



Bringing Green Infrastructure to Tireman Avenue in 2016

Project Overview and Update

What's happening on Tireman Avenue in 2016?

The Detroit Department of Public Works (DPW) plans to resurface Tireman Avenue, as well as other surrounding residential streets, in 2016. DPW and Detroit Water and Sewerage Department (DWSD) identified an opportunity to work together to incorporate innovative green infrastructure projects to help manage storm water runoff more effectively. The initial phase of this project started in late 2015 and will resume in spring 2016.

What type of green infrastructure is being constructed on Tireman Avenue?

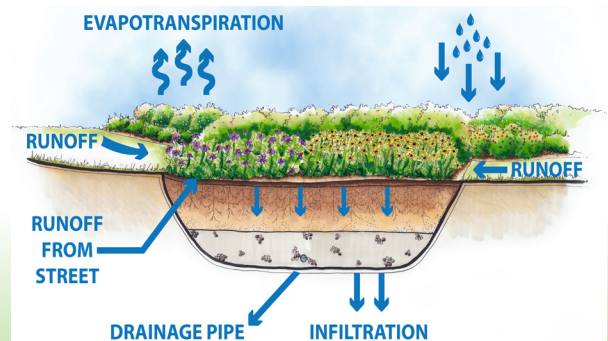
DWSD is constructing bioswales on portions of Tireman Avenue. Bioswales can help to reduce ponding and flooding on streets, as well as help to beautify a neighborhood. DWSD proposes to construct bioswales in two areas along Tireman Avenue. One area is between Chatham and Parkland. The other area is between Parkland and W. Outer Drive.

How do bioswales work?

A bioswale is specially designed to have a wide, porous bottom and a gentle slope. This design captures stormwater, infiltrating it into the ground over a 24 to 48 hour period and settling out sediment. The top layer consists of enhanced soil with plants. The next layer is stone that provides large empty spaces to allow the stormwater to infiltrate. A perforated pipe sits below the stone to capture stormwater that doesn't infiltrate. During heavy rainfall, the bioswales fill up and then overflow back into the street and into the nearest catch basin. The catch basin is connected to the sewer. The drainage system (pipes and catch basins) will not be removed.

What is green infrastructure?

Green infrastructure is an approach to managing storm water that uses the natural processes of soils and plants to soak up storm water where it falls before it can enter and overwhelm the sewer system. DWSD is working with partners throughout Detroit to install a variety of green infrastructure practices, including bioswales, pervious pavement, rain gardens, and tree planting.



A view of how bioretention works





Properties near the proposed bioswale projects on Tireman Avenue

What will the completed project look like?

When complete, the bioswales in front of residential homes might not look very different than the existing tree lawn. The only thing that might be different is the gentle slope. If residents chose to have plantings in the bioswales in front of their homes, the final project might contain perennials.

For the bioretention area along Tireman Avenue in Rouge Park, the completed bioswale will contain flowering shrubs and perennials. This area will take time to establish and grow, but eventually it will look very similar to the project team's rendering.



Mature bioswale on the north side of Tireman Avenue in Rouge Park

Project Update (as of May 2016)

What portion of the project is currently under construction?

Construction of the bioswales between Parkland and W. Outer Drive started in fall 2015 and will be completed during the 2016 construction season.

Why is the construction area ponding water and what is being done?

The initial phase of bioswale construction between Parkland and W. Outer Drive has caused temporary ponding at the site. To address the ponding until construction is complete, the project team created a temporary outlet that will drain the area until the permanent outlet is constructed. The permanent outlet will be constructed during the 2016 construction season. The preliminary schedule has this beginning the week of May 16, 2016. This

schedule changed quickly and an update was not possible prior to days before the start of construction. When construction is complete, the bioswale will only allow a few inches of ponding to help provide infiltration over no more than three days.

What is being done to address vandalism at the site?

During the 2016 construction season, the project team will repair damage done to the site from vandalism, including tire tracks that tore up the project site. The project team is currently working with community leaders to develop ways to prevent future vandalism.

