Cutting Edge Research in Trails and Greenways – Michigan’s project

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Michigan Trails

- The Michigan Trails Alliance was formed in 1986.
- Twenty-one years later Michigan is second only to Wisconsin in the nation with 131 established “rail-trails” covering 1,398 miles.
- There are currently 15 regional trailway initiatives working in Michigan to connect individual trailways to each other and to important destinations.

(Source: Connecting Michigan: A statewide trailways vision and action plan.)
Goals of the Almost 10 Year Investment in Community Trails Research

- Who uses the trails?  Level of tourism demand?
- How many users?
- Are there notable differences in users by:
  - Location
  - Surface type
- How does a community benefit from trails?
- What type and level of support do adjacent residents and nearby businesses have for the trail?
Michigan Trails Researched

Open Multi-Use Trails
## Types of Studies Performed

<table>
<thead>
<tr>
<th>Trail</th>
<th>On-Site</th>
<th>Off-Site</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>User – Resident and Tourist</td>
<td>Adj. Resident</td>
</tr>
<tr>
<td>Pere Marquette</td>
<td>Replicating in 2008</td>
<td></td>
</tr>
<tr>
<td>TART</td>
<td></td>
<td>Replicating in 2008</td>
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<tr>
<td>Paint Creek</td>
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<tr>
<td>Lansing River Trail</td>
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<tr>
<td>Fred Meijer White Pine</td>
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<tr>
<td>Kal Haven</td>
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On-Site Methods

- Observe/tally uses
  - Provides data to extrapolate to overall use by type of user, activity
- Conduct on-site self-administered survey of a selected portion of those observed
  - Unweighted provides data on characteristics of uses
  - Weighted to account for frequency of use bias provides data on characteristics/opinions of distinct users
Off-Site Methods – Mail Questionnaires

- **Adjacent residents and business**
  - Tax assessor’s office – plat maps and lists
  - Chamber of Commerce
  - Driving the area

- **Event registrants**
  - Sample or census depending on population size
  - Ability to ask in-depth economic questions

- **Registered voters**
  - Likely to be sample as population significant at township, city or county level
  - Provides estimate of proportion of households using trail system over set period
  - Explore importance of trails (development, maintenance related to other potential recreation opportunities
  - Done in context of comprehensive recreational planning
Use and Users of Michigan Trails

All studied trails featured
Total Number of Trail Uses

- Pere Marquette Trail: 178,000 uses between April and Sept. 2001
- White Pine Trail: 54,096 uses between July and Sept. 2005
- Paint Creek Trail: 66,420 uses between May and Sept. 2004
- Lansing River Trail: 72,040 uses between May and Sept. 2004
- Leelanau Trail: 29,318 uses between May and Sept. 2002
- Vasa Pathway: 11,406 uses between May and Sept. 2002

Total Number of Trail Uses: 452,749

- Pere Marquette Trail: 178,000 uses
- T.A.R.T Trail: 154,803 uses
- White Pine Trail: 54,096 uses
- Paint Creek Trail: 66,420 uses
- Lansing River Trail: 72,040 uses
- Leelanau Trail: 29,318 uses
- Vasa Pathway: 11,406 uses

Average number of uses per trail:

- Pere Marquette Trail: 178,000 / 5 = 35,600
- T.A.R.T Trail: 154,803 / 5 = 30,960
- White Pine Trail: 54,096 / 5 = 10,819
- Paint Creek Trail: 66,420 / 5 = 13,284
- Lansing River Trail: 72,040 / 5 = 14,408
- Leelanau Trail: 29,318 / 5 = 5,864
- Vasa Pathway: 11,406 / 5 = 2,281
**Uses by Day**

- **Pere Marquette Trail**: 973 uses per day
- **T.A.R.T Trail**: 1,012 uses per day
- **Vasa Pathway**: 92 uses per day
- **Leelanau Trail**: 192 uses per day
- **White Pine Trail**: 588 uses per day
- **Paint Creek Trail**: 434 uses per day
- **Lansing River Trail**: 471 uses per day
Reasons for Using the Trail

T.A.R.T Trail
- Recreation: 38%
- Exercise: 44%
- Race training: n/a
- Transportation: 18%

Leelanau Trail
- Recreation: 39%
- Exercise: 56%
- Race training: n/a
- Transportation: 5%

Pere Marquette Trail
- Recreation: 35%
- Exercise: 61%
- Race training: n/a
- Transportation: 3%

