



Red Cedar River Corridor Trail Plan

Prepared for the Tri-County Regional Planning Commission

Prepared by: Christopher Klove, Matthew Chappuies, Delaney Yancey, Mike Halfen, Yue Bi and Pardeep Toor



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I: EXECUTIVE SUMMARY

The Tri-County Regional Planning Commission and the Williamstown Township planning department commissioned a practicum research team at Michigan State University to explore the possibility of constructing a river trail from Meridian Road to Putnam Street following the contours of the Red Cedar River. The practicum team determined the path of the trail, identified technical concerns and limiting factors while exploring financing opportunities. The team also constructed a 19-step plan to be implemented over the next 10 years that would ensure implementation of this plan and the construction of the Red Cedar River Trail. The plan occurs in three phases and according to the following timeline:

1-2 Years - Organizational Infrastructure and Developing Township Property

1. Form a *Friends of the Red Cedar River Trail* group made up of area stakeholders in Williamstown Township and Ingham County.
2. Commission landscape architect students in the School of Planning, Design, and Construction at Michigan State University to explore the design opportunities at three trailhead locations.
3. Improve bicycle and pedestrian signage and road markings on Zimmer Road and Putnam Street
4. Conduct a traffic study from Grand River Avenue to Sherwood Road (south to north) on both Zimmer Road and Putnam Street to determine techniques to create a safer and more bicycle friendly environment.
6. Call a special meeting with all parcel owners along the Red Cedar River in Williamstown Township to share the opportunities for the desired trail.
7. Perform an engineering study to determine the exact cost of purchasing easements, clearing brush, and constructing a 10-foot wide, crushed rock trail as outlined in this plan.
8. Develop a marketing and communication strategy for the Red Cedar River Trail.
9. Conduct a market analysis to determine the potential cost of easements or parcel acquisition depending on negotiations with individual property owners.
10. Explore and apply for funding opportunities for Phase I of the Red Cedar River Trail – Williamstown Township Community Park.

3-5 Years – Construction Phases I and II

11. Obtain local and/or state funding for purchasing easements or properties outright depending on negotiations with individual property owners.
12. Phase I – Construct the trail and trailhead in Williamstown Township Community Park.
13. Hold a community celebration after completing the trail construction and Williamstown Township Park.
14. Phase II – Construct the trail and trailhead at MDOT Roadside Park and connect it to Williamstown Township Community Park (3-5 years).

6-10 Years – Construction Phase III and Trail Expansion in Ingham County

15. Phase III – Construct the trail from Williamstown Township Community Park to Putnam Street in the City of Williamston
16. Hold a community celebration to reflect on the work completed over the last 10 years.
17. Conduct survey to measure potentially new uses, attitudes, and perceptions of outdoor recreation trail use.

18. Phase IV – Explore opportunities to expand the Red Cedar River Trail to Meridian Charter Township and East Lansing to the West and Webberville to the east.

This plan is a vision and an outline for the Red Cedar River Trail and suggests further engineering and traffic studies to continue in order fully implement this plan and construct the trail. The larger vision in Williamstown Township and Ingham County is to convert this trail into a larger corridor that connects to the river trail system in Lansing and East Lansing through Meridian Charter Township while also extending it east to Webberville. This plan is the first of many future plans that will assert how to make the vision of river trail corridor a reality.

II: INTRODUCTION AND BACKGROUND

In January 2014, the Tri-County Regional Planning Commission and Williamstown Township's planning department sought the assistance of Michigan State University (MSU) students to develop a Red Cedar River Corridor plan. The plan would outline the possibility of constructing a river trail along the Red Cedar River in Williamstown Township. This report will engage in completing the following scope of work:

- Conduct a parcel assessment to determine the feasibility of creating a river trail in Williamstown Township from Meridian Road and Putnam Street;
- Identify the trail route along the Red Cedar River, along with access points, amenities (boat/canoe/kayak launches), connections with other local trails, phases of development, marketing, and general financing information;
- Identify key connectivity nodes on the trail that connect to main streets, businesses, schools, residential areas, recreational facilities, and other existing trails;
- A Trail Impact Assessment by examining national, state, and local case studies to analyze and determine the impact of trails on property value, frequency of trail related crime, public health benefits of recreation opportunities, and economic development opportunities related to robust recreation opportunities.

This project is part of the practicum course in Michigan State University's Urban and Regional Planning program. The MSU team is made up of undergraduate and graduate students in the process of completing either their bachelors or masters degree in urban and regional planning.

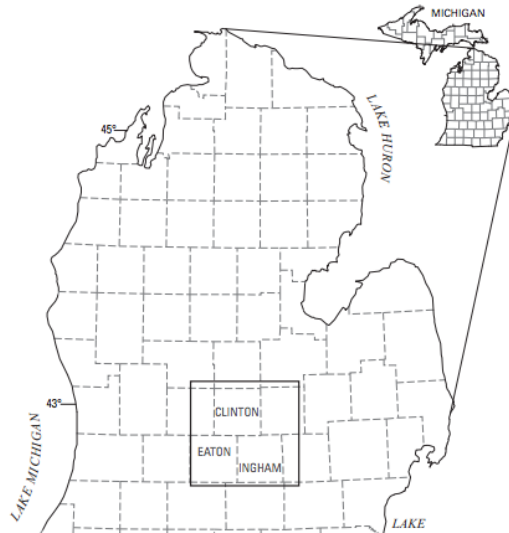


Figure 1: The Tri-County Region consists of Eaton, Ingham and Clinton Counties in Central

Client Information

The primary clients for this plan are the Williamstown Township planning and zoning department and the Tri-County Regional Planning Commission. The Tri-County Regional Planning Commission is a state-recognized organization that provides planning solutions for the region, and facilitates other multi-jurisdictional efforts. The clients have established a Red Cedar River Corridor Committee (RCRCC) made up local and regional stakeholders. Both the clients and members of the subcommittee have agreed to review this plan as well as pursue opportunities to implement the recommendations in the plan.

Purpose of the Project

The purpose of this report is to create a plan for a trail on the Red Cedar River in Williamstown Township while maintaining a regional lens on the importance of non-motorized transportation and connectivity to the region. Williamstown Township's initiative to construct a river trail is based on a dynamic partnership that promotes trail planning across jurisdictional boundaries.

Report Content

The content of this project will provide detailed analysis for a Red Cedar River Corridor Plan for a river trail from Meridian Road to Putnam Street, along the Red Cedar River. This plan will contribute to the larger vision established by the Tri-County Regional Planning Commission to connect the downtown Lansing, MI to Webberville, MI via a non-motorized trail along the Red Cedar River.

Included in this report:

- An overview on the value and benefits of trails;
- Analysis of current trail plans and efforts at the state, regional, and local levels;
- Case studies;
- Recommendations for trail implementation along the Red Cedar River Corridor including strategies to combat technical concerns and finance options

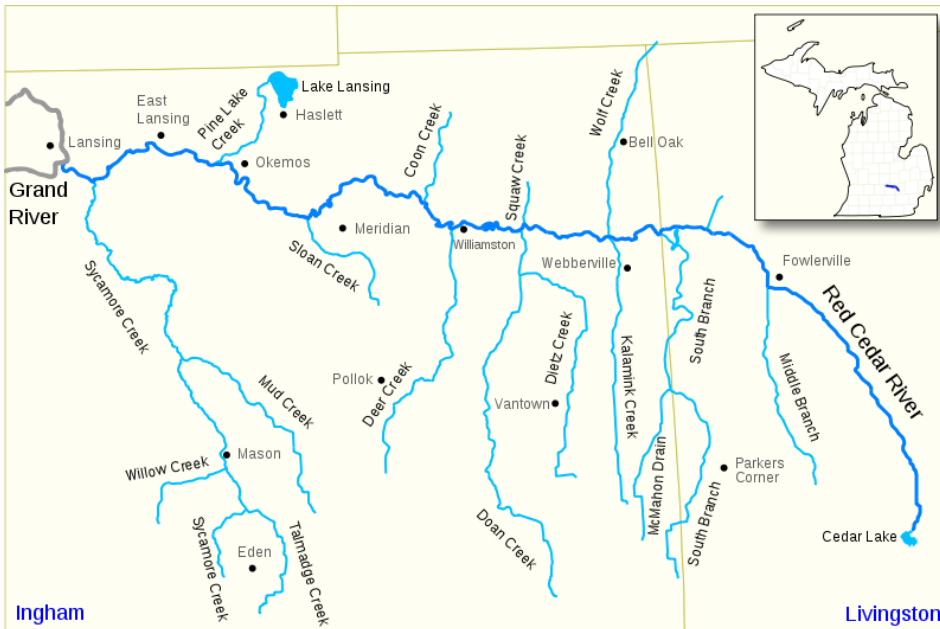


Figure 2: The Red Cedar River flows through central Michigan and branches off into many tributaries.

Value of Trails

The value of trails is both personal and professional, as they provide opportunities for area residents and business opportunities for commercial stakeholders. A trail system and specifically a trail corridor that is

being proposed in this plan may have a regional impact on the area's local economy, ability to attract tourists, public health, transportation, and the preservation of existing natural features.

A river trail is an economic opportunity that has the potential to attract tourists to Williamstown Township and Ingham County. Depending on the use of the trail, opportunities exist for equipment rental, dining, gifts and potentially art/culture. The City of Williamston and the accompanying businesses can be a potential destination for trail users in Williamstown Township. Attracting tourist from outside the boundaries of the municipalities can provide a boost in the local economy and bring in visitors who would not normally frequent the area.

Altering the built environment to promote physical activity may also spur more active lifestyles in Williamstown Township. The river trail will make the area more walkable, connected, and conducive to physical activity. In addition to being an avenue for physical activity, the trail serves as a connector between Williamstown Township and the City of Williamston. Non-motorized transportation opportunities might be enhanced in the future if the trail is expanded into Meridian Charter Township to the west which will potentially connect it to the Capitol in downtown Lansing.

Community Engagement Workshop

On March 13, 2014, the practicum team hosted a community engagement workshop at the Harris Nature Center in Meridian Charter Township. The workshop was organized in part, by the Tri-County Regional Planning Commission and served to bring together residents and stakeholders to discuss a possible river trail in Williamstown Township. The practicum team introduced their project, outlined the trail route, and conducted two exercises to gain public input on the proposed route and desire for other amenities and connections on the trail. Residents attended the workshop from Lansing, East Lansing, Meridian Charter Township, Williamstown Township, City of Williamston, and Leroy Township – the majority of whom have been living in Ingham County for 12 or more years.

A survey was conducted at the end of the workshop (see Appendix A3 for survey summary,) and nearly 90 percent of individuals indicated that they support the implementation of this plan that would construct a trail along the Red Cedar River in Williamstown Township, the plan will increase the quality of life of residents, and would support a county-wide millage to fund the trail.



Photos 1 and 2: The research team conducted a community engagement workshop at the Harris Nature Center in Meridian Charter Township on March 13, 2014.

III: EXISTING EFFORTS AND PLANS

This section provides a context for regional trail efforts in the Tri-County Region, Ingham County and the communities surrounding Williamstown Township that may become part of a larger statewide network.

The Red Cedar River is a regional asset that crosses several neighborhood and political boundaries. The River is an asset for multiple municipalities and stakeholders in promoting regional planning and connectivity, but also a challenge considering the potential disparity of visions for this natural asset. Stakeholders involved with the Red Cedar River include local governments, businesses, non-profits, conservation groups, river and recreational advocates, county government, a regional planning organization, and statewide agencies concerned with water quality. A regional trail system requires cooperation between local jurisdictions in order to maximize the benefits of the Red Cedar River Corridor.

State

There are statewide efforts that complement and support regional and local planning for trails. The Michigan Department of Transportation (MDOT) has supported their efforts on non-motorized linkages between communities and trail segments across the state. Michigan has a total number of 2,645 finished miles of transformed rails-to-trails. MDOT published a non-motorized technical report as a complement to its long-range transportation plan to highlight the public health, economic, recreational and environmental benefits of non-motorized transportation while providing design and financial guidelines for creating and implementing such plans.

In November 2012, Michigan Governor Rick Snyder has also made trails a statewide priority. The Michigan Department of Natural Resources plans to implement a five-year trail plan called the *State Trails Implementation Plan*, including a non-motorized Showcase Trail Plan between Belle Isle in Detroit and the Wisconsin boundary. With Michigan planning the largest system of interconnected pathways in the nation (12,000,) trails are evidently among the top economic drivers for tourism business in the state of Michigan. The purpose of the Governor's Showcase Trail is to provide opportunities for free public outdoor recreational activities for all users. Targeting mostly hikers and bikers, Governor Rick Snyder's vision is to identify the key principles that relate to the existing hike and bike trails within Michigan and its neighbors across the Great Lakes. Prioritizing trails across the state may have a potential ripple effect in Ingham County and more specifically, on the Red Cedar River Corridor. Adopting a statewide mentality that prioritizes trails has the potential to strengthen local trail efforts.

Regional

Greening Mid-Michigan

In Fall 2010, the Tri-County Regional Planning Commission published a vision for "Greening Mid-Michigan" that identifies green infrastructure opportunities in Ingham, Eaton and Clinton counties. Green infrastructure is comprised of parks, natural areas, privately held conservancy lands, trails, rivers, lakes,

streams, forests, and wetlands. Related to trails and non-motorized transportation, the Vision outlined the following guiding principles:

- Pathways, sidewalks, trails, and on-street bicycle facilities should be developed and enhanced to provide alternatives to motorized transportation, improve linkages to recreational opportunities for regional residents, and provide public health benefits by offering opportunities for physical activity.
- Parks and recreation development and expansions should emphasize linkage of facilities through greenways based on the regional vision and the adopted Regional Non-Motorized Systems Plan.

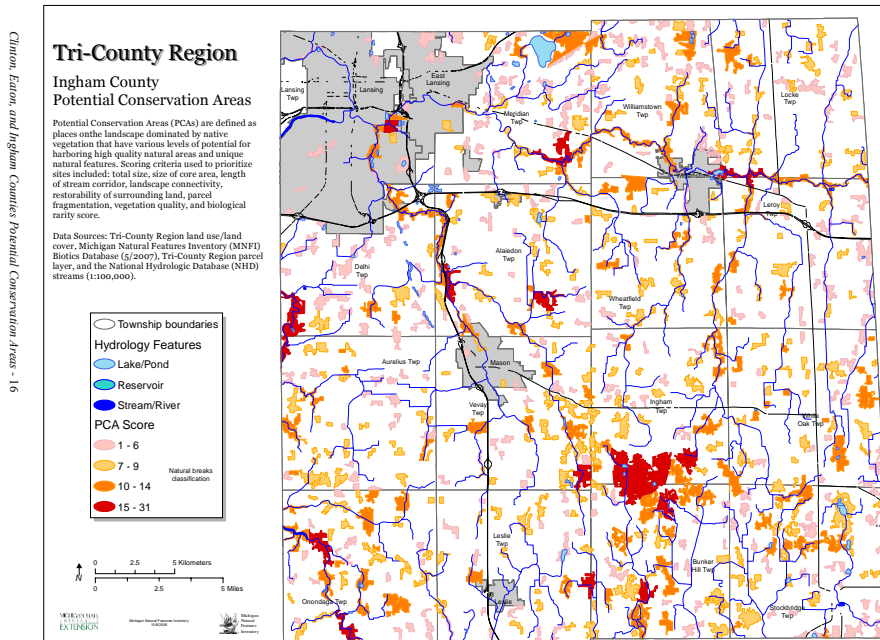


Figure 3: Potential Conservation Areas in the Tri-County Area

The vision also identified Potential Conservation Areas (PCAs) as places on the landscape – regardless of jurisdictional boundaries, land use, and ownership – that are dominated by native vegetation and have potential for harboring high quality natural areas. The PCAs are essential to avoiding habitat fragmentation. Figure 3 shows a map of PCAs in Ingham County.

The Sycamore Creek/Red Cedar River Corridor from Alaiedon Township to the City of Lansing was also specifically identified as a significant place for wildlife habitat and trees in an urban area. This corridor

was also recognized as a key opportunity for regional recreation along the Lansing River Trail and the associated access to city and county parks along the path.

Greening Mid-Michigan also identifies PCAs along Coon Creek, west of the Summit Cemetery and in the northwest corner of the Williamstown Township. In accordance with this vision, Williamstown Township Trails and Greenways Plan allows for four-foot bike lanes that will connect these PCAs.

