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# **Evaluation of Economic Development Strategies: Au Gres**

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## 1. Executive Summary

The Michigan SeaGrant has been conducting an interdisciplinary project intended to develop a sustainable small harbor management strategy for Michigan's coastal communities. The team is hosting charrettes (facilitated community planning sessions) in New Baltimore, Au Gres, Ontonagon and Pentwater. These communities were selected based on several considerations, including broad geographic representation across Michigan and variety in type of harbor, community population size and type of adjacent water body.

Au Gres is a small community with a year-round population of about 800 located on the Au Gres River near Saginaw Bay. Au Gres offers excellent outdoor recreation with natural beauty and an excellent perch and walleye fishery. Au Gres is two hours from Detroit and readily accessible via state and interstate highways. Despite these advantages, Au Gres has experienced a decline in population of about 1% per year since 2000 and there are indications that Au Gres is not appropriately leveraging its advantages. There is a boat launch facility at the mouth of the Au Gres River that serves the thriving local fishery in Saginaw Bay. The facility includes parking for nearly 300 vehicles and receives revenues of \$10 per launch, however the Michigan Department of Natural Resources (DNR) operates this facility and the City of Au Gres receives no revenue from launches. In addition, Au Gres is located on an important recreational byway, but many travelers go through Au Gres without stopping.

Conducting the charrette process for Au Gres resulted in a "Preferred Alternative" identified as "Au Gres 2035" representing a 20-year future condition. This design includes a boardwalk, playground, pavilion, pocket beach, fishing platforms, breakwater area, waterfront retail and restaurant, kayak launch and rentals, band shell, rock climbing wall and other amenities. In addition, 28 mini cabins of additional on-site lodging is proposed and substantial signage, visual exposure, and traffic pattern changes for US 23 are proposed.

This evaluation indicates that the changes identified in the charrette process have significant potential for enhancing the economic sustainability of Au Gres. Further refinement of the vision along with a developing a deeper understanding of likely costs, revenues, and funding mechanisms are recommended.

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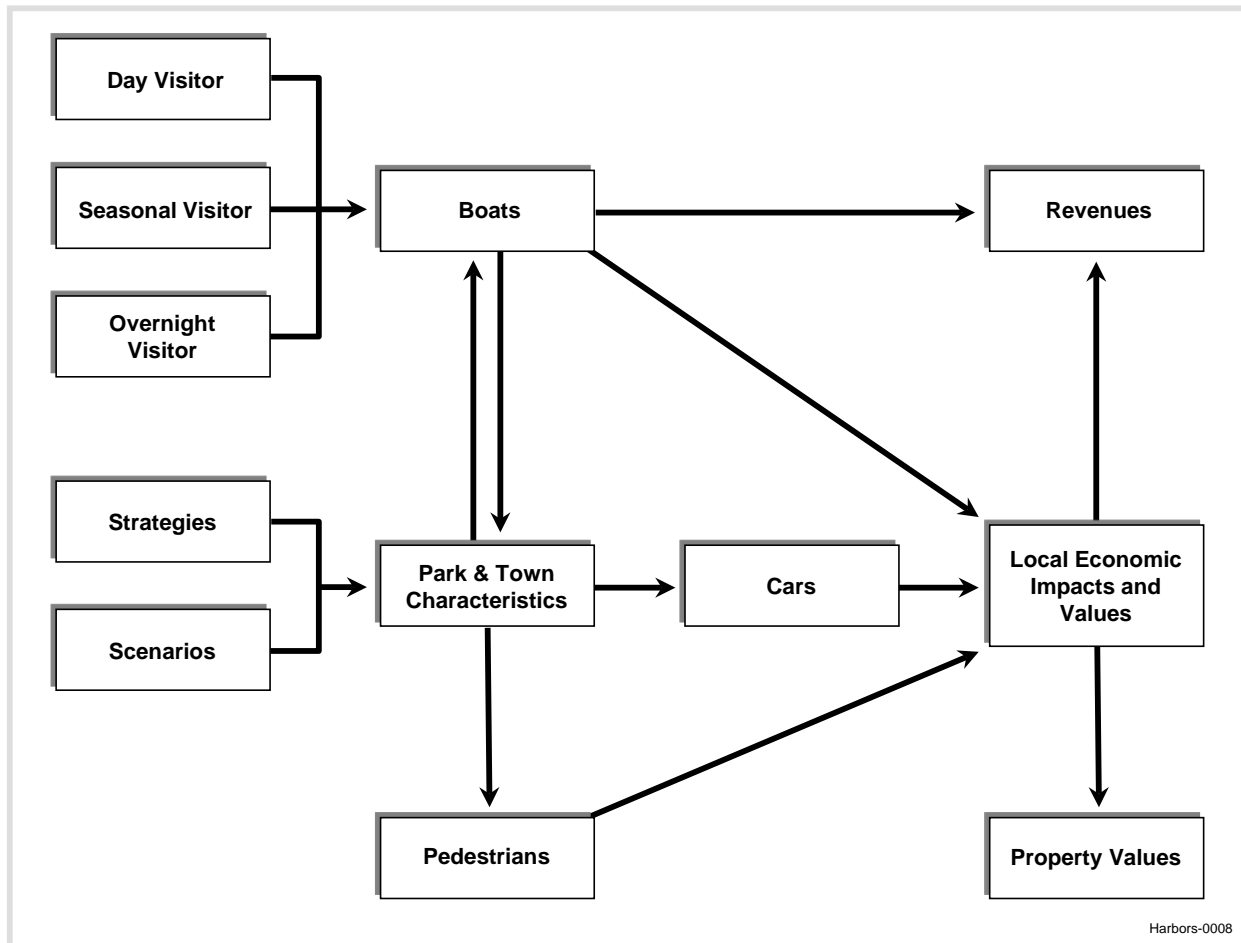
## 2. Economic Model Overview

