massDOT
Massachusetts Department of Transportation

WORK ORDER USER GUIDE

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1 General

A safety review is a way of documenting action or no action taken on findings from a variety of sources that identify a condition as unsafe. These safety reviews serve as the basis for documenting response or remedy of an unsafe condition.

A work order is a way of assigning repair work and keeping track of repairs that are done at a specific location or MassDOT-owned asset. Work orders are created based on a repair need or deficiency. Once a need or deficiency is identified a work order must be assigned to complete the repairs.

Work orders typically get created and assigned by the District Bridge Section, including Ancillary Structures Engineer. The assigner will perform a safety review of incoming significant findings, assess the need, identify the required repairs to be performed, create the work order, give the work order a unique number and priority and assign the work to the correct section or contract. Work orders are assigned to a Resident Engineer who will oversee the repairs and track quantities and payments, and the Contractor who was awarded the specific Contract who will be responsible for performing the work.

Work orders are comprised of key components including the specific location or asset to be repaired, the scope of work to be performed, repair type, the Contract that the repairs will be completed under, who will be performing the work, the date the work is assigned, the date physical work starts and ends and when the work order was closed out.

1.1 Who Uses Safety Review And Work Order Information?

1.1.1 District Leadership

The information from Work Orders will be summarized to show overall statistics on the amount of work being completed and backlogged. It will assist in decision making for staffing and funding requests.

1.1.2 District Sections

The MassDOT District Bridge Section manages the Districts Bridge Maintenance Fiscal Year Non-Federal Aid (NFA) budget and prepares the Various Location Contracts. The Section works with District Bridge Inspection and Maintenance forces to prioritize bridge and work order needs. It also organizes and manages all work orders for the Various Location Contracts.

The District Bridge Sections are responsible for day-to-day management of ancillary structures including oversight of State and consultant inspection teams, reviewing inspection reports, evaluating and prioritizing deficiencies, coordinating initial construction inspections with construction and replacement projects and initiating, verifying and accepting repairs. The primary point of contact for all ancillary structure issues will be the District Ancillary Structure (Inspection) Engineer (DASE) or the DBE's designee until such time that the DASE position is filled. Working through the VueWorks the Bridge Section works closely with District Construction, Traffic, and

Maintenance Sections to facilitate the repair of documented deficiencies through contracts managed by those sections or in-house forces

1.1.3 Headquarters Bridge Preservation Unit

The MassDOT Bridge Preservation Unit is the program manager for the overall preservation strategy. The work order tracking system will feed directly into decision making for larger site-specific projects. Numerous structures are kept in fair condition through work orders therefore never being identified in the bridge rank sheet for rehabilitation or replacement. After a certain point it is more cost effective to rehabilitate or replace a structure than perform constant maintenance. Additionally, the Unit can provide information to other decision makers to identify bridges and structures that may need a more significant approach than individual work orders.

1.1.4 Headquarters Bridge Inspection Unit

The MassDOT Bridge Inspection Unit identifies deficiencies and condition states based on inspection findings. It is prudent to reinspect bridges if the condition state changes due to work as this information is provided to FHWA. Waiting for an inspection cycle to capture work orders that eliminate a deficiency or increase the condition state does not provide up-to-date information on the condition of our assets for FHWA. The close out of a work order which will impact the condition rating of an element will trigger an email notification to allow bridge inspection to determine if they should perform a special inspection.

1.1.5 Headquarters Bridge Rating Unit

The MassDOT Bridge Rating Unit identifies bridges that do not have adequate load carrying capacity. This can result in bridge posting or bridge closure. Many work orders are in response to the results of a rating and therefore tracking the work orders to know when they are issued and completed provides rating staff with the data that they need for informed decisions around bridge posting and closures.

1.1.6 Headquarters Asset Management

Work orders provide data for asset management and feed into the future planning of capital projects. Additionally tracking work orders identifies the bridges that are maintained annually and identifies the overall scope of our asset management actions. This feeds into the Transportation Asset Management Plan and forecasting the state of good repair of our bridge inventory.

1.1.7 Headquarters Ancillary Structures

The Ancillary Structures Program captures the life cycle of ancillary structures assets from initial constructions through maintenance and removal. The work order system provides updated information necessary to adjust inspection ratings documented in the MADOT BMS (4D) Ancillary Structures Module allowing for accurate reporting of the structural health of the inventory. Work order data can additionally be used for several purposes; to assess the funding needs for maintenance contracts, to identify contract items that may be underrepresented or missing from current Maintenance Contracts, identify global /systemic issues for unilateral contract solutions.

The MADOT BMS (4D) Structures Module allows for accurate reporting of the structural health of the inventory. Work order data can additionally be used for several purposes; to assess the funding needs for maintenance contracts, to identify contract items that may be missing from current Maintenance Contracts, identifying global /systemic issues for unilateral contract solutions.

1.2 Using Work Orders For Asset Management

1.2.1 Condition Tracking

The condition of bridges is currently tracked at each inspection date. This data does not capture changes in the condition due to the preservation actions occurring as part of the work orders. By having work orders in a system, a quick identification of bridges that are changing condition due to preservation actions can be determined and special inspections performed to track positive condition rating changes. The condition of Ancillary structures is tracked by ratings through the Bridge Management System (4D). Deficiency repairs have not historically been captured to update the ratings for that asset. The work order system will identify the assets needing new condition ratings, as well as the potential need for district or statewide preservation projects.

1.2.2 Project Initiation

Work orders identify issues with bridges that are not captured through the current methods of project selection and ranking. If we keep a bridge in the FAIR category purely by repeated maintenance work orders, we can identify the need for a larger capital project or. If a corridor of ancillary structures is reaching a point of significant maintenance a corridor approach can be implemented.

1.2.3 VUEWorks

VUEWorks is the software selected by MassDOT for use in work order management across activities from bridges, traffic, electrical, and other maintenance needs. The work order tracking software package is customized for use including separate workflow for Bridge Safety Reviews, Bridge Work Orders, Ancillary Structures Safety Reviews, and Ancillary Structures Work Orders. The software pulls from the geolocation data in the Bridge Management System (4D) to map all assets for use in selection and assignment of work orders. Additionally Bridge VUEWorks has been tied to the Site Application Module (SAM) and Field Inspection Reporting (FIR) to directly select contracts and to attach work orders to invoices. For Ancillary structures VueWorks allows the DASE to establish repair requirements and identify and assign the Section best suited to perform repairs depending on the asset and level of repair. The software can also pull from GeoDOT for other types of layers to map a multitude of assets.

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1.2.4 What Is VUEWorks ?

VUEWorks is web-enabled software that is integrated with GIS maps. We can relate activities, issues, and priorities to a location. By using the map, one can choose from selected map layers to easily identify the location being called on. For the purposes of Bridge Maintenance, many selections on the map will be bridges identified by department number and unique BIN.

VUEWorks is a replacement for the various notification methods to the resident engineer and contractor. The software can intake the information and create a work order form that is then sent to the assigned parties.

1.2.5 Who Uses VUEWorks ?

VUEWorks has various levels of users with the primary full license user being the District Bridge / Structure Maintenance / District Ancillary Structures Sections. These sections will be performing the input of data to create the work order. District Ancillary Structures Sections will require the access and support of District Traffic, Construction, and Area Maintenance to create and execute child work orders. Once the work order is generated the in-house maintenance crews, Contract Managers, and Resident Engineers will be able to use the mobile version of the software for all the pieces they need. The last category of user is those at Headquarters that are using the work orders to inform decisions on programming.

Activity	HQ	District Bridge & Ancillary Structures	Contract Managers Resident Engineers In-House Crews	Contractors*
Initiates & Inputs Data		X		
Assigns		X		X
Views Capability	X	X	X	
Edits Capabilities		X	X	
Adds Documents & Photos		X	X	X
Closes Out		X	X	
Deletes		X	X	
Runs Reports	X	X	X	X

* *future area of expansion*

1.2.5.1 District Bridge Section / Ancillary Structures Engineers

The District Bridge Section or Structures Maintenance will initiate work orders as needed and input all data including available plans as needed. Additionally, they will assign either to the section holding the correct contract or if they manage the contract to the correct contract for the resident / contractor assignment. They can then run reports on the status of work orders as the work progresses with the input of documents and photos from the resident engineers and contractors. At the end of the work order the initiating section will be required to sign off on close out to ensure that the work was completed satisfactorily.

1.2.5.2 Resident Engineers

The residents will receive work orders through VUEWorks for assignment to the Contractor. Residents will be able to document the progress of the work and compare it to scheduled milestones.

1.2.5.3 Contractors

Contractors will receive all work orders through VUEWorks . This will be the official notice that starts the clock for the repairs. The Contractor will submit any schedules and estimates through VUEWorks for each Work Order as needed.

2 Ancillary Structure Work Orders

A work order may be the result of a safety review, inspection report, or other internal or external report of a deficiency condition or be the result of scheduled work by the District based on their needs and Traffic O&M maintenance plans.

MassDOT Ancillary Structure Maintenance efforts are supported through:

- Engineering inspection/analysis
- Monitoring
- Cooperation between District Bridge Sections identifying the Maintenance needs and District Traffic Sections who manage Lighting, Signal, Sign Maintenance Contracts and in-house personnel
- VUEWorks - a work order management system

District Ancillary Structure (I)nspection Engineers (DASE's) are responsible for the structural health of Ancillary Structures within their District. The DASE is responsible for prioritizing the response to deficiencies based on the best available information and developing work order to address said efficiencies.

Work orders requiring engineering analysis, increased inspection frequencies, or monitoring may be assigned by the DASE (through the State ASE) to the Statewide Ancillary Structure Inspection consultants assigned to their District.

Work orders requiring repairs, removals, or replacements are assigned by the DASE to the appropriate Section (District Traffic Sections, Construction Sections or Area Maintenance) managing Lighting, Signal, Sign Maintenance Contracts and in-house personnel, and/or Accident Recovery Coordinators (if applicable).

2.1 Ancillary Structure Work Order Roles

Role/User	Description of Work
District Ancillary Structure (I)nspection Engineer (DASE)	• Respond to outside reports of deficiencies in AS assets. • Acquire information needed to make decisions on actions to be taken. • Review reports of deficiencies and prioritize work to be done. • Develop scope of work to be done and assign to appropriate entities for execution. • Review work done and accept or reject child work order close outs.

Role/User	Description of Work
Contract Managers *(In-house electrician, Lighting, Sign, Signal)*	• Direct contractors and/or in-house personnel to execute the scope of work assigned by the DASE.
Accident Recovery Coordinator	• Manage ARP contractors performing temporary and permanent repairs on ancillary structures when insurance is involved.
Area Maintenance Supervisors	• Perform in-house repairs on sign structures when work is within their ability and to execute the scope of work assigned by the DASE

2.2 Ancillary Structure Safety Reviews

2.2.1 When To Initiate A Safety Review

If a plausible immediate or imminent threat of a falling hazard, having the potential to endanger public safety, is present, the DASE will initiate a Safety Review. *(Note: the new Ancillary Structures Inspection Manual will be adopting a new convention for Deficiency reporting. ~~A new convention (CF) denoting a potential falling hazard will be used as defined as above.)~~. All other deficiencies will be managed through typical work order).*

Typical example scenario's requiring Safety Review**:**

- Overhead Sign reported to be wabbling on the highway (after confirmation of condition by Area Maintenance or verifying in person.)
- Consultant notifies DASE of severely cracked weld on a cantilever sign.
- Consultant reports High mast light has a split seam at the slip joint.
- HOC reports a vehicle strike on a single mast arm signal (not a knock down**.**)

Typical example scenario's NOT requiring Safety Review**:**

- Knock Downs – a knock-down presents no immediate structural safety risk. The site is made safe through response by Traffic O&M Section/ARP.
- Backed off anchor nuts (unless multiple nuts are backed off and pole is wabbling)
- Attachment hardware has minor crack, but a secondary support system (Teather) is intact and fully capable of supporting the deficient element in the event of failure.

- Non-electrified structure has potential of falling away from traffic and people and sufficiently far away from road users to pose no safety risk.

2.2.2 Situations Requiring Engineering Analysis

CREATE SAFETY REVIEW - when damage to a structure is reported from a strike or otherwise and the threat of a falling hazard is plausible but not definitive and an engineering analysis is necessary to make the determination, a safety review should be created.

Before assigning an engineering analysis to consulting engineers (through the State ASE) the DASE shall develop a cost benefit analysis (CBA) to support said assignment and upload it to the work order. A scope of work should be provided to the engineering consultant with the request for an estimate to be compared to the replacement costs for the subject asset.

2.2.3 Actions Based On Cost Benefit Outcomes

If the CBA is favorable to engineering analysis, the engineering work can be assigned.

- If the analysis determines the structure is safe the Safety Review can be closed out with the engineering report attached.
- If the engineering analysis indicates the need for a repair or replacement the DASE will proceed with a Safety Review child work order assigned to the appropriate group with the appropriate scope of work.
- If the CBA is unfavorable and repair/replacement is the better option, the DASE shall:
    1. Create Safety Review Child Work Order and assign to the appropriate Contract Manager with a scope of work for a temporarily solution to make the site safe.
    2. Separately create a typical work order- The DASE will then create a separate typical Work Order assigned to the appropriate contract manager (and/or ARP coordinator if necessary) with a scope of work calling for the replacement of the structure, as well as the design review, and initial inspection of said structure.

2.2.4 Emergency -Temporary Safety Measures Required

CREATE SAFETY REVIEW – This does not include knockdowns. Situations requiring immediate temporary safety measures shall require a Safety Review. In emergency situations communication will be carried out in real time conveying scopes of work verbally, through text, or electronically as needed to make the roadway safe. The DASE must be clear in their expectations and verify the work done. The Safety review work order shall be created (even if it is after the fact) and the Safety Review Child Work Order will be assigned to the appropriate Contract Manager (including the ARP Coordinator) even if the documentation is after the fact. Only when the child work order is closed out, reviewed and accepted by DASE can the Safety Review be closed out.

2.2.5 Long Term Solutions (Replacement Structures).

CREATE TYPICAL WORK ORDER - If a long-term solution is required (replacement/repair) a separate typical Work Order shall be created and assigned to the appropriate contract manager and/or ARP coordinator with a scope of work calling for design review and construction inspection of the replacement of the structure. The Permit issued to the ARP Contractor shall require DASE acceptance of design as a condition of the permit.

2.2.6 Accident Recover Program (ARP)

When a deficiency is caused by an accident (vehicle strike) and insurance is involved the Accident Recovery Coordinator in each district will need to be included in the group assignment of work orders. The ARP contractors are subject to the same scope requirements issued in Safety Review Work order and typical Work Orders as MassDOT Contractors. The ARP Coordinator is responsible for conveying the scope of work issue by the DASE to the ARP Contractors.

2.2.7 Permits Issued For ARP Contractors

Permits issued for ARP Contractors to perform repairs and/or replacements of ancillary structures are subject to the Departments Ancillary Structures Program policies requiring the DASEs signoff on all repair or structure designs prior to installation and the initial inspection for acceptance of an installation.

2.3 Ancillary Structure Safety Reviews

2.3.1 Work Order Initiation

Once a repair need and location has been identified a work order must be issued to perform the work or repair. All work orders must be initiated through VUEWorks to allow for tracking the progress of the work order from initiation to assignment to close out. The DASE will log into VUEWorks, select the asset requiring repairs, create the work order, assign the work order a priority, fill out the work order information, attach reference documents, specify the scope of work including what is required to verify and accept the repair. The DASE is responsible for accepting repairs made.

How to log into the program, set program defaults and to properly fill out the form will be discussed in more detail in subsequent sections.

The work order priority will be classified into the following categories: Emergency, Priority, or Scheduled.

Work Order Type	Priority Description
Emergency	Inspector(s) immediately contacts D.A.S.E. from the field to report the deficiency and to receive further instruction.

A-3	Address the deficiency within 3 months. Inspector(s) should notify the D.A.S.E. within 1 week of the inspection; prior to submitting the inspection report.
A-12	Address the deficiency within 12 months.
A-24	Address the deficiency within 24 months.
Prioritize	Deficiency will be prioritized, at the direction of the D.A.S.E., by the District Maintenance Engineer (DME) or the Responsible Party (if not a State-owned structure) and repairs will be made as soon as funds and/or manpower is available but before the next Routine inspection cycle.

VUEWorks automatically assigns an ID number for each work order that is created.

2.3.2 Work Order Assignment

Once the DASE has created the work order in VUEWorks and has assigned the priority, the work order is assigned to the Contract Manager who will oversee the construction and the contractor or in-house staff who will be performing the work. The Contract Manager may add additional requirements to the work order to address other deficiencies outside of the jurisdiction of the DASE. The Contract Manager will track dates and quantities and costs associated with the repairs.

If the Accident Recovery Program (ARP) is involved, they will be included in the assignment group with the contract manager.

If the asset will require a rerating the new rating shall be determined by the DASE and noted in the work order. Once a work order has been assigned the Contract Manager will be responsible for keeping the work order information in VUEWorks up to date until the repair has been completed and the work order has been closed. The Contract Manager will note and update the Actual Start and Finish dates of the repairs in VUEWorks.

3 Bridge Work Orders

MassDOT Bridge Maintenance and Preservation efforts are supported by contracts that do not have work specified in advance but are assigned through work orders. These work orders are the basis for maintenance actions and need to be tracked as part of the asset management and performance tracking of the strategies implemented. The following steps outline the process involved in how a work order gets assigned from project advertisement to closing out an assigned work order. This process applies to all various locations bridge maintenance projects that do not have any specified locations listed in the Contract.

3.1 Project Contracted

During this step projects are advertised and contracted on a two-year various locations basis. The expected work quantities are developed and utilized to formulate a contract for low bid. Projects are designed and advertised based on the programmed funding amount and quantities determined by the District. Once the project is advertised, awarded and the Contract is given the Notice to Proceed, the District will manage and assign work orders to the Contractor.

The various locations work is typically by work type and cover the following

- Cleaning & Washing
- Shielding
- Shoring
- Deck Repairs
- Substructure Repairs
- Superstructure Repairs
- Joint Repairs

3.2 Bridge Roles

SOP Role	District Specific Role	Description	Safety Review Permissions	Work Order Permissions
Inspection Lead	District Bridge Inspection Engineer or Designee	Create safety reviews	• Create Safety Review • Fill in Inventory Information • Add information in fields required to save • Add any dates known • Attach Documents as needed • Assign to Engineering Lead • Add Notification List • Workflow – Check if Child WO Closed	N/A
Engineering Lead	District Bridge Engineer or Designee	Create or close safety reviews Create work orders	• Fill out Description & Actions • Add any dates known • Attach Documents as needed • All Workflow Steps • Assign • Add Notification List • Close Safety Reviews	• Create Work Order • Fill in any fields • Attach Documents as Needed • Close Work Order

SOP Role	District Specific Role	Description	Safety Review Permissions	Work Order Permissions
Contract Lead	Bridge Maintenance Contract Manager	Create, receive, and close work orders	• Fill out Description & Actions • Add any dates known • Attach Documents as needed • Assign	• Create Work Orders • Fill in any fields • Attach Documents as Needed • Close Work Orders
Headquarters Notification List	Area Bridge Inspection Engineer Bridge Inspection Engineer State Bridge Engineer	Notification of and review critical findings	• Read Only	Read Only
	Ratings and Overload Engineer	Create safety reviews for rating findings	• Create Safety Review • Fill Inventory Information • Add information in fields required to save • Attach Documents as needed • Assign to Engineering Lead • Add Notification List	Read Only

3.3 Bridge Safety Review Process

The need for a work order can come from various sources and involve varying degrees of urgency. These sources can include deterioration and critical findings found during routine bridge inspections, roadway inspections by the District staff or Maintenance Foremen, public feedback, rating reports or scheduled simple routine maintenance. To track any unsafe conditions found a safety review process has been implemented to ensure tracking of action or documentation of reason for no action.

3.3.1 Safety Review Initiation

Once an area of concern is reported it is necessary for the District Bridge Section to conduct a field visit to determine the best course of action in handling the need. Based on the location and severity of the deterioration or failure the District will determine if repairs should be scheduled or the location monitored overtime and repaired under a future Contract. If repairs are to be scheduled the District will determine which Contract to schedule the repairs under and proceed to create and initiate a work order.

Once the safety review is created then there is a period to determine which of the following apply:

3.3.1.1 Additional Information Required

Is the information provided inadequate to make a determination? This could mean that a field confirmation is required by the bridge section or bridge inspection. This also could indicate that a calculation must be performed to determine if the structure is structurally adequate.

3.3.1.2 Immediate Temporary Safety Measures Required

If something is truly identified as a safety risk and a temporary safety measure such as restricting the bridge or closing the bridge is required these are temporary safety measures that can be implemented before a work order can be issued through the system. After the immediate action is taken it would then be documented in VUEWorks as a child work order and closed out appropriately once in place. This documents the unsafe condition found and the response.

If it is truly unknown the level of safety risk associated with the reported deficiency then a temporary measure may be put in place but may not satisfy the close out of the safety review. An example would be a corroded beam end which looks inadequate but cannot truly be determined without calculations. The District may opt to put in blocking as a temporary measure until the final action is determined.

3.3.1.3 Action Required

If the unsafe condition cannot be remedied immediately with a temporary measure there may be a need for further documentation (i.e. calculations or work order). Any calculations would be documented in the safety review and not created as a work order.

A work order required to perform a repair that is intended to close out the safety review would be made through using a child work order. This would allow the Engineering Lead to verify it is closed out prior to the safety review being closed out. This is to be used when a repair is needed to clear the safety hazard beyond temporary measures. An example would be if a hole opened up in a deck and the immediate temporary safety measure is to close a lane. However, the deck must be repaired by a contractor then a work order for a repair would also be tied to the safety review.

3.3.1.4 No Action Required

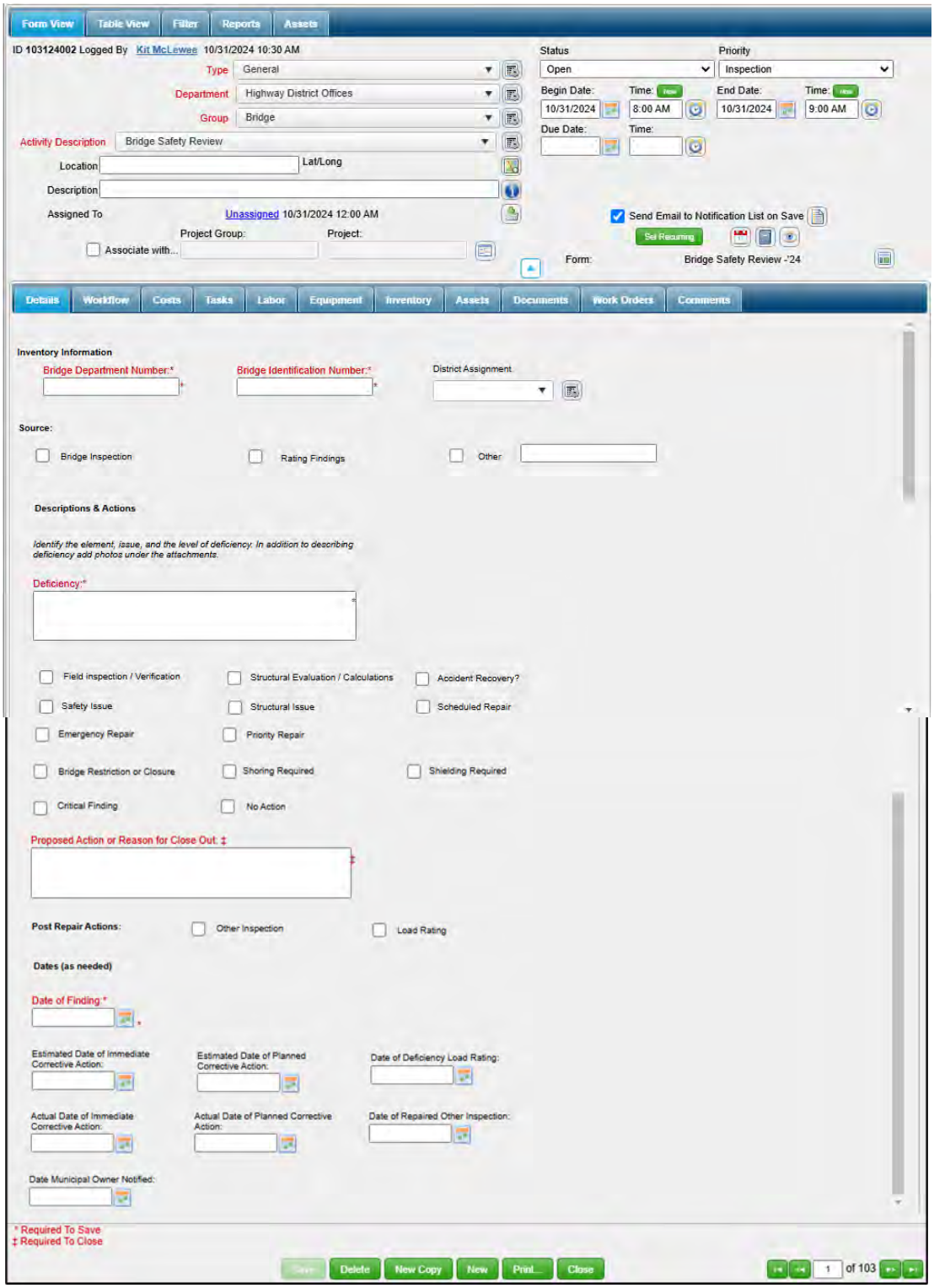
If it is determined that there is not an actual unsafe condition through either engineering evaluation or verification of information that determines a less severe condition then the safety review would get closed out documenting the reasoning.

3.3.2 Safety Review Close Out

The safety review is not closed out until the immediate safety issue is remedied or it is determined there is no unsafe condition. Typically, the safety review will remain open until the immediate action work order is completed and verified.

3.4 Bridge Safety Review Form

See Appendix D for details on what each field calls for.



3.5 Bridge Work Order Process

Whether through a safety review or stemming from other means, when the need for a repair has been identified the District shall initiate a work order to perform the required work. The District Bridge Section will create a work order using VUEWorks and assign the work to a Resident Engineer and Contractor. Based on the type of repair work needed the District will choose the appropriate Contract to perform the work under.

Once the work order has been created it will be assigned a unique number, priority, begin date and due date. The work order number will allow for the repairs to be tracked and reported on, the priority will notify the Contractor when physical work must begin, the begin date is the date from which non-response damages will be assessed , and the due date is the date that physical work must start by before being subject to non-response damages.

After the work order information has been filled out it must be assigned. Once assigned the Resident Engineer will oversee the progress of the repairs, perform field inspections, track items and quantities required to make the repairs and make payments.

3.5.1 Work Order Initiation

Once a repair need and location has been identified a work order must be issued to perform the work or repair. All work orders must be initiated through VUEWorks to allow for tracking the progress of the work order from initiation to assignment to close out. The Bridge Section will log into VUEWorks, select the bridge asset requiring repairs, create the work order, fill out the work order information, attach reference documents, specify whether the structure should be rerated or inspected after necessary repairs are made and assign the work order a priority. Step by step instructions for VUEWorks are included in the Appendix.

The work order priority is important because it will be the basis for which potential non-response damages will be assessed, and will be classified into one of three categories: emergency, priority, or scheduled repairs.

Work Order Type	Priority Description
Emergency Repair	• Work requires immediate attention • Contractor shall commence work within 4 hours of notification
Priority Repair	• Work requires attention in a timely manner but is not an emergency • Contractor shall commence work within 7 days of notification
Scheduled Repair	• Contractor will be required to commence scheduled work 30 days after notification

3.5.2 Emergency Repair

An emergency repair is defined as the work required to repair failed bridge elements, which is of an emergency nature and requires immediate attention. The Contractor will be required to commence emergency work within 4 hours after notification by the Department, unless otherwise directed. The nature of emergency work will require the Contractor to be available 24 hours per day. In addition to required construction Items, payment for any Emergency Repair Work performed will include Item 748.1 Emergency Response. Emergency repairs may be initiated verbally due to the need for immediate action but will be followed up by a written work order in VUEWorks soon after.

3.5.3 Priority Repair

A priority repair is defined as work required to repair failed bridge elements, which is not of an emergency nature; however, needs to be completed in a timely manner to prevent further deterioration or to meet the need of other constraints. The Contractor will be required to commence priority work within 7 days after notification by the Department, unless otherwise directed. Priority repairs will be initiated and assigned using VUEWorks.

3.5.4 Scheduled Repair

A scheduled repair is not considered to be of an emergency nature or a priority over other repairs. The Contractor will be required to commence scheduled work 30 days after notification by the Department, unless otherwise directed. The Contractor shall immediately notify the Engineer if unable to begin physical work within 30 days and provide an explanation for the delay. Scheduled repairs will be initiated and assigned using VUEWorks.

The date from which potential non-response damages will be assessed for each work order will be based on the date the work order is assigned in VUEWorks to the date the Contractor begins physical work. The work order Begin Date will need to be updated to reflect the date that the work order is assigned. This date represents the official date that the Contractor is notified, and day to begin assessing potential non-response damages from. The Due Date will also need to be updated based on the priority classification. This date represents the date that physical work must start before non-response damages are enforced.

VUEWorks automatically assigns an ID number for each work order that is created which will be used in other MassDOT applications to track costs.

3.5.5 Work Order Assignment

Once the Bridge Section has created the work order in VUEWorks and has assigned the priority, the work order must be assigned to the Resident Engineer who will oversee the construction. The resident will notify the Contractor of the work to be performed.

The work order assigned to the Resident Engineer will allow coordination the work with the Contractor, including obtain the required schedule and estimate as necessary, and tracking dates and quantities associated with the repairs.

The Notification List shall include the District Bridge Engineer and select District Bridge Section personnel. If the repairs require a re-rating or inspection the District Bridge Inspection Engineer and State Bridge Inspection Engineer shall also be notified.

Once a work order has been assigned the Resident Engineer will be responsible for keeping the work order information in VUEWorks up to date until the repair has been completed and the work order has been closed. The Resident Engineer will note and update the Actual Start and Finish dates of the repairs in VUEWorks.

3.5.6 Contractor Notification

The Contractor will be notified of work orders from the Resident Engineer. In the future expansion of the program capabilities, it is expected that Contractor's will be notified by the system except for emergency repairs which may first be assigned verbally. Emergency repairs may be assigned verbally with a follow up written work order issued through VUEWorks after. Emergency work orders must still be assigned in VUEWorks to assign a work order number for tracking of work completed, quantities and costs.

Upon notification the Contractor must submit a work schedule and estimate for assigned priority and scheduled repairs within 7 calendar days of issuance of the work order for the Engineer's review and approval. The Contractor's schedule and estimate shall provide information relating to equipment, materials, anticipated work hours, labor availability, itemized estimated value of the repairs, a breakdown of major components of the work (i.e. staging installation, concrete work, etc.) and estimated start and completion dates.

Work Orders may include complexities which will have separate milestones as indicated below.

Complexity	Milestone
Engineering Design	Approved Design within 60 days of assignment
Material Fabrication	Approved Shop Drawings within 30 Days of Work Order or approved engineering design if engineering design required.
Utility Coordination	Engagement with utilities shall occur within two weeks of issuing the work order. Final approval from the utility of the proposed work or utility protection shall be within 60 days of work order issuance or 60 days of approved engineering design if engineering design is required.
Railroad Coordination	Railroad engagement shall occur within two weeks of issuing the work order. Railroad insurance shall be in place within 60 days of work order assignment

Complexity	Milestone
	If engineering is required, engineering design shall be provided to the railroad for approval within 30 days. Railroad flaggers shall be requested within two weeks of railroad insurance approval.

All complexities and components of work orders shall be identified with milestones in the work order bar chart schedule.

3.5.7 Work Order Tracking & Payment

Once the work order has been assigned and the Contractor has been notified the Resident Engineer must enter the date the work begins (Actual Start) of the assigned repairs in VUEWorks. Work orders will be completed by the contractor with tracking and payment through the existing SAM/FIR system. The work order number will be entered into SAM/FIR, so that items and quantities can be tracked for each work order issued.

The Resident Engineer must document the location of the completed repairs including the specific location, dimensions, quantities, and cost required to complete the work order. This information is necessary to be able to track the condition of the repair over time, and costs of repairs associated with a specific bridge asset over time. This will allow for determining when a more substantial capital project is necessary, and maintenance or preservation type work is no longer a viable solution.

3.5.8 Work Order Revision

It is critical to capture changes to work orders due to field conditions. The work order shall be continually updated throughout work activities to ensure accurate documentation of the work performed. This work order tracking system is the basis of the maintenance tracking requirements outlined in the new Specifications for the National Bridge Inventory (SNBI).

3.5.9 Closing Work Order

Once the Contractor has performed the work the Resident Engineer must closeout the work order in VUEWorks within 7 days of finishing the work and ensure that all the quantities and costs associated with the repairs have been finalized in SAM. The Resident Engineer must enter the Actual Finish date and End Date of the work order and change the status of the work order to closed.

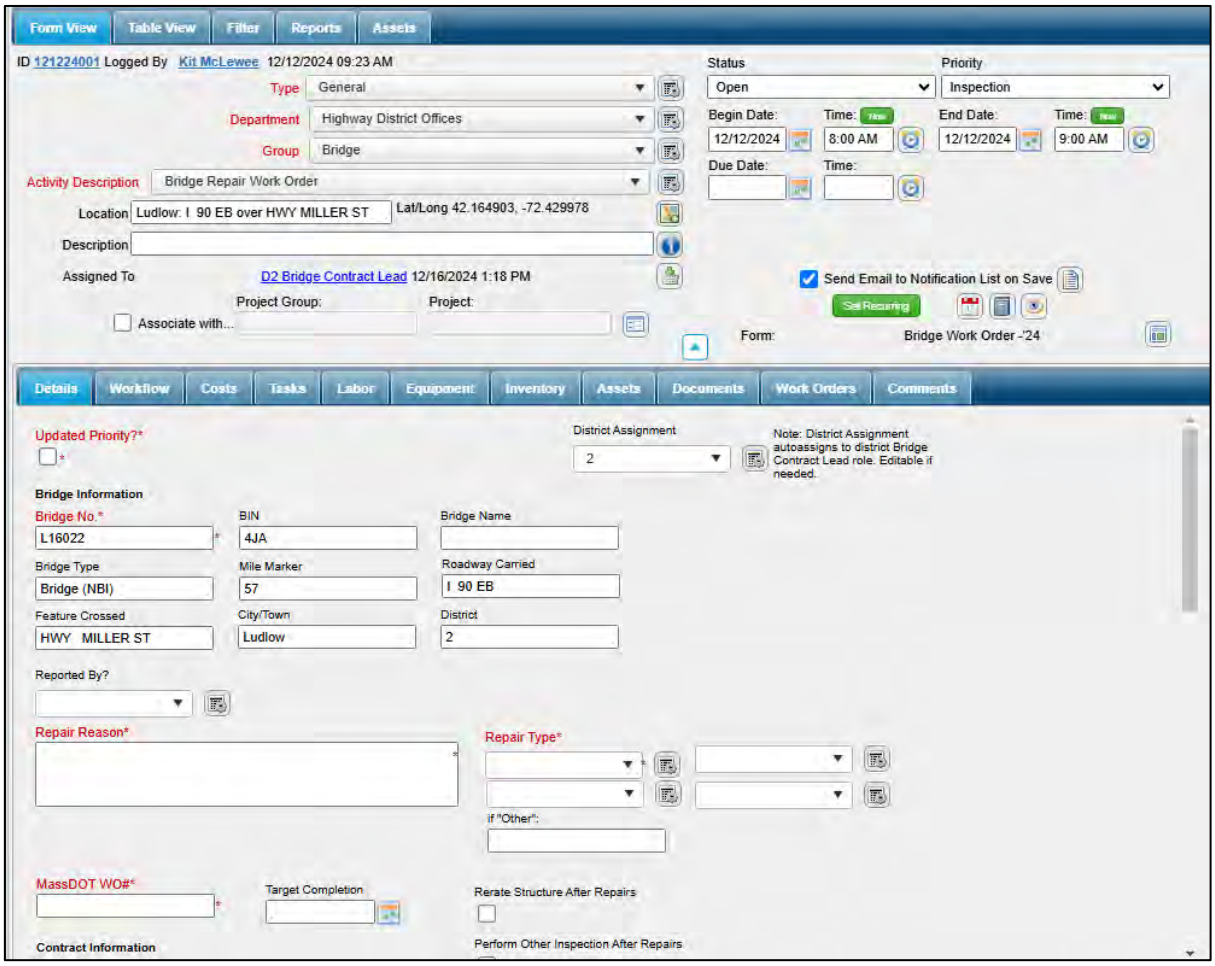
For work orders that require a re-rating or inspection the Resident Engineer must notify the District Bridge Section once the repairs have been completed. The District Bridge Section will then initiate and coordinate the work as necessary. If the completed repairs done under the work order were to address a known critical finding or will improve the rating of a structure a rerating or inspection must be scheduled.

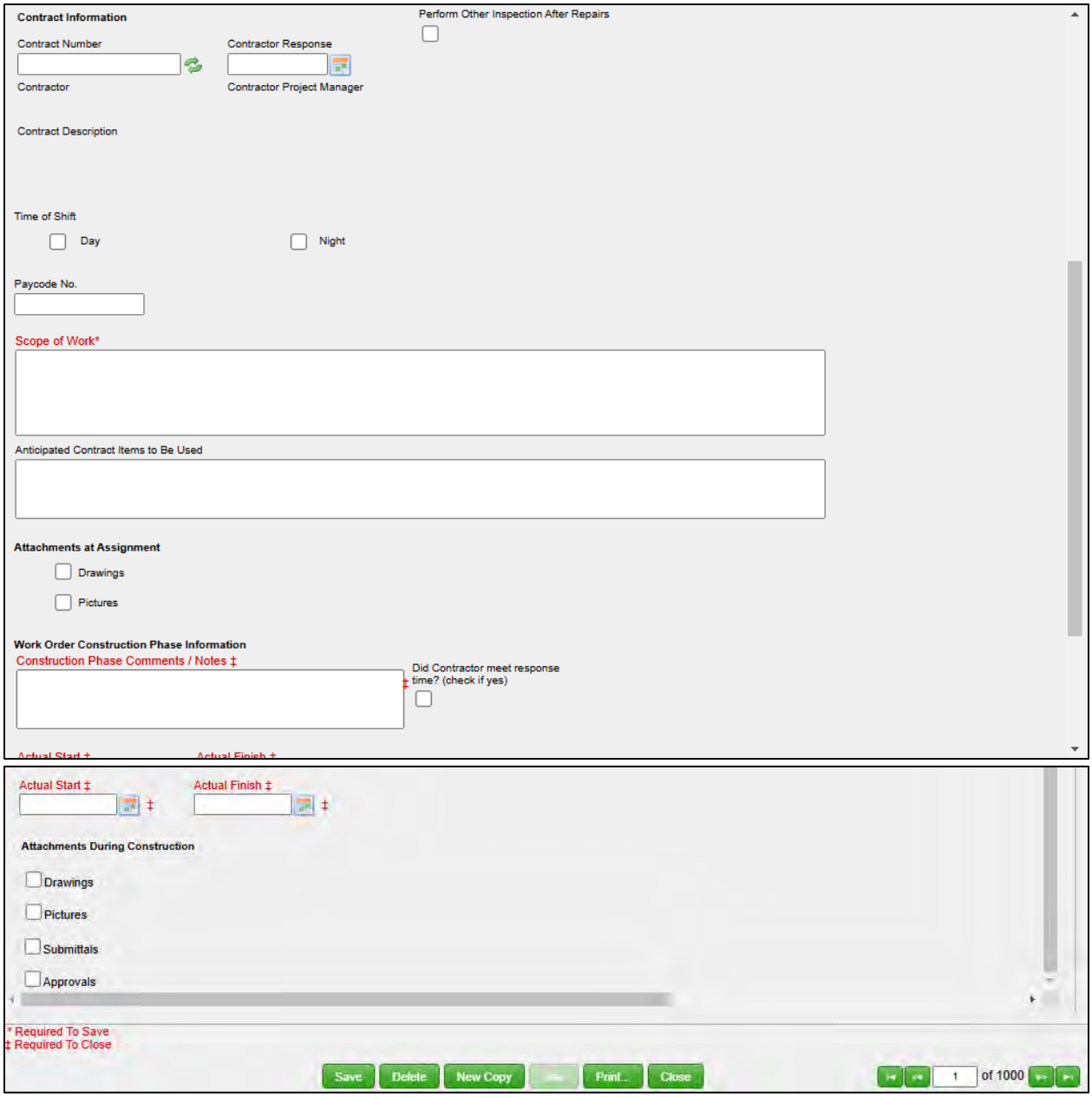
The District Bridge Section must manage the activities and corrective actions taken in response to critical findings and come up with a plan of action for work that may result in a critical finding. If the work performed will result in a critical finding like immediate load restriction or posting or the work includes shoring in order for the structure to remain open, then the District must determine a means to address it. The District shall discuss the need to initiate a new project or work order as needed.

The Resident Engineer must also finalize payment in SAM/FIR for the work order, so that all quantities and costs associated with the repair are captured for tracking and monitoring. Each work order must be processed separately using the assigned unique work order number.

Once close out is completed the information about the work order will be utilized for tracking and will feed into a dashboard including notifications for use outside of the District Bridge Maintenance team.

3.6 Bridge Work Order Form




Contract Information
Perform Other Inspection After Repairs
Contract Number
Contractor Response
Contractor
Contractor Project Manager
Contract Description
Time of Shift
Day
Night
Paycode No.
Scope of Work*
Anticipated Contract Items to Be Used
Attachments at Assignment
Drawings
Pictures
Work Order Construction Phase Information
Construction Phase Comments / Notes ‡
Did Contractor meet response time? (check if yes)
Actual Start ‡
Actual Finish ‡
Attachments During Construction
Drawings
Pictures
Submittals
Approvals
* Required To Save
‡ Required To Close
Save
Delete
New Copy
Print...
Close
of 1000

Appendix - A: VUEWorks Basics

This guide provides step-by-step instructions on how to request a new VUEWorks account. It includes details on logging into the website, filling out the request form, and receiving the account credentials via email. Requesting an account will generate a new account in both Production and Development unless required otherwise in the comments box.

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Signing into VUEWorks A-6

How to Change Password in VUEWorks Account A-9

Set Preferences for Default New Safety Review or Work Order A-12

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NAVIGATING VUEWORKS MAP A-31

Filtering Safety Reviews and Work Orders A-38

Uploading Files to Safety Reviews and Work Orders A-48

1 REQUESTING NEW VUEWORKS ACCOUNT

Pages A2 though A5 are for internal use and have been removed from this document.

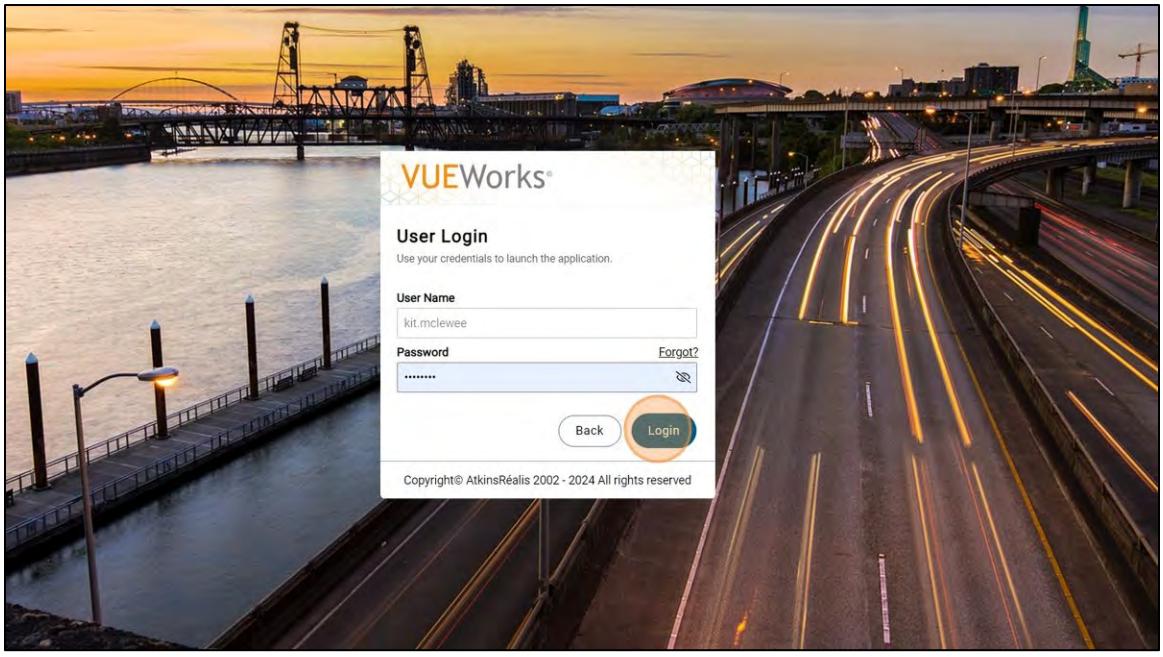
2 SIGNING INTO VUEWORKS

This guide provides step-by-step instructions on how to sign into VUEWorks . It includes details on accessing the login page, entering the username and password, and setting up the basemap.

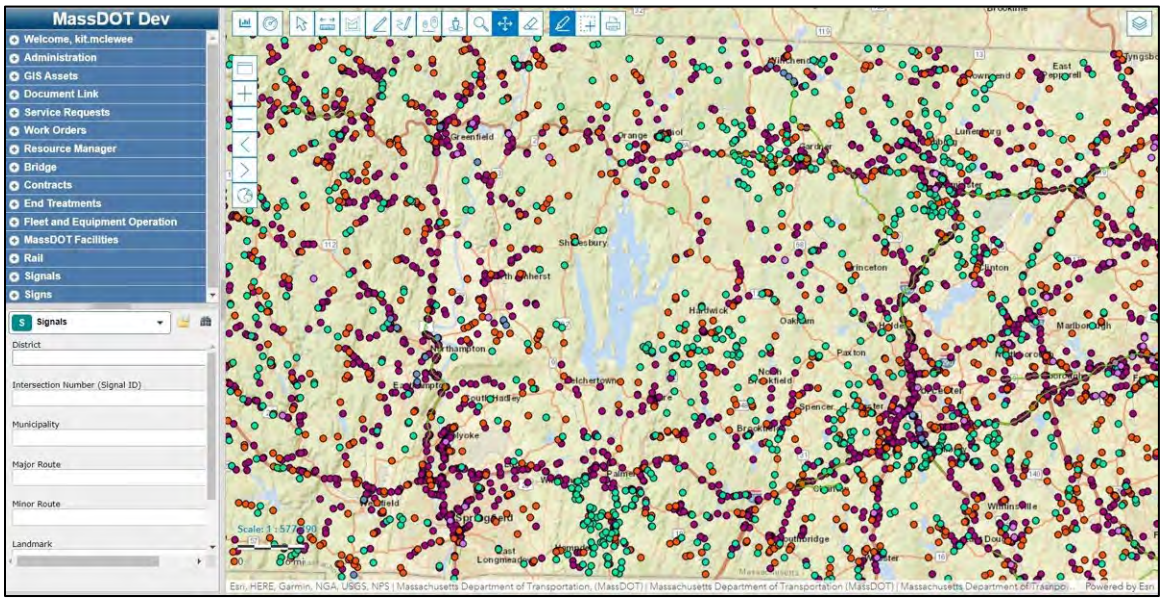
(1) For development, navigate to https://dev-massdot.VUEWorks .com/VUEWorks /Main/Main.aspx

(2) For production, navigate to https://prod-massdot.VUEWorks .com/VUEWorks

(3) Enter User Name and Password and click Login



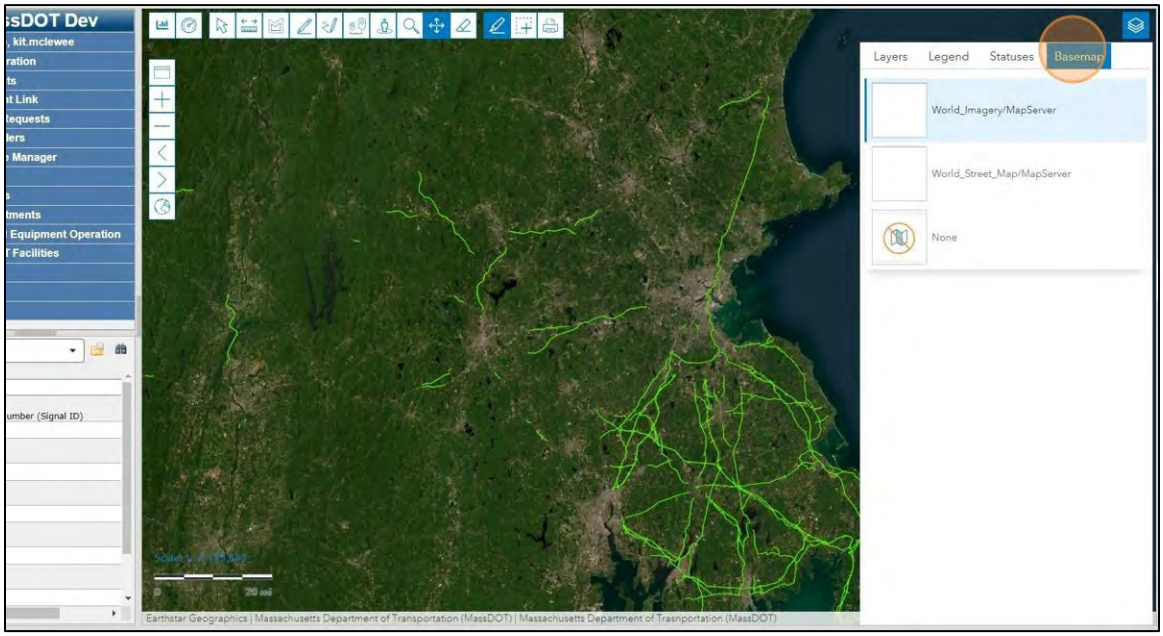
(4) VUEWorks will load with a base map of Massachusetts and a menu on the left.



(5) If no map has loaded, turn on Basemap by clicking the layers icon



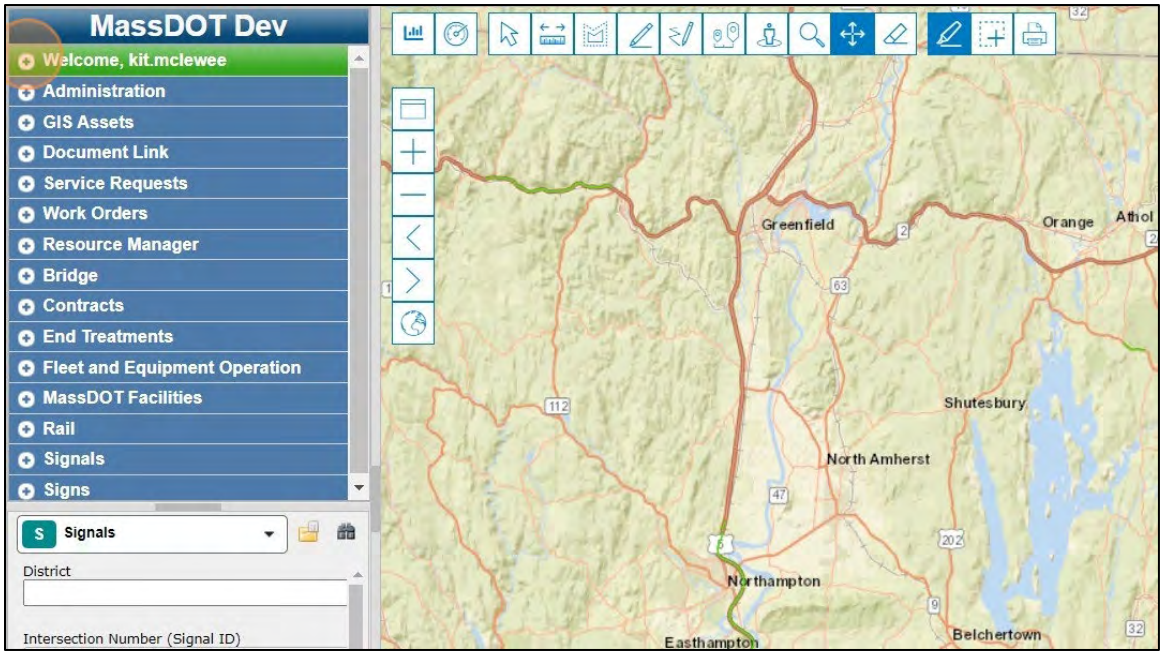
(6) Click Basemap tab. Then select a basemap. World_Imagery is a satellite map (pictured here) and World_Street_Map is a street map (pictured in Step 4)



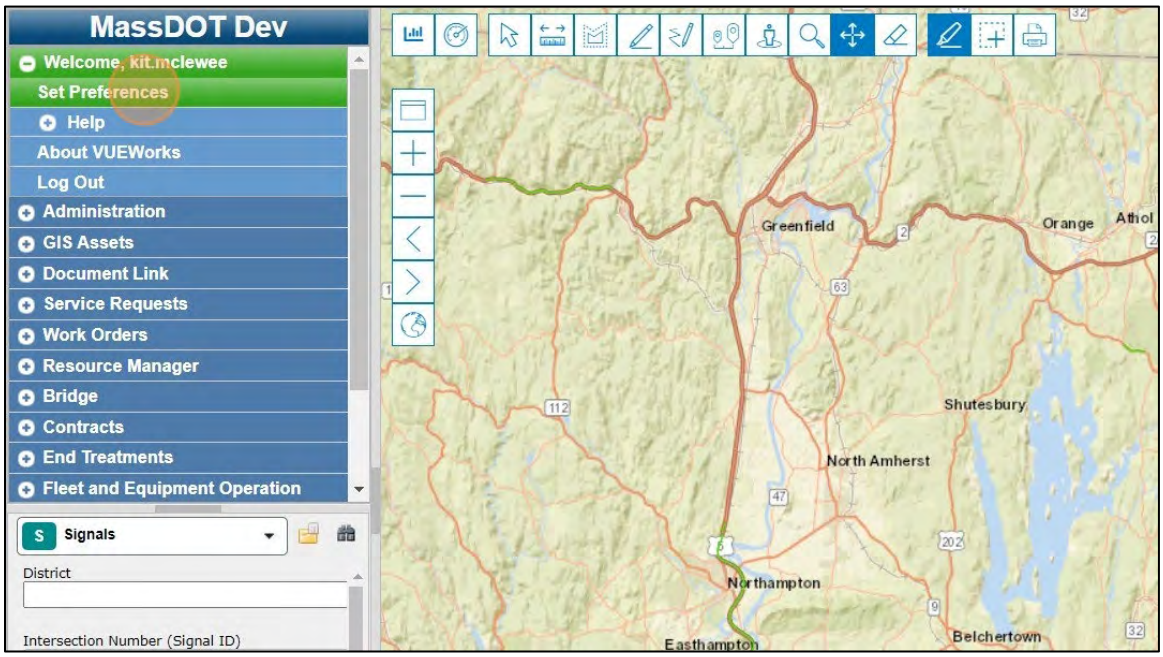
The Satellite Map has a longer loading time; if experiencing lag, consider switching to the World Street Map for improved performance.