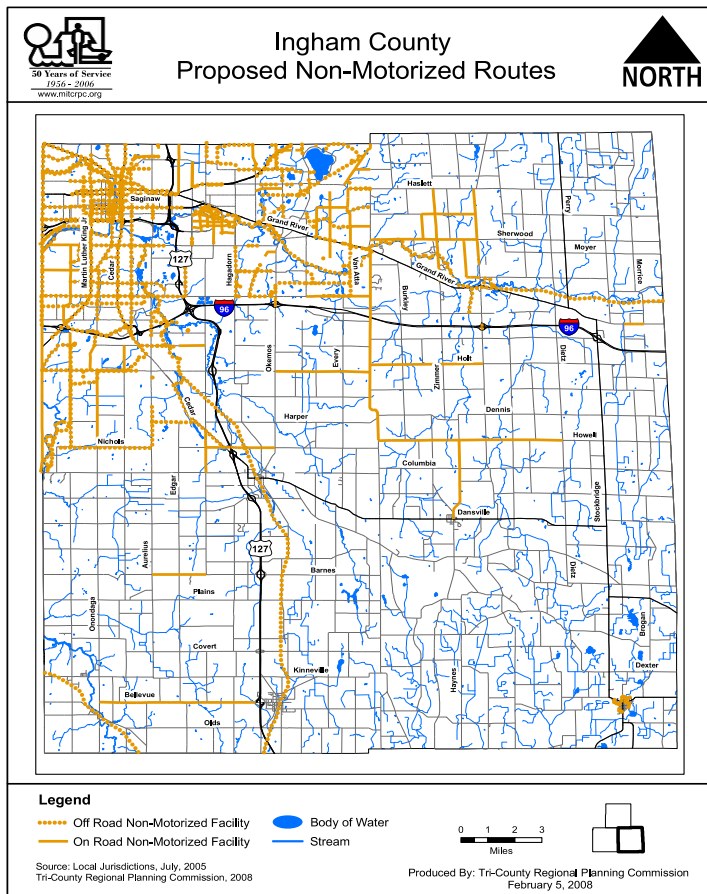


Figure 4: Proposed non-motorized routes and plans in Ingham County.

Michigan/Grand River Avenue Corridor Charrette Vision

In 2013, the Tri-County Regional Planning Commission along with a team of local partners conducted a series of visioning charrettes for the Michigan/Grand River Avenue corridor that spans 19 miles from Lansing to Webberville (figure 4). The purpose of the charrette was to offer the public an opportunity to voice opinions about future development plans of the corridor.

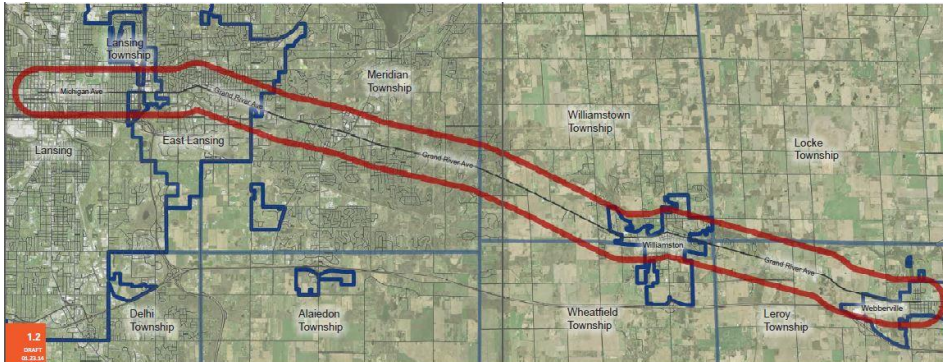


Figure 5: The target area for Michigan/Grand River Avenue Visioning Charrette extends from the Capitol Building in Lansing to Webberville.

Through a series of community engagement activities, such as open forums and actual hands-on drawings, residents and stakeholders prioritized connections to the existing river trail. The charrette team compiled all the current trails plans for the Michigan/Grand River Avenue corridor into a single map displayed in Figure 6.

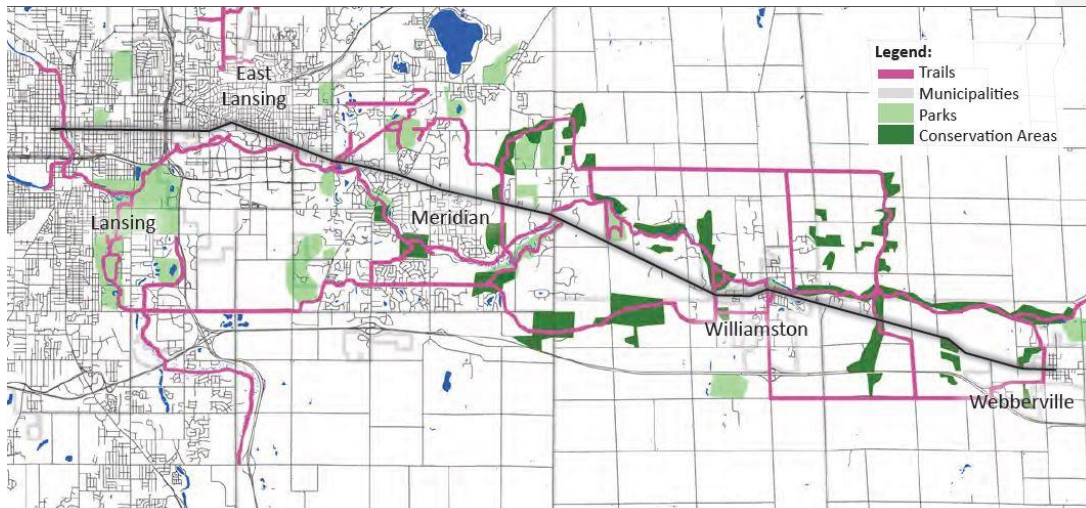


Figure 6: The Michigan/Grand River Avenue charrette team compiled all the proposed and/or desired trail plans in its study area into a single map.

Based on figure 6, a proposed trail paralleling the Red Cedar River could exist from the State Capitol building in downtown Lansing to Webberville. Figures 7 and 8 more specifically outline desired trail connections in Williamston and Webberville. Reference figure 6 for geographical context.



Figure 7: Based on citizen input during the Michigan/Grand River Avenue Charrette, a trail connection on the Red Cedar River is desired in the City of Williamston.

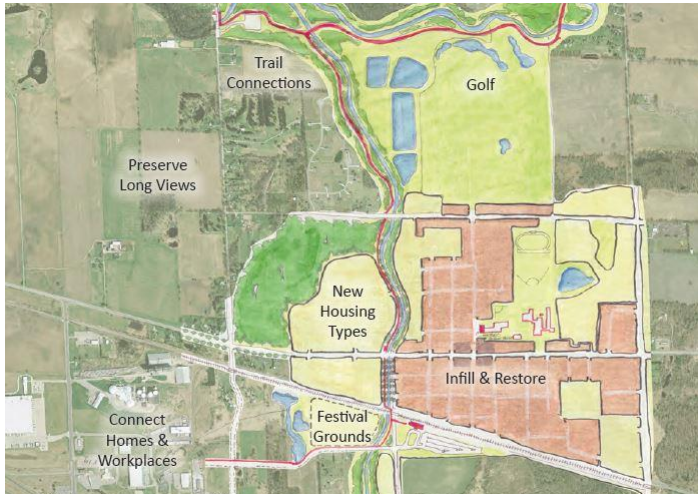


Figure 8: Based on citizen input during the Michigan/Grand River Avenue Charrette, a trail connection on the Red Cedar River is desired in the Village of

Commented [MC1]: Again, this needs a frame of reference.

Tri-County Bicycle Association

The Tri-County Bicycle Association (TCBA) is a membership-driven organization dedicated to: promoting the use of bicycles, defending the rights of bicyclists, providing education on safety and the rights and responsibilities of bicyclists, and establishing a network of bicyclists in the Tri-County area. In 2009, the TCBA released a Crosstown Bicycle Route Mapbook that suggests safe routes from the Lansing Mall to the Meridian Mall (west to east) and south to Holt. The TCBA route map does not extend east to Williamstown Township, beyond suggesting It only suggests Germany Road east into the Township used to travel east (Figure 9).

- Promotion of bikeability of cities and connecting areas (i.e. trails, roads from Lansing to Mason and Holt).
- Focusing on bicycle and hiking trails that connect local communities and attractions.

Based on community feedback, the county established several goals. One of them is to: ~~Goal 3: e~~Enhance existing trails and develop new multi-use trails that connect parks with recreational, residential, cultural and business centers throughout Ingham County. The county hopes to establish a regional trail system that connects Meridian Charter Township, Delhi Charter Township, the City of Lansing, and connections beyond. The Ingham County Parks and Recreation Master Plan further highlights the possibility of linking Williamstown Township with the City of Williamston through the development of a recreation corridor.

City of Williamston

The City of Williamston Comprehensive Plan was adopted in 2006 and emphasizes preserving the dignity and charm of the community while taking advantage of its strategic geographic ~~location beside~~proximity to Michigan State University in East Lansing, and the State Capitol in downtown Lansing. One of the six goals outlined in the comprehensive plan requires the City to provide adequate land for recreation, open space, and leisure-time pursuits. Specifically, the comprehensive plan incorporates the following two action items related to the Red Cedar River and regional trail development:

- Trail Development – Expand non-motorized trails to link community assets including parks, schools, businesses, the Red Cedar River, and residential neighborhoods.
- Capitalize on the Red Cedar River Recreation Opportunities - The quantity and quality of recreation opportunities related to the Red Cedar River needs to be improved by enhancing opportunity for water-based recreation (fishing, canoeing/kayaking) and adjacent non-motorized trails with universal access features that connect aesthetically pleasing public recreation spaces and community schools.

In March 2009, the City of Williamston released a Parks and Recreation Plan for 2009-2013. During this timeframe, the city hoped to complete the McCormick Park renovation and expand recreation opportunities and increase universal access to McCormick Park, Memorial Park and improving the Old Mill Park boardwalk. The City of Williamston did note that they have had discussions with Williamstown Township regarding the development of paths in McCormick Park in an attempt to link community assets including parks, schools, businesses, the Red Cedar River and neighborhoods. Specific plans to enhance non-motorized transportation or initiate development of a Red Cedar River Trail are not referenced d in the Park and Recreation Master Plan.

Meridian Charter Township

Meridian Charter Township adopted a new master plan in 2006 which prioritized an environment that includes preserved natural resources, open spaces, and green areas. Three of the seven goals outlined in the Meridian Charter Township plan are related to trails, recreation and open spaces in the township. The goals are:

- Preserve open space and natural areas.
- Maintain and expand diverse park systems.
- Provide and support an efficient, safe, and environmentally sensitive multi-modal transportation network.

In order to preserve the open space and natural areas in the Township, the plan aims to “protect land that is important to the ecological integrity of the Red Cedar River through zoning, voluntary agreements with landowners, donation of land to the Township or the purchase of land, scenic easements, and development rights where appropriate.” Furthermore, the plan calls for continuing the establishment of a continuous greenway along the Red Cedar River through the identification of additional parcels of land, which are important to the ecological and visual integrity of the Red Cedar River.

With regards to maintaining and expanding the park system, the plan calls for acquiring properties that provide for recreational use and those that protect or provide public access to features unique to the Meridian Charter Township recreation areas.

The Red Cedar River is considered an essential asset that should be planned for and around. It is identified as a natural corridor with potential recreation opportunities. A trail specific to the river is not, however included in the master plan. The plan encourages continual support of the Township’s pedestrian/bicycle pathway system but does not specifically identify a Red Cedar River Trail.

In May 2004, Meridian Charter Township prepared a Greenspace Plan that was intended to protect natural resources, while accommodating new development. Pertaining to trails, the plan seeks to establish a greenspace system for the following:

- Key waterways, adjacent wetlands, and upland buffers
- Walking and biking routes that link parks, schools and other community resources.

The plan acknowledges that the Lansing River Trail along the Red Cedar River has been extended through Michigan State University’s campus from Harrison Road to Hagadorn with the intent of continuing it along the river through Meridian Charter Township. However, the Greenspace Plan does not outline a specific possible route for a trail along the Red Cedar River. Meridian Charter Township has an elaborate network of trails and pathways within its boundaries including nine parks along the Red Cedar River (Figure 10). Key connections eastward, to Williamstown Township could be created along Haslett Road, or Grand River Avenue.

The Township’s department of Parks and Recreation manages, and is funded by the Township’s Park Millage. With its funding, the department has the authority to sell, acquire, and manage any properties related to parks or park projects.

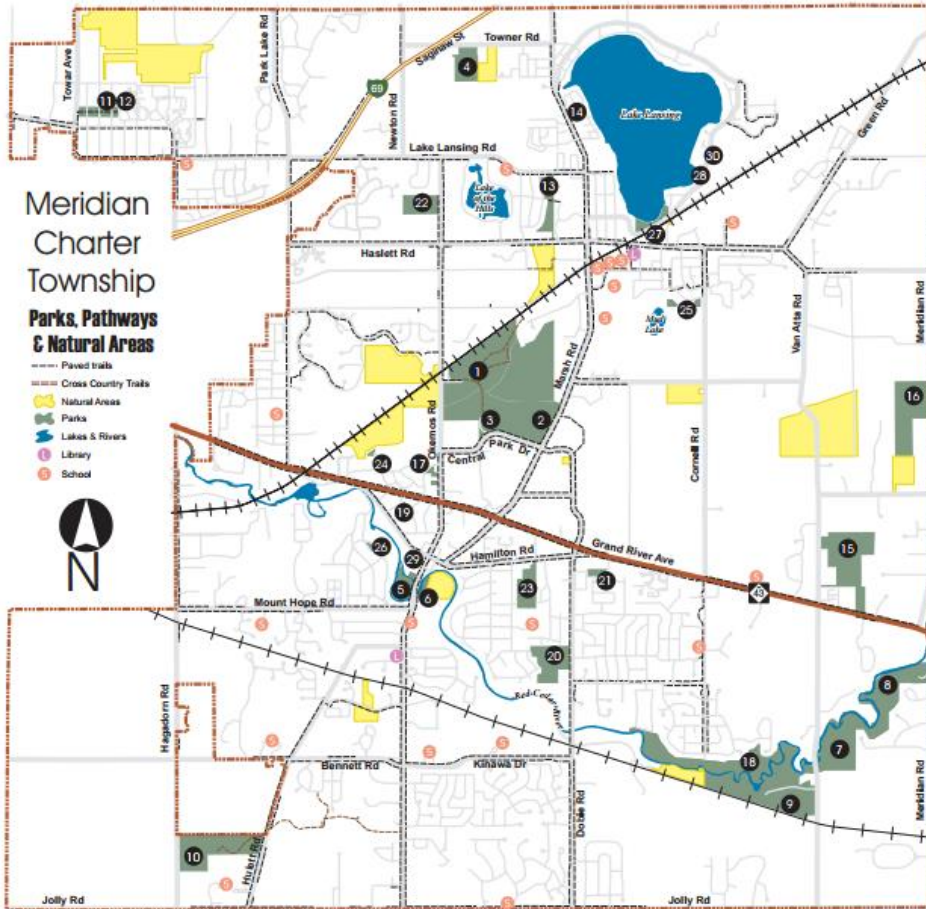


Figure 10: Nine parks are identified along the Red Cedar River in the Meridian Charter Township Green space Plan published in 2004. The plan does not propose a trail along the Red Cedar River in the Township.

Michigan State University

Michigan State University adopted a *Bicycle Facilities Plan* in 2007 with the aim of becoming a national model for non-motorized transportation infrastructure on college campuses. Related to the Red Cedar River, the plan connects with the Lansing River Trail from the west at Harrison Road and runs east across campus through Hagadorn Road (Figure 11).

