

NEW TRAFFIC SIGNAL DEVICE PRODUCT REVIEW GUIDELINES

MICHIGAN DEPARTMENT OF
TRANSPORTATION

FINAL

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A - MANUFACTURER CHECKLIST

1 INTRODUCTION

The Michigan Department of Transportation (MDOT) strives to provide a state-of-the-art transportation network using safe, effective, and reliable technology in its traffic signals across the state. As the technologies used in traffic signal devices continue to evolve and advance at an increased rate of change, guidance to ensure consistent MDOT reviews and approvals of these devices is necessary.

The purpose of these guidelines is to present MDOT’s formal review and evaluation process for new traffic signal devices and products, including testing and certification guidance. The following electronic traffic signal devices are the focus of these guidelines:

- Traffic Signal Cabinets, including various ancillary devices included with the cabinet
- Traffic Signal Controller units including both hardware and firmware
- Malfunction Monitoring Units
- Vehicle Detection Systems
- Emergency/Transit Preemption Systems
- Cellular Modems
- Spread Spectrum Radios
- Switches
- Solar Powered Devices
- Battery Operated Devices

These guidelines were developed through a rigorous multistage process illustrated in Figure 1 and an overview of each stage follows.

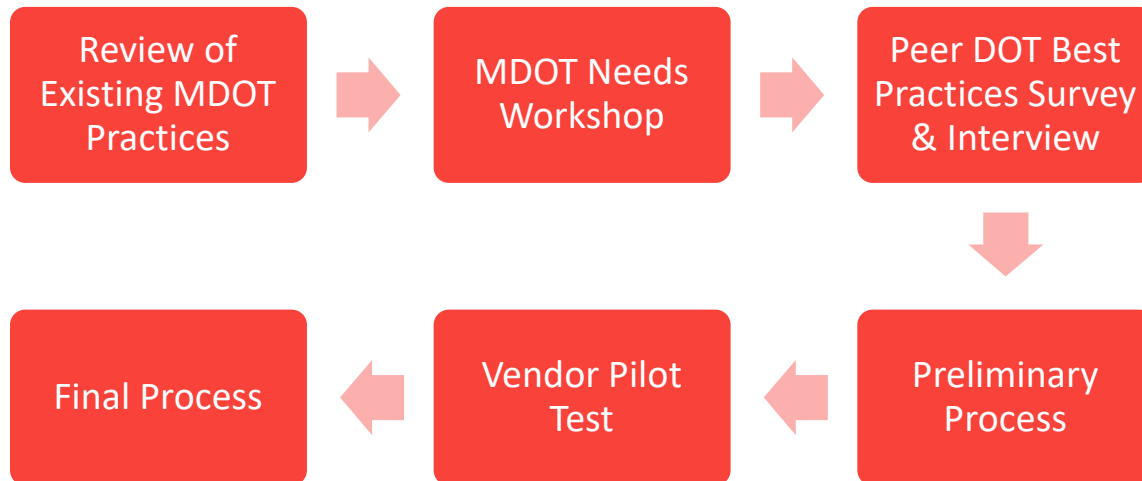


Figure 1: Development Methodology for New Traffic Signal Device Review Guidelines

Review of Existing MDOT Practices

Generally, reviews for a new product were typically conducted by the Lansing Signals Unit and Signal Shop with assistance from Region personnel as needed. Most commonly, requests to consider a new device typically are initiated by the device vendor/manufacturer. From there, it was brought to a review committee to determine if the device warrants further review and testing.

The review and testing process has generally been ad hoc, and requests for information (RFI) and testing procedures were developed individually for each request by the MDOT reviewer(s). The RFI was typically followed by a shop test, and if it was felt appropriate, a pilot field test. The final approval was normally made by the review committee.

While generally built around the standard specifications for construction and special provisions, the RFI and testing process was often created reactively for each request, which frequently created the need for follow up RFIs and adjustments to the testing/certification process adding delays to the overall process.

MDOT Needs Workshop

A workshop was held with MDOT staff responsible for new traffic signal device review requests and included traffic signal electricians, design staff, operations staff, and the MDOT New Products ITS Subcommittee (the current MDOT approving body for new traffic signal devices and products). Existing review practices were discussed as well as current and future needs with respect to the review process. The following were the key outcomes of the workshop:

- Attendees confirmed the need for a more formalized and consistent review process
- The review process should be transparent with standardized documentation
- The review process should be practical and implementable based on MDOT resources
- The review process should be based on best-practices, and a survey of other departments of transportation (DOTs) should be conducted
- The review process must be defensible under scrutiny

Peer DOT Best Practices Survey & Interview

A detailed survey was prepared and sent out to other state DOTs to document their new traffic signal device review best practices. The DOTs included Georgia, Utah, Wisconsin, and Indiana. All agencies use a process that includes evaluation of technical documentation, bench/shop testing the devices, and field testing which are similar to MDOT's practices. Key information was also collected from each DOT regarding staffing for device reviews, frequency of reviews, and any documented testing/certification criteria. Based on the collected information, a follow-up interview was conducted with the Wisconsin DOT given its similarities to MDOT's traffic signal program and to obtain more detail on their processes.

Preliminary Process

A preliminary review process was created by integrating the information of the previous stages (existing MDOT review processes, workshop identified needs, and peer DOT best practices). This included templates for MDOT response letters to vendors as well as testing and certification criteria for the electronic traffic signal device types noted previously.

Vendor Pilot Test

The preliminary review process was utilized in a pilot test with an actual vendor device review request for an emergency preemption product. The vendor was notified that they were part of the pilot test of the new device review process and provided feedback throughout the process.

