



Sustainable Small Harbors Project  
**Pentwater Charrette**  
**Final Report**

**PROJECT GOAL**

To identify the key barriers to small harbor economic, social and environmental sustainability and provide a toolkit to help small harbor managers create more stability in their communities.

**MI Sea Grant**

Sustainable Harbor Design Charrette  
March – June 2015



# Pentwater Charrette Final Report 2015

## Acknowledgements

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### 1.0 Two-Page Executive Summary of Entire Process

Administered by the state, county, and local units of government, there are over 80 small public harbors and marinas throughout the State of Michigan. These harbors are a critical component of the state's blue economy with impacts from Great Lakes recreational boating in the billions of dollars. Unfortunately, a decade-long trend of lower water levels, at least temporarily reversed in 2014, combined with increasingly severe economic constraints have resulted in strained local economies. Most significantly, state and federal funding for public harbors maintenance is increasingly limited. Accordingly, by 2015, public harbors will be required to develop five-year master plans in order to receive financial support from the Waterways Commission of the Michigan Department of Natural Resources (MDNR). Therefore, research is needed to inform both the development and the content of these plans as harbors seek a more sustainable future.

The *Sustainable Small Harbor Management Strategy* project entails developing a strategy for small harbors to become economically, socially, and environmentally sustainable. A key feature includes documenting the value these small harbors provide to various stakeholders including boaters, anglers, property owners, and businesses and identifying potential revenue streams for the future. Project findings will inform the development of a toolkit of best practices, resources, and funding opportunities to support small harbor planning.

The research is being conducted by Lawrence Technological University, Environmental Consulting & Technology, Inc., David Knight LLC, and Veritas Economic Consulting along with representatives of government agencies who are sponsoring the project. Funding for the project is coming from a unique collaboration of agencies including Michigan Sea Grant (MSG), Michigan Department of Natural Resources (MDNR), Michigan Department of Environmental Quality (MDEQ) Office of the Great Lakes (OGL), and Michigan State Housing Development Authority (MSHDA). Finally, a state-wide Advisory Board has been engaged to guide the project and reviewing/summarizing documents that pertain to challenges small harbors face. The Advisory Board is comprised of key partners and stakeholders including policy makers, managers, harbor masters, industry representatives and lobbying organizations that deal with this topic (see project website for additional details <http://www.miseagrant.umich.edu/smallharborsustainability/>). As such, there is a tremendous amount of experience and organizational capacity being applied to this problem.

Communities were selected on a criteria system that included diverse location, the harbor type (small shallow draft), harbor position relative to the community type (suburban, city, downtown), population size, current organizational capacity, and economic condition.



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Pentwater was selected as one of four case study communities. In support of the process, information gathered and analyzed for Pentwater included:

- Organizational and leadership charts of the community
- Marina statistics such as boats berthed, launched, demand, etc.
- Employment data and other related census data
- Master planning efforts (existing or in progress) or special assessment districts
- Zoning for harbor and downtown/adjacent land areas
- Any recent planning or improvement grants received
- Specific challenges Pentwater is experiencing (regulation, policy, laws, water levels, maintenance, etc.)
- Economic information (budget for community, budget for harbor operations, funding mechanisms, grants received, etc.) for Pentwater
- Existing tourist information (flyers, magazines, etc.) and existing tourist way finding signage
- Aerial photograph/maps & GIS information

Developing a vision for a sustainable harbor requires input from a wide range of stakeholders, including landowners, waterfront users, planning officials and local citizens. As such, the charrette design team engaged the Pentwater community in a multi-day community visioning and collaborative design exercise (also known as a design charrette) to identify opportunities to secure the economic, social and environmental sustainability of public waterfront facilities. The team followed the National Charrette Institute (NCI) Charrette System™ for this phase of the project. An NCI charrette is a five day rapid design process involving public interaction. The charrette design team hosted an initial meeting on March 25. Those who attend the initial meeting weighed in on the future of Pentwater's waterfront and identified assets linked to existing and potential public waterfront facilities. A three-day public planning meeting or "community design charrette" to garner feedback, develop ideas and create a sustainable vision for Pentwater's waterfront was conducted from April 17 to 19 (Table 1). In the community design charrette participants assessed and prioritized design and planning options, resulting in three alternatives for the public waterfront as an asset to the community. Those alternatives were further refined into a preferred alternative that represents the vision for Pentwater in 2035. The charrette team compiled community input to develop a harbor sustainability plan specific to Pentwater. The final vision, as well as the process for development, for Pentwater is documented in this report and was presented to Village Council on June 8, 2015.

The goal of the community engagement is to facilitate regular stakeholder involvement and feedback which builds trust in the process and builds support for the project. This allows the project team to quickly gain consensus and reduce the time to implement a sustainability plan. These meetings will inform the toolkit which provides a roadmap for other communities to engage in a similar process.



# Pentwater Charrette Final Report 2015

Table 1 - Pentwater Charrette Schedule

|   | Day 1 (Friday April 17)   | Day 2 (Saturday April 18)                                   |                       | Day 3 (Sunday April 19)                              |
|---|---|---|-----------------------|--|
| 9:00 a.m.   | Depart Detroit @ 9am  | Debrief on Public Input Workshop                            |                       | Debrief on Open House - Finalization of Preferred    |
| 10:00   |   | Refine Vision & Alternatives                                | Technical Meeting**   | Production   |
| 11:00   |   |   |                       | Final Check with Pentwater Community Leadership Team |
| 12:00   | Lunch   | Lunch   |                       | Lunch  |
| 1:00 p.m.   | Meet with Pentwater Community Leadership Team <sup>1</sup> to Share Base Data | Team Pin Up   |                       | Production & Prepare for Final Presentation          |
| 2:00  | Meet with Harbor Master @ 2:30  | Develop Alternatives  | Technical Meetings**  |  |
|   | 3:00  |   |                       |  |
| 4:00  |   |   | Set up for Open House |  |
| 5:00  | Facilitator Briefing  | "Work in Progress" Presentation (4 pm – 6 pm)               |                       |  |
| 6:00 pm   | Public Input Workshop: Alternatives Exercise (6pm – 8pm)                      | Public Open House: Selecting A Preferred Vision (6pm – 8pm) |                       | 6:30 Break Down Studio & Depart                      |
| 9:00 pm   | Close For Day - Dinner  | Close for Day - Dinner                                      |                       |  |
| <p>Orange = Public Sessions; Yellow = Pentwater Community Leadership Team and Key Stakeholder Involvement</p> <p>** Technical Input Meetings as required by Design Team with Harbor Master, Public Works, Planning Commission, Historical Society, DDA and others identified to provide specific input to alternatives. A representative is asked to be "on call" Saturday.</p> |   |   |                       |  |

<sup>1</sup> The Pentwater Community Leadership Team is comprised of Juanita Pierman, Rob Allard, Sara Bizon, Dave Roseman, Jack Witt, and Frode Maaseidvaag





## **Pentwater Charrette Final Report 2015**

### 2.0 Design Alternatives Overview

Each alternative will be “driven” by a unique harbor/waterfront edge feature and developed/evaluated on four additional criteria (Land-Use, Connectivity, Economic Development, and Natural Systems) as represented in the Alternative Content Matrix. The Alternative Content Matrix was completed as part of the charrette process to succinctly disseminate the unique, but parallel alternative concept plans.



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### 2.1 Design Alternative 1: Pentwater Lake Systems Institute

Design Alternative 1 is formed by leveraging the local “Brain Trust” to create a Non-Governmental Organization (NGO) Institute for natural systems education, teaching and learning. The Pentwater Lake Systems Institute would leverage the existing intellectual talent and community capacity by creating a formal structure for knowledge transfer. The intellectual talent and current community capacity, such as the Pentwater Artisan Learning Center and the Pentwater Harbor Research Committee, were identified as community strengths. Table 2 lists the main aspects of this design and Figure 1 is the display board from community voting.