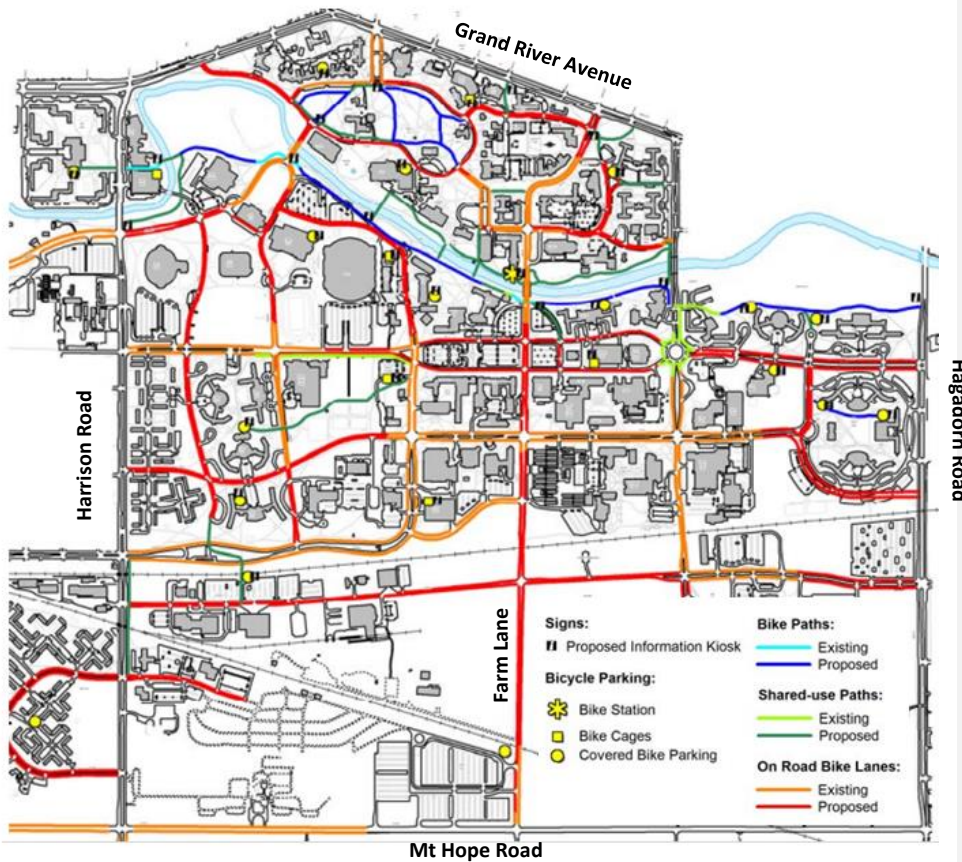


Figure 11: The Michigan State University Bicycle Facilities Plan proposes a trail through campus along the Red Cedar River from Harrison Road to Hagadorn Road.

City of Lansing

The hub of recreation in the greater Lansing area is the Lansing River Trail. Spanning nearly 13 miles along both the Grand and Red Cedar Rivers, this non-motorized trail is used by pedestrians and cyclists for commuting and leisure.



Photo 3: The Lansing River Trail in Old Town

In the City of Lansing master plan that was adopted in 2012, the Lansing River Trail is categorized as a *Placemaking* asset for the community that has the potential to attract and retain talent in the area while being utilized as an economic development resource. Based on citizen input during the planning process, preserving and enhancing the river trail is a top priority for the community. The master plan aims to expand the Lansing River Trail and potentially connect it to adjoining communities

The plan highlights the successful cooperation between the City of Lansing and communities along the Red Cedar River as well as Michigan State University in connecting the trail with campus and eventually across campus to Meridian Road in accordance with the school's Bicycle Facilities Plan (figure 11).

The City of Lansing Parks Master Plan for 2010-2015 continues the Lansing master plan's theme of expanding trails even further outward by emphasizing the use of recreation as a tool for economic development. The following plans to expand the Lansing River Trail are included in this plan (figure 12):

- From McGuire Park to the Kenneth Hope Soccer Complex
- From Michigan Avenue to Cherry Hill Park
- Shiawassee Street to Michigan [Avenue](#)
- Moores River Drive to Grand River Park

The plan suggests that, in partnership with the Lansing Economic Development Corporation, the Chamber of Commerce, and the Department of Planning and Neighborhood Development, the City of Lansing should focus on the following three overlaps between recreation and prosperity: 1) riverfront development; 2) downtown development; and 3) special events and programs.

The *Walk and Bike Lansing* Plan was constructed by a Lansing Walking and Bicycling Task-Force, made up of citizen representatives from the City of Lansing, administrative staff at the city, private

stakeholders, [area](#) non-profits, and staff from the Governor's office. The task force is an advocacy group that outlines the following goals in Lansing:

- Double the percentage of trips made by bicycle or foot in the City of Lansing by 2013.
- Eliminate pedestrian and bicyclist deaths from motor vehicle crashes in Lansing by 2018.
- Reduce pedestrian and bicyclist injuries from motor vehicle crashes in Lansing each year for the next ten years.

The plan also seeks to increase the number of miles in the interconnected non-motorized network that includes roadways, bike routes, bike lanes, walkways, and shared use paths.

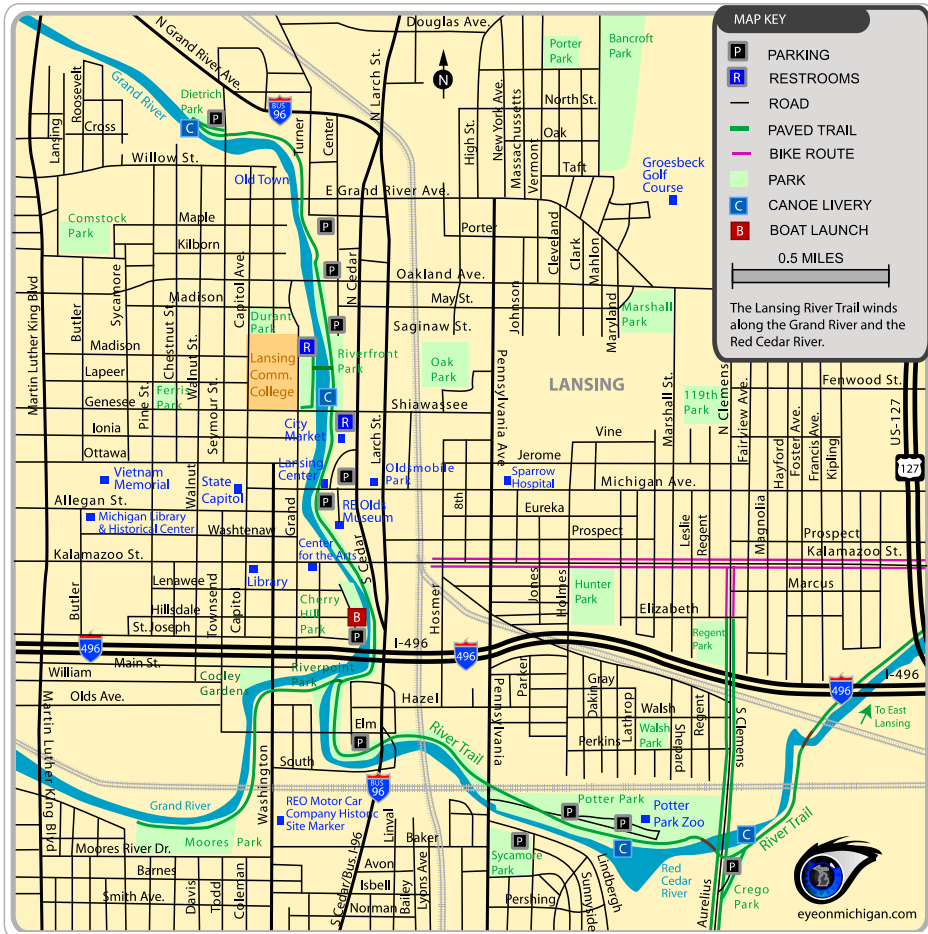


Figure 12: The downtown Lansing segment of the Lansing River Trail.

Williamstown Township

The Williamstown Township master plan of 2013 identifies and prioritizes the perseverance of natural features, collaborative relationships with the region, the promotion of efficient and sustainable growth by

planning for a pedestrian-friendly community, and includes the development of a trail along the Red Cedar River and an off-road trail along Grand River Avenue.

A proposed Red Cedar River Trail plan is specified in the Community and Recreation Facilities and Transportation section of the master plan.

In the Community and Recreational Facilities section, the plan proposes the following improvements related to the Red Cedar River Trail:

- All new development with frontage on the Red Cedar River to have an eight-foot wide unpaved path and recorded path easement along the river.
- Develop facilities in the Township Community Park on Grand River Avenue, including active recreation opportunities, linkages to regional trail systems, and increased access to the Red Cedar River.
- Continue to acquire land to provide riverfront access. Riverfront access facilities should be designed to maintain the quiet, rural character of the river. Appropriate facilities include paths along the river and one or two locations where a small boat or canoe could be put into the river.
- Develop a walking/hiking trail system. Ideally, such a system should link with trails systems in adjoining communities and with trails along the river. Specifically, the plan cites the Van Atta nature trail in Meridian Charter Township as a model.

With regards to transportation, the pedestrian and bicycle safety paths seek to link residential areas with schools, recreational areas, commercial districts, and other attractions. With a potential increase in the population, the plan anticipates the need to construct pathways to address conflicting interests of vehicles, bicyclists, and pedestrians. The non-motorized pathways considered in the master plan are: conventional sidewalks, paved shoulders that are dedicated and marked for bicycle use, or separate bicycle pathways adjacent to the road. The plan also recommends the preparation of a Trails and Greenways Master Plan in Williamstown Township. The Williamstown Township Trails and Greenways plan was published and adopted in 2010 as an amendment to the master plan.

In 2010, Williamstown Township released a Trails and Greenways Plan as an amendment to the Township's master plan. The goals of this plan include the following:

- To satisfy the recreation, fitness, commuting, or utilitarian purposes of trail users.
- To connect origins with key destination including: Township Community Park, Williamston schools, Township Hall, Branch School, the Heart of Michigan trail system, and downtown Williamston.
- To coordinate with Tri-County Regional Planning Commission's Greening Mid-Michigan initiative.

The plan combines the following trail and greenway facilities: the use of a paved shoulder, bike lanes, non-motorized path, foot path, paved trail in accordance with the Americans with Disabilities Act standards, utility corridor and a river/creek greenway corridor (Figure 9). The core of the plan is the loop along Grand River Avenue, Meridian Road, Haslett Road and Williamston Road as it provides non-

motorized options for travel around the Township and to key destinations. Considering the foundational aspect of this loop, the plan prioritizes its construction beyond all other aspects of the plan.

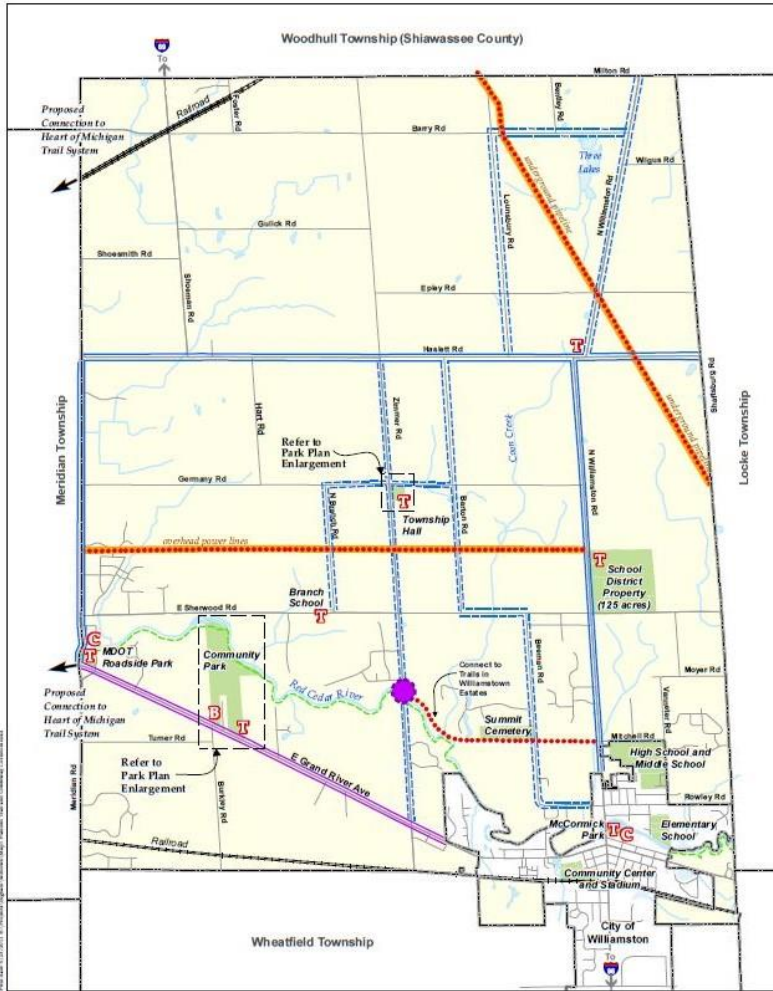


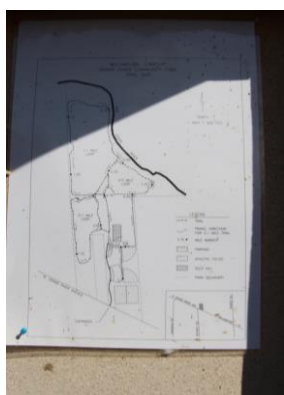
Figure 13: Williamstown Township produced a comprehensive non-motorized transportation plan in its 2010 Trails and Greenways plan.

The second priority in the plan is to complete the trail in Williamstown Township Community Park that connects to Grand River Avenue to the South and the proposed Red Cedar River Trail to the north (Figure 14).



Figure 14: An interurban trail system produced in Williamstown Township's Trails and Greenways plan includes a segment of trail along the Red Cedar River.

The proposed Red Cedar River Trail continues west to the Michigan Department of Transportation Roadside Park at the intersection of Meridian Road and Grand River Avenue to the west and to the west most boundary of the City of Williamston to the east. The proposed Red Cedar River Trail is located south of the river from Meridian Road to Zimmer road after which it crosses over to the north side of the river until it approaches the City of Williamston boundary (Figure 13 on page 37). For the most part, this plan will remain consistent with the proposed path of the Red Cedar River Trail outlined in the Williamstown Township Trails and Greenway Plan.



Photos 4 and 5: Williamstown Township Community Park already has an interurban trail system.

Further Connections

Continuing east from the City of Williamston, this trail could easily link into the City of Webberville, approximately five east. The Red Cedar River flows past the Webberville, only 0.5 miles north of its downtown. Connections from the river leading into town could be made at either Webberville Road, or Gramer Road. Linking the trail to Webberville would grant access to more users in the region, and provide and an extra section of trail to be enjoyed.

IV: CASE STUDIES

A local and regional trail network can have impacts on a community's well being that extend beyond mere recreation. The purpose of this section is twofold: 1) outline the economic and public health benefits of a local and regional trail system; and 2) evaluate three case studies that describe the effects of trails on a local community and as a region as a whole.

Economic Impact

A local and regional trail system can have positive economic benefits in a community in the form of growth in local commerce and property values adjacent to the trail system. Recreational tourism is an economic industry and visitors traveling to trails are likely to spend their money on small rural local businesses where trailheads or access points are located. Trails can be the driver of local economic development. According to a 2009 Minnesota Department of Natural Resource report entitled "Economic Impact of Recreational Trail Use in Different Regions of Minnesota," the economic impact spreads to population centers and commercial hubs along the trail system. Trails and regional recreation opportunities are also a tool for talent attraction and retention in Governor Rick Snyder's MI Place initiative. According to the principle of Placemaking, college graduates are deciding on the region they wish to live based on the cultural and recreational amenities offered to them and then seeking employment in that region. Based on these findings, a trail along the Red Cedar River Corridor that connects to a larger regional system may potentially enhance the livability of the Township and alter its demographics by attracting recent graduates to the area.

Furthermore, trails and greenways also have a positive impact on property values nearby as 70 percent of real estate agents use trails as a selling feature when listing homes, and 80 percent of realtors said that a trail eases the difficulty of selling a property. In Minnesota, 87 percent of homeowners believe trails either increased the value of their homes or had no negative impact. In Seattle, homeowners with properties near, but not adjacent to the trail, sold for an average of 6 percent more than comparable properties not close to a trail system. Additionally, the U.S. National Parks Service notes that increases in property values range from 5 to 32 percent if they are adjacent to trails and greenways.

In a comprehensive study analyzing property values of home sales near two Massachusetts rail-trails, seven communities were analyzed – Arlington, Lexington, Bedford, Ayer, Groton, Dunstable, and Pepperell – and it was concluded that homes near trails sold at 99.3% of the list price compared to 98.1% of list prices for other homes. The most significant finding in this study as outlined in 1, is that homes near rail-trails sold in an average of 29.3 days as compared to 50.4 days for houses not near a trail.