Final Process

The preliminary review process and testing/certification criteria were further refined based on feedback and lessons learned from the vendor pilot test leading to a finalized new device review process. Review templates were created for each of the device types listed previously to improve the efficiency and consistency of reviews. Templates were also created to efficiently automate the MDOT response process as much as possible with consistent documentation. Devices and products that currently do not have technical guidelines but noted in this guidance will still need to have RFI and testing/certification criteria developed specific to those device types and incorporated in subsequent updates of these Guidelines.

2 NEW DEVICE REVIEW PROCESS

2.1 OVERVIEW

The traffic signal device review is composed of a five-step process, where at the end of each step, MDOT decides if the device/product is suitable to proceed to the next step. The process is as follows:

1. **Determination to Evaluate**
2. **Technical Documentation Evaluation**
3. **Technical Shop Evaluation**
4. **Pilot Field Test**
5. **Final Determination**

In support of this process, MDOT has developed detailed technical documentation evaluation, technical shop evaluation/testing and pilot testing process for the following device/product categories:

- Traffic Signal Cabinets, including various ancillary devices included with the cabinet
- Traffic Signal Controller units including both hardware and firmware
- Malfunction Monitoring Units
- Vehicle Detection Systems
- Emergency/Transit Preemption Systems
- Cellular Modems
- Spread Spectrum Radios
- Switches
- Solar Powered Devices¹
- Battery-Operated Devices¹

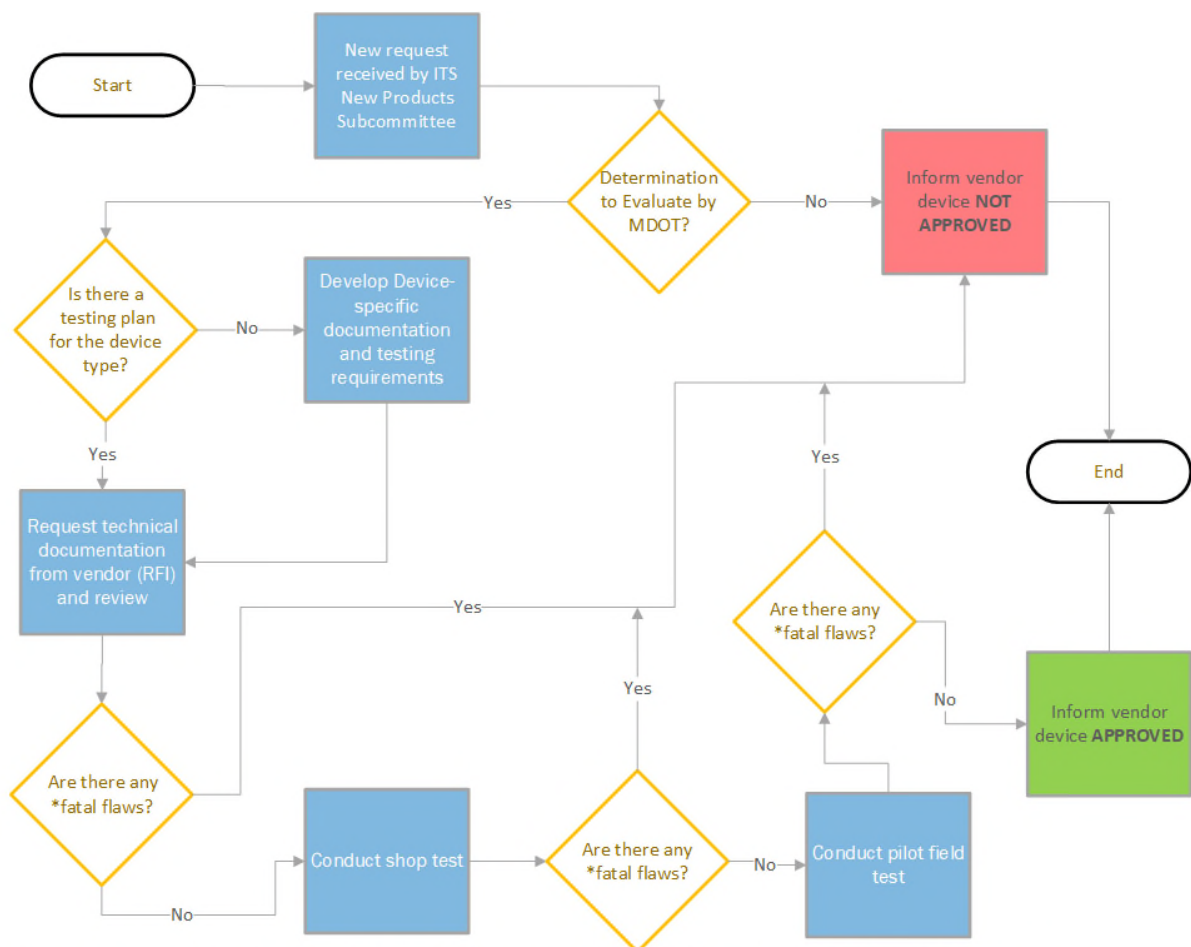
MDOT will follow this same evaluation process for the device/product categories listed below. MDOT has not fully prepared the detailed evaluation criteria for the devices below but anticipates doing so in the future. In the interim if a device is submitted for evaluation that matches a category below, the evaluation process may take additional time as MDOT develops the formal evaluation criteria. Once developed, MDOT will update the repository of testing and certification criteria for future use. These devices include:

- Pedestrian Pushbuttons and ancillary equipment that supports the device
- Audible and Accessible Electronic Pedestrian Devices
- Camera, Microwave, or Radar Devices
- Flasher Cabinets and Controllers
- GPS Units and External Antenna
- Wi-Fi Data Collector
- UPS and Power Condition Devices with ancillary equipment
- Programmable Traffic Signal Heads
- Snow Shields
- Changeable Message Case Signs
- LED School Speed Limit Signs

¹As solar and battery-operated systems are typically used in conjunction with each other, the review and test procedures were merged.