3 HOW TO CHANGE PASSWORD IN VUEWORKS ACCOUNT

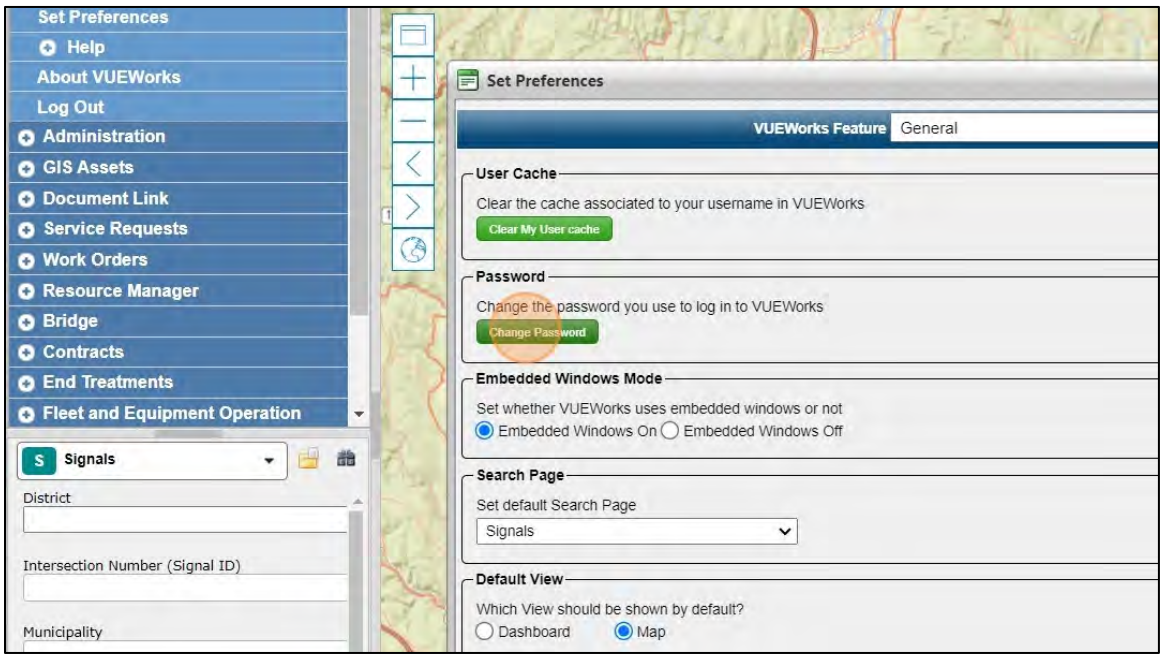
This guide provides a step-by-step process for changing the password in a VUEWorks account. By following these instructions, users can easily update their password to ensure the security of their account.



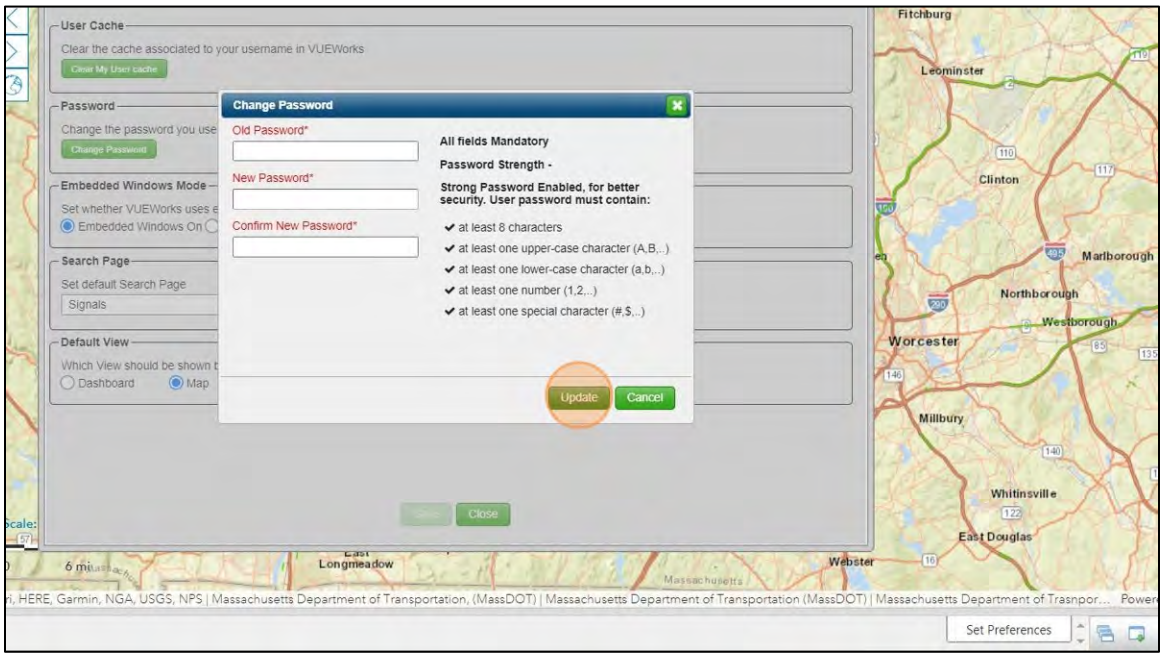
(1) Click Set Preferences



(2) Click Change Password



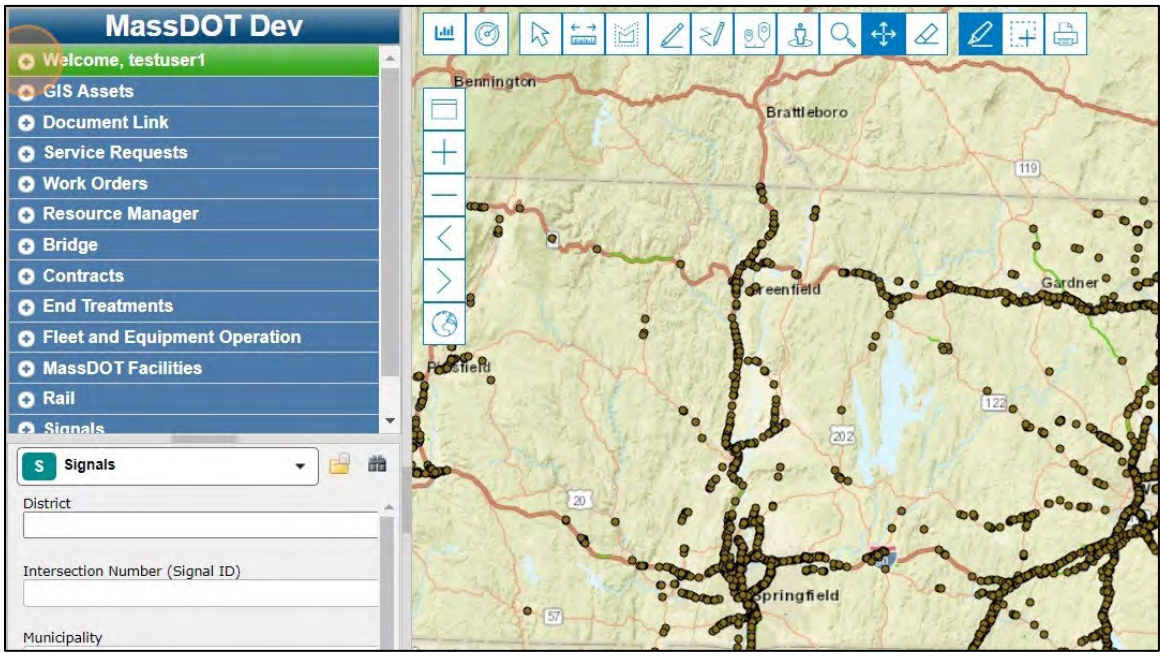
(3) Enter old password and new, then click Update



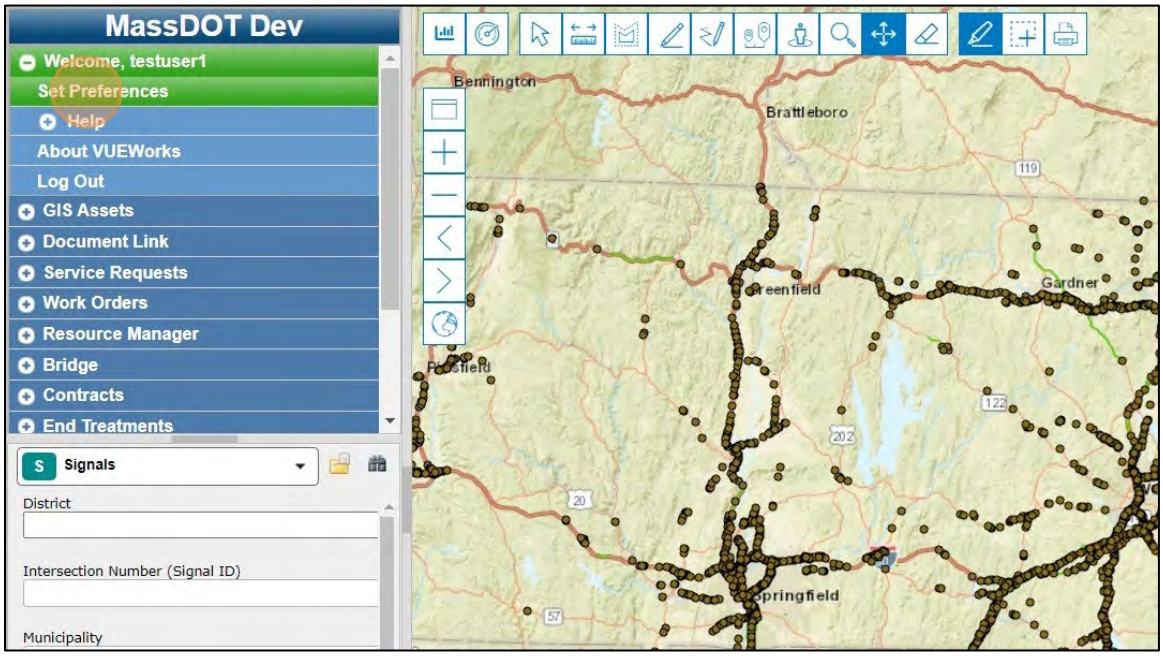
4 SET PREFERENCES FOR DEFAULT NEW SAFETY REVIEW OR WORK ORDER

This guide provides step-by-step instructions on how to change the type of VUEWorks form that defaults when creating a new safety review or work order. By following these steps, users can customize their default work order settings of type, department, group, and activity description. This will save time and ensure consistency when creating new work orders.

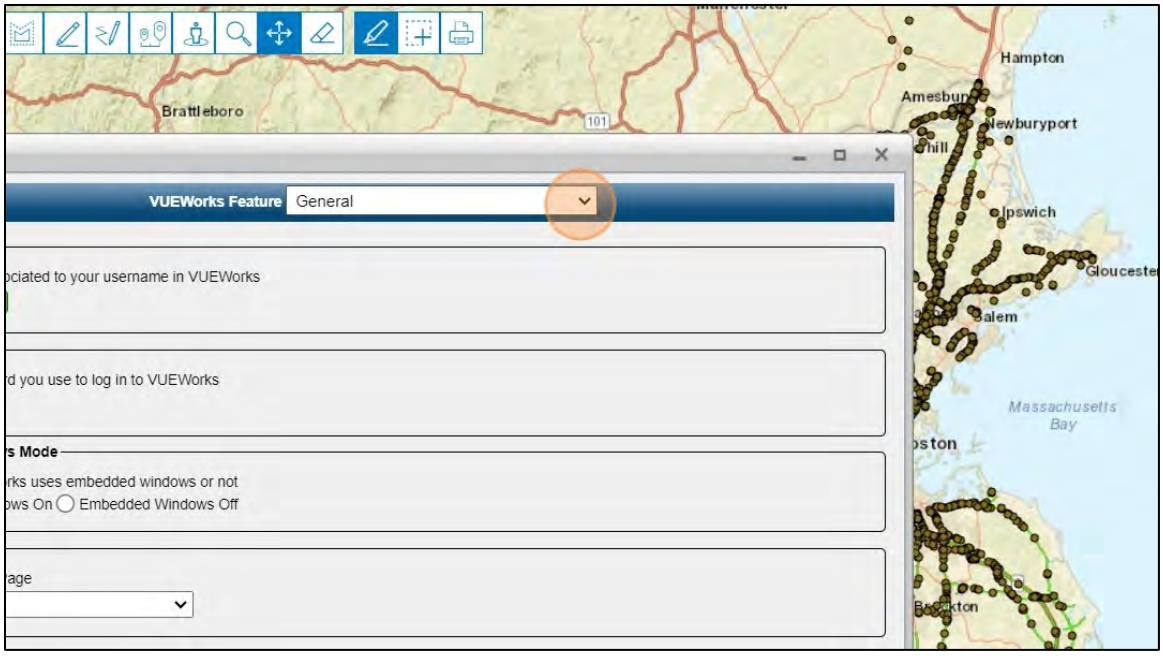
(1) Click Welcome, [name] to expand menu



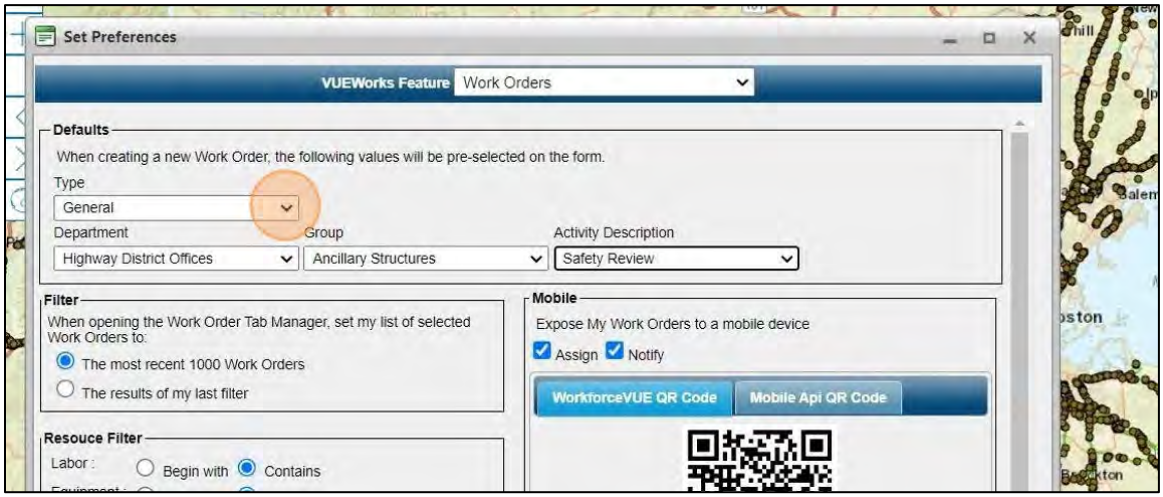
(2) Click Set Preferences



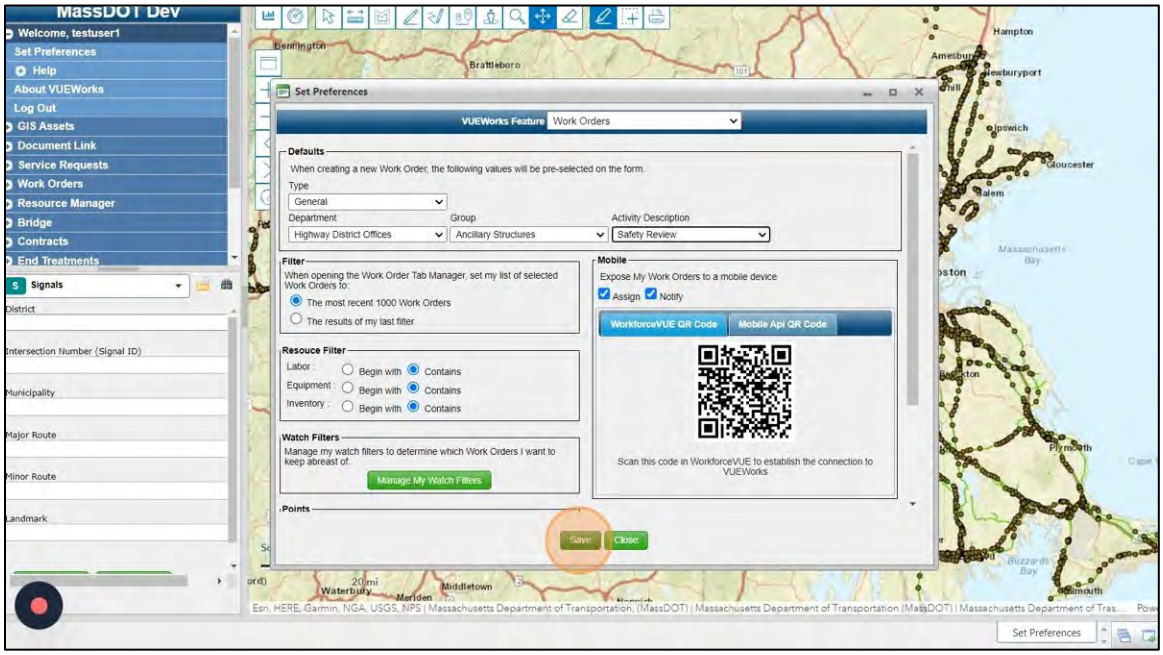
(3) Click the VUEWorks Feature dropdown and select Work Orders



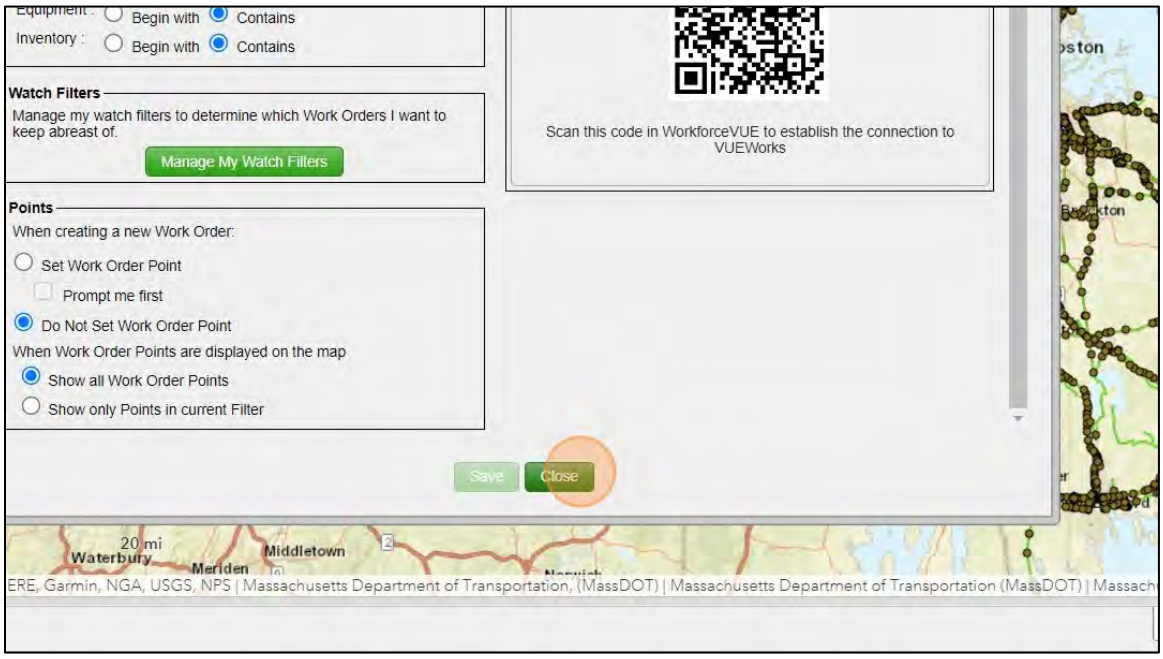
(4) Change Type, Department, Group, and Activity Description to your preferred default. This example is for Ancillary Structure Safety Review.



(5) Click Save



(6) Click Close

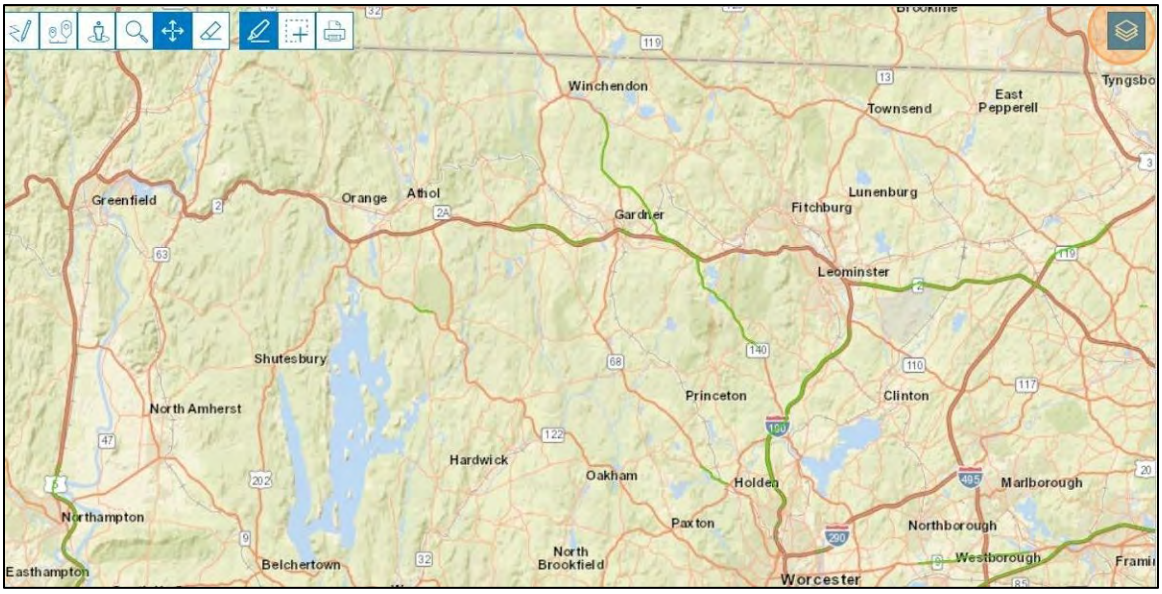


(7) Now when you create a new VUEWorks form, it will be the type you chose in Step 4.

5 LAYERS, LEGEND, WO STATUSES, AND BASEMAPS IN VUEWORKS PLATFORM

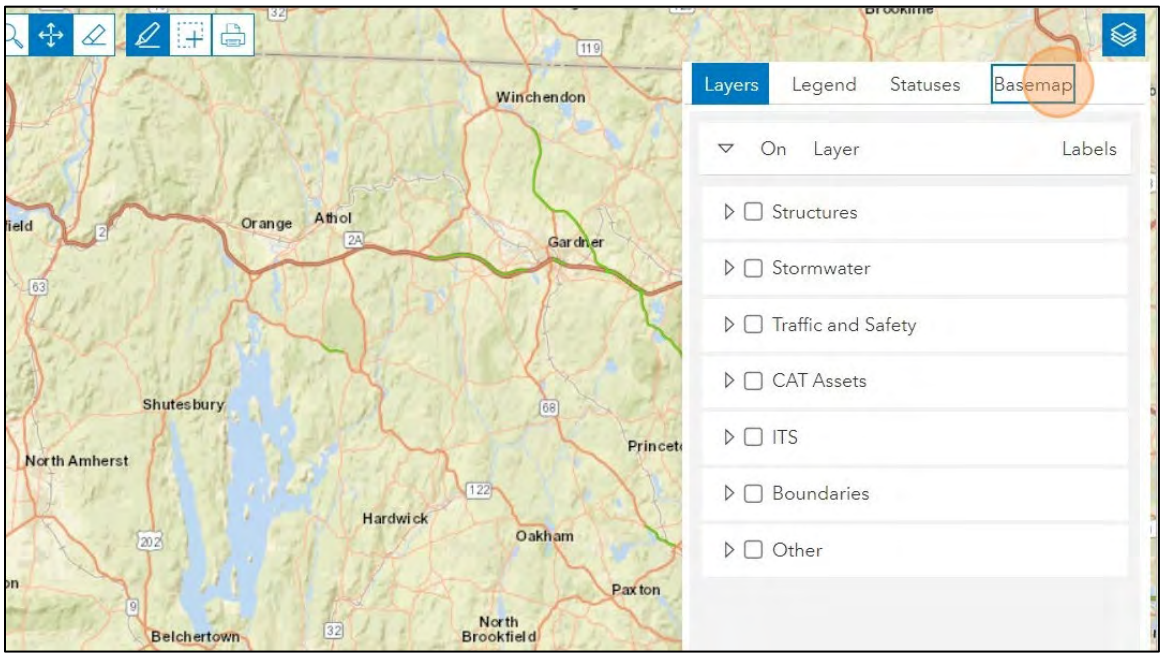
This guide provides step-by-step instructions on how to use the layers icon. It explains how to select different basemaps, change layers, view the legend, view work order statuses, and filter work orders by district on the map. Following this guide will help users effectively utilize the platform's mapping capabilities and customize their view based on their specific needs.

(1) Click the Layers icon in the top right corner.

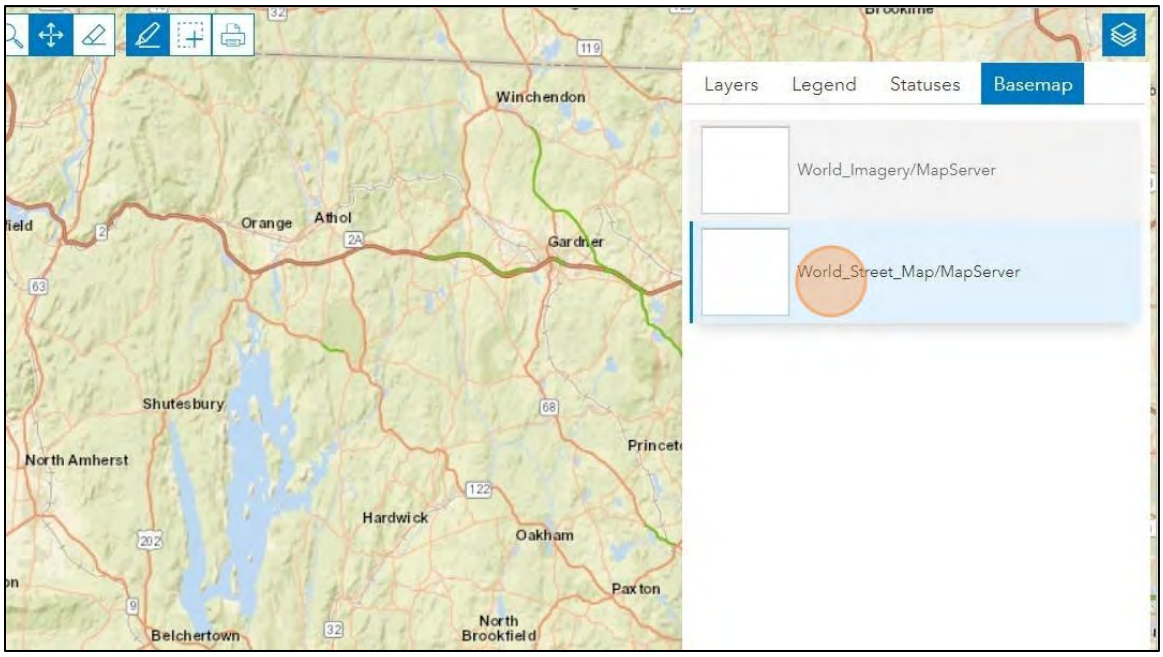


BASEMAP

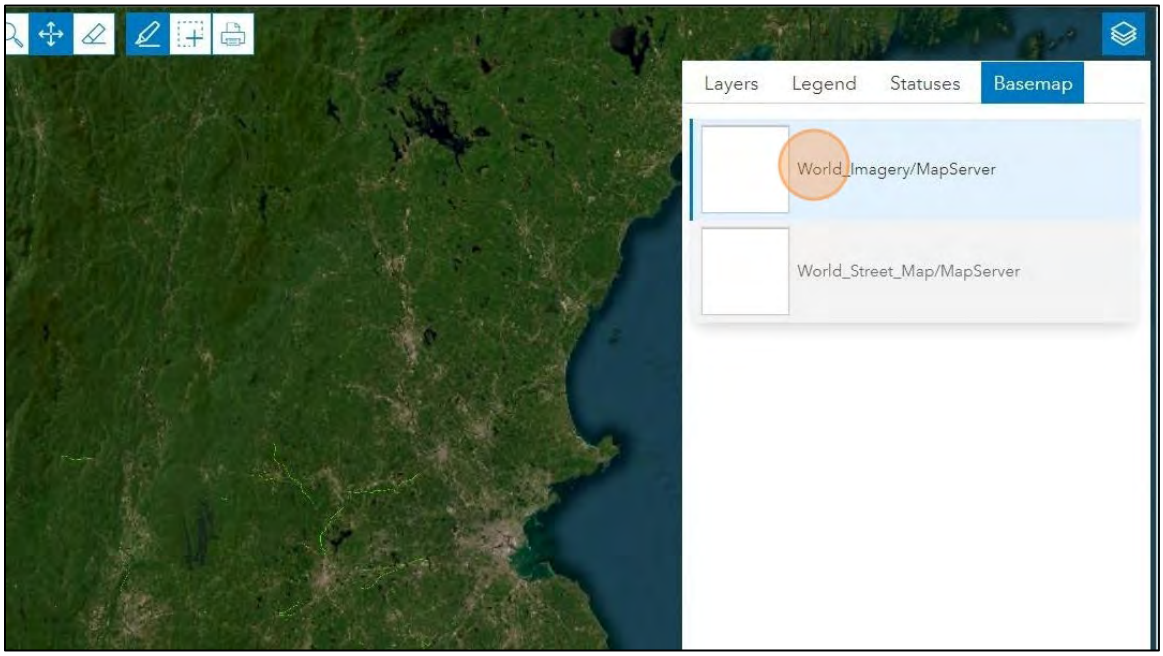
(2) Click Basemap to select your basemap.



(3) World_Street_Map is a road map.



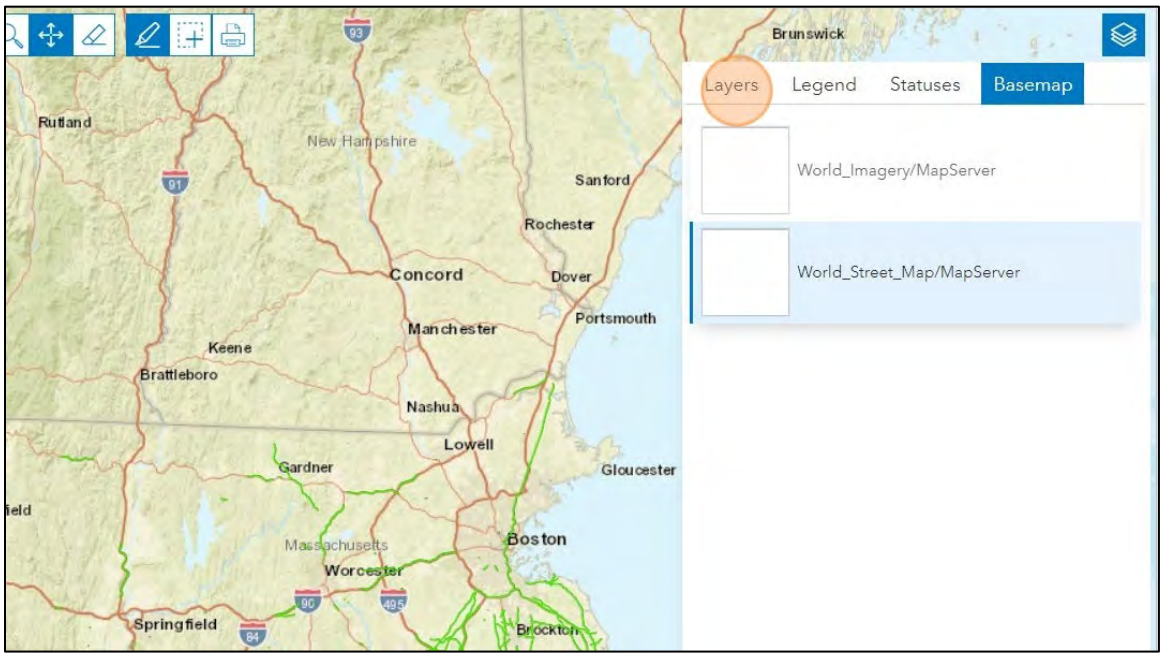
(4) World_Imagery is a satellite imagery map.



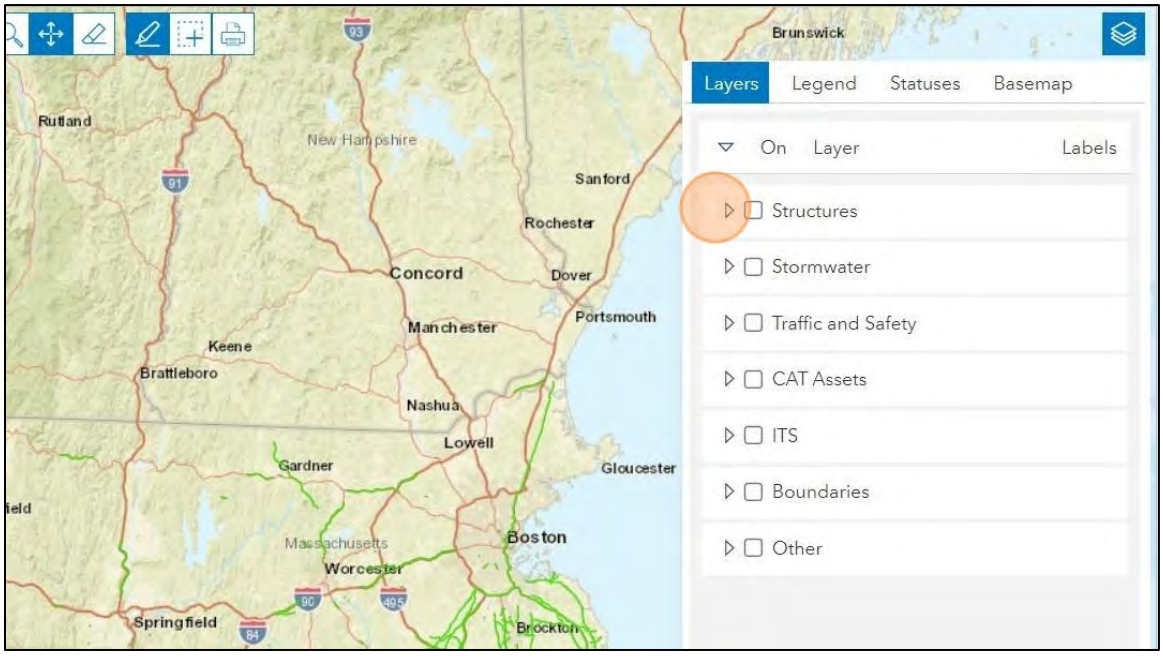
The Satellite Map has a longer loading time; if experiencing lag, consider switching to the World Street Map for improved performance.

LAYERS

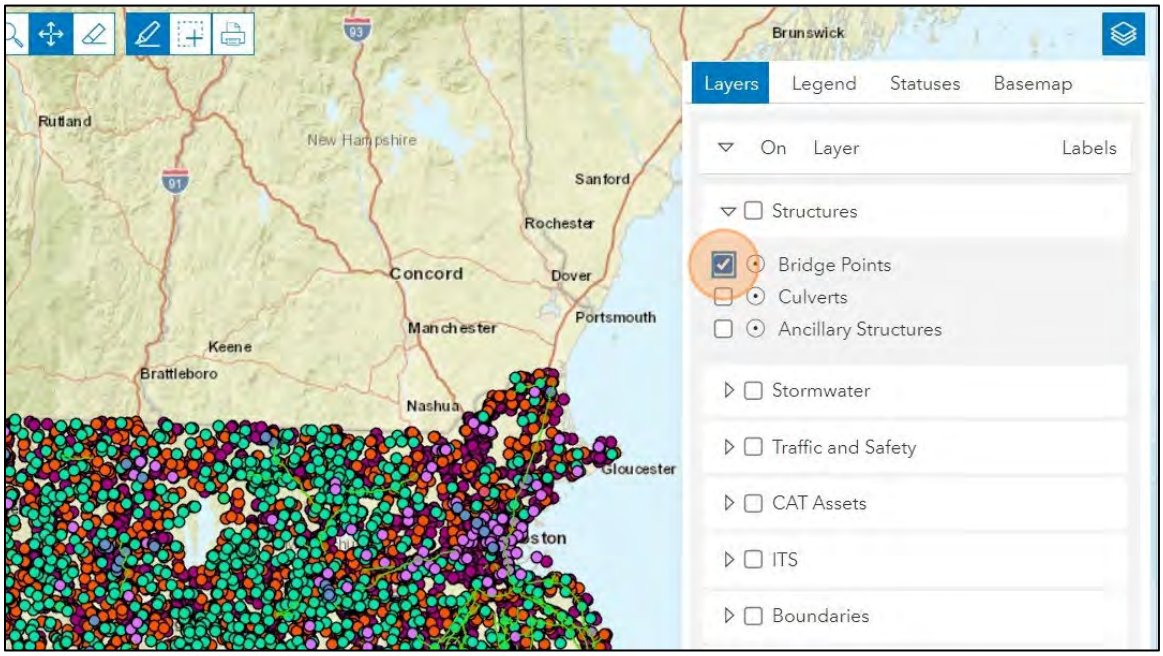
(5) To change layers, select Layers tab



(6) Click the triangle to expand layer options.



(7) Select which layer you would like. Example here is the Bridge Points layer.



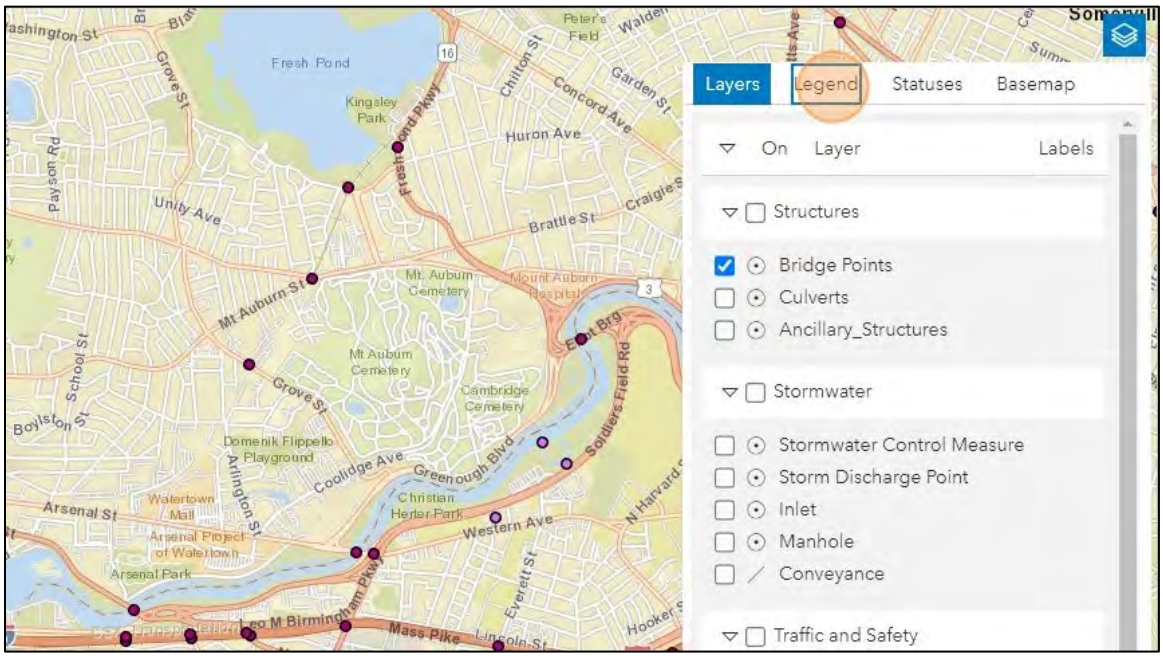
⚠ Bridge Points layer has a zoom extent. If no points appear when the layer is turned on, zoom in.

ⓘ **There is no limit to the number of layers you can turn on.**

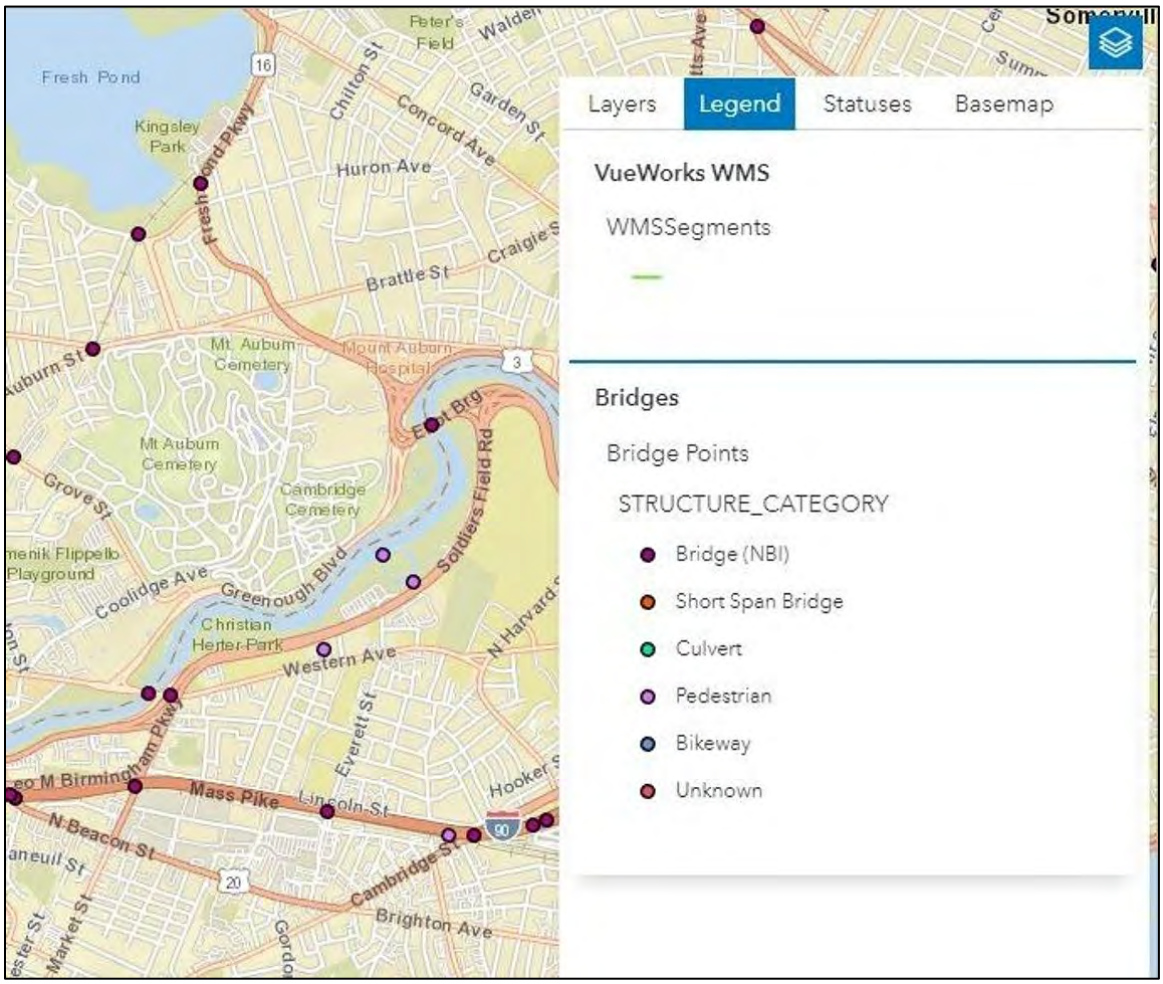
ⓘ **The layer(s) you have on when you exit VUEWorks will remain on when you log back into VUEWorks .**

LEGEND

(8) Click Legend

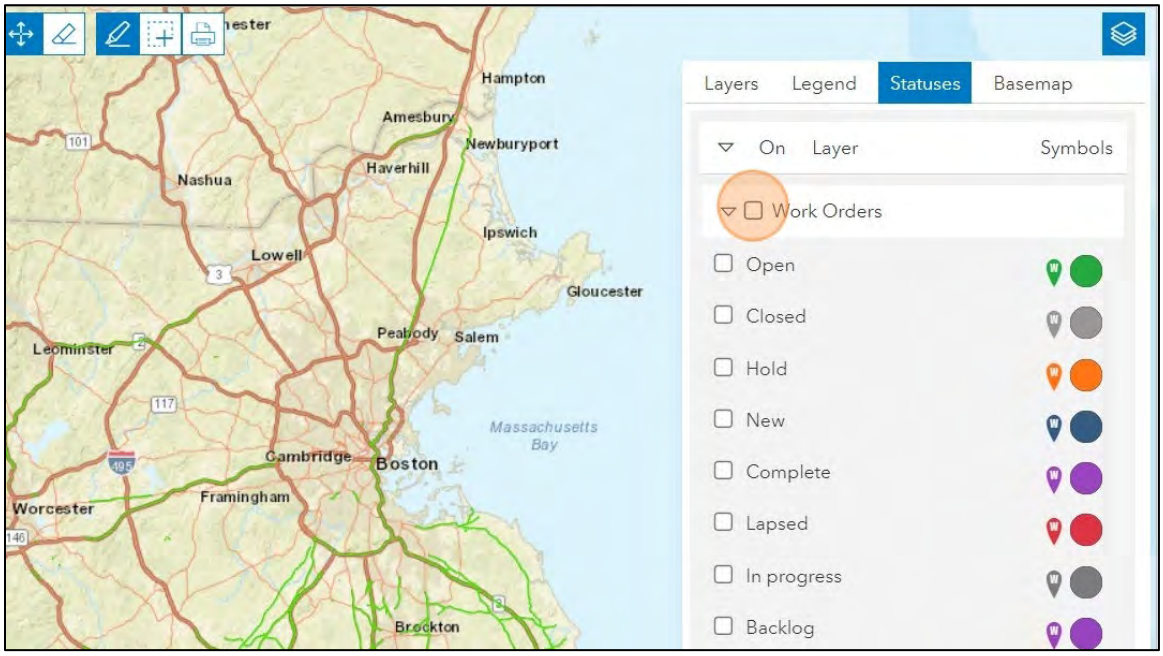


(9) Legend shows what the symbology represents

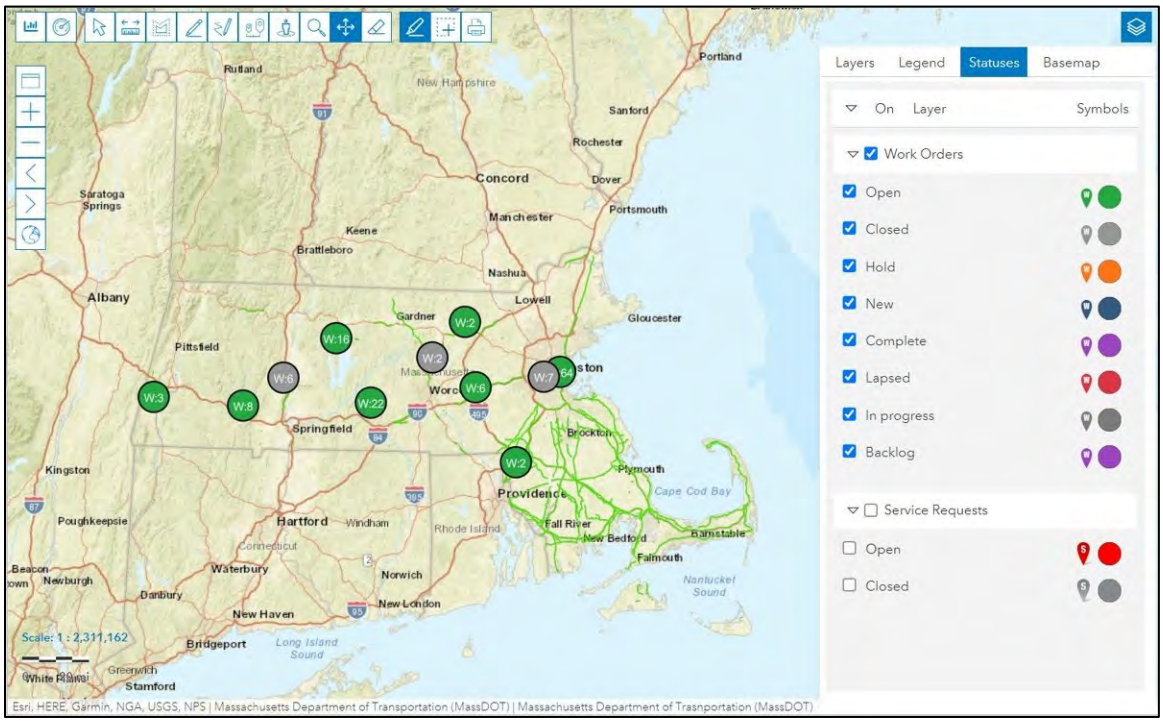


STATUS

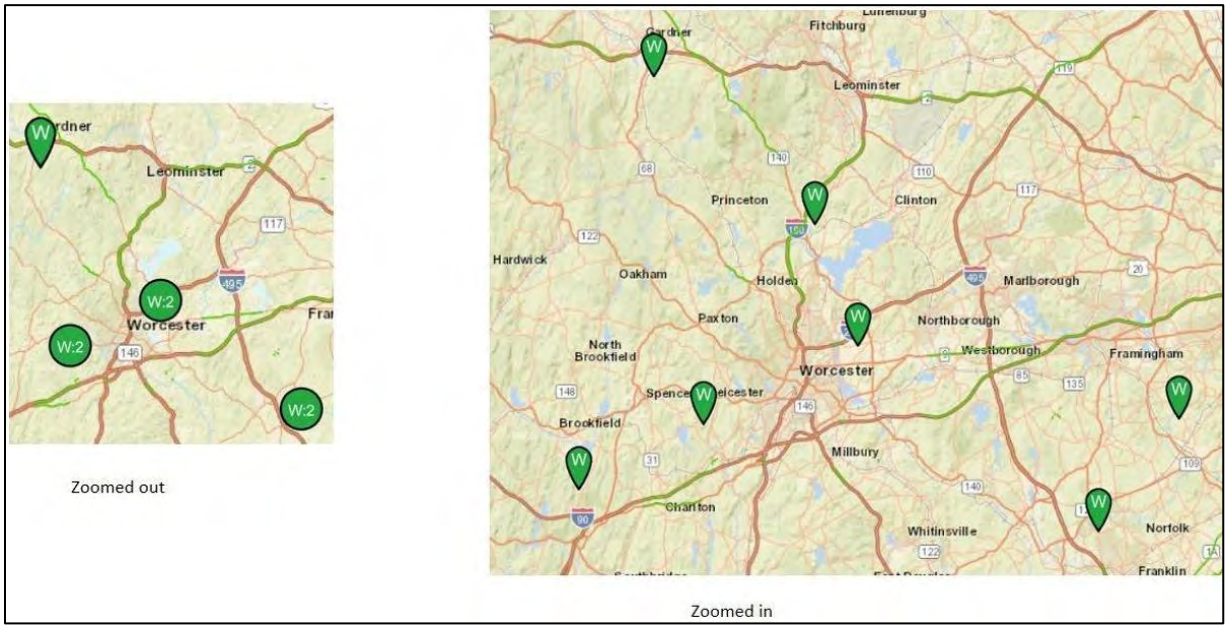
(10) To see work order statuses on the map, open the statuses tab and check Work Orders



(11) Work orders will appear on the map, color coded to their respective status.

