day (5/24/14) through Labor Day (9/1/14). This totals a study period of 101 days. Approximately 2/7 of sampling opportunities were on weekends (Saturdays, Sundays, Memorial Day, Fourth of July and Labor Day) and 5/7 on weekdays (all other days). A trained survey administrator was positioned adjacent to the trail to count all individuals going in one direction classifying them as adults or children and noting their mode of travel (bicycle, foot or

inline skate). The observations were extrapolated based on the proportion of surveyed time periods to the total number of weekend days and weekdays in the sampled season to estimate use for each trail.

During a three-hour sample period, at five-minute intervals, the trail surveyor selected the next passing adult and asked him/her to respond to a self-administered, one-page questionnaire. The minimum number of surveys completed per observation period was none and the maximum was 20. On the LTW, administrators approached a total of 498 adult trail users and 263 (53%) completed a survey. On the NWST, administrators approached a total of 149 adult trail users and 85 (57%) completed a survey. On the NCST, administrators approached a total of 163 adult trail users and 113 (69%) completed a survey. In total, 810 adult trail users were approached across the three trails and 463 (57%) completed surveys. Survey administrators reported that non-respondents were most likely to cite a lack of time, involved in training and didn't want to stop or that they had already completed a survey and declined to do a second.

Survey data provides two important measures. When considering all respondents equally, this information provides accurate information about uses, but it is not representative of distinct individual users, as those who visit more frequently are more likely to be sampled and to be asked to complete a survey. However, when the data are weighted to account for this frequency of use bias, the characteristics of distinct users/visitors can be appropriately assessed. By using the weighting procedure of 1/number of uses during summer, infrequent users who are less likely to be sampled, have representation equal to frequent users, just as they would at a ballot box with a one person, one vote rule. This report is organized by first describing levels of use based on observations, then characteristics of uses based on un-weighted survey data and finally, characteristics of distinct users based on weighted survey data.

RESULTS

Results are presented in three sections. The first is use which is based on observations. The second is uses, which is un-weighted survey data as the chance of sampling one use over another is the same. The third is distinct users, which is weighted survey data as the chance to sample frequent users rises as their number of uses rises during the study period, creating a frequency of use bias.

Observations and Estimates of Use

On the LTW, use during the study period of the Saturday before Memorial Day – Labor Day was estimated to be 18,383 uses and weekday use was estimated at 41,242 uses for a total of 59,625 uses with 31% weekend uses and 69% weekday uses. On a per day basis during the 101 days of the study, this amounts to 590 users per day on the 16.1 mile study area of the LTW. Of all observed uses, 70% were bicycling and 30% were walking or running. Less than 1% of the uses involved in-line skating. When considered by age, 80% of the observed uses were by adults and 20% by children.

On the NWST, use during the study period was estimated to be 3,447 uses on weekends and weekday use was estimated at 5,860 uses for a total of 9,307 uses with 37% weekend

uses and 63% weekday uses. On a per day basis during the 101 days of the study this amounts to 92 uses per day on the 7.5 mile NWST study section. Of all observed uses, 87% were bicycling, 12% were walking or running and 1% in-line skating. When considered by age, 76% of the observed uses were by adults and 24% by children.

On the NCST, use during the study period was estimated to be 6,107 uses and weekday use was estimated at 10,978 uses for a total of 17,085 uses with 36% weekend uses and 64% weekday uses. On a per day basis during the 101 days of the study this amounts to 169 uses per day on the 26.9 miles NCST study section. Of all observed uses, 63% were bicycling, 37% were walking or running and there was no observed in-line skate use. When considered by age, 64% of the observed uses were by adults and 36% by children.

Characteristics of Trail Uses

Origin of Use

Of the LTW use respondents, 32% were Emmet County residents, 15% Charlevoix County residents and 53% lived elsewhere. The state of residence for the trail use respondents was 82% Michigan residents and 18% non-residents. Twenty-six percent of trail use respondents reported owning a second home. Of those second home owners, more than half the homes were located near the LTW, with 33% in Emmet County, 26% in Charlevoix County and 42% elsewhere.

Of the NWST use respondents, 38% were Emmet County residents, 12% Charlevoix County residents and 50% lived elsewhere. The state of residence for trail use respondents was 90% Michigan residents and 10% non-residents. Twenty-two percent of the trail use respondents reported owning a second home. Of those second home owners, half were near the NWST, with 43% in Emmet County, 7% in Charlevoix County and 50% elsewhere.

Of NCST use respondents, 65% were from Cheboygan County, 1% from Emmet County and the rest from elsewhere. The state of residence of trail use respondents was 93% Michigan residents and 7% non-residents. Eighteen percent of the trail use respondents reported owning a second home. Of those second homes, half were near the NCST, with 44% in Cheboygan County, 6% in Emmet County and the rest elsewhere.

Lodging Night Prior to Trail Use

When those using the LTW were asked where they stayed the night prior to the trail use when they were surveyed, 53% stayed at their principal home, 14% at their second home/property, 9% with friends or relatives, 13% in a motel/hotel/rental, 6% in a public campground, 2% in a private campground and 2% in some other venue.