The evaluation processes are generally built around MDOT’s current *Standard Specifications for Construction and Previously Approved Special Provisions* for that device/product type. Where there is a discrepancy with the testing criteria, the most current *Standard Specifications for Construction and Previously Approved Special Provisions* for that device/product type will be the minimum requirement. Exceeding the minimum requirement may be considered beneficial to MDOT and can be factored into the review process. In addition, some of the evaluation items are intended to provide MDOT an opportunity to assess the overall capabilities of the device technology and if the new device has capabilities beyond currently approved devices. Some of these inquiries and tests may go beyond the requirements of the special provisions and the MDOT *Standard Specifications for Construction and Previously Approved Special Provisions*. These inquiries and tests will generally provide an opportunity to demonstrate capabilities beyond the minimum requirements which may be beneficial to MDOT.

Figure 2 illustrates an overview of the process workflow. The remainder of this chapter provides additional details for each of the five steps of the New Device Review Process, including communication and scheduling protocol, and key considerations for vendors.



*A fatal flaw is defined as a failure of supplying literature that shows the product meets requirements, failure of subsequent testing of mandatory functionality, performance issues, and/or an equipment failure during testing/piloting.

Figure 2: New Traffic Signal Device Review Process Overview

2.2 STEP 1 - DETERMINATION TO EVALUATE

The **Determination to Evaluate** is a preliminary non-technical review by MDOT's ITS New Products Subcommittee (NPS) to determine if MDOT has justification to utilize the proposed device/product and would like to evaluate.

This step is typically initiated by a device vendor/manufacture contacting the MDOT Lansing Signals Unit (LSU) to request their device be reviewed. The requests may reach MDOT's attention via different sources:

- Direct request to the LSU
- Request to a Region or TSC office which is then brought to the LSU
- Request to a local agency (often an MDOT maintaining agency) which is then brought to the LSU

To initiate a new product evaluation, the vendor must fill out and submit form 1022N ([1022N Link](#)). MDOT will review the form. If the product is classified as technology that is included in these guidelines, then the vendor will be provided the "Manufacturer Checklist" with a request for information (RFI) form specific to the device category for the vendor to fill out and send back to the LSU (see Appendix A). The vendor provided information is then brought to the NPS to determine if the device warrants further review and testing. The NPS will look at the product's information and identify the following:

- Does the device fall under an existing Special Provision?
- Does the device meet the technical requirements in the existing Special Provision?
- Does the device exceed existing technical requirements in a Special Provision and is this added functionality useful to MDOT?
- How many devices already meet the existing Special Provision or category of technology?
- How many devices are currently being evaluated by the NPS?

In most cases, MDOT has the resources to support up to two devices for a single category of technology (i.e., signal controller). Some devices may be sole source such as Malfunction Monitoring Units (MMU) that are safety critical to the operations of the intersection or present interoperability challenges that are overly burdensome to manage. If MDOT already meets the specified number of devices per technology, they can elect to not move forward with the evaluation of the product. The table below defines the number of products MDOT can support for the technology that MDOT has developed technical evaluation documentation for to date. Justification is provided to explain why there is a limited number of products that MDOT can support. In total, with this technology alone, MDOT's approach would allow up to **30 different products**. This table will be updated as MDOT further evaluates other devices. In general, those other products will likely be limited to two products per technology as well. A list of the previously approved products on MDOT-let signal contracts or products that successfully went through the new products evaluation process can be provided upon request.

Technology	Maximum Number of Products	Justification
Signal Cabinets	Two Products	Two products are expected to cover all installations statewide. Limiting the number of options streamlines maintenance in the case of troubleshooting an issue on the street that is affecting the operations of the traffic signal.
Signal Controllers	Two Products	Training and interoperability challenges consist in the Signal Industry with signal controllers. The current central signal system is only compatible with the two existing controllers used by MDOT. Maintaining this interoperability will remain an ongoing challenge as controller firmware and the central software system is routinely updated. Limiting the number of options also streamlines maintenance in the case of troubleshooting an issue on the street that is affecting the operations of the traffic signal.
Vehicle Detection Systems	Two Products for each sub-category of vehicle detection (i.e., radar vs camera)	MDOT has at least seven different sub-categories of vehicle detection technology which provides ample opportunity for innovation and competition with up to 14 potential devices in use. Many of these devices require substantial training and have a software application which provides additional resource needs for MDOT to properly maintain.
Malfunction Monitoring Units	One Product	Interoperability challenges may exist with other devices. As this device acts as the failsafe to ensure that the signal goes into flash when other equipment fails, it is paramount for the motoring public's safety that this device is properly installed and configured. MDOT has the resources to support only one of these devices.

Technology	Maximum Number of Products	Justification
Cellular Modems	Two Products	Interoperability challenges exist with the State of Michigan private network, the central signal system, signal controllers, and cell modems. By supporting two cell modem products, MDOT can effectively manage these challenges to ensure remote communications are functioning properly while supporting competition.
Radios	One Product	MDOT typically installs radios in an existing radio system which requires synchronization with existing radios in the traffic signal system. In addition, MDOT is not installing as many radios so there is not a real need for MDOT to invest resources in this technology as it is mostly being replaced by cellular communications.
Switches	Two Products	As noted, communications equipment can present interoperability challenges with the enterprise private cell network supporting central signal system. By allowing two products, MDOT already must address the challenges of having five different products operating together in different arrangements (two cell modems, two switches, one radio) on a local level plus the State of Michigan Network and the central signal system.
Preemption Devices	Two Products	Preemption devices are installed per the request of the local agency and is the responsibility of the local agency to pay for installation and maintenance, however, MDOT is required to be trained and knowledgeable with the devices. Two products allow for a reasonable choice for local agencies to select from while also helping manage the resource obligations of MDOT for a product that is optional.