Enhancing the economic sustainability of harbor towns requires making important decisions in the face of complicated conditions. To support these efforts, a generalized decision-support model that can be tailored to individual harbor towns is being developed. The model evaluates demand for waterfront facilities and waterfront parks.<sup>1</sup> Demand arises from the nearby population and includes features commonly considered in recreation and urban planning, such as park features, town walkability, town marina access, and marina amenities.

The models are intended to support consideration of strategies and scenarios. Strategies are considered by decision-makers and include changes to typical harbor characteristics (e.g., number of slips), as well as urban planning-related characteristics, such as walkability and town/harbor access. Scenarios are external factors such as population levels and distribution, incomes, boat ownership levels, gas prices, harbor maintenance costs, and labor costs. Figure 1 illustrates the highest level architecture of the model—at the level of the relationship between strategies/scenarios and costs/revenues.

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<sup>1</sup> This is fundamentally different from other economic models of marinas and boat launches, which are simple input-output models relying only on direct revenue and expenses.



**Figure 1: Model Relationships**

As Figure 1 depicts, Strategies and Scenarios influence Park and Town Characteristics and there are Implementation Costs associated with them. The Park and Town Characteristics impact the level of Boat Visits, Pedestrian Visits, and Car Visits. A vibrant marina can draw additional visits. This is indicated by the double arrow between Boat Visits and Park and Town Characteristics. Changes in Boat Visits lead to changes in both Marina Costs and Marina Revenues as (for example) harbor operators purchase and sell more gas and utility services.

Along with these trips come expenditures which are represented by Local Economic Impacts and Values. With these expenditures local businesses make profits and pay taxes. This change in value is a potential source of indirect revenue for the marina. Along with improved tourism prospects, there is the potential for changes in property values which is another improvement in value that could cause taxes to increase and be a potential source of indirect revenue.

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### 3. Au Gres Model

Tourism and recreational demand modeling was undertaken to characterize the economic implications of the Preferred Alternative (Au Gres 2035) that was identified during the Au Gres charrette process.<sup>2</sup> To accomplish this, the Small Harbor Sustainability model was customized to the Au Gres 2035 scenario. This effort focuses on economic values that could potentially be captured to support a more sustainable future.