Table 1– Case Study: Number of days a homes were on sale in Massachusetts

Town	Homes near a rail trail		Homes NOT near a rail trail	
	Number of Properties Sold	Days on Market	Number of Properties Sold	Days on Market
Arlington	10	27.1	119	28.3
Lexington	10	18.5	166	54.4
Bedford	3	55.3	38	42.4
Ayer	1	47	30	73
Groton	2	22	53	80.4
Dunstable	1	20	12	83.2
Pepperell	3	48.3	57	80.2
Average		29.3		50.4

Public Health and Recreation

The built environment impacts how a community lives and the degree of physical activity that individuals receive throughout the course of their lives. Many recent developments have made automotive traffic necessary for most daily commuting scenarios, and often make bicycle or pedestrian commutes impractical. These patterns may have contributed to an increase in American obesity and other health issues related to sedentary lifestyles. Trails offer an opportunity for recreation. According to the Center for Disease Control and Prevention (CDC) “Trails for Health” initiatives, greenways encourage healthier lifestyles by service as close to home outdoor fitness resources for walking, jogging, in-line skating and bicycling and encouraging safe and interpersonal interaction by linking neighborhoods. The public health benefits of trails also spills into economics, as a healthier populace can reduce medical costs. Wang et al (2004) determined the per capita cost of using trails versus the medical costs due to an unhealthy populace. Wang discovered that per capita annual cost of using the trails was \$209 (\$59 construction and maintenance, \$150 equipment and travel). Per capita annual direct medical benefit of using the trails was \$564. The cost-benefit ratio was 2.94, which means that every \$1 investment in trails for physical activity led to \$2.94 in direct medical benefit.”

Three Case Studies

Below is an examination of three case studies in Michigan, Indiana, and Massachusetts that exemplify the potential benefits of a trail in Williamstown Township and a larger regional trail system that connects with adjoining municipalities in Ingham County.

Lansing River Trail

A detailed usage study of the Lansing River Trail was conducted in 2004. From May to September 2004, the study found 72,040 users of the trail, an average of 471 per day. Recreation was the dominant trail use at 59 percent; 35 percent were using it for exercise; 3 percent for race training; and 3 percent for commuting. Bicycling, 49 percent, and pedestrian, 46 percent, were the dominant modes of transportation the Lansing River Trail. During this five-month study period, 56 percent of trail users were residents of Lansing, while the other 44 percent indicated that they had traveled specifically to use the trail. The ratio of users who did or did not drive to get to the trail was equally split.

With its proximity to residential dwellings and business in Lansing, the trail is easily accessible and has seven designated access points, equipped with parking. The trail also connects to multiple points of interest, including downtown Lansing, Hawk Island Park, Old Town, Lansing Community College, Lansing City Market, Cooley Law School Stadium, and the Potter Park Zoo. The trail also connects to East Lansing and Michigan State University.

Indian Trails - Prairie Duneland, Monon, Pennsy Rail-Trail, River Greenway and Maple City Greenway

In the State of Indiana, five different trails were studied - Prairie Duneland Trail, Monon Trail, Pennsy Rail-Trail, River Greenway Trail, and Maple City Greenway. Whether urban or rural, multiple factors remained consistent. Comparing survey results from prior to construction with survey results from after construction of the trail, the general attitude shifted from pessimism to enthusiasm. Respondents reported that the trail not only increased their opinion of their community but that it also positively impacted their property value.

For visitors of the trail, the existence of the path enhanced the perception of the host community. Trail users who were visiting from out of town gained a more desirable attitude towards the community. Not only did the trail system help increase regional opinion, it was also responsible for residents who purchased their home post-trail implementation. Real estate agents began using the trail as a selling point. Residents moving into the area stated that the location of the trail was far more likely to have persuaded their decision rather than deter it.

Massachusetts - Minuteman Bikeway and Nashua River Trail

In Massachusetts, the Minuteman Bikeway, and the Nashua River Trail were constructed in the 1990s, with additions and extensions to both trails have being made as recently as 2008. These trails illustrate an increase in home values, and promote the use of non-motorized transportation.

The trail study found that by increasing connections to downtown districts, businesses saw a boost in revenue during peak hours of trail use. The Minuteman Bikeway has been credited for the reduction of motorized vehicle traffic in its corridor, as it provides pivotal connections to the downtown and city center. The trail also connects with the Massachusetts Bay Transportation Authority system of railroads, subway and buses.

V: TRAIL PATH AND RATIONALE

Methodology For Trail Placement

While designing the Red Cedar River Trail, the following criteria were considered:

- Existing plans for the Red Cedar River Trail
- Topography
- Floodplain
- Parcel Analysis

The Williamstown Township Trails and Greenways Plan proposes a trail along the south side of the Red Cedar River from Meridian Road to Zimmer Road, continuing on to the western edge of the City of Williamston. The proposed trail route in this plan is consistent with existing Trails and Greenways Plan in the township.

Topography

~~The land is low which will increase flooding and potentially close the proposed river trail for long stretches due to safety concerns.~~ Surrounding elevations are low, which increase the potential for flooding during periods of heavy precipitation. The river trail on both the south and north side of the river will lie exclusively in the floodplain (Figure 15).

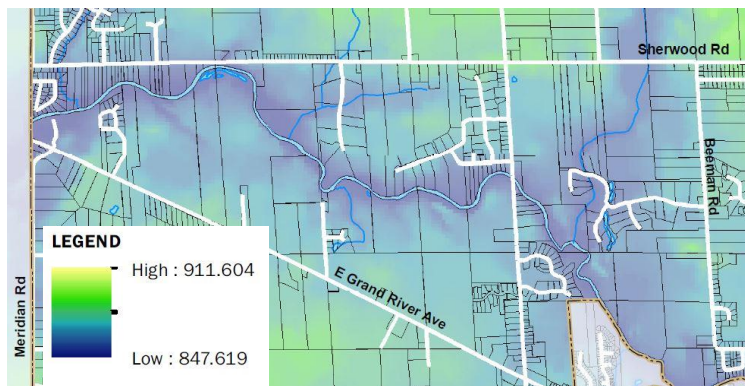
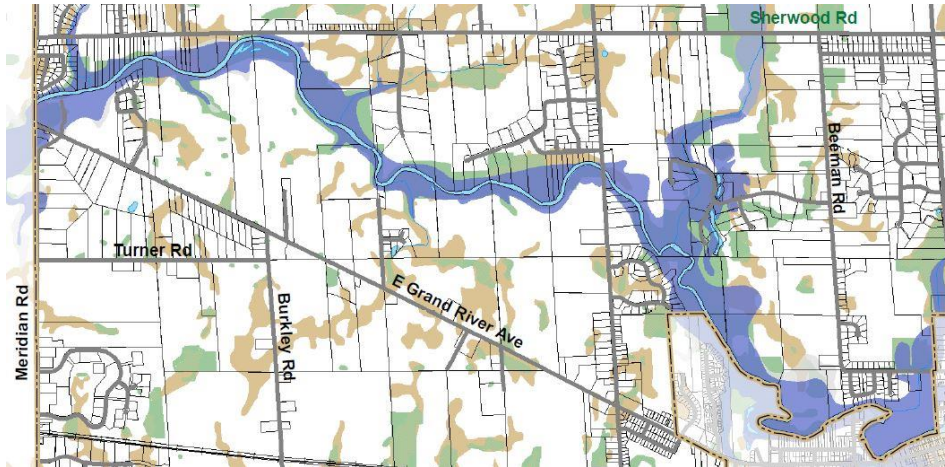


Figure 15 – The land around the Red Cedar River in Williamstown Township is low and will therefore lead to increase flooding on the proposed river trail.



Considering the likelihood of flooding on both the north and south side of the trail, maintenance and safety procedures have to be considered in detail to ensure the proposed trail will not be used during potentially hazardous times of the year. A coordinated schedule between the Township and the County may be necessary to determine appropriate time for trail closures.

Since a floodplain buffer surrounds the river on both sides, it would be impossible to build a river trail that avoids being in the floodplain. Therefore, only areas of steep topography are avoided.

Despite these challenges, many similar trails are built within floodplains. A trail is a renewable land use of a floodplain that would not require permanent structures to be erected.



Proposed Trail Location and Rationale

The analysis is presented in detail in three different sections: 1) Meridian Road to Thatcher Road; 2) Thatcher Road to Zimmer Road; and 3) Zimmer Road to McCormick Park.

The proposed Red Cedar Trail is approximately 6.4 miles long from Meridian Road to Putnam Street in Williamstown Township (Figure 13). Of the 6.4 linear miles, approximately 10% is already public domain (Township and McCormick Parks). The trail begins at the Michigan Department of Transportation (MDOT) Roadside Park at the corner of Grand River Avenue and Meridian Road and ends at McCormick Park off of Putnam Street in the City of Williamston. It is routed along both the north and south side of the Red Cedar River, through 24 parcels. The trail crosses the river twice – once, south to north, at Zimmer Road, and once again, north to south, at Putnam Road. No new bridges will need to be constructed to create this trail, although a cantilevered platform may serve as an option to circumvent a house on a private parcel that is located close to the waterway. This parcel will be discussed in detail in this section, and again in section VI. The trail crosses nine small tributaries, and offers public access to the river at four locations. The entire trail route is within a 500-year floodplain.



Photo 6: Michigan Department of Transportation Roadside Park on the corner of Grand River Avenue and Meridian Road in Williamstown Township.



Figure 17: The proposed trail along the Red Cedar River in Williamstown Township from Meridian Road to Putnam Street.

Meridian Road to Thatcher Road

From Meridian Road, the trail runs along the south bank of the river through a total of eight parcels, all within a 500-year floodplain (Figure 14). There are no conflicting land uses that interfere with the trail from Meridian Road to Thatcher Road. The south side of the river was selected, in part, because the north side has steeper riverbanks near Sherwood Road and Foote Cemetery. Across from Foote Cemetery, the trail dips south below a small lake surrounded by steep banks. The trail runs through the Township Park here, for about 3,300 linear feet; which is all public domain. The river can be accessed at the Grand River Bridge, and within the park.

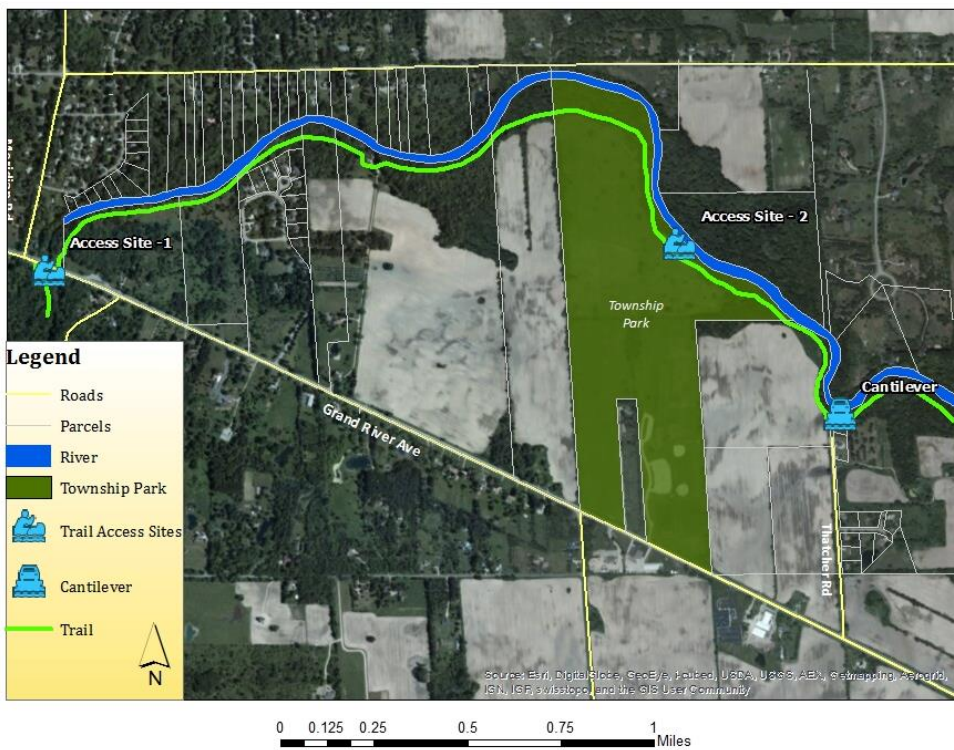


Figure 18: The proposed trail along the Red Cedar River in Williamstown Township from Meridian Road to Thatcher Road.

Access points

The trail has two access points in this section – at the trailhead by MDOT Roadside Park, and within the Township Park. The access sites should contain signage, maps and mileage information for the trail. The MDOT Roadside Park is accessible off of Grand River Avenue and has adequate parking for visitors to

serve as a possible kayak and/or canoe launch point. Grand River Avenue in Williamstown Township has existing bike lanes, which also allow for non-motorized access to the river trail. It is possible for the Township Park to have an access site for the trail, but it may be difficult to launch watercraft from this location, due to the parking lot's distance from to the river.

Connections to Key Nodes and Amenities

The Red Cedar Roadside Park and the Township Park are key amenities in this sub-section of the river trail. The proposed river trail provides non-motorized connection between these parks, supplementing the option to travel between them on Grand River Avenue. The river trail also connects to a subdivision off of Grand River Avenue that abuts the Red Cedar River.

Barriers and Opportunities

The parcel in Figure 19 is worth an additional study, due to the proximity of the built structure to the River. One option for this parcel is to route the trail in front of the property in question as outlined in Figure 15. A second option is a cantilever that extends onto the river and bypasses the parcel.

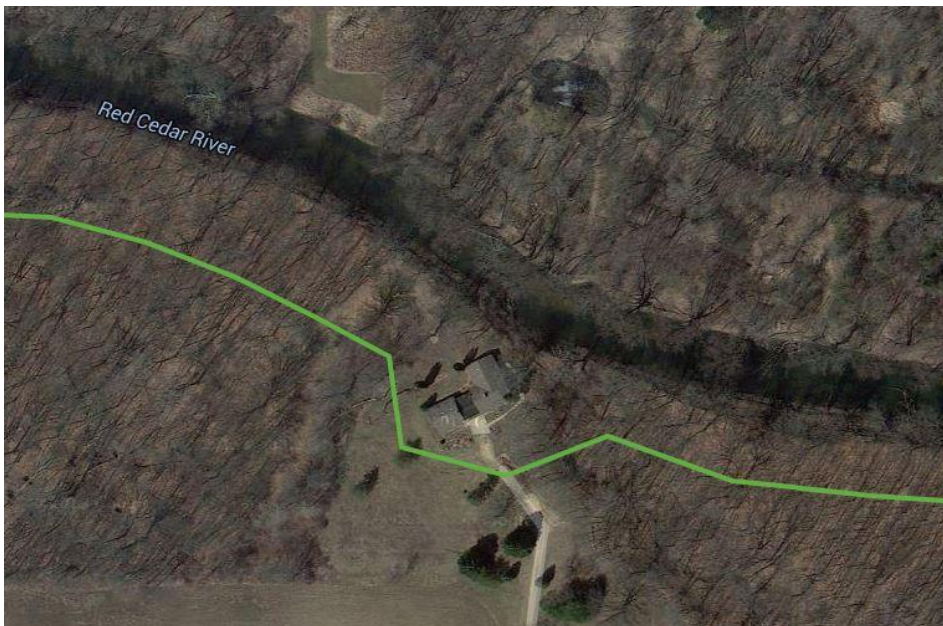


Figure 19: A structure along the Red Cedar River between Meridian Road and Thatcher Road is close to the south riverbank of the Red Cedar River and may require the trail to cut in front of the property or a boardwalk out over the water.

Thatcher Road to Zimmer Road

From Thatcher to Zimmer Road, the trail runs through three parcels (Figure 16). The trail also crosses two tributaries, before linking up with Zimmer Road, and crossing the bridge to the north side of the river. The river can be accessed at the county bridge at Zimmer Road.