Technology	Maximum Number of Products	Justification
Solar Powered Devices	Two Products for each sub-category of Solar Powered Devices	Having more than two products adds extra burden and cost for MDOT's maintenance staff to maintain stock. These devices typically require specific parts and pieces for the specific product and are not generic.
Battery Operated Devices	Two Products for each sub-category of Battery-Operated Devices.	Having more than two products adds extra burden and cost for MDOT's maintenance staff to maintain stock. These devices typically require specific parts and pieces for the specific product and are not generic.

Table 1 – Technology and Maximum Number of Products Justification

In addition, **MDOT only has the resources to evaluate up to four products simultaneously of existing technology** otherwise the NPS will not be able to consistently perform the evaluation process. If MDOT exceeds this threshold, a product request will be placed on a waiting list to be evaluated in the future once ongoing evaluation(s) are completed. Prioritization will be based on first come first serve and the waiting list will be provided to external stakeholders upon request.

At MDOT's discretion, MDOT may elect to evaluate more than four products simultaneously if MDOT has a need for a product's technology that is new to MDOT.

A formal response letter from the LSU is provided to the vendor indicating next steps.

If the device is approved for evaluation, an MDOT Process Manager is assigned in the LSU to facilitate the review process and serve as the primary MDOT point of contact with the vendor. The assigned Process Manager is communicated in the formal response letter along with an overview of the review process and estimated review schedule.

The general workflow of this step is illustrated in Figure 3.

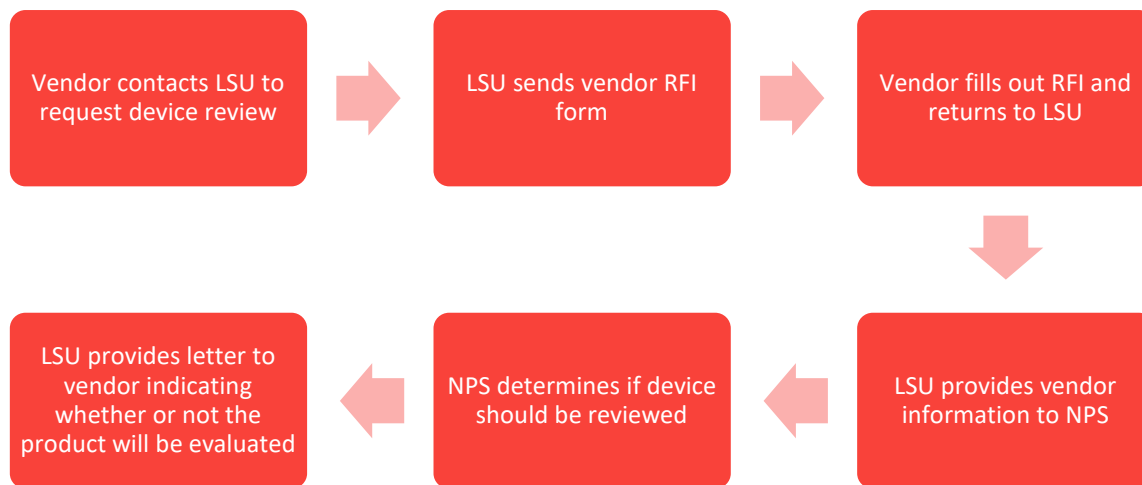


Figure 3: Determination to Evaluate Workflow

2.3 STEP 2 - TECHNICAL DOCUMENTATION EVALUATION

The **Technical Documentation Evaluation** is a preliminary evaluation of the product information provided by the vendor to confirm that there are no obvious insurmountable issues that would preclude approval of the use of the device/product by MDOT. This step is only performed IF the device is approved for evaluation in the previous step.

The MDOT Process Manager will assign appropriate staff for this documentation review based on the device type and communicate the review schedule to the team as outlined in the formal MDOT response letter prepared in Step 1.

The *Technical Document Evaluation* tab of the specific device type review spreadsheet will be used by the MDOT review team as a prompt list for the review and for documentation of how a device does or does not meet a review criteria or standard based on the technical documentation provided by the vendor. The electronic versions of the spreadsheets are maintained and available on upon request.

In an effort to improve the technology and products that MDOT uses, some response requests are intended to verify if the product exceeds MDOT's current specifications and provides additional functionality or durability. For example, if a battery-operated device is specified to have a 5yr minimum lifespan, a product warranted to have a 10yr minimum lifespan will reflect positively in determining which devices to approve.

Once the team has completed their review of the technical documentation, the MDOT Process Manager provides a formal response letter to the vendor. The response will have one of the three following review status indications:

- Approved for Shop Test
- Additional Information Needed
- Not Approved

If additional information is needed, the response letter will indicate what information is needed and the technical document review continued when the vendor has responded with the additional information.

If the technical documentation review indicates the device should not be approved, the response letter will indicate MDOT's reason(s) for not approving the device to advance in the review process at this time.

The general workflow of this step is illustrated in Figure 4.

