# PRELIMINARY ENGINEERING PLANS ACME TO ELK RAPIDS SEGMENT DRAFT JUNE 3, 2019 VILLAGE OF ELK RAPIDS END TRAVERSE CITY CHARLEVOIX GET CONNECTED ACME **START** IN COOPERATION WITH: Prein&Newhof PREPARED BY:

## PRELIMINARY ENGINEERING PLANS ACME TO ELK RAPIDS SEGMENT DRAFT

**EXECUTIVE SUMMARY** 



## INTRODUCTION

With a goal of understanding the options, and developing a proposed preferred alignment, the 11 mile Acme To Elk Rapids segment of the 45.8 mile Traverse City to Charlievoix Trail is the focus of this document. It is also important to recognize all of the of years of previous planning efforts that took place prior to entering this "preliminary engineering" phase.

\* The route shown on the subseqent pages is preliminary and is not meant represent the actual route the trail will follow.

## THE PLANNING PROCESS

Beginning in June of 2018, Trails Engineering Consultant Prein&Newhof (P&N) was hired to lead the preliminary engineering process for the Acme to Elk Rapids Trail. On June 18th the consultant and owners group met to discuss previous planning efforts and to "drive the route".

Since then, P&N along with representatives from the Village of Elk Rapids, Traverse Area Recreation and Transportation Trails (TART Trails), and Networks Northwest went through a comprehensive planning, public engadgement, and and engineering evaluation to find the route that would best meet the goals of all of the stakeholders of the trail.

In summary, the input provided to P&N became the following guiding priciples with which to determine the preferred route:

#### **Guiding Priciples of Design**

- 1. Respect the land and the land owner adjacent the trail.
- 2. Provide for safe travel for non-motorized users of all abilities and with multiple means of travel.
- 3. Connect the trail user to the highest valued physical, social, and cultural resources of the area for the best experience
- 4. Provide for a trail that is funded, constructed, and maintained by typical and prudent standard methods, achievable by the parties responsible for doing so.

## NEXT STEPS

The goal of this docuement and process is to provide the stakeholder team and its representatives with the necessary information to be able to take the following next steps:

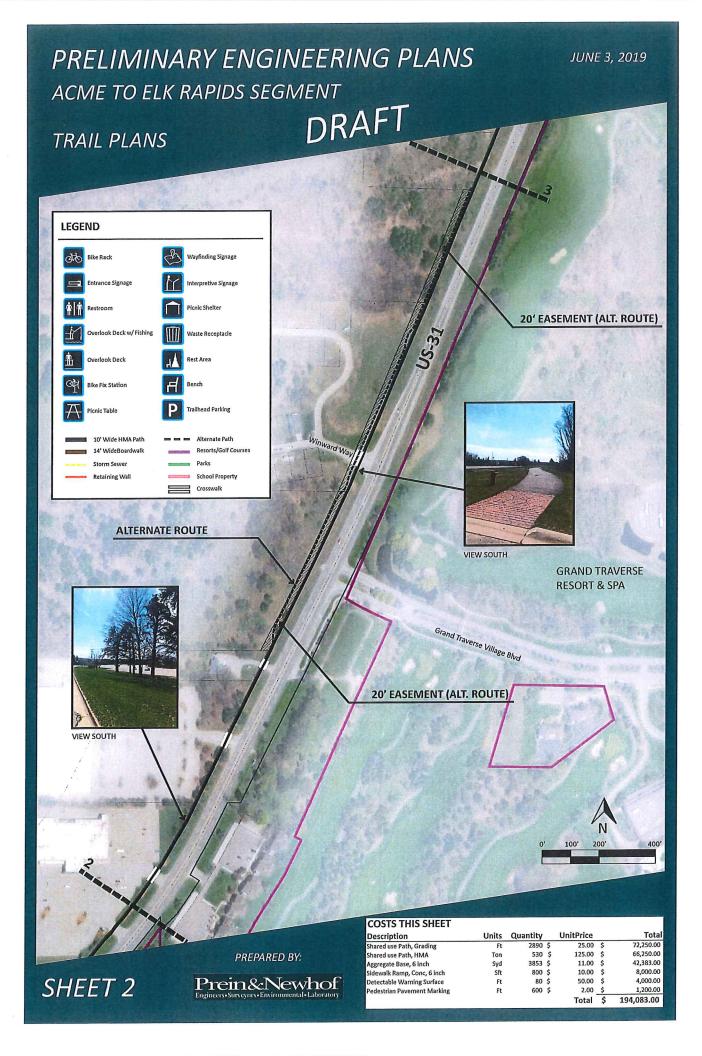
- 1. Determine the initial mix of public, private, and non-profit funding sources currently available in 2019. and begin to apply for funding as appropriate.
- 2. Establish possible trail mainenance and operations responsibilities and costs.
- 3. Understand site and property specific challenges and opportunities to target conversations
- 4. Building off of this phase, proceed with final engineering plans used to solicit bids for construction.