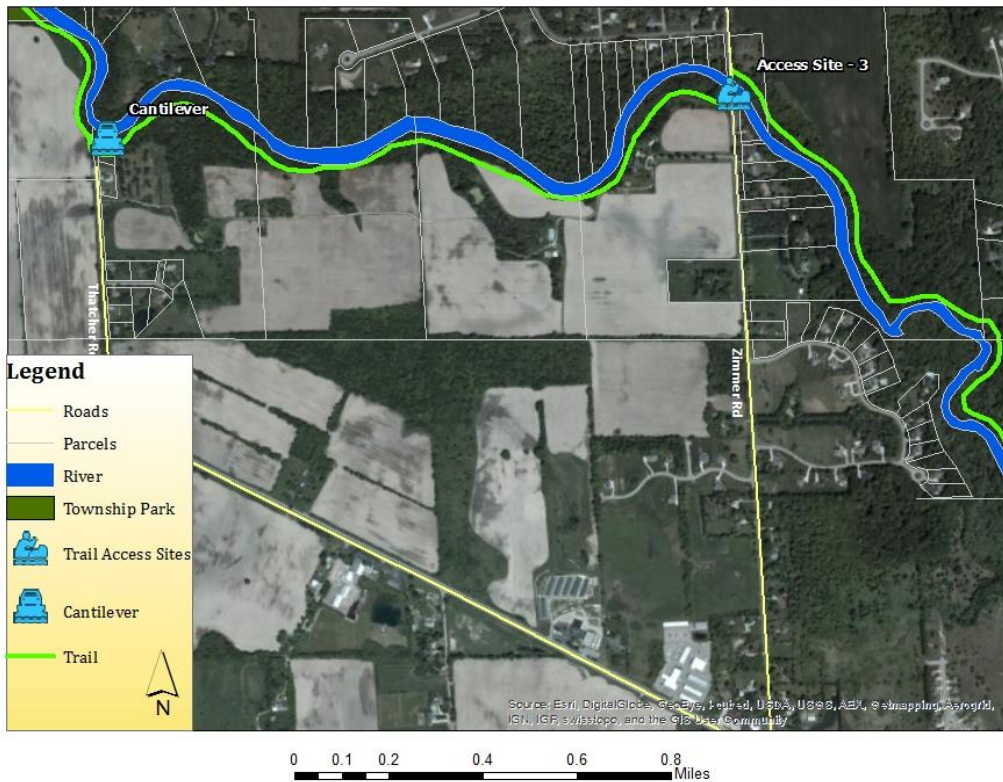


Figure 20 - The proposed trail along the Red Cedar River in Williamstown Township from Thatcher Road to Zimmer Road.

Access points

The river trail could be accessed from the county bridge at Zimmer Road. A parking lot could be built on the southwest or northeast corner of the bridge, allowing access to the river. This access point also provides the opportunity to travel on the north side of the river going east to Williamston.

Connections to Key Nodes and Amenities

Widened shoulders on Zimmer Road allow for non-motorized connections to Grand River Avenue to the South and Haslett Road to the north.

Barriers and Opportunities of the trail route

The house at the north end of Thatcher Road within 50 feet of the river's ~~edge which~~ edge, which may create a potential conflict. To continue the trail, a cantilevered platform could be built out into the river, which would go around the residential unit of concern (Figure 17). Another, possibly less expensive option would be to move the trail to the south of the built structure.

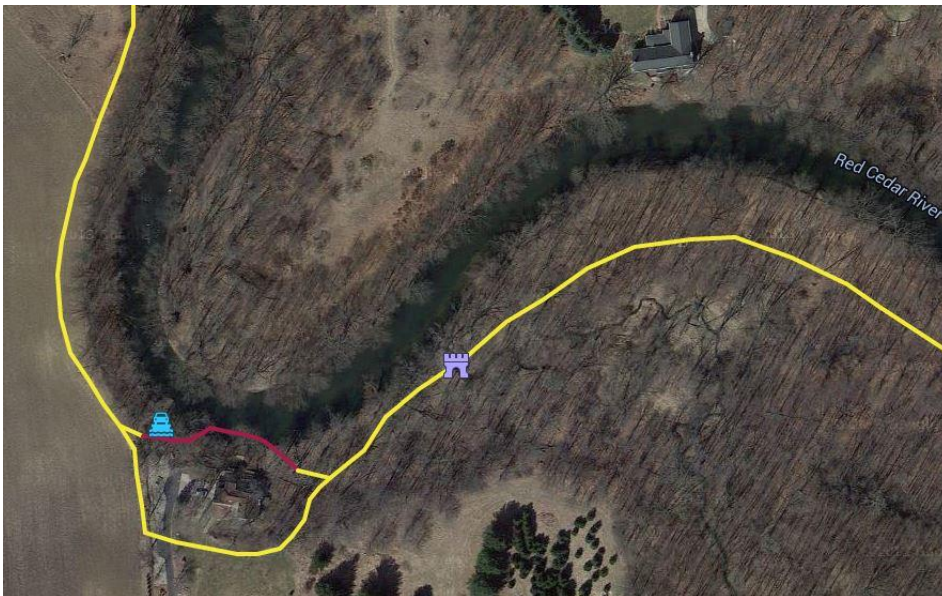


Figure 21: A built structure along the Red Cedar River between Thatcher Road is close to the south riverbank of the Red Cedar River and may require the trail to skirt south, or on to a cantilever system that extends over the water.

Zimmer Road to McCormick Park

From Zimmer Road, the trail runs along the north side of the river, through fifteen parcels (Figure 22). The south side is avoided because of the density of parcels, steepness of the riverbanks, and proximity to Grand River Avenue and a sewage treatment facility. The trail crosses six tributaries in this section, and runs along Brookshire Golf Course. The trail remains rural until it reaches Putnam Street, where it crosses the bridge to the south and leads to McCormick Park in the City of Williamston.

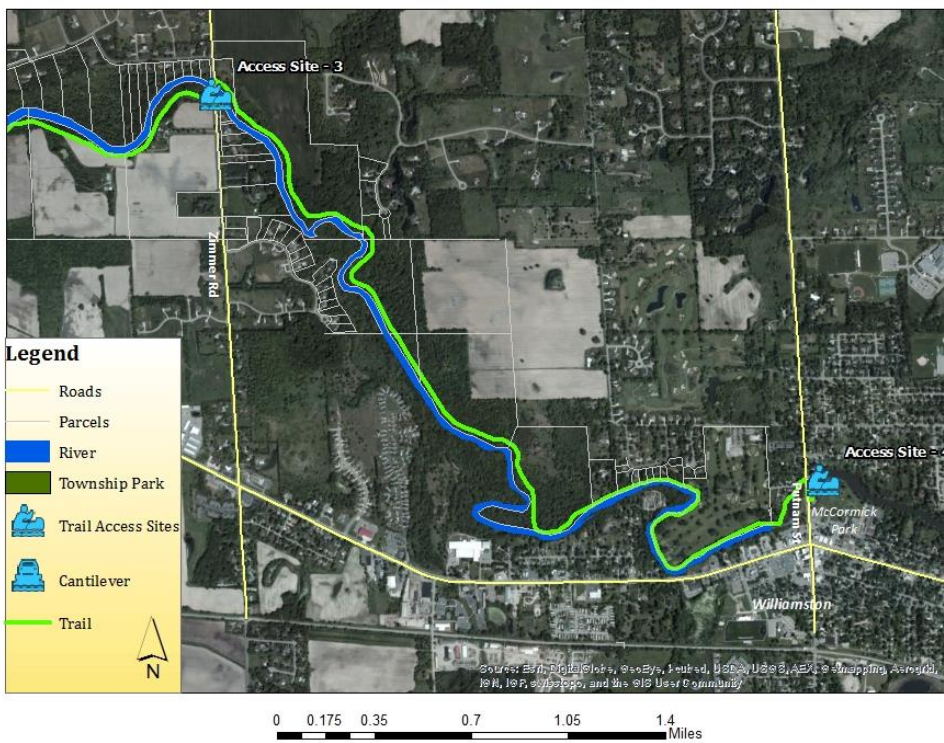


Figure 22- The proposed trail along the Red Cedar River in Williamstown Township from Zimmer Road to McCormick Park.

Access points

Trail access sites are proposed at Zimmer Road and McCormick Park. The proposed river trail would end at McCormick Park in the City of Williamston which provides another opportunity for kayak or boat launch on the east end of the trail. The trail could easily be extended however, to Meech Road and

beyond; future studies may accommodate such plans.

Connections to Key Nodes and Amenities

The trail ends in downtown Williamston, which is the commercial center of the city. The corner of Putnam Street and Grand River Avenue is heart of the commercial district in the city as it offers multiple commercial opportunities to local residents and visitors to the area.

Barriers and Opportunities of the trail route

This is the first time that the proposed Red Cedar River Trail crosses municipal boundaries from the Williamstown Township to the City of Williamston. Renovating McCormick Park and expanding recreational opportunities along the Red Cedar River are prioritized in the city's parks and recreation ~~plan-plan~~; however, a specific reference to a trail along the Red Cedar River is not mentioned.



Photos 7 and 8: The Zimmer Road bridge is the location where the proposed trail crosses from the south side of the Red Cedar River to the north side.

The proposed trail route follows the contours of the Red Cedar River in Williamstown Township on both the south and north side of the river. The trail crosses from the south to north side of the river at the Zimmer Road Bridge (Photos 7 and 8). The trail route was determined based on a parcel analysis on both sides of the river from Meridian Road to Putnam Street in Williamstown Township. The results of the parcel analysis that determined the proposed route of the trail will be discussed in the next section.

VI: TECHNICAL CONSIDERATIONS

There are many technical considerations to completing the envisioned Red Cedar River Trail. Below is an overview of technical concerns related to the design and construction of the trail.

Parcel Analysis

As outlined in the previous section, the proposed trail will run on the south side of the Red Cedar River from Meridian Road to Zimmer Road before shifting to the north side of the river from Zimmer Road to Putnam Street. Based on this proposed path, the trail will cut through 25 total parcels – 11 on south side of the river and 13 on the north side of the river (Figure 23)

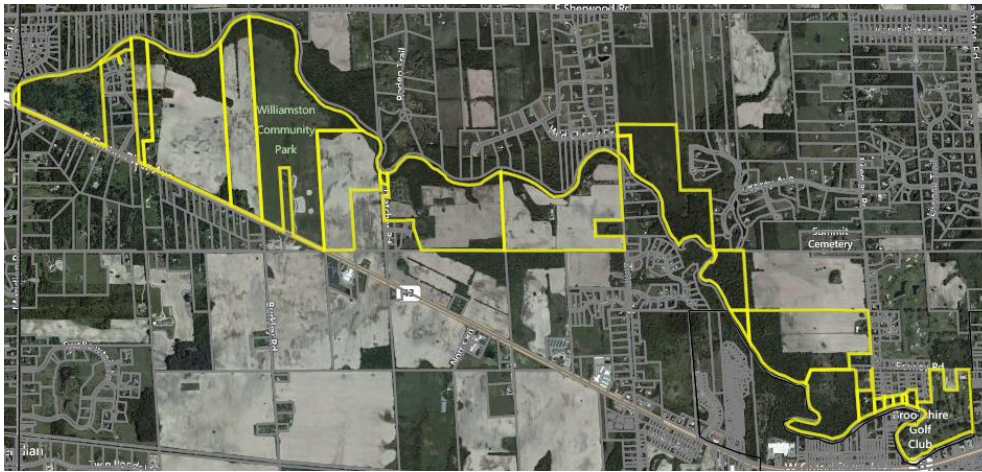


Figure 23 – The parcels that the proposed trail will cut across from Meridian Road to Puntam Street along the Red Cedar River.

The north side was selected from Meridian to Zimmer Road because there are fewer parcels to consider during the implementation and construction phase of the trail (Table 2). From Meridian Road to Zimmer Road, there are only 11 parcels on the south side of the river versus 58 parcels on the north side of the River.

Table 2: Parcel Analysis from Meridian Road to Zimmer Road along the Red Cedar River

	# of Parcels	# of Residences	Average Distance of Residence to River (When Applicable)	Average Distance of Residence to Trail (When Applicable)
North Side of Red Cedar River	58	49	274.6 ft.	246.4 ft.
South Side of Red Cedar River	11	10	137.4 ft.	112.7 ft.

10 of the 11 parcels on the south side of the river are privately owned. The publicly owned parcel is along the boundary of Williamstown Township Park.



Figure 24 – The parcels that the proposed trail will cut across on the south side of the Red Cedar River from Meridian Road to Zimmer Road.

Table 3 on the following page lists the 11 parcels. Parcels 5, 9 and 11 as numbered in the table and colored in red represent three potentially concerning parcels due to the residential structures that lie close to and abutting the Red Cedar River.

Table 3: Parcels from West to East on the South Side of the River from Meridian Road to Zimmer Road.

<u>Parcel #</u>	<u>Ownership</u>	<u>Size (In Acres)</u>	<u>Zoning Code</u>
1	Private	.9	402-RES-VAC
2	Private	50	401-RES-IMP
3	Private	2.76	402-RES-VAC
4	Private	19	401-RES-IMP
5	Private	115.5	401-RES-IMP
6	Private	61.5	602-DEV-VAC
7	Public	132.14	099-EXEMPT-REAL
8	Private	60	602-DEV-VAC
9	Private	.97	401-RES-IMP
10	Private	92.6	102-AG-VAC
11	Private	96.38	401-RES-IMP

Parcels 5, 9 and 11 were identified on the research team and mapped by the research team on the south south side of the river (Figure 25).

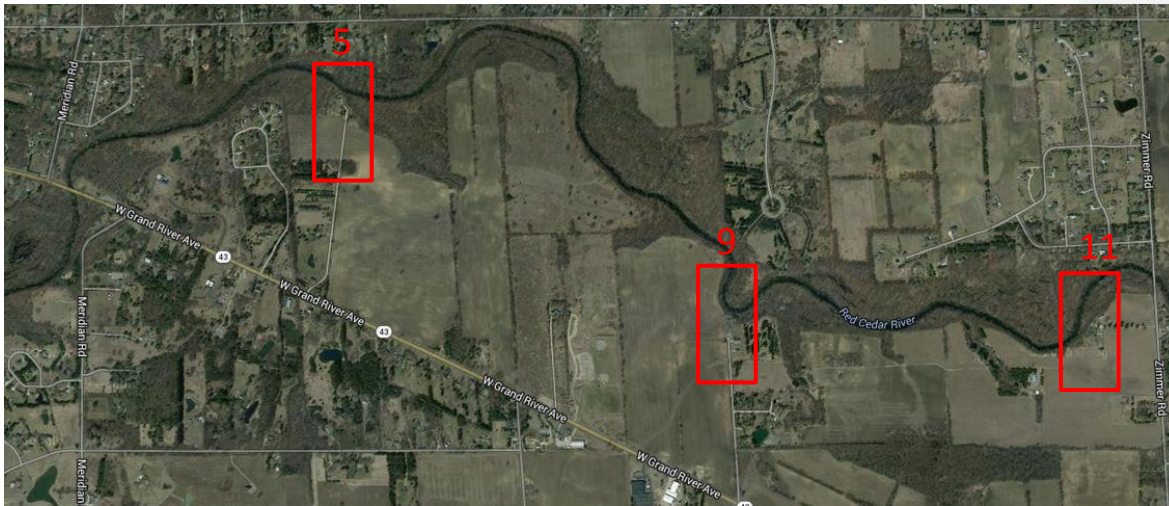


Figure 25: Three parcels on the south side of the Red Cedar River from Meridian Road to Zimmer Road that require further evaluation based on their proximity to the river.

Ideally, a river trail would follow the contour of the Red Cedar River. However, each of these parcels is located in close proximity to the proposed trail and will require creative solutions and negotiations to permit the trail to follow the exact contour of the river.

The first parcel (number 5 in Table 3 and Figure 25) in question, as shown in Figure 26, is further east on Grand River Avenue. The total size of the parcel is 115.5 acres but the challenge is the residence that abuts the Red Cedar River and is only accessible via a private unnamed road off of Grand River Avenue. The parcel lies 51.2 feet from the river which, considering the suggested 25-foot setback from the river and the suggested 10-foot multi-use two-way trail, hinders the possibility of running the trail through the back of the residence on the parcel. An alternative solution on this property might be a cantilever that puts the trail on the river itself. Another option is for the trail to angle away from the River, south and loop around the private driveway closer to Grand River Avenue. This option would require a greater easement but would maintain the resident's privacy considering the proximity of the trail in the alternative.



Figure 26 - The first (1) parcel requiring careful consideration on the south side of the Red Cedar River.

The second parcel requiring additional consideration lies at the end of Thatcher Road off of Grand River Avenue. The Thatcher Road subdivision consists of 10 homes, the last of which is on 0.97 acres with its back facing the Red Cedar River. The property is 43.1 feet from the river. Thatcher Road is a public right of way but the river is not visible from the road. Following the contour on the south side of the river is likely not an option behind this property due to its proximity to the river. A cantilever, like on the previous parcel, is also an option around this parcel. Another alternative is to lead the trail off the river and connect it to Thatcher Road to provide a connection to Grand River Avenue and re-loop towards the river via Cedarville Drive and then back up north to the river. This option will require the purchase of additional easements or parcels which will increase the overall cost of the trail but will also provide a necessary connection to Grand River Avenue.



Figure 27: The second (2) parcel requiring careful consideration on the south side of the Red Cedar River lies at the end of Thatcher Road off of Grand River Avenue.