The model underlying this report is based on the best currently available information. Locations and incomes of potential visitors are collected from the census, and travel costs to Au Gres are identified based on distance and driving costs. Further secondary research or expert opinion could improve this specification

Model specifications include the functions and parameters that characterize behaviors, the data that describes markets and characteristics, and the targets for baseline calibration. Models are based on the best behavioral functions and framework available. Recreation attractors include marina, park, and fishing opportunities. The market for town visits also includes transient visitors to the marinas and therefore a symbiotic connection between demand for transient slips in marinas and demand for town trips from marinas exists; improving town conditions increases transient marina visits and improving marina conditions increases town visits by transient boaters.

Site-specific behavioral information is not available. This is the usual case unless a site-choice survey and data modeling efforts have been conducted in the area. A site-choice function from an econometric model of urban park use is applied to characterize the expected changes from the park. This model was developed by identifying park characteristics, surveying recreator behaviors, and econometrically modeling the relationship between the two (Kinnell et al. 2006). Although this model was developed for urban area, it contains many variables that represent features that are being considered for an Au Gres park. The function from this model is applied to the less densely populated area around Au Gres by collecting and applying the data that represent distance and population densities in the Au Gres area.

Table 1 contains the variables in this model.

**Table 1**  
**Coefficients Used in the Model**

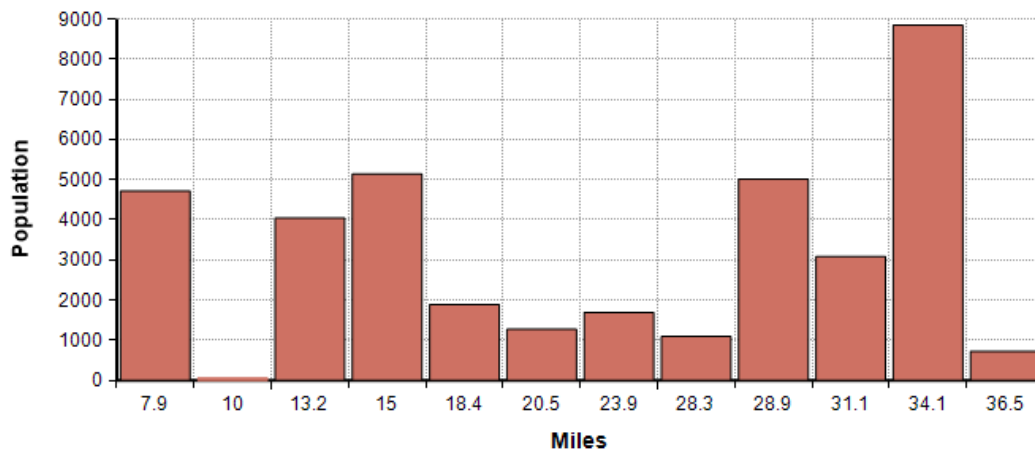
<b>Category</b>	<b>Coefficient</b>
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<sup>2</sup> Description is available in the Au Gres Charrette Final Report produced by Lawrence Tech University and Michigan Sea Grant.

One-way distance	-0.11
Acres	0.01
Trails	0.99
Trail miles	0.02
Picnic area	0.74
Sports facilities	0.43
Swimming facilities	0.14
Waterbody	0.83
Playgrounds	0.26

Visitors to Au Gres can arrive via land and water. The local land-based market that could potentially use the town, waterfront facilities, boat ramps, and marinas is specified to be the population within 40 miles of downtown Au Gres. The ZIP Codes within this distance (as identified using PC\*Miler routing and mileage software [ALK Technologies, Inc. 2010]) and their populations (based on U.S. Census data) are depicted below.