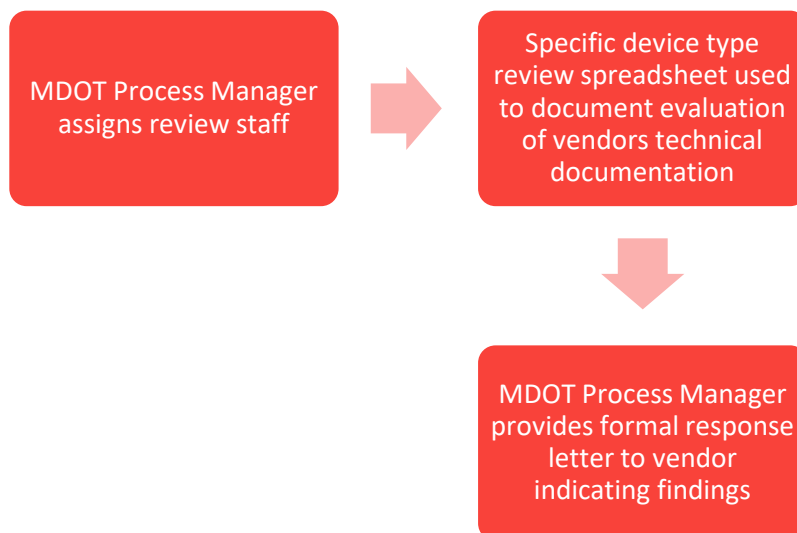


Figure 4: Technical Documentation Evaluation Workflow

2.4 STEP 3 - TECHNICAL SHOP EVALUATION

In the **Technical Shop Evaluation**, the MDOT Process Manager will coordinate with the review team to conduct a bench test at MDOT's Lansing Signals Shop utilizing sample devices/products provided by the vendor. The device/product will be tested in MDOT standard traffic signal cabinets to verify and evaluate the information provided in the Technical Documentation Evaluation and if the operations are suitable to MDOT's needs. This step is only performed IF the vendor was approved for a shop test in the previous step.

The vendor will need to be present on-site to witness MDOT's device setup and configuration for the bench test. The vendor may need to provide a qualified signal technician or electrician to assist with the testing. The *Shop Test Evaluation* tab of the specific device type review spreadsheet will be used by the MDOT review team as a prompt list for the shop test and for documentation of how a device does or does not meet testing and certification criteria. The electronic versions of the spreadsheets are maintained and available through the LSU.

In an effort to improve the technology and products that MDOT uses, some test cases may be optional and are intended to test the equipment to determine if the product exceeds MDOT's current specifications. For example, MDOT may test the product's compatibility, which is not a current requirement in the specifications, with other equipment or applications. Optional test or criteria will be clearly defined upfront prior to testing. In the event MDOT chooses to limit the number of devices, doing well on these tests will reflect positively in determining which devices to approve.

Once the team has completed the shop test evaluation, the MDOT Process Manager provides a formal response letter to the vendor. The response will have one of the three following review status indications:

- Approved for Field Test
- Additional Information Needed
- Not Approved

If additional information is needed, the response letter will indicate what information is needed and the shop test evaluation continued when the vendor has responded with the additional information.

If the shop test evaluation indicates the device should not be approved, the response letter will indicate MDOT's reason(s) for not approving the device to advance in the review process at this time.

The general workflow of this step is illustrated in Figure 5.

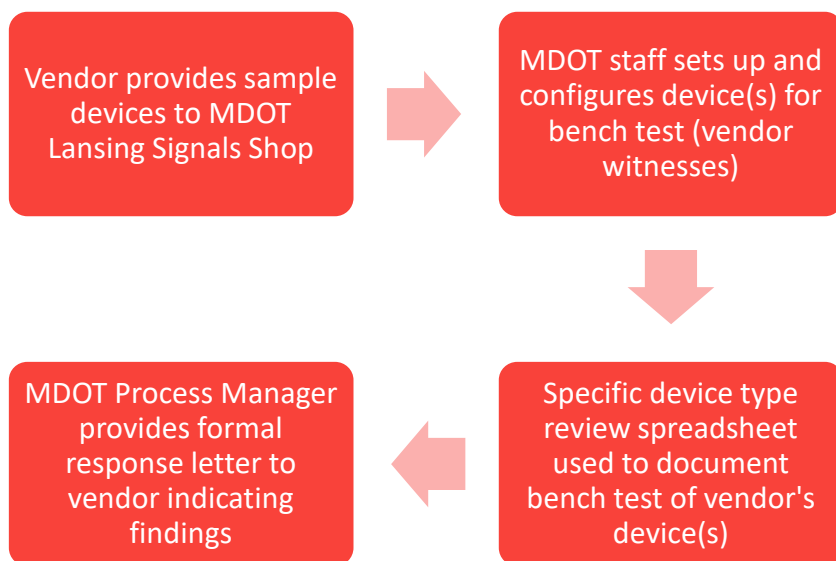


Figure 5: Shop Test Evaluation Workflow

2.5 STEP 4 - FIELD TEST EVALUATION

The MDOT Process Manager will coordinate with the vendor to conduct a **Field Test Evaluation** (commonly referred to as a Pilot Test) of the device/product at a small number of locations to evaluate the system in real world field conditions over an extended period of time. This step is only performed IF the vendor was approved for a field test evaluation in the previous step.

The MDOT Process Manager will identify the size and location of the field installation and the vendor will then provide the devices to MDOT for field installation. MDOT will require that the vendor be present in the field to witness field installation and configuration. In addition, MDOT may require a prequalified contractor provided by the vendor to assist with the installation. The devices will remain in the field and monitored by MDOT for a duration of time defined by the MDOT Process Manager. This may take up to a year if the device requires performance verification in all seasons of Michigan weather. Devices will be removed by MDOT or the vendor's contractor after the pilot field test is complete, and a summary of the entire device review and key findings will be provided by the MDOT Process Manager to the NPS.

There will typically not be a separate Field Test Evaluation response provided to the vendor. The NPS (in Step 5) will provide the final determination if the device is approved or not.

The general workflow of this step is illustrated in Figure 6.