The third (3) and final parcel under consideration on the south side of the Red Cedar River lies just west of Zimmer Road, and faces east (Figure 28). The 96.38-parcel contains three structures with the main residence being closest to the river at 117.6 feet. The other two structures are 120.7 and 153.2 feet from the river respectively. If an easement in the backyard of this property is not feasible, another option is to continue the trail east to Zimmer Road before the river bends. The plan aims to shift the trail to the north side of the river after the Zimmer Road Bridge and this option would begin that transition just south of the bridge. The cantilever option can also be considered.



Figure 28 - The third (3) parcel requiring careful consideration on the south side of the Red Cedar River lies abuts Zimmer Road and the Red Cedar River.

At Zimmer Road, the proposed trail moves to the north side of the Red Cedar River. The research team recommends the north side of the river because there are fewer parcels to negotiate with for during the implementation and construction phase of this plan (Table 4).

Table 4: Parcel Analysis from Zimmer Road to Putnam Street Along the Red Cedar River

	# of Parcels	# of Residences	Average Distance of Residence to River (When Applicable)	Average Distance of Residence to Trail (When Applicable)
North Side of Red Cedar River	14	13	192.7 ft.	167.3 ft.
South Side of Red Cedar River	53	51	114.9 ft.	89.1 ft.

All 14 parcels on the south side of the river from Zimmer Road to Putnam Street are privately owned (Figure 29).



Figure 29 – The parcels that the proposed trail will cut across on the north side of the Red Cedar River from Zimmer Road to Putnam Street.

Table 5 displays all 14 parcels on the north side of the river. East of Zimmer Road, parcels 1, 9-13, and 14 require further study and careful consideration.

Table 5: Parcels from West to East on the North Side of the River from Meridian Road to Zimmer Road.

<u>Parcel #</u>	<u>Ownership</u>	<u>Size (Acres)</u>	<u>Zoning Code</u>
1	Private	3.26	401-RES-IMP
2	Private	60.16	602-DEV-VAC
3	Private	2.57	401-RES-IMP
4	Private	19	102-AG-VAC
5	Private	3.42	102-AG-VAC
6	Private	75.56	102-AG-VAC
7	Private	36.37	102-AG-VAC
8	Private	5.37	401-RES-IMP
9	Private	.71	401-RES-IMP
10	Private	.97	401-RES-IMP
11	Private	.91	401-RES-IMP
12	Private	.43	401-RES-IMP
13	Private	.97	401-RES-IMP
14	Private	42.5	201-COMM-IMP

The challenges on the north side of the river are greater because there are a greater number of smaller parcels that need to be negotiated with in order to implement the trail. Figure 30 on the next page highlights the three areas of concern and their corresponding numbers in Table 5.



Figure 30: Three areas that are identified as challenges on the north side of the Red Cedar River from Zimmer Road to Putnam Street.

The first parcel (labeled “1” in Table 5 and Figure 30) to the north of the Zimmer Road Bridge, just east of Zimmer road is potentially troublesome, as the planned river trail would cut through its wooded front yard (Figure 31). It’s also a concern because this is the first time the proposed trail connects to the north side of the river which will require additional directional and welcoming signage closer to the residence. The residence is 233.9 feet away from the river and the entire parcel is 3.26 acres. Considering the proximity to the road and river, it would be advantageous for the Township to purchase a portion of this parcel outright in order to maximize the recreational potential of the cross-section of the trail from south to north. If the township owns a portion of the parcel, it can be converted into another trailhead by providing parking, signage and maps of the trail going in either direction. Another option for parking and trail signage is the southwest or southeast corner of the bridge. Both parcels to the south have unused frontage along Zimmer Road.

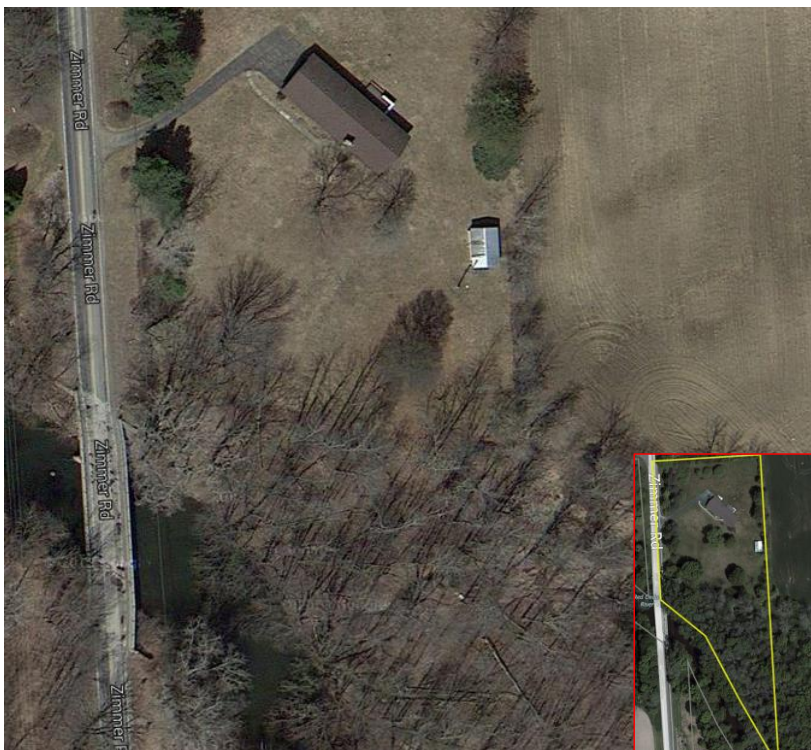


Figure 31: The first parcel on the north side of the river just east Zimmer Road may potentially serve as a Trailhead for the Red Cedar River Trail.

The last two parcels (labeled 9-13 and 14 in figure 30) could be troublesome for the construction of the trail because of their lot sizes and lack of public access. There are 11 parcels on Harvey Drive abutting the river in the section labeled “6” and most of the lots are less than 30 feet from the Red Cedar River. Multiple easements need to be negotiated in this segment in order for the trail to follow the contour of the river. The Brookshire Golf Course abuts the river from McCormick Street to Putnam Street. The trail, as currently planned could run the southern boundary of the golf course until it approaches Riverside Drive. At Riverside Drive, the trail would move to the street until it connects with Putnam Street in the City of Williamston. The golf course could be an advantage for the development of the trail because it is a single parcel.

An alternative to sections 1 and 9-13, is to shift the trail north, prior to reaching either sections, and using Rowley Road as an access point to Putnam Street. The shift to Rowley Road would require negotiations with fewer landowners, but the trail would also significantly stray away from the river.

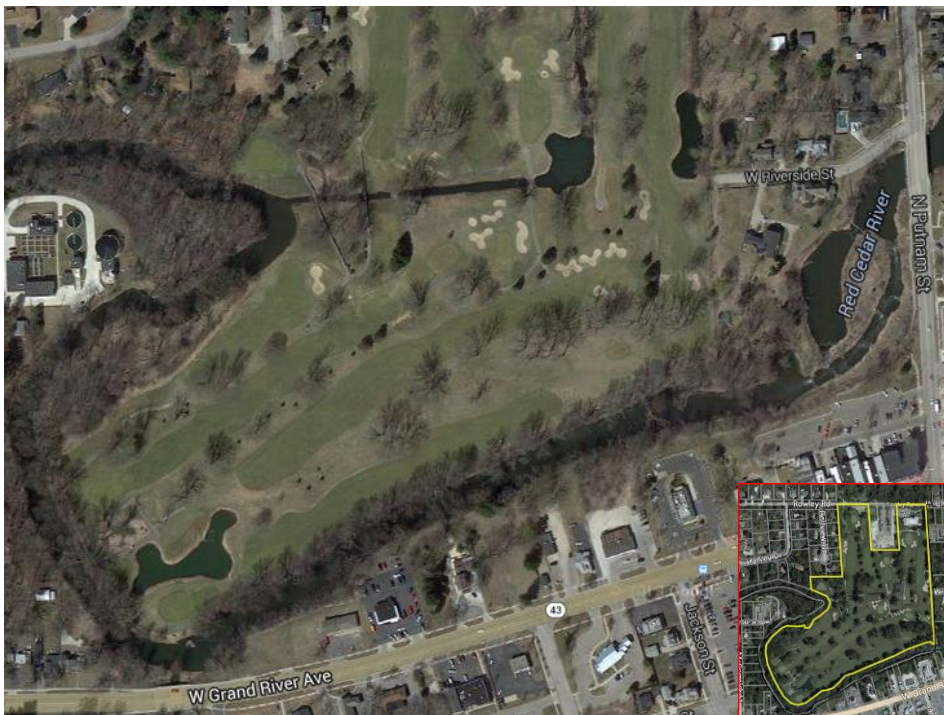


Figure 32: The golf course needs to be a major partner during the planning and implementation process of the Red Cedar River Trail in Williamstown Township and the City of Williamston.

The proposed trail plan in this report requires further research and discussion at each of the seven areas mentioned above. The Red Cedar River Trail will not be possible without consistent cooperation and constant communication with landowners along the river and the entire Williamstown Township community.

Easements

An easement is the right to use a portion of a parcel for a specific stated purpose. An easement is legally tied to a parcel and carries over between owners. The size of the easement is dependent on the intended use. In the case of the Red Cedar River Trail, easements may need to be purchased from property owners along the Red Cedar River in order to acquire rights to develop the trail through the private parcels. The value of easements is dependent on the total assessed value of the parcel and requires negotiation with landowners.

Materials:

The type of materials used for the trail will largely determine the character of the trail, the recreational purposes for which it is used, and its accessibility to users. The materials used will also determine the estimated costs of constructing the trail and subsequent maintenance requirements over the life of a trail. The factors to be considered when choosing material options are: accessibility, cost, maintenance, aesthetics, environmental influence and continuity with connecting trails. The three materials being considered for the Red Cedar River Trail are concrete, asphalt, and crushed stone.

Concrete

Concrete is a hard and fast surface for recreational activities. With appropriate maintenance, it is a long-lasting material with a life expectancy of 25 years or more. Concrete trails are usually found in urban environments, and in areas with a high volume of users. Concrete trails are ideal for bicyclists, in-line skaters, strollers, and individuals with disabilities.



Photo 9: An example of a concrete trail.

Asphalt

Asphalt is an aggregate material and is a cheaper alternative to concrete. Asphalt provides a usable surface for individuals with disabilities, pedestrians, inline skaters, skateboarders, walkers and many other trail users that may require a smooth surface. With proper maintenance, its life span is estimated at an

average of 10 years. Asphalt is subject to cracking in conditions of extreme weather and precipitation, and can be deformed by growing tree roots.



Photo 10: An example of an asphalt trail

Crushed Rock

Crushed rock is an inexpensive yet durable option, depending on the exact composition of the mixture. Although adequate for pedestrians and mountain biking, crushed rock may be difficult for skaters and wheelchairs. Unlike concrete and asphalt, crushed rock complements the natural environment and aesthetics of the surrounding parcels along the Red Cedar River.



Photos 11 and 12: Two examples of crushed rock trails.

Appropriate signage directing users to the river trail and providing direction once on the trail is essential to enhance the recreational and transport experience. Wayfinding and signage contributes to the trail by informing the trail user of upcoming access and exit points to the trail, and can inform users of the trail rules and guidelines. Proper signage can enhance safety along the trail and provide information about trail boundaries and crossings, as well as offering directional and positional reassurance. The following signage options could be placed on the Red Cedar River Trail.

- A. Information signs for highway users
- B. Warning (Pedestrian Crossing) signs for highway users
- C. Entrance sign
- D. Trailhead Information sign/Kiosk
- C. Regulatory (usage control) signs
- D. Road Crossing signs
- E. Reassurance markers/blazes
- F. Direction change indicators
- G. Confirmation/Identification signs (trail logos)
- E. Interpretive signs
- F. "Crossing Private Land" signs
- H. You-Are-Here signs
- I. Destination signs
- N. Boundary signs
- O. Adopter signs

See the appendix for a complete description of required signage along the trail.

VII: Red Cedar River Trail Plan

As outlined in this report, the Red Cedar River Trail is a great opportunity for Williamstown Township and Ingham County. However, the planning, engineering, and construction of the trail present challenges and obstacles that should be addressed in phases. Constructing the river trail is a long-term project that will require concerted and sustained effort by a multitude of stakeholders including: Williamstown Township, Ingham County, Tri-County Regional Planning Commission, area recreational advocates, and local stakeholders and residents. This Red Cedar River Corridor Plan is the first step of many ahead to make the trail a reality in Williamstown Township.

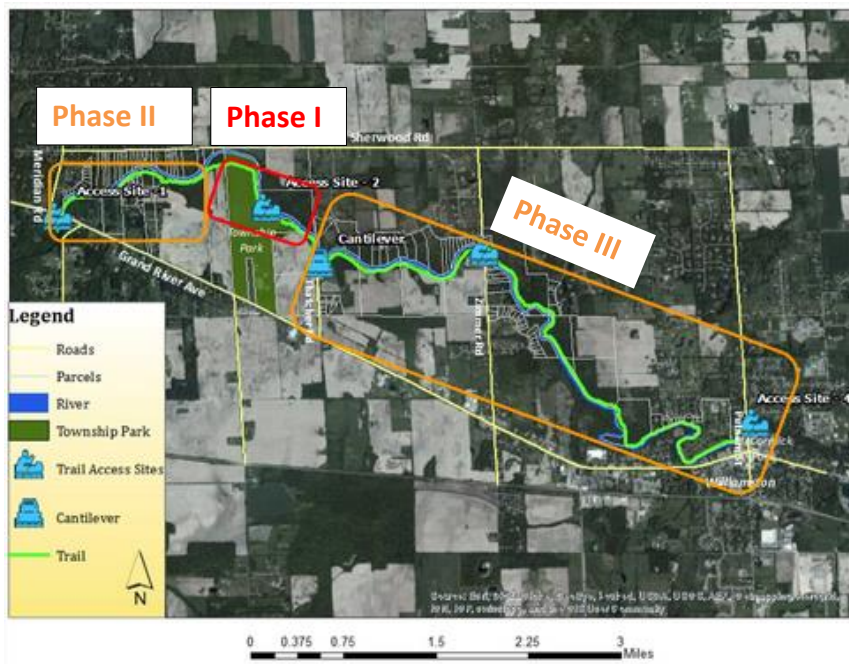
The research team focuses on five phases of construction for the Red Cedar River Trail:

Phase I – Construct the trail and trailhead in Williamstown Township Community Park (3-5 years).

Phase II – Construct the trail and trailhead at MDOT Roadside Park and connect it to Williamstown Township Community Park (3-5 years).

Phase III – Construct the trail from Williamstown Township Community Park to Putnam Street in the City of Williamston

Phase IV – Explore opportunities to expand the Red Cedar River Trail to Meridian Charter Township and East Lansing to the West and Webberville to the east (6-10 years).



■ *Figure 33: The three phases of development for the Red Cedar River Trail in U Williamstown Township.*

Below, is a detailed description of each of these recommendations organized chronologically. The research team recommends that these steps be followed in order in order to maximize the resources available to implement this plan and construct a Red Cedar River Trail in Williamstown Township.

1-2 Years - Organizational Infrastructure and Developing Township Property

The river trail is supported by the Williamstown Township planning department, Ingham County Parks and Recreation, and the Tri-County Regional Planning Commission. The efforts and desires of the local and regional governments are supported by funding opportunities at the State and Federal level. The recommended efforts in the next two years is to continue to develop synergy between local governments, increase grassroots effort to promote the trail in the region, and conduct additional studies that are necessary to break ground on the trail.

1. Form a “Friends of the Red Cedar River Trail” group made up of area stakeholders in Williamstown Township and Ingham County.

A “Friends of the Red Cedar River Trail” group should be a grassroots organization that would advocate for the construction of the trail, rally public support for trail, offer marketing and communication material, create recreational programs, organize regular clean-ups and volunteer maintenance efforts, and provide additional support to local governments. The friends group can also seek funding opportunities for the trail while organizing fundraisers for the construction and maintenance of the trail. The organization should start in Williamstown Township and ultimately expand into neighboring Meridian Charter Township and the City of Williamston and one day partnering with the Friends of the Lansing River Trail. The founding members of the friends group should include local officials, business owners, neighborhood leaders, and residents.

2. Commission landscape architect students from the School of Planning, Design, and Construction at Michigan State University to explore the design opportunities at four trailhead locations.

In Fall 2014, a group of landscape architecture students from the School of Planning, Design and Construction at Michigan State University will be designing elements of the river train in Williamstown Township in order to take the next step for this plan. The research team advises the team of landscape architects to focus on the following four areas (Figure 34).

