



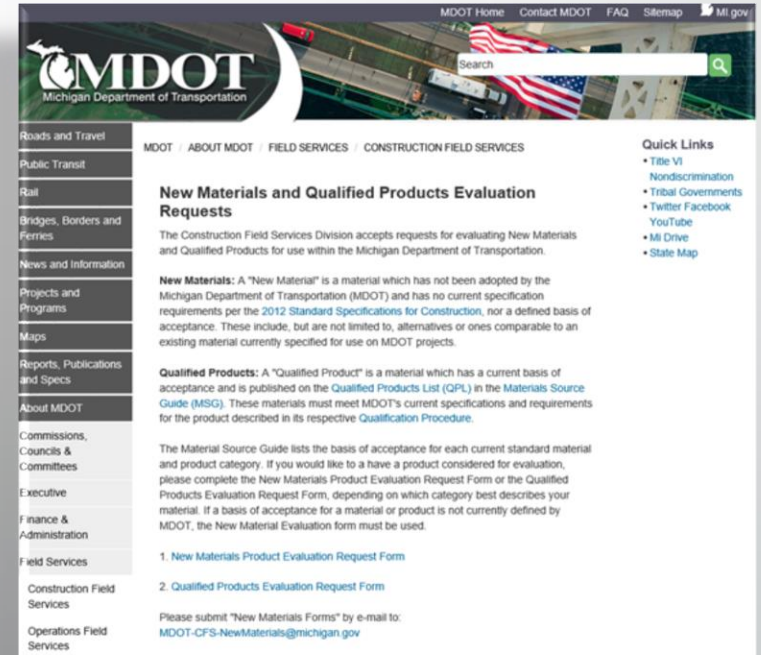
MDOT Innovations

House Transportation Subcommittee

September 19, 2017

Advanced/Innovative Materials Program

- Construction Field Services Division accepts requests for evaluating New Materials & Qualified Products for use within MDOT
- "New Material" has not been adopted by MDOT & has no current specification requirements per 2012 Standard Specifications for Construction, nor defined basis of acceptance.
- "Qualified Product" has current basis of acceptance & is published on Qualified Products List in Materials Source Guide. These materials must meet MDOT's current specifications & requirements.



The screenshot shows the MDOT website page for "New Materials and Qualified Products Evaluation Requests". The page features a navigation menu on the left with categories like "Roads and Travel", "Public Transit", "Rail", "Bridges, Borders and Ferries", "News and Information", "Projects and Programs", "Maps", "Reports, Publications and Specs", "About MDOT", "Commissions, Councils & Committees", "Executive", "Finance & Administration", "Field Services", "Construction Field Services", and "Operations Field Services". The main content area includes a search bar, a "New Materials and Qualified Products Evaluation Requests" section, and a "Quick Links" section. The "New Materials and Qualified Products Evaluation Requests" section contains the following text:

New Materials and Qualified Products Evaluation Requests

The Construction Field Services Division accepts requests for evaluating New Materials and Qualified Products for use within the Michigan Department of Transportation.

New Materials: A "New Material" is a material which has not been adopted by the Michigan Department of Transportation (MDOT) and has no current specification requirements per the 2012 Standard Specifications for Construction, nor a defined basis of acceptance. These include, but are not limited to, alternatives or ones comparable to an existing material currently specified for use on MDOT projects.

Qualified Products: A "Qualified Product" is a material which has a current basis of acceptance and is published on the Qualified Products List (GPL) in the Materials Source Guide (MSG). These materials must meet MDOT's current specifications and requirements for the product described in its respective Qualification Procedure.

The Material Source Guide lists the basis of acceptance for each current standard material and product category. If you would like to have a product considered for evaluation, please complete the New Materials Product Evaluation Request Form or the Qualified Products Evaluation Request Form, depending on which category best describes your material. If a basis of acceptance for a material or product is not currently defined by MDOT, the New Material Evaluation form must be used.