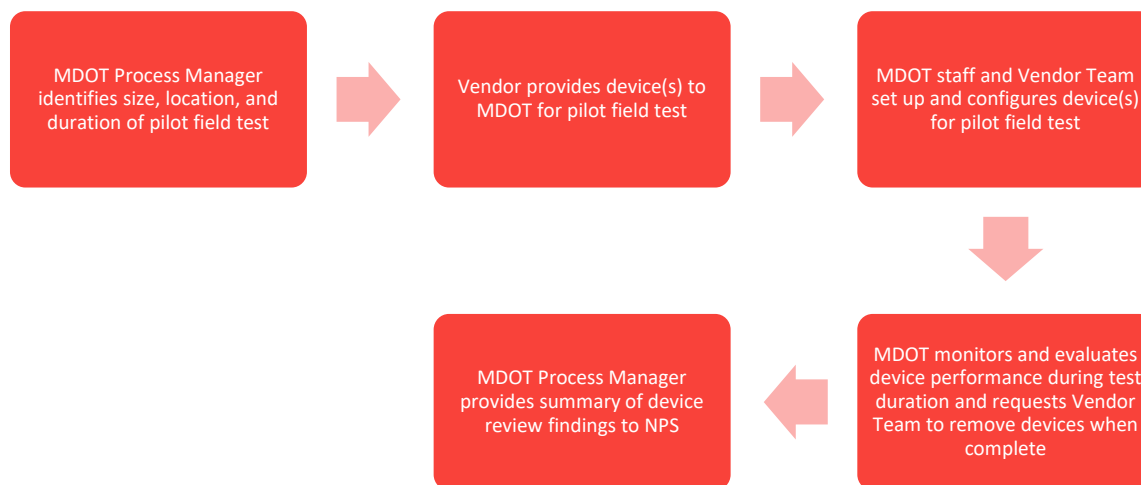


Figure 6: Pilot Field Test Evaluation Workflow

2.6 STEP 5 - FINAL DETERMINATION

Based on the results of the above steps, MDOT's New Products ITS Subcommittee will make a **Final Determination** on whether the device/product is approved for use on MDOT's roadway network.

Once the NPS has made a determination, the MDOT Process Manager provides a formal response letter to the vendor. The response will have one of the three following review status indications:

- Approved
- Additional Information Needed
- Not Approved

If additional information is needed, the response letter will indicate what information is needed and the final determination response letter updated when the vendor has responded with the additional information.

If the NPS indicates the device should not be approved, the response letter will indicate MDOT's reason(s) for not approving the device at this time.

If the device is approved, the response will indicate which pay item the device is approved for use under or if there are any other special considerations.

The general workflow of this step is illustrated in Figure 7.

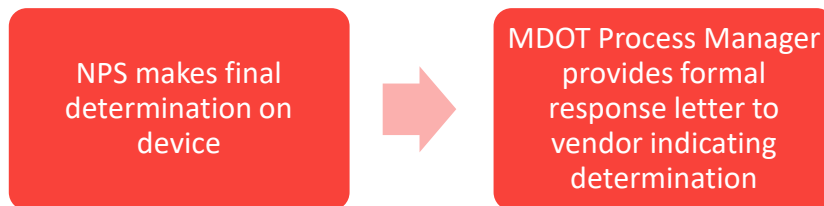


Figure 7: Final Determination Workflow

2.7 COMMUNICATION

Once the NPS has approved a device for review, an MDOT Process Manager will be assigned as MDOT's primary point of contact for coordination as noted in Section 2.2. The MDOT Process Manager will be responsible for coordinating MDOT's review staff, coordination with the vendor, and act as the liaison to the NPS regarding the review findings. All vendor communication with MDOT will be through the MDOT Process Manager.

All communications must include the MDOT Process Manager and vendor primary and backup contacts. During the evaluation process, work teams may be developed to facilitate technical processes. Contact without copying the MDOT Process Manager and vendor primary and backup contacts is strongly discouraged, and such communications may be considered as non-responsive. If contact from MDOT is received without the MDOT Process Manager copied, the vendor should contact the MDOT Process Manager to confirm the status of the contact.

Vendor technical experts will likely be required to be available either via email, phone or in person at times during the evaluation process. MDOT Requests for Information (RFIs) should be responded to by the vendor as soon as possible. Responses that exceed more than 10 business days without contact to update MDOT on the nature of the delay may classify the vendor as non-responsive and reason for MDOT to end the evaluation.

2.8 SCHEDULING

The MDOT Process Manager will coordinate with the vendor to develop an estimated schedule for the device/product evaluation process. It is important to note that the MDOT technical experts have other duties related to maintenance and supporting construction projects. This may result in limited MDOT staff resources available for review and testing. Their work supporting these other duties takes precedence over the testing of new devices. Furthermore, as MDOT does not have independent staff dedicated to the device review process, MDOT reserves the right to prioritize staff workloads as they relate to reviewing new devices. MDOT may place an evaluation on a waiting list as noted in Section 2.2.

The expected duration of each review step is provided in the table below and should be used as a template for coordinating schedules between MDOT and vendors.

Table 2 – Expected Evaluation Durations

Evaluation	Duration	Comments
<i>Evaluating Technical Documents</i>	2 to 4 weeks	The Technical Documentation Evaluation is dependent upon receiving all required information in a usable format and in a timely manner.
<i>Bench Testing Equipment</i>	4 to 6 weeks	Bench Testing is dependent upon receiving all required equipment from the vendor at the signal shop designated for testing following a successful technical document review.
<i>Field Testing Equipment</i>	Up to 1 year	Field Testing Equipment is dependent upon a successful bench test at the signal shop before implementing in the field. This duration is necessary to assess equipment performance over the course of a typical year which involves significantly variable conditions between seasons.

2.9 DEVICE UPGRADES OR ISSUES

Device approval is based on the make and model tested including software & firmware at the time of the review. In other words, the approval is for that physical device/software/firmware combination at that snapshot in time. If there are any subsequent changes over time including software or firmware changes, the vendor must notify MDOT prior to providing these devices on MDOT Contracts. MDOT will determine if the change is substantial enough to justify a complete review per the established process or if an abbreviated review is sufficient. Failure to notify MDOT may result in rejection of the device on MDOT projects.