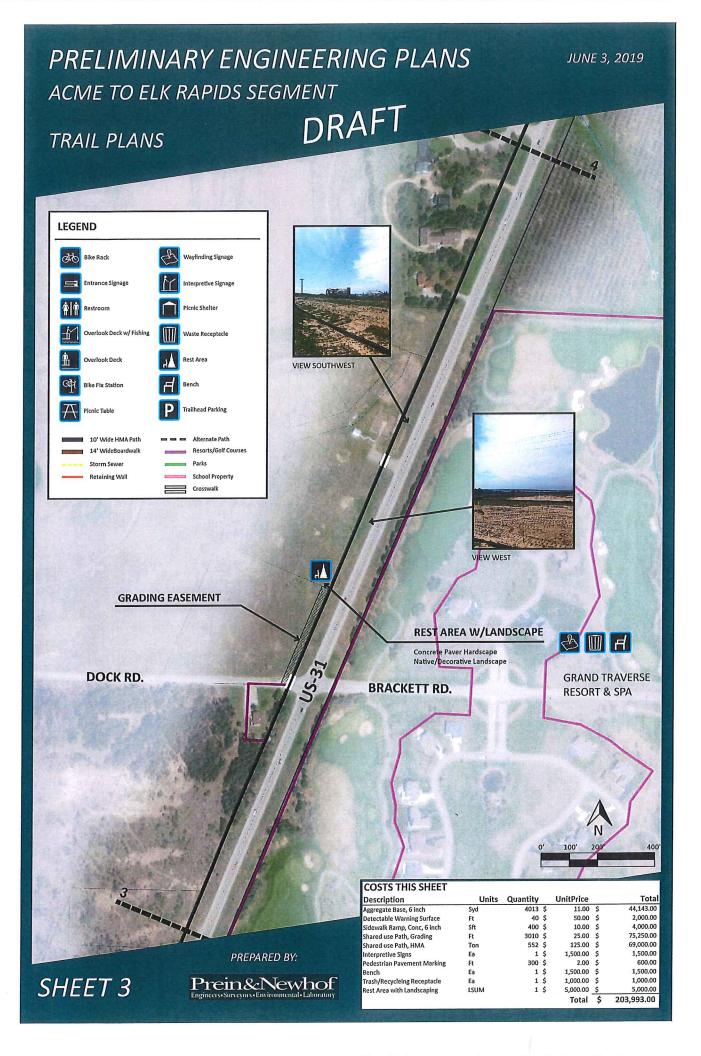
## THE RECOMMENDED ROUTE

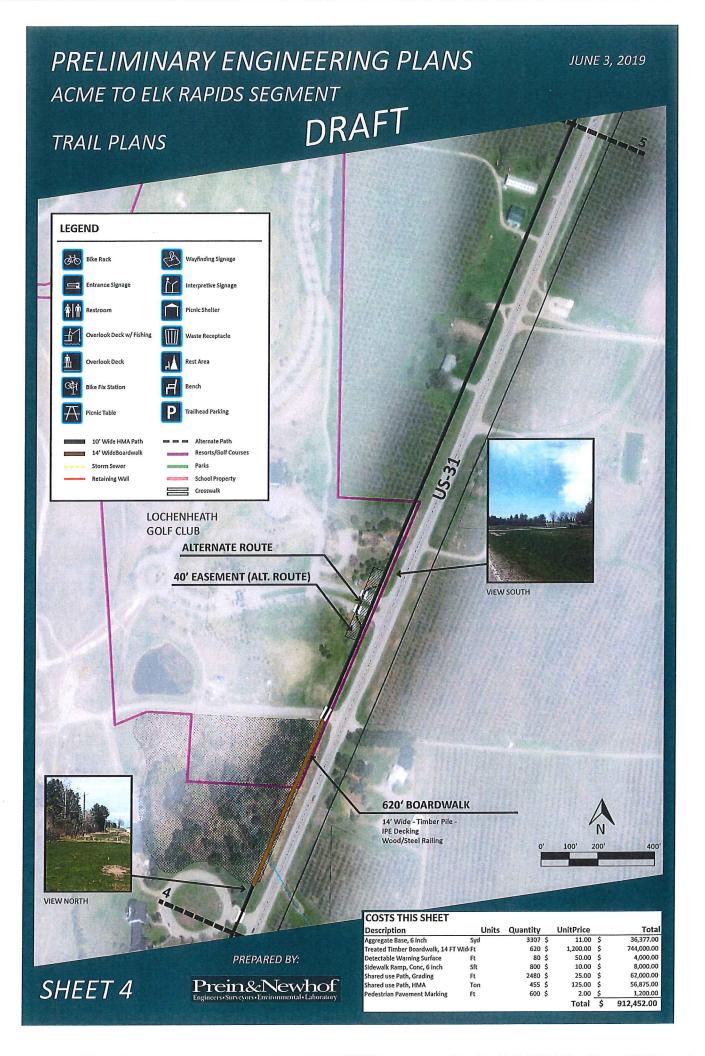


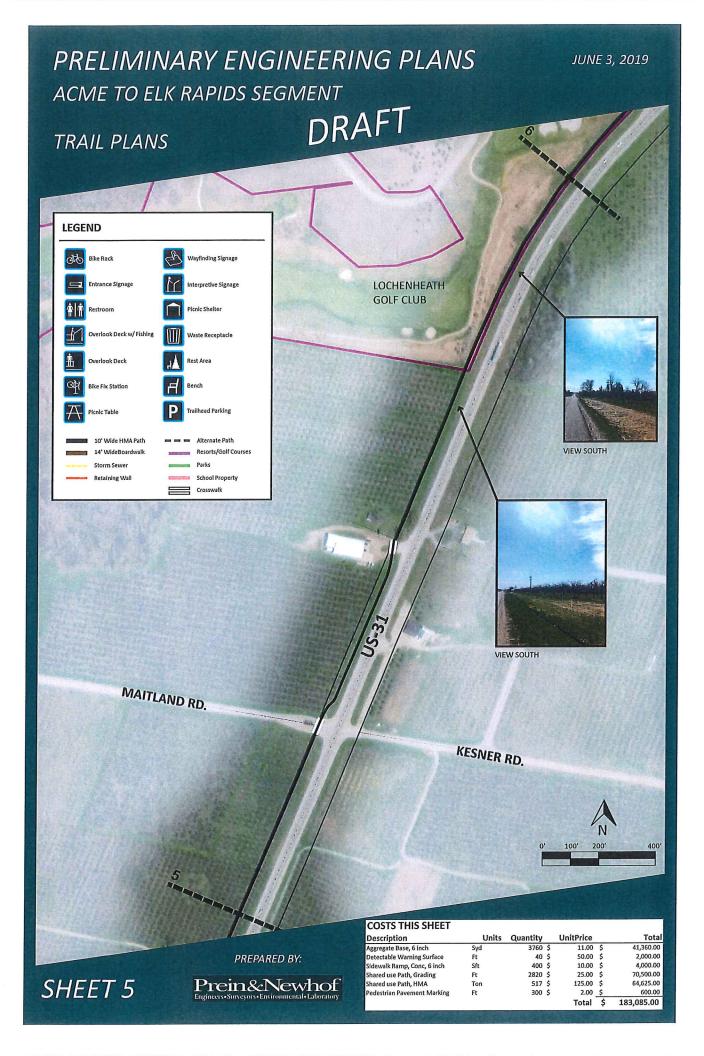
## ESTIMATE OF CONSTRUCTION COSTS

Description	Units	Quantity	<b>Unit Price</b>	Total
14' Treated Timber Boardwalk	Ft	3421	\$ 1,200.00	\$ 4,105,200.00
Trailhead Parking Lot	LSUM	2	\$ 750,000.00	\$ 1,500,000.00
Shared use Path, Grading	Ft	49580	\$ 25.00	\$ 1,239,500.00
Shared use Path, HMA	Ton	9092	\$ 125.00	\$ 1,136,500.00
Modular Block Retaining Wall	Sft	11500	\$ 50.00	\$ 575,000.00
Aggregate Base, 6 inch	Syd	28932	\$ 11.00	\$ 318,252.00
Restroom Building with Utility Allowance	LSUM	2	\$ 125,000.00	\$ 250,000.00
Scenic Overlook	LSUM	5	\$ 30,000,00	\$ 150,000.00
Storm Sewer	Ft	1620	\$ 75.00	\$ 121,500.00
Sidewalk Ramp, Conc, 6 inch	Sft	10000	\$ 10.00	\$ 100,000.00
Detectable Warning Surface	Ft	1000	\$ 50.00	\$ 50,000.00
Shelter	LSUM	2	\$ 25,000.00	\$ 50,000.00
Rest Area with Landscaping	LSUM	8	\$ 5,000.00	\$ 40,000.00
Entry Sign	Ea	3	\$ 10,000.00	\$ 30,000.00
Bench	Ea	18	\$ 1,500.00	\$ 27,000.00
Interpretive Signs	Ea	11	\$ 1,500.00	\$ 16,500.00
Pedestrian Pavement Marking	Ft	6900	\$ 2.00	\$ 13,800.00
Trash/Recycleing Receptacle	Ea	9	\$ 1,000.00	\$ 9,000.00
Bike Rack (Group of 5)	Ea	3	\$ 2,500.00	\$ 7,500.00
Wayfinding Signs	Ea	4	\$ 1,500.00	\$ 6,000.00
Picnic Table	Ea	3	\$ 1,500.00	\$ 4,500.00
Bike Repair Station	Ea	2	\$ 1,000.00	\$ 2,000.00
			Total	\$ 9,752,252.00