Those using the NWST reported were most likely to have stayed the previous night in their own home (66%), followed by at a hotel/motel/rental (12%), at their second home or property (8%), with friends or relatives (8%), in a public campground (4%), in a private campground (1%) or some other venue (2%).

Those using the NCST were most likely to have stayed the night prior to their trail use at their own home (56%), at a hotel/motel/rental (14%), at their second home or property (12%), with friends or relatives (8%), at a public campground (7%) or a private campground (2%).

Purpose of Use

When asked to identify the purpose or purposes of their use of the LTW from a close-ended list, almost 2/3 (64%) cited recreation, followed by normal exercise (56%), training level exercise (8%) and transportation (7%). When asked the one primary purpose for their visit, 50% cited recreation, 37% normal exercise, 7% training level exercise and 5% transportation.

For NWST uses, the most commonly cited purposes for the visit were recreation (72%), followed by normal exercise (65%), training level exercise (5%) and transportation (1%). When asked the one primary purpose from this list for their trail use, 57% cited recreation, 42% normal exercise and 1% training level exercise.

For NCST uses, the most commonly cited purposes were normal exercise (56%), followed by recreation (51%), transportation (11%) and training level exercise (4%). When asked the one primary purpose from this list for their trail use, 46% cited normal exercise, 41% recreation, 11% transportation and 2% training level exercise.

Activities during Trail Use

When asked about activities during their trail experience, many reported multiple activities during a trail use (Table 1).

Table 1. Activities and most important activity during LTW, NWST and NCST trail use.

Activity	Percent						
	Participated			Most Important			
	LTW	NWST	NCST	LTW	NWST	NCST	
Bicycling	70%	87%	60%	59%	81%	56%	
Walking	34	24	39	19	10	23	
Eating at restaurant	20	21	14	7	5	5	
Socializing	16	16	14	2	3	2	
Running/jogging	11	6	16	9	0	7	
Shopping at stores on/near the trail	10	11	14	1	0	1	
Walking pet	7	2	6	2	1	2	
In-line skating	1	0	0	<1	0	0	
Nature observation (a)	NA	NA	16	NA	NA	3	
Fishing access (a)	NA	NA	0	NA	NA	0	
Other (b)	1	2	1	1	0	1	
Total	NA	NA	NA	100%	100%	100%	

(a) Nature observation and fishing access were not available choices on LTW and NWST questionnaires, hence the NA

(b) Other: Geocaching; Photography; Riding a scooter

Spending during Trail Use

When asked if the respondent had spent any money during their trail experience, slightly more than half (51%) of LTW users responded affirmatively. This direct spending is estimated to be approximately \$750 thousand dollars over the study period (Table 2).

Table 2. Spending during trail uses on the LTW, NWST and NCST.

Trail	% Who Spent \$ During Trail Experience	Mean Spending of Those Who Spent	Median Spending of Those Who Spent	Estimated Local Spending Across Trail Uses During Study Period (a)
LTW	51%	\$40.29	\$25.00	\$760,219
NWST	46	\$28.57	\$20.00	\$85,624
NCST	54	\$21.87	\$10.00	\$92,259

(a) Computed by multiplying percent who spent something times total estimated uses during study period times the median spending per capita by those who spent. For the LTW that would be $0.51 \times 59,625 \times \$25 = \$760,219$.

Of those who spent on the LTW, spending ranged from \$1-\$350, with mean spending of \$40.19 and median spending of \$25.00. Estimating total spending used the more conservative median (half spent more and half spent less) rather than the mean or average for two reasons. First, the mean is more heavily influenced by a few large expenditures than the median. Second, while the question asked specifically only about the respondent's spending, it is realistic to assume that adult respondents with children were likely include those younger people as part of their spending, thus reducing the actual spending per capita. When asked if they would have spent more in the area without their LTW trail experience, the same amount or less, 12% would have spent more if they hadn't used the trail, 51% would have spent the same amount and 37% would have spent less.

For NWST uses 46% of respondents reported spending something during their trail experience. Of those spending, 14% would have spent more without their trail use, 53% spent the same amount they would have spent anyway and 32% would have spent less without using the trail. For NCST uses, 54% of respondents reported spending. Of those spending, 9% would have spent more without their trail use, 59% spent the same amount as they would have without their trail use and 32% would have spent less without their trail use. In total across the three trails, it is estimated that trail users, as part of their trail experiences during the study period, spent almost a million dollars in the local area.

Accessing the Trail

The majority of trail uses on the LTW, NWST and NCST did not involve the use of a vehicle to access the trail (Table 3). Those on the NCST were least likely to use a vehicle for trail access.

Table 3. Means of accessing the LTW, NWST and NCST for trail use.