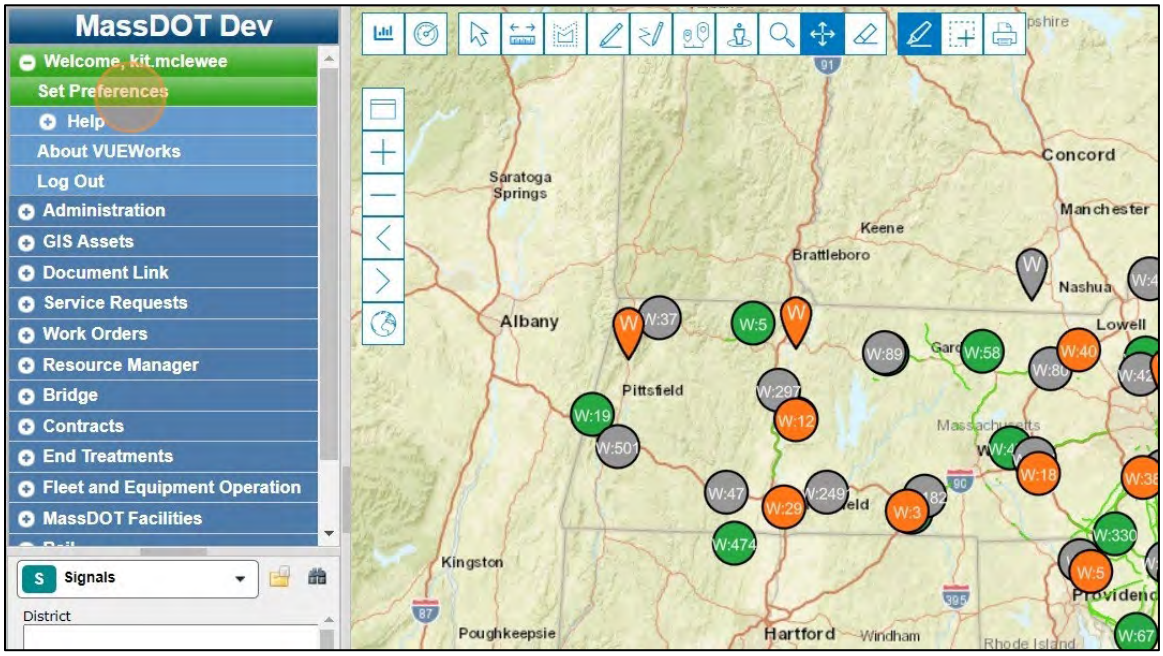


If a work order point on the map is labeled W:#, that number represents how many work orders are located around that point. If you zoom in enough, the map will show you the individual work orders.

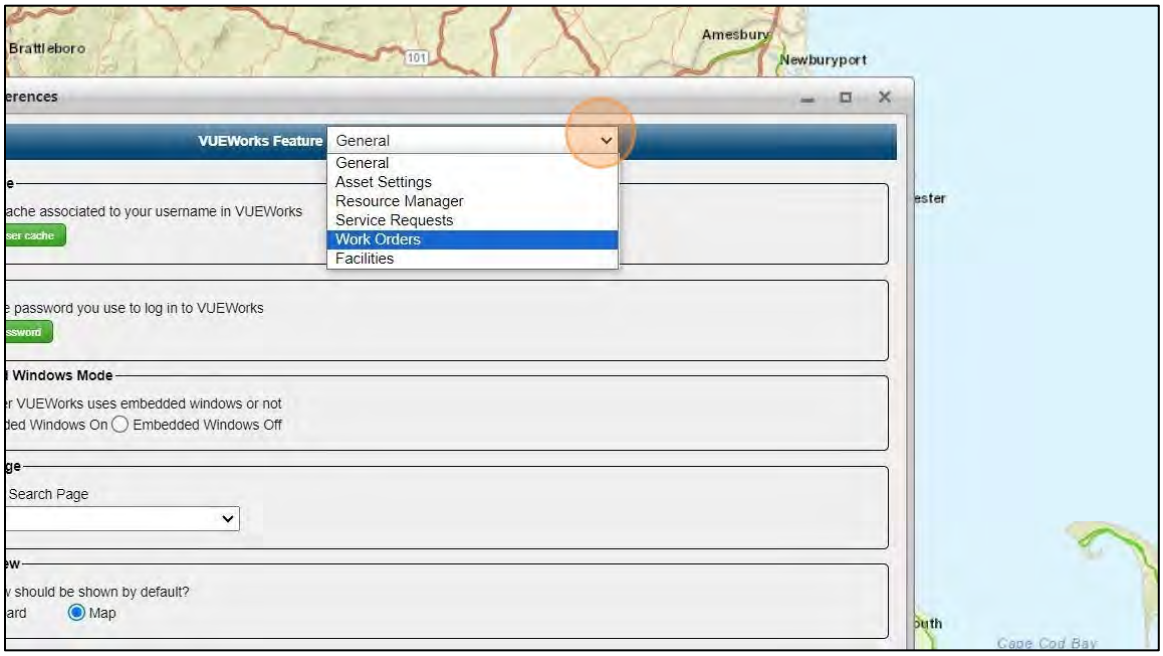


HOW TO FILTER WORK ORDERS BY DISTRICT ON MAP

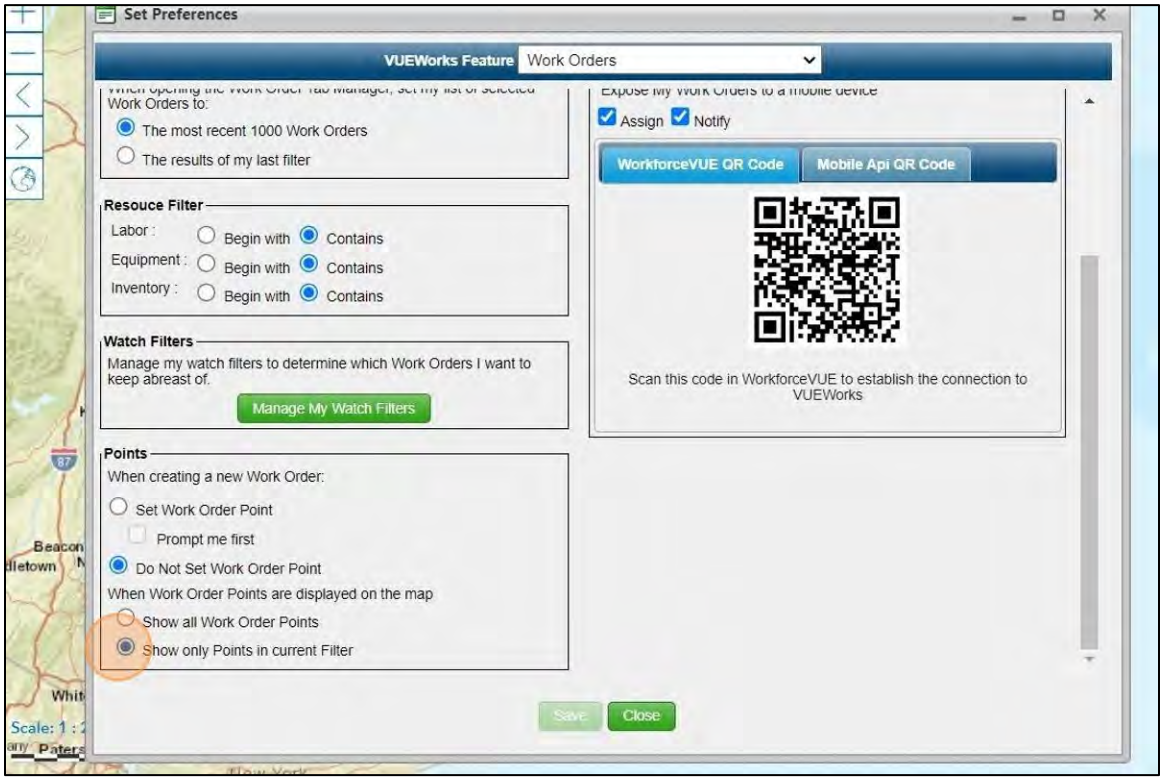
(12) Open Set Preferences under Welcome, [name]



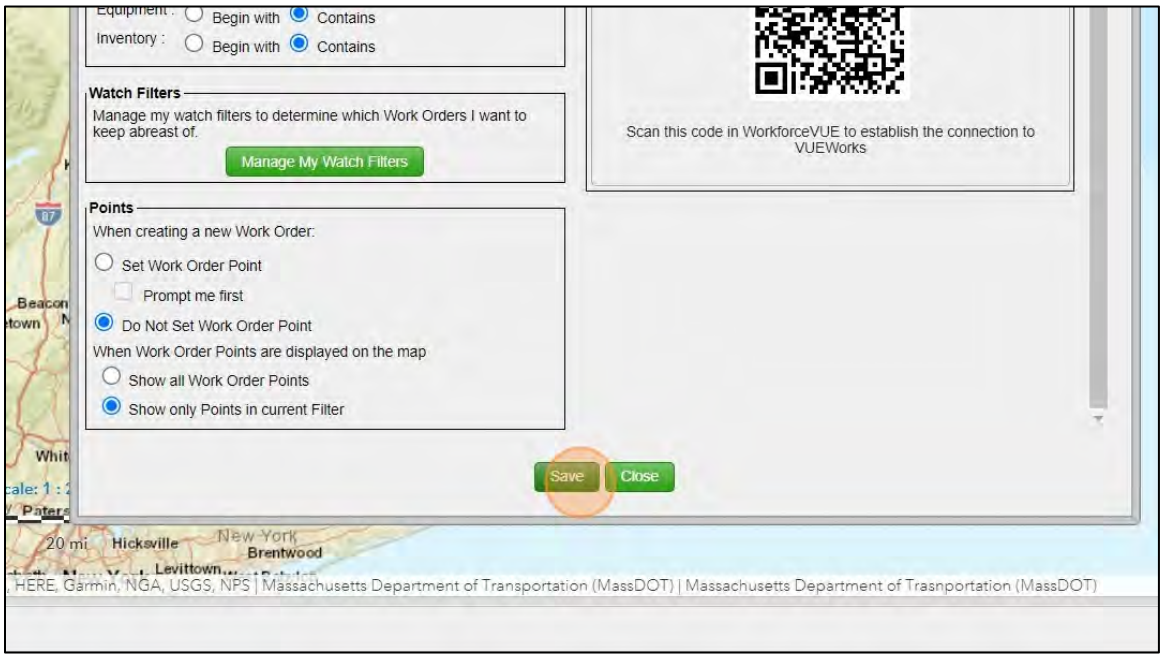
(13) Change VUEWorks Feature to Work Orders.



(14) Scroll to bottom of the Set Preferences window and turn on Show only Points in current Filter field.



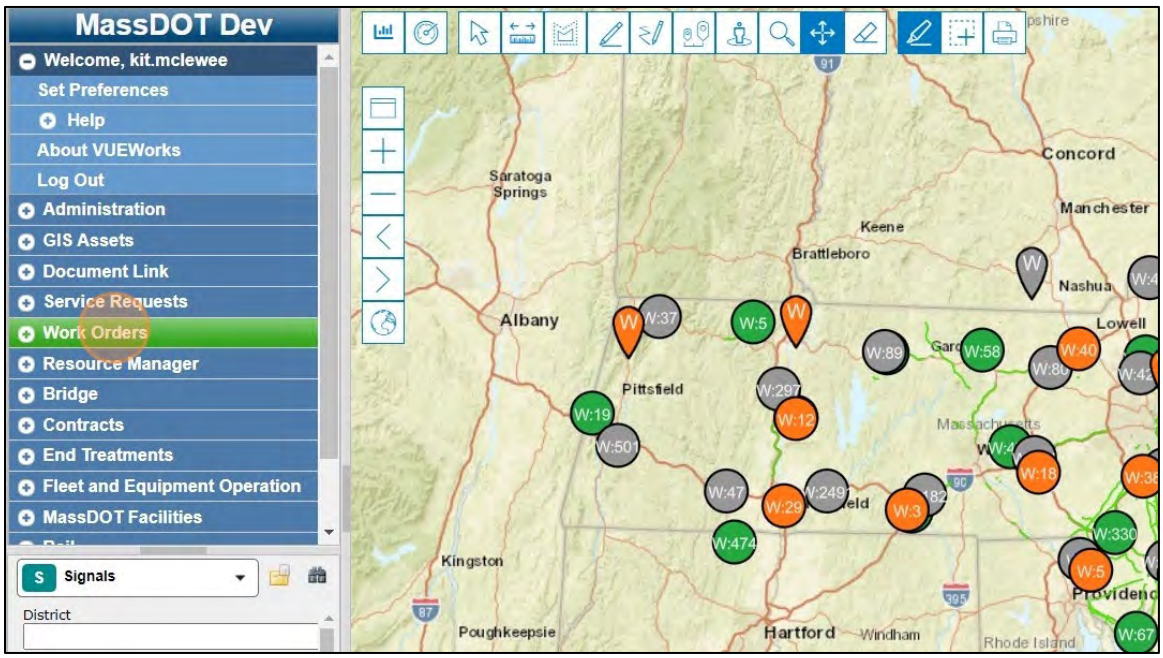
(15) Click Save



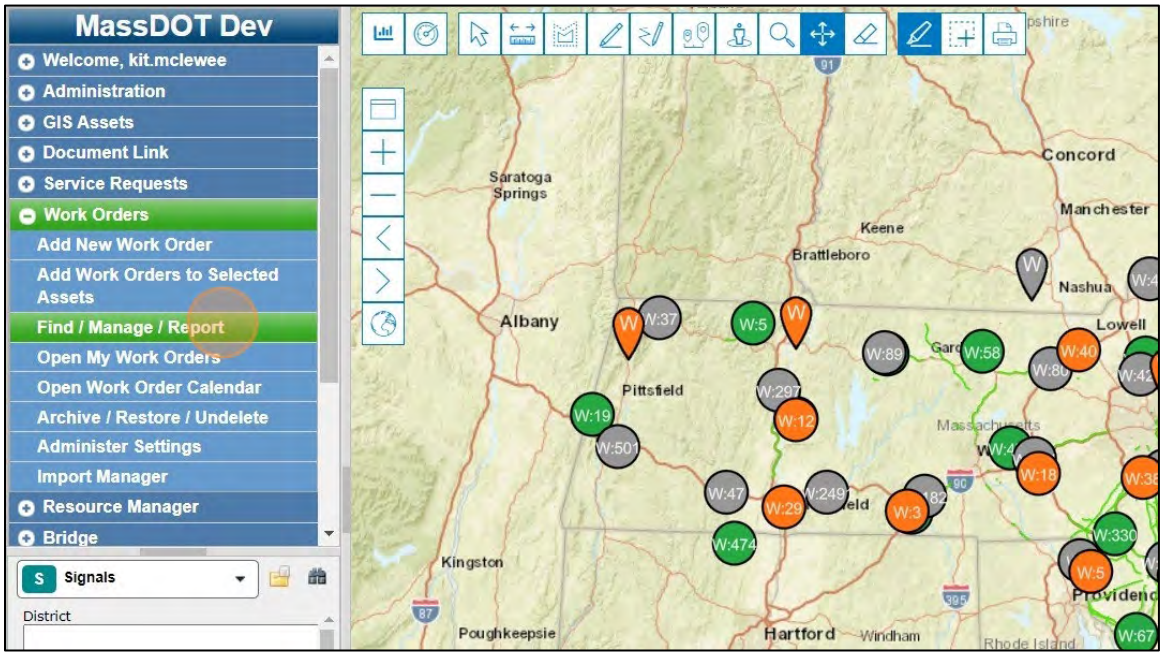
(16) Click Close



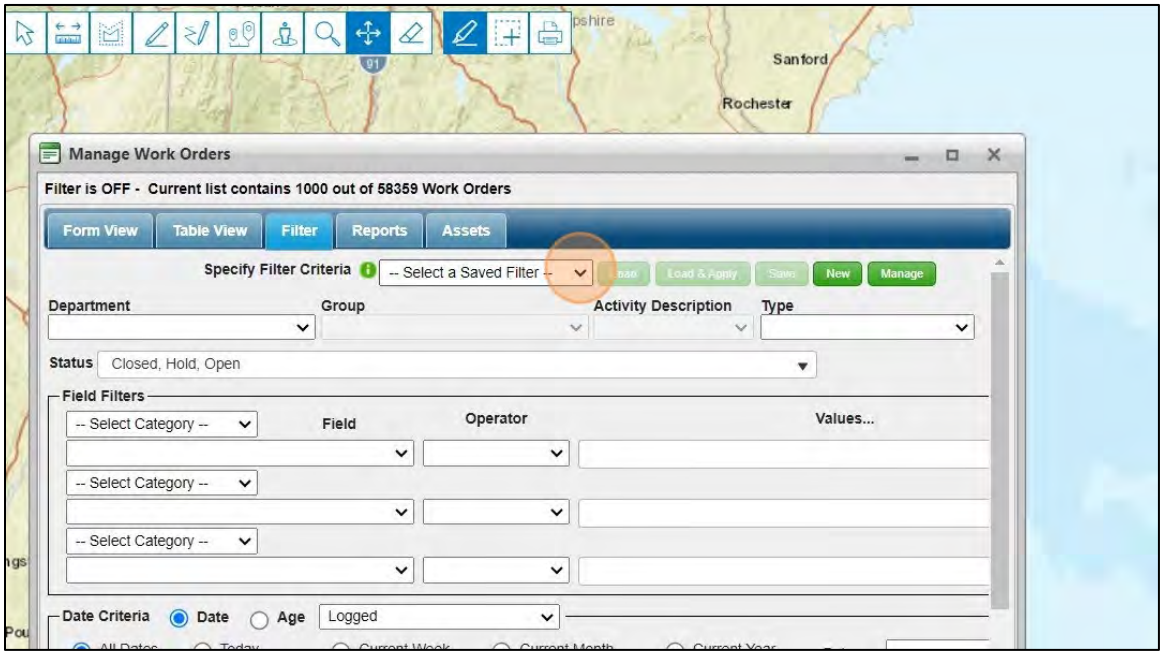
(17) Click Work Orders



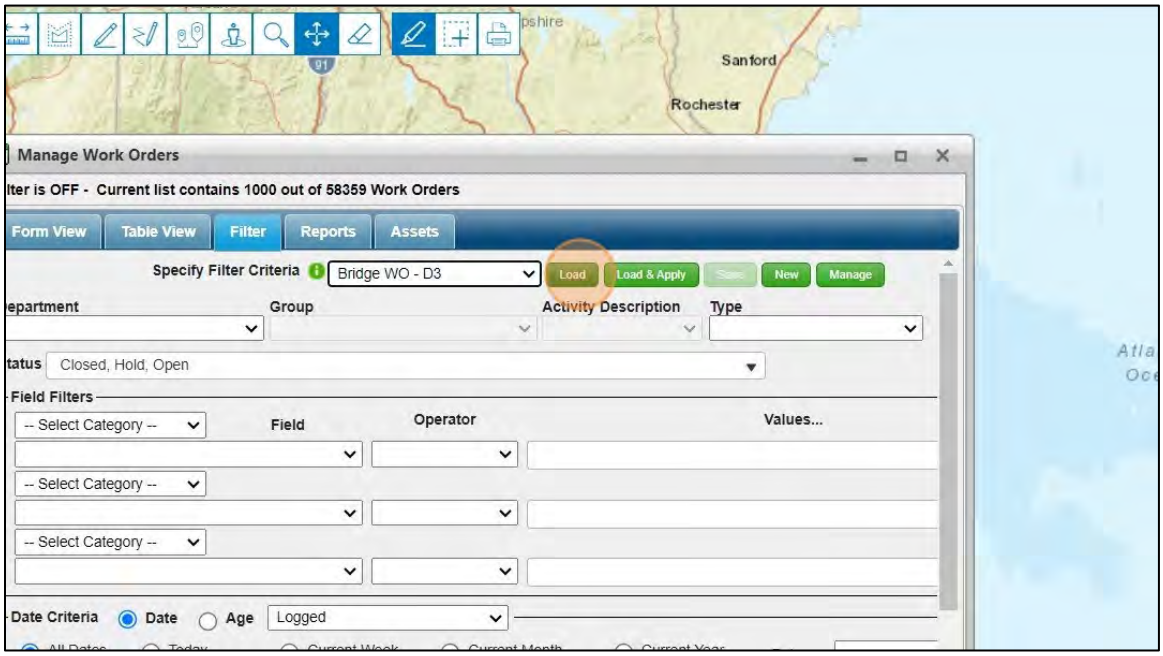
(18) Click Find / Manage / Report



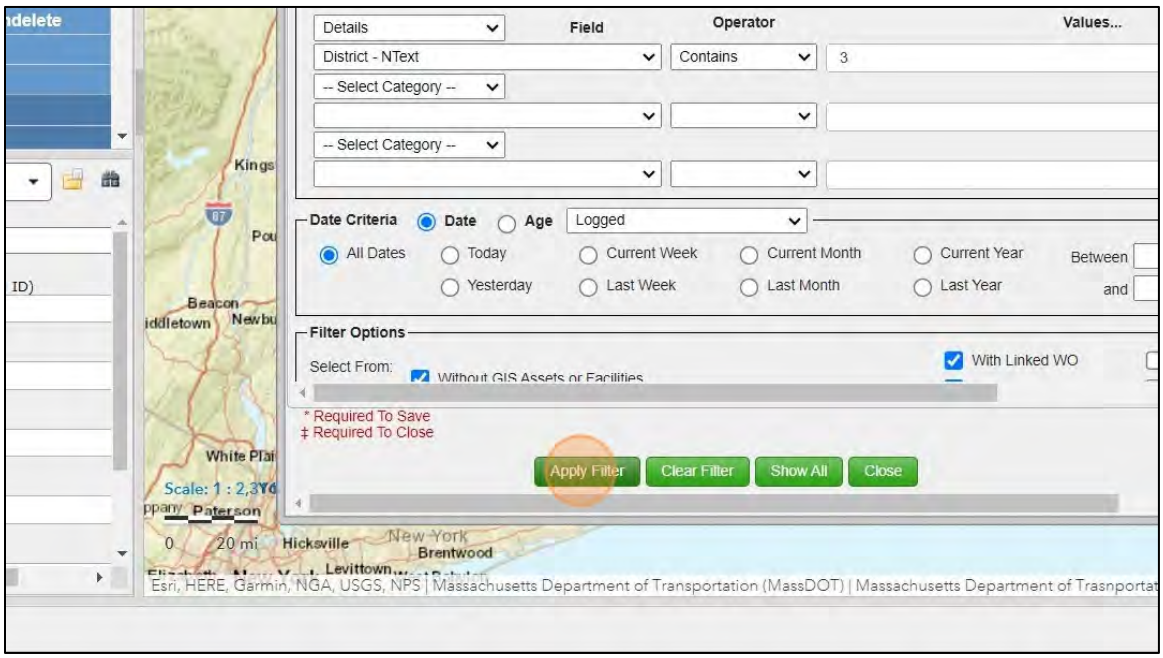
(19) Click Specify Filter Criteria dropdown and change to filter of interest



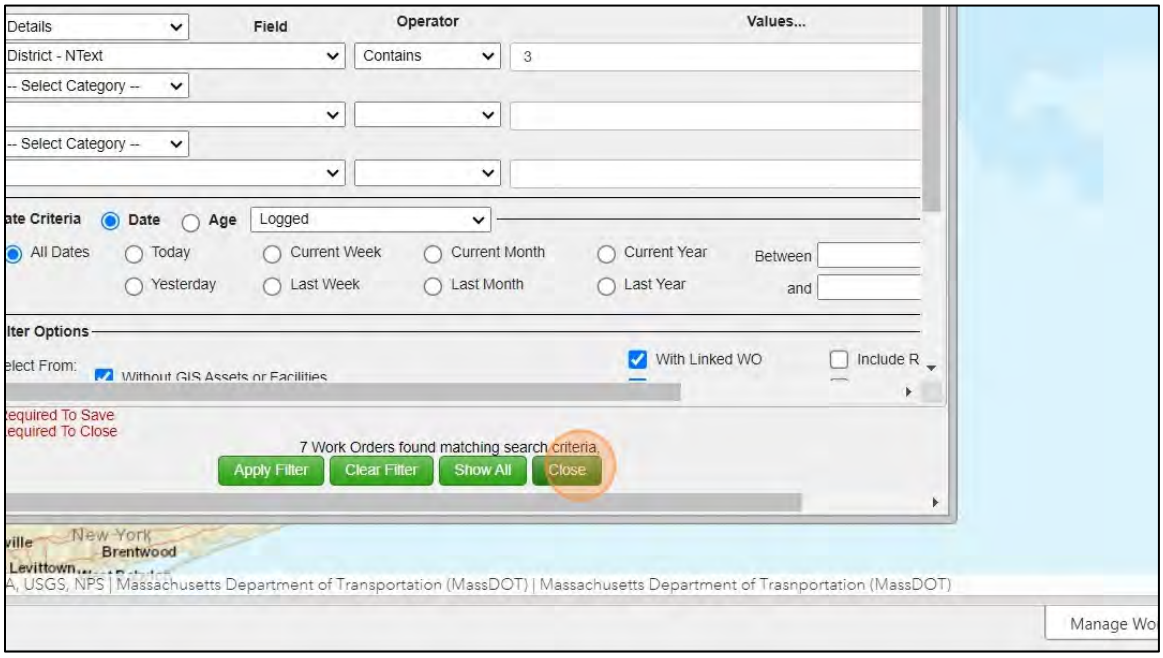
(20) Example filter here is District 3 Bridge Work Orders. Click Load.



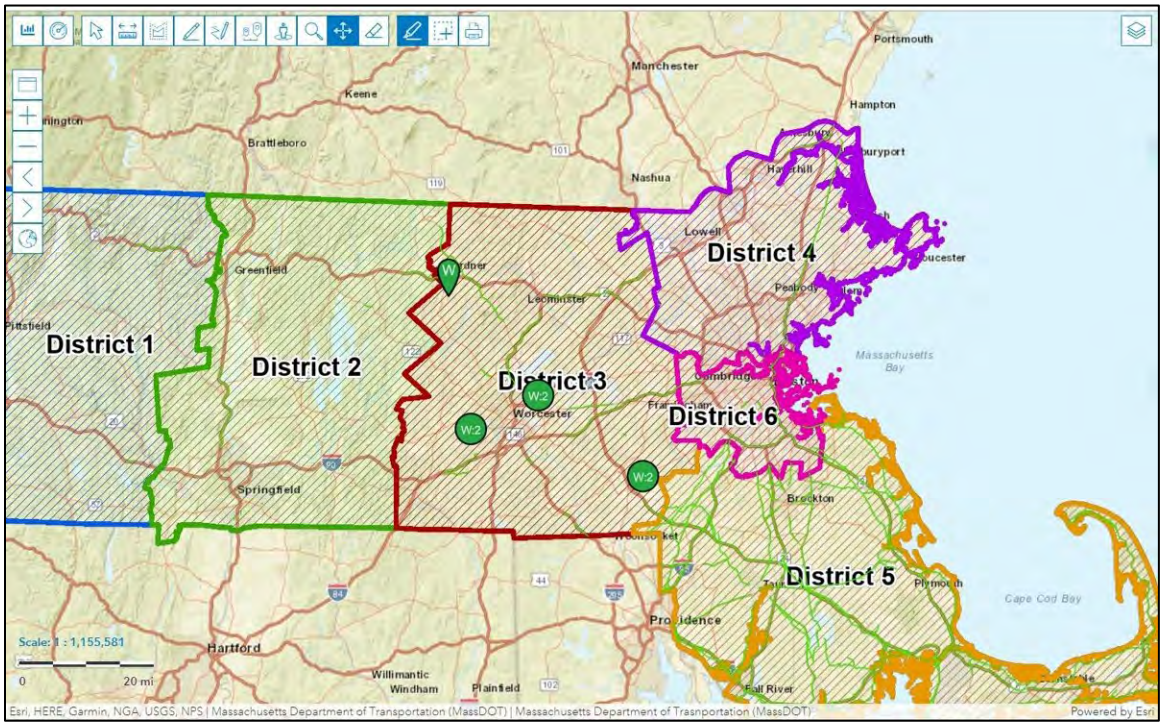
(21) Click Apply Filter



(22) Click Close



(23) Map will only show work orders based on filter chosen in step 18. District layer is turned on to show district boundaries.

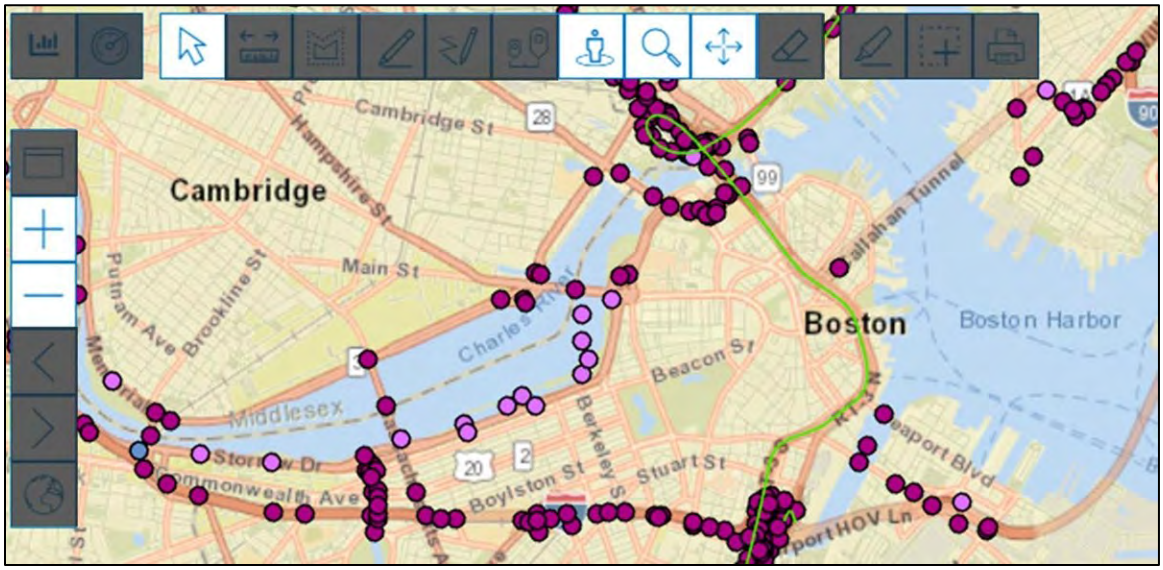


6 NAVIGATING VUEWORKS MAP

This guide provides step-by-step instructions on how to navigate the VUEWorks Map with most frequently used widgets.

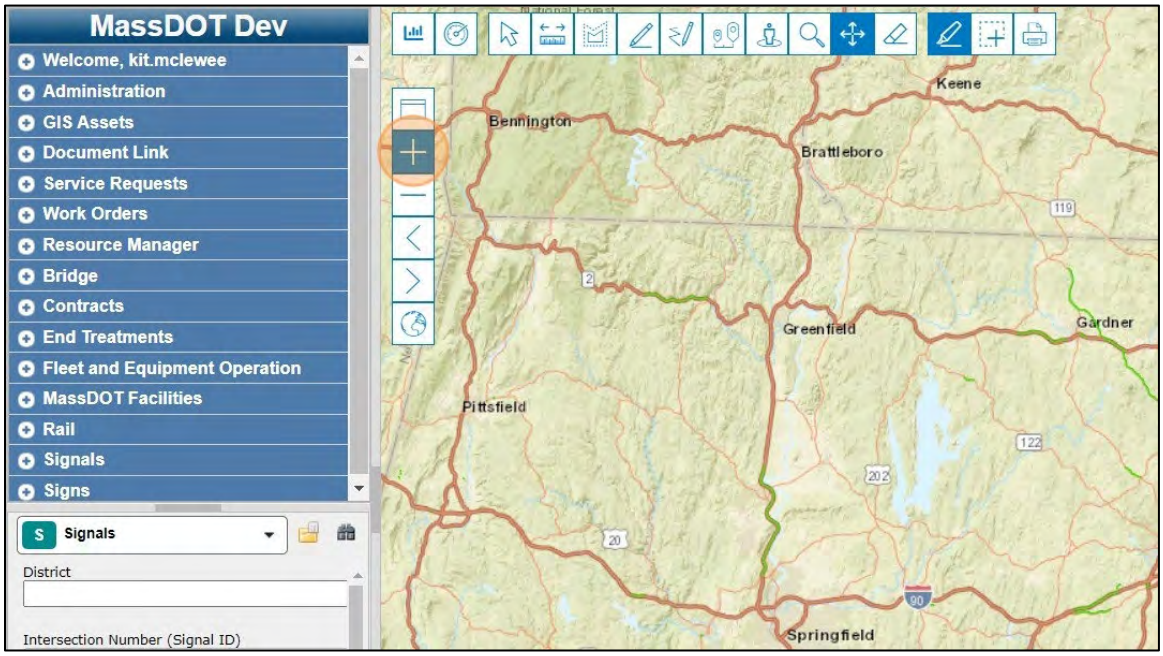
(1) Most frequently used widgets in VUEWorks are highlighted in white. Starting bottom left and going clockwise, the widgets are:

- **zoom in/out**
- **select assets**
- **street view**
- **address search**
- **pan map**



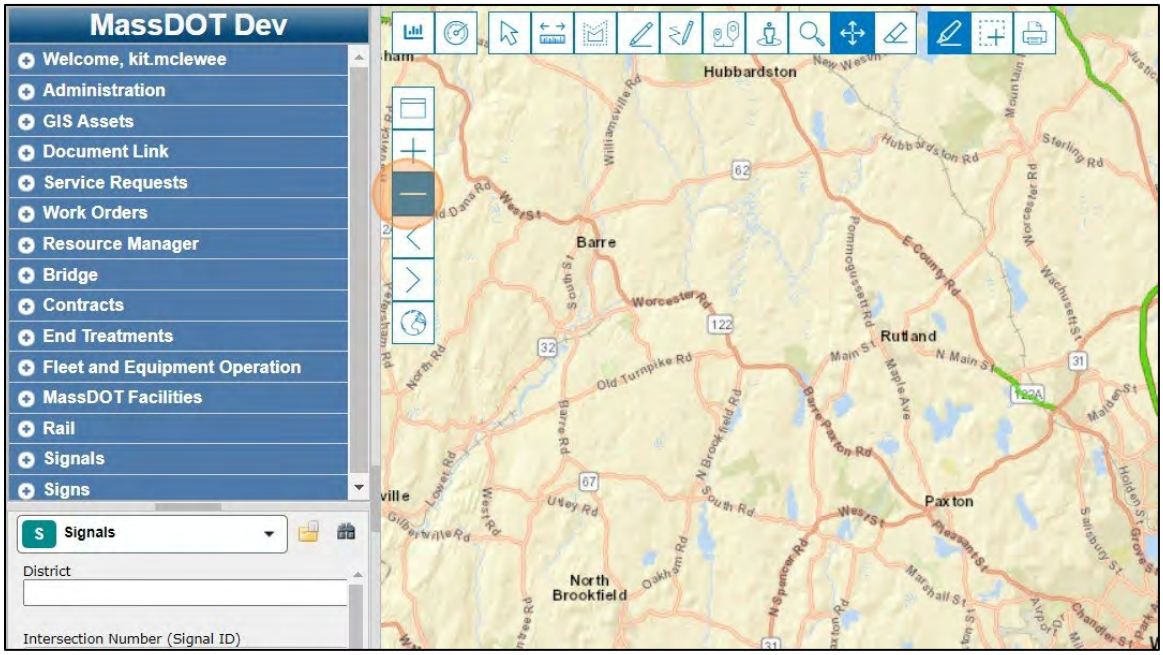
Zoom In

(2) Zoom in



Zoom Out

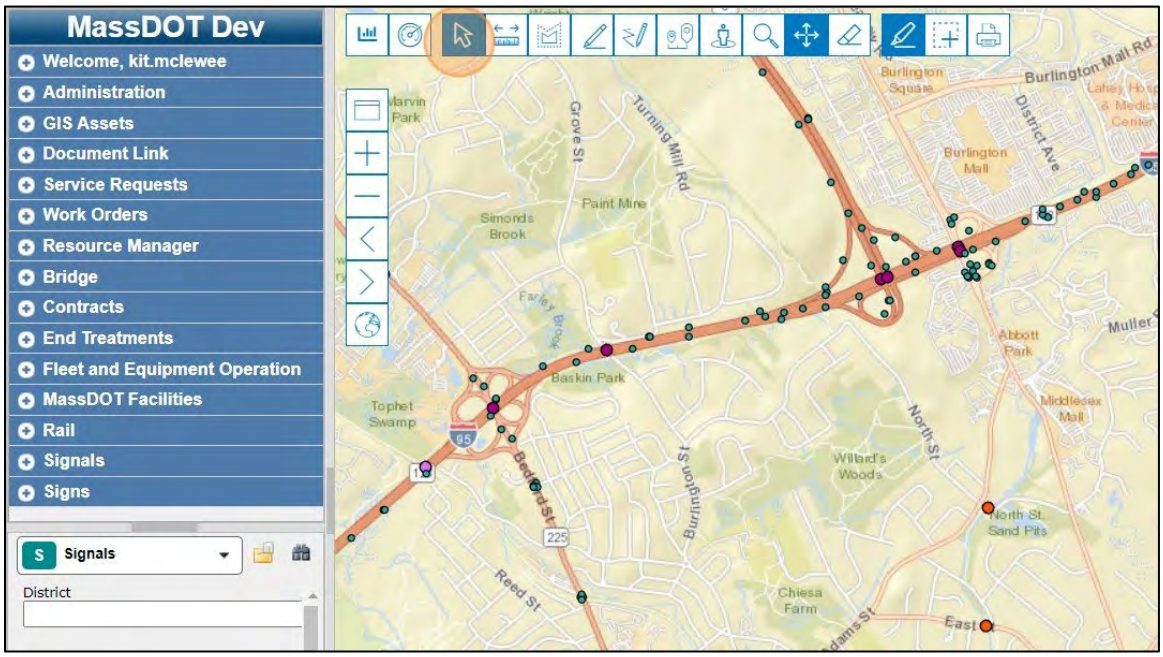
(3) Zoom out



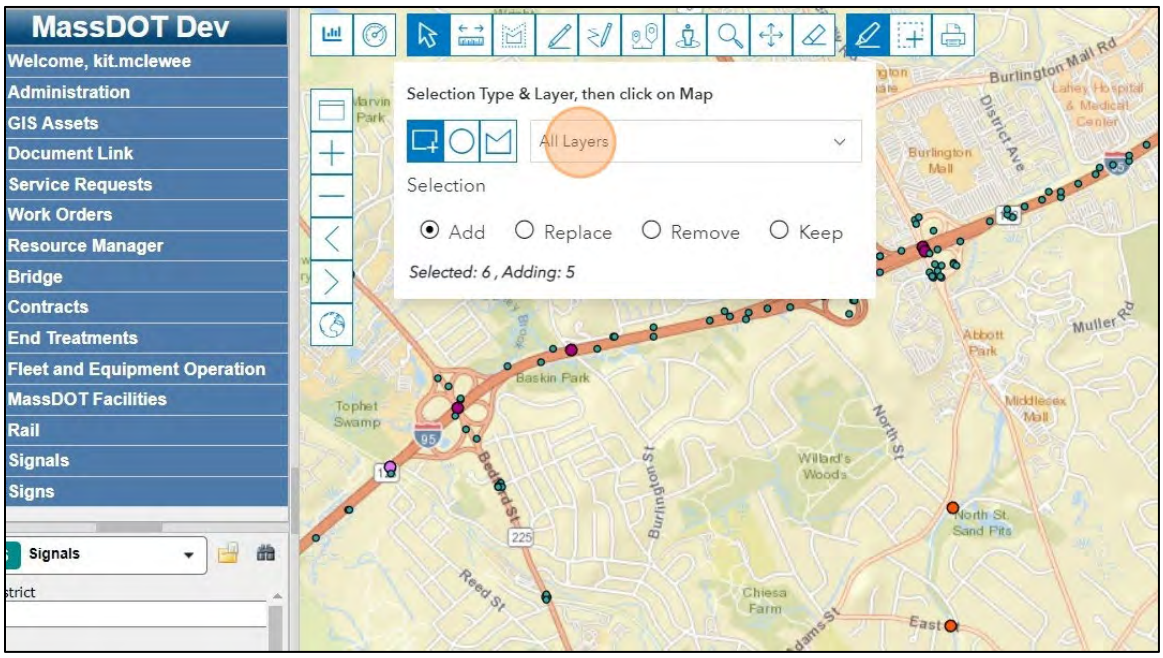
Select Assets

Make sure your asset layer is turned on

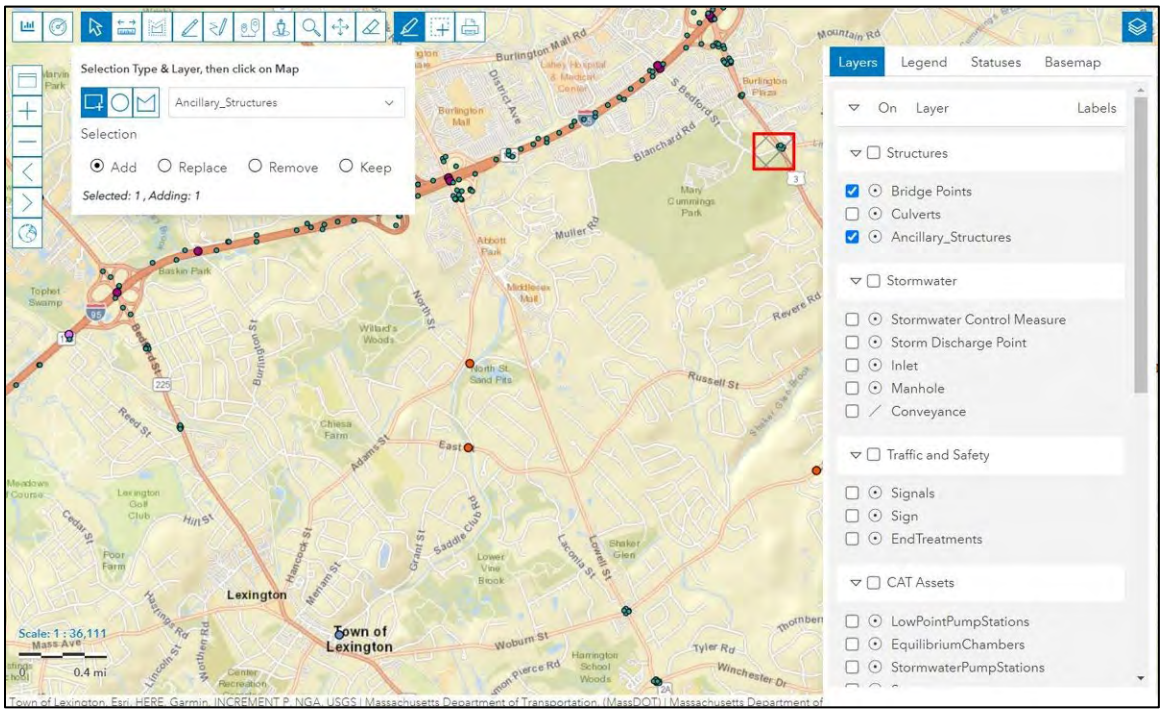
(4) Select Assets - to get more information on one or more assets



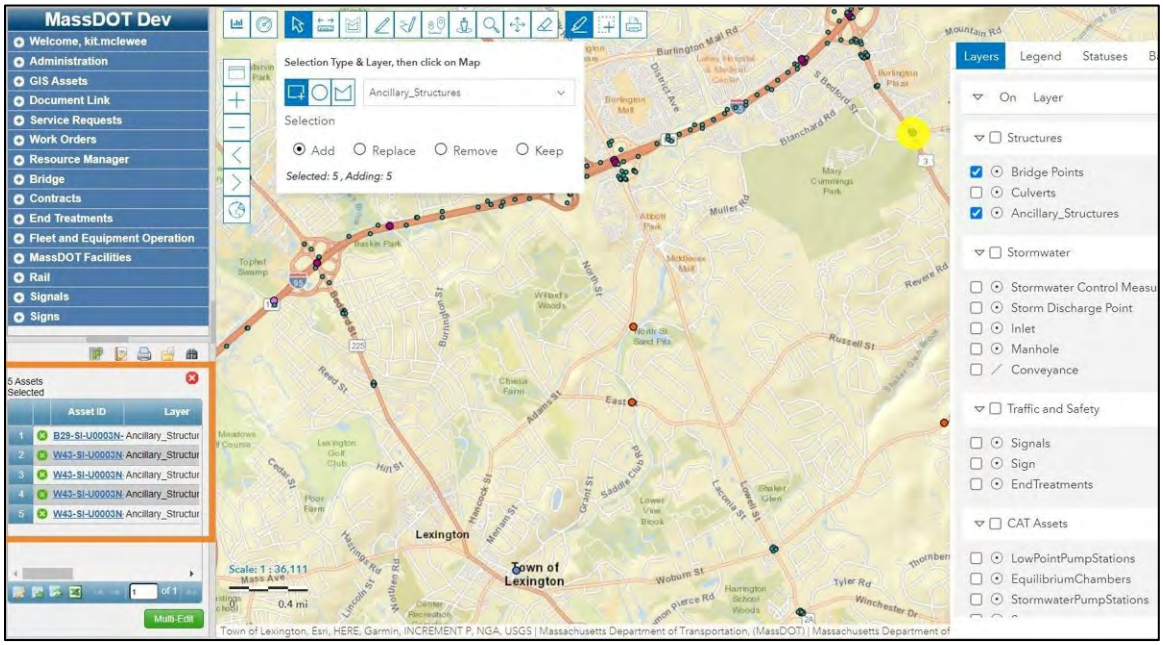
(5) Choose layer to select from



(6) Draw a box around assets of interest or click asset

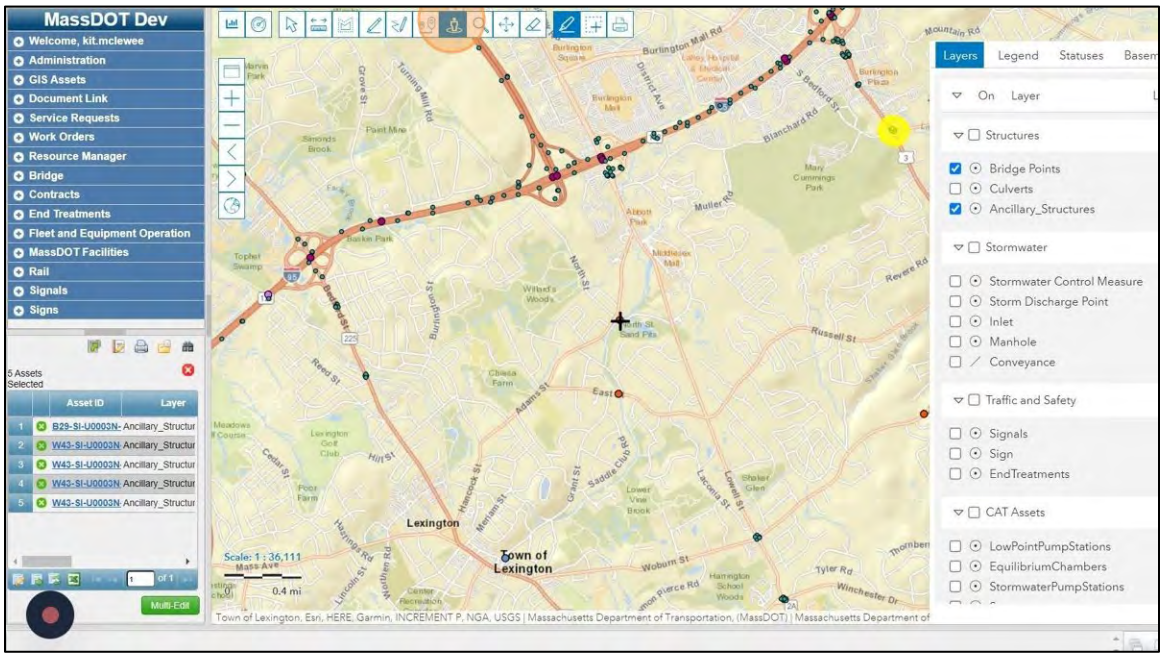


(7) Selected assets highlight yellow and asset information opens in bottom left corner



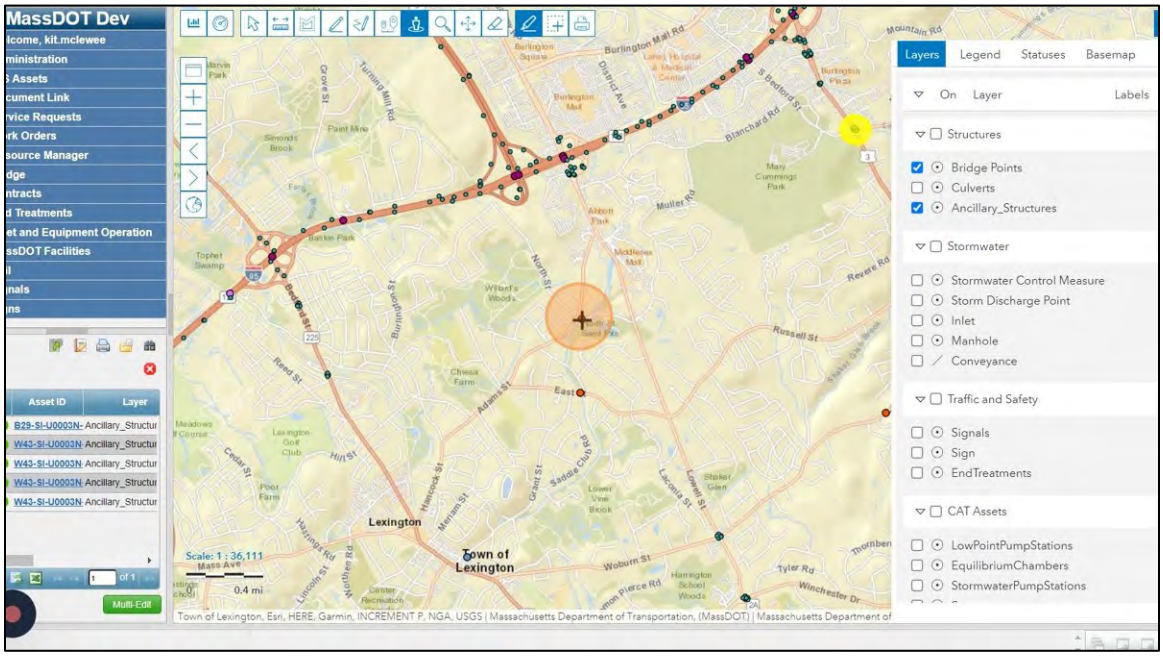
Street View

(8) Street View - open in a new tab street view in Google Maps

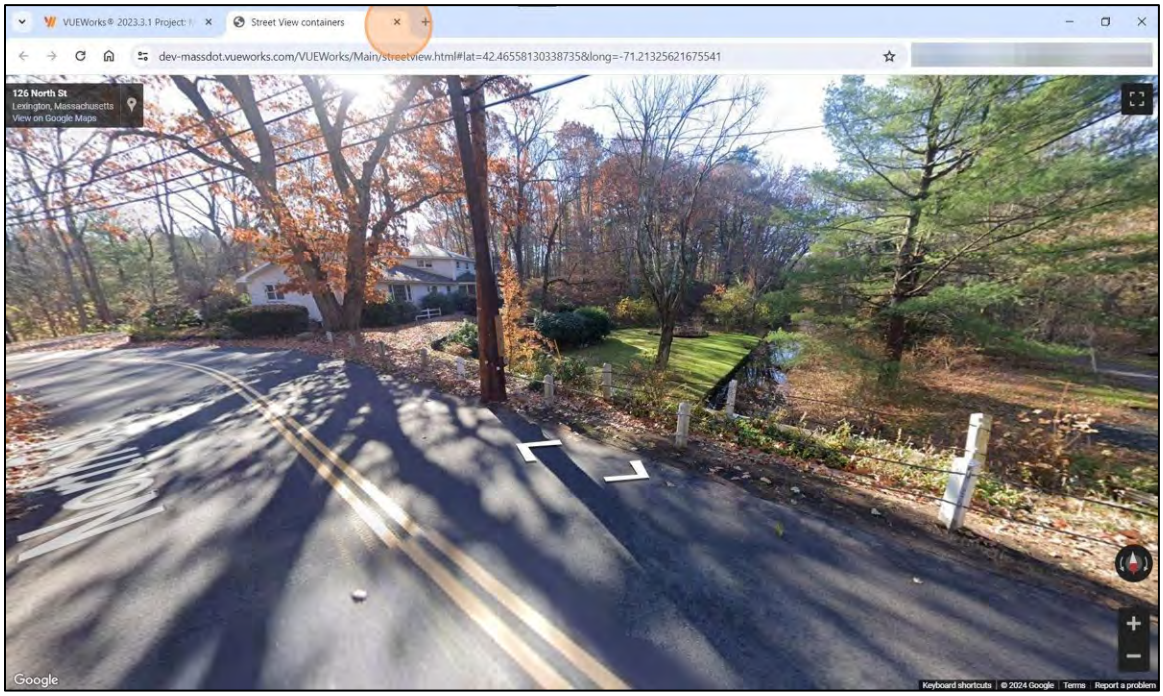


When finished with Street View, click the icon again to turn off, otherwise any time you click on the map a separate Street View tab will come up

(9) Select location on map

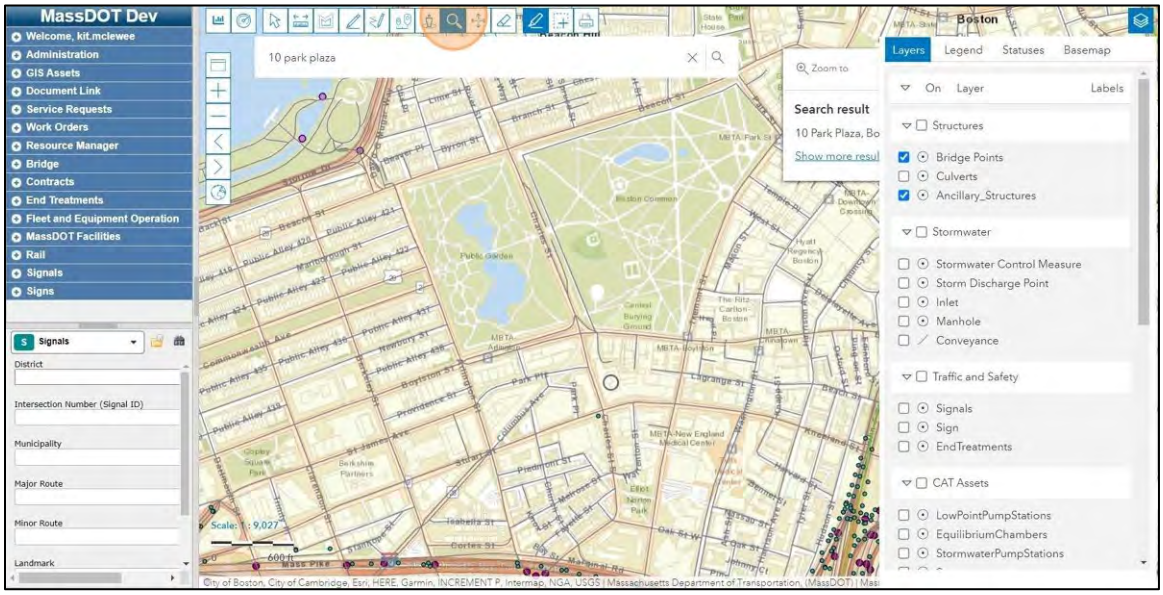


(10) New tab opens at location selected on Google Maps Street View. Close tab to exit street view.