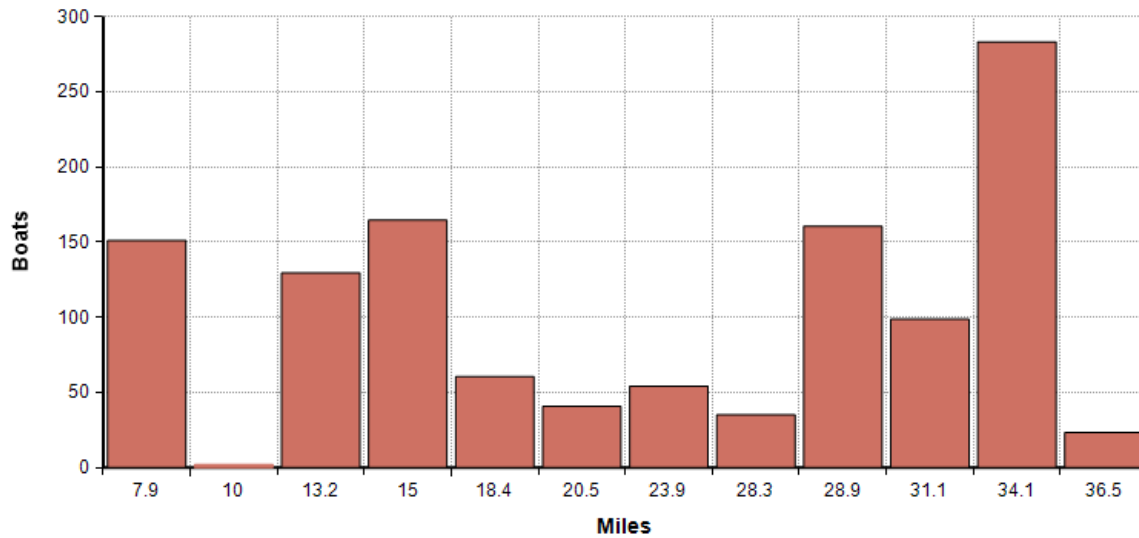


**Figure 2: Populations within 40 Miles of Au Gres from Center of ZIP Codes**

The primary market for slips and launches is specified to be the population of boat owners within 40 miles of the marina.

Figure 3 depicts estimates of boat ownership for ZIP Codes within this area. Actual levels of boat ownership in this area are unknown and are specified at a statewide average of 8% per household.





**Figure 3: Specified Boat Ownership from ZIP codes within 40 Miles of Au Gres**

Marina users can include both seasonal slip rentals and transient boaters arriving by Saginaw Bay or Au Gres River. The market for transient slips and the town visits consists of boats on Saginaw Bay/Lake Huron within traveling distance.

Table 2 depicts water distances and locations with concentrations of boats near Au Gres.

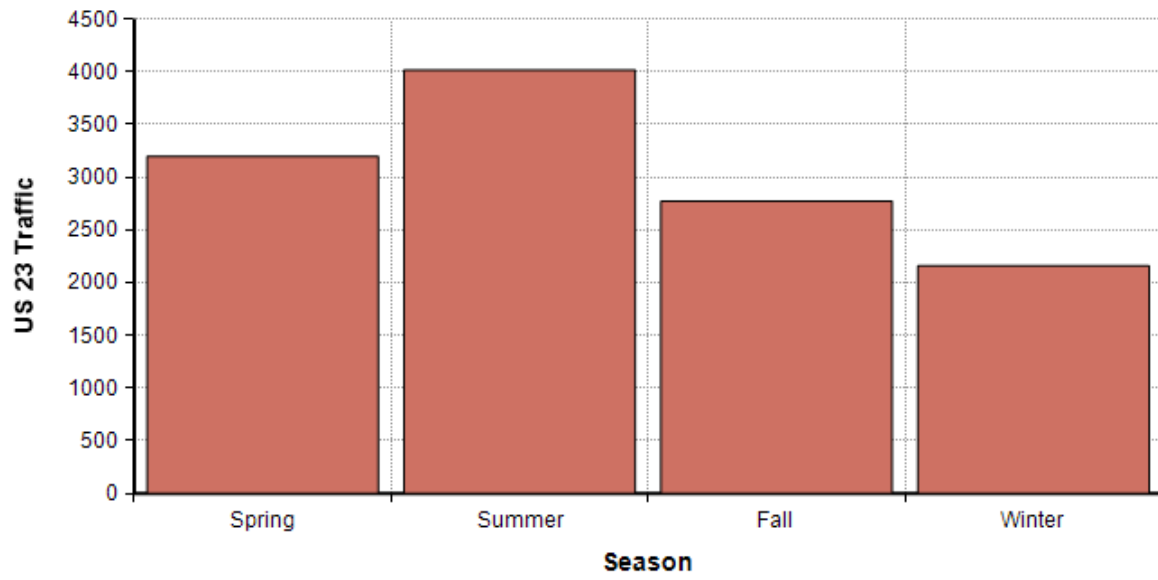
**Table 2**  
**Locations and Water Distances**