1. New Materials Product Evaluation Request Form

2. Qualified Products Evaluation Request Form

Please submit "New Materials Forms" by e-mail to: MDOT-CFS-NewMaterials@michigan.gov

Advanced/Innovative Materials Program

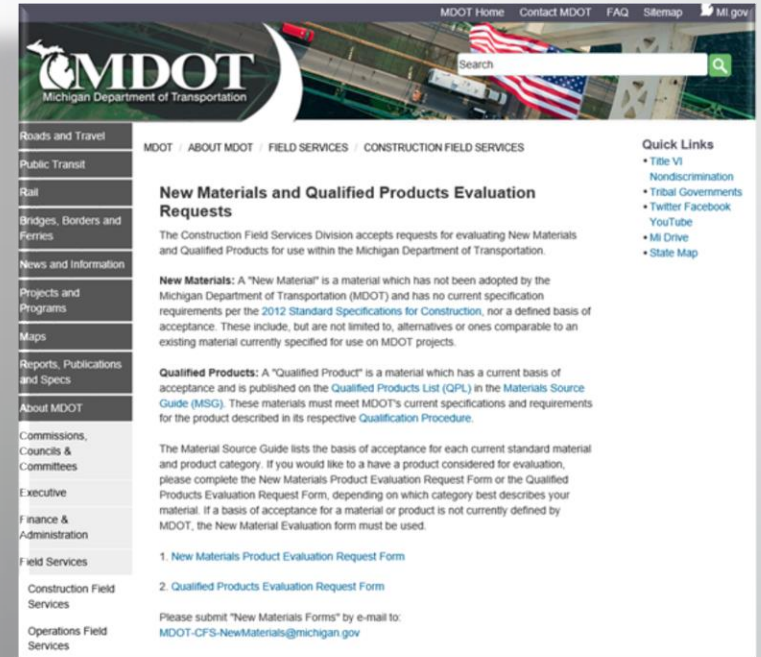
Contact Information

Please submit "**New Materials Forms**" by e-mail to:
MDOT-CFS-NewMaterials@michigan.gov

or send to:
Michigan Department of Transportation
Construction Field Services Division
Attn: New Materials Evaluations
8885 Ricks Road, P.O. Box 30049
Lansing, MI 48909

Please submit "**Qualified Products Forms**" & required documentation to address listed in [Qualification Procedures](#) specifically designated for that material.

If you have any questions, please contact:
MDOT-CFS-NewMaterials@michigan.gov



The screenshot shows the MDOT website interface. At the top, there is a navigation bar with links for 'MDOT Home', 'Contact MDOT', 'FAQ', and 'Sitemap'. The main content area is titled 'New Materials and Qualified Products Evaluation Requests'. It includes a search bar and a navigation menu on the left. The main text explains that the Construction Field Services Division accepts requests for evaluating new materials and qualified products. It defines 'New Materials' as those not currently specified in the 2012 Standard Specifications for Construction, and 'Qualified Products' as those with a current basis of acceptance. The page also lists two forms: '1. New Materials Product Evaluation Request Form' and '2. Qualified Products Evaluation Request Form'. At the bottom, it provides the email address for submitting forms: MDOT-CFS-NewMaterials@michigan.gov.

Agency-Wide Focus on Innovation

- Created team of Innovation Champions
- Developed website for employees to submit innovative ideas
 - Innovation Champion for appropriate area reviews idea, discusses with management & impacted personnel, approves implementation when appropriate
- Economies, Efficiencies & Innovations Report produced annually
 - \$53 million in quantified savings in 2016
 - Estimated \$650 million in cumulative quantified savings to MDOT since 2010

The screenshot displays the 'Innovation Central' website interface. At the top, there are navigation links for 'Innovation Central', 'Statewide Innovations Alignment Team', and 'MDOT Teams Portal'. A search icon is visible in the top right corner. The main heading is 'The Innovation Process', followed by a brief description: 'This page lists all of the ideas that have been submitted to date. They are listed with the most recent ideas at the top. Each column can be filtered to show desired information.'

The process is visualized as a horizontal flowchart with six steps:

- Innovation Goal:** MDOT WIG 25% improvement in value added innovations.
- Idea:** Employee driven ideas and actions. GIVE US YOUR IDEAS!
- Identify, Define, Prioritize Ideas:** Employee engagement. Region and Office focus on innovation and solicitation of ideas.
- Evaluate and select ideas for implementation:** Region or Office best practices and solutions. Work areas know the process and drive the innovations.
- Execute Ideas:** Barrier busting. Resources identified and allocated. Process developed or improved. SIAT is here to help!
- Measure and Report on Results:** Report innovation results and value added. Celebrate your success!

On the right side, there is a call-to-action box titled 'Have a great idea?' featuring a lightbulb icon and a 'Submit it here!' button.