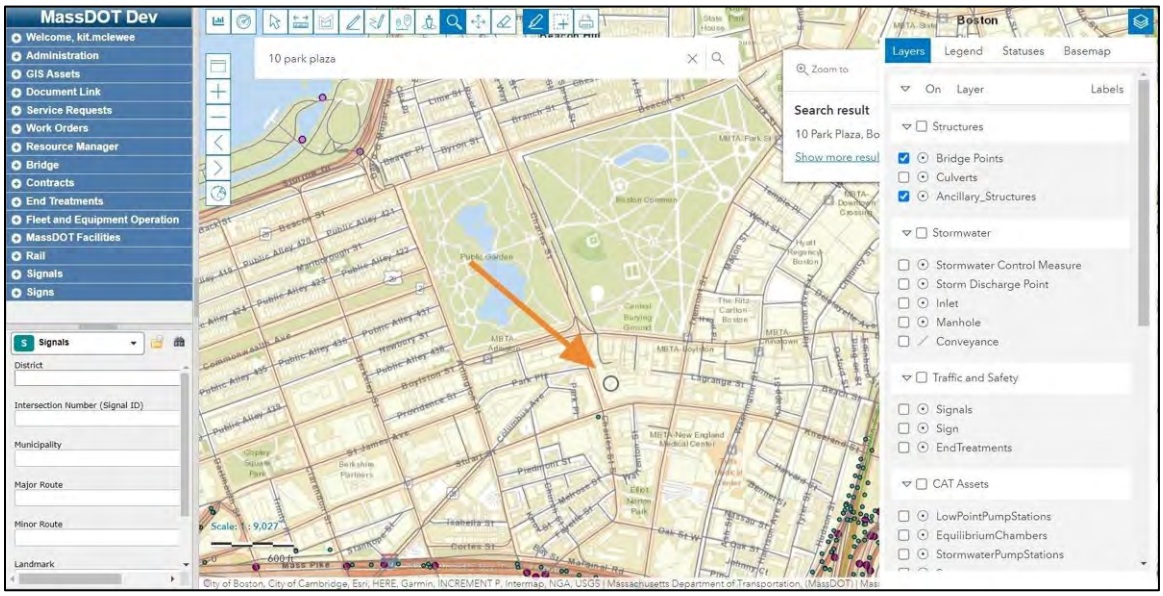


Address Search

(11) Click the magnifying glass icon and enter address

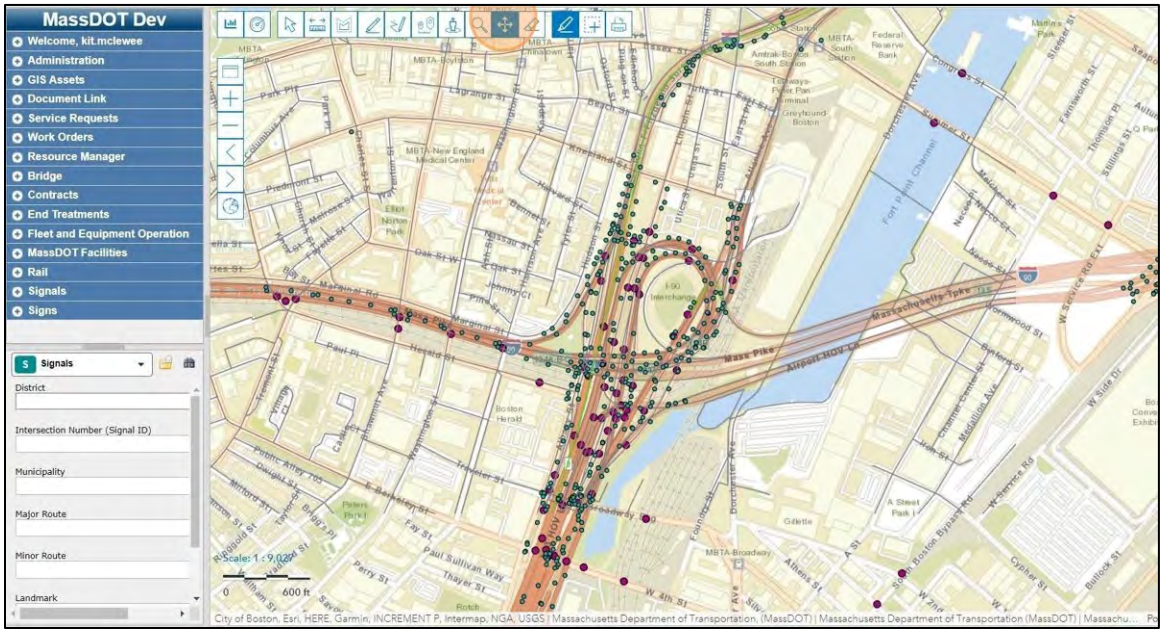


(12) A small circle outlined in black will appear on map around area searched for



Pan Map

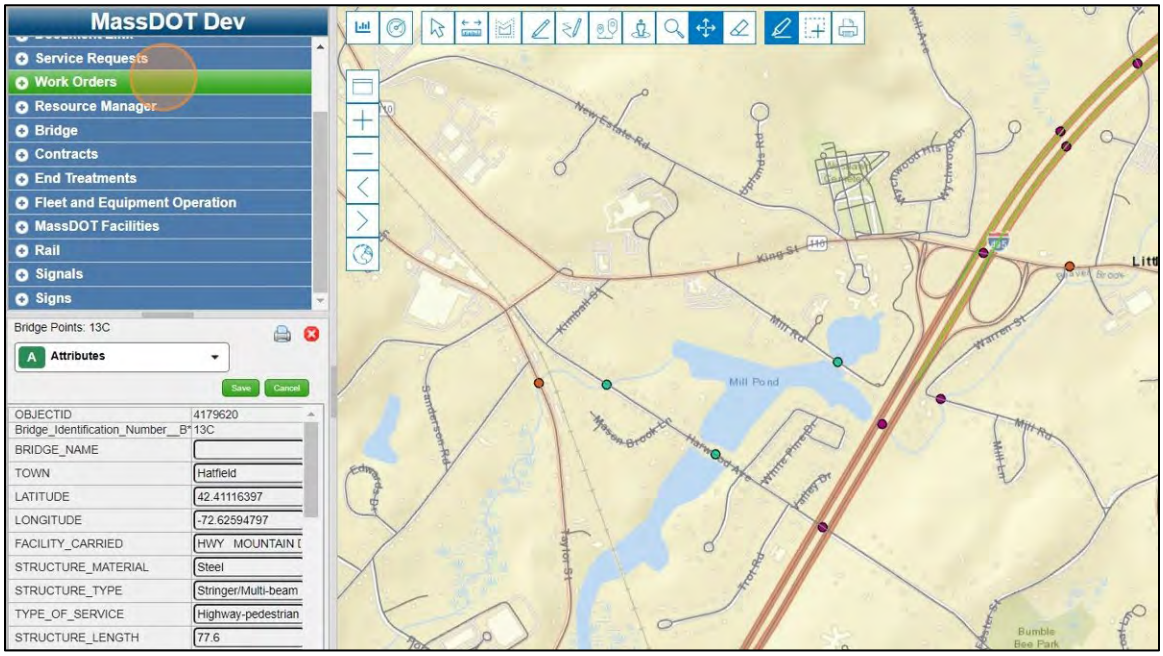
(13) Click icon with four arrows to click and drag the map in any direction



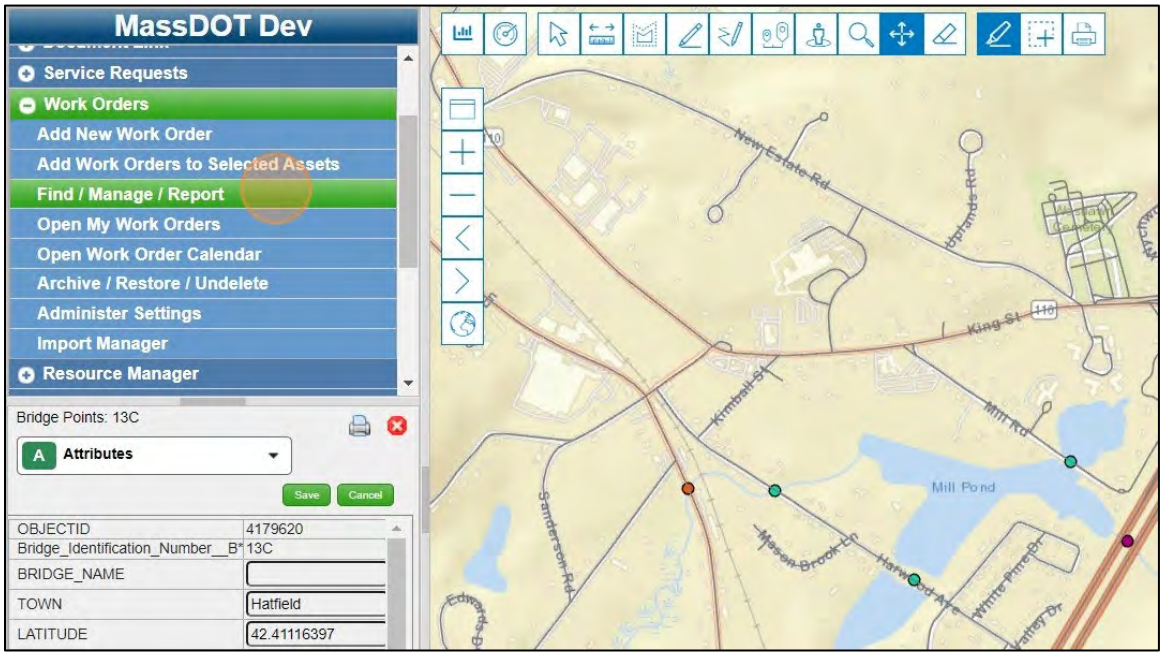
7 FILTERING SAFETY REVIEWS AND WORK ORDERS

This guide provides step-by-step instructions on how to filter safety reviews and work orders in VUEWorks . By following these steps, users can easily find and manage specific forms based on filters such as district, structure type, and user.

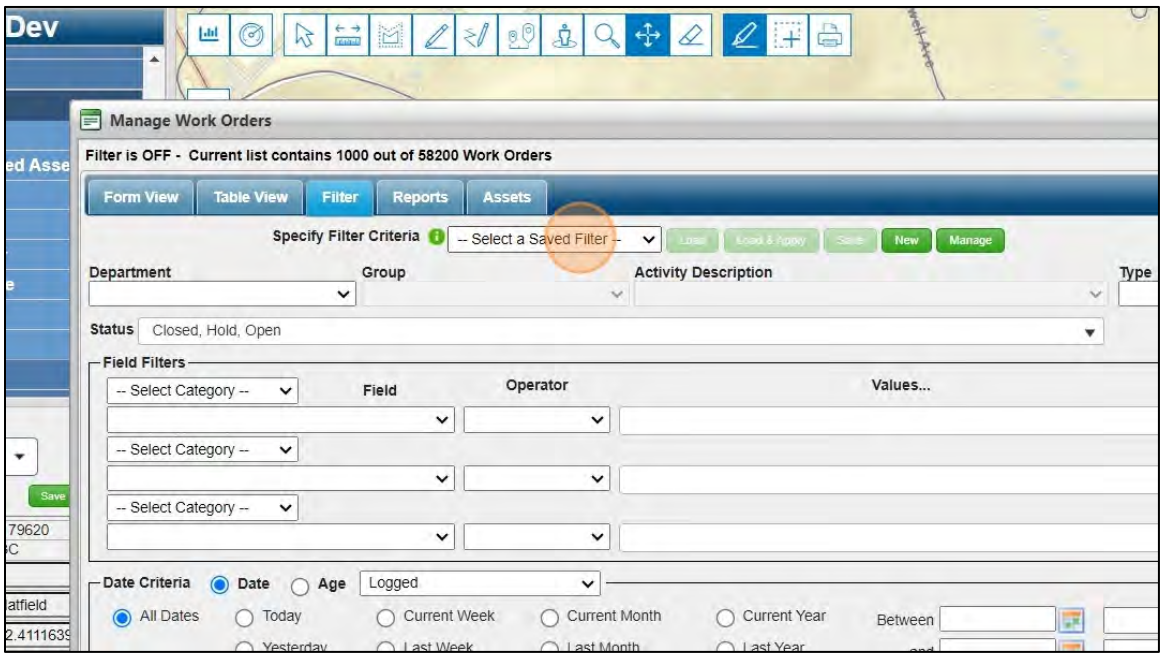
(1) Click Work Orders



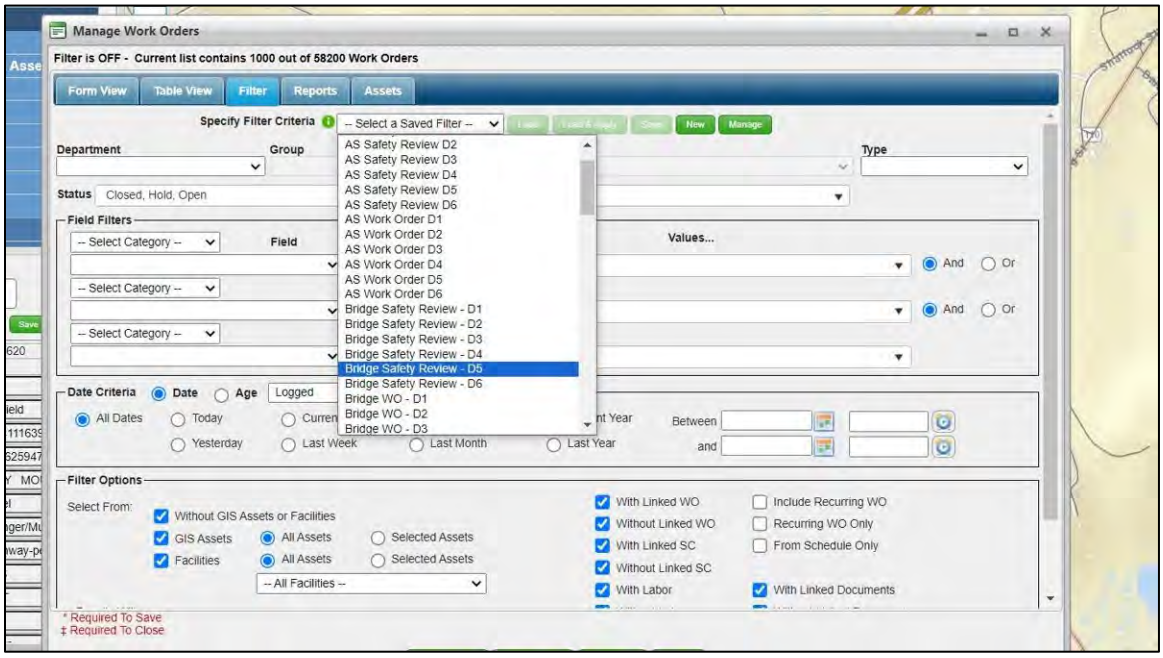
(2) Click Find / Manage / Report



(3) Click this dropdown.



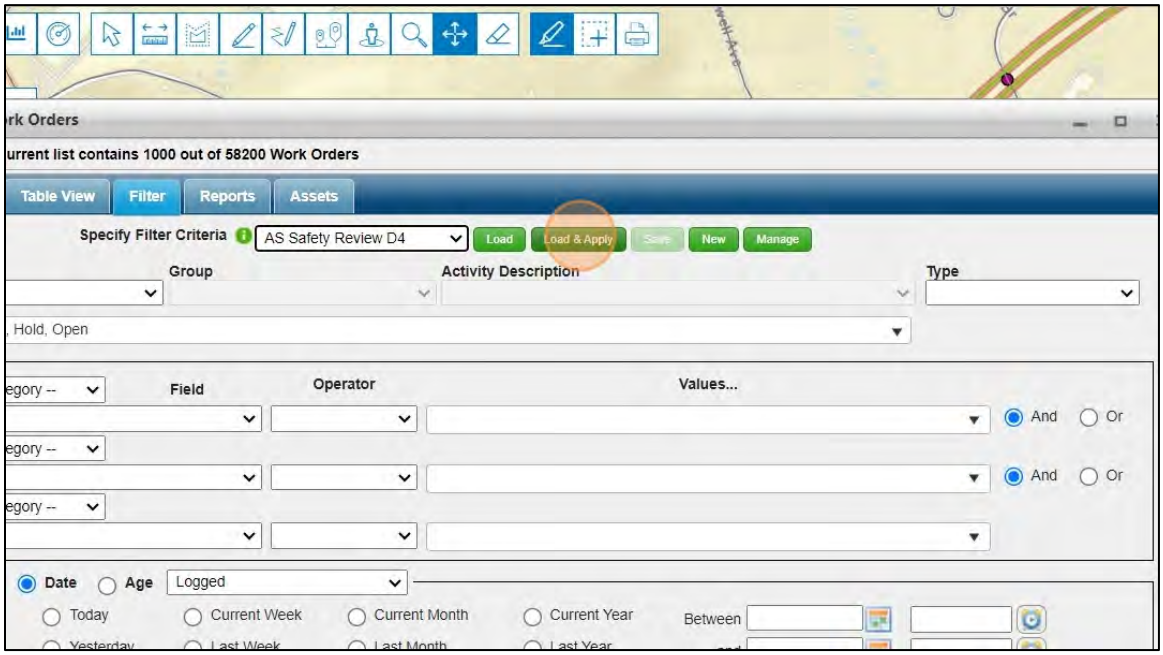
(4) Choose filter



If you don't have the filter you want, contact VUEWorks support@dot.state.ma.us You can also manually set up a filter, explained in the 'No pre-set filter' section of this guide.

Ancillary Structure Example

(5) Example filter here is for Ancillary Structure Safety Reviews in District 4. Click Load & Apply. The filter fields will populate and the filter will run.

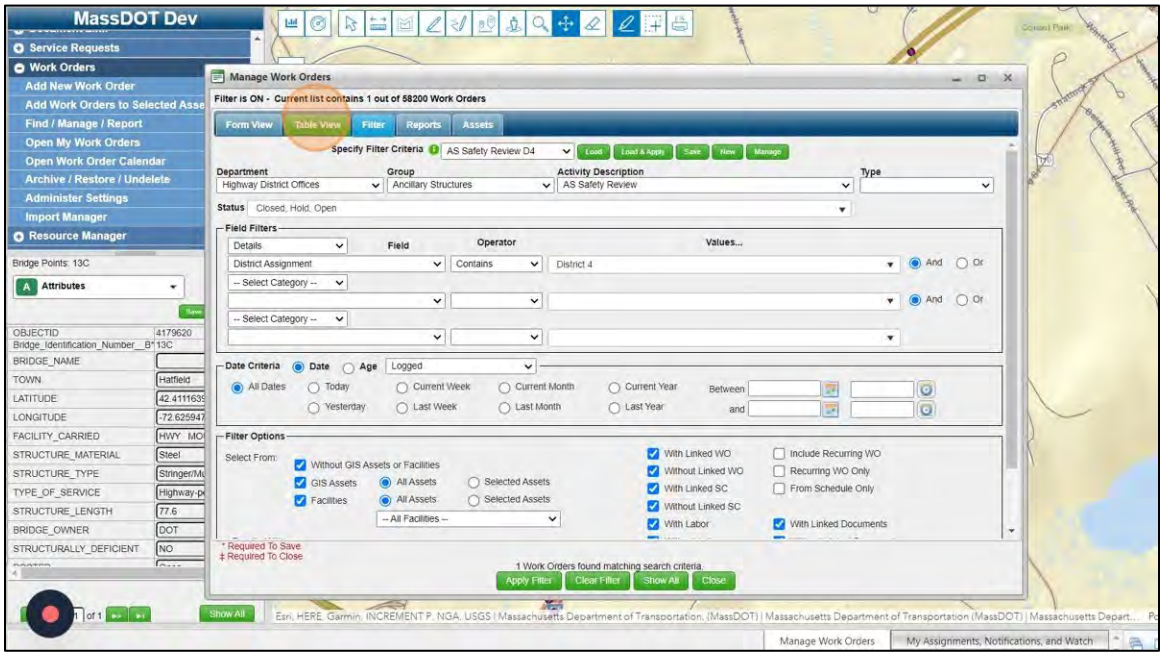


Difference between Load vs Load & Apply:

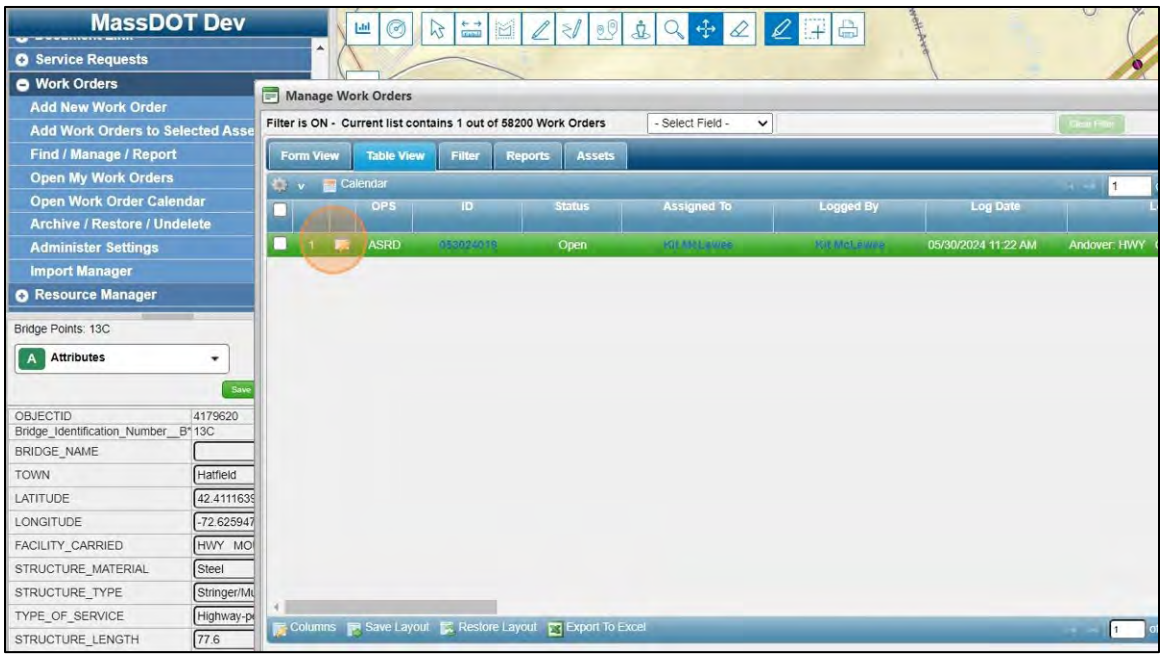
Load - populates filter fields but does not activate. Table View tab will still show previous filter results.

- populates filter fields and will filter results, viewable in the Table View tab.

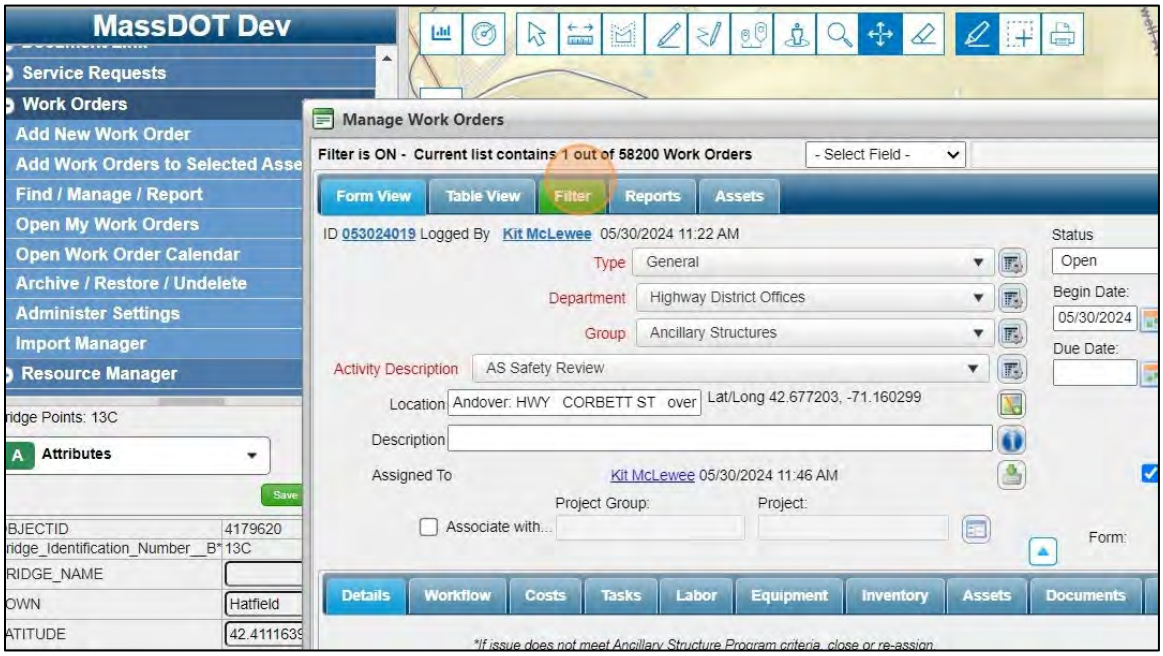
(6) Filtered results are in the Table View tab



(7) Click the pencil icon to open the form

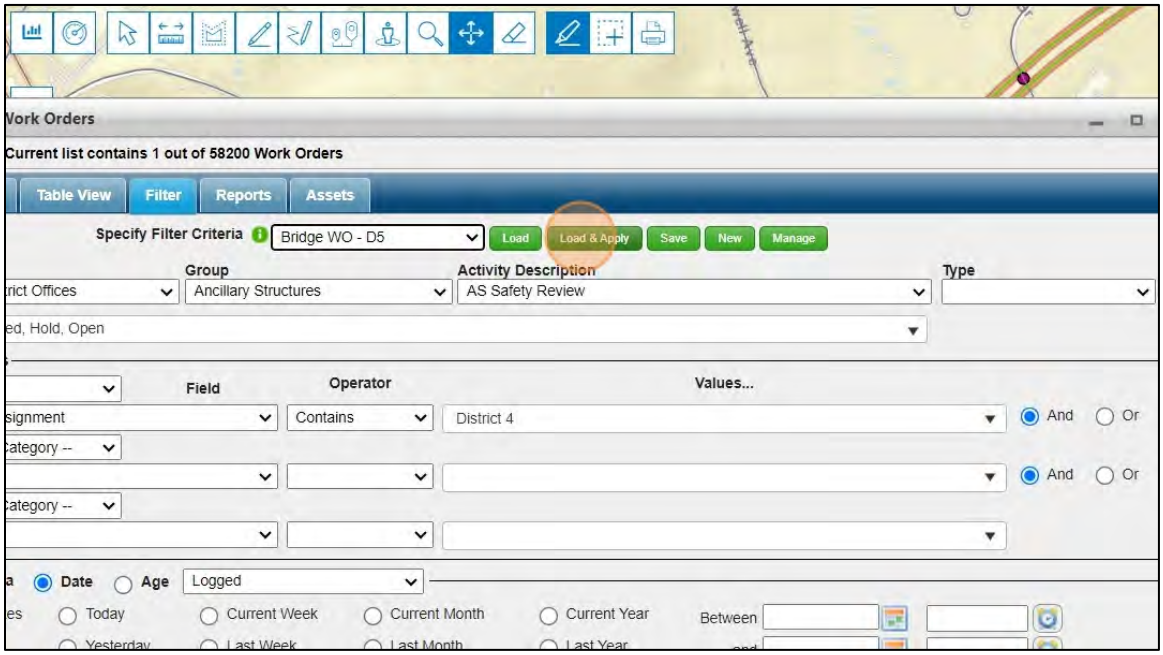


(8) Click Filter tab to go back to filter

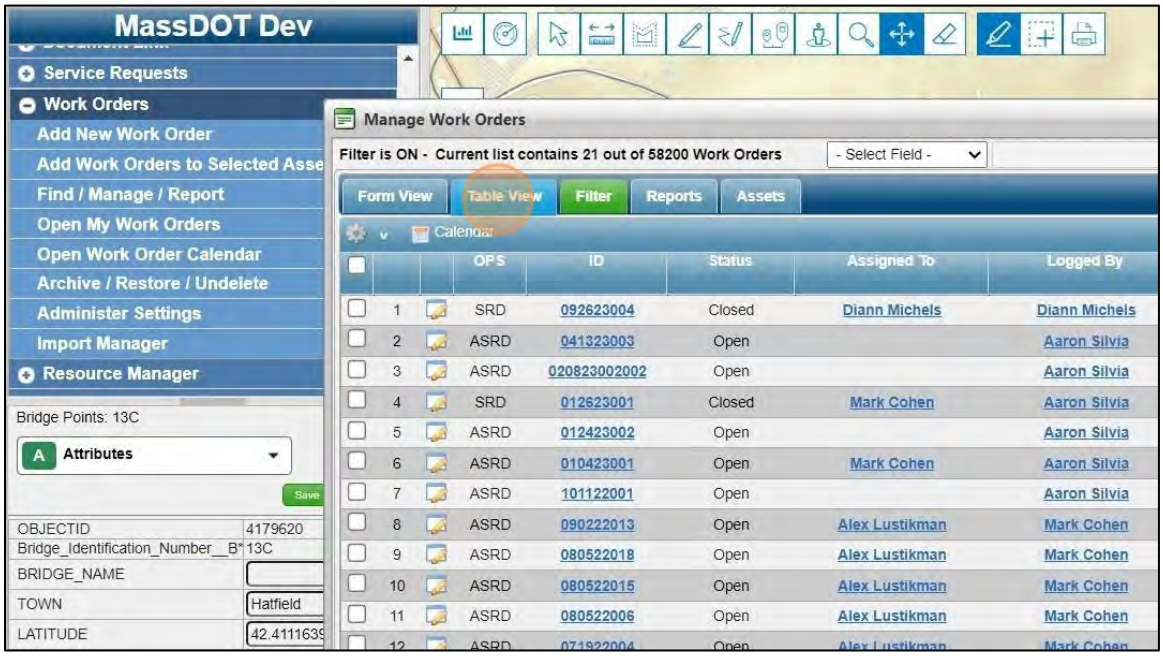


Bridge Example

(9) Choose the bridge filter you want. Click Load & Apply

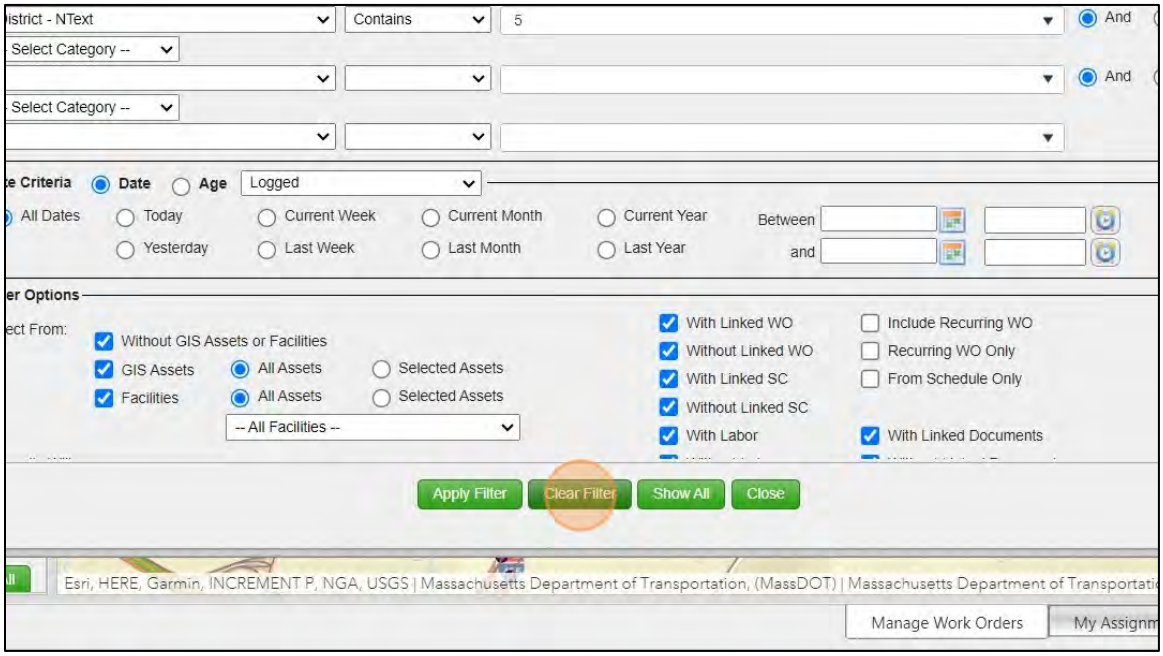


(10) Click Table View to view list of forms

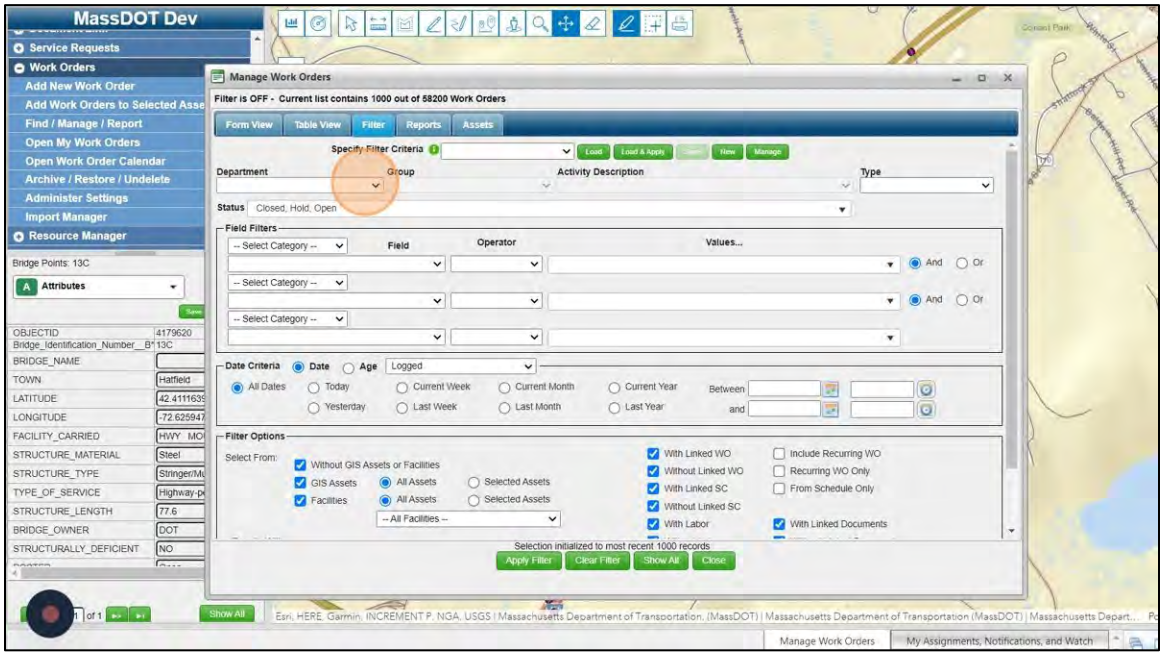


No pre-set filter search

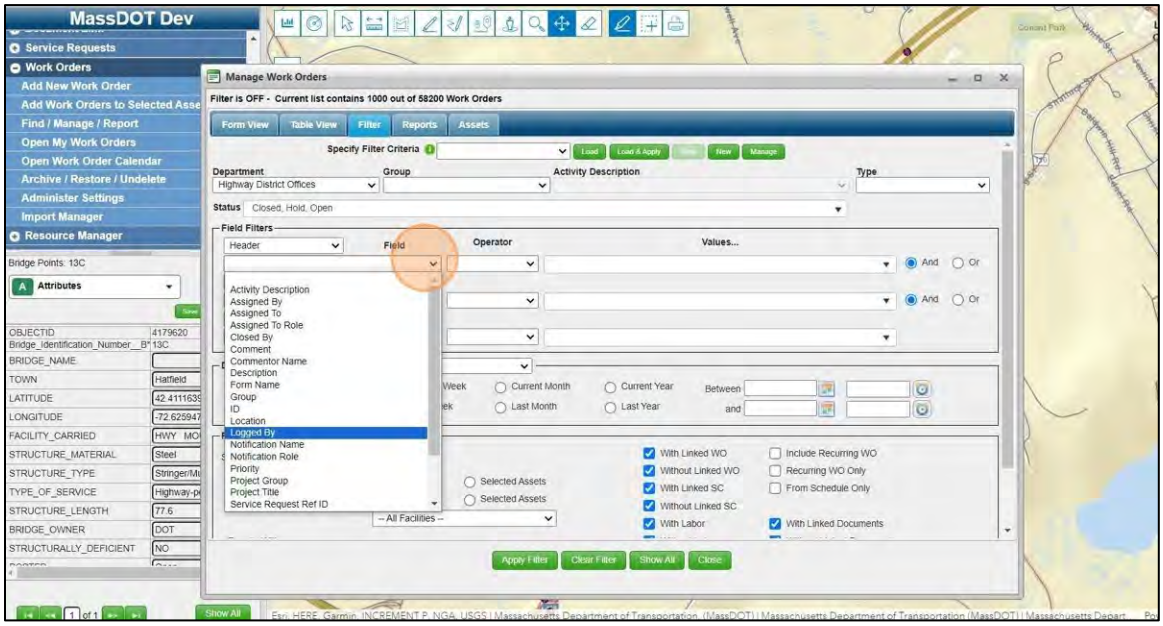
(11) Click Clear Filter



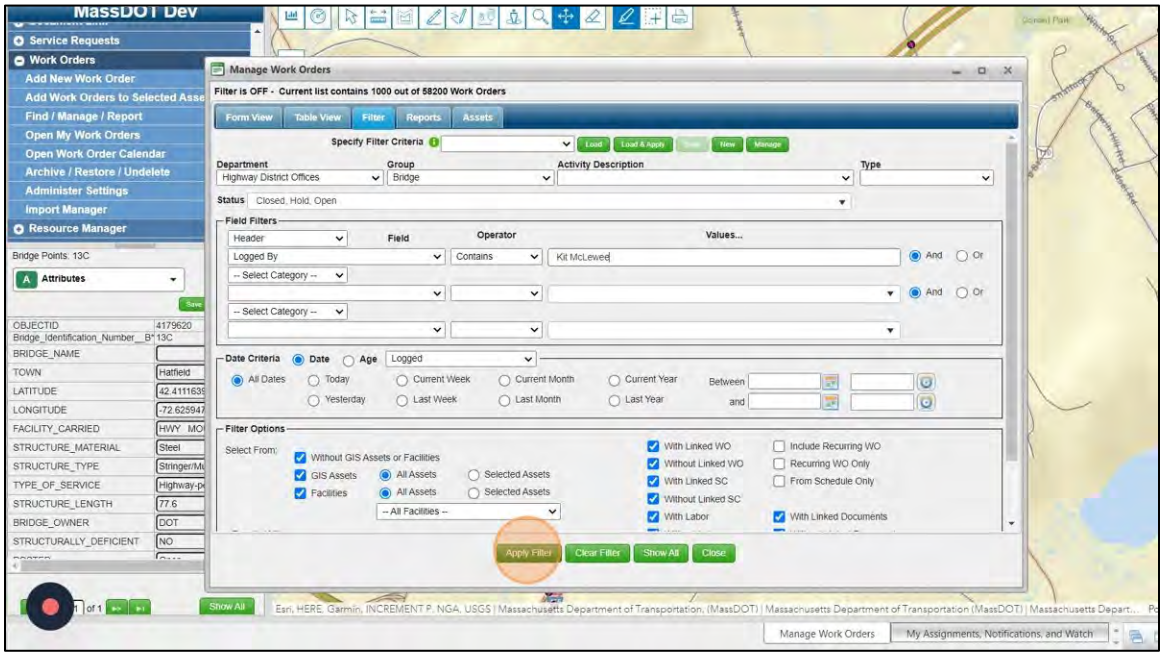
(12) Now you can set the filter fields however you would like. Department is usually *Highway District Offices*.



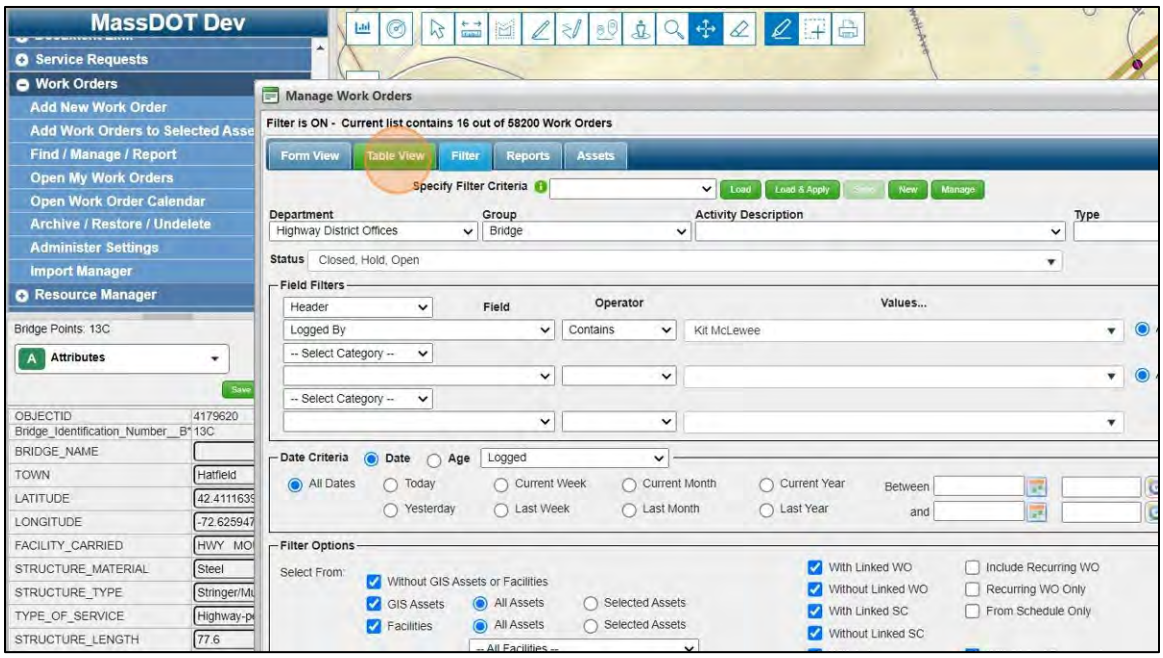
(13) Under Field Filters you can search by other parameters such as who logged the form or to whom it was assigned.



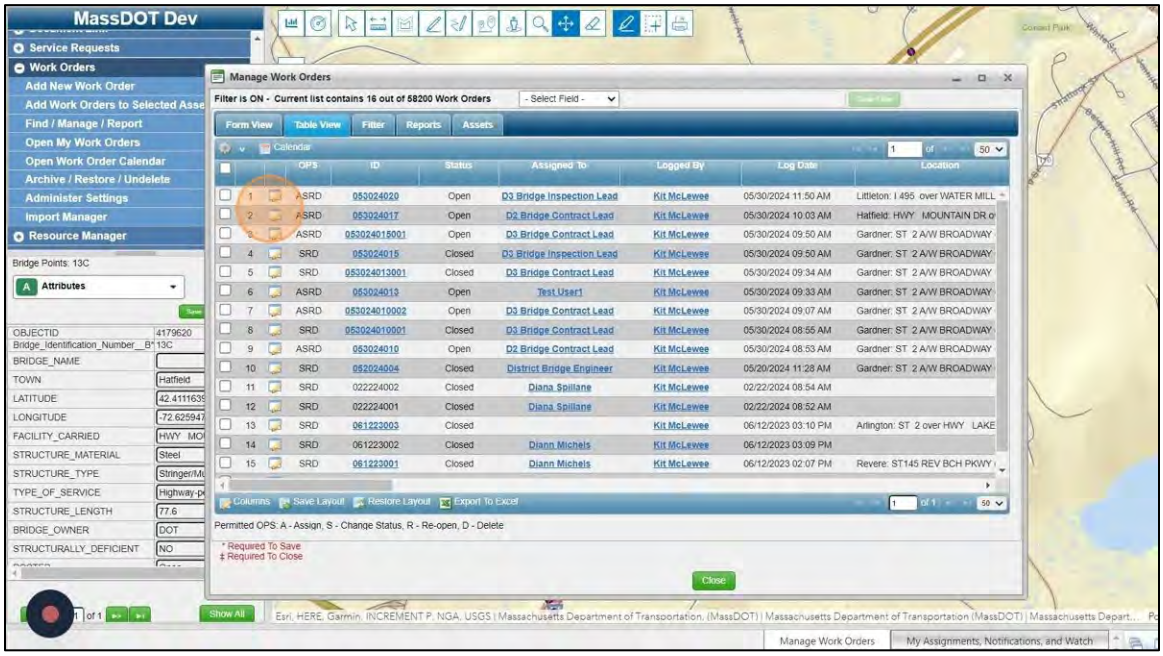
(14) Example filter for Bridge forms logged by user Kit McLewee. Click Apply Filter



(15) Click Table View



(16) List of bridge forms logged by user appears. Click the pencil icon to open form.



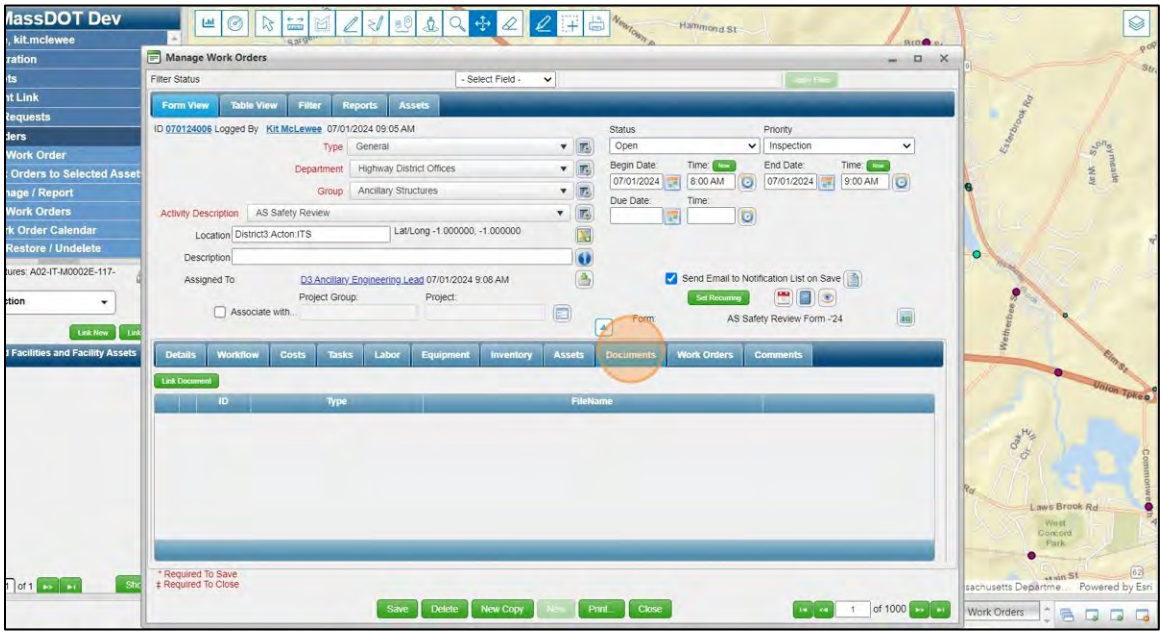
8 UPLOADING FILES TO SAFETY REVIEWS AND WORK ORDERS

This guide provides step-by-step instructions on how to add documents or photos to a form in VUEWorks . This works for all activities and structures. It covers uploading, linking, and removing files. Viewing this guide will help users effectively manage and organize their documents within the VUEWorks platform.