TRAIL PLANS

DRAFT

## LEGEND







Wayfinding Signage













Overlook Deck w/ Fishing



Waste Receptacle







Bike Fix Station











Resorts/Golf Courses

Retaining Wall

Crosswalk

LOCHENHEATH **GOLF CLUB** 



VIEW SOUTH



VIEW NORTH



VIEW SOUTH



**COSTS THIS SHEET** Total 31,977.00 4,000.00 8,000.00 54,500.00 Description Units Quantity 11.00 \$ 50.00 \$ Detectable Warning Surface Sidewalk Ramp, Conc, 6 inch 10.00 Shared use Path, Grading Shared use Path, HMA 2180 \$ 25.00 50,000.00 148,477.00

SHEET 6

Prein&Newhof

PREPARED BY:

## PRELIMINARY ENGINEERING PLANS JUNE 3, 2019 ACME TO ELK RAPIDS SEGMENT DRAFT TRAIL PLANS **LEGEND** Bike Rack Entrance Signage Interpretive Signage Overlook Deck w/ Fishing Waste Receptacle Trailhead Parking 10' Wide HMA Path Alternate Path 14' WideBoardwalk Resorts/Golf Courses Retaining Wall School Property Crosswalk **150' STORM SEWER** HDPE Storm Drainage Pipe **COSTS THIS SHEET** Description Quantity Storm Sewer Aggregate Base, 6 inch 150 \$ 3080 \$ 75.00 \$ 11.00 \$ 11,250.00 33,880.00 Syd Ft Sft PREPARED BY: Detectable Warning Surface Sidewalk Ramp, Conc, 6 inch 20 \$ 200 \$ 50.00 \$ 10.00 \$ 1,000.00 2,000.00 Shared use Path, Grading 2310 \$ 25.00 125.00 57,750.00 53,000.00 Prein&Newhof SHEET 7 Shared use Path, HMA 424 \$ Ton 300.00

159,180.00

Total \$

TRAIL PLANS

**DRAFT** 

#### LEGEND











Interpretive Signage









Waste Receptacle











Picnic Table



Trailhead Parking

10' Wide HMA Path 14' WideBoardwalk

> Storm Sewer Retaining Wall



Alternate Path Resorts/Golf Courses



School Property

Crosswalk

275' BOARDWALK

14' Wide - Timber Pile IPE Decking Wood/Steel Railing

SCENIC OVERLOOK









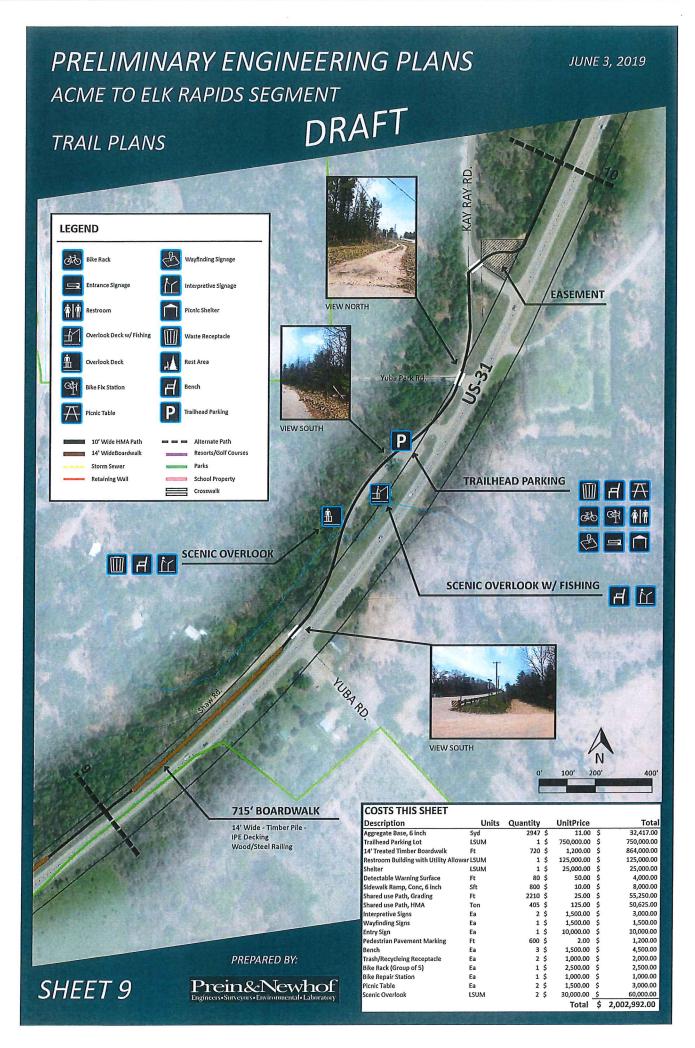


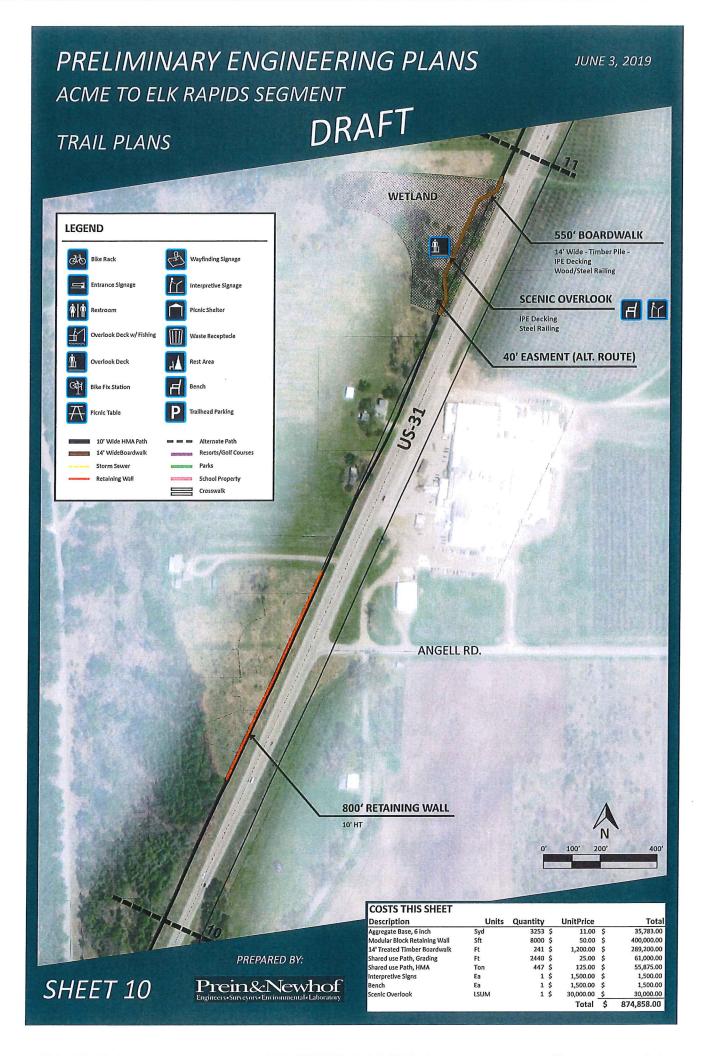
PREPARED BY:

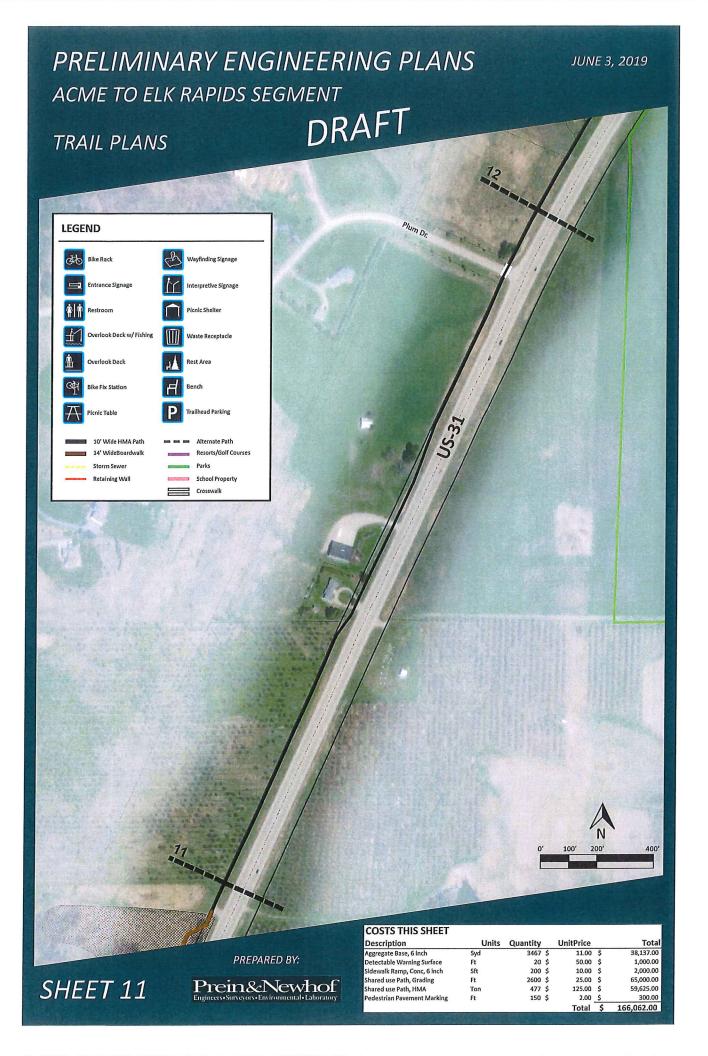
SHEET 8

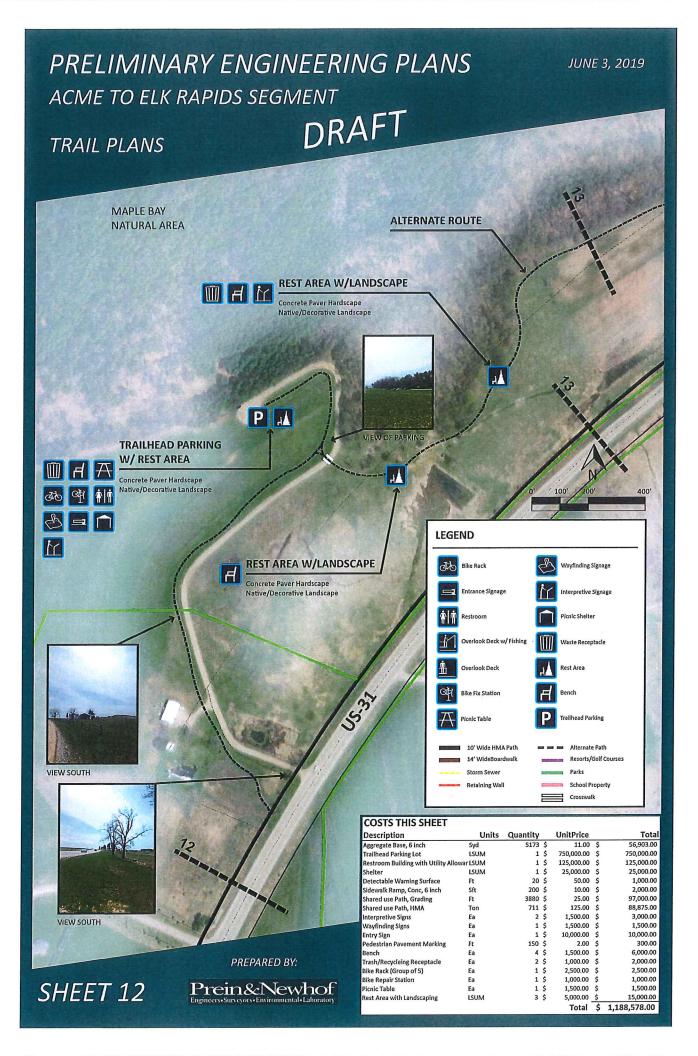


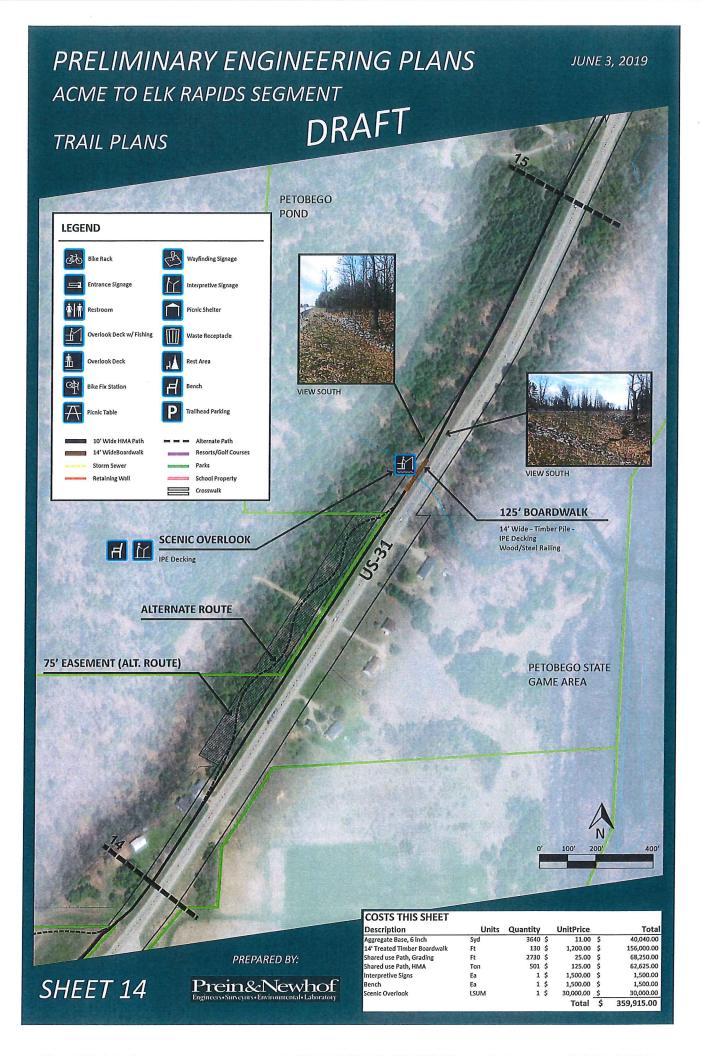
COSTS THIS SHEET					
Description	Units	Quantity	UnitPrice		Tota
Aggregate Base, 6 inch	Syd	2853	\$ 11.00	\$	31,383.00
14' Treated Timber Boardwalk	Ft	280	\$ 1,200.00	\$	336,000.00
Detectable Warning Surface	Ft	20	\$ 50.00	\$	1,000.00
Sidewalk Ramp, Conc, 6 inch	Sft	200	\$ 10.00	\$	2,000.00
Shared use Path, Grading	Ft	2140	\$ 25.00	\$	53,500.00
Shared use Path, HMA	Ton	392	\$ 125.00	\$	49,000.00
Interpretive Signs	Ea	1	\$ 1,500.00	\$	1,500.00
Pedestrian Pavement Marking	Ft	150	\$ 2.00	\$	300.00
Bench	Ea	2	\$ 1,500.00	\$	3,000.00
Trash/Recycleing Receptacle	Ea	1	\$ 1,000.00	\$	1,000.00
Bike Rack (Group of 5)	Ea	1	\$ 2,500.00	\$	2,500.00
Scenic Overlook	LSUM	1	\$ 30,000.00	\$	30,000.00
			Total	Ś	511.183.00