Means of access	Percent		
	LTW	NWST	NCST
Drove vehicle	47%	48%	30%
Bike	35	40	34
Foot	17	12	34
Public transit	<1	0	0
Other	1	0	1
Total	100%	100%	100%

Travel distance to reach a trail for use varied considerably. On the LTW distance ranged from 0 miles (lived trailside) to 300 miles, with a median distance of 5 miles traveled to use the trail. On the NWST, distance to reach the trail ranged from 0 miles to 180 miles with a median of 5 miles. On the NCST, distance to reach the trail ranged from 0 to 50 miles with a median distance to reach the trail of 1 mile.

Characteristics of On-Trail Experience

The length of the median trail experience was two hours on the LTW, the NWST and the NCST. On the LTW, uses ranged from less than 1 hour to 16 hours. On the NWST, uses ranged from less than 1 hour to 6 hours. On the NCST, uses ranged from less than 1 hour to 8 hours.

The mean trail use group on the LTW had 2.2 members. Of these groups, 40% had one member, 36% had two members, 7% had three members and 17% had four or more members. The largest party identified had 15 members. Party membership was 50% male and 50% female, with 63% age 41 or over and 37% age 40 or younger. Of the uses, 2% of the respondents reported that they had a disability that seriously limited them from participation in work or recreation.

On the NWST, the mean trail use group had 2.4 members. Of these groups, 40% had one member, 36% had two members, 11% had three members and 13% had four or more members. The largest party identified had 34 members. Party membership was 53% male and 47% female, with 69% of party members age 41 or over and 31% age 40 or younger. Of the uses, none of the respondents reported having a disability that seriously limited them from participation in work or recreation.

On the NCST, the mean trail use group had 2.4 members. Of these groups, 33% had one member, 36% had two members, 11% had three members and 20% had four or more members. The largest party identified had 12 members. Party membership was 49% male and 51% female. By age, 51% of party members were age 41 or over and 49% age 40 or younger. Of the uses, none of the respondents reported that they had a disability that seriously limited their participation in work or recreation.

When asked to rate their satisfaction with their trail experience for the current use on a scale of 1-9 where 9 was highly satisfied and 1 was highly dissatisfied, the mean rating on the LTW was 8.7. On the NWST it was 8.9 and on the NCST it was 7.0.

Characteristics of Distinct Trail Users

Characteristics of distinct trail users come from weighted survey responses to on-site surveys. These responses are weighted to eliminate frequency of use bias associated with frequent trail users having a greater chance to be sampled. By using the weighting procedure of 1/number of uses during summer, infrequent users who are less likely to be sampled have representation equal to frequent users, just as they would at a ballot box with a one person, one vote rule.

Initially Learn about the Trail

The one method in which the distinct trail user initially learned about the trail was most commonly living in the area for the LTW and the NCST and seeing the trail for the NWST (Table 4). For all trails, other commonly used methods to first learn about the trail included hearing about the trail from friends and relatives and local/state maps.

Table 4. How distinct user first learned about LTW, NWST and NCST.

Method	Percent		
	LTW	NWST	NCST
Live here/know about it	30%	17%	30%
Saw the trail once in the area	24	29	26
Friends/relatives	23	22	23
Local/state map	10	15	8
Internet (a)	8	3	3
Service employee (hotel/restaurant)	3	3	3
Participation in trail event	2	4	2
Media (tv, newspaper, etc.)	1	7	6
Total	100%	100%	100%

(a) Facebook; Google; Google maps bike route; LAT.45 Bike Shop; Search for trails; Top of Michigan Trails Council

Use of Trail during Past 12 Months

When asked about trail use during the past 12 months, those sampled on the NCST had the most uses of their trail over the previous 12 months (Table 5). The average use per season includes both those who used the trail that season and those who did not. The NCST, unlike the other two trails is specifically managed for winter use by snowmobiles, while the other two trails in the study areas are not.

Table 5. Use of trail where surveyed over past 12 months on LTW, NWST and NCST.

Season	LTW Mean Uses (% using)	NWST Mean Uses (% using)	NCST Mean Uses (% using)
Winter (Dec-Feb)	0.5 (5%)	0.4 (3%)	1.2 (10%)
Spring (March-May)	1.5 (18%)	2.3 (24%)	1.9 (15%)
Summer (June-Aug)	3.0 (100%)	2.7 (100%)	3.4 (100%)
Fall (Sept-Nov)	0.9 (13%)	1.0 (13%)	1.5 (14%)
Total Year	5.9 (100%)	6.4 (100%)	8.0 (100%)

Most Important Trail Improvement Needed

When asked about the one most important aspect of the trail to improve from a close-ended list, responses varied considerably by trail (Table 6). On the LTW, more drinking fountains were the single most requested improvement. On the NWST, three items were closely bunched as most requested: more restrooms, more drinking fountains and separation from roads. On the NCST, improving the crushed limestone trail surface was cited by more than half of the distinct users.

Table 6. One most important aspect to improve on the LTW, NWST and NCST.