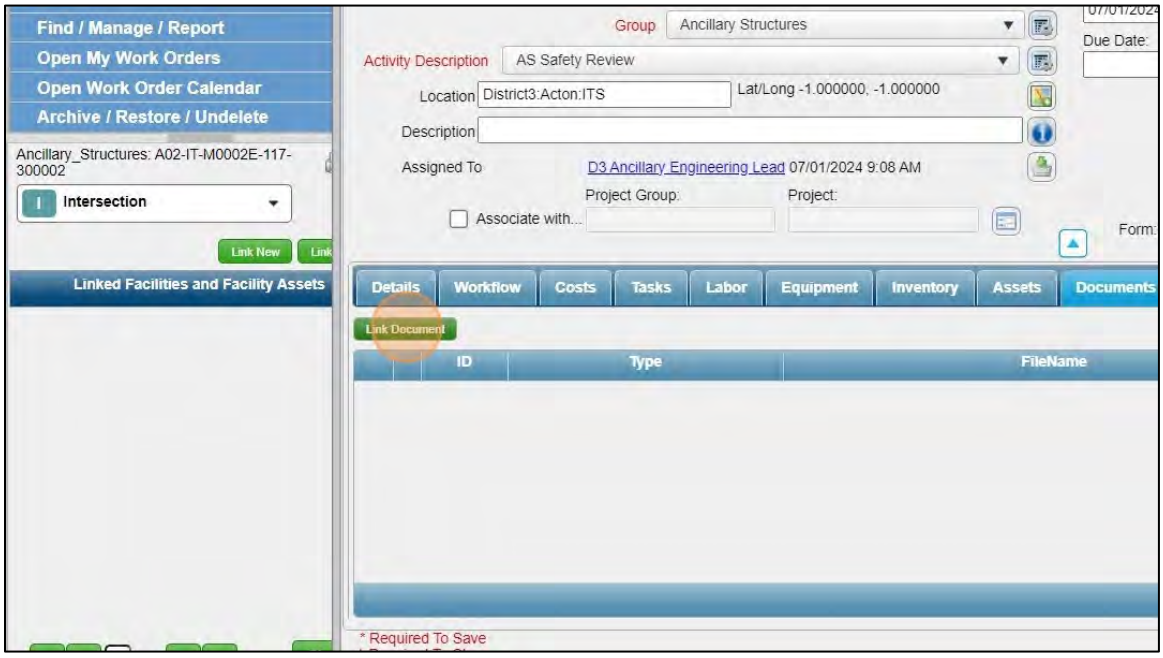
You can upload the following document types:

- **jpeg**
- **png**
- **jfif**
- **pdf**
- **word doc**

(1) Open the safety review or work order and navigate to the Documents tab

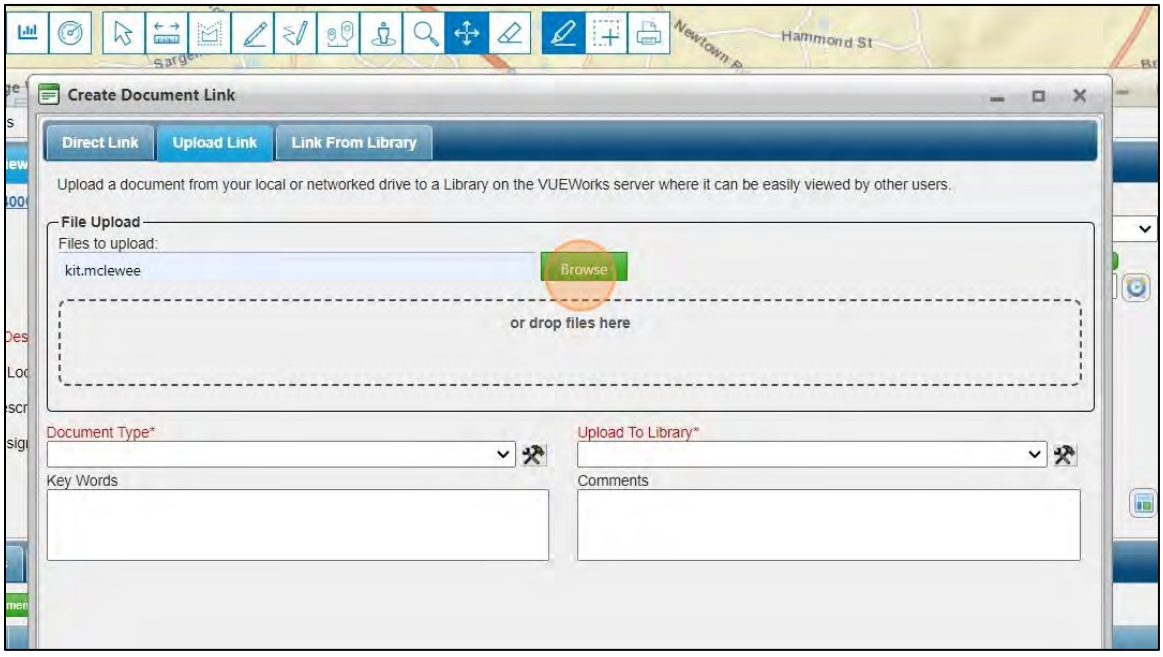


(2) Click Link Document

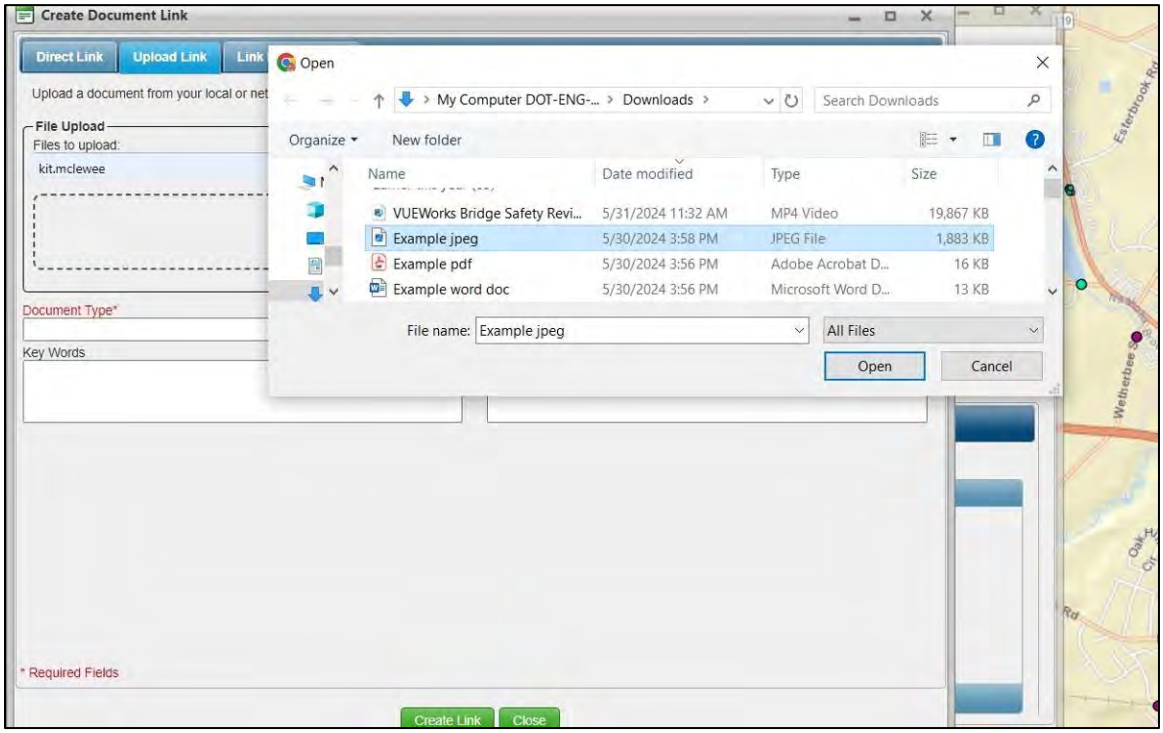


Browsing for File

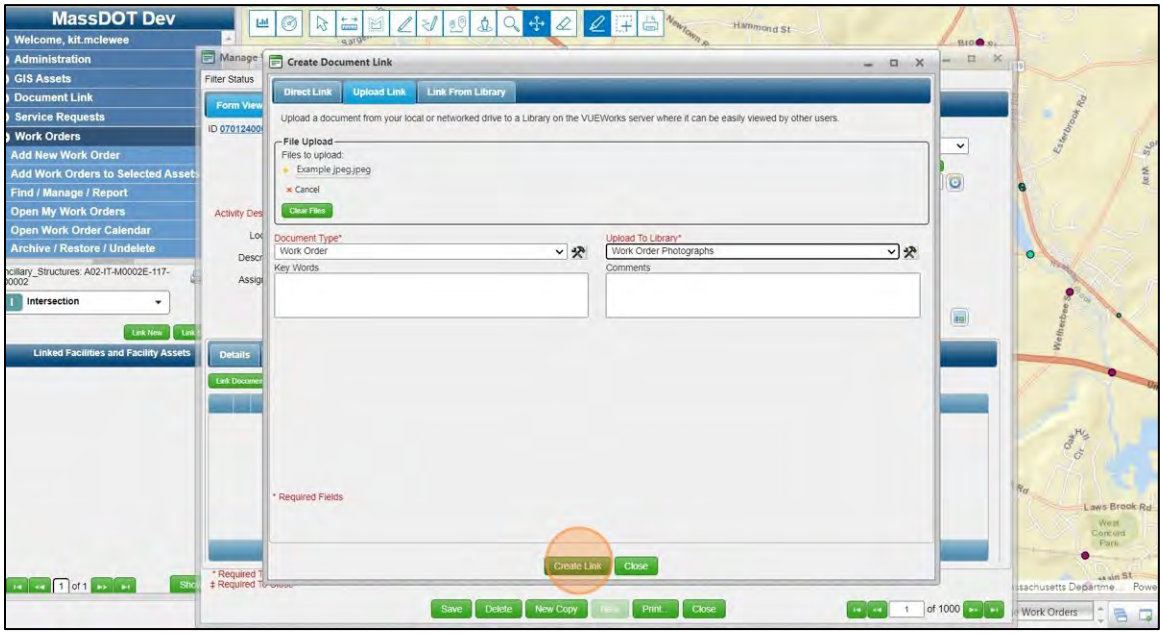
(3) In the Upload Link tab, click Browse. A new window will pop up



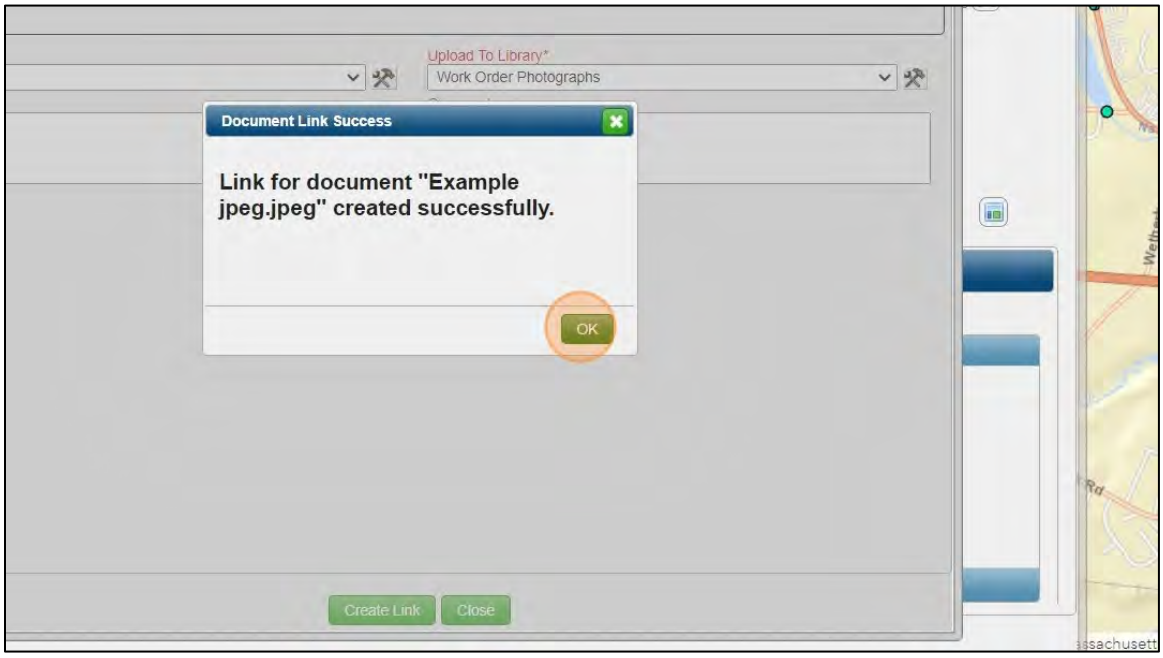
(4) A window will pop up to select document(s) to upload. Select the file then click Open



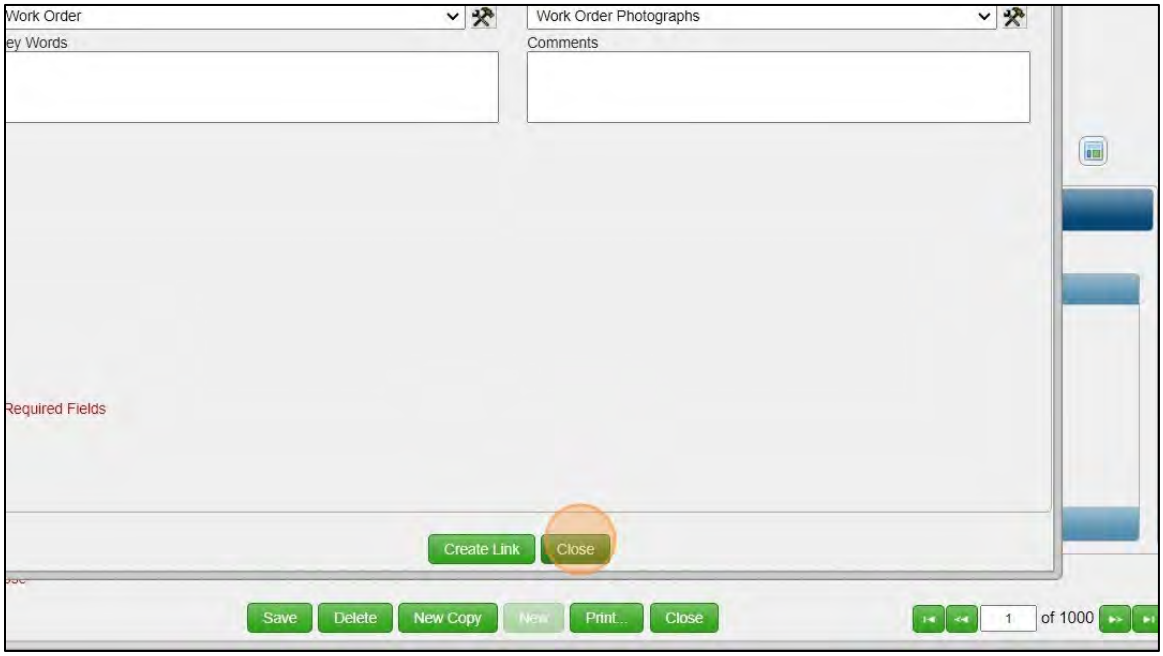
(5) Choose *Work Order* for Document Type and either *Work Order Photographs* or *Work Order Documents* for Upload to Library. Then click Create Link



(6) Click OK

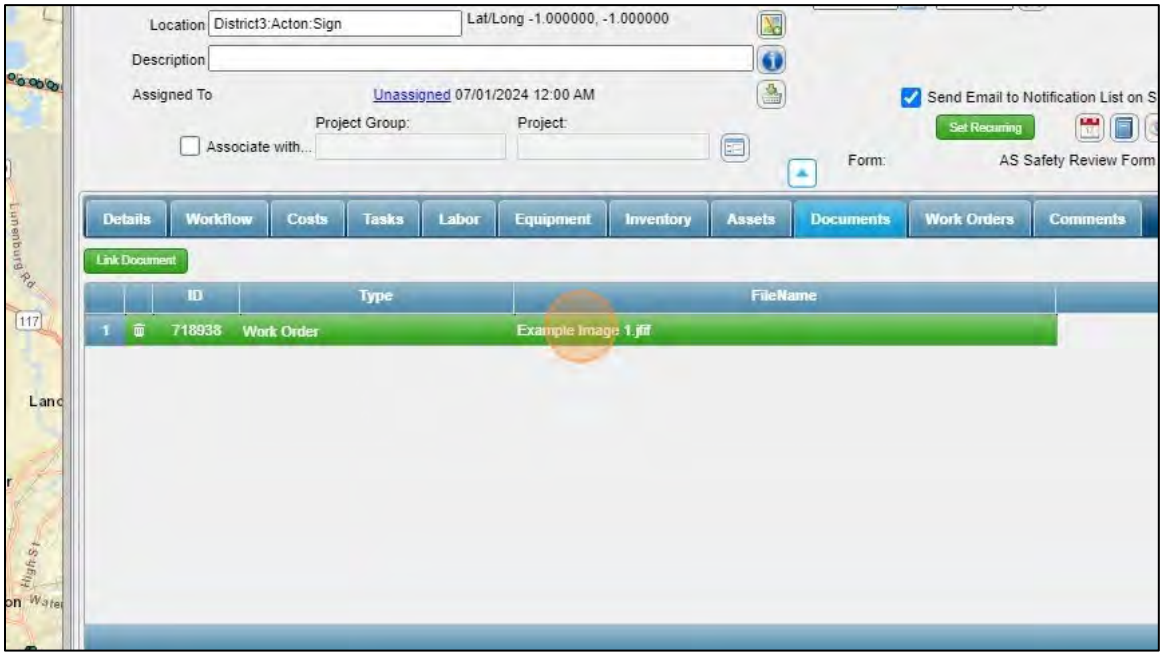


(7) Click Close

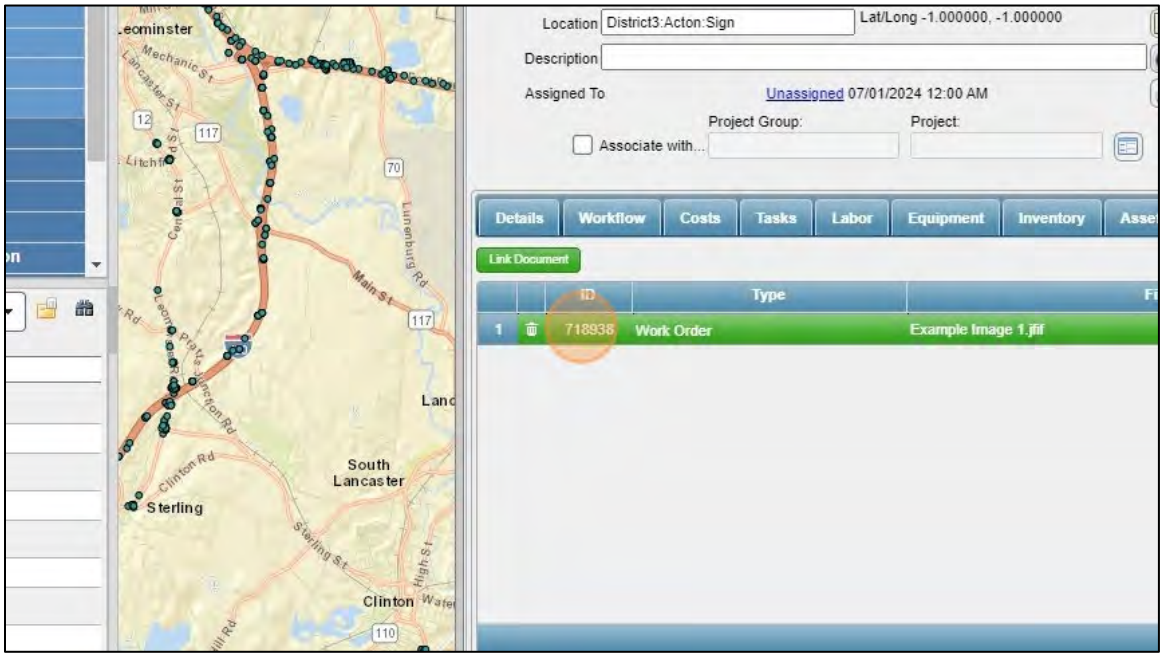


Viewing Uploaded File

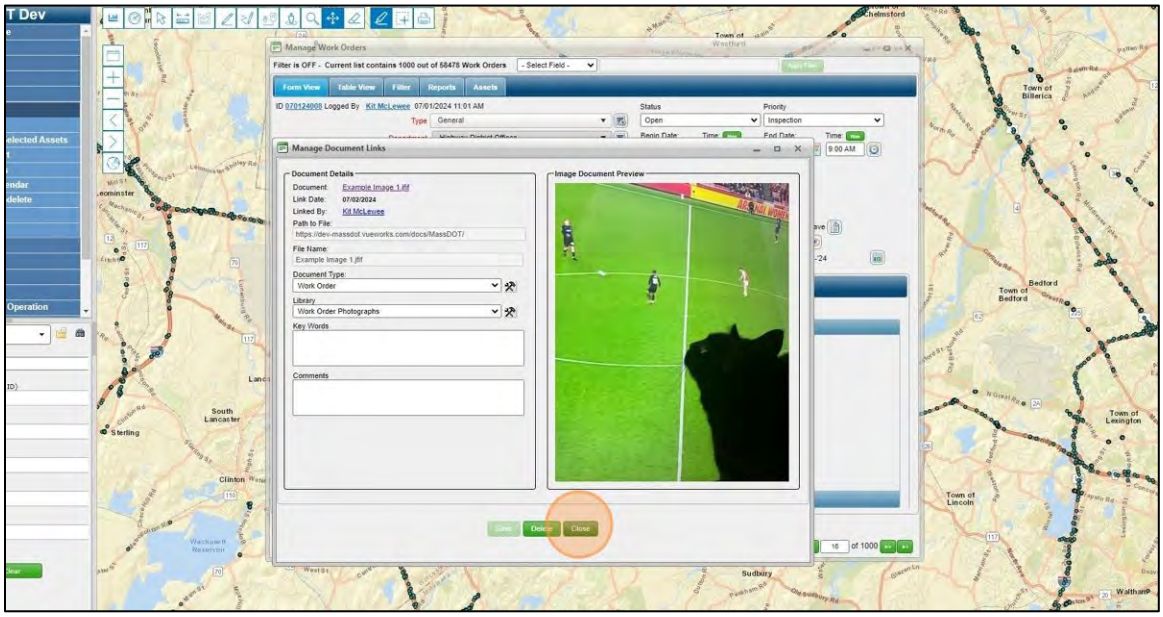
(8) To view file, click the Filename. Word documents will download for viewing, the other file types (.jpg, .png, .jfif, .pdf) will open in a new tab.



(9) Click ID number to see details and a preview



(10) Click Close to exit details window



Deleting an Uploaded File

⚠ You do not have permission to delete files. Email VUEWorks support@dot.state.ma.us if you need a file removed.

Appendix - B: VUEWorks for Ancillary Structures (AS)

This guide provides step-by-step instructions on how to view and search for specific ancillary structures (AS) on map.

Viewing AS Layer **B-2**

Creating, ... **B-10**

AS Safety Review Workflow Steps (Creating AS WO **B-16**

CREATING AS WORK ORDER (NO SAFETY REVIEW **B-26**

Closing AS Work Order **B-31**

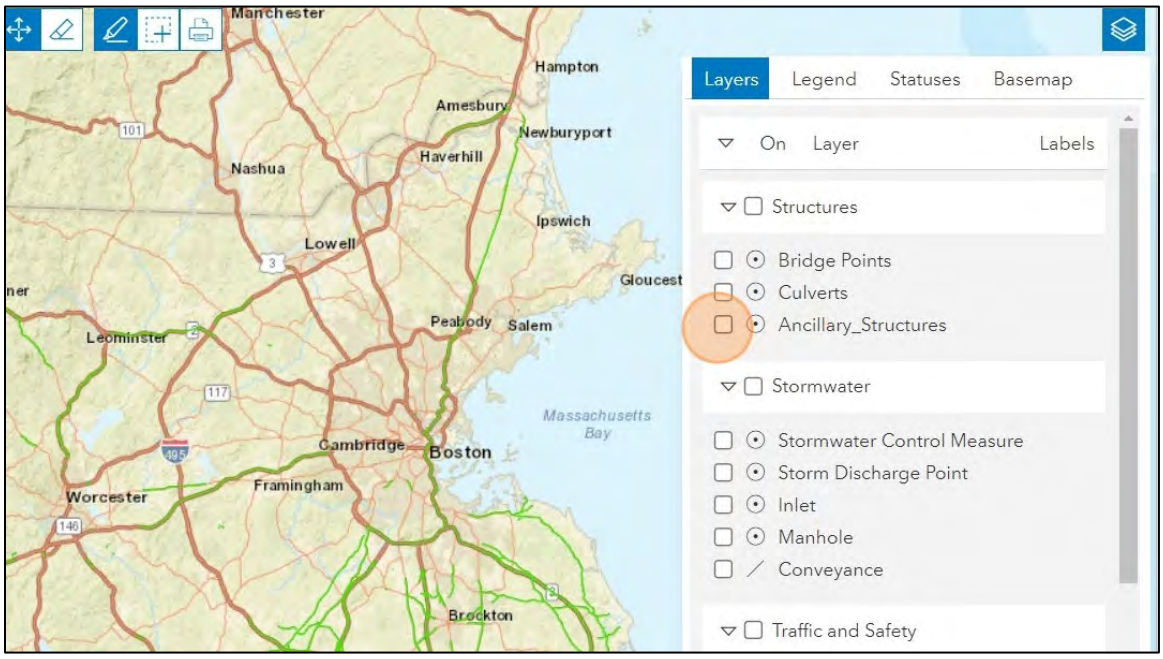
1 VIEWING AS LAYER AND SEARCHING FOR SPECIFIC AS

VIEWING AS LAYER

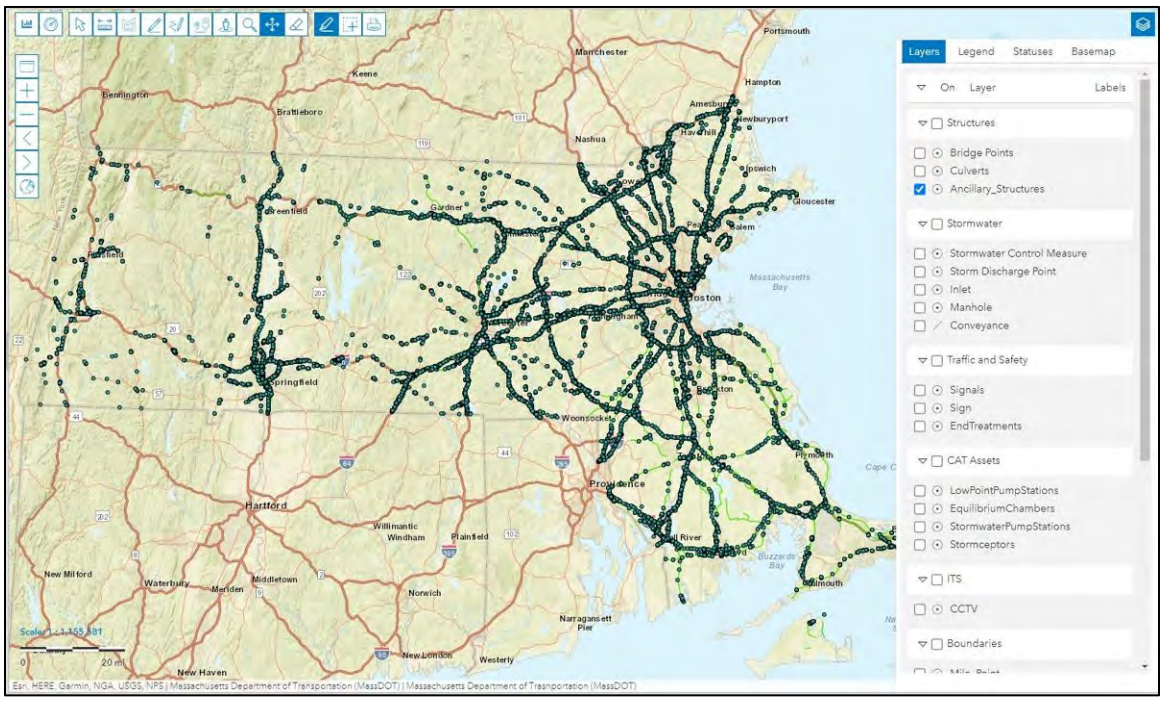
(1) Open "Layers" icon.



(2) Click the "Ancillary Structures" field.

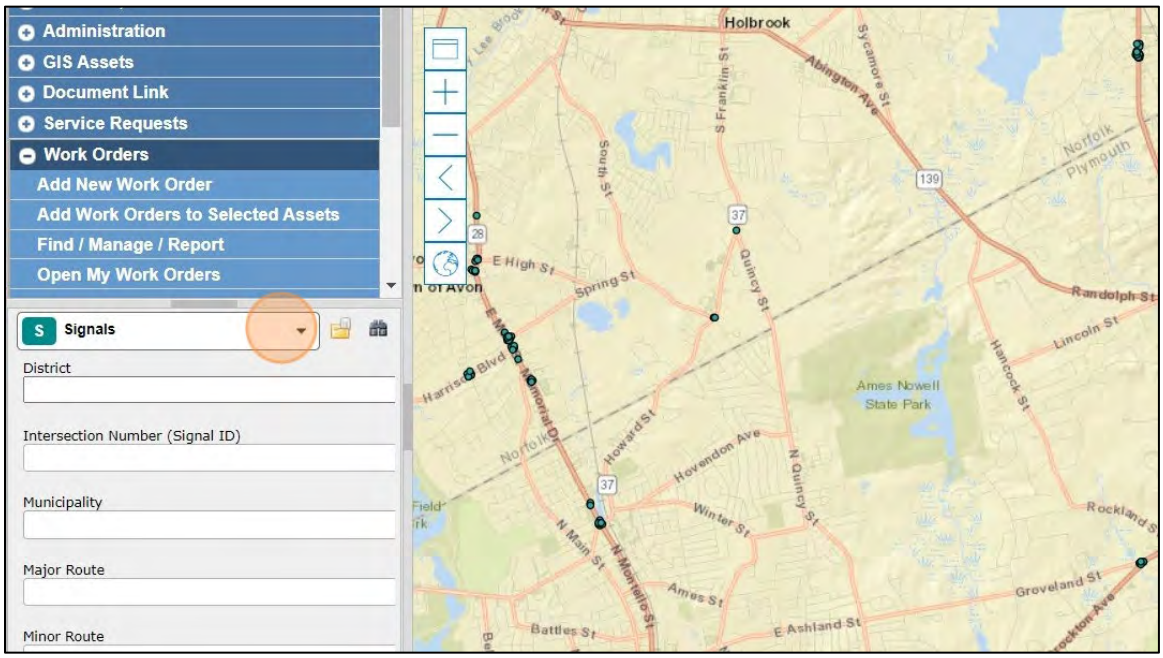


(3) AS layer will turn on

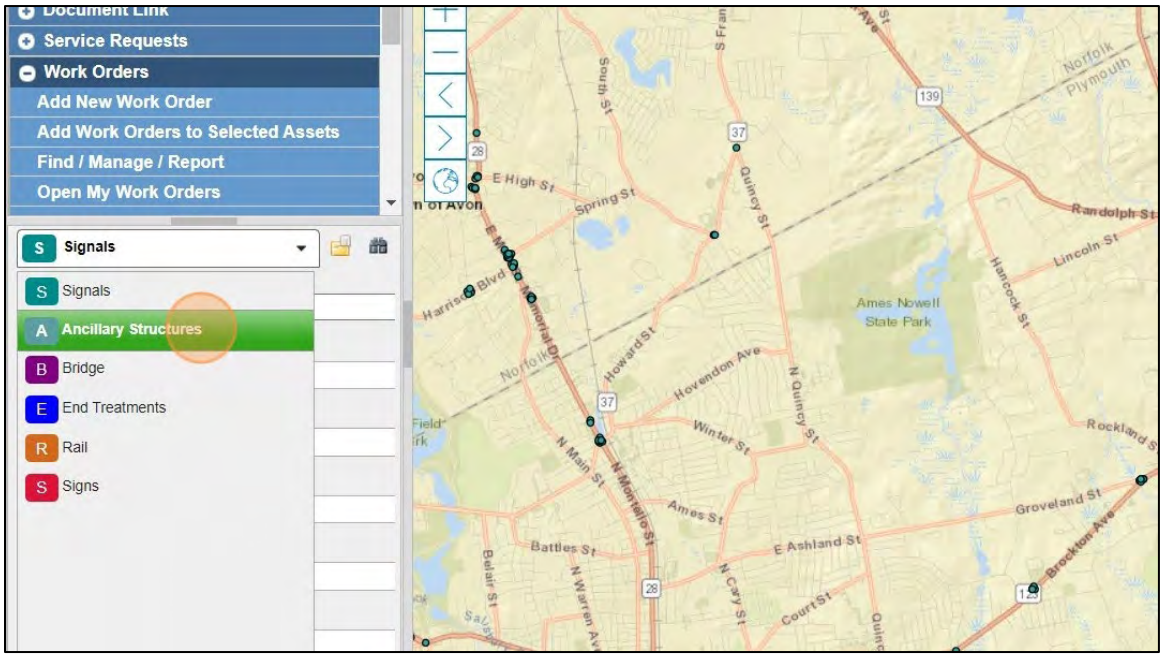


SEARCHING FOR AS - STRUCTURE NUMBER

(4) In the bottom left search box, click the search drop down.

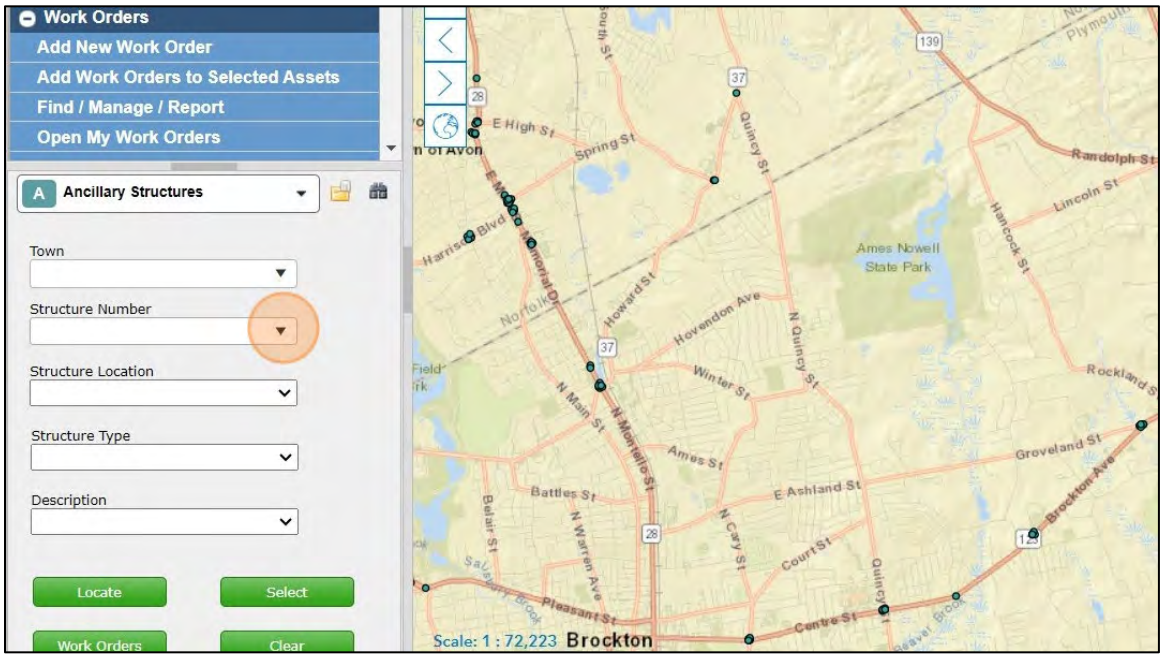


(5) Click "Ancillary Structures"

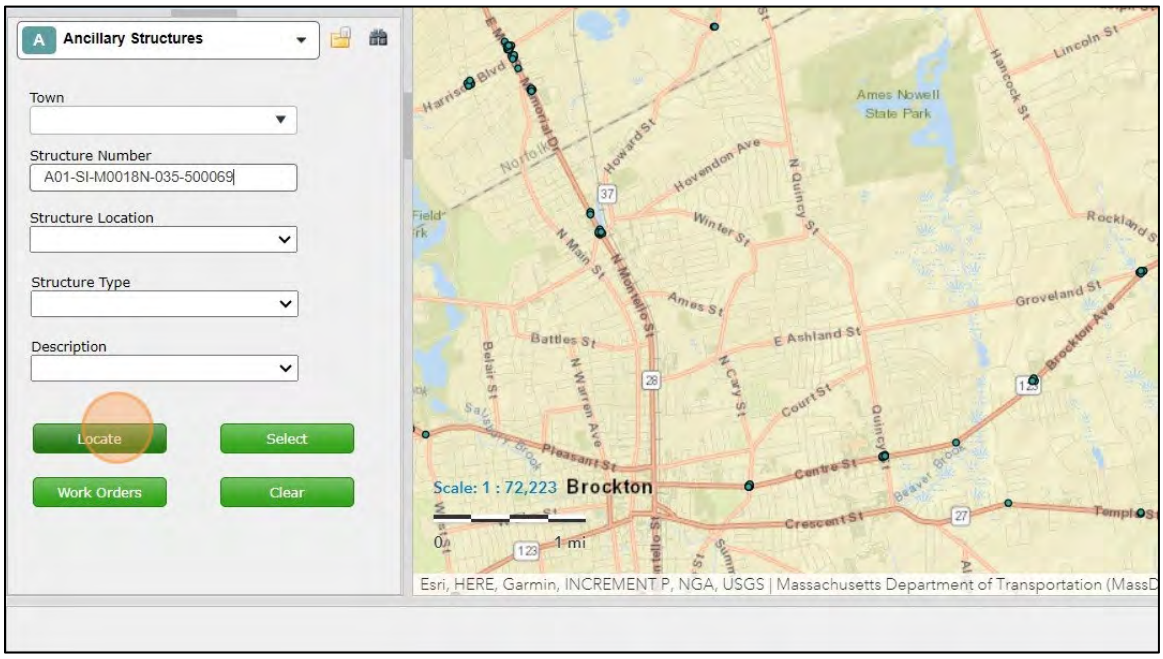


The assets in the search drop down may not match exactly to the screenshot. Please email vueworkssupport@dot.state.ma.us if you do not have the asset you need.

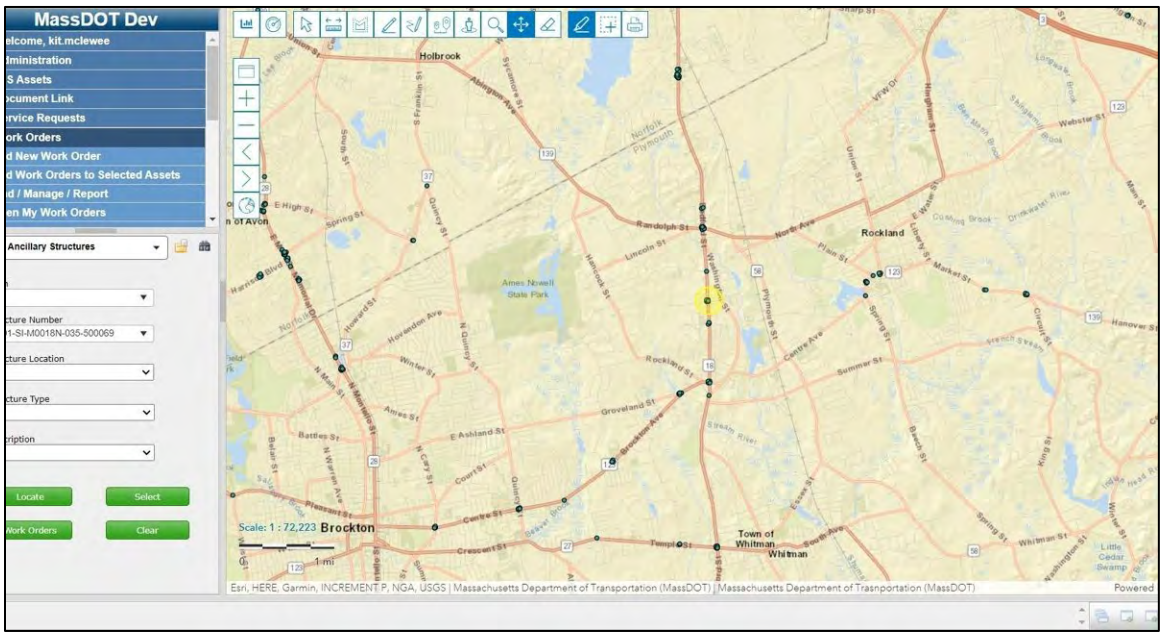
(6) Select Structure Number from drop down or type in



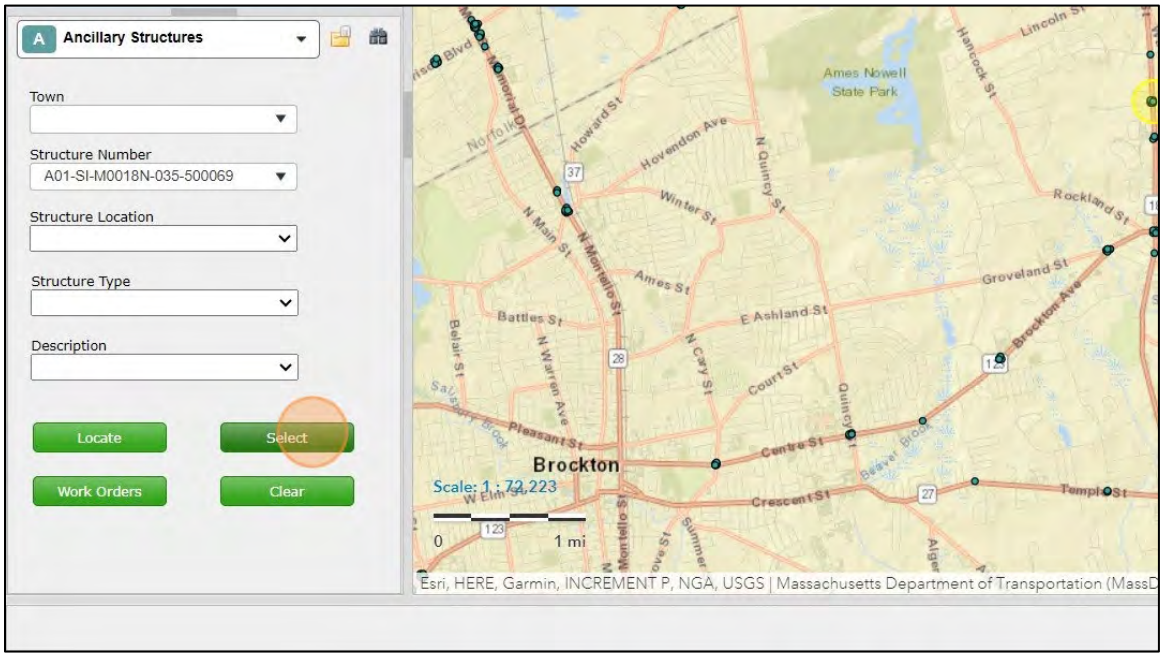
(7) Click "Locate"



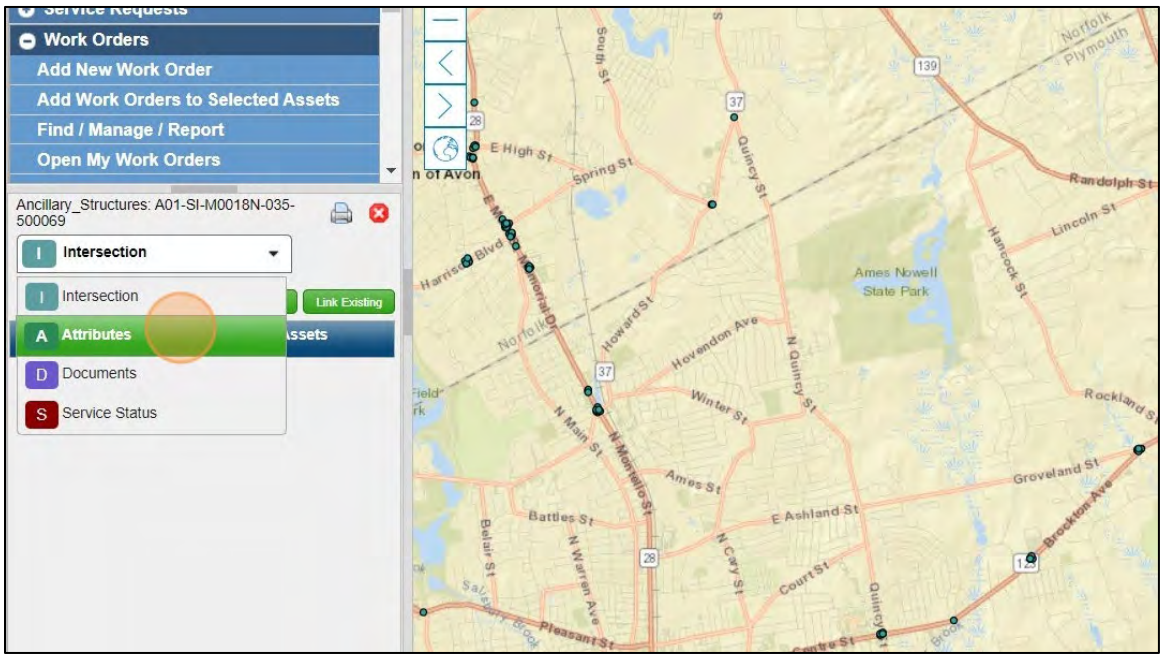
(8) Asset will be highlighted in yellow on map.



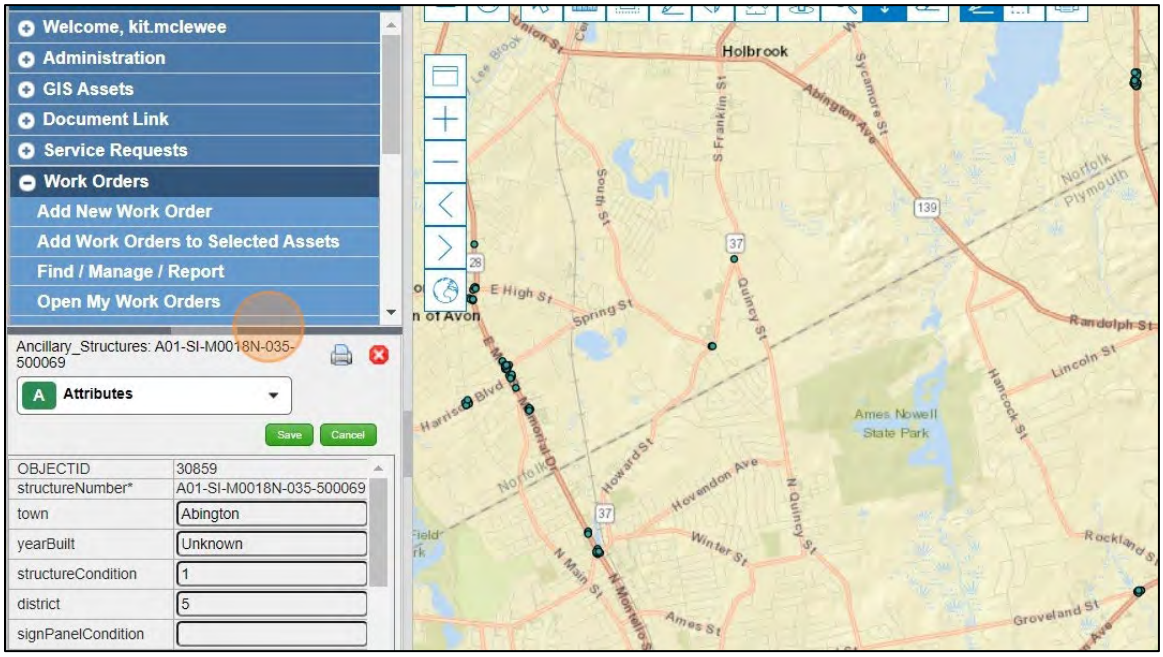
(9) To see attribute data, click "Select".



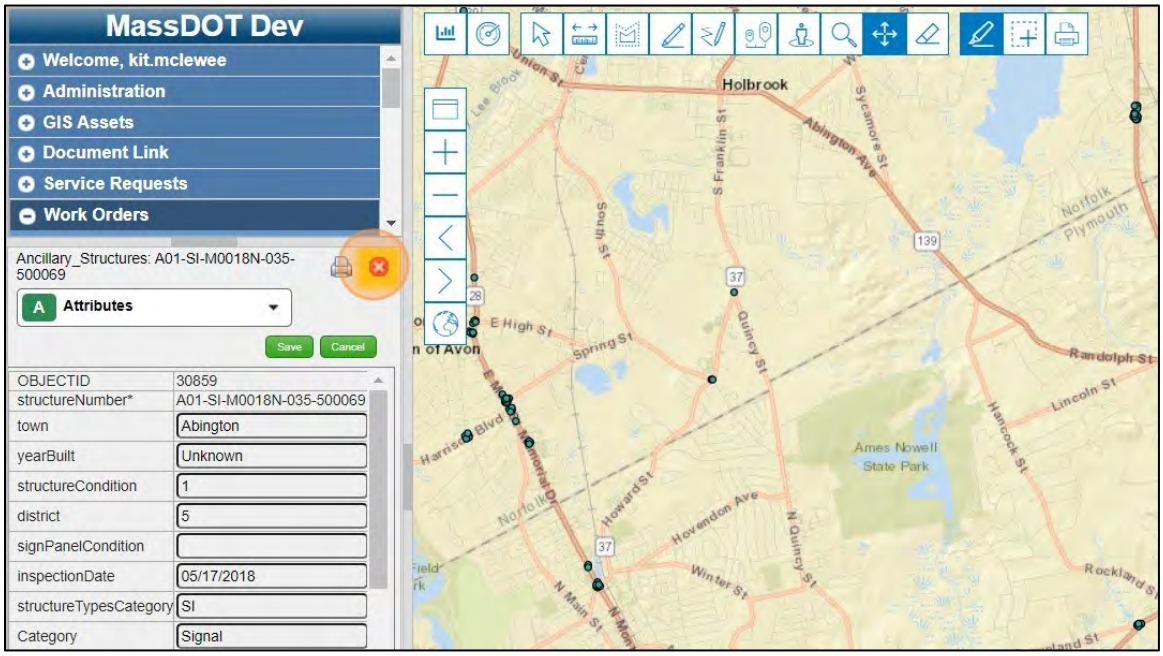
(10) Click drop down and chose "Attributes"



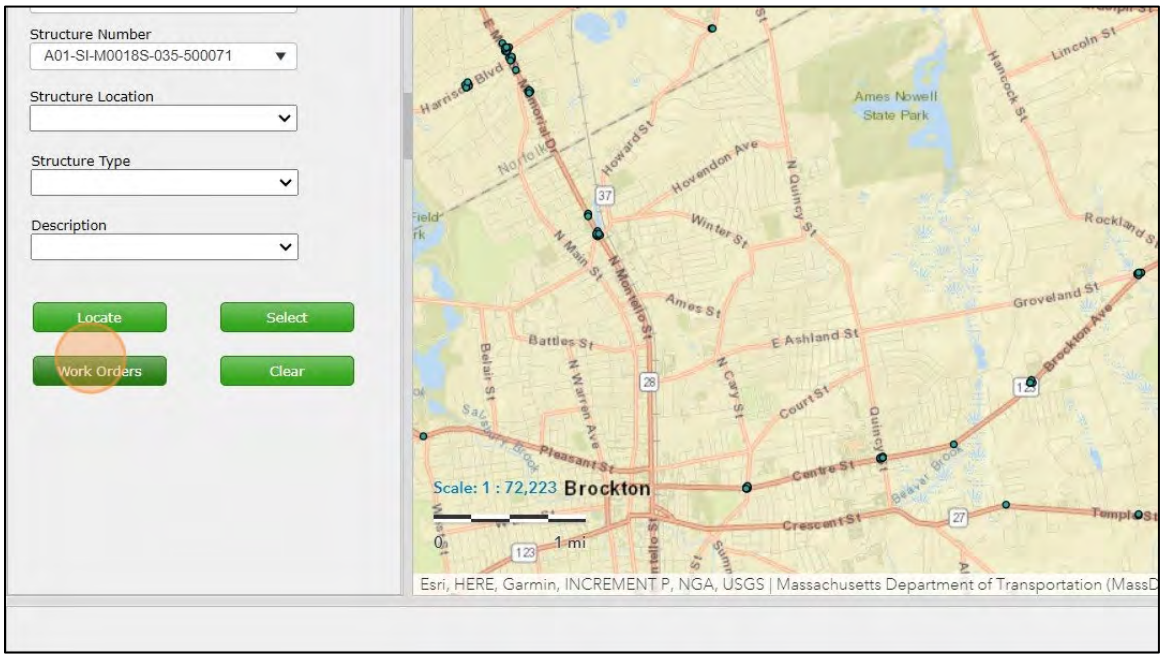
(11) To view more of the attributes window, click the grey bar and drag up to see more rows at a time or scroll down.



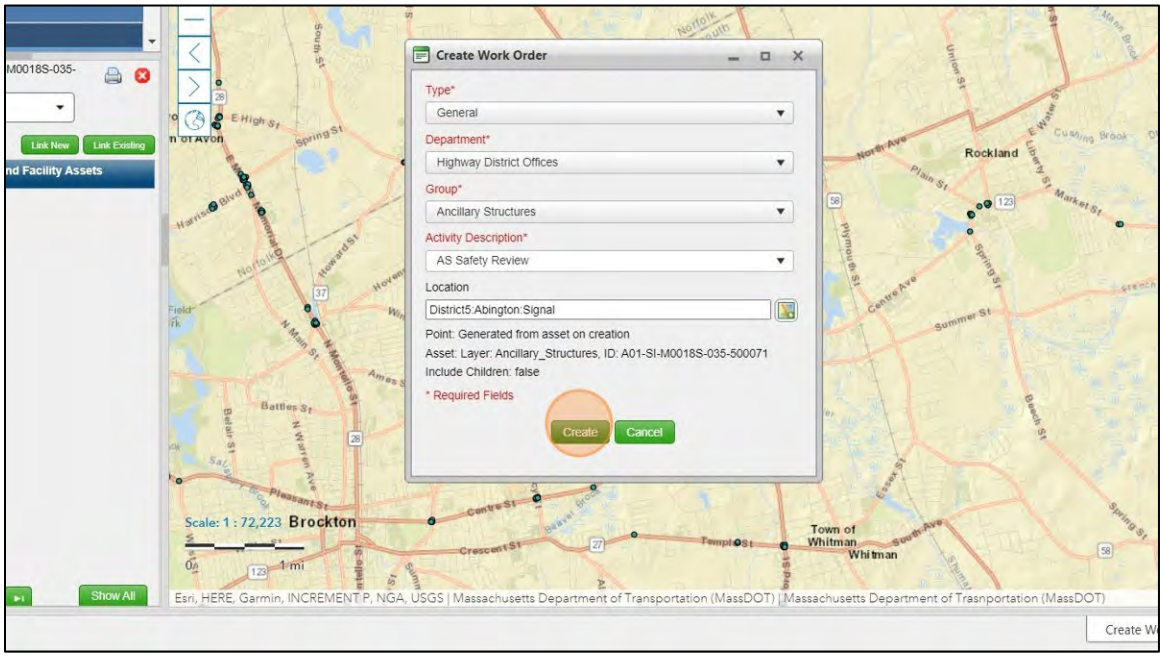
(12) Click the red x to exit attributes window



(13) To add ancillary structure to a new work order, click "Work Orders"



(14) Change Type, Department, Group, or Activity Description if needed. Then click "Create".



2 CREATING, ASSIGNING, AND SAVING AS SAFETY REVIEW

This guide provides step-by-step instructions on how to create, assign, and save an AS Safety Review. It includes details on selecting the asset, how the auto-assignment works, and completing the necessary fields to save the review. Following this guide will ensure a smooth and efficient process for managing safety reviews.