Figure 2 shows a plan view of the development on the marina. The building proposed on the corner of 3<sup>rd</sup> and Hancock Street is the 7,200 ft<sup>2</sup> institute along with retail on the ground floor. Green infrastructure, the swale and rain garden, were added to the municipal marina to help improve water quality of stormwater runoff before it reaches Pentwater Lake. Green infrastructure uses plants and soil to absorb and filter runoff instead of direct discharge into the lake. The municipal marina is shown as an expanded marina based on a plan prepared by Wade Trim for the Village of Pentwater. There were some community and engineering concerns with this proposed marina design, but to redesign a marina was out of scope for the weekend charrette process so the existing plans were used to demonstrate improvements could be made. The second phase of this alternative includes a destination restaurant (Figure 3).

Table 2 - Alternative 1 Content Matrix

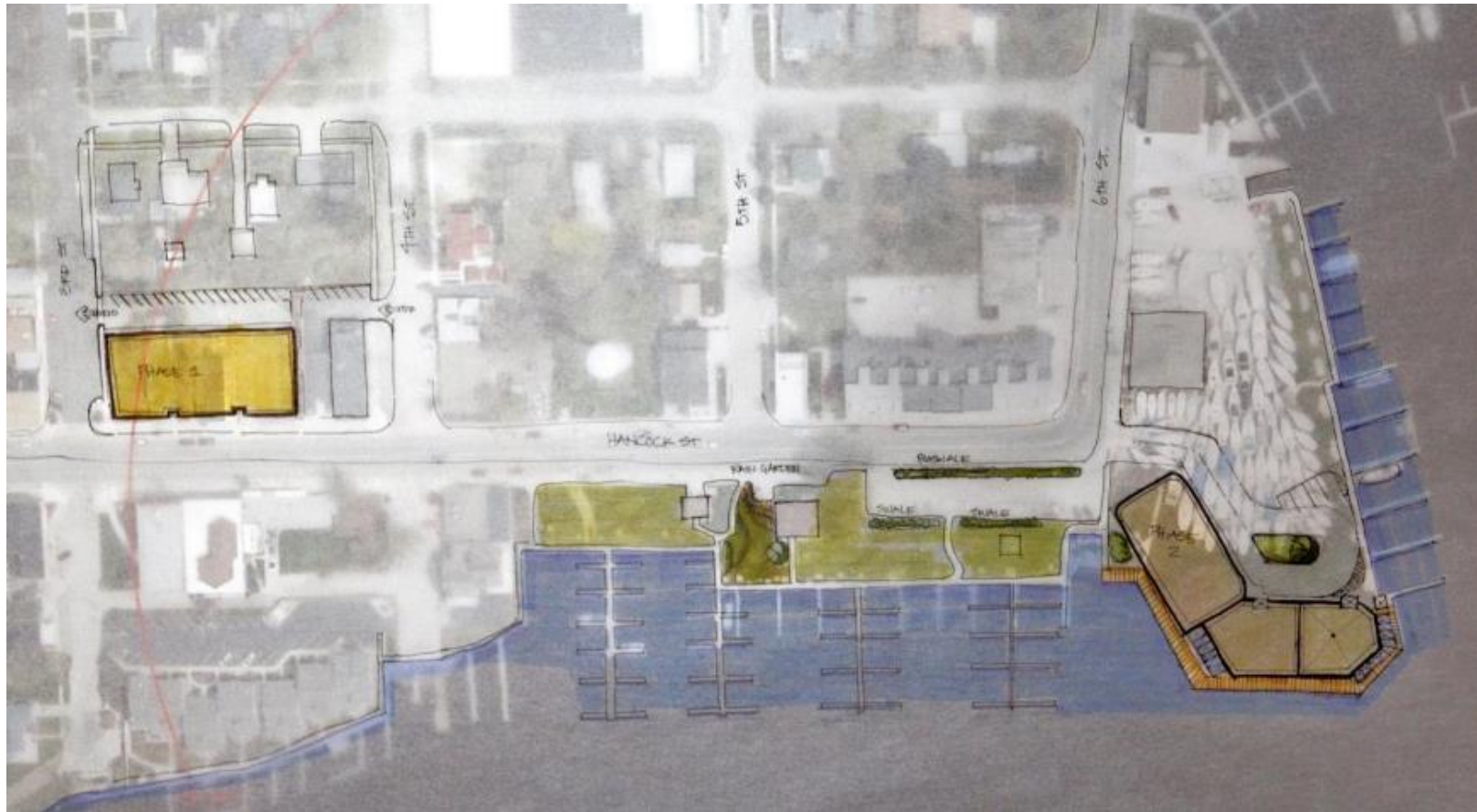
| Alternative 1: Pentwater Lake Systems Institute |  |
|---|--|
| Harbor/Waterfront Edge Driver                   | Leveraging the local “Brain Trust” for Natural Systems, Create a NGO Institute in Downtown Pentwater for Generational Knowledge Transfer and Continuing Education; Serve as a hub for basin wide teaching and learning   |
| Land-use  | Phase 1: Hancock and 3 <sup>rd</sup> street: Relocated Police Station/Ground Floor Retail/7200 sf of Institute and Parking<br>Phase II: Snug Harbor Point: Destination Restaurant/Relocate Fuel Marina: <ul style="list-style-type: none"> <li>Expanded Public Marina</li> </ul> Downtown: <ul style="list-style-type: none"> <li>Year-round Retail and Housing Options for Staff, Visiting Scholars and Students</li> </ul> |
| Economic Development                            | Village: <ul style="list-style-type: none"> <li>Transfer Innovative Ideas into Business Models worthy of Investment and Production for Economic Development</li> </ul> Marina <ul style="list-style-type: none"> <li>Launch Fees; Slip Rentals</li> </ul> Downtown: <ul style="list-style-type: none"> <li>Mixed Use Downtown (Increased Tax Base; Increase Spending)</li> </ul>   |
| Natural Systems                                 | Natural Stormwater Management Features on Hancock  |
| Local Precedent(s)                              | “Interlochen”; Chautauqua NY; SCORE  |
| Engineering Consideration                       | <ul style="list-style-type: none"> <li>New Building and Parking Lot</li> <li>Minor Underground Infrastructure Improvements (Water, Sanitary Sewer, Storm Sewer) to Site</li> <li>IT/Cable/Electrical Improvements</li> </ul>   |

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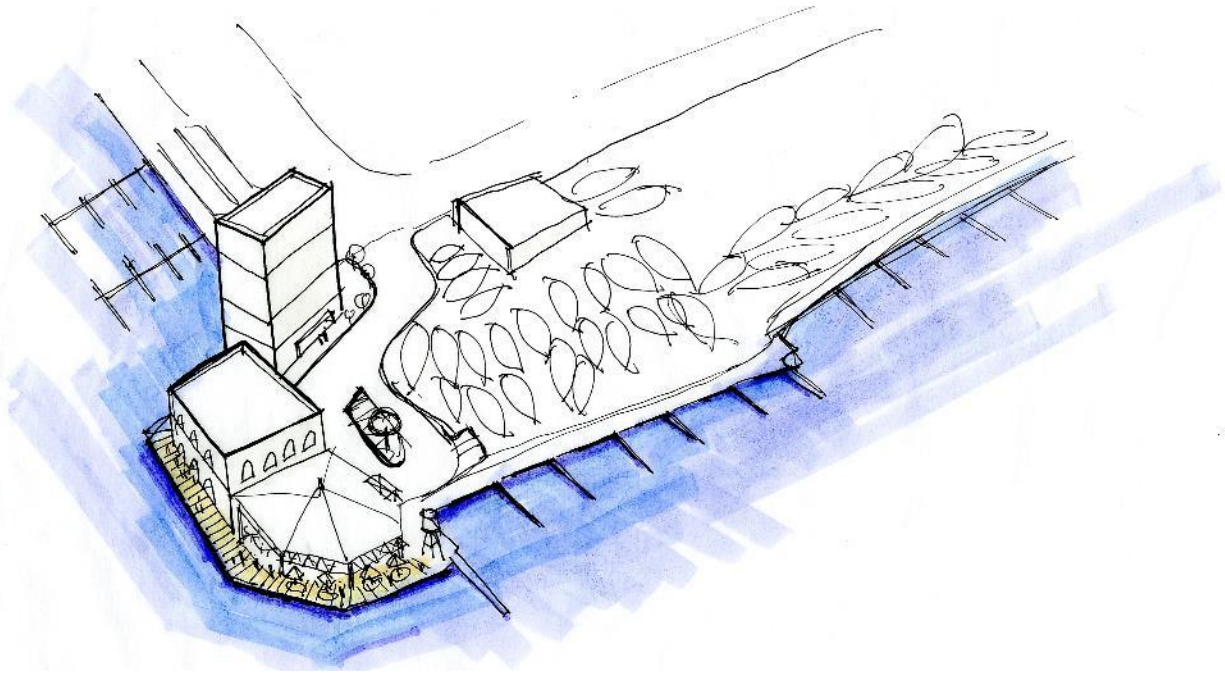
Figure 1 - Alternative 1 Presentation Board