Vasa Pathway
- Recreation: 41%
- Exercise: 58%
- Race training: n/a
- Transportation: 1%

White Pine Trail
- Recreation: 35%
- Exercise: 52%
- Race training: 10%
- Transportation: 3%

Lansing River Trail
- Recreation: 59%
- Exercise: 35%
- Race training: 3%
- Transportation: 3%

Paint Creek Trail
- Recreation: 37%
- Exercise: 48%
- Race training: 11%
- Transportation: 4%
Types of Trail Use and Disabled Users

- **Leelanau Trail**
  - Bicycle: 43%
  - In-line Skating: 13%
  - Run/Walk: 42%
  - Disabled: 3%

- **Pere Marquette Trail**
  - Bicycle: 54%
  - In-line Skating: 22%
  - Run/Walk: 23%
  - Disabled: 4%

- **White Pine Trail**
  - Bicycle: 77%
  - In-line Skating: 6%
  - Run/Walk: 17%
  - Disabled: 4%

- **Vasa Pathway**
  - Bicycle: 43%
  - In-line Skating: n/a
  - Run/Walk: 57%
  - Disabled: 3%

- **Lansing River Trail**
  - Bicycle: 49%
  - In-line Skating: 5%
  - Run/Walk: 46%
  - Disabled: 5%

- **T.A.R.T Trail**
  - Bicycle: 49%
  - In-line Skating: 11%
  - Run/Walk: 38%
  - Disabled: 3%

- **Paint Creek Trail**
  - Bicycle: 56%
  - In-line Skating: n/a
  - Run/Walk: 44%
  - Disabled: 3%
Origin of Uses

Leelanau Trail
- Resident: 84%
- Live Elsewhere: 16%

T.A.R.T Trail
- Resident: 79%
- Live Elsewhere: 21%

Vasa Pathway
- Resident: 78%
- Live Elsewhere: 22%

White Pine Trail
- Resident: 92%
- Live Elsewhere: 8%

Pere Marquette Trail
- Resident: 77%
- Live Elsewhere: 23%

Paint Creek Trail
- Resident: 90%
- Live Elsewhere: 10%

Lansing River Trail
- Resident*: 56%
- Live Elsewhere**: 44%

*Resident considered resident of the city of Lansing
** 15% were E. Lansing residents and 29% elsewhere
**Getting to the Trail**

- **Pere Marquette Trail**
  - User did not drive to trail: 46%
  - User drove to trail: 54%
  
- **T.A.R.T Trail**
  - User did not drive to trail: 60%
  - User drove to trail: 40%

- **Leelanau Trail**
  - User did not drive to trail: 45%
  - User drove to trail: 55%

- **White Pine Trail**
  - User did not drive to trail: 41%
  - User drove to trail: 59%

- **Lansing River Trail**
  - User did not drive to trail: 54%
  - User drove to trail: 46%

- **Paint Creek Trail**
  - User did not drive to trail: 55%
  - User drove to trail: 45%

- **Vasa Pathway**
  - User did not drive to trail: 20%
  - User drove to trail: 80%

*The Pere Marquette survey asked users if they had used the parking lot. 54% of users used the parking lot.*
Trail Uses by Adults and Children

- **Leelanau Trail**
  - Trail use by adults: 76%
  - Trail use by children: 24%

- **T.A.R.T Trail**
  - Trail use by adults: 79%
  - Trail use by children: 21%

- **Vasa Pathway**
  - Trail use by adults: 88%
  - Trail use by children: 12%

- **White Pine Trail**
  - Trail use by adults: 81%
  - Trail use by children: 19%

- **Pere Marquette Trail**
  - Trail use by adults: 76%
  - Trail use by children: 24%

- **Paint Creek Trail**
  - Trail use by adults: 86%
  - Trail use by children: 14%

- **Lansing River Trail**
  - Trail use by adults: 86%
  - Trail use by children: 14%
Gender Profile (All ages)

Leelanau Trail
- Male users: 55%
- Female users: 45%

T.A.R.T Trail
- Male users: 59%
- Female users: 41%

Pere Marquette Trail
- Male users: 39%
- Female users: 61%

Vasa Pathway
- Male users: 54%
- Female users: 46%

White Pine Trail
- Male users: 56%
- Female users: 44%

Paint Creek Trail
- Male users: 53%
- Female users: 47%

Lansing River Trail
- Male users: 57%
- Female users: 43%
Adjacent Residents

Pere Marquette Rail-Trail and Fred Meijer White Pine Trail featured
Property Relation and Distance from Trail