Category	Coefficient
Sebewaing Marina	24.5
Bayport Harbor of Refuge	21.3
Bay City Yacht Club	30.3
Linwood Beach Marina	26.8
Caseville Marina	22.9
Main Pier Condominium Marina	36.4
East Tawas State Dock	24.2
Bayport Harbor of Refuge	21.3

Although boating improvements would result in improved values the existence of significant resources under current conditions and large over-water distances mitigate this effect. As value from water traffic is expected to be small relative to land, this effect is not evaluated further.

A final important consideration relates to transient car visits. Au Gres is located along US Highway 23 (US 23). US 23 goes north/south through the United States. Its northernmost 362 mile long section is in Michigan's Lower Peninsula. Coming from population centers to the south, US 23 is a freeway that is concurrent with I-75 from Flint to Standish. This section (which is about 15 miles from Au Gres) carries almost 70,000 vehicles per day.

At Standish, US 23 becomes a byway that follows the Lake Huron shoreline northward. This section of US 23 runs through Au Gres and is part of the Pure Michigan Byway Program. As a Pure Michigan Recreational Byway, this segment of US 23 is one of seven recreation routes that have been deemed representative of Michigan's natural and cultural heritage. The latest published traffic count for U.S. 23 at Au Gres was taken during 2005 and indicates an annual total of 1,074,120. The daily averages for winter, spring, summer, and fall, respectively, are depicted in Figure 4.



**Figure 4: Daily Average US 23 Traffic in Au Gres**

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## 4. Baseline

The modeling approach applies the “Baseline and Counterfactual” framework. A representation of current conditions is developed and the model is calibrated to represent these “Baseline” conditions. After developing this Baseline characterization, counterfactual strategies can be evaluated by making changes to model inputs.

Because park trips, seasonal marina occupancy, transient marina occupancy, and boat launch use are important variables that are subject to change under different strategies and scenarios, these are identified as targets for calibration.

No specific information about trips or expenditures is available for this effort. Given this situation, the 2005 traffic count information was employed to characterize trips. As most of the additional activity in Au Gres would be generated during tourist season, Baseline trips during this time period are most relevant. Approximately 2,000 vehicles are counted on winter days. These are believed to be related to trips to work and errands that are unrelated to tourism and recreation.

The approximately 2,000 per day difference in the vehicle count between summer and winter is taken to represent tourism and recreation-related trips. Highway 23 serves as a north/south route and the primary road in Au Gres. The importance of US 23 in these roles allows using it as a surrogate for Baseline trip estimates. To convert the vehicle counts into trip estimates the 2,000 vehicle counts are divided into 500 vehicle counts traveling through Au Gres, 500 vehicle counts on single day trips to Au Gres, and 1,000 vehicle counts from tourists that are visiting Au Gres. This is further broken down as:

- 500 vehicles traveling north and 500 vehicles traveling south on US 23
- 250 single-day recreation trips into and out of Au Gres
- 250 families staying in or near Au Gres.

In Baseline conditions, the 500 vehicles are specified as passing through Au Gres without undertaking recreation or incurring expenses. The 250 single day recreation trips to Au Gres are specified as adults spending \$50 each across tourism categories “Food and Beverage,” “Retail,” and “Transportation.”