Figure 2 - Alternative 1 Marina Plan



*Figure 3 - Alternative 1 Destination Restaurant Development*



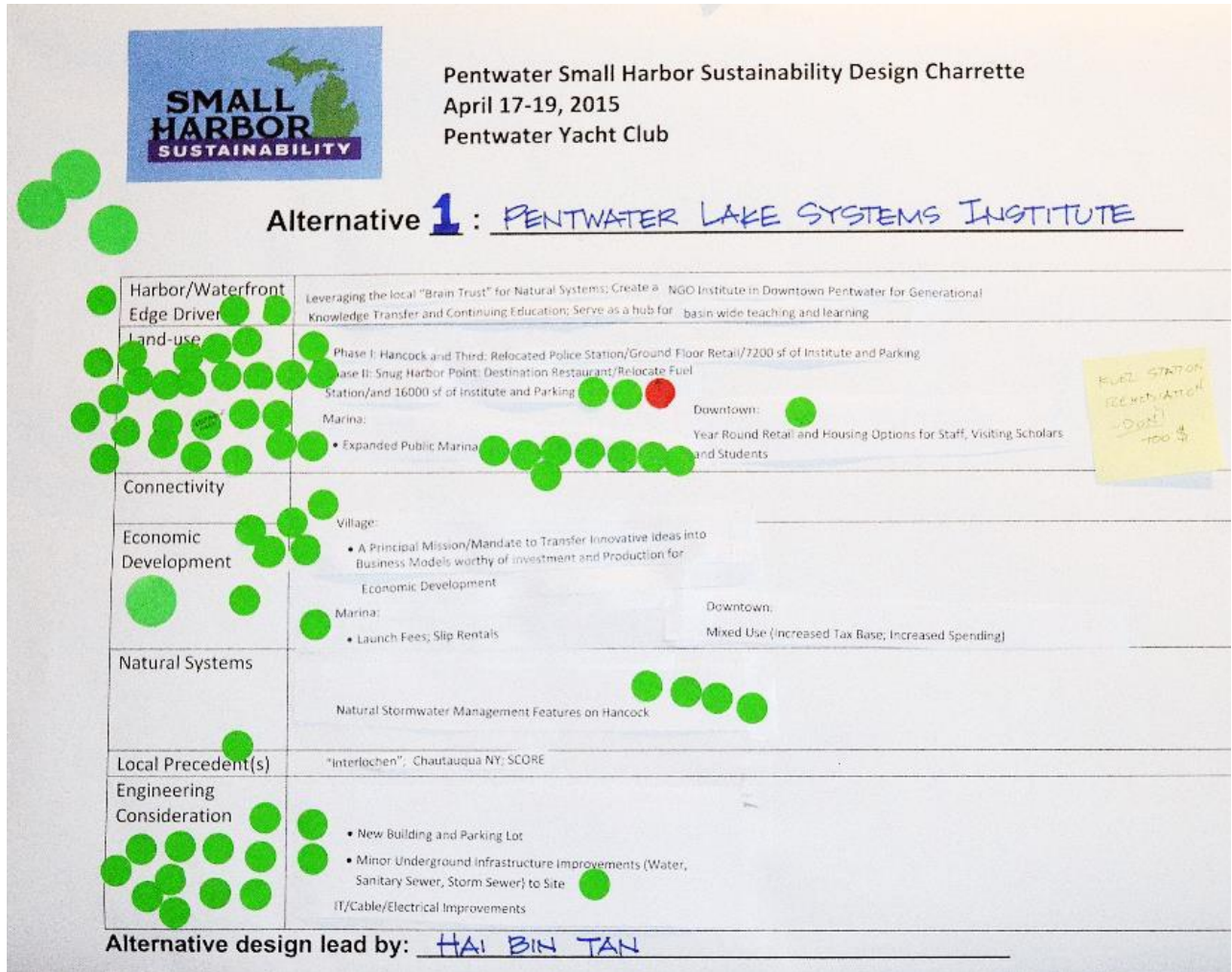




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Alternative 1 received four overall approval votes (large green dots) and one rejection vote (small red dots) by community members on the second night of the charrette. The one red vote was against moving the current fuel station due to remediation costs. The voting is shown in Figure 4 with overall votes on the top left corner and votes for individual elements within the table.

Figure 4 - Alternative 1 Community Vote





## Pentwater Charrette Final Report 2015

### [2.2 Design Alternative 2: Marine Craft and Technology School](#)

Alternative 2 design was driven by creating a marine craft and technology school and adding municipal marina slips by the municipal boat launch. The proposed Marine Craft and Technology School would provide an academic institutional driver to develop the Pentwater waterfront and attract youth and institute staff to the community. Table 3 lists the main aspects of this design and Figure 5 is the display board from community voting. A detailed plan of the boat launch area is enlarged in Figure 6 and Figure 7 shows an artistic rendering of the marine craft school next to the boat launch.



Table 3 - Alternative 2 Content Matrix

| Alternative 2: Marine Craft and Technology School |   |
|---|---|
| Harbor/Waterfront Edge Driver                     | Leveraging the local Artisan Center and Patterson Marine; Create Private/Public Marine Based School Focused on Marine Craft and Technology at Public Boat Launch; Serve as a hub for basin wide teaching and learning   |
| Land-use  | <p>Phase I: Investment at Public Boat Launch, New 20 Slip Marina, 12000 sf of Wooden Boat School and Water based Training Harbor</p> <p>Phase II: High Bay Large Boat Repair and Construction Marina:</p> <ul style="list-style-type: none"> <li>Expanded Public Marina near Boat Launch</li> </ul> <p>Downtown:</p> <ul style="list-style-type: none"> <li>Year Round Retail and Work Force Housing Options for Families</li> </ul>  |
| Economic Development                              | <p>Village:</p> <ul style="list-style-type: none"> <li>Transfer Innovative Artisan and Maker Space Ideas into Business Models worthy of Investment and Production for Economic Development</li> </ul> <p>Marina:</p> <ul style="list-style-type: none"> <li>Launch Fees; Slip Rentals; Large Boat Repair and Construction; Tuition and Housing</li> </ul> <p>Downtown:</p> <ul style="list-style-type: none"> <li>Mixed-Use (Increased Tax Base; Increased Spending)</li> </ul> |
| Natural Systems                                   | Natural Stormwater Systems along Lake Road; Wetlands and Submerged Habitat; Creek Habitat & Pocket Park   |
| Local Precedent(s)                                | Bayfront Maritime Center (Erie, PA), The Wooden Boat School (Brooklin, ME), Northwest School of Wooden Boat Building (Port Hadlock, WA)   |
| Engineering Considerations                        | <ul style="list-style-type: none"> <li>Major improvements to Marina with Floating Docks</li> <li>Major underground Infrastructure Improvements (Water, Sanitary Sewer, Storm Sewer) to New School Construction</li> <li>IT/Cable/Electrical Improvements to Public Marina and New School Construction</li> </ul>  |