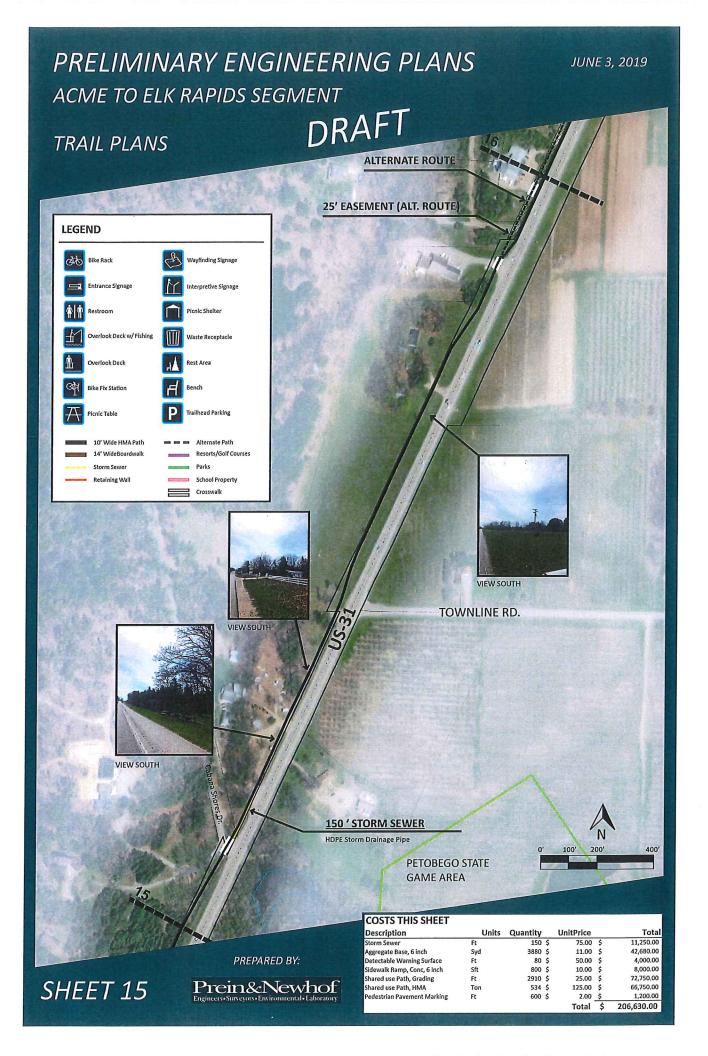


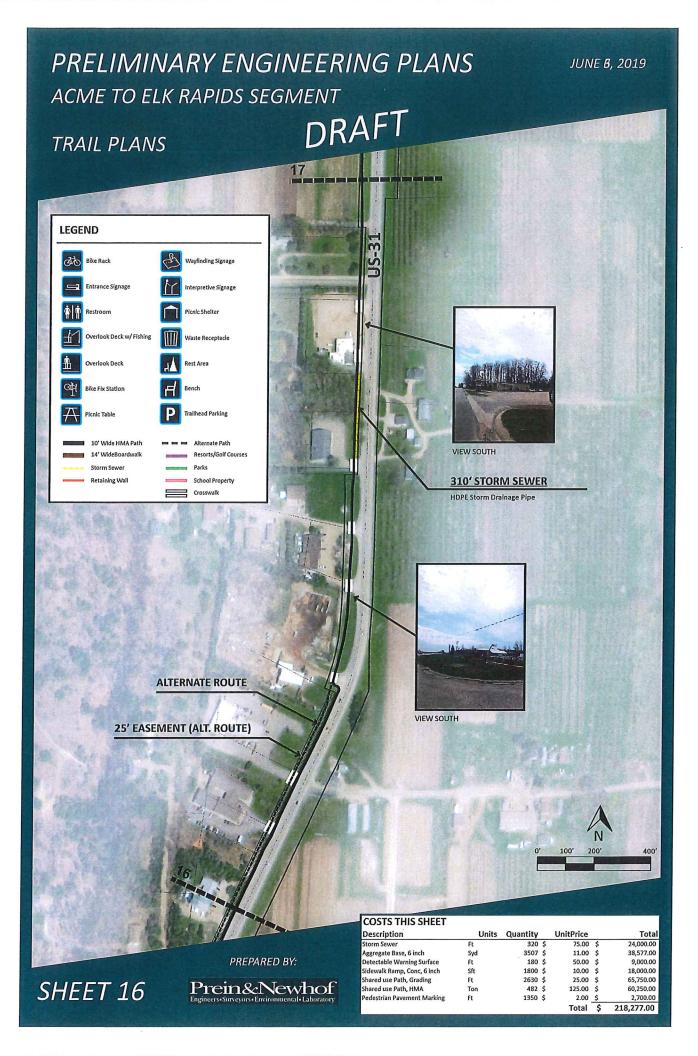














## PRELIMINARY ENGINEERING PLANS JUNE 3, 2019 ACME TO ELK RAPIDS SEGMENT **DRAFT** TRAIL PLANS **LEGEND** VIEW SOUTH Bike Rack Wayfinding Signage Entrance Signage nterpretive Signage Overlook Deck w/ Fishing Bike Fix Station Picnic Table Trailhead Parking 10' Wide HMA Path Alternate Path 14' WideBoardwalk Resorts/Golf Courses Storm Sewer Parks Retaining Wall School Property Crosswalk **VIEW SOUTH** VIEW SOUTH VIEW SOUTH OF PROPOSED BOARDWALK 1020' BOARDWALK 14' Wide - Timber Pile -IPE Decking Wood/Steel Railing 400'