The 250 families that are specified to be vacationing in Au Gres on a typical summer day are expected to engage in at one or more activities each day. These activities include outings such as shopping, restaurant visits, fishing, golfing, and park visits. Using 150 days to represent spring, summer, and fall days, there would be 500 to 1,000 outings per day and up to

15,000 total outings over a tourist season. The area identified for most change in the charrettes relates to lodging and waterfront activities at the current Au Gres City Park and DNR mooring facility near downtown Au Gres. Baseline park features are specified as depicted in Table 3.

**Table 3  
Baseline Park Features**

Category	Current Conditions	Numeric Specification
One-way distance	Approximately 40,000 people live within 40 miles	Numbers underlying Figure 2
Acres	Estimated 20 acres	20 (acres)
Trails	Concrete walkway at riverfront	0 (0 for no, 1 for yes)
Trail miles	No designated trails	0 (miles)
Picnic area	Picnic table and fire ring	0.5 (0 to 1 scale)
Sports facilities	Tennis, outdoor volleyball, horseshoe pits, shuffle board, basketball courts, baseball/softball fields	0.75 (0 to 1 scale)
Swimming facilities	No designated area	0 (0 for no, 1 for yes)
Waterbody	Fishing and boating	1 (0 for no, 1 for yes)
Playgrounds	Play areas in the park	0.5 (0 to 1 scale)
Community space	Unused open space	0.5 (0 to 1 scale)
Dining	Existing, underused building	0 (0 to 1 scale)
Retail	None	0 (0 to 1 scale)
Water transportation	None	0 (0 to 1 scale)
Accommodations	Campground	109 sites

Boat slips are in place at the disused DNR mooring facility. However, the boat slips fell into disrepair because people did not use them and the maintenance costs were high therefore the baseline use of these slips is specified at zero. Across the Au Gres River from these unused slips are 76 slips that see some use. By satellite view inspection, on June 28, 2016, at least 24 boats used the slips giving an estimated. About half appeared to be 25 feet or less and half appeared to be about 35 feet.

The number of trips to Au Gres City Park is not available. For the purposes of this report it is specified to be

- 150 (days) x 2 (adults) x 50 (average sites used) = 15,000 visits from campers at the City of Au Gres Riverfront Campground
- 15,000 (tourist trips) x 0.10 (estimated percent) = 1,500 visits from tourists
- 90,000 (local trips) x 0.05 (estimated percent) = 4,500 visits from tourists

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This is a total of 21,000 visits per year with 6,000 trips coming by car and 15,000 being walking trips from people located on-site. Based on this specification the model is specified as described in Table 3 and calibrated to produce 6,000 car trips with local populations as depicted in Figure 2 and tourist populations specified as being in the 48703 ZIP code.