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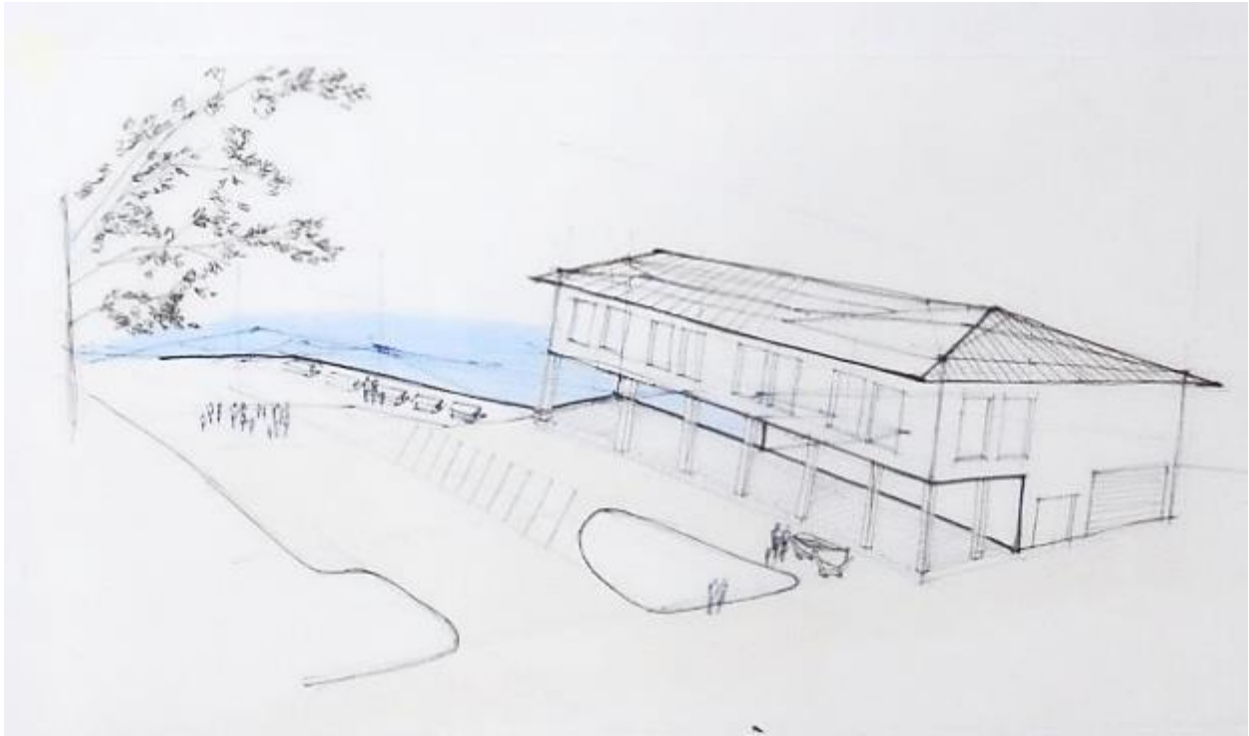
Figure 5 - Alternative 2 Presentation Board



Figure 6 - Alternative 2 Downtown Plan Version 1



*Figure 7 - Alternative 2 Downtown Harbor Section*



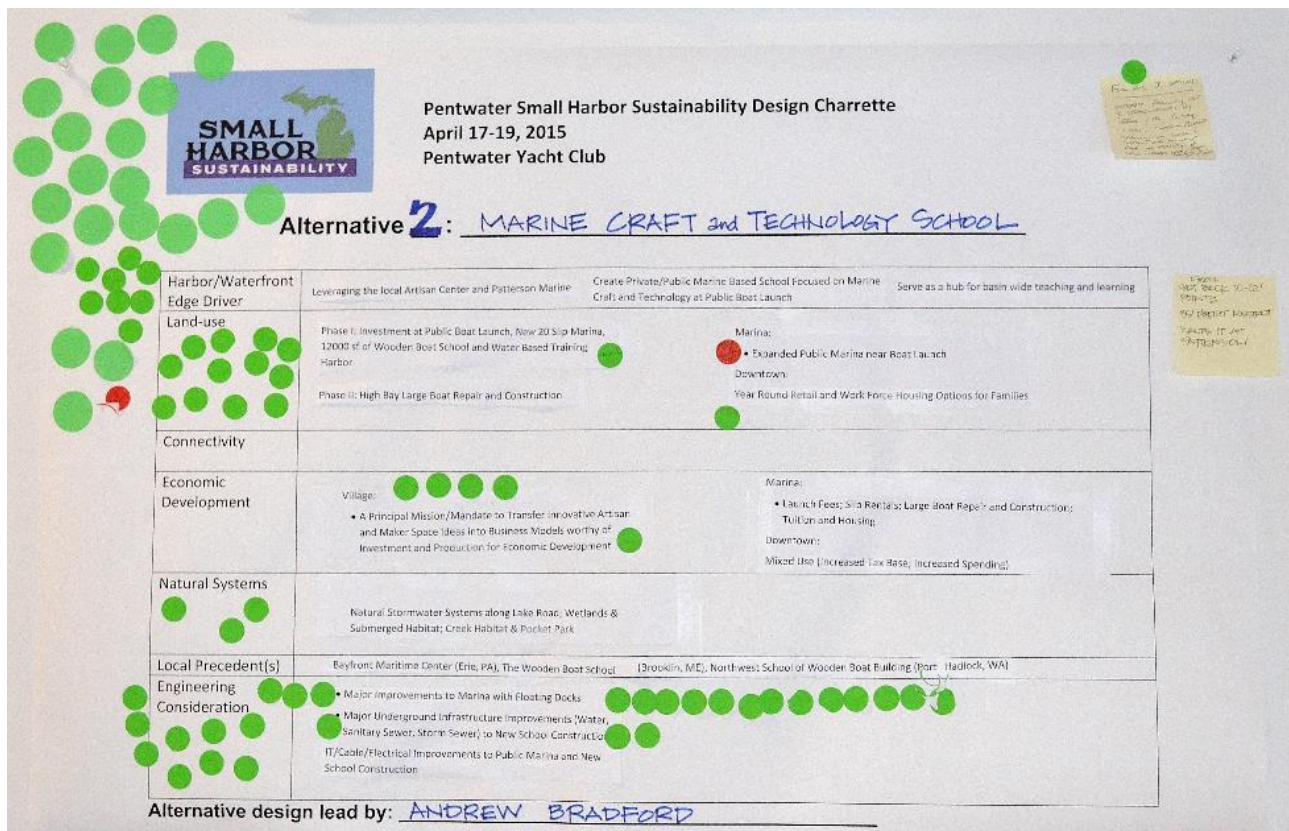


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Alternative 2 received 22 overall approval votes (large green dots) and two rejection votes (small red dots) by community members on the second night of the charrette. This design had the most large green dots of the three alternatives. The rejection votes were based on potential conflicts at the boat launch marina and not utilizing the existing Patterson Marine facility on the eastside of town. The voting is shown in Figure 8 with overall votes on the top left corner and votes for individual elements within the table. Oral feedback during the public input session included:

- Youth Sailing Ramp is best located on a beach on one side of a floating pier.
- Set back buildings 10-12' from pointe and keep 35' freight restriction open on lake. Facility should be at Patterson Marine, not at this location.
- For all three options: extend facility use and effectiveness by offering 1 hour, ½ day, 1 day, and 1 week courses drawing on local and distant drive Michigan universities. Have professors on variety of topics – create draw from state park campers and out of town visitors.
- Have continuing education short courses.

Figure 8 - Alternative 2 Community Vote



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## 2.3 Design Alternative 3: Mears University Center

The third alternative includes a university extension center immediately adjacent to Mears State Park entrance. The proposed Mears University Center would engage one or more Michigan universities to create an extension center for both field courses, research, as well as local offerings of degree programs. This center would be similar to, but not duplicate, University facilities located in Muskegon and Traverse City.

Table 4 lists the main aspects of this design and Figure 9 is the display board from community voting.