SHEET 18

Prein&Newhof
Engineers-Surveyors-Environmental-Laboratory

PREPARED BY:

COSTS THIS SHEET Description Units Quantity **UnitPrice** 21,417.00 11.00 Aggregate Base, 6 inch 1020 \$ 1,200.00 \$ 50.00 \$ 1,224,000.00 5,000.00 14' Treated Timber Boardwalk Detectable Warning Surface Sidewalk Ramp, Conc, 6 inch 1000 \$ 10.00 10,000.00 Ft 25.00 36,500.00 Shared use Path, Grading 1460 \$ hared use Path, HMA 33,500.00 Pedestrian Pavement Marking 2.00 Total \$ 1,331,917.00

## PRELIMINARY ENGINEERING PLANS JUNE 3, 2019 ACME TO ELK RAPIDS SEGMENT DRAFT TRAIL PLANS LEGEND Bike Rack Wayfinding Signage Entrance Signage Interpretive Signage Overlook Deck w/ Fishing Waste Receptacle Bike Fix Station 340' RETAINING WALL 10' Wide HMA Path Alternate Path 14' WideBoardwalk Resorts/Golf Courses Storm Sewer Parks Retaining Wall School Property 330' STORM SEWER HDPE Storm Drainage Pipe 90' STORM SEWER HDPE Storm Drainage Pipe 260' BOARDWALK 14' Wide - Timber Pile -IPE Decking Wood/Steel Railing COSTS THIS SHEET Description Units Quantity 75.00 \$ 11.00 \$ 31,500.00 22,880.00 PREPARED BY: Aggregate Base, 6 inch Syd Sft 2080 \$ Modular Block Retaining Wall 60,000.00 1.200.00 312.000.00 14' Treated Timber Boardwalk 260 \$ SHEET 19 Prein&Newhof Engineers-Surveyors-Environmental-Laboratory Shared use Path, Grading Shared use Path, HMA 125.00 35,750.00

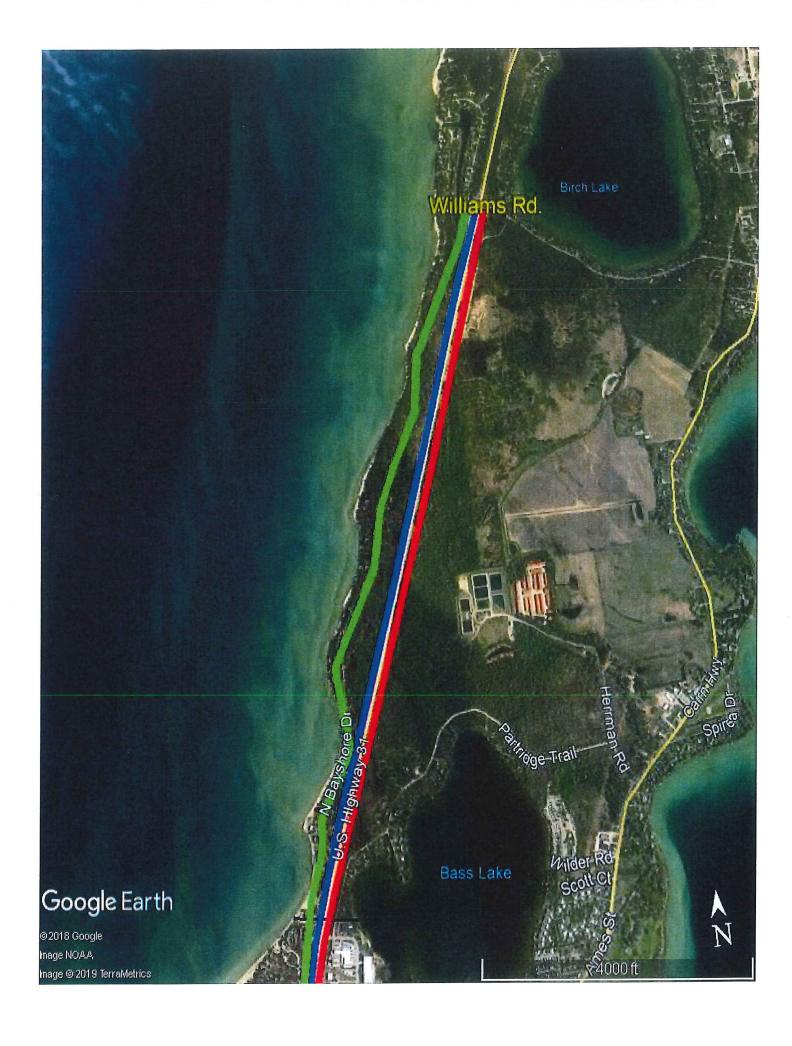
Total \$

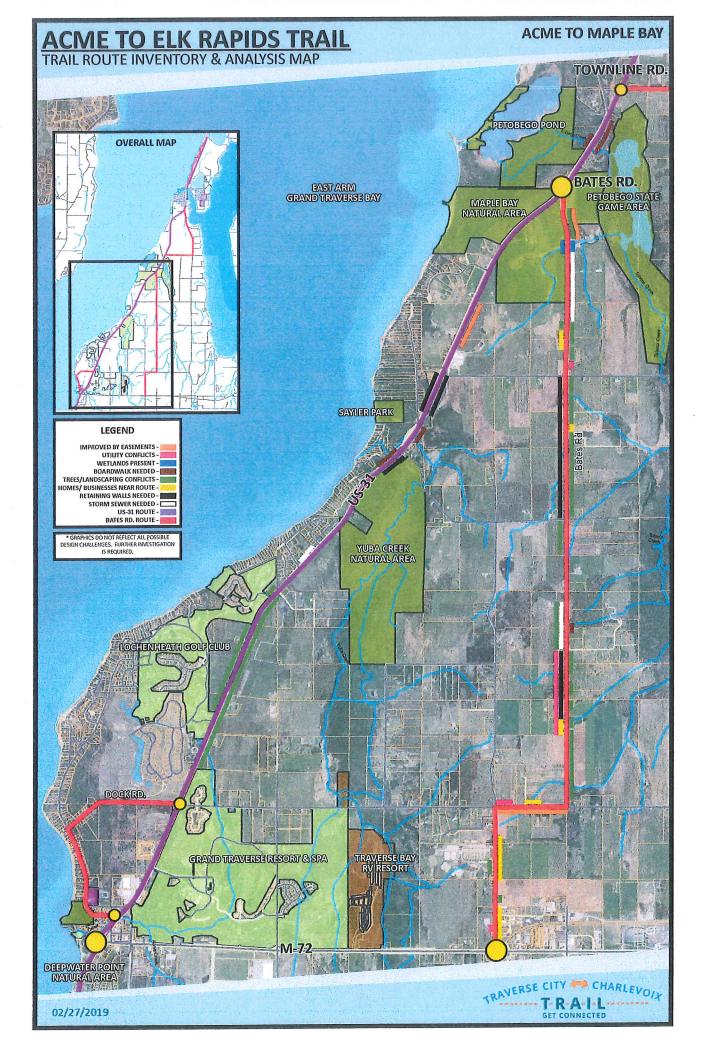
501,130.00

271,675.00









## ACME TO ELK RAPIDS TRAIL TRAIL ROUTE OPPORTUNITIES/CONSTRAINTS/PUBLIC INPUT

## West

#### Opportunities

- Wide ROW
- Less Adjacent Agriculture
- Access to several natural areas, including Deepwater Point, Sayler Park, Maple Bay Natural Area, and Petobego Pond (without having to cross US-31)
- Access to commercial properties