In addition, devices currently approved for use on MDOT projects may be reviewed again if MDOT staff find concerns with the operation, performance, or functionality of the devices/products provided on projects. The vendor is expected to participate in the review process, which will follow a similar process to the new device/product review. Refusal to participate may result in rejection of the devices on new projects by removal of the brand name on the Special Provision. If upon review, they are found to no longer meet the requirements, MDOT will notify the vendor of the status and the key issues that led to the change.

As technology and operational needs change, MDOT may implement new standards and specifications for a device type. MDOT will notify vendors in advance of the change to provide an opportunity to confirm if their devices/products can meet the new requirements by a date to be determined (typically 6 to 12 months). Depending on the nature of the changes to the specifications, an abbreviated MDOT review process may be used that focuses primarily on the new requirements at the discretion of the MDOT Process Manager.

2.10 VENDOR CONSIDERATIONS

The following are key considerations for vendors regarding MDOT’s New Device Review Process:

- Approval of the device/product does not imply or guarantee any intention by MDOT that it will utilize your device/product.
- MDOT reserves the right to determine when and where a device/product is utilized. Some device/product types are only used rarely.

- Determination of when and where to use such devices is outside the scope of this process. This evaluation is limited to determining if the proposed device/product is suitable where MDOT determines implementation is appropriate.
 - Some devices/products are only installed at a Local Agency's request. MDOT maintains the right to approve or deny the use of the device/product on MDOT roadways and may set limits on how it is utilized.
 - After successful completion of the evaluation process, MDOT may decide to deploy a product gradually so additional testing and verification of the product's durability, compatibility, and longevity can be completed. A "Pilot" Special Provision will be utilized for procurement of the product until validation can be completed to add it to a standard Special Provision. MDOT will utilize this Special Provision for up to one year.
- For devices/products that require significant knowledge and training, MDOT may limit the number of approved devices/products to limit the training burden on MDOT staff.
 - For devices/products that have limits on compatibility with other brands, MDOT may limit the number of approved devices/products to limit issues with compatibility and spare parts.
 - Devices/products should generally be consistent with MDOT's current *Standard Specifications for Construction and Previously Approved Special Provisions* for that device/product type. MDOT will be updating many of its Special Provisions in 2022 to list brand names that are currently approved for use along with the technical requirements. If applicable, an "approved equal" option will be noted in the Special Provision with the requirement for the "approved equal" product to go through this evaluation process. The evaluation process will not be justification to delay the project.
 - A device/product that has been rejected may not be resubmitted for a minimum of 24 months from the date of the rejection letter or 12 months if only minor issues were discovered during the previous review.
 - If the product was rejected previously, any new submittal must include details of the updates and how they address the technical issues found during the prior review and testing.
 - It is important that the vendor provided technical documentation be complete and well organized. The response to the items in the Technical Documentation Evaluation spreadsheets must directly respond to each item requested. Failure to provide a complete and organized response may result in evaluation delays or rejection of your device/product.
 - While website links, technical details and marketing materials can be included, they should be referenced in the vendor's PDF response to the specific MDOT questions with page numbers or appendix references called out in the response.
 - MDOT may request clarification or have additional questions based on the Technical Documentation Evaluation.
 - If a question does not apply to your product, include a statement of why it does not apply. A blank response may be considered non-responsive and could result in rejection of your device/product

APPENDIX A MANUFACTURER CHECKLIST



Manufacturer Checklist

- Intelligent Transportation System Devices
- Traffic Signals Technology as Identified in the “New Traffic Signal Device Product Review Guidelines”

Related Products and Services

INSTRUCTIONS: Please carefully review the **NEW TRAFFIC SIGNAL DEVICE PRODUCT REVIEW GUIDELINES** ([link](#)) prior to submitting this form. In addition to this document, you should have received a request for information (RFI) in a form of a spreadsheet. This document must be completed in its entirety, signed, and returned, along with any required supporting documentation. No provisions of this document may be modified or deleted by the Manufacturer or Authorized Representative.

, herein referred to as
(Manufacturer/Authorized Representative)

“Manufacturer/Authorized Representative,” in an effort to familiarize the Michigan Department of Transportation, herein referred to as “MDOT,” with

, makes the following
(Description of Products or Services)

representations:

1. Are you the Product Manufacturer? Yes No
2. Are you an Authorized Representative recognized by the product manufacturer?
Yes No, If yes, please provide Supporting Documentation.
3. INFORMATION (Check all that apply)

MDOT wishes to receive ALL of the following informational materials, whether contained in one or multiple documents; indicate which item(s) you are providing:

- | | | |
|---|--|---|
| <input type="checkbox"/> Sales brochure | <input type="checkbox"/> Operator’s Manual | <input type="checkbox"/> Service Manual |
| <input type="checkbox"/> Installation Guide | <input type="checkbox"/> Warranty | <input type="checkbox"/> Specifications |
| <input type="checkbox"/> Material Safety Data Sheets (MSDS) | <input type="checkbox"/> None of the above | |

4. Material Testing (Check all that apply)

Select the following standards in which your product or service is compliant? Indicate any independent testing laboratories or other entities that have approved/certified/listed/registered your product or service. Supporting documentation and/or certificates must be provided for any boxes checked.

- AISC ANSI ASCE ASTM CSA NTCIP
 IEEE MIOSHA NEC NFPA PNS NIOSH
 OSHA UL USDOT US-EPA ITE NESC
 MASH NCHRP350 None of the above

Other:

5. WARRANTY (Check all that apply)

- 5.1. Manufacturer/Authorized Representative specifically guarantees MDOT that use of this product/service will NOT invalidate original equipment manufacturer (OEM) or distributor warranties for equipment, structures, or any other items that may be impacted by such use.
- 5.2. Manufacturer/Authorized Representative has also attached documentation from the original equipment manufacturer (OEM) or distributor verifying that use of the product/service described will NOT invalidate original warranties, as indicated above.
- 5.3. Manufacturer/Authorized Representative cannot guarantee use of this product/service will not void warranties of other equipment, structures, or items, but does assume full financial responsibility for resolving any issues stemming from the avoidance of warranties that result from the use of Manufacturer/Authorized Representative's product or service.
- 5.4. Manufacturer/Authorized Representative cannot guarantee use of this product/service will not void warranties of other equipment, structures, or items. (This may disqualify your product/service from further consideration.)