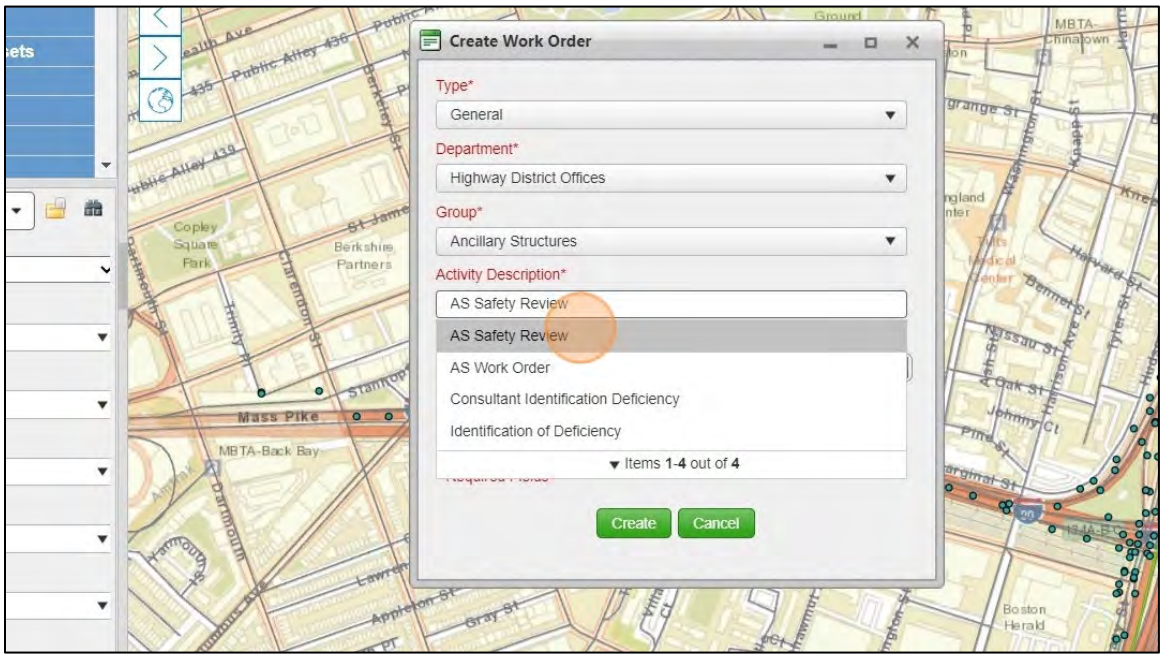
FIND ASSET AND CREATE SAFETY REVIEW

⚠ This tutorial adds an AS to a safety review by searching on the map. If you want to add an AS to a safety review by searching the structure number, go to Viewing AS Layer and Searching for Specific AS tutorial

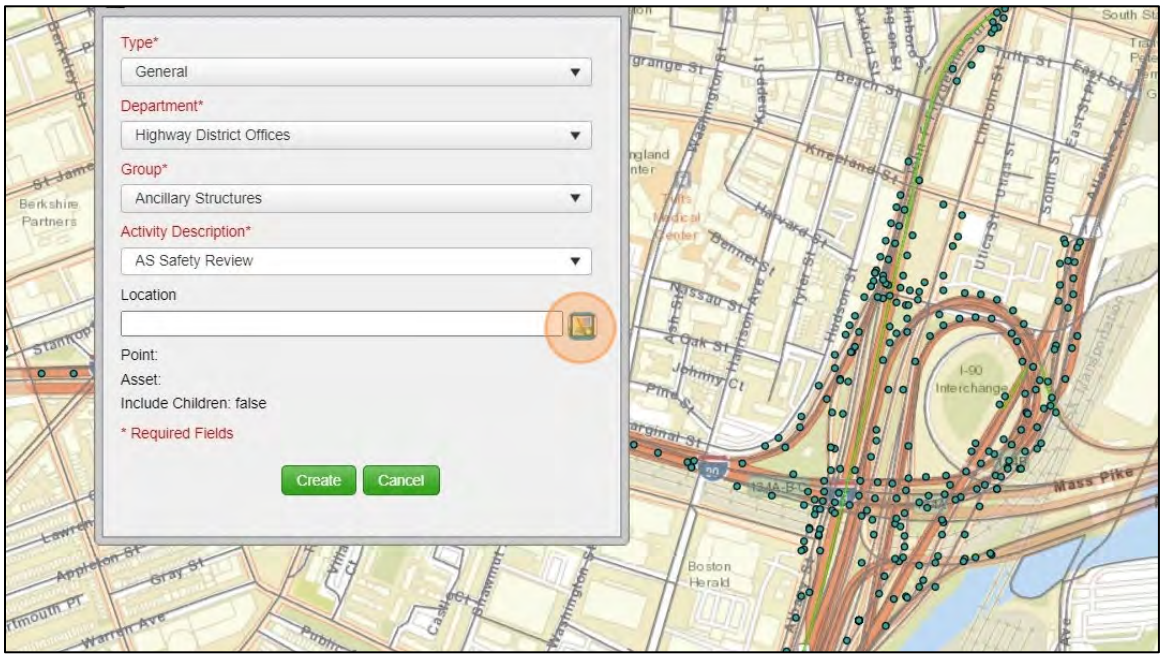
(1) Click "Add New Work Order"



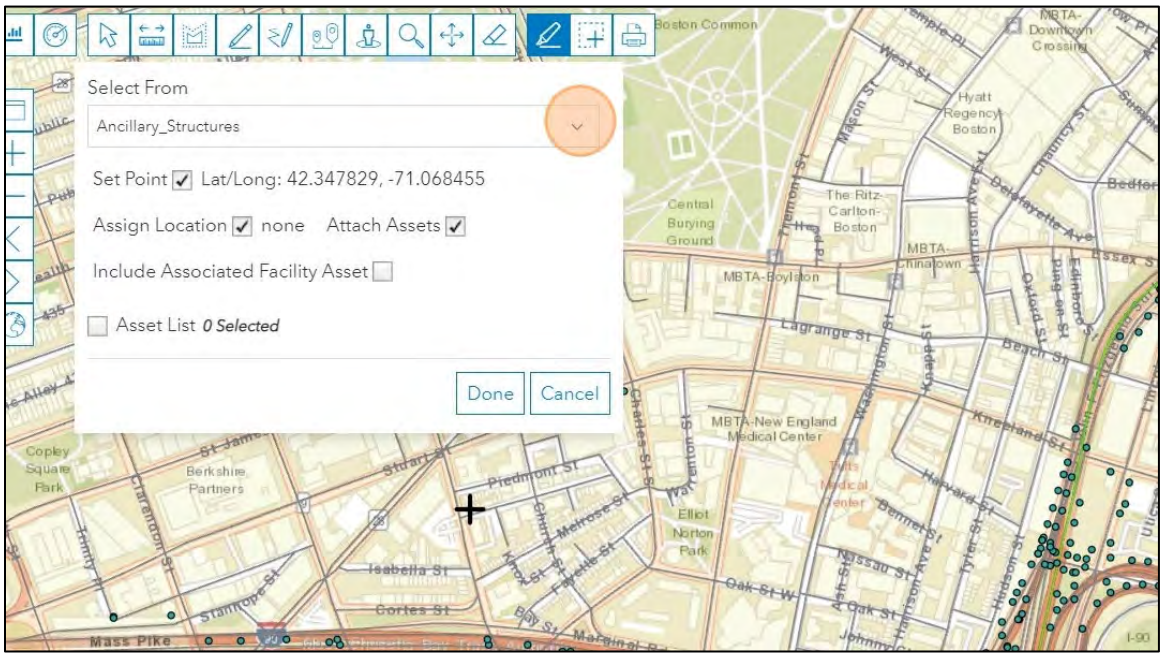
(2) Change "Activity Description" to *AS Safety Review* if needed



(3) Click Location icon to select asset.

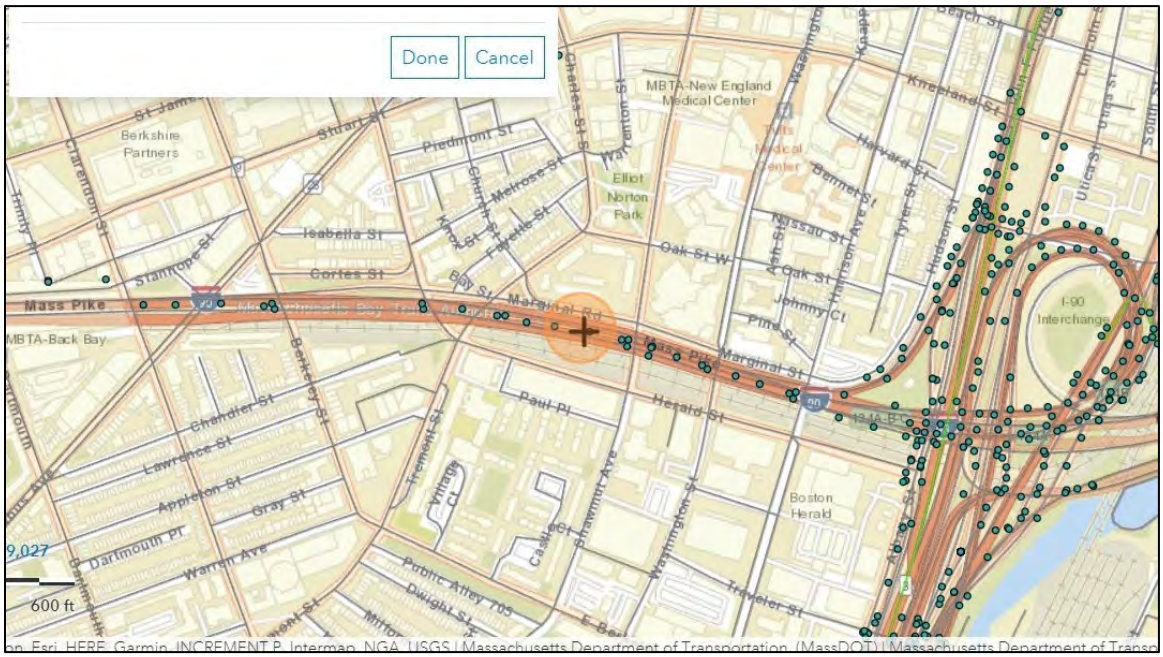


(4) Change this dropdown to Ancillary_Structures if needed

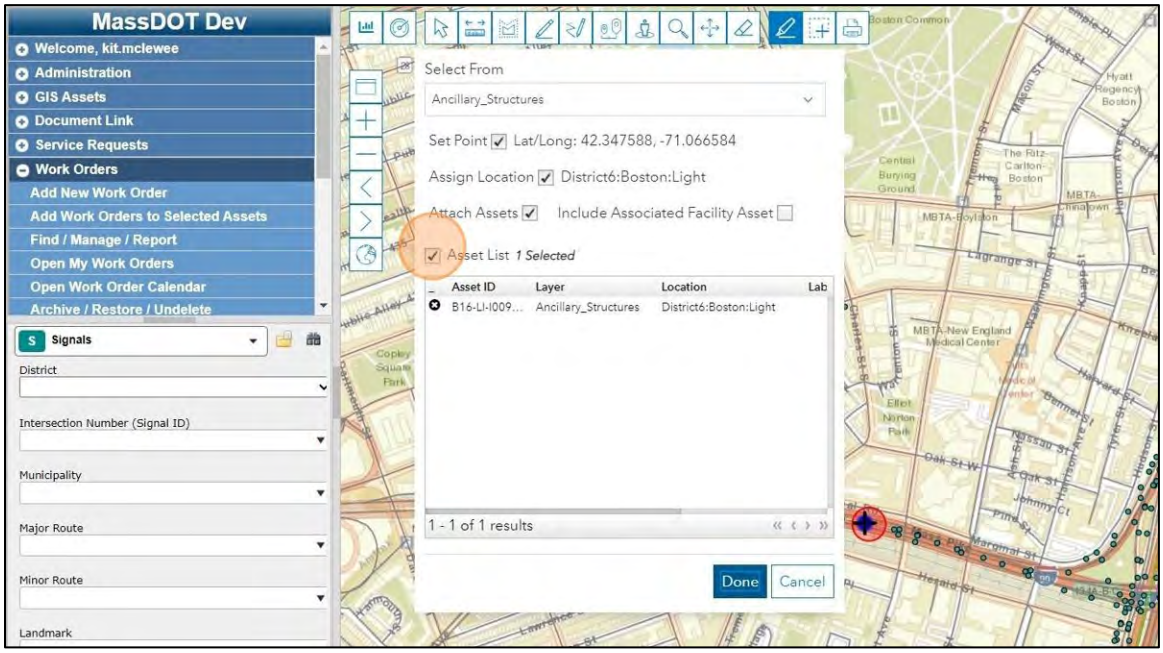


⚠ If the layer isn't in the drop down, make sure layer is turned on

(5) Choose asset

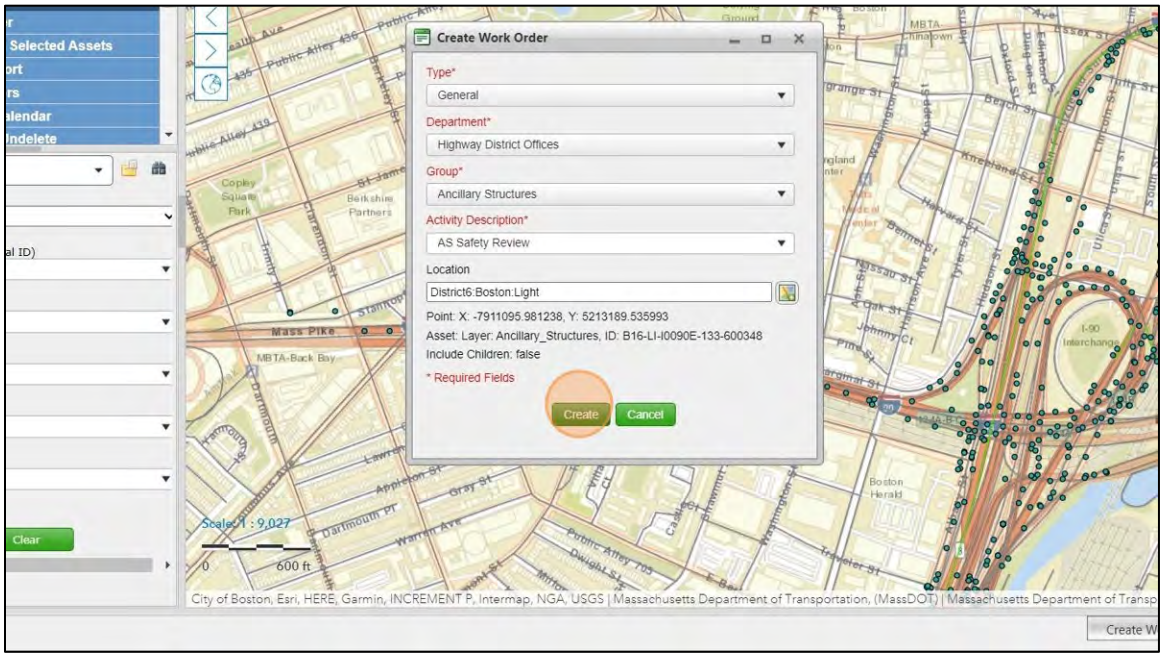


(6) Check "Asset List" to expand Asset information. Click x next to the asset to remove from list. After confirming correct asset, click done.



Note "Location" field auto-populates with *District: Town: AS Category*

(7) Click "Create"

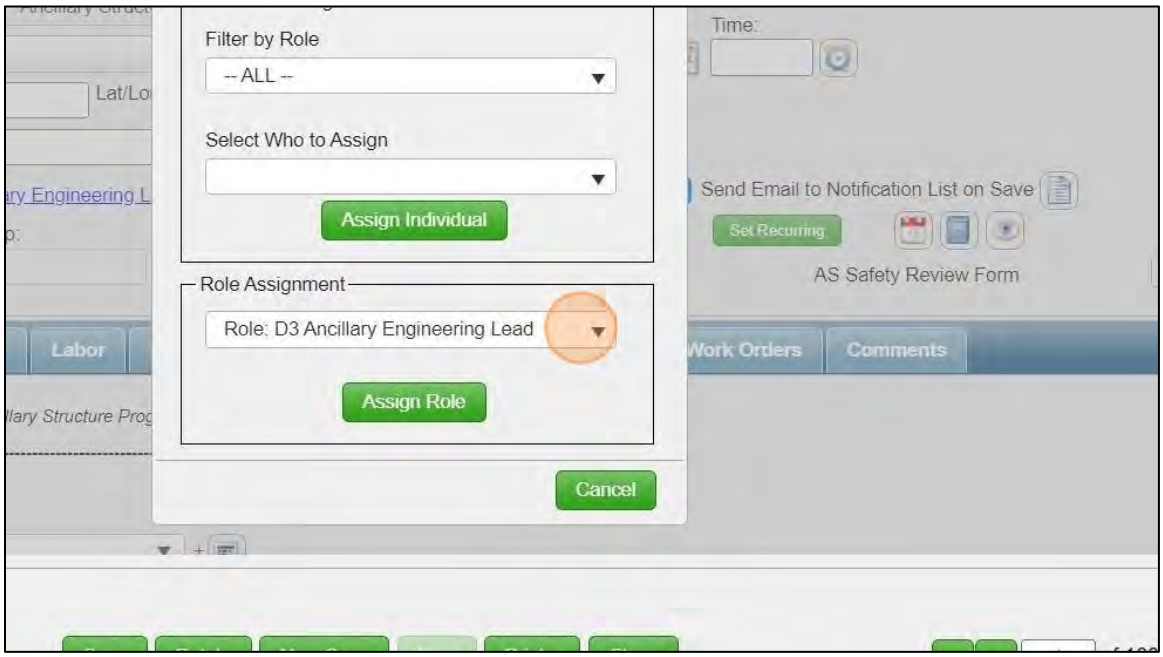


ASSIGNING

(8) Safety review is auto-assigned to the District Ancillary Engineering Lead based on the "District Assignment" under Details tab. If you need to change the assignment, click the Change Assignment icon.



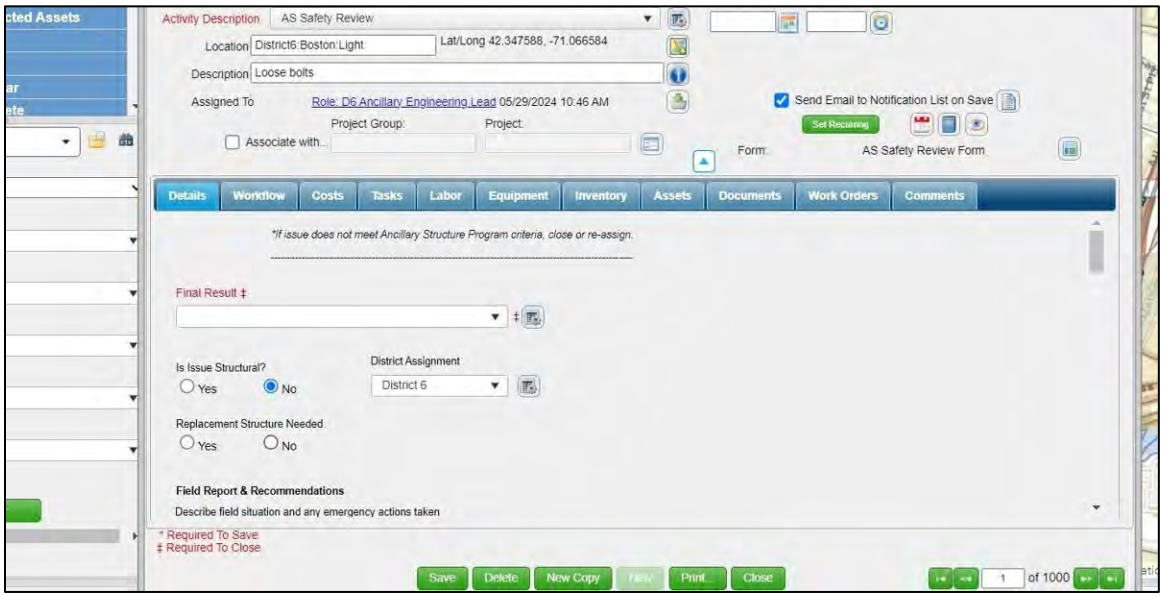
(9) You can change assignment to an individual or role



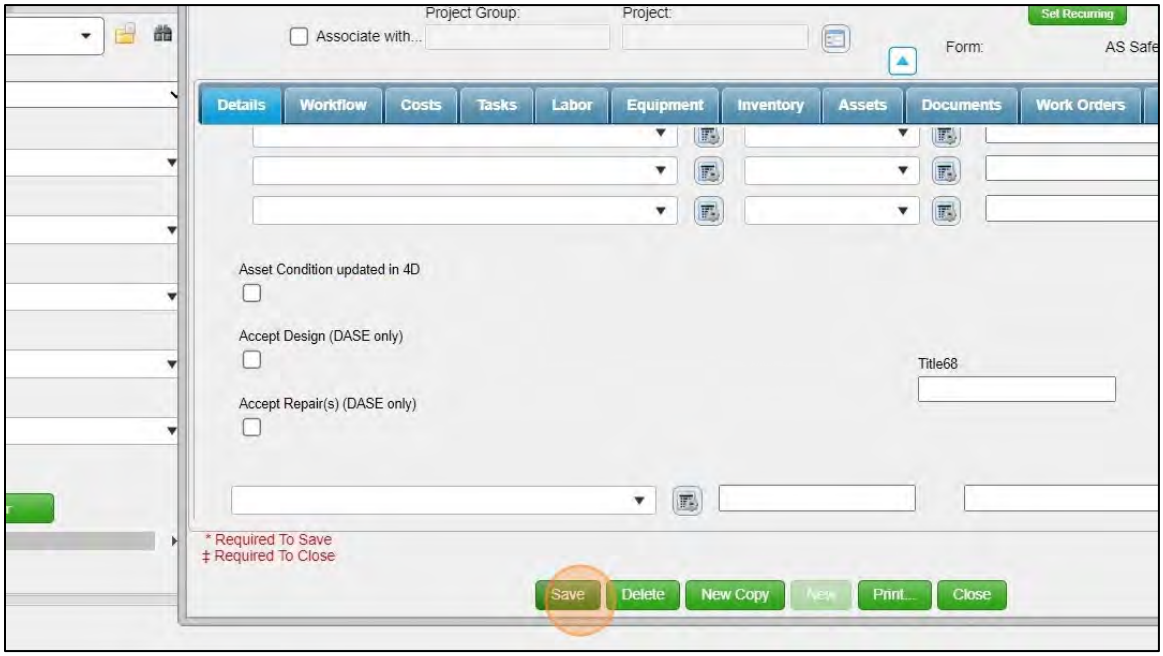
⚠ You can only assign to one role OR one individual.

SAVING

(10) Note fields in red are either required to save or to close, specified by the legend in the bottom left corner of the form.



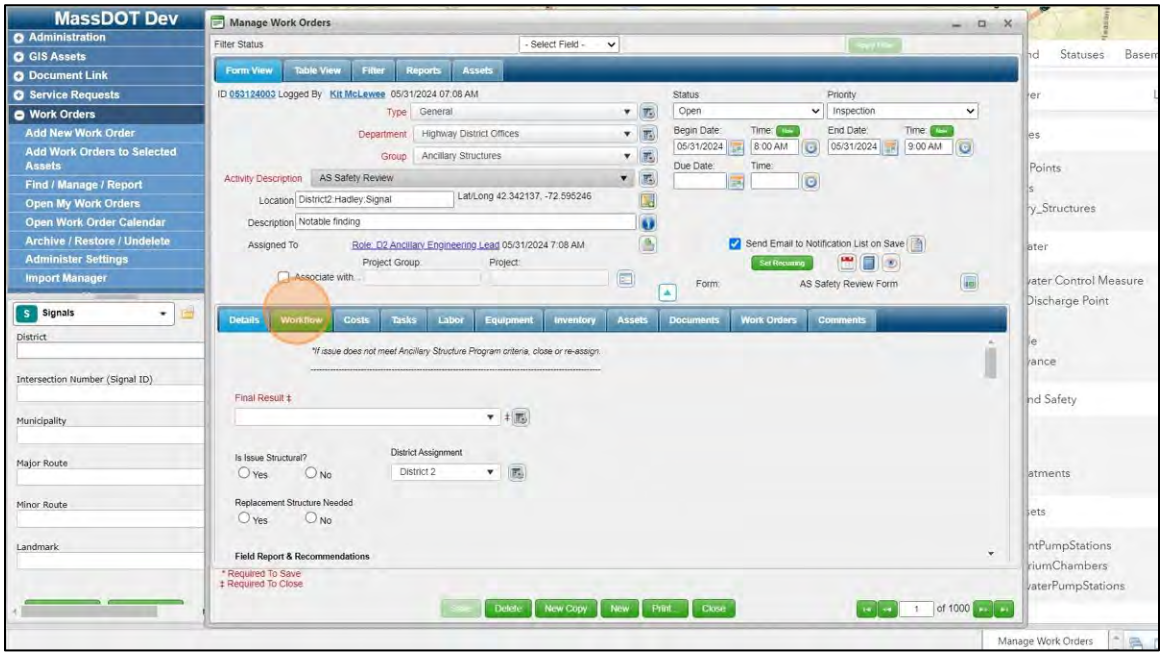
(11) Click "Save"



3 AS SAFETY REVIEW WORKFLOW STEPS (CREATING AS WO)

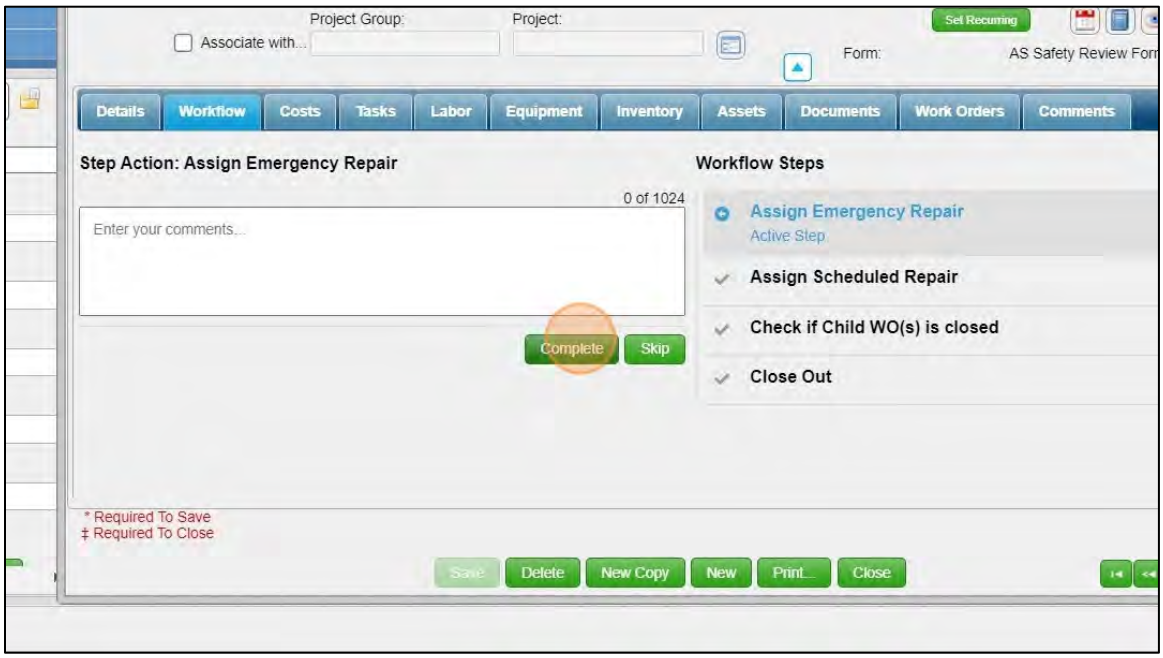
This guide provides the steps for creating and managing child work orders linked to a parent safety review for ancillary structures. It explains how to create and assign emergency and scheduled work orders, check their status, and close the safety review. Following this guide will ensure a systematic and efficient approach to AS safety reviews and work order management.

(12) Open AS Safety Review. Click "Workflow" tab next to details.



⚠ Creating Emergency WO

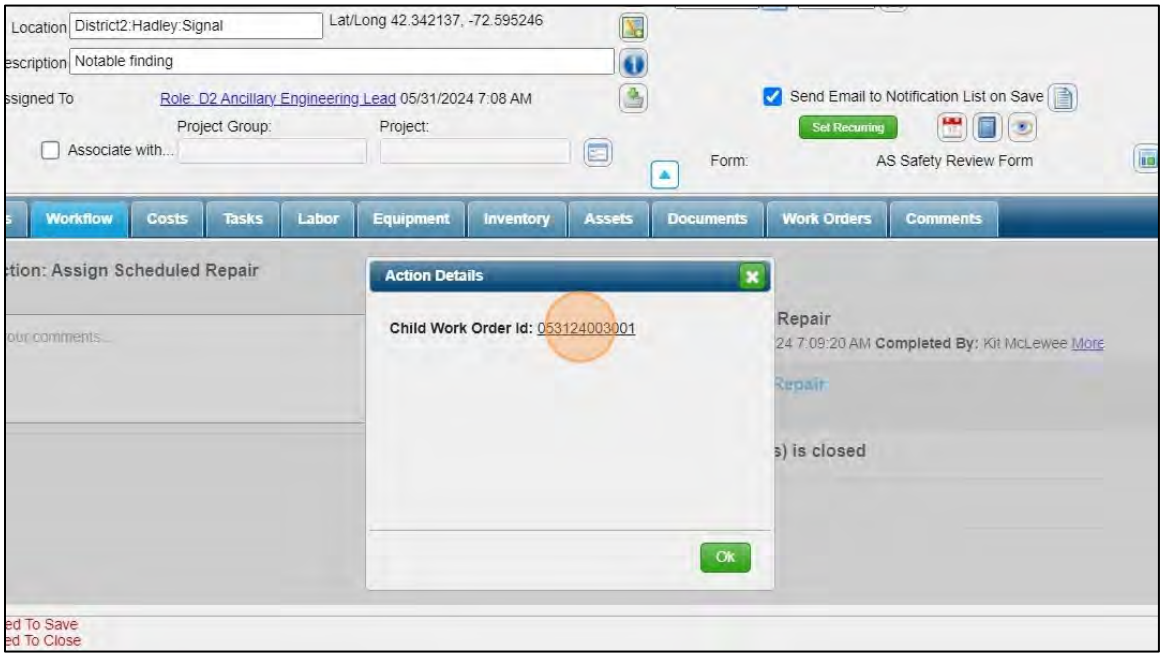
(13) If Safety Review warrants an emergency work order, click "Complete"



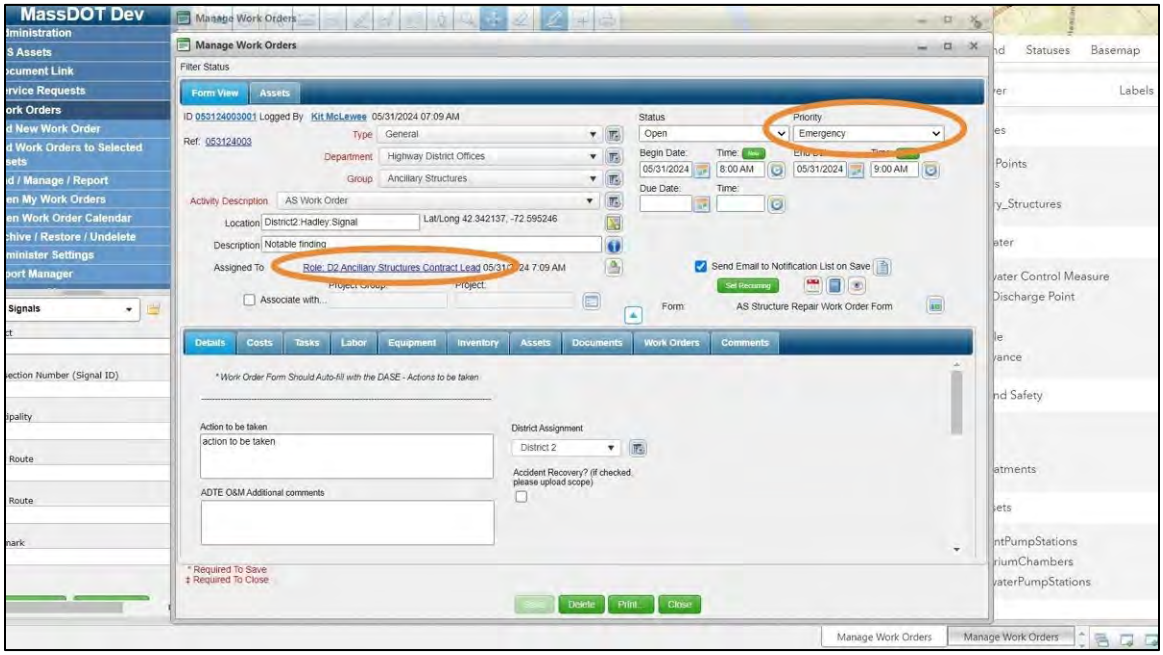
(14) Click "More" to open



(15) Click link to open child AS work order

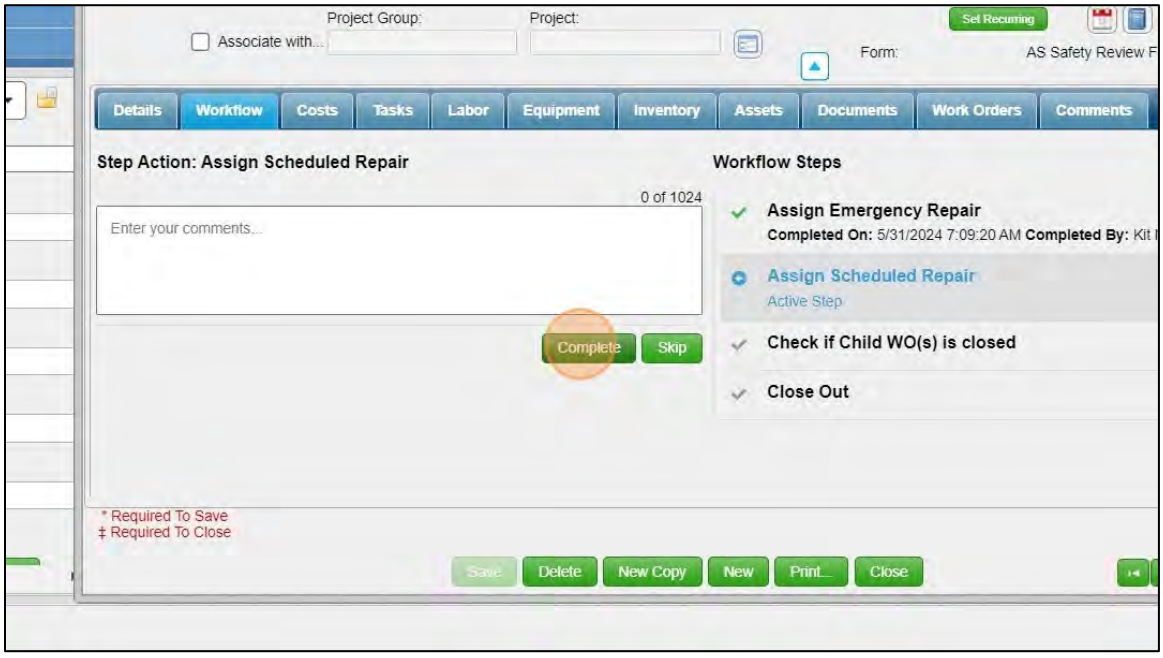


(16) Work order is auto-assigned to the District Ancillary Structures Contract Lead. Priority is set as *Emergency*.

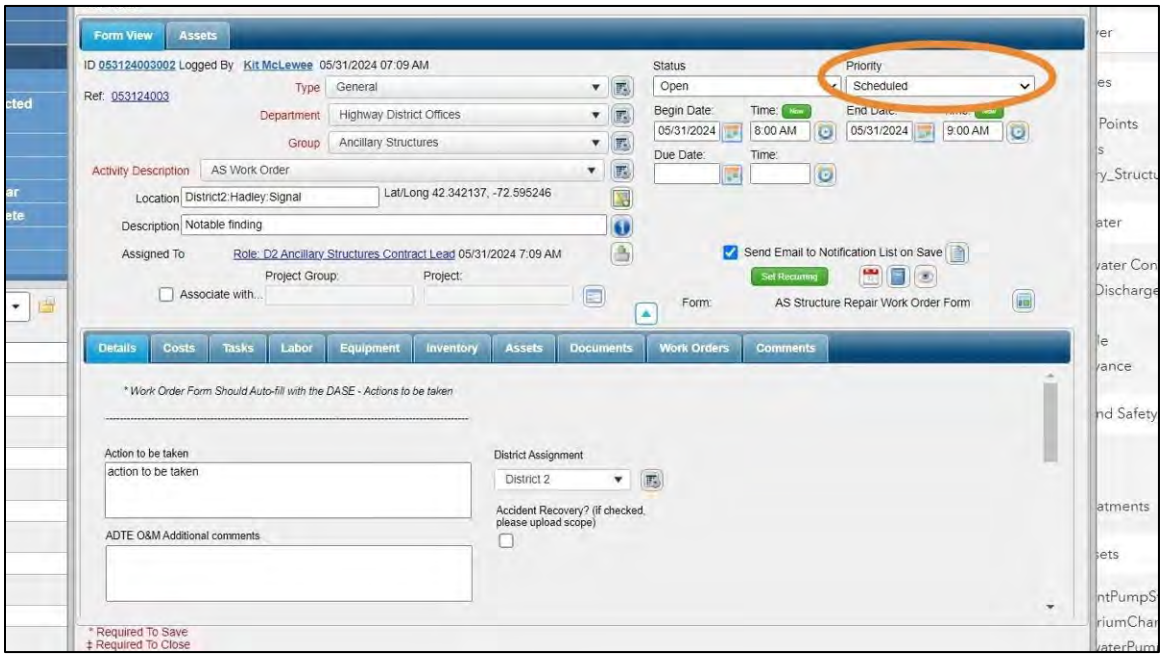


CREATING SCHEDULED WO

(17) "Assign Scheduled Repair" creates a child work order with "Scheduled" status. Click "Complete".



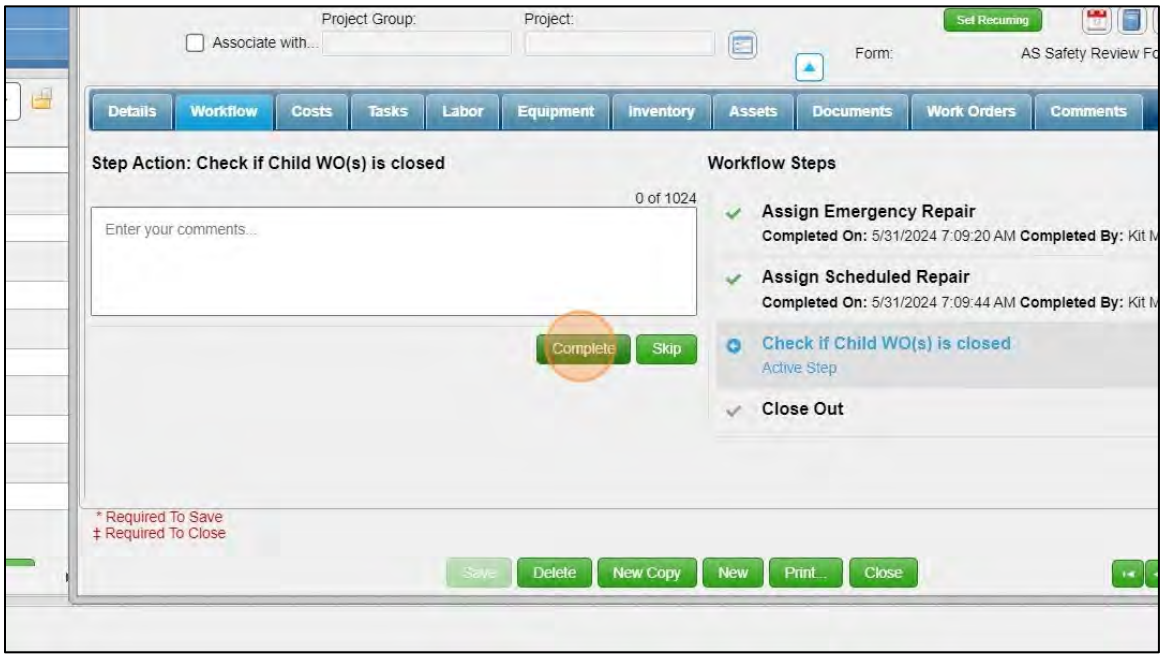
(18) The child AS work order has a "priority" of *Scheduled*



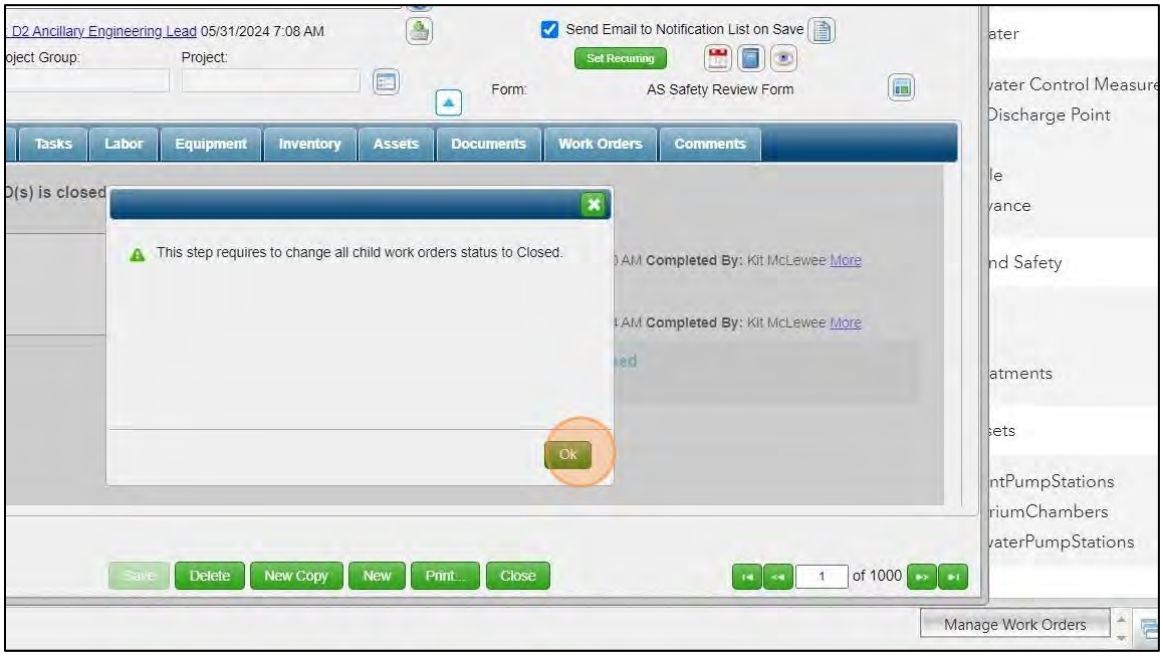
CHECK CHILD WO STATUS

⚠ Only Inspection Lead can complete this workflow step

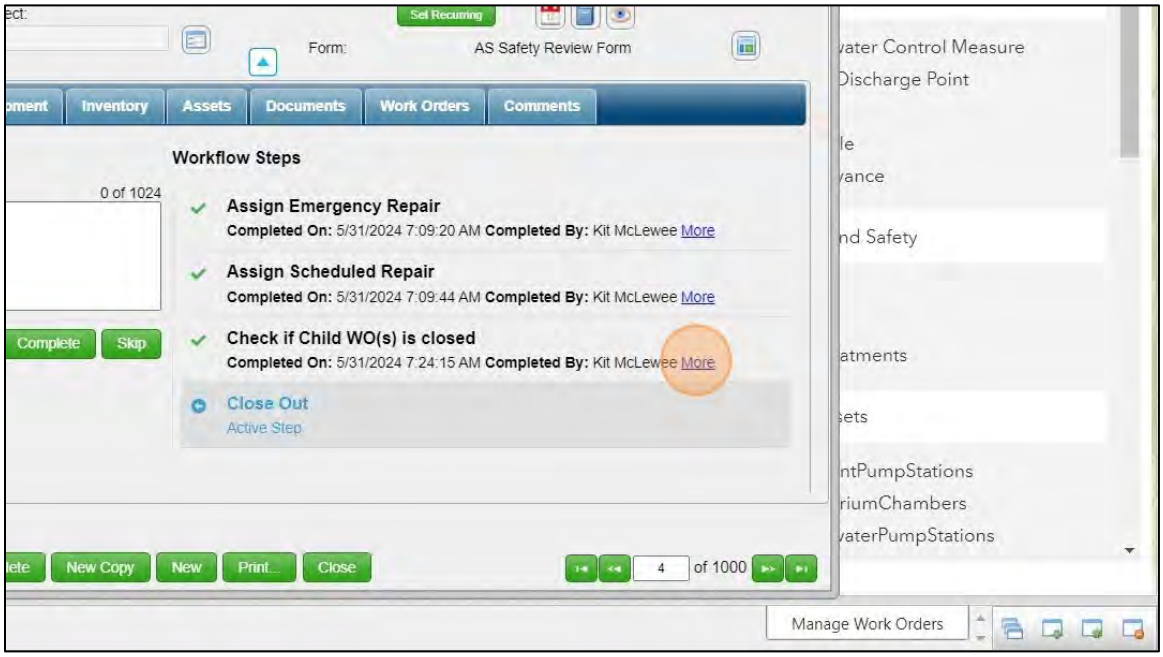
(19) "Check if Child WO(s) is closed" completes only if all child work orders to parent safety review have the status of *closed*. Click "Complete".



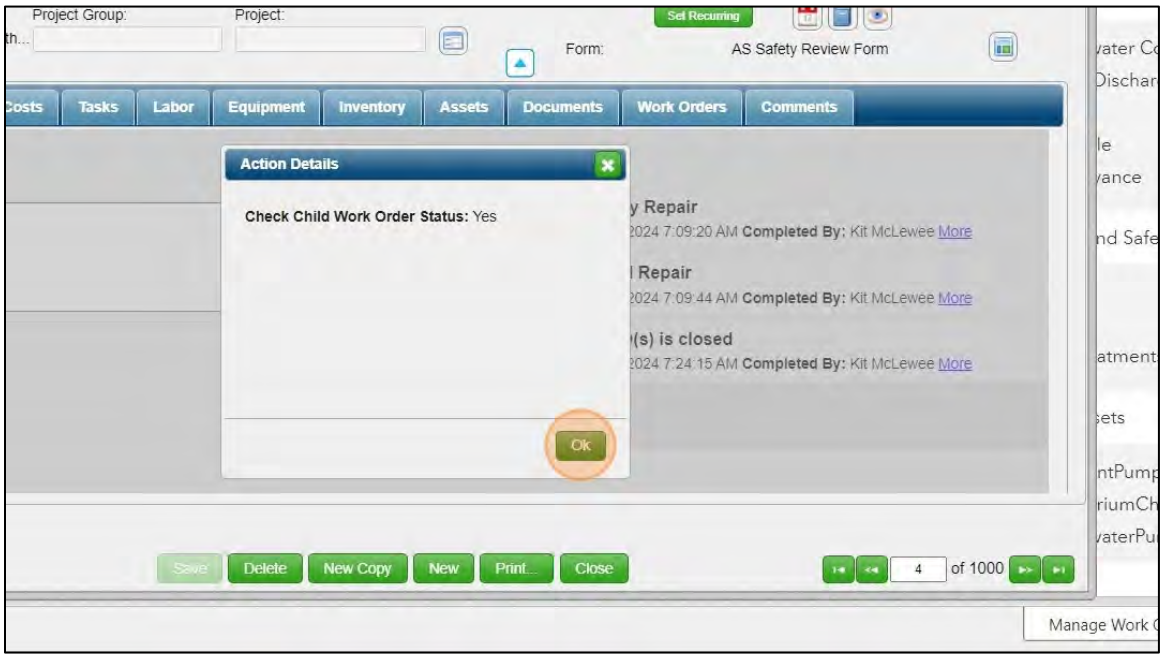
(20) If at least one child work order is not *closed*, this workflow step will not complete. Click "Ok" to exit popup window.



(21) If all child work orders are *closed*, this workflow step will complete. Click "More" for details.



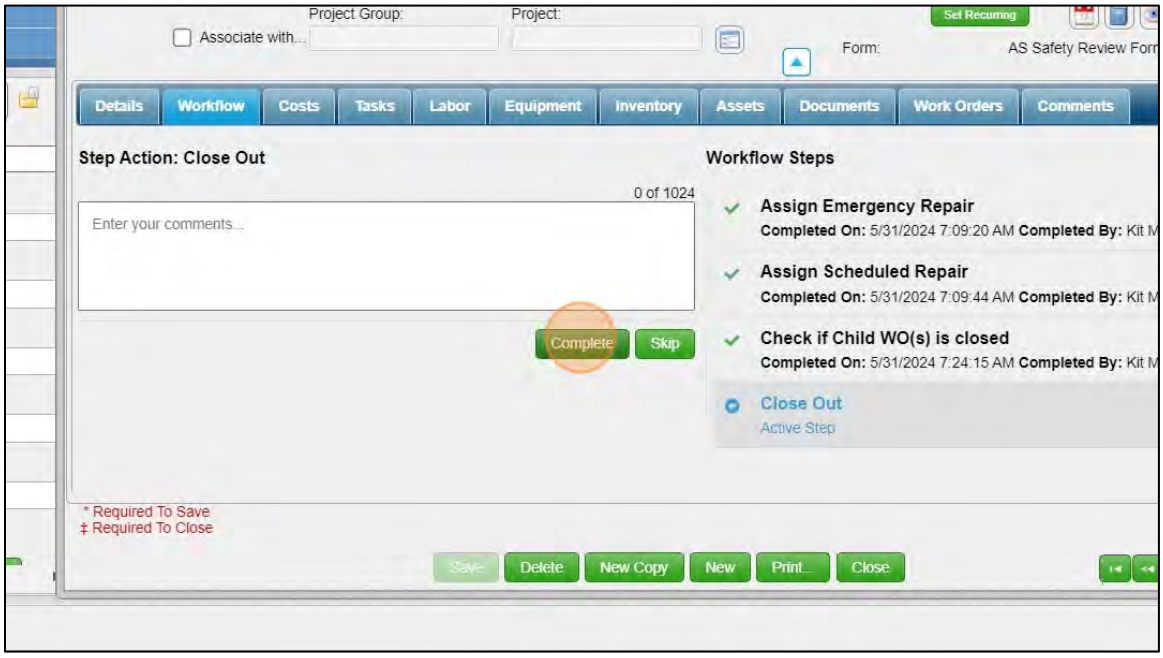
(22) To close Action Details window, click "Ok"



CLOSE OUT SAFETY REVIEW

Only Engineering Lead can complete this workflow step

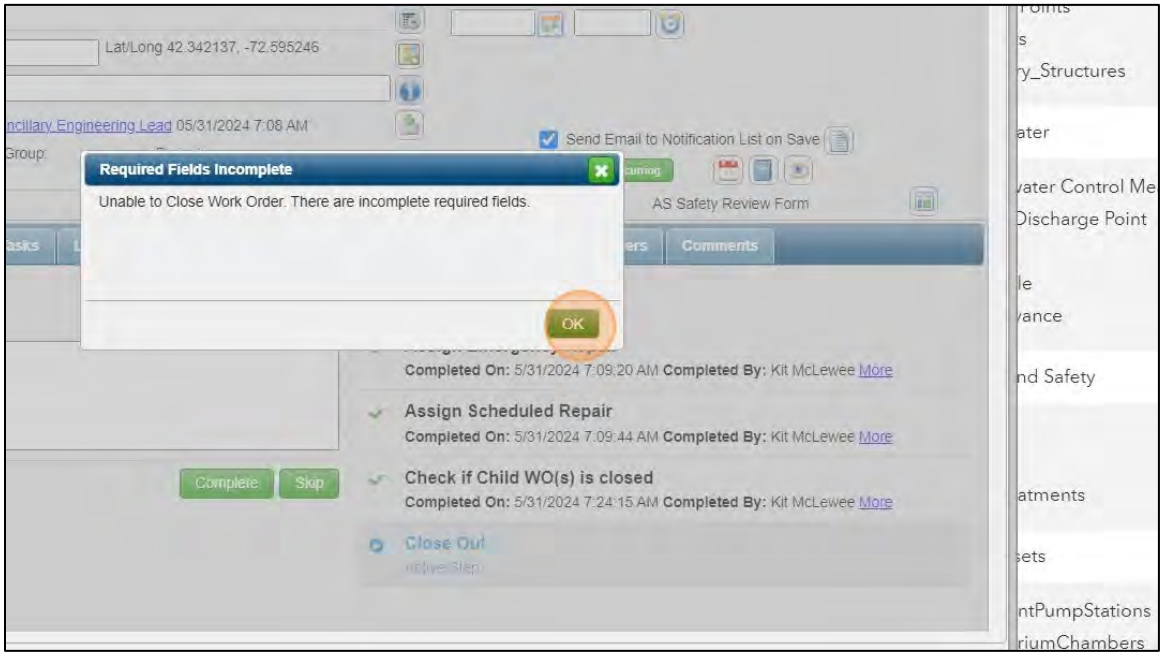
(23) The last workflow step changes the status of the safety review to *closed*. Make sure all fields required to close are filled out in the details tab. Click "Complete"



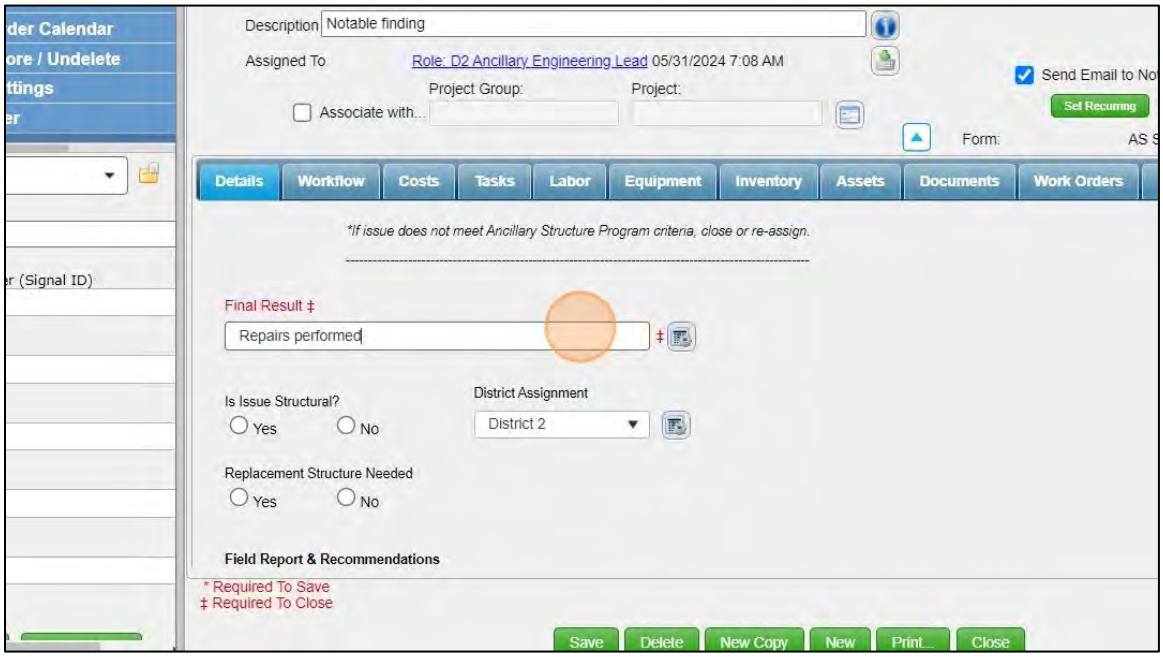
(24) "Status" will change to *Closed*.



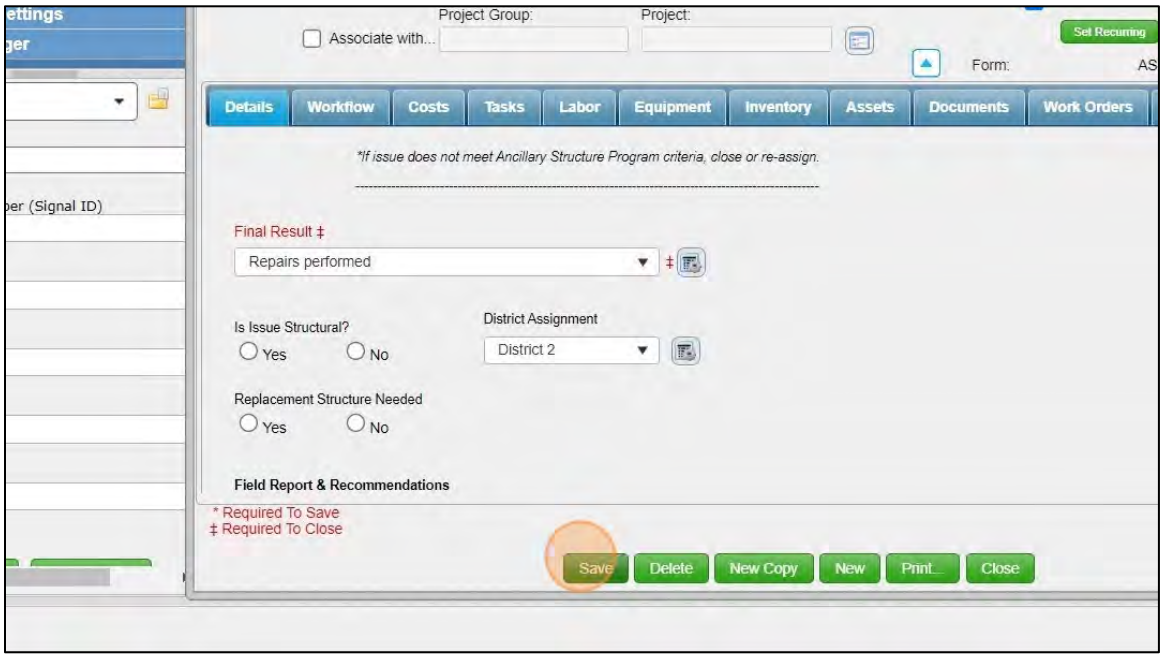
(25) If fields required to close are not filled out, workflow step will not complete. Click "Ok" to close popup.



