



**Federal Clean Water Act  
Section 319 Grant  
2013-0010**

**The Watershed Center Grand Traverse Bay**  
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**Kids Creek Restoration - Phase I**

9/1/13 through 6/30/17

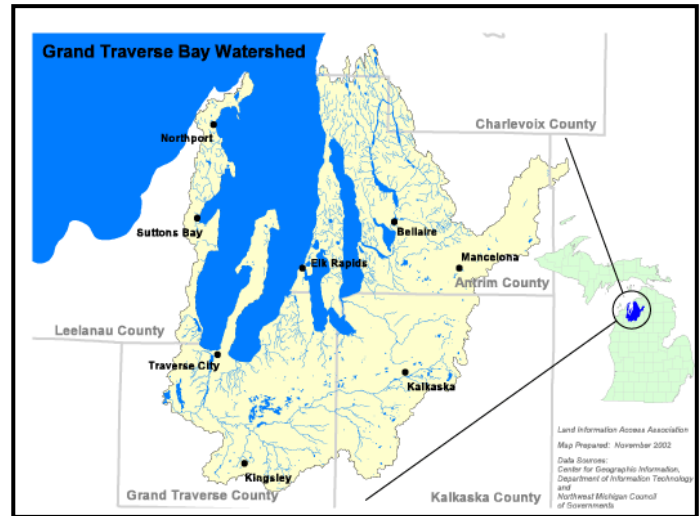
The Grand Traverse Bay watershed, contains 976 square miles of land and is one of the premier tourist and outdoor recreation regions in the State of Michigan. Sediment and excessive nutrient loading are the two highest ranking pollutants that are impacting the watershed, with stormwater being their primary entry points. In fact, a portion of Kids Creek, a major tributary to the Boardman River and Grand Traverse Bay, is on the State's Impaired Waters List due to impacts related to stormwater. This project built upon TWC's work in the Kids Creek area by implementing a variety of BMPs that utilized Low Impact Development (LID) and Green Infrastructure (GI) techniques (e.g. rain gardens, green roofs, infiltration planter boxes, pervious pavement, etc.) aimed at reducing the quantity and improving the quality of stormwater entering the creek. In addition, this project helped expand the knowledge base in the Kids Creek area through a variety of outreach methods including radio PSAs, newspaper advertisements, and social media.

<b>Grant Amount:</b>	<b>\$642,500</b>
<b>Match Funds:</b>	<b>\$672,700</b>
<b>Total Amount:</b>	<b>\$1,315,200</b>

**Partners involved:**  
Munson Medical Center, Grand Traverse Pavilions

**I&E Activities:**

- Hosted Freshwater Summit conference (October of 2013 - 2016)
- Produced and ran five radio ads related to educating people about Kids Creek stormwater issues and Kids Creek Restoration Project
- Developed two print ads focused on native plants and rain gardens



**Best Management Practices** - A variety of LID/GI based BMPs were installed on Munson Medical Center's Campus

- 6,539 SF green roof installed (one new and one retrofit)
- 1,033 feet of underground infiltration trenches
- One rain garden (1,317 cu ft capacity)
- 1,310 SF Pervious Pavers
- 3 Downspout Planter Boxes
- One stormwater basin retrofit - sediment forebay and wetland detention (17 acre drainage area)

**Pollutants Reduced**

- 9.72 tons sediment
- 14.34 lb Phosphorus
- 82 lb Nitrogen



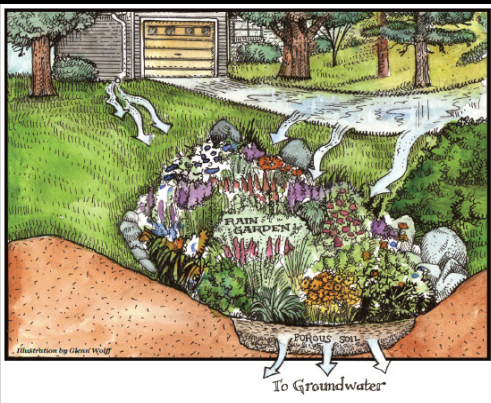
**Example of Newspaper Advertising Concepts**




**Go Native to Protect Water Quality**  
 Native plants protect our Up North water by reducing stormwater runoff, erosion and pollution.



Protecting our Up North water quality - [gtbay.org](http://gtbay.org)



**Landscape for Water Quality**  
 Keep our Up North water clean the natural way!  
 Rain gardens not only help keep our water clean, they are also beautiful.



Protecting our Up North water quality - [gtbay.org](http://gtbay.org)

**Before/After BMP Photos**



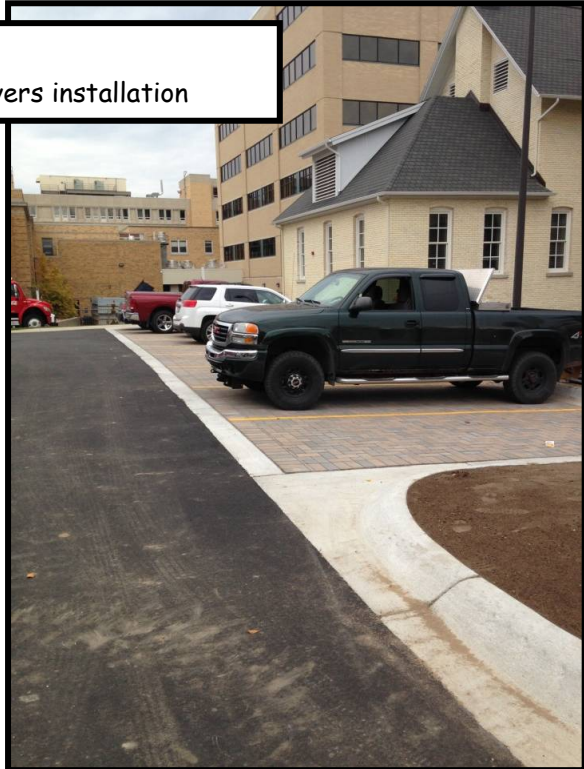
**Stormwater Basin Retrofit -  
 Sediment Forebay and Wetland Retention**



**MMC's green roof  
 installation at NW Tower A**



MMC's Building 29 -  
parking lot pervious pavers installation



MMC's Building 29 -  
downspout planter boxes



MMC's Building 29 -  
rain garden retrofit



MMC's Cowell Family Cancer Center -  
green roof and infiltration trenches



More pictures of Cowell Family Cancer Center green  
roof available at:  
*(The link provided was broken and has been removed.)*