	Percent		
	LTW	NWST	NCST
Drinking fountains	35%	20%	10%
Separation from roads	14	21	7
Signage/Maps	13	7	0
Trail surface	13	5	55
Benches	10	7	10
Restrooms	8	22	14
Trailheads/access	5	8	0
Bike maintenance station w/tools, air, etc.	2	6	3(a)
Bike racks/stands	0	5	
Security	0	0	0
Total	100%	100%	100%

(a) Bike maintenance station and bike racks/stands were not choices on the NCST, but were noted by three percent of respondents under “Other please list”

Sense of Security on Trail

When asked to rate their overall sense of security during their uses of the trail, on a scale of 1-9 where 9 is highly secure and 1 is highly insecure, the mean rating for distinct users on the LTW was 8.5. On the NWST it was 8.6, while on the NCST it was 8.4.

Use of Other Area Trails over Past 12 Months

When distinct users were asked if they had used other area trails, those surveyed on the LTW were most likely to say they had used the NWST from Petoskey to Alanson, while NWST users were most likely to say they had used the LTW. NCST users were most likely to cite use of the LTW (Table 7).

Table 7. Use of other area trails in past year by distinct LTW, NWST and NCST users.

Trail	Percent Used Trail in Past Year		
	LTW	NWST	NCST
Little Traverse Wheelway	100%	100%	44%
NWST Petoskey to Alanson	68	100	34
NC State Trail Ind. River – Cheboygan	21	26	100
NC State Trail Wolverine –Indian River	22	36	100
NC State Trail Gaylord – Wolverine (a)	NA	NA	27
NC State Trail Cheboygan – Mackinaw City (a)	NA	NA	29
NE State Trail Alpena – Cheboygan (a)	NA	NA	8

(a) LTW and NWST distinct users were not asked about non-study sections of NCST or North East State Trail, hence the choice was not available (NA)

Ownership of Trail Related Equipment

When distinct user respondents were asked about their ownership of land and water trail related equipment, bicycles were the most commonly owned trail equipment across all trails with almost universal ownership (Table 8). Distinct users on the NCST were much more likely to own canoes and snowmobiles than users of the other two trails, while NWST users were much more likely to own cross country skis than users of the other two trails. No respondent reported owning an electric assist bicycle and very few reported owning a horse.

Table 8. Ownership of trail related equipment by distinct users on the LTW, NWST and NCST.

Equipment	Percentage Owning		
	LTW	NWST	NCST
Bicycle	98%	100%	97%
Kayak	33	44	48
X-C Skis	27	45	30
Canoe	10	8	22
Snowmobile	8	5	25
ORV	8	5	8
Horse	3	2	2
Electric Assist Bike	0	0	0

Demographics of Distinct Trail Users

The origins of distinct user respondents on the LTW were that 83% were Michigan residents and 17% were non-residents. About half (51%) were female and 49% were male. On the NWST, 88% of the distinct user respondents were Michigan residents and 12% were non-residents. Forty-two percent were female and 58% were male. On the NCST, 90% of the distinct user respondents Michigan residents and 10% were non-residents. Thirty-seven percent were female and 63% were male.

The ages of distinct users surveyed on the trails ranged from 19 to 85 years of age. On the LTW, ages of respondents ranged from 20 to 80 years of age, with a mean age of 50 and a median age of 54. On the NWST ages of respondent ranged from 20 to 85 years of age,

with a mean age of 53 and a median age of 57. On the NCST, ages of respondent ranged from 19 to 80 years of age, with a mean age of 51 and a median age of 53.

DISCUSSION

The study revealed substantial use on all three trails, with the LTW receiving the most use on a seasonal, daily and per mile basis. This is not surprising as it passes through a major residential, tourist and business area of the region's most populous city. All three trails attract a substantial proportion of use and users that are not only residents, but also second home owners in the region and tourists from other states.

Considering the proportion of total use during the summer versus other seasons, it is reasonable for the LTW and the NWST to believe spring and fall non-snow season use when combined would be similar to summer use levels. This suggests that perhaps there are 100,000 uses annually on the LTW in Emmet County and 18,000 on the NWST from Petoskey to Alanson. On the NCST, the situation is very different with the trail surface reflecting the year-round nature of the trail and its importance as a groomed snowmobile trail in the winter months. So, it is reasonable for the snowfree months to suggest that use in spring and fall is equal to the estimated 17,000 summer uses for a snow-free total use estimate of 34,000 uses. There is no reasonable way from this summer data to estimate winter snowmobile use of the NCST. Such a study would need to focus on snowmobilers and would likely involve using magnetic loop traffic counters that could accurately report the passing of large metal object (snowmobile). This would need to be calibrated to understand the traffic patterns of snowmobiles during the same day of use to provide a valid use estimate and likely coupled with on-site surveys.