Property in relation to the trail

<table>
<thead>
<tr>
<th>County</th>
<th>Adjacent or right next to trail</th>
<th>Trail intersects property</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pere Marquette-Midland County</td>
<td>94.9%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Pere Marquette-Isabella County</td>
<td>83.3%</td>
<td>16.7%</td>
</tr>
<tr>
<td>Fred Meijer White Pine-Kent County</td>
<td>96.0%</td>
<td>4.0%</td>
</tr>
</tbody>
</table>

Approximate Distance from Trail

<table>
<thead>
<tr>
<th></th>
<th>Pere Marquette-Midland County</th>
<th>Pere Marquette-Isabella County</th>
<th>Fred Meijer White Pine-Kent County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range</td>
<td>1-3,520 yards</td>
<td>50-1,760 yards</td>
<td>1-1,760 yards</td>
</tr>
<tr>
<td>Mean</td>
<td>100 yards</td>
<td>394 yards</td>
<td>60 yards</td>
</tr>
</tbody>
</table>
Type of Residential Ownership

- Pere-Marquette-Midland County
- Pere-Marquette-Isabella County
- Fred Meijer White Pine-Kent County
Resident Respondents’ Demographics

Gender

- Male:
  - Pere Marquette-Midland County: 54.0%
  - Pere Marquette-Isabella County: 50.3%
  - Fred Meijer White Pine-Kent County: 46.0%

- Female:
  - Pere Marquette-Midland County: 38.0%
  - Pere Marquette-Isabella County: 49.7%
  - Fred Meijer White Pine-Kent County: 49.7%

Age (years)

- Pere Marquette-Midland County:
  - Age (years): 54

- Pere Marquette-Isabella County:
  - Age (years): 54

- Fred Meijer White Pine-Kent County:
  - Age (years): 51.3

Length of Residency (years)

- Pere Marquette-Midland County:
  - Length of Residency (years): 38.7

- Pere Marquette-Isabella County:
  - Length of Residency (years): 32

- Fred Meijer White Pine-Kent County:
  - Length of Residency (years): 20
Resident Respondents’ Employment Status

- Full-time: Pere Marquette-Midland County, 34.4%; Pere Marquette-Isabella County, 19.2%; Fred Meijer White Pine-Kent County, 55.0%
- Part-time: Pere Marquette-Midland County, 5.3%; Pere Marquette-Isabella County, 0.0%; Fred Meijer White Pine-Kent County, 5.6%
- Retired: Pere Marquette-Midland County, 21.1%; Pere Marquette-Isabella County, 16.5%; Fred Meijer White Pine-Kent County, 19.2%
- Self: Pere Marquette-Midland County, 6.7%; Pere Marquette-Isabella County, 2.0%; Fred Meijer White Pine-Kent County, 4.0%
- Unemployed: Pere Marquette-Midland County, 0.0%; Pere Marquette-Isabella County, 3.3%; Fred Meijer White Pine-Kent County, 6.1%
- Homemaker: Pere Marquette-Midland County, 0.7%; Pere Marquette-Isabella County, 0.0%; Fred Meijer White Pine-Kent County, 0.0%
- Student: Pere Marquette-Midland County, 11.6%; Pere Marquette-Isabella County, 1.1%; Fred Meijer White Pine-Kent County, 0.0%
Resident Respondents’ Educational Attainment

- Pere Marquette-Midland County
- Pere Marquette-Isabella
- Fred Meijer White Pine-Kent County
It is important to note PMRT – Midland Cty and White Pine were studied after trails’ existence (10 or so years). PMRT-Isabella Cty was studied before trail construction.
Adjacent Residents’ Use of Trail

65.0% of Pere Marquette-Midland County residents used the trail for exercise and improving their health.

100.0% of Pere Marquette-Isabella County residents used the trail to exercise and to spend their free time.

63.6% of Fred Meijer White Pine-Kent County residents used the trail for exercise and fun and enjoyment.
Residents’ Perceived Social Impact of Trail

Rating scale with mean presented:
1=Very Negative Influence
2=Moderate Negative Influence
3=Neutral
4=Moderate Positive Influence
5=Very Positive Influence
Residents’ Perceived Economic Impact of Trail

**Speed at which property would sell**

- **Pere Marquette-Midland County**
  - Fast: 27.7%
  - Slower: 39.5%
  - No Difference: 68.9%

- **Fred Meijer White Pine-Kent County**
  - Fast: 3.4%
  - Slower: 4.5%
  - No Difference: 56.0%

**Amount at which property would sell**

- **Pere Marquette-Midland County**
  - Less Money: 4.8%
  - More Money: 18.4%
  - No Difference: 76.9%

- **Fred Meijer White Pine-Kent County**
  - Less Money: 4.6%
  - More Money: 24.1%
  - No Difference: 71.3%

Pere Marquette-Isabella County residents were not asked this question.
Residents’ Rating of Trail Conditions

Pere Marquette-Midland County residents were not asked this question.