## East

## **Opportunities**

- Access to Grand Traverse Resort, East Maple Bay Natural Area, and Yuba Creek Natural
- Few road and driveway crossings

## West

#### **Opportunities**

- Less vehicles/ road noise
- Panoramic countryside views

### East

#### Opportunities

- Less vehicles/ road noise
- Panoramic countryside views

## **US-31** Route

#### Constraints

- Approx. 1,400' of boardwalk needed
- 8,500 sq. ft. of retaining wall needed
- Orchard proximity on south end/west side of
- Orchard product staging area
- High adjacent road traffic/noise
- Numerous driveway crossings
- Landscaping would need to be relocated/ replaced
- No access to Grand Traverse Resort or Yuba Creek Natural Area

#### Constraints

- US-31 crossings
- Orchard/ shoreline fruit proximity
- Orchard related equipment in operation and entering/
- Not on same side of US-31 as Sayler Park, West Maple Bay Park, and Petobego Pond
- Easements required or construct expanded shoulder/
- non separated path 900' of boardwalk needed
- 5,500 sq ft. of retaining wall needed

## Summary of Public Input

- Crossing 31 is a major safety concern High traffic volume, speed, distracted driving, and sight lines are dangerous West side has easier access to parks and open space, and
- more residential housing
- Existing ROW capacity
- Most effective for transportation and cost
- Views of the Grand Traverse Bay from 31 Distracted highway driving
- Safety and separation from cars important Number of driveways on West side
- Trespassing concerns and need for marking private property
- Disruption to agricultural operations Loss of fruit trees along 31
- Pesticide application concerns
- Trespassing on farms is already an issue
- Crop loss from construction and trail users
- FSMA requirements, sanitation, and liability
- Unknown of how future regulations will impact farm
- operations and workers Access to farm stands/potential expansion of agribusiness
- Safety concerns with business/customer vehicle traffic and trail users
- Safety concerns for trall users crossing US-31 to access businesses/markets on West side
- Easement acquisition concerns/questions Snow removal concerns/questions
- Access to Greek Orthodox Church and Lochenheath

## **Bates Rd. Route**

#### Constraints

- Easements required, or construct expanded shoulder/non separated path
- Several sections of retaining wall totaling 5,000sqft.
- Wetlands present
- Requires old tree removal
- Steep terrain- ADA changes
- Areas where power lines in ROW limit trail placement
- Proximity to homes

### Constraints

- Requires grading easements
- 600' of boardwalk needed Sections of storm sewer required
- Requires old tree removal
- Steep terrain- ADA challenges
- Areas where power lines in ROW limit trail placement
- Proximity to homes
- Landscaping would need to be removed

## Summary of Public Input

- More disruption and physical effects of building than a separated path
- Bike traffic interrupting farm operations
- County roads do not provide space for separated
- Difficulty of obtaining easements
- Fewer connections to parks and natural areas
- Wetland concerns
- Concern over crown in center of road
- Maintenance concerns
- Not as direct as the US-31 route
- Less traffic and wider roads make it safer option
- Connects to existing trail system and Acme Quieter more peaceful route
- Scenic views

## Dock Rd. Route

#### Opportunities

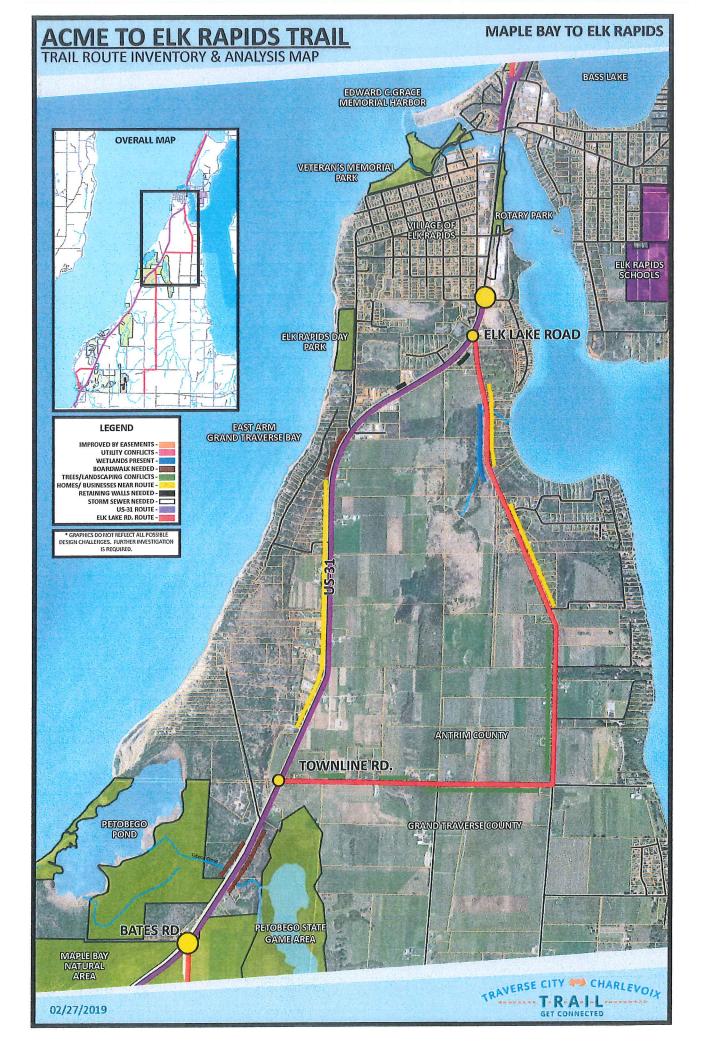
- Existing connectivity to Deepwater Natural Area and US-31 to the north
- Access to route by nearby residents

## Constraints

- Curvy road
- 55 mph road
- Steep terrain- ADA challenges
- Dense residential area

## **Summary of Public Input**

- Conflicts with motor vehicle traffic on a narrow
- and curvy road
- Biker etiquette Speeding/distracted vehicles
- Steep section
- Scenic views along the water Residential access
- Less traffic and noise than US-31 Existing road already used



## MAPLE BAY TO ELK RAPIDS

ACME TO ELK RAPIDS TRAIL
TRAIL ROUTE OPPORTUNITIES/CONSTRAINTS/PUBLIC INPUT

## West

#### Opportunities

- Wide ROW
- Overall less adjacent agriculture
- Access to Petobego State Game Area and Pond
- Access to trail by adjacent residents
- Access to commercial properties
- No US-31 crossing