*Table 4 - Alternative 3 Content Matrix*

| Alternative 3: Mears University Center |   |
|--|---|
| Harbor/Waterfront Edge Driver          | Leveraging Pentwater’s Natural location and assets to create a Public University center at Mears State Park for Research Practice and Economic Business Development around near shore lake processes; serve as a hub for basin wide teaching and learning   |
| Land-use                               | Marina: <ul style="list-style-type: none"> <li>• Research Vessel Dock Station and Kayak Launch; Expanded Public Marina</li> </ul> Downtown: <ul style="list-style-type: none"> <li>• Year Round Retail and Housing Options for Staff, Visiting Scholars and Students</li> </ul>   |
| Economic Development                   | Village: <ul style="list-style-type: none"> <li>• A Principal Mission/Mandate to Transfer Research Ideas into Business Models worthy of Investment and Production for Economic Development</li> </ul> Marina: <ul style="list-style-type: none"> <li>• Launch Fees; Slip Rentals; Large Boat Repair and Construction; Tuition and Housing</li> </ul> Downtown: <ul style="list-style-type: none"> <li>• Mixed-Use (Increased Tax Base; Increased Spending)</li> </ul> Local jobs; Increased Tourist Spending; Student Enrollment and Faculty Engagement |
| Natural Systems                        | Naturalization of Lake Michigan Shoreline; Longshore Sediment Maintenance and Extended Dredging Cycle   |
| Local Precedent(s)                     | Annis Water Resources Institute (Muskegon); Great Lakes Water Studies Institute (Traverse City); Great Lakes Research Center (Houghton)   |
| Engineering Considerations             | <ul style="list-style-type: none"> <li>• New Building construction</li> <li>• New Parking Lot</li> <li>• Minor Road Improvements to Site</li> <li>• Major underground Infrastructure Improvements (Water, Sanitary Sewer, Storm Sewer) to Site</li> </ul>   |

Figure 9 - Alternative 3 Presentation Board

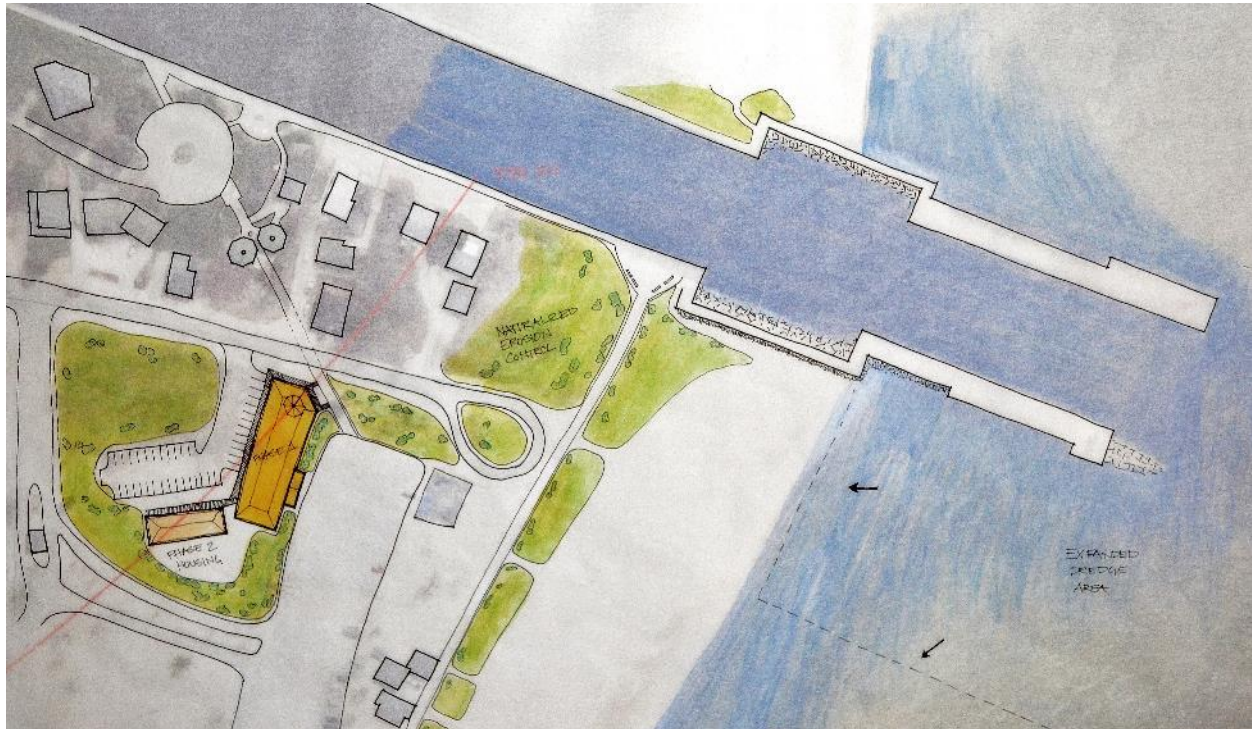




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Measures to reduce sedimentation within the channel are shown in Figure 10. In this design the dredging zone at the edge of the harbor entrance is extended so a larger zone of lake bottom must experience sedimentation before harbor entrance experiences shoaling. Restoring designated areas for dune vegetation can help reduce the amount of sand blown onto pathways and into the channel from the beach. The plan includes two phases noted in Figure 10. Phase 1 is the school and once that is established further amenities will be needed including housing for students and visiting faculty (Figure 11).

*Figure 10 - Alternative 3 Plan*



*Figure 11 - Alternative 3 University Extension Building*





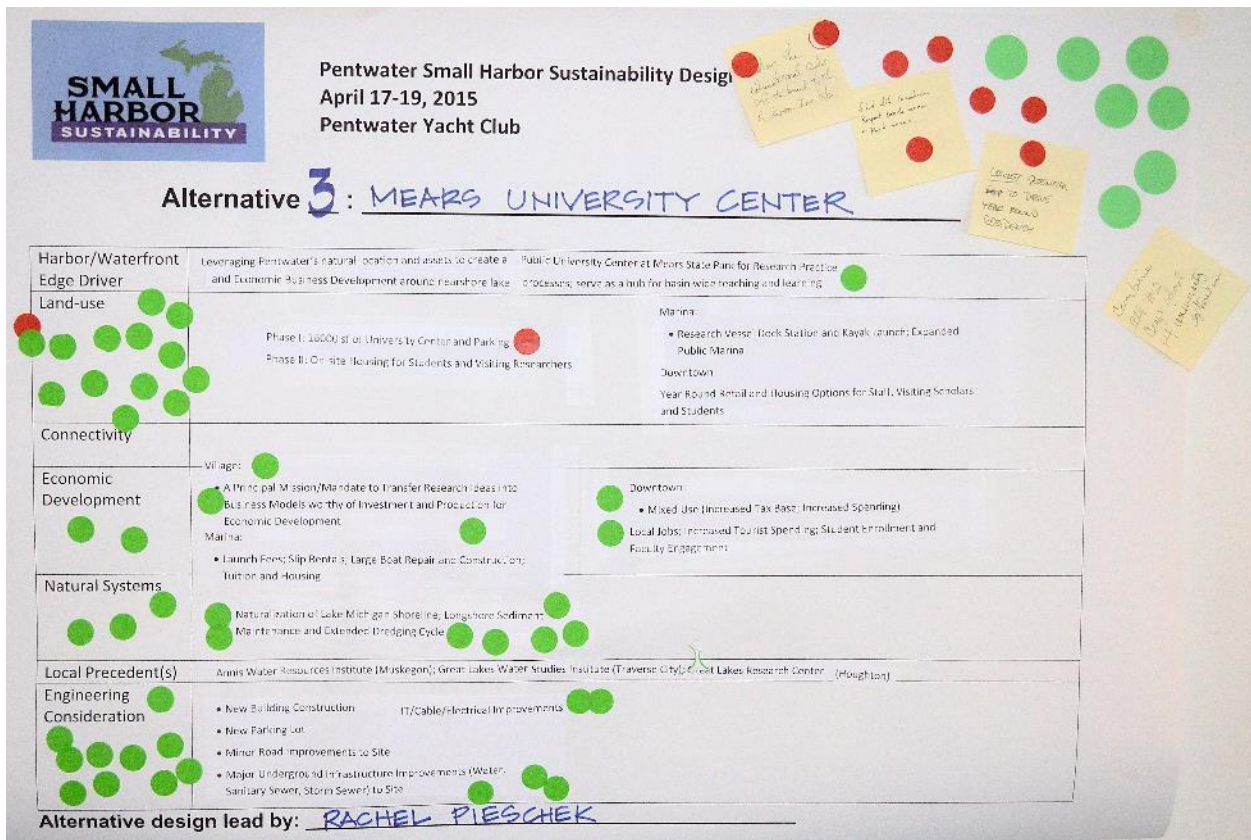


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Alternative 3 received seven overall approval votes (large green dots) and ten rejection votes (small red dots) by community members. The rejection votes primarily had to do with building a large facility near the entrance to the state park. The voting is shown in Figure 12 with overall votes on the top right corner and votes for individual elements within the table. Oral feedback during the public input session included:

- Move the educational center off the beach area to the Nickerson Inn Site
- Lowest potential to drive year round residency
- Find a different location respecting the beach and park area
- Combine all of alternative 2 boat school with a university extension from this alternative

Figure 12 - Alternative 3 Community Vote





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## 3.0 Preferred Alternative – Pentwater 2035

“Pentwater 2035” represents a shared future vision of the community based on the charrette design process. Alternative 2 had the majority of community approval votes, so the “preferred alternative” was developed primarily from Alternative 2 with small aspects of Alternative 1 and 3 included based on voting and oral feedback during the process. The final design includes developing a Pentwater Marine Technology Institute, expanding marina facilities and several redevelopment opportunities downtown and along the lakefront. The final design includes the items in Table 5 and is illustrated in Figure 13.

*Table 5 - Preferred Alternative Content Matrix*

| Preferred Alternative – Final Design |  |
|--------------------------------------|--|
| Harbor/Waterfront<br>Edge Driver     | Pentwater Marine Technology Institute, Destination Restaurant, and Marina Expansion  |
| Land-use                             | <ul style="list-style-type: none"> <li>• Pentwire “Future Brownfield Redevelopment”</li> <li>• Independent Senior Housing at Lowell and Frederick corner</li> <li>• Mixed-Use infill at Police Station, (ground floor retail and police station, upper levels residential, parking behind)</li> </ul>                  |
| Connectivity                         | Chain ferry across channel; “Complete” streets including Lowell;   |
| Economic<br>Development              | <ul style="list-style-type: none"> <li>• Increased Marina size – boat slip rentals</li> <li>• Increased residential – tax base</li> <li>• Destination Restaurant and retail</li> </ul>   |
| Natural Systems                      | Low Impact Development (LID) on Hancock Street, Re-vegetation of Dune Grasses near State Park, Underwater fish habitat (LWD incidental)  |
| Engineering<br>Considerations        | <ul style="list-style-type: none"> <li>• Major improvements to Marina with Floating Docks</li> <li>• Major underground Infrastructure Improvements (Water, Sanitary Sewer, Storm Sewer) to New School Construction</li> <li>• IT/Cable/Electrical Improvements to Public Marina and New School Construction</li> </ul> |

*Figure 13 - Final Design Full Site Plan*





## Pentwater Charrette Final Report 2015

### 3.1 Boat Launch Area

Final design of the municipal boat launch includes adding boat slips, moving the pavilion, adding an extended pier, and moving the sailing school sand launch to be adjacent to the boat ramp. Figure 14 shows an artistic rendering of the boat launch and slips from the lake and Figure 15 is a rendering of the school next to the launch.

*Figure 14 - Boat Launch Existing Condition and Artistic Rendering*



## Pentwater Charrette Final Report 2015

*Figure 15 - Artistic Rendering of Boat Launch and Boat Building School*

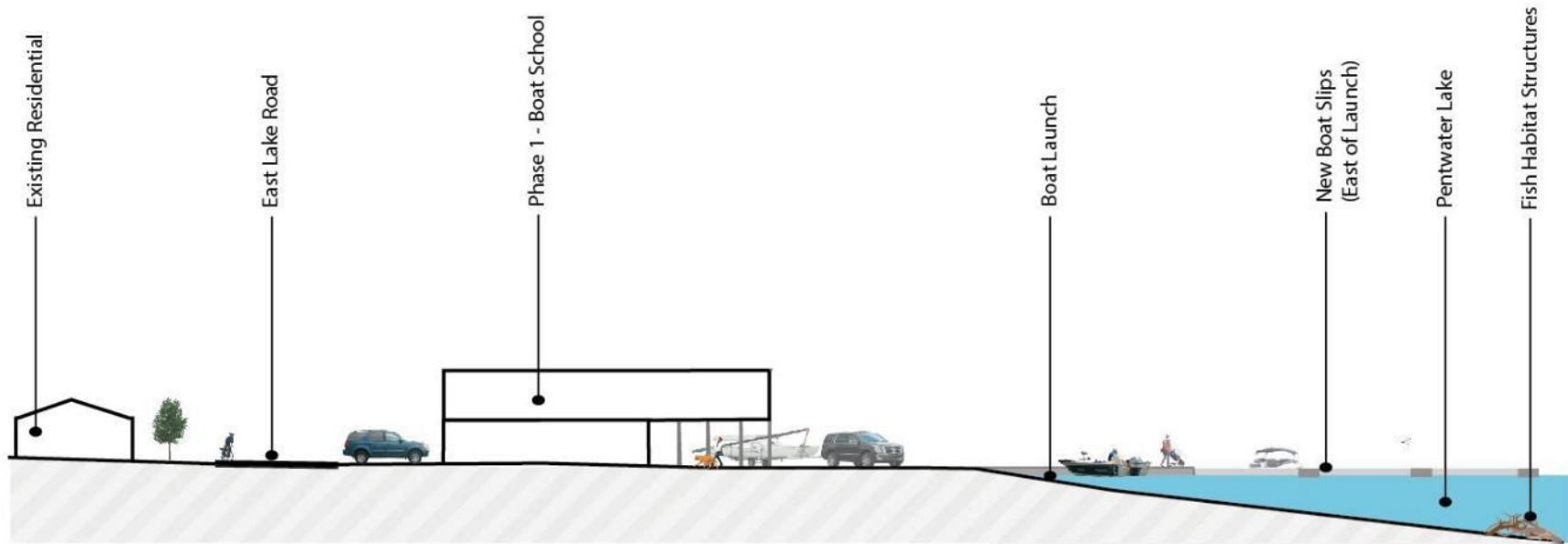


Fish habitat enhancement structures, as shown in Figure 16, are part of the vision to improve the fish populations in Pentwater Lake. There are a variety of different types of fish habitat structures and Figure 16 is only one example of the type of structure that can be added inside of the lake. Figure 17 shows the fish habitat as well as the launch, school, and additional facilities along the waterfront. An artistic rendering of Phase 2 is in Figure 18. The location of Phase 2 can be seen in Figure 19, which is the plan view of the boat launch and school area.

*Figure 16 - Example Fish Habitat Enhancement Structure Ultimately Located on Bottom of Lake*



Figure 17 - Section of Boat Launch and Boat Building School





## Pentwater Charrette Final Report 2015

*Figure 18 - Potential Site for Phase Two and Artistic Rendering*





Figure 19 - Boat Launch Plan



## 3.2 Downtown Waterfront

New boat slips based on the Wade Trim plan, Figure 20, are included in the park plan including electrical and other necessary infrastructure upgrades to accommodate more boat slips. Figure 21 illustrates the new slips in section. Finally, bioswales and rain gardens were added to the municipal park to help improve water quality in Pentwater Lake.