Below the flowchart, there is a section titled 'Innovation Idea Submittals' with a table of entries:

Status	Title	Identify Your Work Area	Created
Submitted	CFS Conference Room Table Upgrades	Construction Field Services	9/13/2017 12:27 PM
Submitted	Heated Tail light housings.	Southwest Region	9/12/2017 12:38 PM



Recent Innovations... Just a Few Examples

Innovations submitted by employees & implemented in
2016-2017

Innovations Making Better Use of Technology

- **Property Damage Reclamation Process Mobile App** – Mobile app used when crash involves damage to public infrastructure. MSP, maintenance forces, local agencies use app to geo-locate damage along with image. Expedites repairs & recovery of funds for damaged public infrastructure through insurance companies. Estimated savings: \$125,000/year.
- **E-Invoices** – Airports can now submit invoices for approved work electronically to MDOT Aero Project Managers & Accounts Payable staff to speed process of contractor & consultant payments. Saves staff time, reduces errors, & payments are made more quickly. Saves MDOT estimated \$16,000/year & saves contractors estimated \$24,000/year.





Innovations Using GIS & GPS

- **Tagged Overhead Sign Cleaning & Replacement Project** – Handheld devices used to geo-locate tagged highway signs for cleaning & replacement. Saves estimated \$12,500/year in staff time & improves urban landscape.
- **Concrete Patch Geo-location** – Handheld devices used to geo-locate position of concrete patch work needed, included GPS info as part of project bid document. Low bidder was 9.25% below estimate & indicated GPS info very useful. Saved estimated \$117,000 on project.
- **ROW Permits** – GIS mapping tool used to identify permitted & unpermitted work. Map shows items such as proposed & approved permitted activities, & unknown situations such as water main breaks or excavation for utility repairs. Minimizes time spent on travel to inspect & monitor work. Saves estimated \$740,000/year.



Innovations Using New Products

- **Replace existing tower lighting at highway interchanges with LEDs** – Reduces energy consumption by 50-60% & eliminates need to replace existing light fixtures every 2 years. Work can be done in house by MDOT forces. Saves an estimated \$1,124,540/year.
- **Alternative Culvert Repairs** – Alternative innovative lining for corrugated metal pipe culverts restores structural integrity of severely deteriorated pipes & eliminates costly removal & replacement. Saves estimated \$14,900/year in Metro Region.
- **Bridge Inspections for High Load Hits** – Using Light Detection & Ranging (LIDAR) located on freeway shoulder in lieu of hand measurements & associated lane closures. Saves estimated \$7,200/year in Metro region.



Innovations Providing Better Customer Service

- **Recycling** – Atlanta Maintenance Garage in North Region decided to recycle broken sign posts. They bevel tops, paint them rustic brown, & use them as trail markers & delineator posts in Roadside Parks. No cost savings quantified, but they look great in parks & reuse something that would otherwise end up in landfill.
- **Keyless Remote to Activate Crosswalk Signal** – MDOT staff worked with city engineer to install keyless remote (similar to that of a car) to activate school crosswalk signals on M-68 in Rogers City, Presque Isle County, North Region. Ice on locked signal cabinet made it difficult for crossing guard to unlock cabinet & activate signals. Two indicator lights in cover of cabinet were also installed to show that signals were activated.



Innovative Partnerships

- **Living Wind Break** – Bay Region received 5,000 seedlings from MDNR to plant in right-of-way as living wind break & partnered with local Conservation Districts to get them planted. Costs not yet estimated, but certainly less expensive than other options.
- **E-Gov Delivery** – Transportation Asset Management Council staff now using E-Gov Delivery to share information with local partners regarding asset management training, saving staff time & improving communication with local agencies.



More...

- **I-94/I-69 Interchange Wall Redesign** – After project was let, MDOT construction team continued to look for innovations & after reviewing site conditions, redesigned one of planned retaining walls, saving approximately \$2,000,000.
- **Mile Marker Sign Innovation** – Staff designed mile marker signs using square tube & breakaway foundation. Installed along US-127 Clare area. Material cost savings (\$60 vs. \$600). Easier & faster for crews to install & repair.

A grayscale photograph of two construction workers wearing hard hats and safety vests, looking at a laptop on a construction site. The image is overlaid with a large blue and black geometric graphic on the left side.

Thank You!