About half of trail users spent money during their trail use experience, with many enjoying area restaurants and shopping. While the largest proportion of trail users who spent money would have spent a similar amount during the day in the local area, regardless if they had used the trail or not, about a third of those who spent on each trail noted that their trail use increased their spending. This is a substantial, if not spectacular, boost to the local economy. The more intangible benefit of strengthening the sense of community through a shared trail experience, welcoming visitors to the region and providing enjoyable family activities that keep people in the area longer and spark return visits may be more important than the daily spending related to the trail experience. Trails by their nature reveal many positive aspects of a community and provide an important physical and social connection that can have lasting economic benefits and influence decisions related to future travel activities, as well as second home and primary home purchases.

In terms of marketing opportunity, the importance of the trails being visible to area visitors, visible in promotional materials about the area and well known in the region are borne out by the proportion of respondents who first learned of the trail by seeing it, from others in the region and from maps and the internet. Each trail is becoming more firmly embraced as a community asset. This is especially impressive for the newly paved NWST, which is bringing many people from the Petoskey area toward Alanson since it was paved in 2013.

Another important marketing opportunity is to look at the ownership patterns of land and water trail related equipment. In particular, almost all trail users are bicycle owners, but sizeable portions of trail users also own “blue trail” craft such as kayaks and canoes. Also, on some trails a substantial proportion of trail users are cross country ski owners. Cross marketing to these other trail uses could strengthen use on the region’s land based rail-trails and conversely, increase interest in blue trails. Further, many events such as triathlons specifically combine land and water trail use. This region would be ideal to host such events, benefiting from the tremendous confluence of land and water trail resources.

The users of each trail have very specific preferences for improvements needed. The distinct users on the LTW were most likely to have as their highest priority from a close ended list drinking fountains along the trail. While there are such facilities at some public parks, they are often separated along the trail by substantial distances, especially for those on foot.

On the NWST, three improvement suggestions each garnered about 20% of the distinct user response: more drinking fountains, more restrooms and separation from roads. Unlike the other two trails, the NWST is shorter, but lacks many public recreation facilities along its length with the exception of the DNR Fisheries Interpretive Center at Oden, which is not open at some important hours of the day for trail users. In addition, other than at Alanson, there are relatively few places to enjoy a snack or purchase a beverage. Some additional facility at this mid-point that provides drinking water and a restroom that would serve trail users across the day, seven days a week would be very helpful. The other concern about separation from the road is difficult to accomplish since the rail-trail and the adjacent state highway are unlikely to change alignment.

On the NCST, the major suggestion for improvement is to improve the surface of the trail to one that is paved. Considering the dual motorized winter, non-motorized summer use of this trail, that is not feasible. Besides the considerable investment of the Michigan snowmobile program in the NCST and at trailheads such as the Cheboygan trailhead, paved trails may sustain considerable maintenance expenses from snowmobile use. Further, the black asphalt paving is less likely to effectively maintain snow cover than crushed limestone, limiting the trail’s effectiveness as a snowmobile trail. The other concerns expressed by NCST distinct users related to more benches, restrooms and drinking fountains could be more readily addressed. This trail has some of these facilities that function well (e.g. Topinabee trailhead), while at sites such as Rondo Road boating access site, the focus is more on river access. However, potable water at each trailhead would be valued by all site users. A similar argument can be made for benches and restrooms.

CONCLUSION

The LTW, NWST and NCST each contribute to the well-being of the Emmet, Charlevoix and Cheboygan County regions. They provide complementary trail opportunities that serve residents, second home owners and tourists. They are well used and well liked and

each can be further improved to even better serve the region and to further economic development, individual health and social well-being. One way the identity of the trails and importance to the region could be further enhanced would be to have additional trail events. Another would be for Friends groups to be more prominent, especially if they or others sold trail branded merchandise such as trail clothing items, trail related gear such as water containers, etc.

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Appendix A – LTW Questionnaire

Dear Trail User:

Michigan State University is conducting an assessment of LTW use and users. Please take the 4-5 minutes needed to complete this survey. You indicate your voluntary agreement to participate by completing and returning this survey. However, if you choose not to complete all or part of the questions, you will not suffer any penalty. You are free to discontinue your participation at any time. Your responses will be kept confidential and your privacy will be protected to the maximum extent allowable by law. This study was funded by Emmet County, the Top of Michigan Trails Council and MSU Extension.

1. Where is your primary home? EMMET COUNTY 1a. Do you own a second home? ___ No ___ Yes in EMMET COUNTY
 CHARLEVOIX COUNTY CHARLEVOIX COUNTY
 ELSEWHERE ELSEWHERE

- 2.. Where did you STAY LAST NIGHT? (Please check one)
 OWN HOME FRIENDS/RELATIVES HOME/2ND HOME PRIVATE CAMPGROUND
 OWN 2ND HOME/PROPERTY HOTEL/MOTEL/RENTAL PUBLIC CAMPGROUND OTHER _____

3. Which of these reasons describes your use of the LTW today? (Please check all that apply)
 RECREATION TRANSPORTATION TO WORK/SCHOOL TRANSPORTATION OTHER THAN TO WORK/SCHOOL
 NORMAL EXERCISE TRAINING-LEVEL EXERCISE TO WHERE? _____

4. Which **ONE** of these reasons is your primary reason for being on the LTW today? (fill in one) _____

5. What activities will you or others in your group do today when using the LTW Trail? (check all that apply)
 BICYCLING IN-LINE SKATING SOCIALIZING
 WALKING RUNNING/JOGGING SHOPPING AT STORES ON/NEAR THE TRAIL
 WALKING PET EATING AT RESTAURANT OTHER (DESCRIBE) _____

6. Which **ONE** activity listed above is the primary one for being on the LTW today? (fill in one) _____

- 6a. As part of this trail use, are you/will spend any money today? ___No ___Yes 6b. If yes, approximately how much? \$____.____.