## East

#### Opportunities

- Few road and driveway intersections
- Potential for agribusiness

## **US-31** Route

#### Constraints

- 900' of boardwalk along the West side
- 1,000 sq. ft. of retaining wall require
- Frequent/ numerous driveways
- High adjacent road traffic/ noise

## Constraints

- US-31 crossing needed
- Orchard proximity
- Orchard related equipment in operation and entering/exiting
- Easements required or construct expanded shoulder/ non separated path
- 2,000 sq ft. of retaining wall needed

#### **Summary of Public Input**

- Road noise Crossing 31 is a major safety concern
- Safety and separation from cars important
- High traffic volume, speed of traffic, and sight lines are dangerous West side has easier access to parks and open space
- Existing ROW capacity
  Views of the Grand Traverse Bay from 31
  Most effective for transportation purposes

- More cost effective route
  Aesthetic of highway (not appealing)
  Proximity of businesses and disruption to operations and existing infrastructure
- Proximity of residences on West side and loss of privacy/ buffer from highway
- Impacts to private property and questions/concerns over
- compensation
  Trespassing concerns and need for marking private property
- Distracted highway driving

- Steep banks and steep grade of curbs
  West side has larger number of driveways with cars/trucks constantly turning in/out
- West side is close to more residential housing and parks/ open
- Trail users disrupting active ag operations

- Pesticide application concerns
  Trespassing on farms is already an issue
  Crop loss from construction and trail users
- FSMA requirements, sanitation, and liability Unknown of how future regulations will impact farm operations and workers
- East side of US-31 has potential for more disruption to
- agriculture interests
  Easement acquisition concerns/questions
- Questions and unknown impacts to private property/homes/ businesses
  Access to farm stands/potential expansion of agribusiness
- Connection to Elk Rapids
- Viability and accessibility to business
  Broadband development opportunities
  Alternate route down Sunset Shores to North

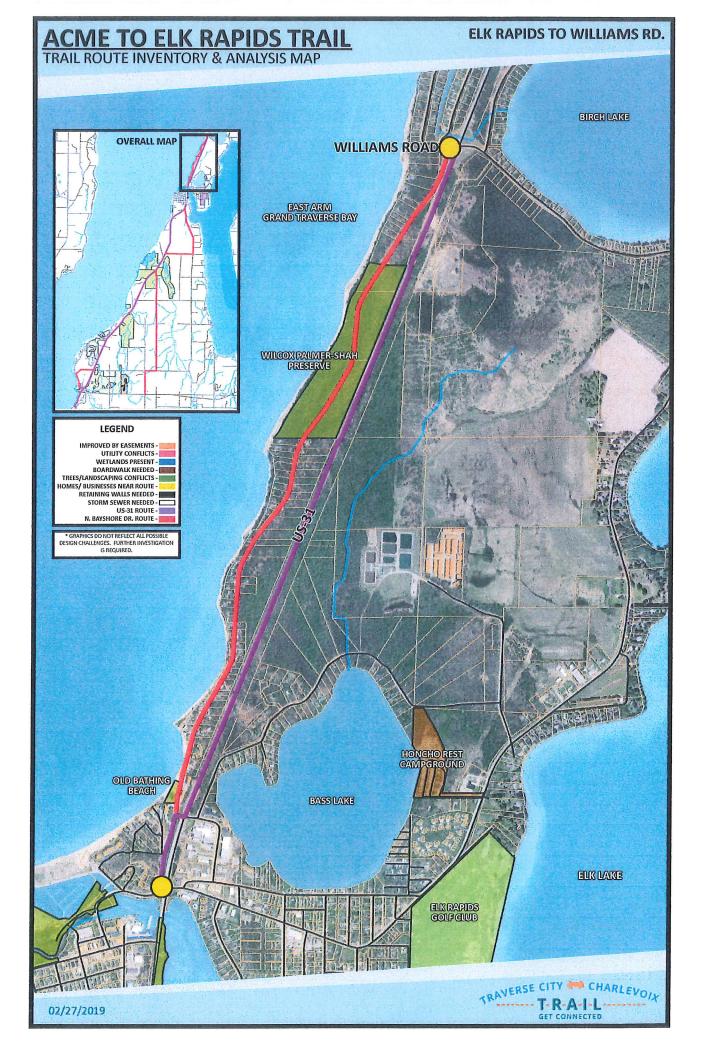
## Elk Lake Rd./Townline Rd. Route

#### Opportunities

- Panoramic countryside views
- Adjacent residential access Less vehicles/road noise
- Constraints
- Wetlands along presents
- Proximity to orchards
- Proximity to homes
- Tree removal would be required
- Fasements

## **Summary of Public Input**

- Less traffic and wider roads make Elk Lake Rd, the safer option
- Loss of land, orchards, and trees
- Bike traffic interrupting farm operations
- Already used by cyclists
- Proximity of residences
- Scenic



## ELK RAPIDS TO WILLIAMS RD.

## ACME TO ELK RAPIDS TRAIL TRAIL ROUTE OPPORTUNITIES/CONSTRAINTS/PUBLIC INPUT

## West

#### **Opportunities**

· Less wetland impact

## **US-31** Route

#### Constraints

- Proximity to homes
- Trail would require tree removal and reduce buffer between highway and homes
- Wetlands present
- High adjacent road traffic/ noise
- Narrower ROW

Constraints

Wetlands present

High adjacent road traffic/ noise

## **Summary of Public Input**

- Wide ROW allows for separated trail
- Limited access highway
- Proximity to residences and loss of privacy on West side
- Removal of trees and buffer between highway and residences on West side
- Adverse impacts of recreational traffic to residences
- Highway traffic and noise
- Requires costly boardwalk
- Roadside Park is located on East side, North of Williams Rd. - access to public restrooms and park amenities
- Intersection of Williams Road/W Harbor Dr. and US-31 is hazardous area for automobile traffic
- Input indicates East side preferred over West side by N. Bayshore Residents
- Unknown what side of the road the facility will be north of Williams Rd.

## East

## Opportunities

- Wide ROW
- Distance from development or agriculture

## N.Bayshore Dr. Route

#### **Opportunities**

- Low volume vehicle traffic
- Existing connectivity to Village
- Access to Wilcox Palmer Preserve

## Constraints

- Separated path or expanded shoulders not possible
- Speed limit of 35 mph
- Areas of limited visibility

#### Summary of Public Input

- Limited ROW Safety concerns over shared roadway
- Road becomes curvy and narrows Number of driveways Traffic volume and congestion
- Encroachment onto property
- Loss of privacy Trespassing
- Decreased property value
- Biker etiquette
  Conflicts with motor vehicle traffic
  Speeding and distracted driving
- Increased traffic will increase risks
- Need for adequate buffer and safety Dangerous for kids
- Drinking by bikers and/or drivers
- Trash
  Negative environmental impacts and increased erosion issues
- Availability and response time of emergency services

- Availability and response time of emergency services Least costly option Opportunity to partner with utility projects Already used for biking and walking Bike traffic on N. Bayshore will increase regardless of where trail is built
- Scenic Access to natural/recreation areas
- Request to add pavement markings
  Provides access to downtown Elk Rapids and businesses
- Route would help with traffic calming