- 1) Trailhead at MDOT Roadside Park
- 2) Entrance and trailhead at Williamstown Township Community Park
- 3) Zimmer Road Bridge Crossing
- 4) Connection from Brookshire Golf Club to the boardwalk on the south side of the Red Cedar River and McCormick Park to the east of Putnam Street.

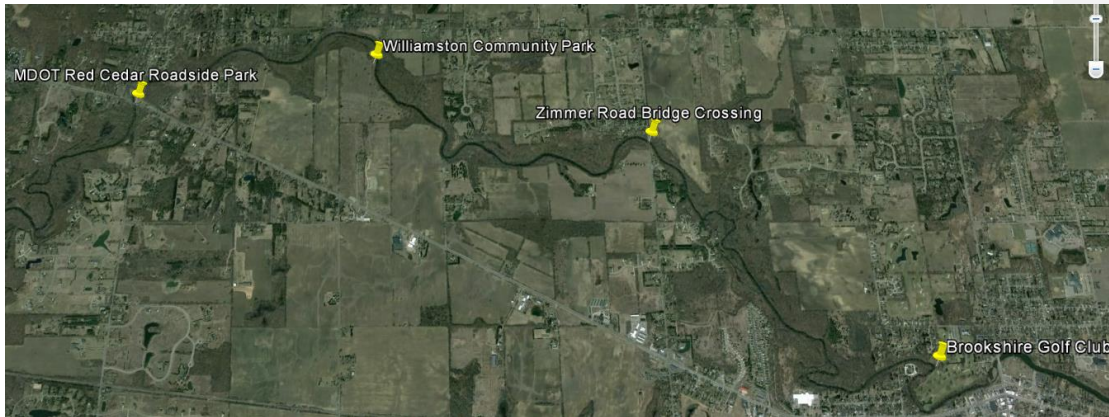


Figure 34: Four potential trail head location for the Red Cedar River Trail in Williamstown Township.

These four areas are key access points to the river trail in the township and have opportunities for parking. The current infrastructure at these sites is informal as it lacks adequate, signage, rules, directions or any elements that distinguish them as parks and potential trailheads. These sites should be grand gateways to the trail that provide amenities, maps and introduce the trail and the history of Williamstown Township to users.

3. Improve bicycle and pedestrian signage and road markings on Zimmer Road and Putnam Street

As outlined in this plan, Zimmer Road and Putnam Street are major crossings for the river trail in Williamstown Township. The Zimmer Road Bridge (photos 7 & 8 on page 42) is the point where the trail moves from the south side of the Red Cedar River to the north. At Putnam Street the trail connects with McCormick Park and the boardwalk on the south side of the river that abuts the downtown businesses district the City of Williamston. Currently, Zimmer Road and Putnam Street have marked and paved 4-foot shoulders but greater efforts are needed to ensure the safety of bicyclists and to enhance the non-motorized transportation culture in the Township. The shoulders need to be clearly marked as bicycle lanes going north and south on both Zimmer Road and Putnam Street. Additionally, pedestrian and bicycle crossing signs need to be placed at intersections on both streets as well as signage that indicates the pedestrian and bicycle right-of-way. It is necessary to implement these steps before the trail is constructed in order to build an expectation in the community for future users of the trail. This also permits drivers an opportunity to get accustomed to the new signage while promoting bicycle safety and users in Williamstown Township.

4. Conduct a traffic study from Grand River Avenue to Sherwood Road (south to north) on both Zimmer Road and Putnam Street to determine techniques to create a safer and more bicycle friendly environment.

It is necessary to conduct a traffic study to determine traffic calming techniques on Putnam Street and Zimmer Road between Grand River Avenue and Sherwood Road. Traffic calming techniques are essential to create safer crossings for the river trail in Williamstown Township. Careful consideration should be given to the Zimmer Road Bridge and the crossing at Putnam Street between the Brookshire Inn and Golf Club and McCormick Park. Signs would alert motorists of the presence of a trail (and its users) and encourage slower speeds.

5. Conduct a countywide baseline recreational survey to determine current uses of trails and other recreational facilities.

The research team conducted a Red Cedar River Trail Workshop (appendix A3) as a part of this plan; however, further research is needed to determine the attitudes and potential usage of the trail in Williamstown Township. Additionally, baseline data measuring current usage of trails in Ingham County from Township residents as well as those residing in neighboring jurisdictions needs to be gathered in order to assist with determining the volume and type of future usage of the trail. This baseline survey would also be an opportunity to determine how the Township and County prefers to finance the Red Cedar River Trail not only in Williamstown Township, but potentially in the county as well.

6. Call a special meeting with all parcel owners along the Red Cedar River in Williamstown Township to share the opportunities for the desired trail.

The greatest challenge to implementing this plan is the number of private parcels that align the proposed path of the trail in Williamstown Township on both the south and north side of the Red Cedar River. As outlined in the parcel analysis, the Township will need to either purchase segments of parcels or acquire easements from private landowners in order to construct a river trail. It is crucial that advocates for the trail and governmental planning staff at all levels of government to clearly communicate their intentions and plan effectively, and efficiently with landowners along the river. A special meeting should be called with landowners on both the north and south side of the river. Also, individual meetings need to be held immediately with the owners of the five parcels outlined in the technical concerns section of this plan.

7. Perform an engineering study to determine the exact cost of purchasing easements, clearing brush, and constructing a 10-foot wide, crushed rock trail as outlined in this plan.

This plan recommends a 10-foot wide crushed rock trail from Meridian Road in Williamstown Township to Putnam Street in the City of Williamston. The width is appropriate for two-way pedestrian and bicycle traffic while permitting opportunities for passing. Crushed rock is the recommended material because of its low cost of construction and maintenance. In order to accurately determine the cost of construction, it is important to commission an engineering feasibility study to project the width of potential easements, clearing brush, improving access points to the river from Grand River Avenue, following the contours of the rivers, and materials for the trail. This plan provides cost estimates based on the construction of past trails but a study specific to the landscape of the Red Cedar River in Williamstown Township is necessary before moving forward with implementing the plan. Even though it is recommended that the trail be

completed in phases, the engineering study should span the entire length of the river in Williamstown Township in order to anticipate costs in future phases of the trail development.

8. Develop a marketing and communication strategy for the Red Cedar River Trail.

It is important to have a communication and marketing strategy in order to brand the Red Cedar River Trail and discuss it with citizens in a unified and concerted manner. Constructing the trail is a long-term project that involves many stakeholders and residents. A campaign promoting the benefits of the trail, outlining financing options, and educating residents on the importance of this asset to the Township and the County is a key aspect of maintaining public support for construction, and encouraging use of the trail.

9. Conduct a market analysis to determine the potential cost of easements or parcel acquisition depending on negotiations with individual property owners.

After the engineering study determines the width of required easements at every privately owned parcel, a market analysis should be conducted with existing parcels to determine the exact costs of acquiring easements from private landowners. Full parcel acquisition is also an option on parcels where an easement cannot be appropriately negotiated. The market analysis must determine the required capital investment to purchase easements to construct the trail from Meridian Road to Putnam Street. In addition to determining the cost of purchasing easements, opportunities must be explored to obtain the necessary capital to make these purchases. The negotiation and cost of easements and the difficulty in obtaining funding will be a limiting factor in implementing this plan.

10. Explore and apply for funding opportunities for construction of the Red Cedar River Trail in Williamstown Township Community Park.

As outlined in the Cost and Financing Options section of this plan (page 65), there are many local, state, and federal options for obtaining funding to construct a trail. All of the options mentioned in that section should be explored for the portion of the trail in Williamstown Township Community Park. A mowed grass trail system with three loops – 1.1 miles, 0.5 miles, and 0.7 miles – already exists in the Township Park. The river trail will run along the north edge of the park and will add to the existing trail system. This park is the ideal place to start constructing the river trail because the Township already owns the property and it is aligned with the interurban trail system for the Community Park that was outlined in its Trails and Greenways Plan produced in 2010. It is preferred that a multi-year funding proposal be drafted and implemented to account for the multiple phases of trail development.

3-5 Years – Constructing Phase I and II

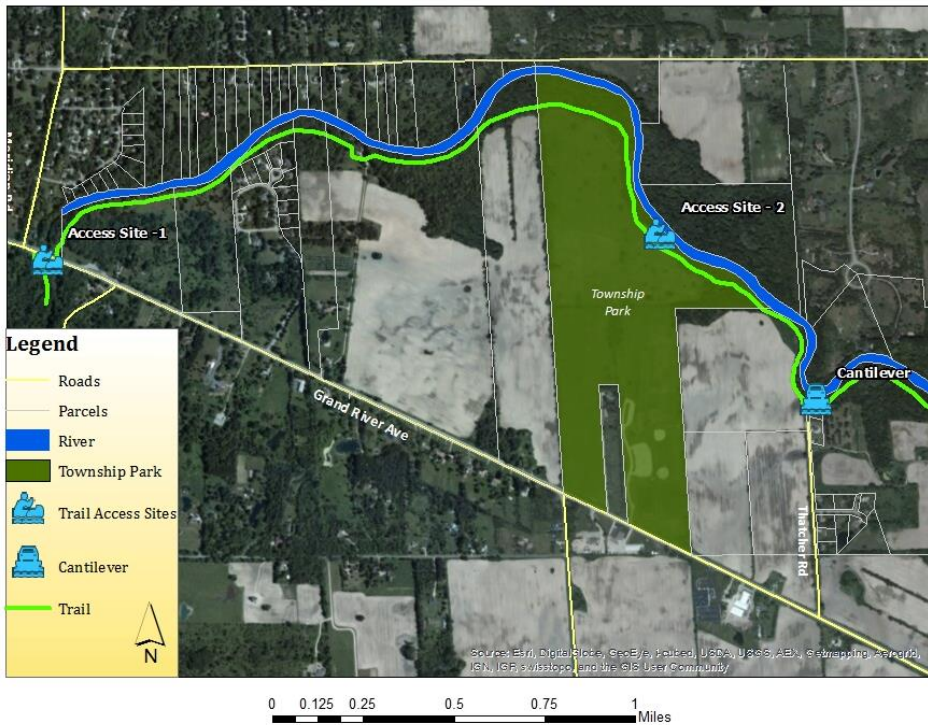
The next phase of this plan provide will be the formative years for trail development and construction. While the first two years complete the trial planning, engineering, and financing process, the next five years should be focused on physical implementation of this plan and trail construction. The trail should be constructed in phases starting at Williamstown Township Park, and then moving east to MDOT Roadside Park in Meridian Charter Township to the west before expanding east to Zimmer Road.

11. Obtain local and/or state funding for purchasing easements or properties outright depending on negotiations with individual property owners.

Once the market analysis for easements or parcel acquisition is complete, the next step is to determine a strategy to make the necessary purchases. Funding to purchase easements may result from a county millage, the MNRTF – which offers funds for property acquisition, local fundraising efforts from the Friends of the Red Cedar River, private financing, and/or donations from local foundations. It is likely that multitude of options will be necessary to obtain the appropriate funding for the trail.

12. Construct the trail and trailhead in Williamstown Township Community Park.

The first phase of trail construction should be on the north edge of Williamstown Township Park on the south side of the Red Cedar River. This is publicly owned land and will enhance the already existing trail system in the park.



13. Hold a community celebration after completing the trail construction and Williamstown Township Park.

It is important to take a moment to reflect on the community's accomplishments over the past several years and re-engage residents and stakeholders with the work that lies ahead. A community celebration should be organized once the first portion of the Red Cedar River Trail in Williamstown Township Park is complete. This event will bring the community together to illustrate the social potential of recreational open spaces in the Township while also re-focusing residents and stakeholders for the work remaining to complete the river trail.

14. Construct the trail and trailhead at MDOT Roadside Park and connect it to Williamstown Township Community Park

15. Construct the trail Williamstown Township Community Park to Zimmer Road

The completion of this step will complete the construction of the trail on the south side of the river in Williamstown Township. After Zimmer Road, the plan recommends moving to the north side of the Red Cedar River until Putnam Street in downtown Williamston.

6-10 Years – Construction Phase III and Trail Expansion in Ingham County

The future vision of the trail is to expand beyond the borders of Williamstown Township and into Meridian Charter Township to the west and the City of Williamston to the east. The vision is for the Red Cedar River Trail in Williamstown Township to become the Red Cedar River Corridor that connects to the west most trailhead on the Lansing River Trail. This vision will require partnerships and collaboration with neighboring municipalities and a unified effort to fully realize the possibilities of a regional river trail.

16. Partner with the City of Williamston and Brookshire Inn and Golf course to develop the River Trail on the north side of the River from Zimmer Road to Putnam Street.

17. Hold a community celebration to reflect on the work completed over the last 10 years.

The purpose of the second celebration is to once reflect on the accomplishment of the past decade while moving forward with a more regional focus on the Red Cedar River Trail. At this point the majority of the construction on the trail in Williamstown Township should be completed and the community should be visioning the expansion of the trail to the west in Meridian Charter Township and the east to Webberville. This celebration will be a good opportunity to conduct a charrette or workshop for the expansion of the trail. Also, this will be an opportunity to conduct a follow-up trail survey to measure trail usage and attitudes of residents.

18. Conduct survey to measure potentially new uses, attitudes, and perceptions of outdoor recreation trail use.

The survey should be modeled after the first survey to measure trail uses, attitudes, perceptions and outdoor recreation opportunities on the trail. The survey data collected over the last 10 years should be used by Ingham County to pursue future funding for the Red Cedar River corridor. The survey results will

also be pivotal for future community engagement efforts to provide data and a narrative of the positives and negatives of the trail as described by residents in Williamstown Township.

19. Phase IV – Explore opportunities to expand the Red Cedar River Trail to Meridian Charter Township and East Lansing to the West and Webberville to the east.

In order to transform the Red Cedar River Trail into a regional corridor, Ingham County and the Tri-County Regional Planning Commission need to facilitate partnerships with neighboring municipalities to ensure the extension of a trail along the Red Cedar River. This is both an obstacle and an opportunity. Ideally, the Red Cedar River Trail connects to Michigan State University’s trail system and the Lansing River Trail to the west. A thorough plan and grassroots community engagement effort are necessary in Meridian Charter Township as preliminary steps to expand the river trail. Expanding in Meridian Charter Township should be the first priority followed by an eastward expansion to Webberville.

VIII: COST AND FINANCING OPTIONS

Estimated Cost

The total length of the Red Cedar River Trail is 6.4 miles, stretching from Meridian Road to Putnam Street. The length, width, and materials used for construction of the trail will determine the cost of construction.

The trail must accommodate two-way traffic of pedestrians, joggers, bicyclists and other users of the trail. The standard trail width for two-way traffic is 10 feet to 12 feet depending on the volume of users expected. The wider the trail the more accommodating it is for multiple and diverse simultaneous users. The width of the trail must also account for passing slow-moving users.

There are positives and negative to the various material options for the trail. Hard surface materials, although expensive, are more accommodating for multi-use trails and require less maintenance and can endure frequent use. Installing a trail using hard surfaces such as asphalt ranges from \$200K per mile to \$300K per mile and can last for 7 to 15 years. Asphalt works well for bicyclists, inline skaters and other trails users and is commonly used in urban areas. Materials such as concrete surfaces price from \$300K per mile to \$500K per mile. This particular surface is normally utilized in urban areas with extreme climate impacts; vulnerability to flooding and can last for over 25 years. Other surface materials such as crushed rocks are accessible for majority of trail users except for inline skaters. Crushed rock also enhances the aesthetics of the natural landscapes. The cost of crushed rocks is inexpensive and ranges from \$80K per mile to \$120K per mile.

The construction of the Red Cedar River Trail will also require clearing of trees and overhead brush as the path approved in the section above is often populated with woodlands. Removing existing vegetation will add to the cost of construction a trail. Table 6 illustrates the estimated cost of a 10-foot trail based on the material used and required clearing.

Table 6: Estimated Costs of Trail Construction Based on Obstacles and Materials

Trail Width	Trail Surface	Obstacles	Cost Per Mile
10-foot trail	Crushed aggregate, 4-inch depth	-soft soil and light to no vegetation	\$37,000
		-large rocks or heavy vegetation	\$48,200
10-foot trail	Asphalt	-soft soil and light to no vegetation	\$125,000
		-large rocks or heavy vegetation, or wet soils	\$300,000
10-foot trail	Concrete	-soft soil and light to no vegetation	\$188,000
		-large rocks or heavy vegetation	\$600,000

In addition to the construction costs, there will be annual maintenance costs associated with the river trail in Williamstown Township. Flooding is a specific concern in the Red Cedar River Trail. Flooding can result in foliage and debris on the trail, erosion along the path and large rocks and gravel washing onto the trail. Other estimated maintenance costs for the trail are outlined in Table 7.