*Figure 20 - Wade Trim Expansion Plan for Municipal Harbor*

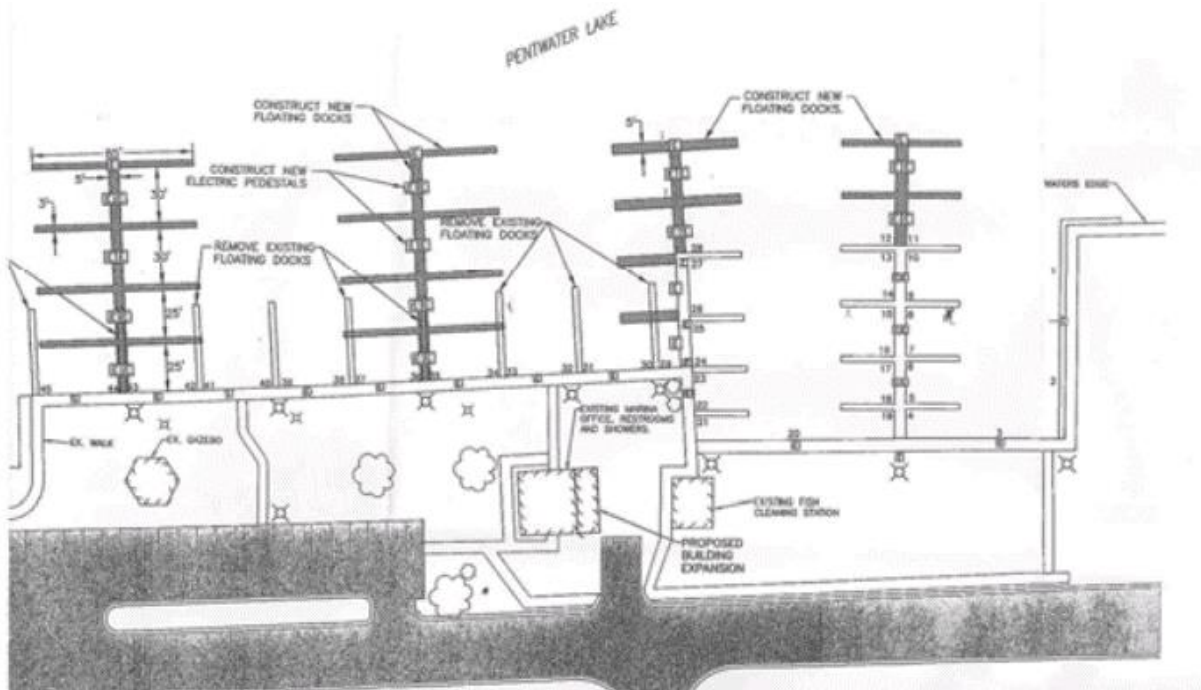


Figure 22 illustrates all of these changes as well as a destination restaurant on the end of the Snug Harbor property. A “year-round” destination restaurant that would include facilities such as banquet/meeting space, catering, etc. would draw people from other communities into Pentwater and its waterfront location would make it unique in the region.

Figure 21 - Section of Municipal Harbor Design

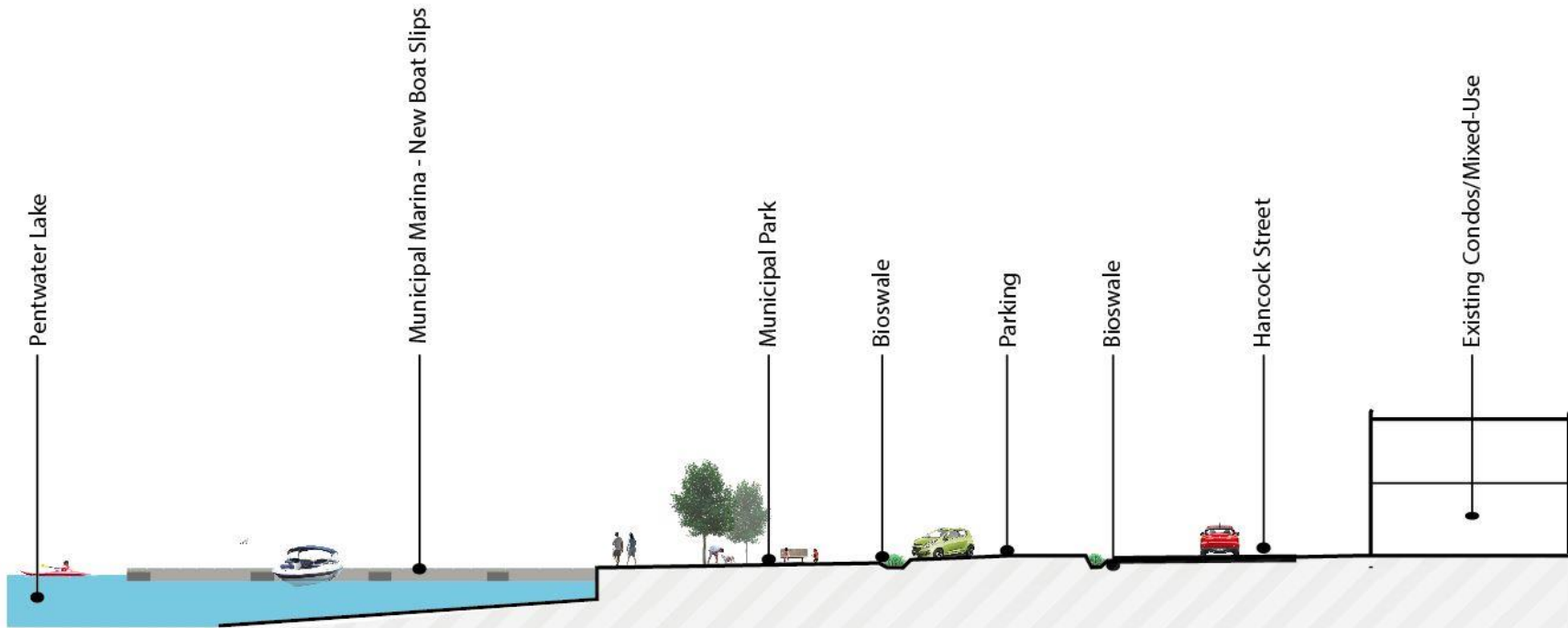


Figure 22 - Final Design Municipal Marina and Snug Harbor Plan





## Pentwater Charrette Final Report 2015

Figure 23 shows an oblique artistic rendering of proposed the destination restaurant and municipal park modifications. In the municipal park, rain gardens and swales are added to help treat and infiltrate water into the ground instead of stormwater running off directly into Pentwater Lake. This environmental component is intended to help improve water quality of Pentwater Lake and act as a demonstrative project to educate residents about native plants, stormwater runoff, and what they can do to improve water quality in the lake.

Figure 24 provides an example of a rain garden and Figure 25 is a photograph of existing conditions on the restaurant site and an artistic rendering of the design.

*Figure 23 - Existing Conditions and Artistic Rendering of Municipal Marina and Snug Harbor*



*Figure 24 - Example Rain Garden (Woodbridge Greenhouses 2010)*



*Figure 25 - Existing Condition and Artistic Rendering of Snug Harbor Waterfront*



