

# Secor Rd. Dam Removal & Stream Restoration

## Improving the Ottawa River

### Post-Project Fact Sheet

October 2012



The Secor Road Dam was located in the Village of Ottawa Hills, Ohio across the street from The University of Toledo College of Law. This low-head dam was installed in 1928 to create a ponded area for recreational use for Village residents, unfortunately the desired pond only occurred during storm events. This structure was at river mile 11.8 and was the last major obstruction to a free-flowing Ottawa River .

Being in an urban area, the floodplain near the Secor Road Dam has extensive utilities running through it to serve the neighboring community. Additionally, the river is crossed in several locations by a large sanitary sewer interceptor and the floodplain contains many active and some inactive sanitary sewer lines. Due to the extensive amount of utilities and infrastructure, very detailed planning was essential to prevent service interruptions, sewage infiltration into the waterway, and costly repairs.

In 2006, a team comprised of government, academia and citizens lead by the Toledo Metropolitan Area Council of Governments (TMACOG) applied for funding from the Ohio EPA 319(h) Nonpoint Source Pollution Control program and was granted partial funding. It was determined that the dam removal portion of the grant would be completed by the Ohio Department of Transportation (ODOT) for stream mitigation credits. This modification reduced the amount needed for the project; thus saving Ohio EPA grant funds for other projects, while still completing a needed project.

The dam was removed by ODOT along with one of the sheet pile walls in November 2007. Some of the concrete from the dam was rubblized in place to create a riffle. The remaining concrete was buried in one of the stream banks.

The stream restoration and bank stabilization work began in August 2008. The methods selected would use the least amount of hard structure while helping nature to establish a stable system. These included:

- Bendway Weirs
- Traffic Control Stones
- Longitudinal Peaked Stone Toe Protection
- Live Stakes/Poles
- Floodplain Plantings

All of the stone structures were keyed into the banks to prevent the river from cutting behind the structure, eroding the banks, and washing it out.

Single Stone Bendway Weirs were used to help redirect the flow of the river around the bend and down through the center of the created riffle. In general, a Bendway Weir redirects the water flowing over the weir back towards the center of the stream and away from the bank. A set of weirs are designed to

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act as a system to capture, control, and redirect current and velocity through the bend and reduce erosion. The stone used for this project was approximately 2' x 3' x 5'. There were three sets of single stone Bendway Weirs installed on this site. Two of them were placed upstream of the riffle and one is downstream to help align the highest current to the center of the channel before going under the Secor Road bridge.

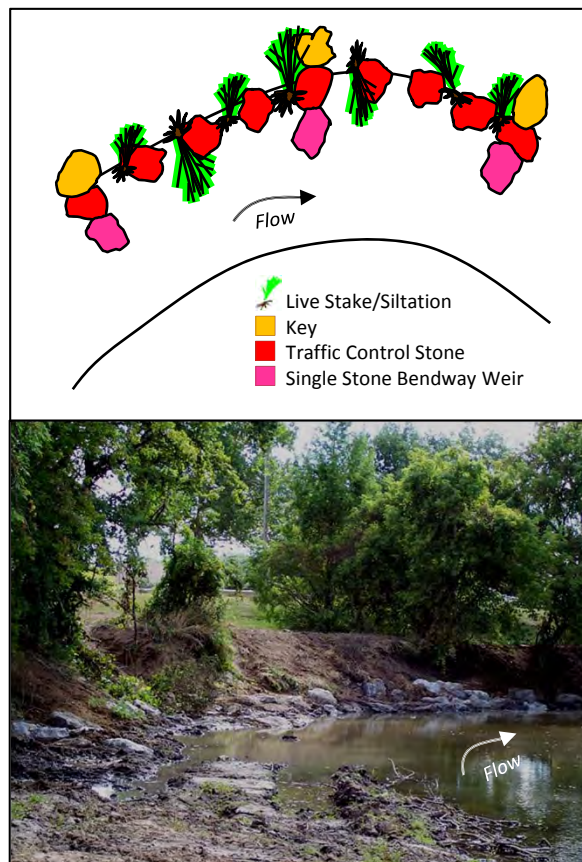
Traffic Control Stones (TCS) were used to help protect the outside bend and aid in establishing vegetation. A series of large stones (2-3 tons each) were placed at the base of the slope at approximately 8-10 feet apart. Each stone was embedded into the toe of the slope, so that the top of the stone would be just below the normal high water mark. As the water flows downstream the outer bank receives the majority of the energy. The TCS helps to deflect that energy and the associated vegetation absorbs energy and slows the velocity, thus reducing erosive forces.

Longitudinal Peaked Stone Toe Protection (LPSTP) was installed downstream of the riffle at the confluence of Heldmen Ditch and the Ottawa River. This area was of particular interest to the Village of Ottawa Hills due to the high, steep bank with infrastructure above including a road and housing. An LPSTP was installed to create a floodplain bench that would allow suspended sediments to settle out and create a natural buffer for the high bank above. The LPSTP area was also extensively planted with live stakes during installation and the existing bench was planted with rooted nursery stock.

Live stakes/poles were placed throughout the project area, especially near any disturbed areas where stone structures were installed. The live stakes/poles that were installed were locally harvested by volunteers and included: red osier dogwood, silky dogwood, buttonbush, and sandbar willow.

The floodplain and banks were planted extensively in July 2009 using rooted nursery stock. Species selected were native to Northwest Ohio and suited to occasional flooding. Woody shrubs suited to wetland conditions were planted low on the banks nearest the water. Species requiring less water were planted higher on the slopes. The floodplain was planted with a combination of hardwood native trees as well as shrubs that provide cover and food for wildlife. July was chosen for planting as a way to avoid spring and fall floods and allow time for the plants to set root into the soil before overwintering. Because the plants were installed mid-summer, occasional watering was done by hand with a hydroseeding tanker truck. Survival of the planted materials was approximately 90%, however deer browse and tree girdling from buck rubbing caused many trees to die. In some cases strong root stock was able to push a secondary growth back up.

Ohio EPA sampled the site in 2000 before the project began, and again in 2011, several years after completion. The sampling results showed a noticeable improvement in the fish, macroinvertebrate and habitat communities. In 2000, the site was determined to be in non-attainment of Ohio's water quality standards. When the site was re-evaluated in 2011, it was in full-attainment. A true measurement of success directly attributable to this project.



(top) The diagram illustrates the middle bend of this project.  
(bottom) The middle bend post-construction.