Rating scale with mean featured:
1=Very Poor
2=Poor
3=OK
4=Good
5=Very Good
Percent of respondents reporting no change in depreciative behaviors.

Pere Marquette-Isabella County residents were not asked this question.
Trail Influence on Quality of Life Conditions

Percent of respondents reporting increase of quality of life conditions.

- Pere Marquette-Midland County
- Fred Meijer White Pine-Kent County

<table>
<thead>
<tr>
<th>Category</th>
<th>Pere Marquette-Midland County</th>
<th>Fred Meijer White Pine-Kent County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recreation Opportunities</td>
<td>73.2%</td>
<td>72.0%</td>
</tr>
<tr>
<td>Community Pride</td>
<td>69.5%</td>
<td></td>
</tr>
<tr>
<td>Personal Enjoyment</td>
<td>65.2%</td>
<td></td>
</tr>
<tr>
<td>Community Revitalization</td>
<td>68.1%</td>
<td>67.9%</td>
</tr>
<tr>
<td>Health and Fitness</td>
<td>67.1%</td>
<td>67.1%</td>
</tr>
<tr>
<td>Neighborhood Enhancement</td>
<td>58.1%</td>
<td>57.9%</td>
</tr>
<tr>
<td>Preservation of Open Space</td>
<td>50.0%</td>
<td></td>
</tr>
<tr>
<td>Non-Motorized Trans.</td>
<td>54.7%</td>
<td></td>
</tr>
<tr>
<td>Positive Social Interactions</td>
<td>46.9%</td>
<td></td>
</tr>
<tr>
<td>Aesthetic Value</td>
<td>38.7%</td>
<td></td>
</tr>
<tr>
<td>Natural and Cultural Ed.</td>
<td>35.4%</td>
<td>32.6%</td>
</tr>
</tbody>
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Pere Marquette-Isabella County residents were not asked this question.
Nearby Businesses

Pere Marquette Rail-Trail and Fred Meijer White Pine Trail featured
96% of nearby Midland County business employees used the Pere Marquette Trail.

100% of nearby Isabella County business employees used the Pere Marquette Trail.

54% of nearby Kent County business employees used the Fred Meijer White Pine Trail.
Businesses’ Attendance at Planning Meetings

- Pere Marquette-Midland County: 50.0%
- Pere Marquette-Isabella County: 14.0%
- Fred Meijer White Pine-Kent County: 13.0%
Pere Marquette-Isabella County businesses were not asked their opinion about the trail shortly after and during the construction process.
Businesses’ Perceived Social Impacts of Trail

Rating scale with mean featured:
1=Very Negative Influence
2=Moderate Negative Influence
3=Neutral
4=Moderate Positive Influence
5=Very Positive Influence
Final Comparison of How Neighborhoods of Residents and Businesses View the Trail

Pere Marquette Rail-Trail and Fred Meijer White Pine Trail featured
Comparison of Trail to Abandoned Railroad Right-of-Way

Adjacent Residents

Nearby Businesses
Overview of Findings

Methods

- Volunteers, students or summer interns are appropriate workforces for on-site surveying.
- Observations or counting PLUS short user survey are easy to implement with a random sampling frame.
- Event surveys with a registration list are relatively easy to do and yield high response rates. An on-site event survey is more challenging.
Overview of Findings

- “In” community trail (sidewalk and trail system) yielded the highest use levels and greatest proportion of transportation use (Traverse City and TART trails)
Overview of Findings

- Longer trails are more heavily used by cyclists (White Pine Trail, Pere Marquette – both trails are paved)
Overview of Findings

- Trail neighbors are generally supportive of the nearby trail as shown by their own high level of use and opinion of the trail as better than rail or an abandoned corridor. Studies of residents before a trail is built and/or agricultural areas show some skepticism.
Website with results and instruments located at
www.carrs.msu.edu/trails

Or e-mail
vogtc@msu.edu