When will construction of the residential bioswales start?

The bioswales in the residential portion of Tireman Avenue will start mid-June. Residents will receive letters in the mail at least two weeks before the project begins on their portion of Tireman Avenue. The work will take approximately three months.

Frequently Asked Project Questions

Are there other examples of bioswales in Detroit and southeast Michigan?

Bioswales are not a new approach to managing storm water. Property owners are using this type of green infrastructure practice around Detroit, throughout southeast Michigan, and around the country. Lawrence Tech has an interactive map that shows the location of selected bioswale projects. <http://www.ltu.edu/lid/>

How well do bioswales perform?

Research has shown that, during smaller storms, grassed bioswales along roads can completely absorb storm water runoff by infiltrating stormwater to the groundwater table and releasing water to the atmosphere. In the case of large storms, bioswales are designed to direct excess storm water to the sewer system.

Can bioswales cause basement flooding?

Bioswales actually help reduce basement flooding caused by storms that overload the sewer system. The bioswales will be located more than 10 feet from homes and at least 2 feet above the groundwater table so as not to cause seeping into basements. Drain pipes beneath the bioswales also help direct storm water to the sewer during heavy rains. Residents with concerns about basement flooding should remember to direct downspouts 6 feet away from the house and ensure that the ground slopes away from the house.

Will trees get cut down during bioswale construction?

Trees in the area between the sidewalk and curb will be protected during construction. Any small trees that have to be removed to facilitate construction will be replaced as part of this project.

Where will residents park during construction?

A project goal is to keep homeowners happy while construction crews are at work. The construction crew will

coordinate with residents when road work will affect a driveway. Driveways might be temporarily inaccessible during the day when work is happening, but the construction crew should install a temporary entry to driveways by the end of the construction day. Driveways should remain accessible during most of the construction activity and overnight driveway parking should still occur as normal.

During driveway entrance paving, there may be several days when driveways are inaccessible while the concrete sets. The contractor will keep residents informed about driveway access as construction progresses.

Residents should also be aware that traffic patterns may be changed to allow one-way travel down Tireman Avenue as well. Part of the construction process involves removing large portions of roadway. Construction crews will assist drivers through these areas with flaggers and signs. Drivers should watch out for signs and follow changes in traffic patterns.

Who is responsible for maintaining the bioswales?

DWSD is responsible for maintaining the underground components of the bioswales, but needs local residents' help in maintaining the above ground vegetation, whether that's turf grass or other types of vegetation. If the bioswale has turf grass, the only maintenance needed is mowing, just like a lawn. If the resident chose another type of vegetation, then the resident will simply have to weed the bioswale like any other garden. The bioswale in Rouge Park will be maintained by DWSD.

Project Contact Information

Who can residents call if there are questions or problems with the bioswales once they're installed?

If residents on Tireman Avenue have questions or concerns about the bioswales in front of their property or in the neighborhood, they can call DWSD at the 24 hour emergency hotline (313.267.7401) or email dwsd-publicaffairs@detroitmi.gov or use the Improve Detroit mobile app available at: www.detroitmi.gov/How-Do-I/Mobile-Apps/ImproveDetroit. It is important to DWSD to know if there are problems with the bioswales or any questions on proper maintenance or functioning.

Where can I get more information?

DWSD will provide updates about the Tireman Avenue bioswale project, as well as other Green Infrastructure projects, on their website (www.detroitmi.gov/dwsd). More technical information about bioswales and how they work is available in Chapter 7 of SEMCOG's *Low Impact Development Manual for Michigan* (<http://www.semco.org/lowimpactdevelopmentreference.aspx>).

Who can I contact to share my thoughts?

If you have questions or concerns about the bioswale project, please contact Parvez Jafri at 313.267.1224 or jafrip@detroitmi.gov. If you have questions or concerns about road resurfacing, please contact Jihad Slim at 313.224.3947 or slimj@detroitmi.gov.