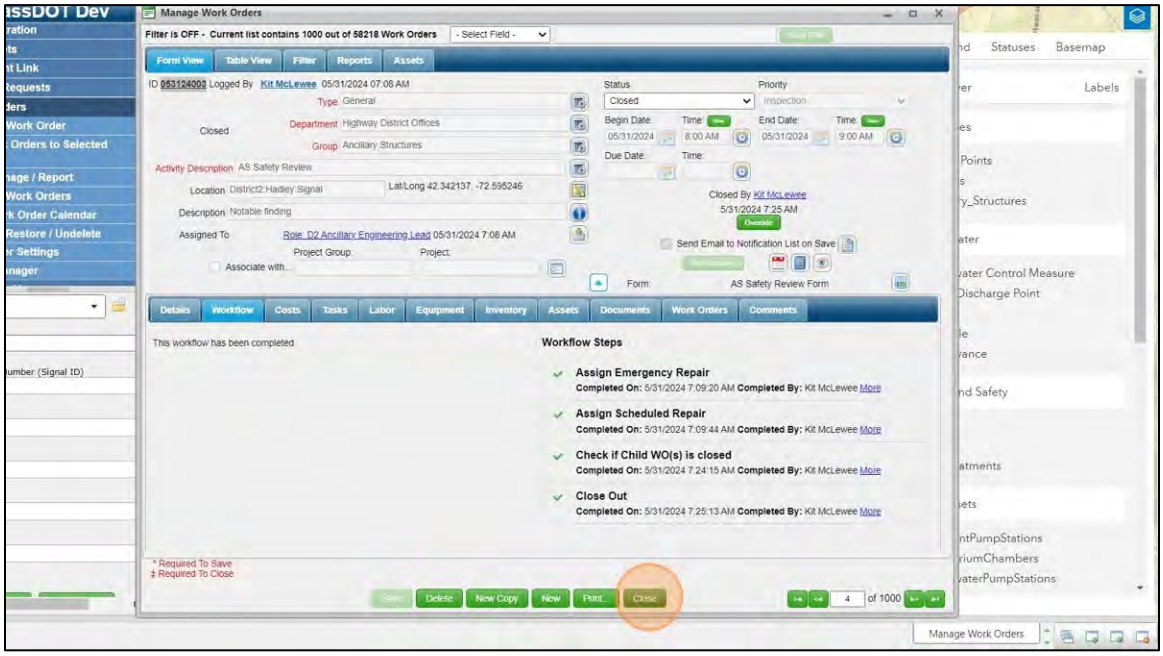
(26) Fill out fields required to close.



(27) Click "Save"



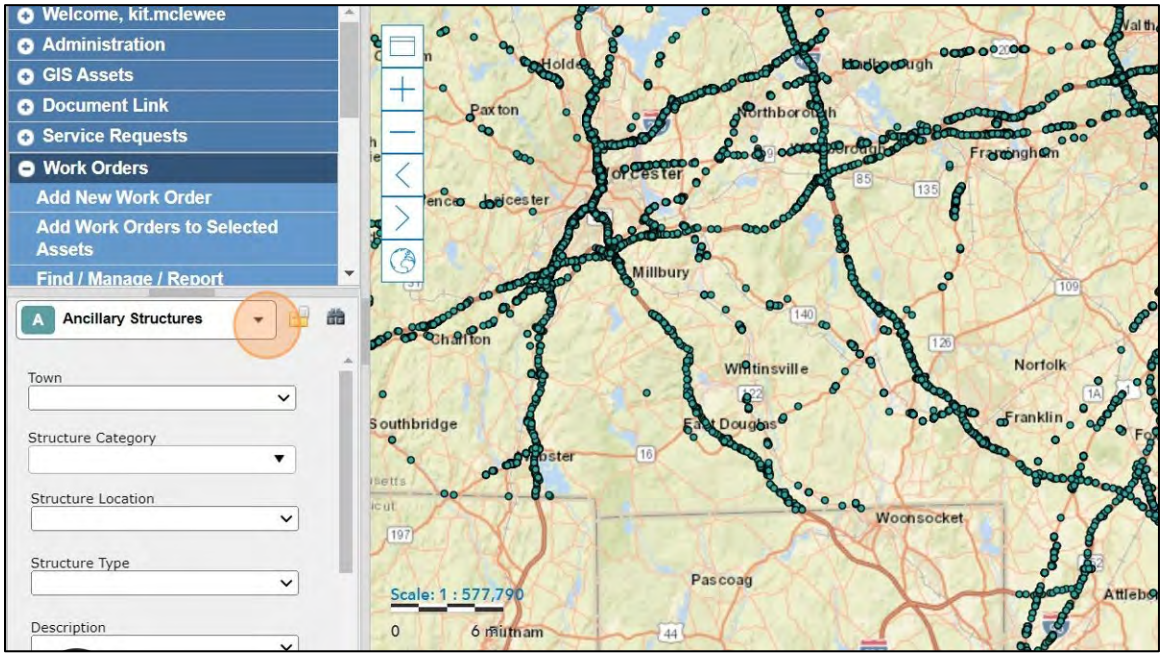
(28) Workflow steps are complete. Click "Close" to exit the window of this now closed safety review.



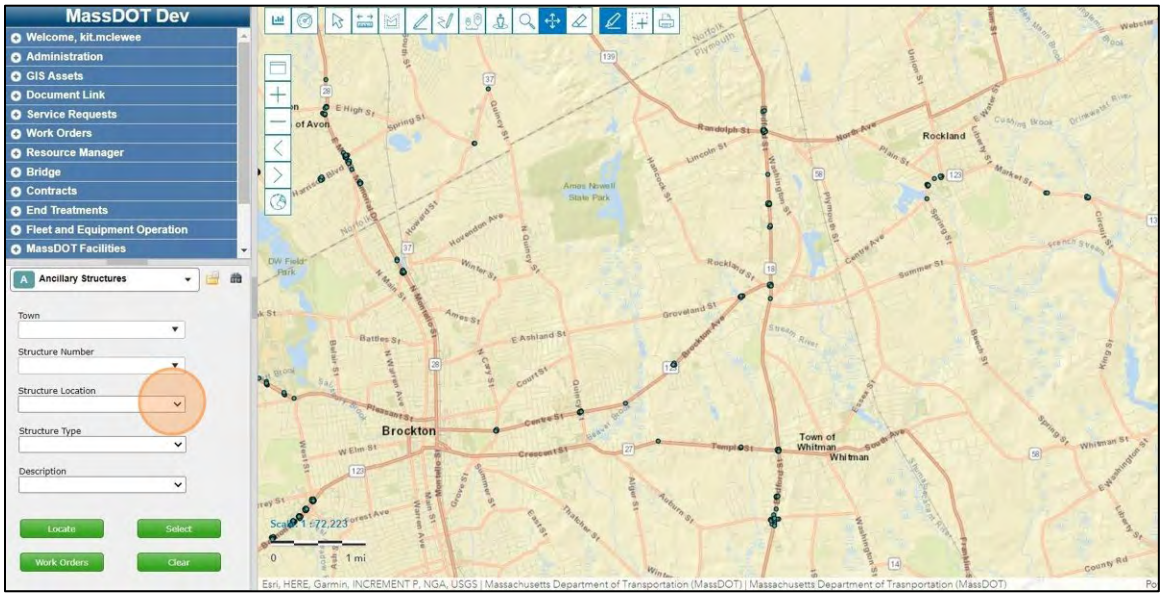
4 CREATING AS WORK ORDER (NO SAFETY REVIEW)

This guide provides step-by-step instructions on how to create an AS work order without a safety review. It includes details on how to search for the asset, add it to a new work order, assign the work order to the appropriate person, and save the required fields.

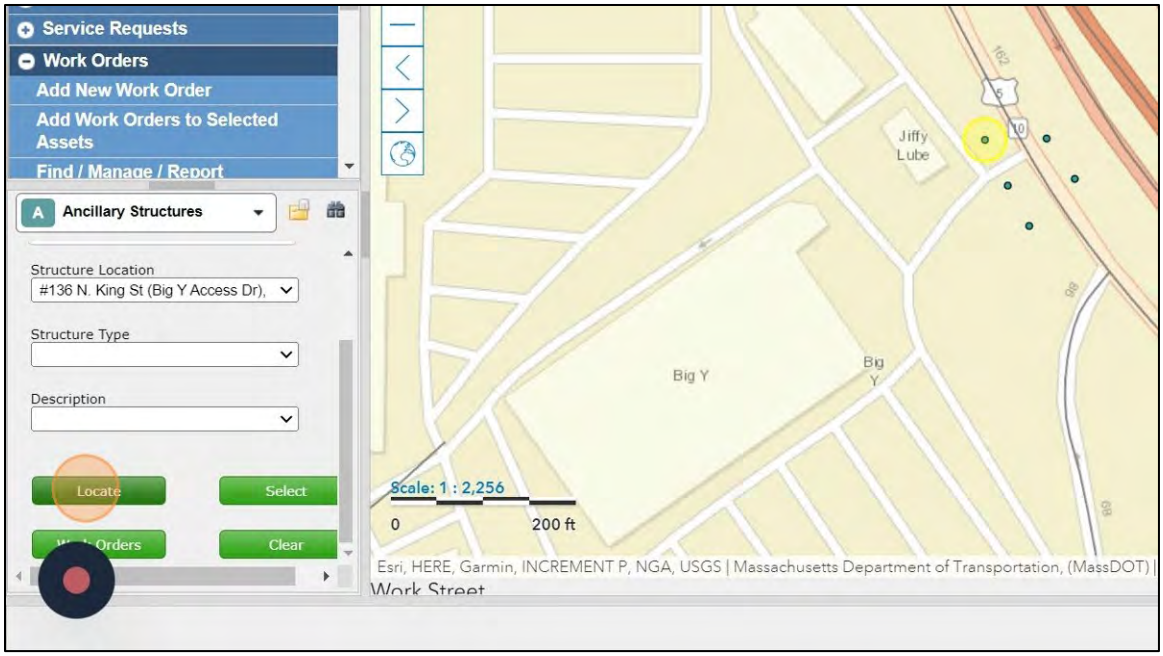
(29) Click to change search bar in bottom left corner to Ancillary Structures if needed



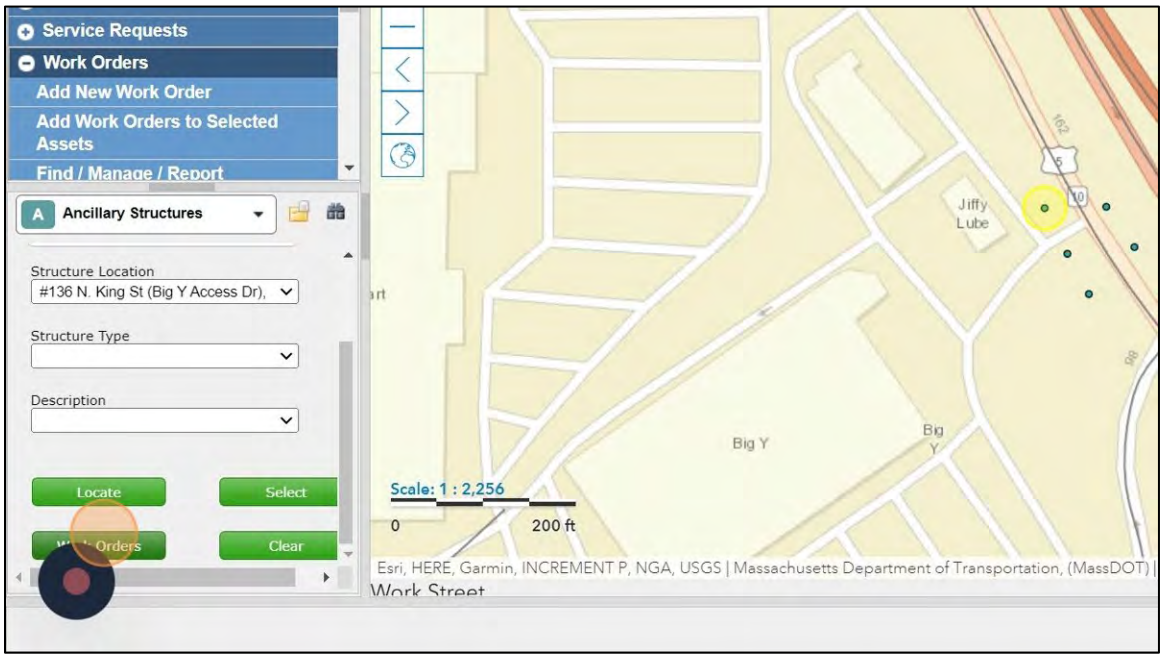
(30) You can search via the filters below. With any filter, the map will narrow in on the asset and then you will need to identify the asset on the map. This example will use "Structure Location".



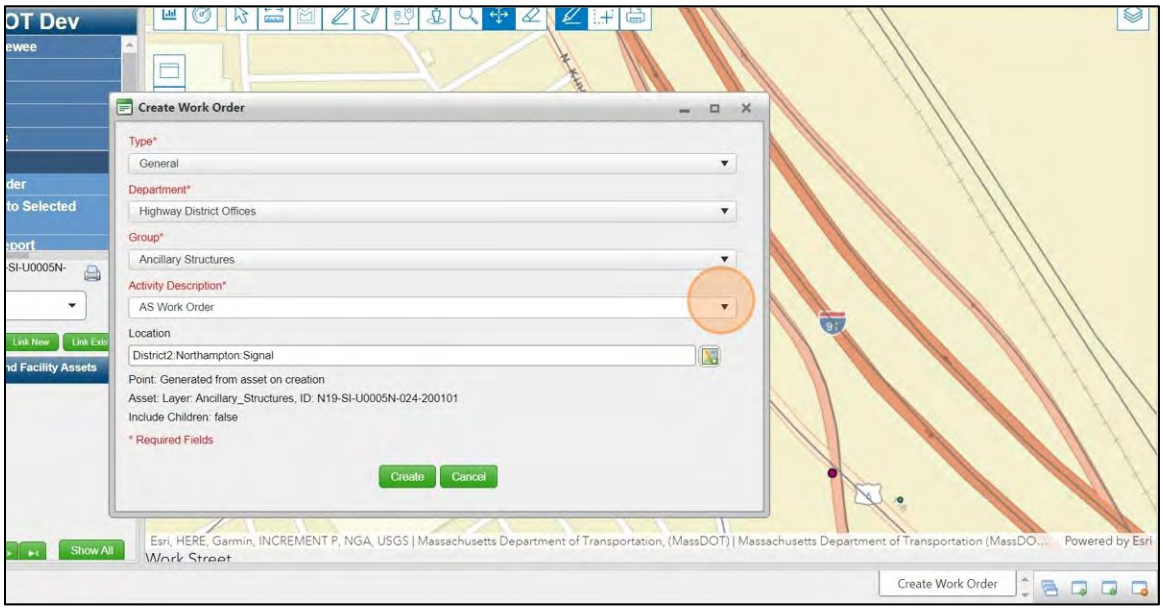
(31) After choosing the structure location, click "Locate". Asset will highlight in yellow.



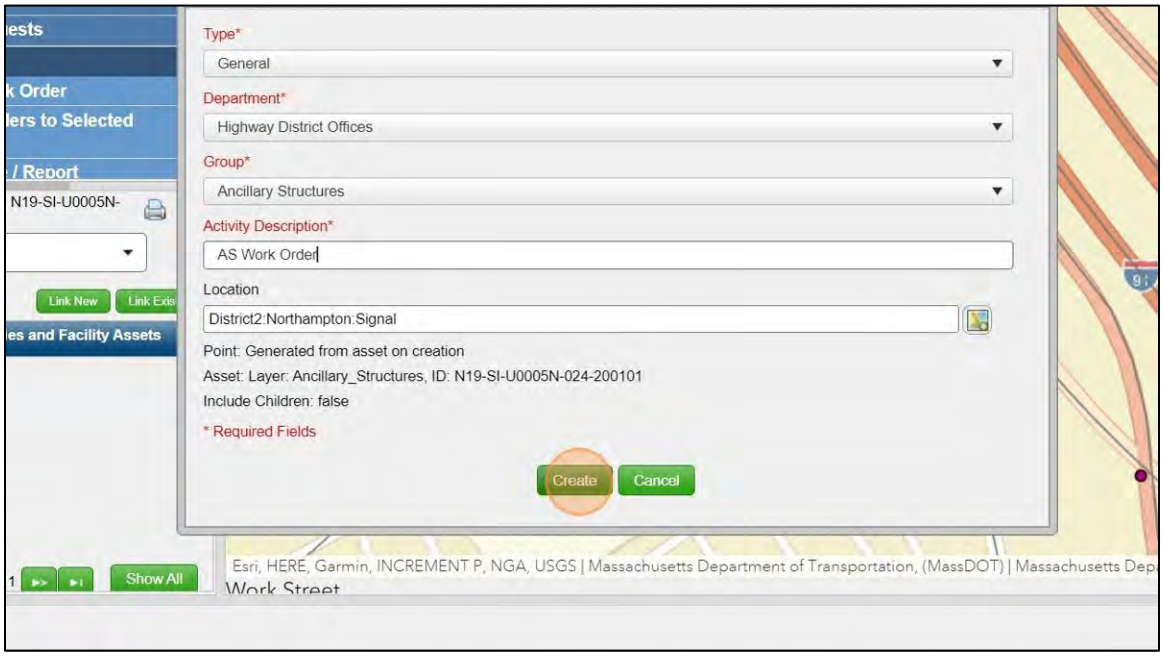
(32) Click "Work Orders" to add AS to a new work order



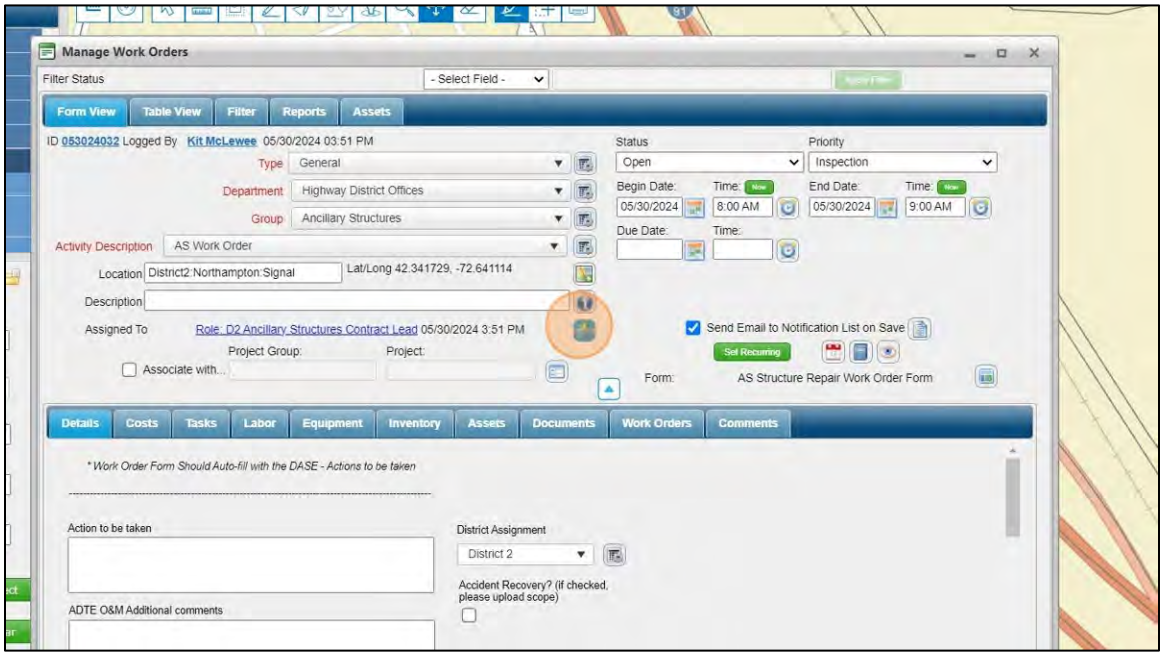
(33) Set "Activity Description" as *AS Work Order*



(34) Click "Create"

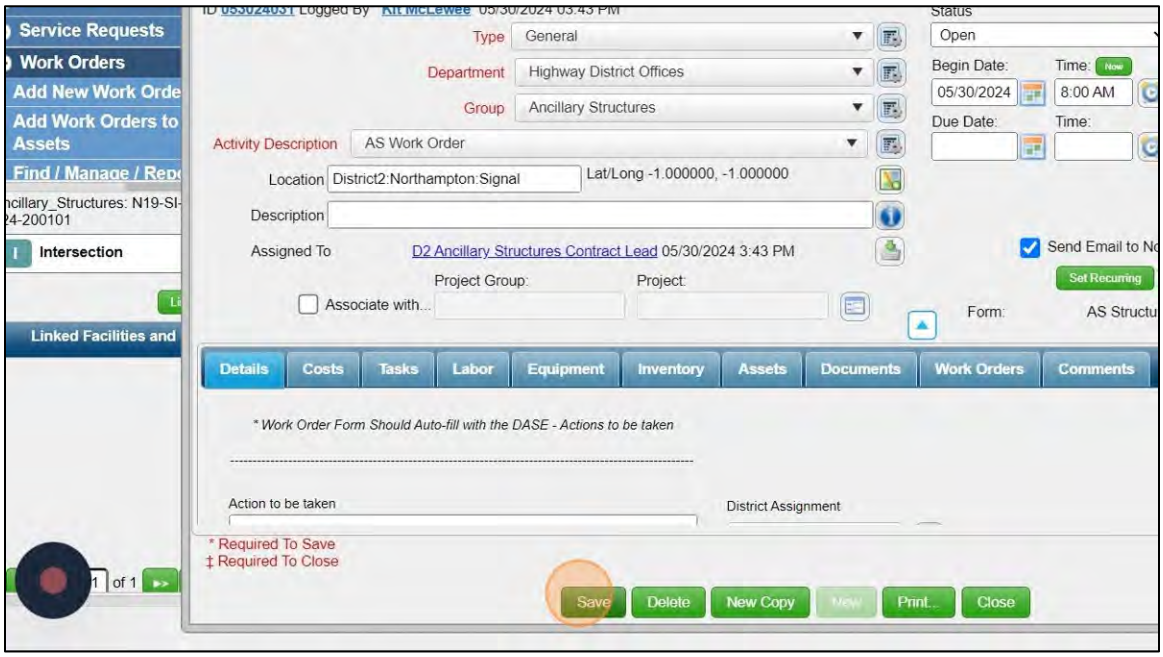


(35) Work order auto-assigned to the District Ancillary Contract lead based on "District Assignment" field under Details tab. If you need to change the assignment, click the Change Assignment icon.



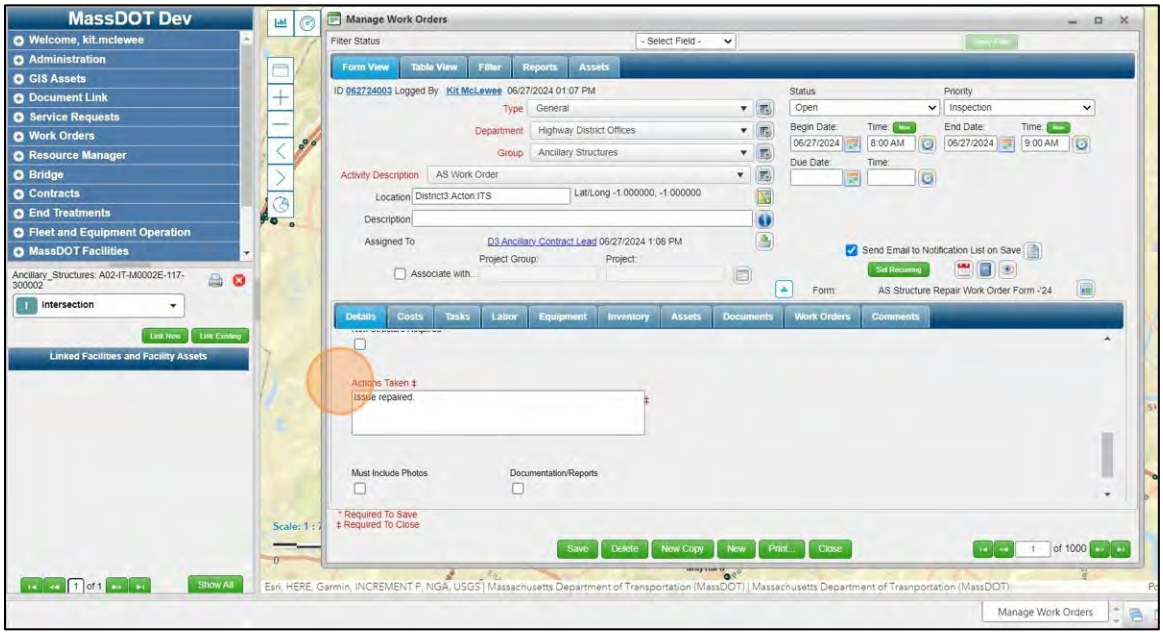
⚠ You can only assign to one role OR one individual.

(36) Fill out fields required upon save, then click "Save". This will notify assignee of new work order.

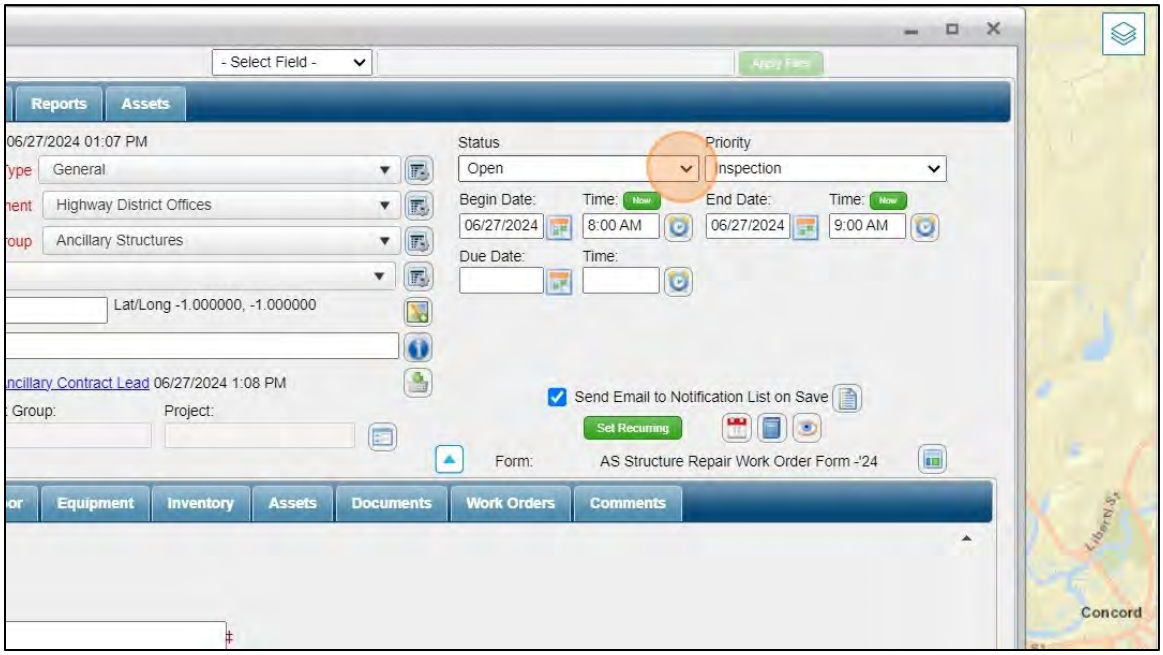


5 CLOSING AS WORK ORDER

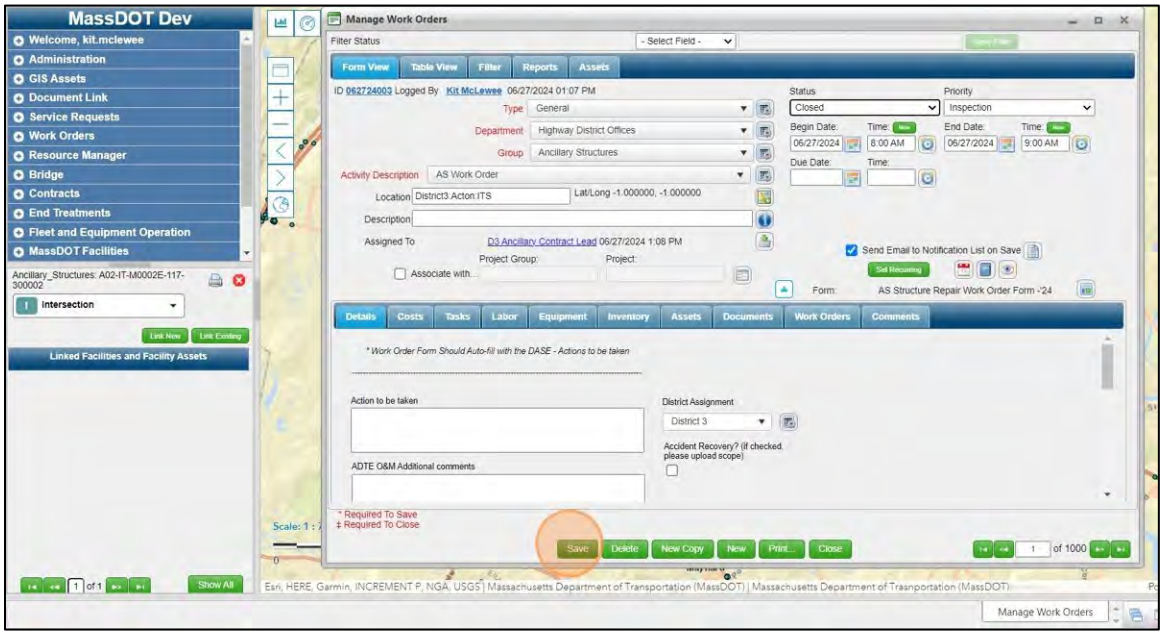
(37) Ensure work order has all necessary fields completed. For AS work orders, "Actions Taken" must be filled to close.



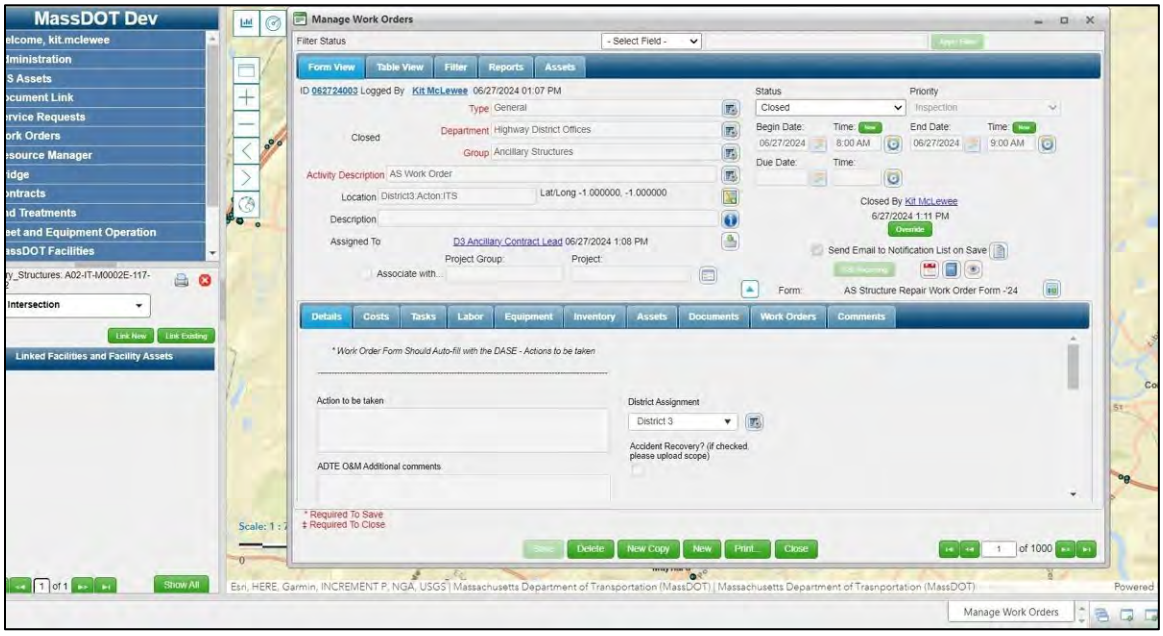
(38) Click this dropdown to change "Status" to *Closed*



(39) Click "Save"



(40) Form will grey out and cannot be edited when *Closed*



Appendix - C: VUEWorks for Bridges

Viewing Bridge Layer and Searching for Bridges C-2

Creating, Assigning, and Saving Bridge Safety Review C-14

Bridge Safety Review Workflow Steps (Creating Bridge WO and Closing Safety Review) C-23

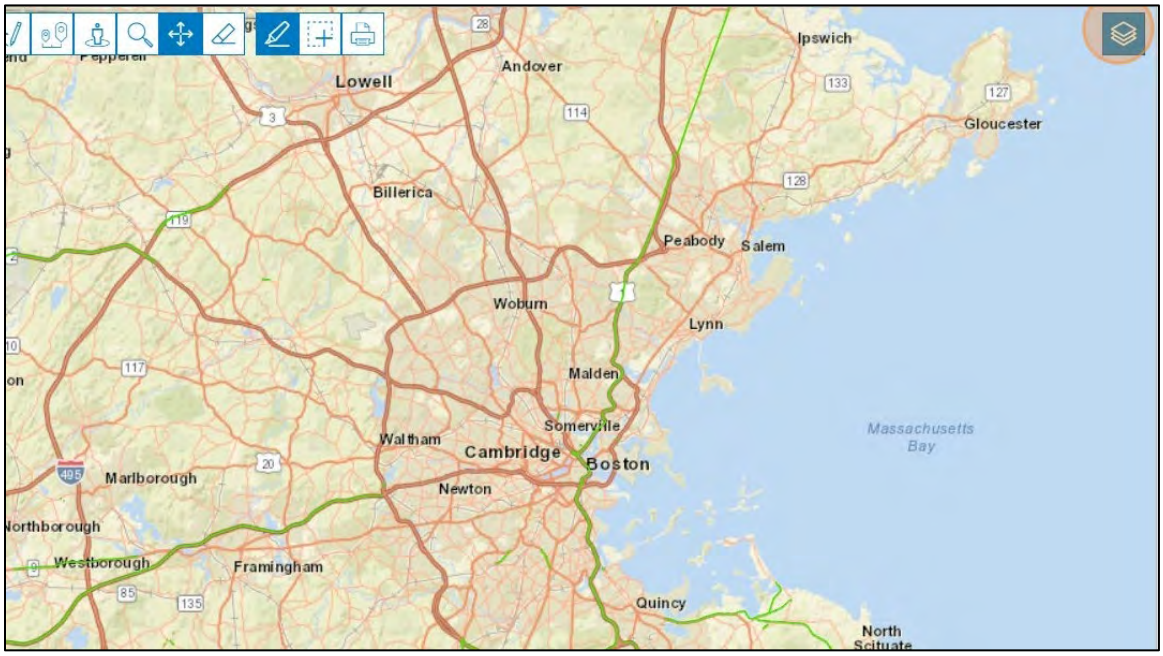
Creating Bridge Repair Work Order (no safety review) C-32

Closing Bridge Work Orders C-37

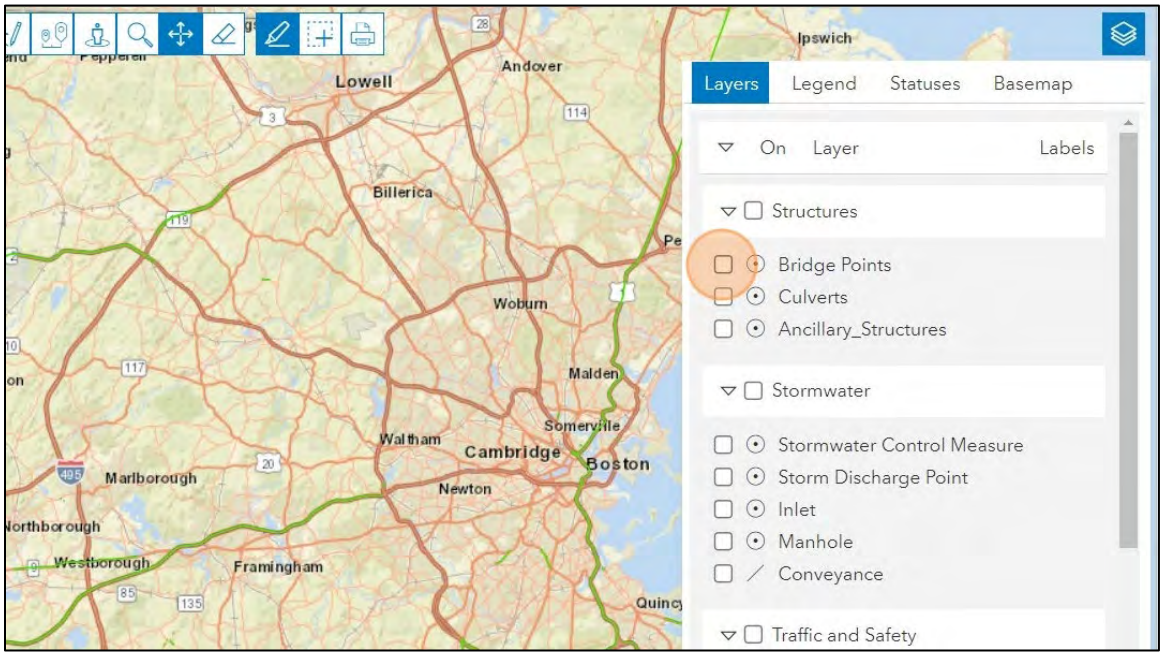
1 VIEWING BRIDGE LAYER AND SEARCHING FOR BRIDGES

VIEWING BRIDGE LAYER

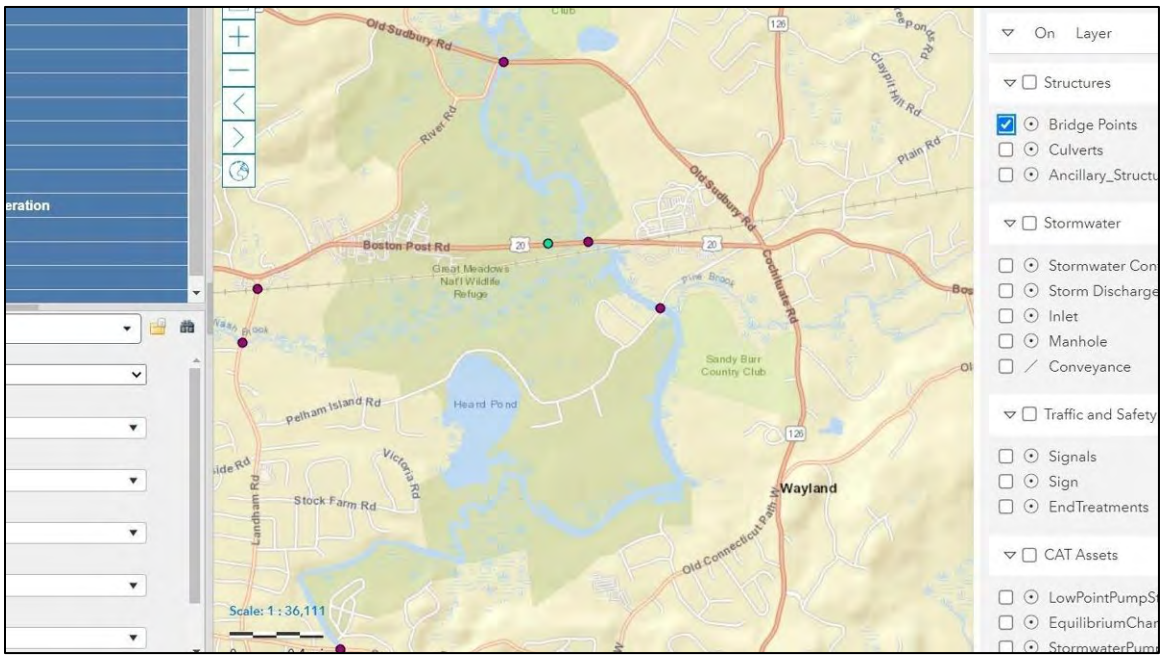
(1) Open "Layers."



(2) Click the "Bridge Points" field.



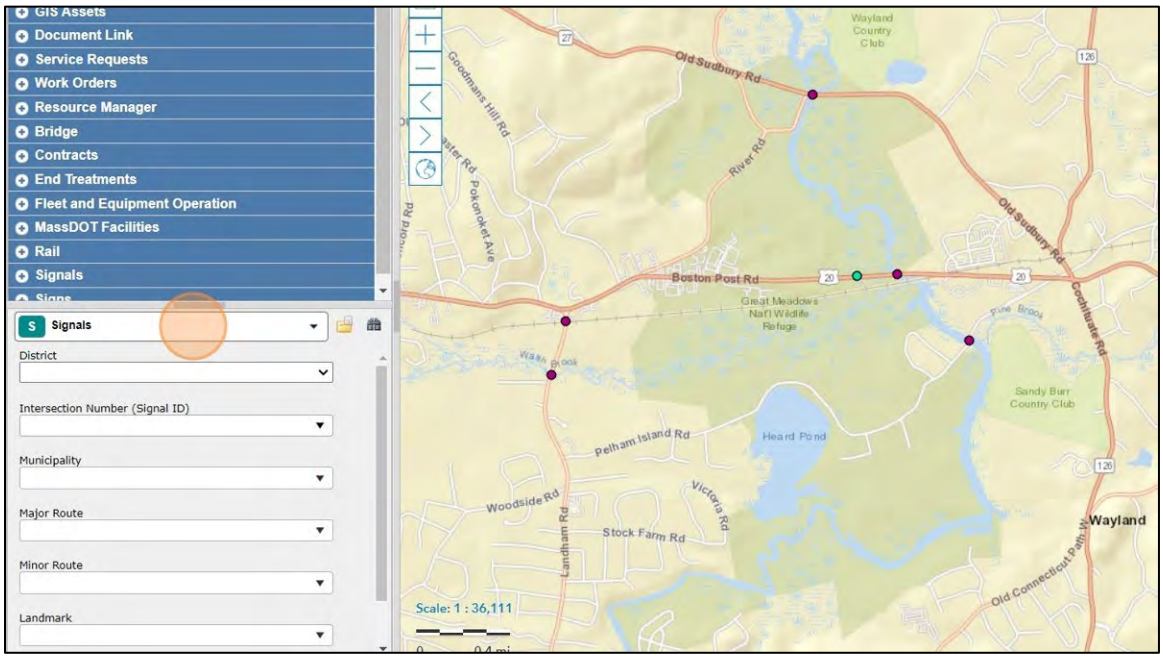
(3) Bridge points layer will turn on.



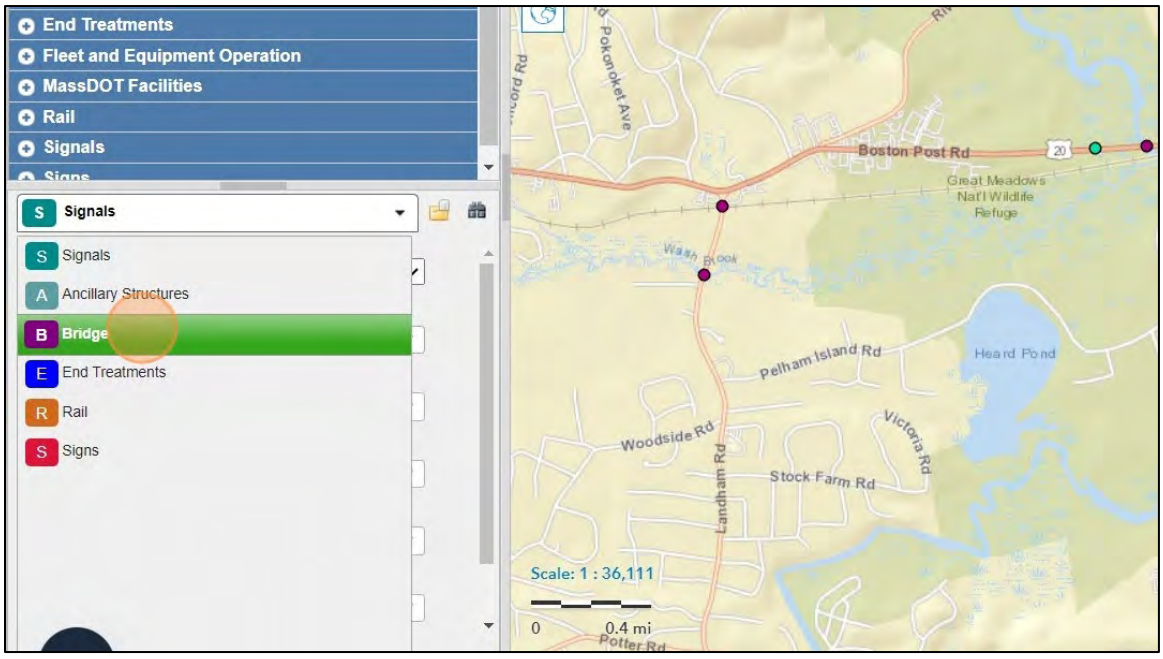
There is a zoom extent on this layer so if you do not see the bridge layer turn on when checked, zoom in.

SEARCHING FOR BRIDGES - BIN OR BRIDGE DEPT. #

(4) In bottom left search box, click the search drop down.

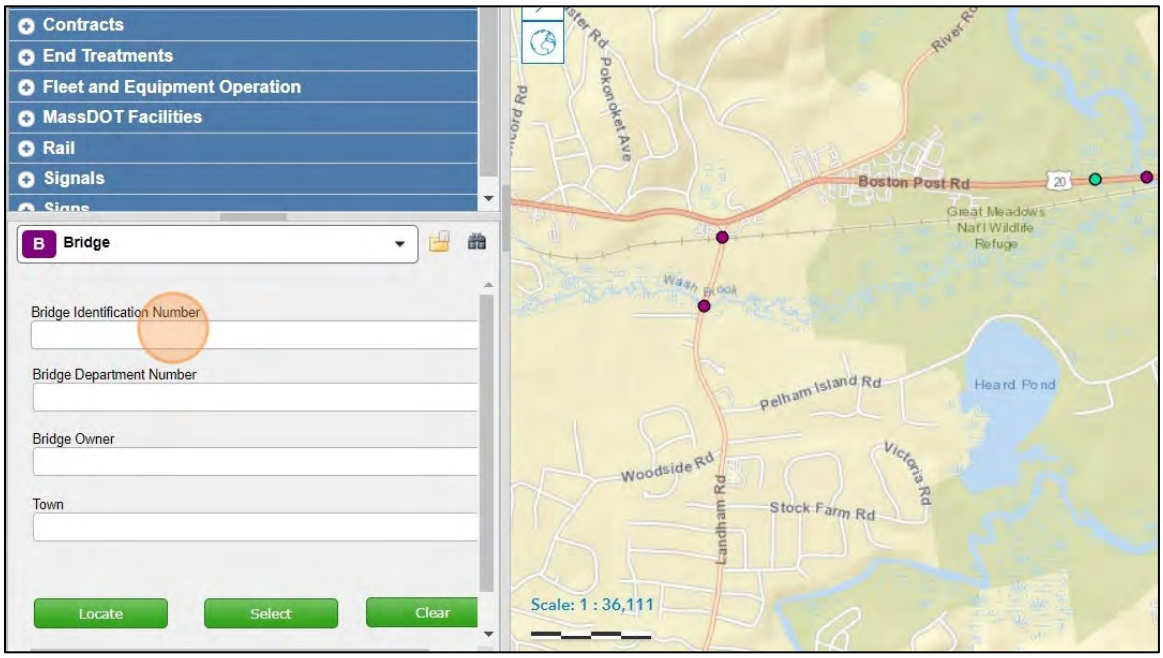


(5) Click "Bridge"

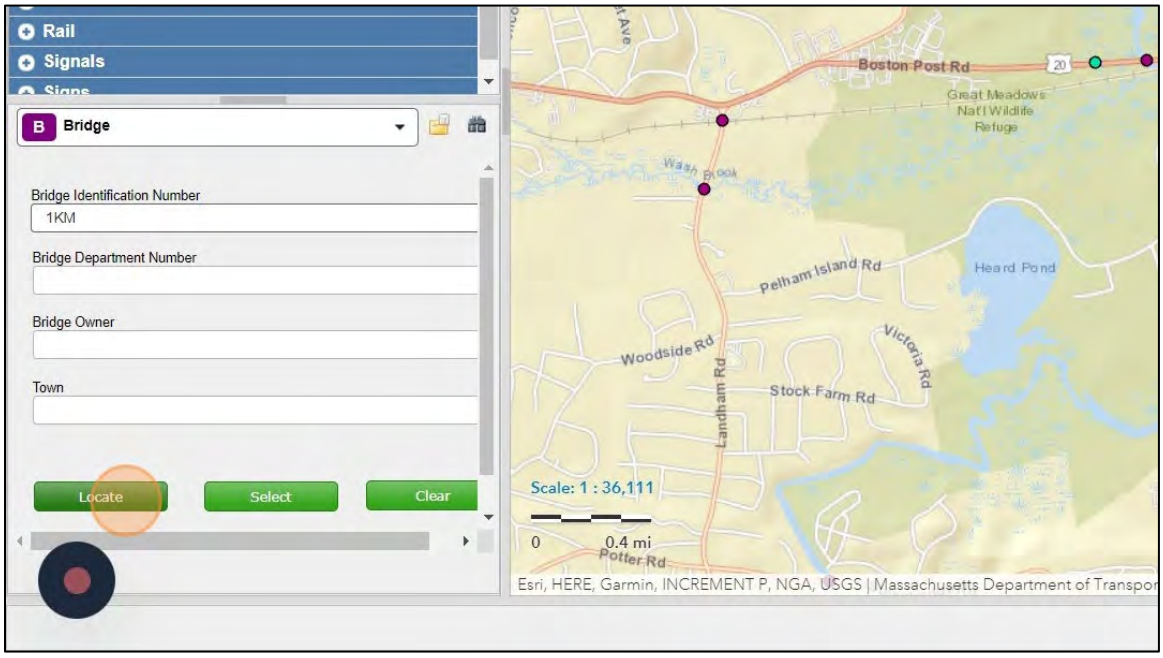


The assets in the search drop down may not match exactly to the screenshot. Please email vueworkssupport@dot.state.ma.us if you do not have the asset you need.