<i>Table 7– Estimated Annual Trail Maintenance Costs Per Mile</i>	
One mile of paved trail costs:	Cost
Drainage and storm channel maintenance (3-5 times a year)	\$500.00
Sweeping/blowing debris off trailhead (16-24 times a year)	\$1,200.00
Pickup and Removal of trash (16-24 times a year)	\$1,200.00
Weed vegetation control (8-12 times a year)	\$1,000.00
Mowing of 3ft grass shoulder along trail (8-24 times a year)	\$1,200.00
Minor repairs to trail furniture/safety features	\$500.00
Maintenance supplies	\$300.00
Equipment fuel and repairs	\$600.00
Total	\$6,500.00

The annual maintenance costs of the trail should be considered prior to constructing the trail. Maintaining the trail is a vital component to ensuring a safe and positive user experience for residents of Williamstown Township and the surrounding community.

Financing Options

Expanding the trail system in the State of Michigan is a priority for Governor Rick Snyder, as mentioned earlier. There are federal state and local opportunities to obtain funding for a trail. Below are some of the resources and funding avenues that can be explored for the purposes of funding the construction of the river trail.

Federal – Transportation Alternatives Program (TAP)

The Transportation Alternatives Programs, as stated in its name, provides funding for alternative transportation routes, including recreational trail projects. In 2013 and 2014, \$809 million and \$820 million has been available for transportation enhancements through this program.

Michigan Natural Resources Trust Fund

In 2013, the Michigan Natural Resources Trust Fund (MNRTF) is considering \$46.5 million in proposed projects. MNRTF funds are available for trail projects but they require local matches. MNRTF funds can also be used for land acquisition to construct trails. Table 8 illustrates trail projects being considered for funding in 2013.

Table 8– 2013 MNRTF Trail Project Being Considered for Funding		
Project Title	Project County	Grant Request Amount
Jonesville Rail Trail Construction	Hillsdale	\$296,000
Hart-Montague Trail State Park Reconstruction	Oceana	\$300,000
Fred Meijer Berry Junction Trail Development	Muskegon	\$300,000
Fred Meijer White Pine Trail SP Surface and Bridge Improvements	Various	\$300,000
North Western State Trail Surfacing - Alanson to Mackinaw City	Emmett	\$282,000
Great Lakes Bay Regional Trail Development	Saginaw	\$280,000
Point AuGres Park Blue Water Trail Development	Arenac	\$126,100
Clinton River Trail Improvements - Auburn Hills	Oakland	\$73,500
Clinton River Trail Improvements - Rochester	Oakland	\$156,700
Clinton River Trail Improvements - Rochester Hills	Oakland	\$93,700
Paul Henry Trail Extension and Riverfront Improvement	Barry	\$300,000
Arcadia Dunes University - Accessible Trail and Overlook	Benzie	\$292,100
Interlochen Recreational Trail Development	Grand Traverse	\$192,000
Clare Soccer Fields and Exercise Trail	Clare	\$300,000

State of Michigan Department of Natural Resources – Recreational Trails Program

The State of Michigan Recreational Trails Program has allocated \$2.7 million in funds for trail improvements in the state. An additional \$800,000 is available to fund the maintenance and development of recreational trails and trail related facilities. The deadline to apply for the grants is June 1, 2014.

Millages, Bonds and Assessments

Local, county, or state millages and bond issues may be passed by voters or governing bodies. Millages can be passed for park operations, maintenance, development, land acquisition and a local trail way system initiative. Using a vote to decide how tax dollars are allocated is a fair and efficient way to fund projects, like trail systems, as it ensures that a local asset is developed by local funds. A millage ensures district or regional buy-in and places the financial responsibility of the capital improvement directly on the users of the trail.

Private and Corporate Foundations

Private and corporate foundations are another funding option for local projects. Foundations that promote public health, recreation opportunities, and/or athletic endeavors should all be considered as potential sources of funding. Proximity to a local foundation enhances the probability of receiving funding from such organizations.

Friends Groups and Other Organizations

The long-term success of many trail projects and non-motorized initiatives has been due to “friends” groups and advocacy organizations that follow a project through from inception to implementation. Friends groups can also provide a number of services including, physical labor as through “Adopt-a-Trail” maintenance or construction activities, fundraising, user education, promotion, and actual surveillance of the facility. Civic groups and school groups can play an important role in supports of non-motorized projects through advocacy, promotion, and hosting events. In addition, these groups have the opportunity to apply for grants and other avenues of funding to construct and maintain the trail.

Financing the river trail will require a collaborative effort between local and regional governments. Funding opportunities must be identified, prioritized and then collaboratively pursued by Williamstown Township, Ingham County, and the Tri-County Regional Planning Commission. It’s possible that the trail will require multiple avenues of funding from different levels of government – local, state, and federal. In order to facilitate this potential necessity, funding for the trail should be pursued independently for the three phases of trail construction if a single large funding opportunity isn’t readily available or granted.

IX: APPENDIX

A-1: Socio-economic Profile of Williamstown Township

Williamstown Township is a small, rural, satellite community of East Lansing and Lansing. Based on trends in growth and housing and its master plan, Williamstown Township aims to maintain its rural character and nature in the coming years. The purpose of this section is to detail population and housing trends in the Township via a socioeconomic profile that provides a broad overview and glimpse into the personality of Williamstown Township.

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Population

Williamstown Township is made up of 4,978 residents, according to the 2010 U.S. Census. The population increased 3 percent (144 residents) from the year 2000 to 2010. The largest growth spurt that the Township has experienced occurred from 1970 to 1980 when the population grew by 39.5 percent (1,125) from 2,847 to 3,972 residents (Table 9). Growth in Williamstown Township has slowed relative to its own past as well as the surrounding communities of Williamston and Meridian Charter Township. Williamstown Township can be classified as a rural, low-density community.

Table 9: Population of Williamstown Township from 1970 to 2010.

Decade	Population at end of Decade	Actual Growth	Percent Change
1960-1970	2,847	+884	+45.0%
1970-1980	3,972	+1,125	+39.5%
1980-1990	4,285	+313	+7.9%
1990-2000	4,848	+549	+12.8%
2000-2010	4,978	+144	+3.0%

Age

The median age of Williamstown Township is rising and was reported at 47.2 years in the 2010 Census. The median age has gradually increased from 30.5 years in 1980, 35.6 in 1990, and 40.9 in 2000. According to the Williamstown Township Master Plan, the factors causing the median age in the Township to rise are: low turnover of housing, low in-migration of young families, aging of existing population and the exodus of younger adults as they move out to start their careers. In total, 53.5 percent of Williamstown Township residents are 45 years or older while only 20.9 percent are between the ages of 20 to 44 (Table 10).

Table 10: Population of Williamstown Township in 2010 by age cohort.

	Population Number	Percent
Under 5 years	166	3.3%
5 to 19 years	1,113	22.4%
20 to 34 years	522	10.5%
35-44 years	521	10.4%
45-64 years	1,911	38.4%
65 and over	745	15.1%
Total:	4,978	100%

Racial Composition

The population of Williamstown Township is predominantly white. In 2010, 96.1 percent of the population was white which is down from 98.5 percent white that was reported in 2000.

Education

Williamstown Township is a relatively well-educated community; as 25.5 percent of residents hold a bachelor’s degree and 24.4 percent have either a graduate or professional degree. 95.8 percent of residents have graduated from high school or higher in the Township, as opposed to a statewide average of only 88.7 percent.

Median Household Income

The median household income in Williamstown Township is higher than that of [the City of Williamston](#), Meridian Charter Township or the Tri-County region. The median household income in Williamstown Township from 2006-2010 was \$94,387, which is, on average, at least \$30,000 above the surrounding communities.

Households

The average household size in Williamstown Township has declined from 3.27 in 1980, to 2.66 in 2010 (Table 11). According to the Williamstown Township Master Plan, the decrease in household size is consistent with the national trend of couples having children later in life as well as with the population demographics of the community as an aging population is likely to have fewer kids living at home in the Township.

Table 11 – Household Size from 2000 to 2010

	Household Size in 2000	Household Size in 2010
Williamstown Township	2.85	2.66
Meridian Charter Township	2.36	2.26
City of Williamston	2.33	2.40

Tri-County Region	2.48	2.42
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The number of housing units increased in Williamstown Township by 13 percent to raise the total from 1,726 in 2000 to 1,950 in 2010 (Table 12). The growth was greater than Meridian Charter Township and the Tri-County region, but less than the City of Williamston.

Table 12 – Housing Units from 2000 to 2010

	Housing Units in 2000	Housing Units in 2010	Numerical Change from 2000-2010	Percent Change From 2000-2010
Williamstown Township	1,726	1,950	+224	13.0%
Meridian Charter Township	17,101	18,569	+1,468	8.6%
City of Williamston	1,533	1,789	+256	16.7%
Tri-County Region	181,804	199,026	+17,222	9.4%

A-2 Required Signage on a Trail

Below is detailed information on required signage along the Red Cedar River Trail in Williamstown Township.

Information Signs for Highway Users

These signs are found along highways, or heavily trafficked roads, in order to help inform travelers of the trail location. On a brown background with white font, the suggested sign going on either direction of Grand River Avenue, the sign should say: "Red Cedar River trail." The corresponding distance from the sign should also be included on the sign.

Warning (pedestrian crossing) Signs

It is important to warn vehicles of pedestrian crossings along the trail. Warning signs are for the safety of both vehicles and pedestrians. Often times they are located before a crosswalk, or stoplight. In areas where the road takes a sudden turn it is important to locate the sign a safe distance in front of the crossing, so the driver knows of the potential of crossing pedestrians.



Entrance Signs

Typically situated at the common access points to a trail, these signs help identify where users can easily connect to the trail. It is essential to implement these postings at every trailhead, and as many other entrance points as possible. It is common for communities to place the entrance sign at the beginning of the right of way in question, that way trail users can be more informed on where to enter.

Trailhead Information Sign/Kiosk

Like an entrance sign, it is important to place info kiosks at each trailhead. The kiosk should be able to display an image of the mapped out trail, as well as any other important notices. A corkboard is often used allow for constant updates about trail conditions and upcoming events. Many standard kiosks have a split panel design, with a permanent map on one side and temporary info located on the other.



Regulatory (usage control) Signs:

At each entry point it is important to inform the trail user of what is allowed and acceptable along the trail. If the trail is intended to be used for non-motorized transit, this is where that information is displayed. The rules of the trail must be clearly displayed at each trailhead.

Reassurance Markers/Blazes

Often times found on visible sections of trees along the trail, the blaze marker helps insure the user that they are traveling the correct path. Having a bright color indicate the outlined trail helps keep a consistent system of informed users. Many communities make sure the blaze marking occurs every 50 to 100 feet along segments of the path. This way the potential of a traveler becoming lost is minimized.



Direction Change Indicators

Like a blaze marking, the directional change indicator, makes the user aware of where the trail leads. They are often the same pattern as the blaze marker, however can be doubled to either side of the path, to inform that the trail is turning.

Confirmation/Identification Signs

First introduced at the trailhead, the ID marker is typically the trail logo. They can be posted roughly half a mile apart from each other, to ensure that the user is still traveling the same path that they started down. It is important to use the trail logo at all intersections as well, in order to eliminate confusion to users as what way to travel.



Interpretative Signs

Interpretative signs label existing features along the trail. If the path crosses by any landmarks they are typically identified by an interpretation sign. For example, lakes, ponds, mountains, rivers, state forests, and any other key land marks.

Crossing Private Land Signs

In areas where the trail comes in close contact with private property, it should be posted along the path in order to ensure that all recreational users do not stray from the trail into someone's private estate. Courtesy and respect for private property should be emphasized in these signs.

You are Here Signs

An optional but effective way of ensuring that all users know of their general location is to implement a “you are here sign” on a larger map of the trail. These maps should include mileage to the nearest trailhead and other amenities along the trail.

Destination Signs

Located either at trailheads or other points of interest along the path, these postings help the traveler know how far they are from specific locations along the trail. If the trail has a park located along it destination signs can be implemented with a direction arrow, and distance to said park. They most often times are used to inform the public about attractions along the path (and even distance to towns or business).



Safety, Operational Guidelines and Lighting

Considering the Michigan climate and the likelihood of the Red Cedar River flooding during the spring, the river trail will need limitations and guidelines to ensure safety of the users. The trail will be susceptible to flooding each spring which will require Williamstown Township to create barriers on all access points to either completely or selectively close the trail. Another option is to construct barriers from the trail to the River to ensure the users are safe.

It is also important to determine whether the trail will be accessible year-round, or on a seasonal basis. It's possible to open the trail for the winter months for snow shoeing, cross country skiing or other non-motorized uses but that will also impact the annual maintenance costs of the trail.

In addition, hours of use could be specified for the trail. Safety could be enhanced by the use of lighting along the trail.

A-3 Red Cedar River Corridor Trail Network Presentation

March 13, 2014

Thank you for attending the Red Cedar River Corridor Trail Network Presentation hosted by the Tri-County Regional Planning Commission and the Michigan State University Practicum Team. Your feedback and support throughout the evening is an integral part of the planning process. Please complete the brief exit survey below to provide additional input on the proposed Red Cedar River Corridor Plan. Thank you!

1. Please indicate your age cohort:

- A) 18-24 years old
- B) 25-39 years old – 2
- C) 40-64 years old – 4
- D) 65 or older – 3

2. Please indicate the municipality in which you reside in:

- A) Lansing – 1
- B) East Lansing
- C) Meridian Township - 2
- D) Williamstown Township - 3
- E) City of Williamston – 2
- F) Other. Please specify: Leroy Township

3. How long have you been living in Ingham County?

- A) 0-2 years
- B) 3-5 years
- C) 6-8 years – 1
- D) 9-11 years – 1
- E) 12 or more years – 7

4. Do you currently use the trail system for recreation or transportation in Ingham County?

- A) Yes. Please specify which trails you are using: - 6 (Harris Nature Center, Meridian Township Sidewalks, MSU River Trail, Lansing River Trail, Trails through Nancy Moore Park)
- B) No – 3

5. How many times per week are you using the trail system in Ingham County?

- A) Once – 3
- B) 2-4
- C) More than 4 times – 1
- D) I do not use the trail system in Ingham County – 3

Less than once a month, 4-6 times per month

6. For what purpose do you currently use the trail system in Ingham County?

- A) Walking/Jogging- 4
- B) Biking – 3
- C) Other. Please specify: Special Events – Hawk Island Triathlon _____
- D) I do not use the trail system – 2

7. Please indicate (x) the extent to which you agree with the following statements as they pertain to the Red Cedar River Corridor plan in Williamstown Township and the potential for a regional river trail system in Ingham County.

	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
I support the implementation of the Plan which aims to construct a river trail in Williamstown Township.	77.8% (7)	11.1%(1)		11.1%(1)	
My community supports the implementation of the Plan which aims to construct a river trail in Williamstown Township.	14.3%(1)	28.2% (2)	57.1%(4)		
Implementing the plan will improve the quality of life of residents in the Township.	77.8% (7)	11.1%(1)	11.1%(1)		
Implementing the plan will improve the quality of life of residents in Ingham County.	77.8% (7)	11.1%(1)	11.1%(1)		
Property values around the trail will increase along Grand River Avenue.	77.8% (7)		22.2%(2)		
Property values around the trail will decrease along Grand River Avenue.			22.2%(2)	22.2%(2)	55.6% (5)
I support a County-wide millage to fund the Plan and other recreational improvements in the area.	55.6% (5)	33.3% (3)			11.1%(1)
I would visit Williamston businesses more frequently as a result of this trail.	22.2%(2)	44.4% (4)	11.1%(1)	22.2%(2)	

8. For what purpose would you use the Red Cedar River Trail in Williamstown Township?

- A) Walking/Jogging – 6
- B) Biking – 6
- C) Other. Please specify: kayaking _____
- D) I would not use the trail – 1

9. How many times per week would you use the Red Cedar River Trail in Wiliamstown Township?

- A) Once – 4 (*2-10 times per year*)
- B) 2-4 – 2
- C) More than 4 times – 1
- D) I would not use the trail – 1

Once per month

10. Please share any other additional comments and/or suggestions about today’s presentation and the proposed Red Cedar River Corridor Plan.

Talk to landowners. Need to hear their concern.

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