6. LOCAL REFERENCES (Must provide or check "None")

Provide references that have used this SPECIFIC product or service within the state of Michigan or the tri-state area. Attach additional sheets if more references are available.

6.1. Contact Name:

Organization:

Location (City/State):

Telephone: Ext:

E-Mail Address:

6.2. Contact Name:

Organization:

Location (City/State):

Telephone: Ext:

E-Mail Address:

6.3. None (Manufacturer/Authorized Representative cannot provide any references for this SPECIFIC product or service.)

7. COST OF SUPPLYING PRODUCT OR SERVICE FOR EVALUATION

(Must check one or more)

7.1. Manufacturer/Authorized Representative will provide product or service at NO CHARGE to MDOT.

7.2. Manufacturer/Authorized Representative will also provide both installation and removal of product or service (including restoration of installation site to original condition) at NO CHARGE to MDOT.

7.3. Manufacturer/Authorized Representative will also provide any necessary associated items, consumables, or other supplies at NO CHARGE to MDOT.

7.4. Manufacturer/Authorized Representative's commitment to provide items at NO CHARGE to MDOT, as indicated above, will expire on:

(Date)

7.5. Manufacturer/Authorized Representative will NOT provide any product or service at no charge; MDOT will be expected to incur all associated expenses.

8. RESPONSIBILITY (Must check one)

8.1. Manufacturer/Authorized Representative agrees to defend MDOT and will not hold it responsible against any and all claims of liability related to use of Manufacturer/Authorized Representative's products or services.

8.2. Manufacturer/Authorized Representative cannot agree to this Responsibility provision. (This may disqualify your product/service from further consideration.)

9. COST SAVINGS CLAIMS (Must check one)

9.1. Manufacturer/Authorized Representative is providing written, detailed financial analysis supporting and demonstrating the cost savings claimed by the use of its product or service. This analysis shall include a return on investment (ROI) analysis and calculation of payback period, with all assumptions and calculations clearly shown.

9.2. Manufacturer/Authorized Representative cannot provide the detailed financial/ROI analysis (as required above) to support its claims of cost savings.

9.3. Manufacturer/Authorized Representative makes no claims whatsoever that any cost savings are associated with the use of this product or service.

10. ENERGY REDUCTION CLAIMS (Must check one)

10.1. Manufacturer/Authorized Representative is providing written, detailed analysis supporting and demonstrating the energy reductions claimed by the use of its product or service. This analysis shall have all assumptions and calculations clearly shown. If a cost savings due to energy reduction is also claimed, see Section 9 (Cost Savings) above.

10.2. Manufacturer/Authorized Representative cannot provide the detailed energy reduction analysis (as required above) to support its claims.

10.3. Manufacturer/Authorized Representative makes no claims whatsoever that any energy reductions are associated with the use of this product

or service.

11. ENVIRONMENTAL, SUSTAINABLE, OR "GREEN" RELATED CLAIMS

(Must check one)

- 11.1. Manufacturer/Authorized Representative is providing written, detailed documentation supporting and clearly demonstrating how this product or service offers benefits that are "environmental," "sustainable," "green," or similar in nature. Such claims must be verifiable and supported by independent, third-party sources, and documentation of such support provided.
- 11.2. Manufacturer/Authorized Representative cannot provide the required documentation (as required above) to support its claims of "environmental," "sustainable," or "green" related benefits.
- 11.3. Manufacturer/Authorized Representative makes no claims whatsoever that "environmental," "sustainable," or "green" related benefits are associated with the use of this product or service.

12. ACKNOWLEDGEMENT

Manufacturer/Authorized Representative understands, acknowledges, and agrees to all of the following:

- 12.1. All responses (check marks, statements, etc.) made by the Manufacturer/Authorized Representative on this document are truthful and correct, and the responses have been checked for accuracy by representatives of the Manufacturer/Authorized Representative who are authorized to answer and who would have knowledge as to the accuracy of such responses.
- 12.2. Completion and signature of this checklist by the Manufacturer/Authorized Representative, or the supplying of products or services by the Manufacturer/Authorized Representative, does NOT obligate MDOT to use or attempt to use the products or services described herein.
- 12.3. The trial use of any product or service does not obligate MDOT to purchase additional product or service, nor does such use imply that MDOT intends to purchase additional product or service.
- 12.4. In the event MDOT does elect to pursue the purchase of this or similar products/services, the standard purchasing practices and requirements of the State of Michigan, including competitive bidding, will apply, and the Manufacturer/Authorized Representative will receive no preferential consideration.

12.5. The trial, testing, favorable evaluation, or any other review or use of a product or service does not constitute an endorsement or recommendation by MDOT. Manufacturer/Authorized Representative may not in any way promote, advertise, imply, or suggest to current or potential customers that any product or service has been tested, endorsed, approved, or recommended by MDOT.

12.6. Any testing/evaluation of this product along with any MDOT resource must be coordinated/approved by authorized personnel from the MDOT New Product Evaluation Team.

Manufacturer/Authorized Representative Acceptance and Signature:

(Signature of Manufacturer/Authorized Representative)

(PRINTED name of above individual)

(Title)

(Date)

For further information, MDOT may contact:

Name

Address

City/State/Zip

Telephone

E-Mail

Please send this completed form and any required documentation to:

Terri Mears
mearst@michigan.gov