## 5. Au Gres 2035

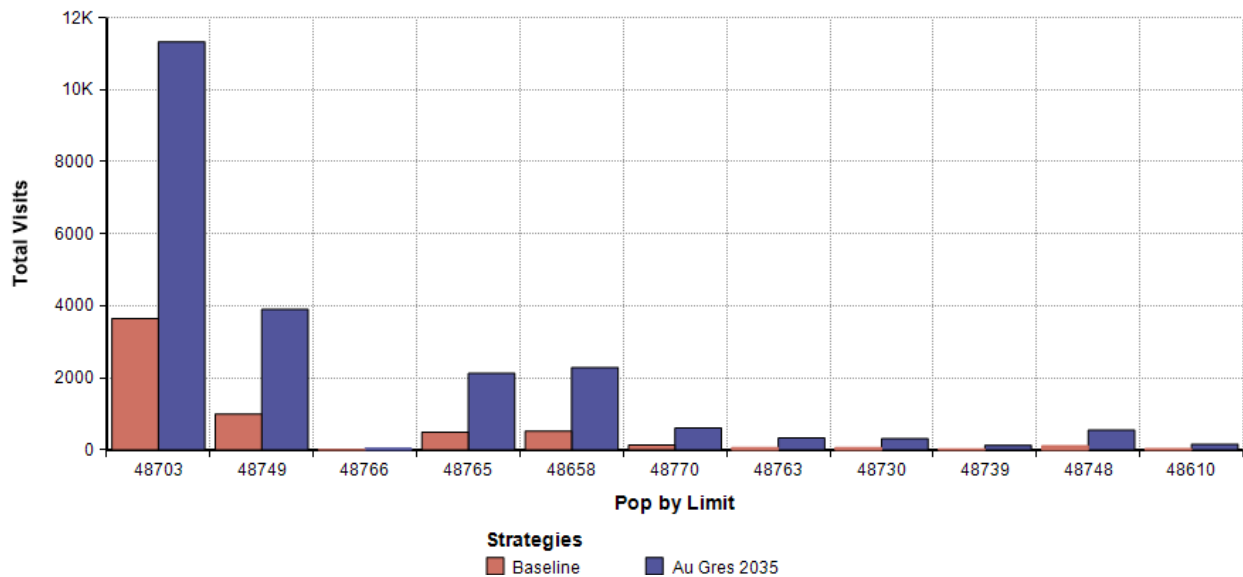
With the Baseline conditions characterized, strategies can be evaluated by changing underlying data and running model simulations. Conducting the charrette process for Au Gres resulted in a “Preferred Alternative” identified as “Au Gres 2035” representing a 20-year future condition. This design includes a boardwalk, playground, pavilion, pocket beach, fishing platforms, breakwater area, waterfront retail and restaurant, kayak launch and rentals, band shell, rock climbing wall and other amenities. In addition, 28 mini cabins of additional on-site lodging is proposed and substantial signage, visual exposure, and traffic pattern changes for US 23 are proposed.

Table 4 lists components and there numeric specifications used to specify the Counterfactual economic model.

**Table 4  
Model Components and Coefficients**

Category	Proposed Enhancements	Numeric Specification
One-way distance	Signage and visitor center to draw attention to recreational and retail opportunities, roadside parking	Numbers underlying Figure 2
Acres	Enhanced use of existing acreage	20 (acres)
Trails	Boardwalk for walking and bird observation in wetlands	0 (0 for no, 1 for yes)
Trail miles	Boardwalk potentially one-quarter mile	0.25 (miles)
Picnic area	Pavilion	1.0 (0 to 1 scale)
Sports facilities	Kayak launch and rental; fishing platforms	1.0 (0 to 1 scale)
Swimming facilities	Riverfront pocket beach	1 (0 for no, 1 for yes)
Waterbody	Kayaking, fishing from platforms, breakwater improvements, access to Michigan Water Trail	1 (0 for no, 1 for yes)
Playgrounds	Playground with splash pad	1.0 (0 to 1 scale)
Community space	Band shell and city green, visitor information and observation tower, rock-climbing wall	1.0 (0 to 1 scale)
Dining	Waterfront restaurant	1 (0 to 1 scale)
Retail	Waterfront retail	1 (0 to 1 scale)
Water transportation	Day docks, water taxi	1 (0 to 1 scale)
Accommodations	Mini cabins	28 units

Applying these specified characteristics to the economic model results in the trip changes depicted in Figure 5.



**Figure 5: Baseline and Au Gres 2035 Trips**

This is a total of an approximately 15,000 trip increase. As described earlier, there are an estimated 250 transient tourist vehicles traveling through Au Gres on US 23 each summer day. Through these changes to signage and the configuration of US 23, these transient tourists may be induced to visit Au Gres. Although an analysis of this effect has not been conducted, the road and signage changes combined with park improvements could lead to substantial visit increases (thousands per year) from this source. The largest beneficiary of these in the Au Gres 2035 would be retail, particularly the waterfront restaurant. Characterizing revenue implications requires more detailed development of this concept.

Occupancy of the existing campgrounds is expected to increase. However with baseline occupancy rates at 70% to 95% there is limited room for occupancy improvement. The improvement in nearby facilities would increase the value of campground stays indicating that higher rates could be charged without lowering occupancy from baseline rates. As meaningful new costs are not expected for this campground, higher prices would lead to improved cash flow for these 109 campsites of \$25,000 to \$45,000 per year.<sup>3</sup> The new mini cabins are expected to rent for \$80 per night and should have high occupancy levels. At 80% occupancy

<sup>3</sup> For example a \$3 increase for 100 days at 80% occupancy would lead to \$26,100 and a \$5 increase would lead to \$43,600 per year.