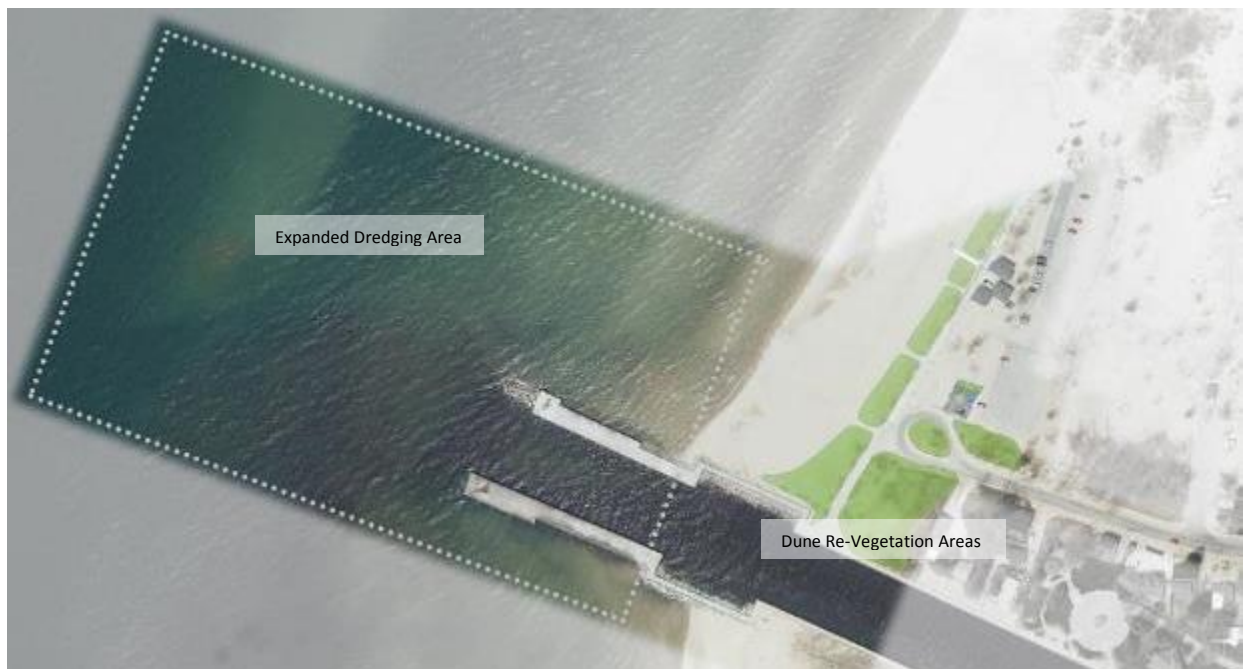




### 3.3 Harbor and Channel

Sedimentation control described in Alternative 3 was incorporated with the final design for the area outlined in Figure 26. The methods include an expanded dredging area at the mouth of the channel. An expanded dredging area would cost more to dredge than the current area because of increased size, but will prolong time between dredging which could ultimately save in mobilization costs. Restoring dune vegetation areas along Mears State Park and edge of the channel will stabilize areas of soil and help to control sand blowing away from the beach. An example of dune habitat restoration in Glen Haven, Michigan is shown in Figure 27.

*Figure 26 - Final Design Channel Mouth and State Park Site Plan*



*Figure 27 - Example of Dune Vegetation Habitat Restoration Project in Glen Haven, MI*





### 3.4 Bedstead Park

At the end of Bridge Street a new pocket park (referred to as Bedstead Park) is designed as a connection point between downtown and the channel. The site was the location of the Bedstead Factory until 1900. Figure 28 is an illustrative site plan of the park and Figure 29 is a rendering of the park as viewed from the Pentwater Yacht Club. This park would have a kayak launch and additional storage racks which the Village could rent to people, following process utilized for current kayak storage service. The park is located at the end of the channel, so it could support a boat crossing between there and the opposite side of the channel. A chain ferry, similar to the one in Saugatuck, is included in the design with landings on each side.

*Figure 28 - Bedstead Park Plan*



*Figure 29 - Bedstead Park Existing Conditions and Artistic Rendering*





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### 3.5 Downtown Redevelopment

Through the community design process, there were four redevelopment opportunities identified in downtown Pentwater (Figure 30). The first location is at the corner of Hancock Street and Lowell Street. The location has easy walking access to downtown and Mears State Park. The site could be redeveloped into an independent senior living facility. Alternatively, this site could be redeveloped into workforce housing to accommodate the affordable housing shortage in the community. Both independent senior housing and affordable housing were cited as community concerns so either option would meet community needs.

The second location is a currently occupied historic structure at the northwest corner of Hancock and 2<sup>nd</sup> Street. This location could serve as the proposed boat school through repurposing the existing space.

The third location is redevelopment of the current police station, chamber of commerce, as well as a vacant building and a vacant lot (Figure 31). The police station would be relocated within the mixed-use building to maintain a downtown presence. The mixed-use facility could meet several community needs including space for professional businesses and housing for marine technology institute.

The final location is the current location of Pentwater Wire. There is no proposed plan to relocate the business or repurpose the site based on the community meetings. It is included in the Pentwater 2035 plan because if this industry were to leave Pentwater, the site is a prime location for redevelopment and re-zoning so the community would want a contingency plan.



Figure 30 - Downtown Redevelopment Opportunities



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*Figure 31 - Existing Condition and Artistic Rendering of Downtown Mixed-Use Development Site*

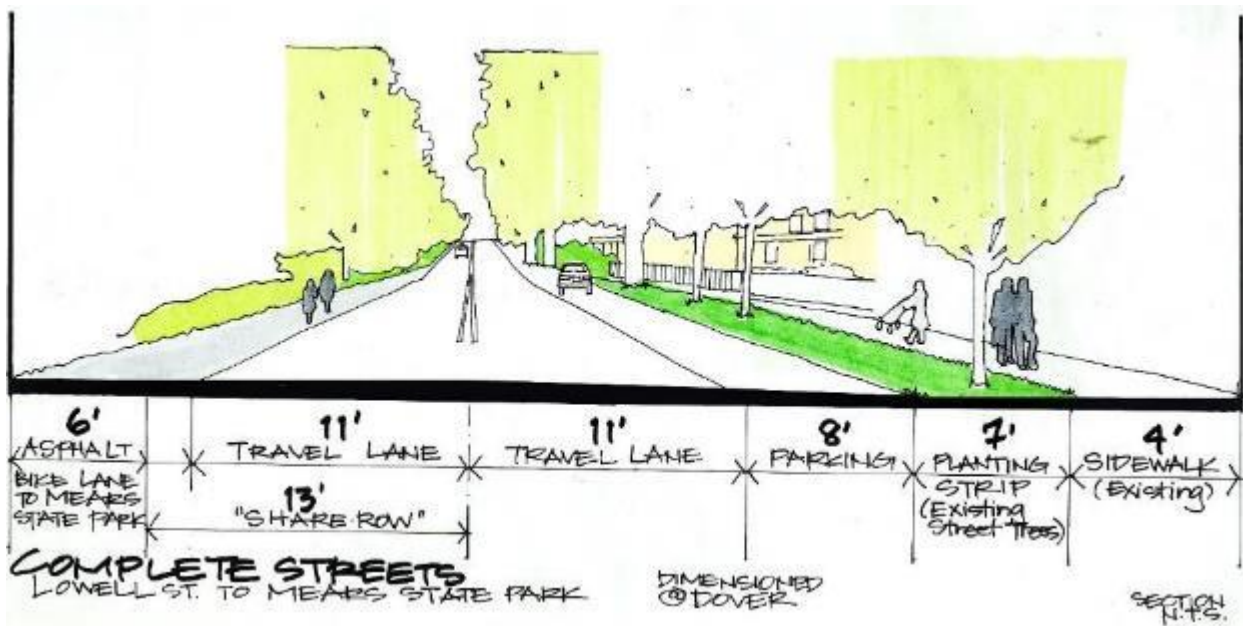




**4.0 Connectivity**

The harbor connection via car, bike, walking, and boating are all important in Pentwater. Lowell Street, 6<sup>th</sup> street, and Hancock Street are key connections for pedestrians and vehicles. These streets should be designed as complete streets which are defined by their ability to be accessible to all modes and abilities. Figure 32 and Figure 33 are “complete street” designs of Lowell Street. The designs are based on current right-of-ways and infrastructure. A six foot designated bike path is designed on one side of the street and parking on the other.

*Figure 32 - Complete Street Section of Lowell Street*



*Figure 33 - Final Digitized Complete Street Section of Lowell Street*





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Figure 34 is the preliminary connectivity diagram before public voting and modifications for the final. Figure 35 shows the public voting on parts of the connectivity diagram and the modifications to the diagram. Majority of the red votes were against modification to the Village Green downtown park. The community made the following written comments during voting:

- Do not change the Village Green
- Winter Sledding area, do not touch this area (Village Green)
- No change allowed on a “sacred cow”! (Village Green)
- Question on Public Row on Lake Edge – Riparian rights (GR Attorney) and Legal issues
- Historically Hancock was diagonal/“head in” parking, Murals on Pentwire structure
- What about information connectivity? Pentwater Town wide high speed public WiFi please
- Add green infrastructure near Clymer. Lake Association tests water quality there.
- Year-round high schools, continuing education, and short courses



Figure 34 - Preliminary Connectivity Diagram









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