- 6c. Would you have spent more, less or the same amount in the Petoskey/Harbor Springs/Charlevoix area if you had **NOT** used the trail today? (check one) ___More ___Same amount ___Less

7. What segment or segments of the LTW will/did you use part or all of today? (check all that apply)
 HARBOR SPRINGS TO PETOSKEY STATE PARK
 PETOSKEY STATE PARK TO EAST PARK (EAST END OF BAY HARBOR)
 EAST PARK (EAST END OF BAY HARBOR) TO CHARLEVOIX

8. Where did you start the trail today? (closest road intersection) _____

9. How did you access the trail today? (check one) DROVE VEHICLE PUBLIC TRANSIT FOOT BIKE OTHER _____

10. How far did you travel (one-way) to the trail today from where you stayed last night? (fill in) _____ # NUMBER OF MILES

11. How many total hours will you use the trail today? (fill in) _____ # NUMBER OF HOURS

12. Including yourself, how many people are in your trail-using group today? (fill in number matching gender and age, if none leave blank)

	YOUNGER THAN 19	19-24 YEARS	25-40 YEARS	41-60 YEARS	61 YEARS OR OLDER
MALE					
FEMALE					

13. How did you **FIRST** learn about the LTW? (check one)
 LOCAL/STATE MAP SAW THE TRAIL ONCE IN THE AREA SERVICE EMPLOYEE (HOTEL/RESTAURANT)
 MEDIA (TV, NEWSPAPER, ETC.) FRIENDS/RELATIVES INTERNET (PLEASE EXPLAIN)
 PARTICIPATION IN TRAIL EVENT LIVE HERE/KNOW ABOUT IT _____

14. In the past 12 months, how many days did you use the LTW? WINTER (DEC, JAN, FEB) _____ SPRING (MARCH, APR., MAY) _____
SUMMER (JUNE, JULY, AUG) _____ FALL (SEPT, OCT, NOV) _____

15. Please rate your trail experience today on a scale of 1-9 with 9 being highly satisfied to 1 highly dissatisfied. RATING # _____

16. Please check the **ONE most important aspect** you want improved on the LTW?
 RESTROOMS SIGNAGE/MAPS TRAIL SURFACE BIKE RACKS/STANDS
 SECURITY TRAILHEADS/ACCESS BENCHES DRINKING FOUNTAINS
 BIKE MAINTENANCE STATION W/TOOLS, AIR, ETC. SEPARATION FROM ROADS

17. Please rate your overall sense of safety and security when using the trail (9 highly secure to 1 highly insecure) RATING # _____

18. In the past 12 months please check those trails you have used. NC STATE TRAIL WOLVERINE –INDIAN RIVER NC STATE TRAIL IND. RIVER – CHEBOYGAN
 NW STATE TRAIL PETOSKEY- ALANSON

19. Please check each that you own: BICYCLE X-C SKIS CANOE KAYAK SNOWMOBILE ORV E ASSIST BIKE HORSE

20. Do you have an impairment that seriously limits your participation in work or recreation? YES NO

21. What is your primary home zip code? _____ 22. Are you? MALE FEMALE 23. What is your age? _____

Thank you very much for your help today!

Appendix A – NWST Questionnaire

Dear Trail User:

Michigan State University is conducting an assessment of NWST use and users. Please take the 4-5 minutes needed to complete this survey. You indicate your voluntary agreement to participate by completing and returning this survey. However, if you choose not to complete all or part of the questions, you will not suffer any penalty. You are free to discontinue your participation at any time. Your responses will be kept confidential and your privacy will be protected to the maximum extent allowable by law. This study was funded by Emmet County, the Top of Michigan Trails Council and MSU Extension.