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for 100 days per year these cabins would generate \$179,200 however unlike the campsites there would be additional costs of constructing and operating the cabins.

With improved amenities, occupancy of the 76 boat slips on the north side of the river across from the proposed day docks and water taxi would increase. During 2014, the transient slip rate was \$22 per day for a 25-foot boat and \$31 for a 35-foot boat. On June 28, 2016, at least 24 boats used the slips. About half appeared to be 25 feet or less and half appeared to be about 35 feet. Assuming that June 28 was a typical use day for the slips and a doubling of occupancy (to a little over 60%) over a 100 day season these slips would generate an additional \$63,600 in annual revenue for the City of Au Gres at the rates charged in 2014.

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## 6. Conclusions

The attractiveness of Au Gres and its' harbor would be enhanced through development activities as identified by the Preferred Alternative – Au Gres 2035 described in the charrette final report. With successful development activities and value capture from these activities, the economic sustainability of Au Gres would be improved through increased visitation from tourists and nearby residents. The envisioned park improvements would cause a substantial increase in trips to Au Gres. The majority of these trips are expected to come by land from out-of-town tourists. Marina development, connectivity, and improvements would be an important draw for land-based trips. However, even with significant marina improvements, visits by boaters would be a relatively small portion of total new trips.

Given the importance of land-based trips and Au Gres' location along historic route U.S 23 a potentially important promotional resource is the Pure Michigan Byway Program, which attempts to “preserve the unique and irreplaceable qualities of selected corridors, improve distinct roads in a careful and considerate way, and promote a greater awareness of and appreciation for the state's scenic, recreational, historical and cultural resources.” These actions provide economic benefits by stimulating tourism specifically by getting people to drive the selected roads and spend money at local businesses.

Economic sustainability requires some form of value capture. Direct value capture is possible through the municipality operating facilities and receiving revenues that exceed total costs. Revenues from operating the existing campground are expected to improve and there would be revenues from mini cabin and boat slip rentals. A preliminary evaluation supports revenue estimates for lodging in the range of \$250,000 to \$300,000 per year. Additional revenue streams would arise from an on-site water-front restaurant and other features including rentals, water taxi, and retail.

Value capture from private activities is potentially available through tax increment financing (TIF). Michigan “allows an established TIF authority to ‘capture’ property tax revenue from incremental increases in value in a determined area and spend the ‘tax increment revenue’ or a percentage of the total increased collections to develop the area or finance a specific project.” Municipalities find TIF plans attractive partially because funds can be generated for economic development without the need to levy new taxes. A municipality such as the City of

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Au Gres can create a TIF authority and designate the district where the TIF plan will be applied (Krogulecki 2016).<sup>4</sup>

Information limitations regarding development and operations funding and costs are the most significant impediment to drawing definitive conclusions about the economic viability of the Au Gres 2035 concept. The Michigan Department of Environmental Quality's Coastal Zone Management Program provides grants to coastal communities to assist in "the development of vibrant and resilient coastal communities." The Au Gres 2035 concept appears consistent with CZM funding criterion. Grant-based funding from this source or others would enhance economic sustainability by lowering outlays that must be recouped to ensure economic sustainability.

Considering development costs, the State of Michigan plans to transfer the land associated with the disused mooring facility, consisting of four to five parcels the City of Au Gres. Enhancements to this land are a critical component of Au Gres 2035 as they are important to site attractiveness and would also provide revenue streams through operation and/or taxation. However, one of these parcels is a designated brownfield which could have remediation cost implications. Finally, detailed costs for identified improvements have not been developed. Developing these costs and considering them in the context of more refined revenue projections is recommended.

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<sup>4</sup> The Michigan Senate Fiscal Agency (2010) noted that SmartZones can use tax increment financing for business incubator facilities."

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