1. Where is your primary home? EMMET COUNTY CHARLEVOIX COUNTY ELSEWHERE 1a. Do you own a second home? ___ No ___ Yes in EMMET COUNTY CHARLEVOIX COUNTY ELSEWHERE

2.. Where did you STAY LAST NIGHT? (Please check one)
 OWN HOME FRIENDS/RELATIVES HOME/2ND HOME PRIVATE CAMPGROUND
 OWN 2ND HOME/PROPERTY HOTEL/MOTEL/RENTAL PUBLIC CAMPGROUND OTHER _____

3. Which of these reasons describes your use of the NWST today? (Please check all that apply)
 RECREATION TRANSPORTATION TO WORK/SCHOOL TRANSPORTATION OTHER THAN TO WORK/SCHOOL
 NORMAL EXERCISE TRAINING-LEVEL EXERCISE TO WHERE? _____

4. Which ONE of these reasons is your primary reason for being on the NWST today? (fill in one) _____

5. What activities will you or others in your group do today when using the NWST Trail? (check all that apply)
 BICYCLING IN-LINE SKATING SOCIALIZING
 WALKING RUNNING/JOGGING SHOPPING AT STORES ON/NEAR THE TRAIL
 WALKING PET EATING AT RESTAURANT OTHER (DESCRIBE) _____

6. Which ONE activity listed above is the primary one for being on the NWST today? (fill in one) _____

6a. As part of this trail use, are you/will you spend any money today? ___No ___Yes 6b. If yes, approximately how much? \$____.

6c. Would you have spent more, less or the same amount in the Petoskey/Alanson area if you had NOT used the trail today? (check one) ___More ___Same amount ___Less

7. What segment or segments of the Little Traverse Wheelway will/did you use part or all of today? (leave blank if none)
 HARBOR SPRINGS TO PETOSKEY STATE PARK
 PETOSKEY STATE PARK TO EAST PARK (EAST END OF BAY HARBOR)
 EAST PARK (EAST END OF BAY HARBOR) TO CHARLEVOIX

8. Where did you start the trail today? (closest road intersection/town) _____

9. How did you access the trail today? (check one) DROVE VEHICLE PUBLIC TRANSIT FOOT BIKE OTHER _____

10. How far did you travel (one-way) to the trail today from where you stayed last night? (fill in) _____ # NUMBER OF MILES

11. How many total hours will you use the trail today?(fill in) _____ # NUMBER OF HOURS

12. Including yourself, how many people are in your trail-using group today? (fill in number matching gender and age, if none leave blank)

	YOUNGER THAN 19	19-24 YEARS	25-40 YEARS	41-60 YEARS	61 YEARS OR OLDER
MALE					
FEMALE					

13. How did you **FIRST** learn about the NWST? (*check one*)
- LOCAL/STATE MAP SAW THE TRAIL ONCE IN THE AREA SERVICE EMPLOYEE (HOTEL/RESTAURANT)
 MEDIA (TV, NEWSPAPER, ETC.) FRIENDS/RELATIVES INTERNET (PLEASE EXPLAIN)
 PARTICIPATION IN TRAIL EVENT LIVE HERE/KNOW ABOUT IT
-
14. In the past 12 months, how many days did you use the NWST? WINTER (DEC, JAN, FEB) _____ SPRING (MARCH, APR., MAY) _____
SUMMER (JUNE, JULY, AUG) _____ FALL (SEPT, OCT, NOV) _____
15. Please rate your trail experience today on a scale of 1-9 with 9 being highly satisfied to 1 highly dissatisfied. *RATING #* _____
16. Please check the **ONE most important aspect** you want improved on the NWST?
- RESTROOMS SIGNAGE/MAPS TRAIL SURFACE BIKE RACKS/STANDS
 SECURITY TRAILHEADS/ACCESS BENCHES DRINKING FOUNTAINS
 BIKE MAINTENANCE STATION W/TOOLS, AIR, ETC. SEPARATION FROM ROADS
17. Please rate your overall sense of safety and security when using the trail (*9 highly secure to 1 highly insecure*) *RATING #* _____
18. In the past 12 months please check those trails you have used. NC STATE TRAIL WOLVERINE –INDIAN RIVER NC STATE TRAIL IND. RIVER – CHEBOYGAN
 LITTLE TRAVERSE WHEELWAY
19. Please check each that you own: BICYCLE X-C SKIS CANOE KAYAK SNOWMOBILE ORV E ASSIST BIKE HORSE
20. Do you have an impairment that seriously limits your participation in work or recreation? YES NO
21. What is your primary home zip code? _____ 22. Are you? MALE FEMALE 23. What is your age? _____
- Thank you very much for your help today!

Appendix A-NCST Questionnaire

Dear Trail User:

Michigan State University is conducting an assessment of NCST use and users. Please take the 4-5 minutes needed to complete this survey. You indicate your voluntary agreement to participate by completing and returning this survey. However, if you choose not to complete all or part of the questions, you will not suffer any penalty. You are free to discontinue your participation at any time. Your responses will be kept confidential and your privacy will be protected to the maximum extent allowable by law. This study was funded by the Top of Michigan Trails Council, the DNR and MSU Extension.

1. Where is your primary home? EMMET COUNTY 1a. Do you own a second home? ___ No ___ Yes in... EMMET COUNTY
 CHEBOYGAN COUNTY CHEBOYGAN COUNTY
 ELSEWHERE ELSEWHERE
- 2.. Where did you STAY LAST NIGHT? (*Please check one*)
- OWN HOME FRIENDS/RELATIVES HOME/2ND HOME PRIVATE CAMPGROUND
 OWN 2ND HOME/PROPERTY HOTEL/MOTEL/RENTAL PUBLIC CAMPGROUND OTHER _____
3. Which of these reasons describes your use of the NCST today? (*Please check all that apply*)
- RECREATION TRANSPORTATION TO WORK/SCHOOL TRANSPORTATION OTHER THAN TO WORK/SCHOOL
 NORMAL EXERCISE TRAINING-LEVEL EXERCISE TO WHERE? _____
4. Which **ONE** of these reasons is your primary reason for being on the NCST today? (*fill in one*) _____
5. What activities will you or others in your group do **today** when using the NCST Trail? (*check all that apply*)
- BICYCLING SOCIALIZING NATURE OBSERVATION
 WALKING RUNNING/JOGGING SHOPPING AT STORES ON/NEAR THE TRAIL
 WALKING PET EAT AT RESTAURANT FISHING ACCESS
 OTHER _____
6. Which **ONE** activity listed above is the primary one activity for being on the NCST today? (*fill in one*) _____
- 6a. As part of this trail use, are you/will you spend any money today? ___ No ___ Yes 6b. If yes, approximately how much? \$____.____.
- 6c. Would you have spent more, less or the same amount in the Wolverine/ Indian River/Topinabee/Cheboygan area if you had **NOT** used the trail today? (*check one*) ___ More ___ Same amount ___ Less
7. What segment or segments of the NCST will/did you use part or all of today? (*check all that apply*) WOLVERINE TO INDIAN RIVER INDIAN RIVER TO TOPINABEE
 TOPINABEE TO CHEBOYGAN

8. Where did you start the trail today? (closest road intersection/town) _____
9. How did you access the trail today? (check one) DROVE VEHICLE PUBLIC TRANSIT FOOT BIKE OTHER _____
10. How far did you travel (one-way) to the trail today from your lodging last night?(fill in) _____ # NUMBER OF MILES
11. How many total hours will you use the trail today?(fill in) _____ # NUMBER OF HOURS

12. Including yourself, how many people are in your trail-using group today? (fill in number matching gender and age, if none leave blank)

	YOUNGER THAN 19	19-24 YEARS	25-40 YEARS	41-60 YEARS	61 YEARS OR OLDER
MALE					
FEMALE					

13. How did you **FIRST** learn about the NCST? (check one)

- LOCAL/STATE MAP SAW THE TRAIL ONCE IN THE AREA SERVICE EMPLOYEE (HOTEL/RESTAURANT)
 MEDIA (TV, NEWSPAPER, ETC.) FRIENDS/RELATIVES INTERNET (PLEASE EXPLAIN)
 PARTICIPATION IN TRAIL EVENT LIVE HERE/KNOW ABOUT IT _____

14. In the past 12 months, how many days did you use the NCST from Wolverine to Cheboygan? WINTER (DEC, JAN, FEB) _____ # SPRING (MARCH, APR., MAY) _____ #
SUMMER (JUNE, JULY, AUG) _____ # FALL (SEPT, OCT, NOV) _____ #

15. Please rate your trail experience today on a scale of 1-9 with (9 being highly satisfied to 1 highly dissatisfied. *RATING* # _____

16. Please check the **ONE** most important aspect you want improved on the NCST? RESTROOMS SIGNAGE/MAPS TRAIL SURFACE DRINKING FOUNTAINS
 SECURITY TRAILHEADS/ACCESS SEPARATION FROM ROAD BENCHES
 OTHER (DESCRIBE) _____

17. Please rate your overall sense of safety and security when using the trail (9 highly secure to 1 highly insecure) *RATING* # _____

18. In the past 12 months please check the trails you have used. NE STATE TRAIL ALPENA - CHEBOYGAN LITTLE TRAVERSE WHEELWAY
 NW STATE TRAIL PETOSKEY - ALANSON NC STATE TRAIL WOLVERINE - GAYLORD NC STATE TRAIL CHEBOYGAN - MACKINAW CITY

19. Please check each that you own: BICYCLE X-C SKIS CANOE KAYAK SNOWMOBILE ORV E ASSIST BIKE HORSE

20. Do you have an impairment that seriously limits your participation in work or recreation? YES NO

21. What is your primary home zip code? _____ 22. Are you? MALE FEMALE 23. What is your age? _____

Thank you very much for your help today!

This project is focused on the benefits of trails as an economic development tool. Trails are a useful and sustainable source of both tourism money and convenient transportation that does not rely on the automobile. To better understand how to enhance the qualities of trails in Northern Lower Michigan, the Department for Community Sustainability at Michigan State University partnered with numerous entities including the Top of Michigan Trails Association and Emmet County to prepare an assessment of trail use and users from Memorial Day weekend 2014 to Labor Day weekend 2014 on portions of the Little Traverse Wheelway in Emmet County and the multi-county North Central State Trail. The assessments provide observational data of trail use and users and responses from a sample of those users who are adults 18 or over to a self-administered questionnaire.



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