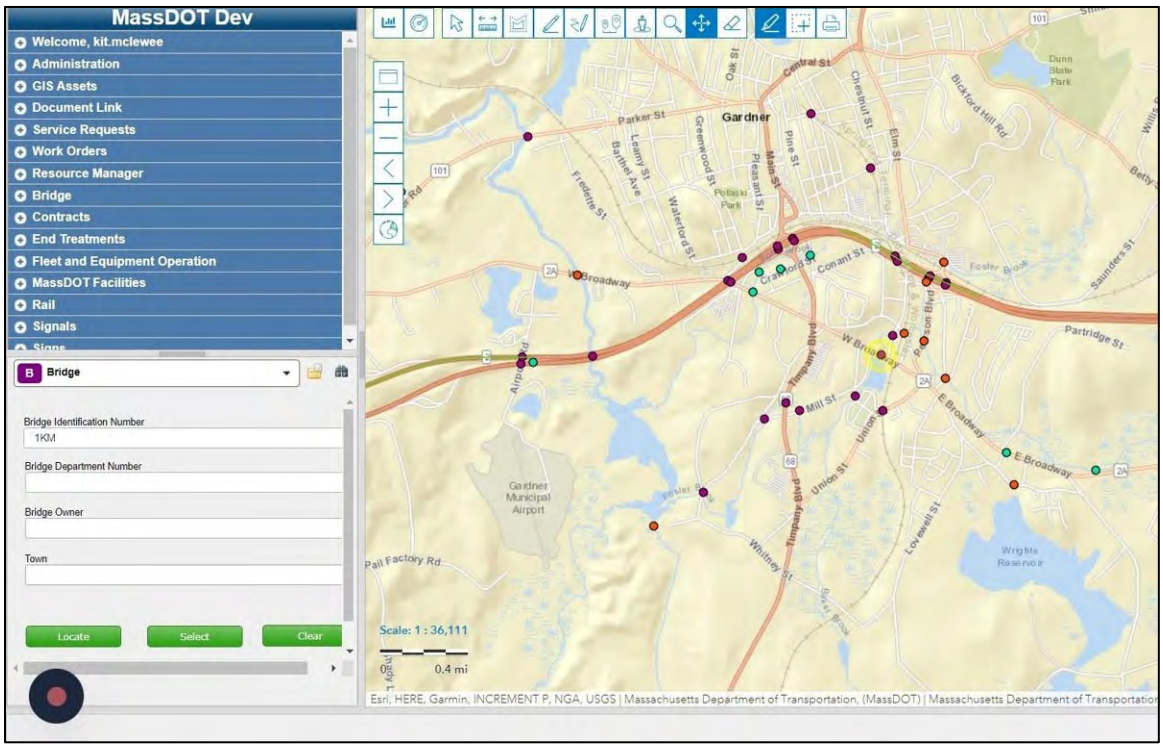
(6) Enter BIN or Bridge Department Number



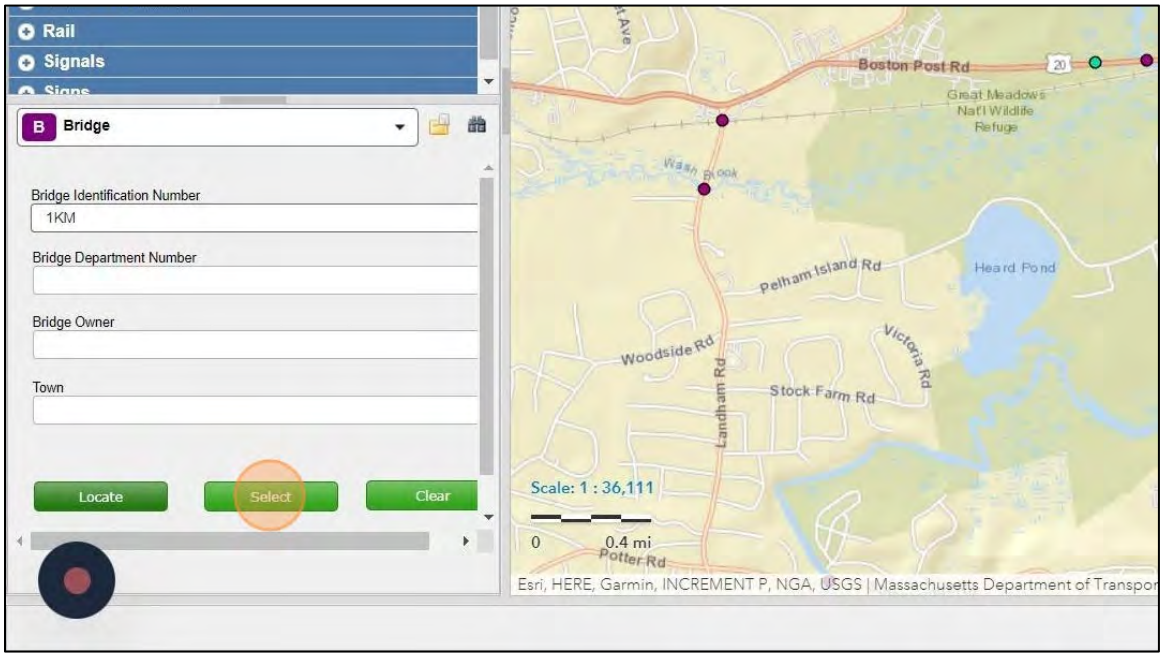
(7) Example here is BIN 1KM. Click "Locate"



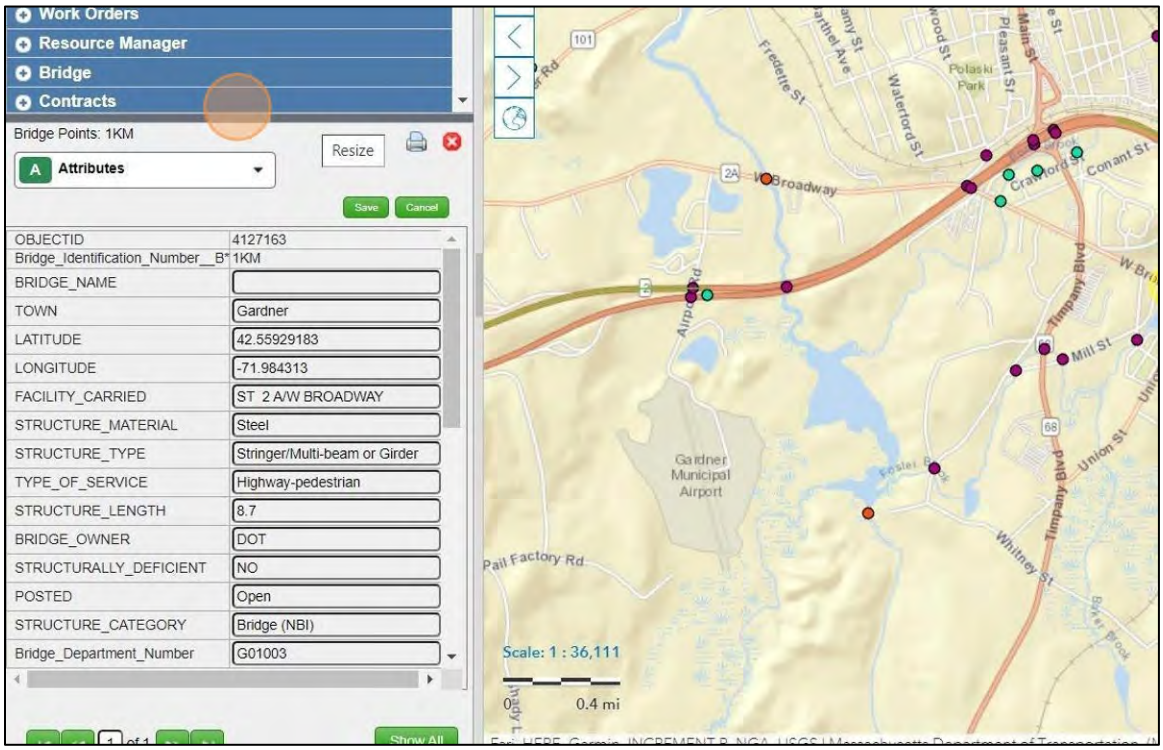
(8) Asset will highlight in yellow on map.



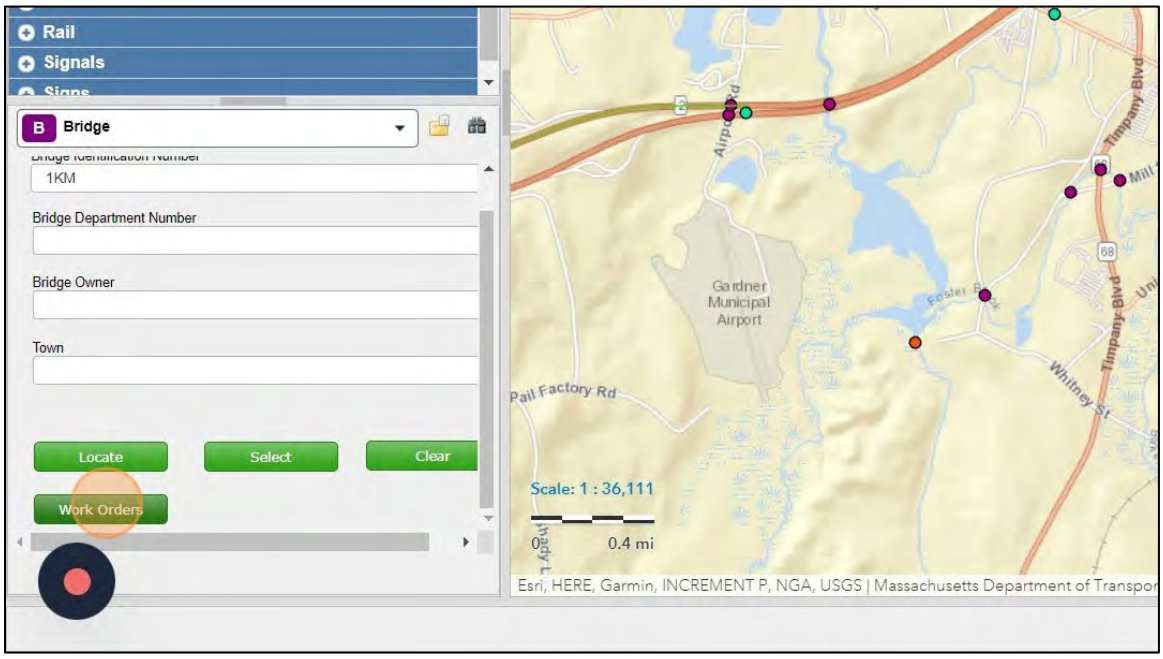
(9) To see attribute data, click "Select".



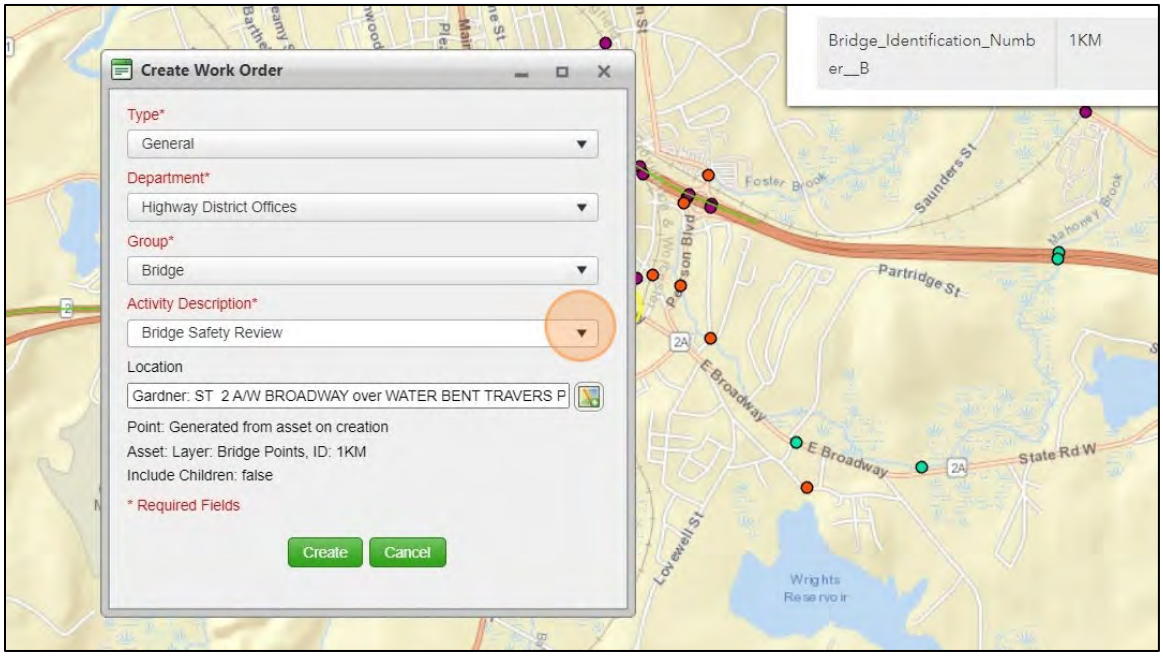
(10) Attribute data will appear. To view more of the attributes window, click the grey bar and drag up to see more rows at a time or scroll down.



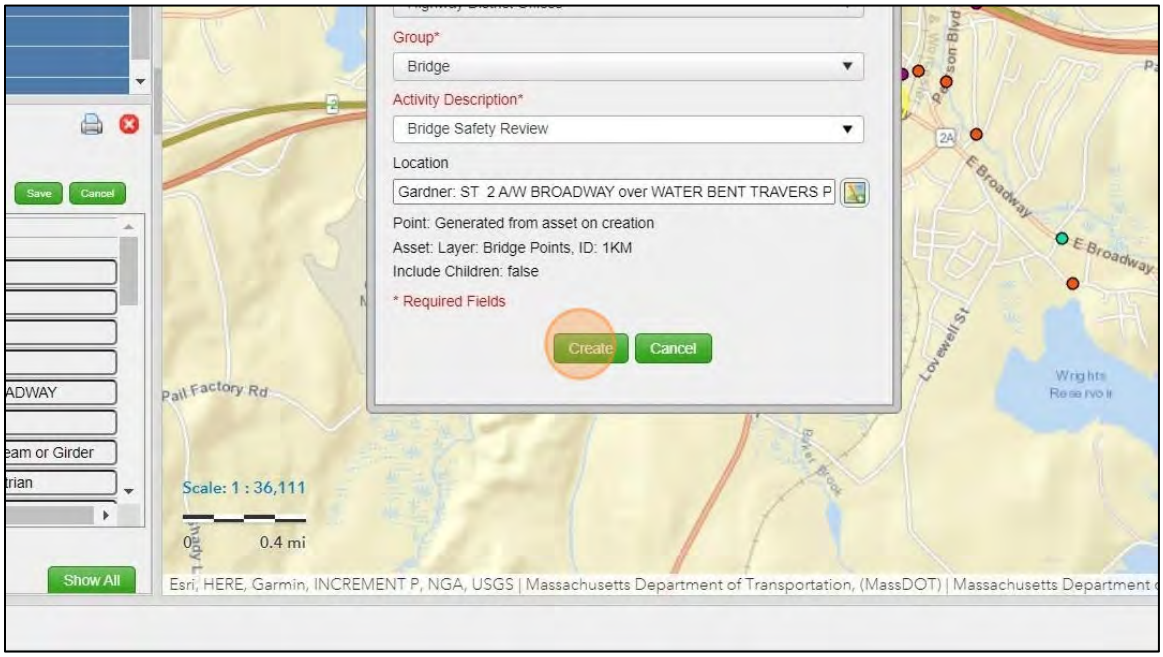
(11) To add the bridge to a new work order, click "Work Orders"



(12) Change Group and Activity Description if necessary.

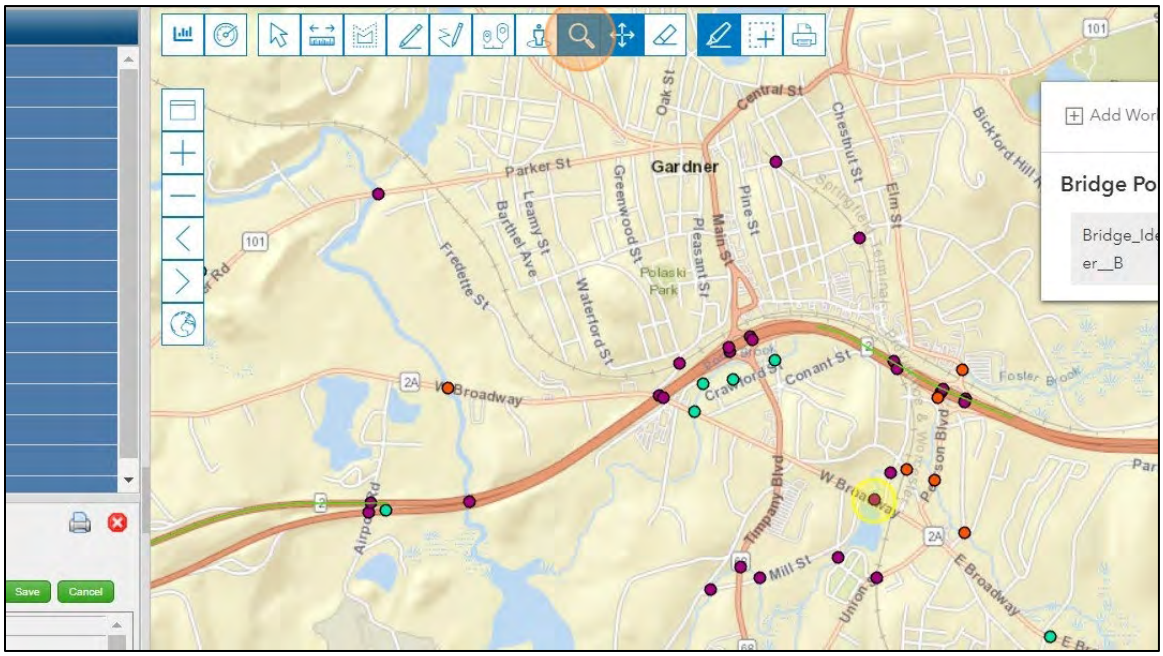


(13) Click "Create".

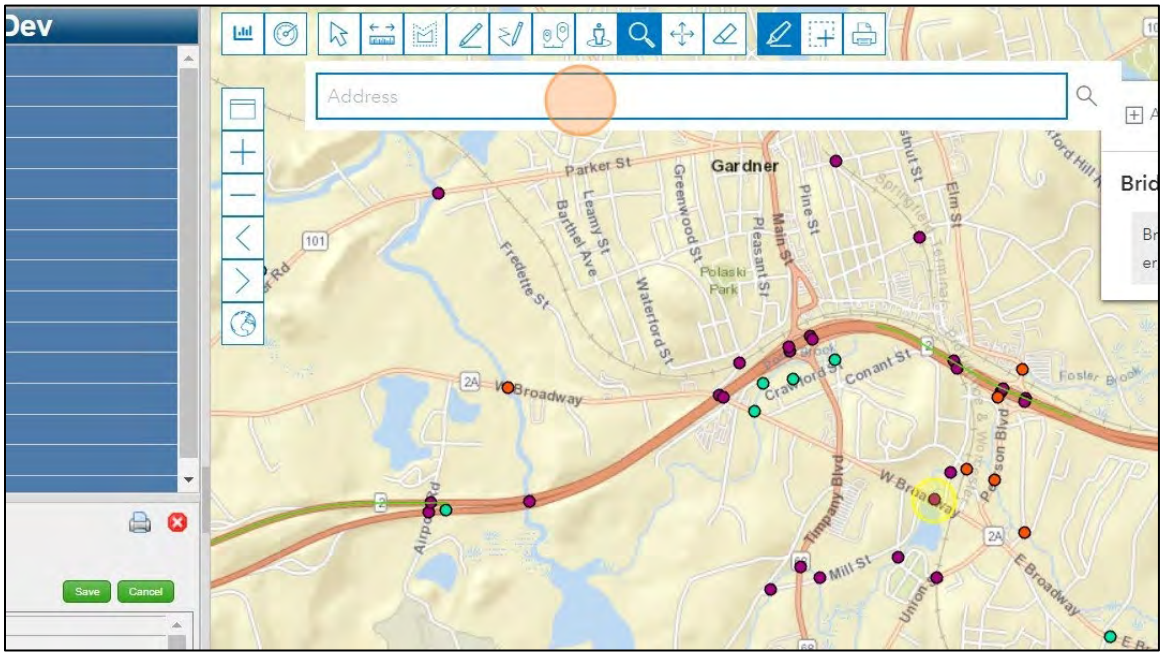


SEARCHING FOR BRIDGES - NARROWING ON MAP

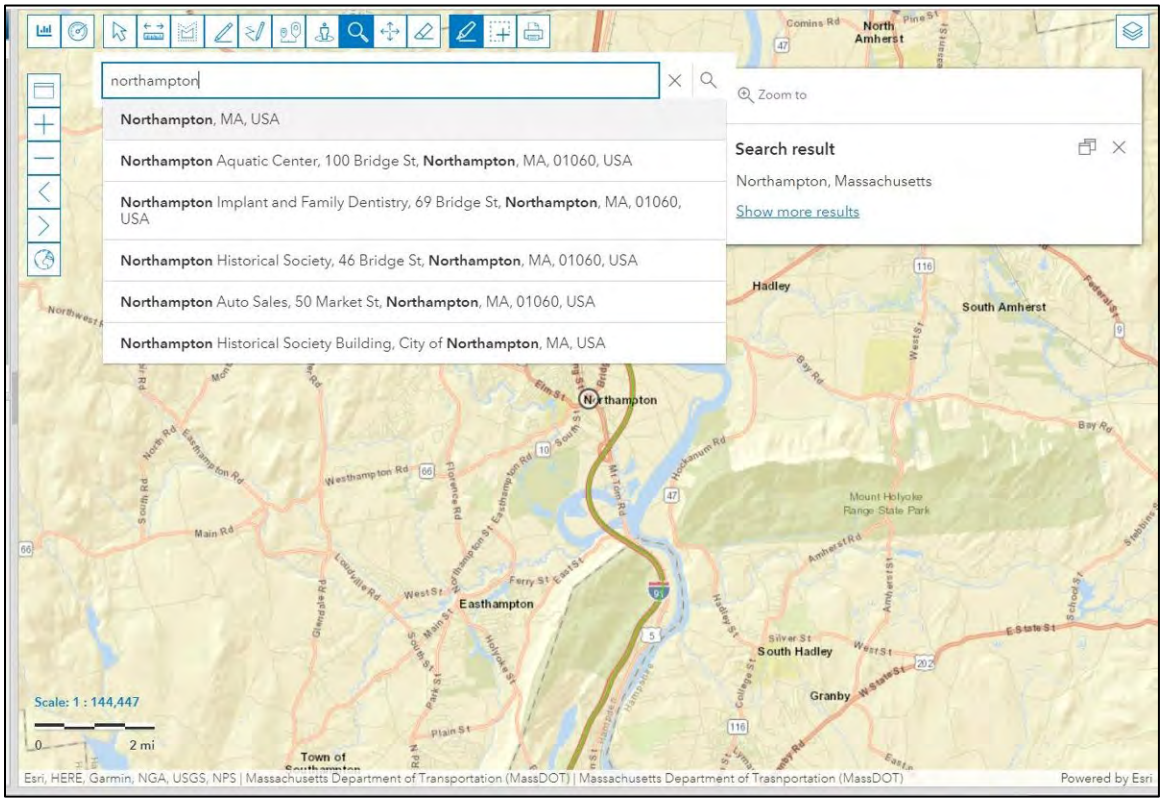
(14) Click the "Address Search" icon.



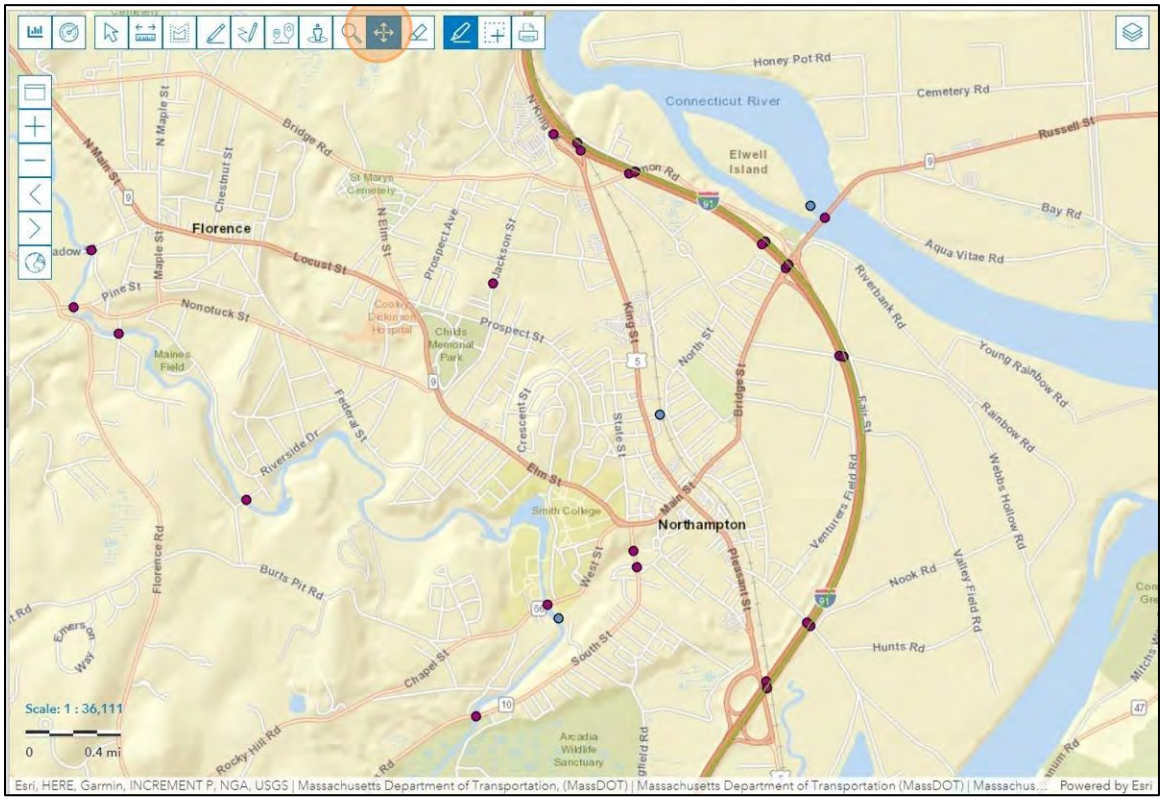
(15) Click the "Address" field.



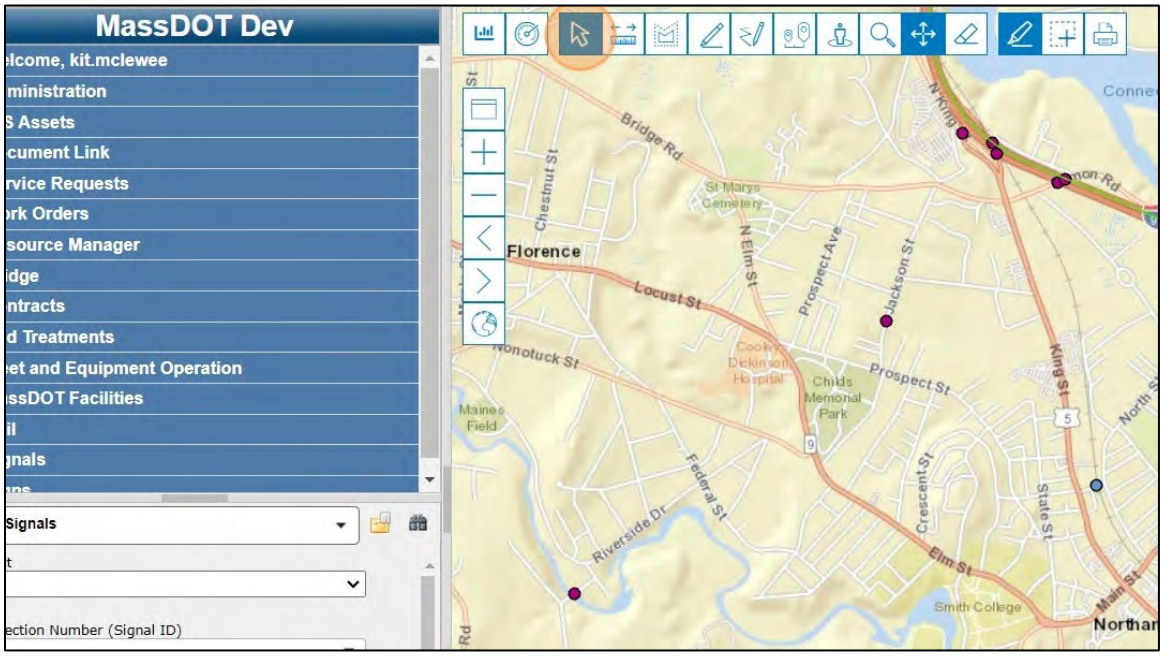
(16) Enter town and press enter or select from drop down. This will zoom into the town on the map.



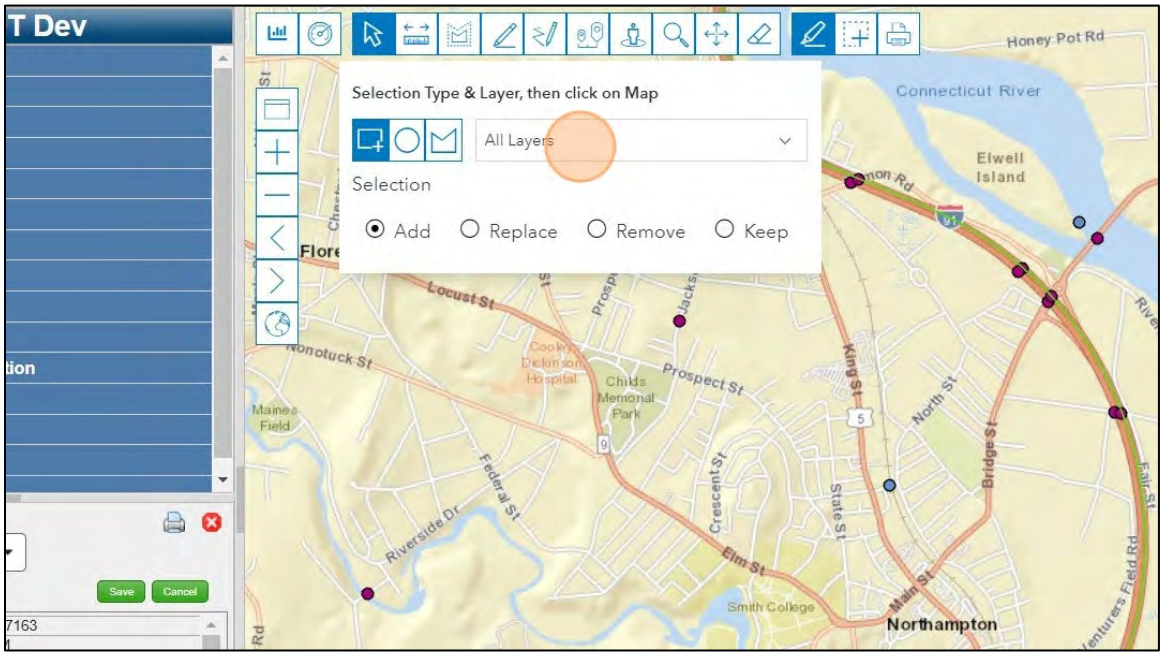
(17) Select the "Pan Map" icon to move the map around and search for bridge of interest.



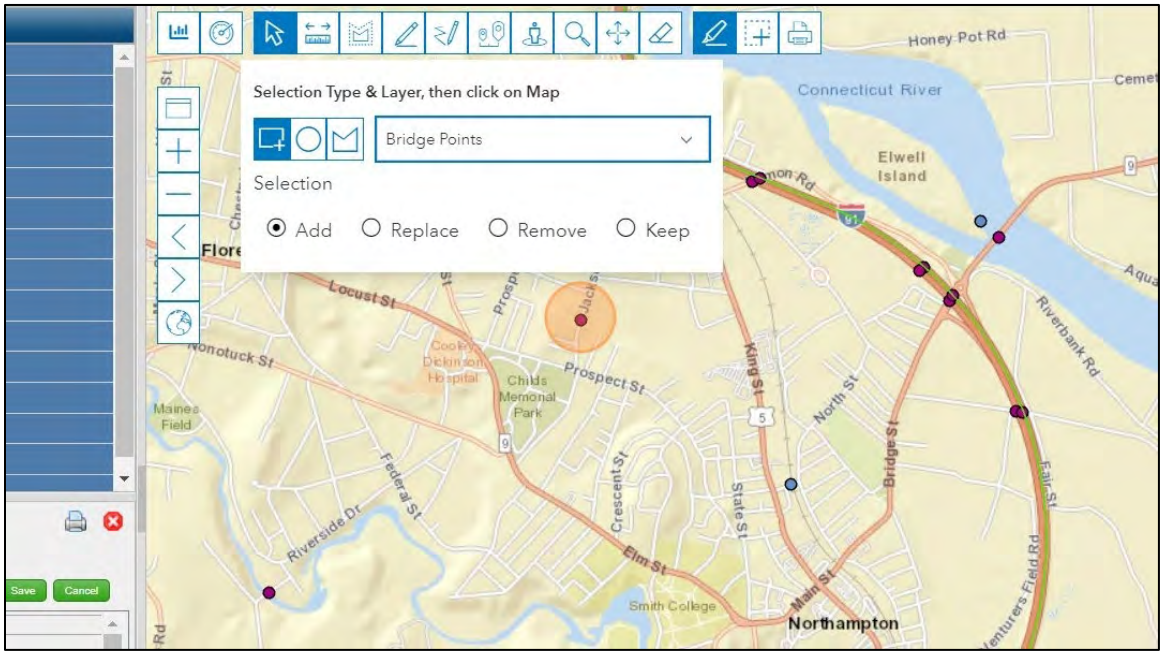
(18) Once you have located the bridge of interest, click "Select Assets" icon



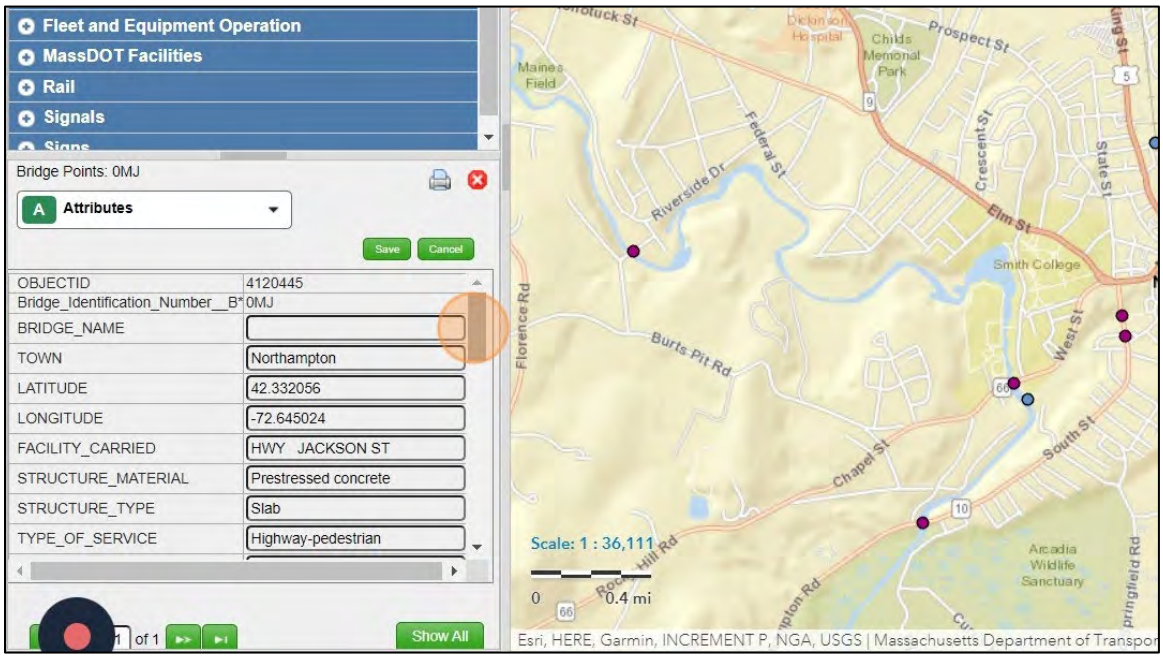
(19) Click this dropdown and change to "Bridge Points".



(20) Click bridge point.



(21) Attributes will appear in lower left hand box.



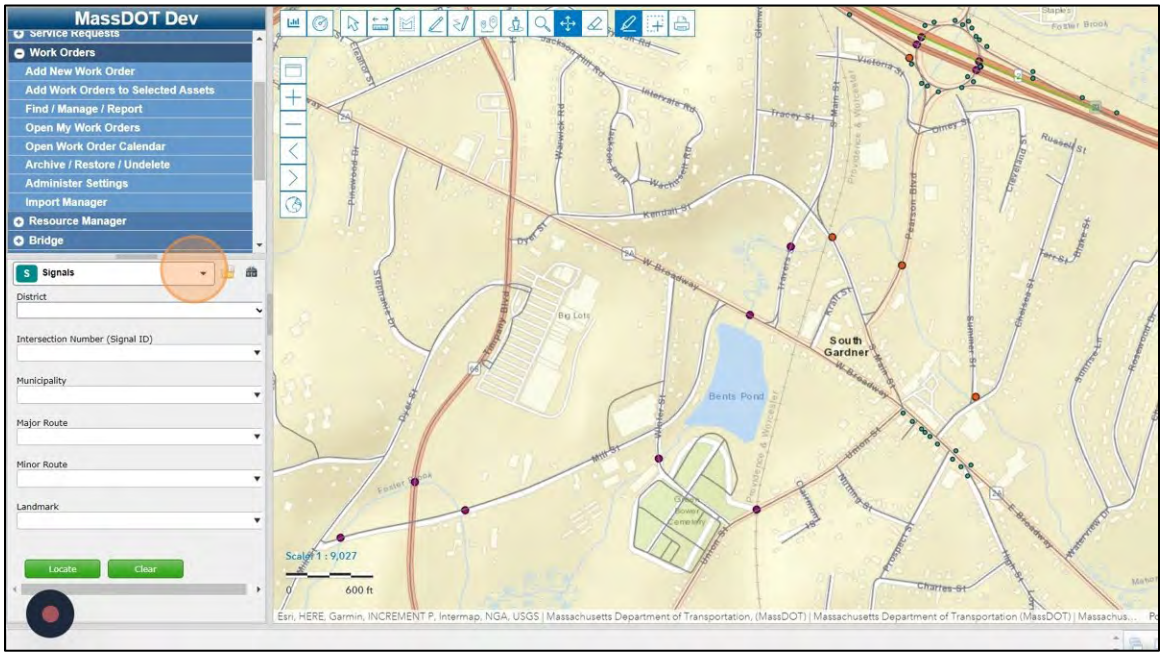
2 CREATING, ASSIGNING, AND SAVING BRIDGE SAFETY REVIEW

This guide provides step-by-step instructions on how to create, assign, and save a bridge safety review. It includes details on finding the asset, creating the safety review, assigning it to the appropriate person, and saving the review.

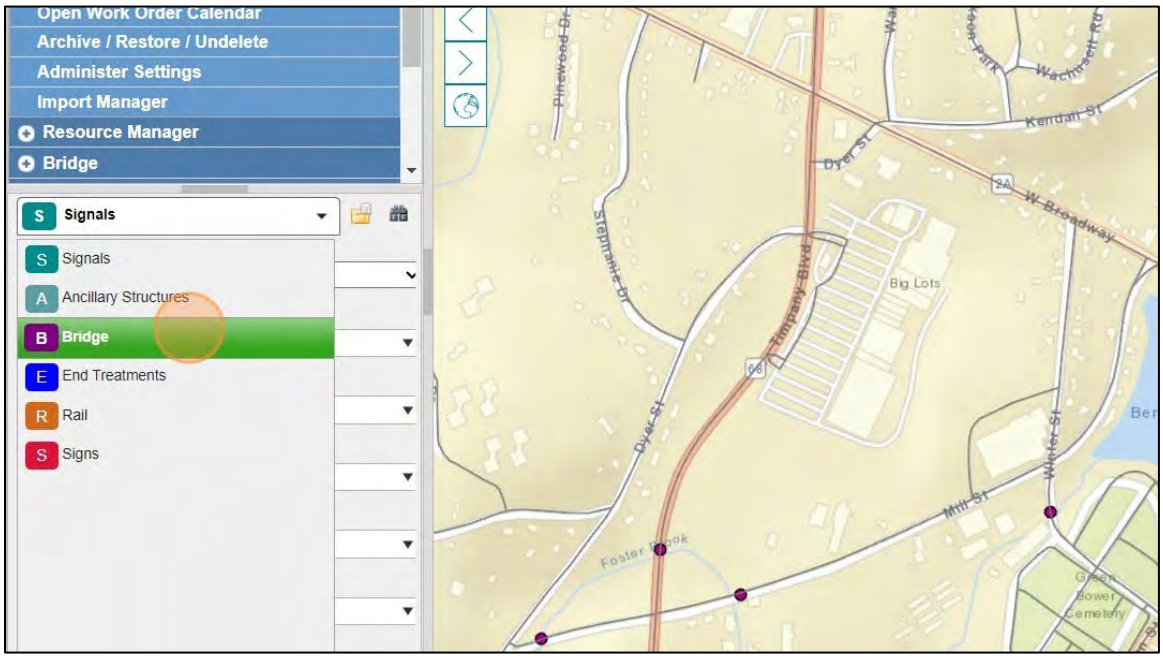
Have the bridge layer turned on!

FIND ASSET AND CREATE SAFETY REVIEW

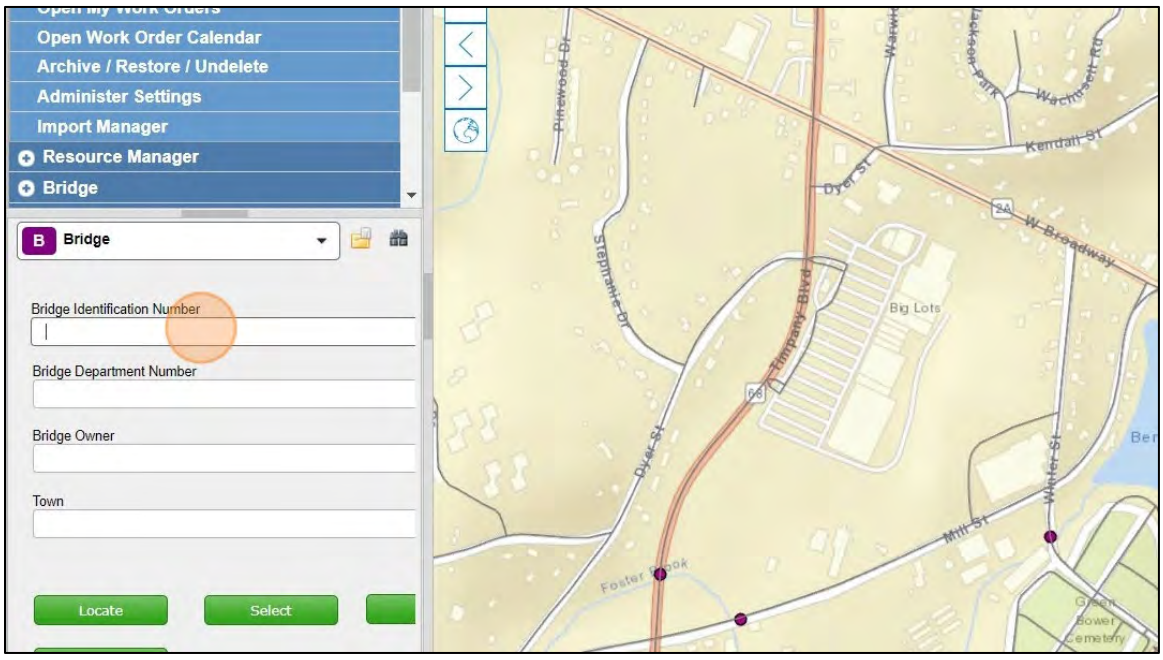
(1) Click to change search bar in bottom left corner



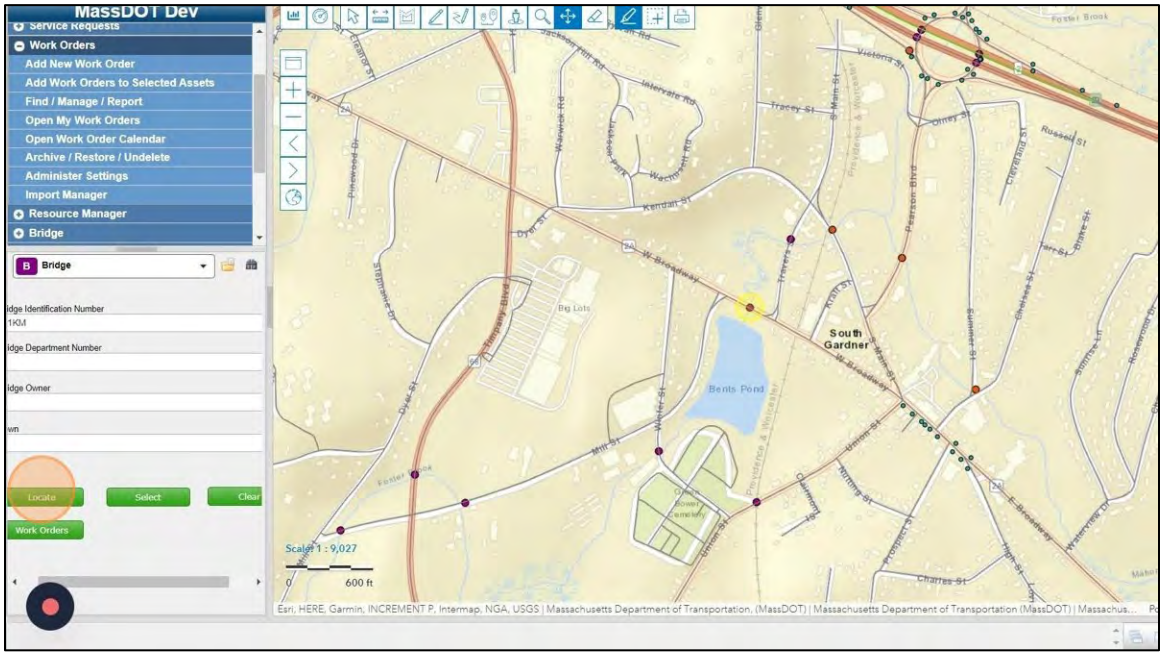
(2) Choose "Bridge"



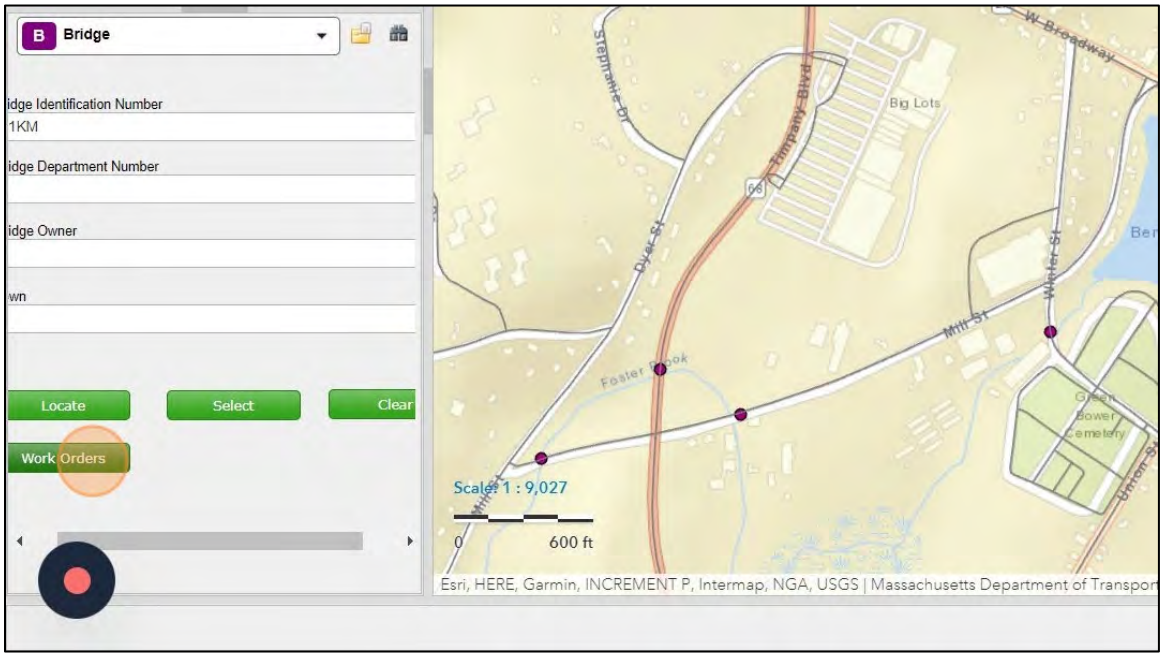
(3) Enter BIN



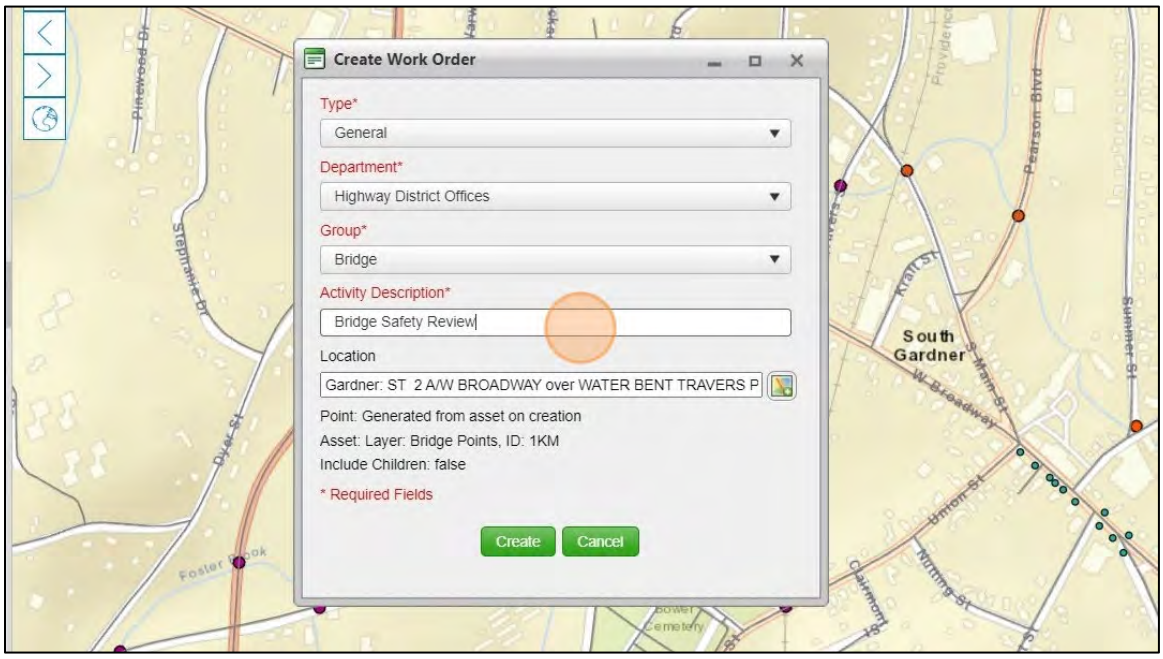
(4) BIN 1KM used as an example here. Click "Locate" to move map to bridge. Bridge highlights in yellow.



(5) Click "Work Orders" to add bridge to a new safety review

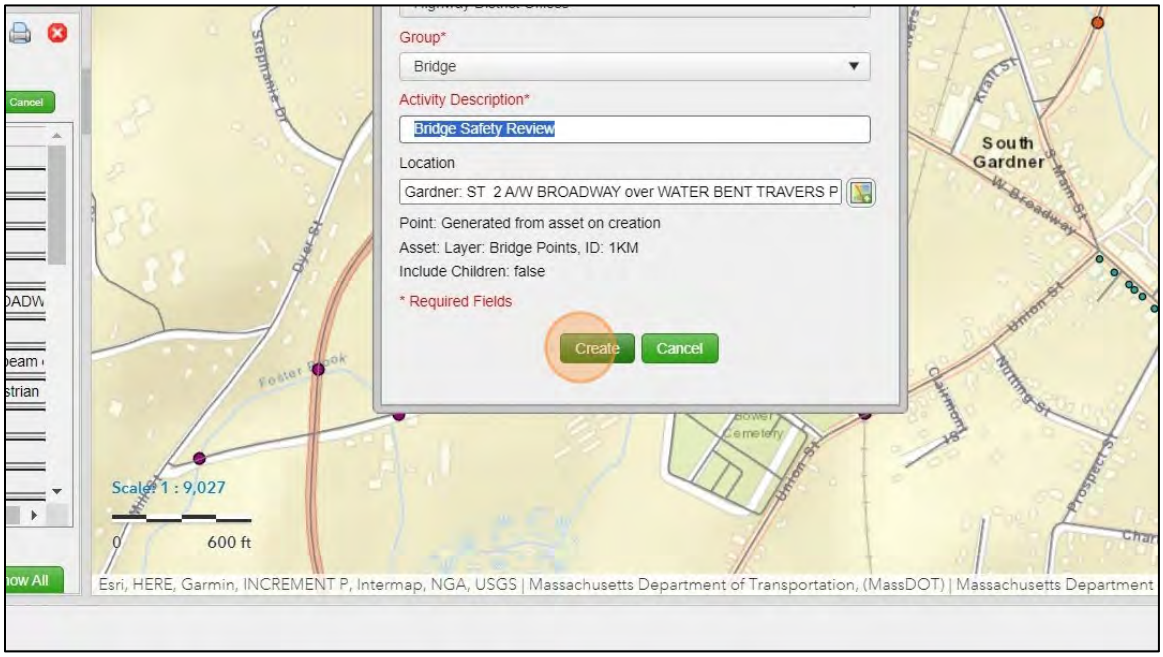


(6) Make sure Activity Description is "Bridge Safety Review"

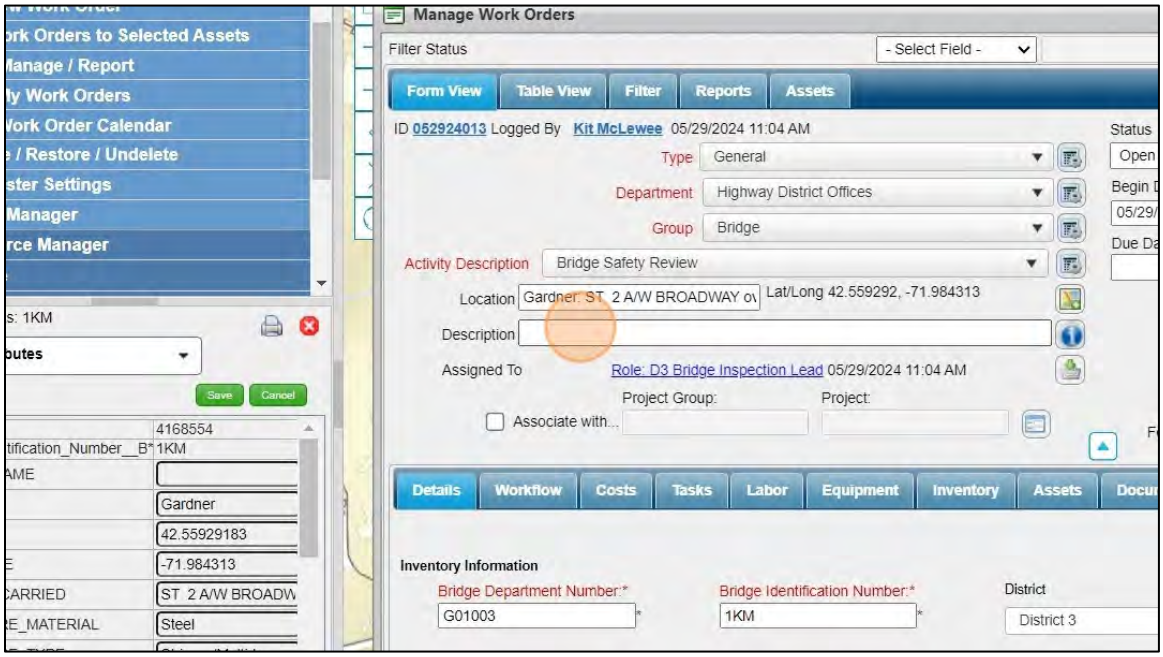


Note "Location" field auto-populates with Town: Facility Carried over Feature Intersected

(7) Click "Create"

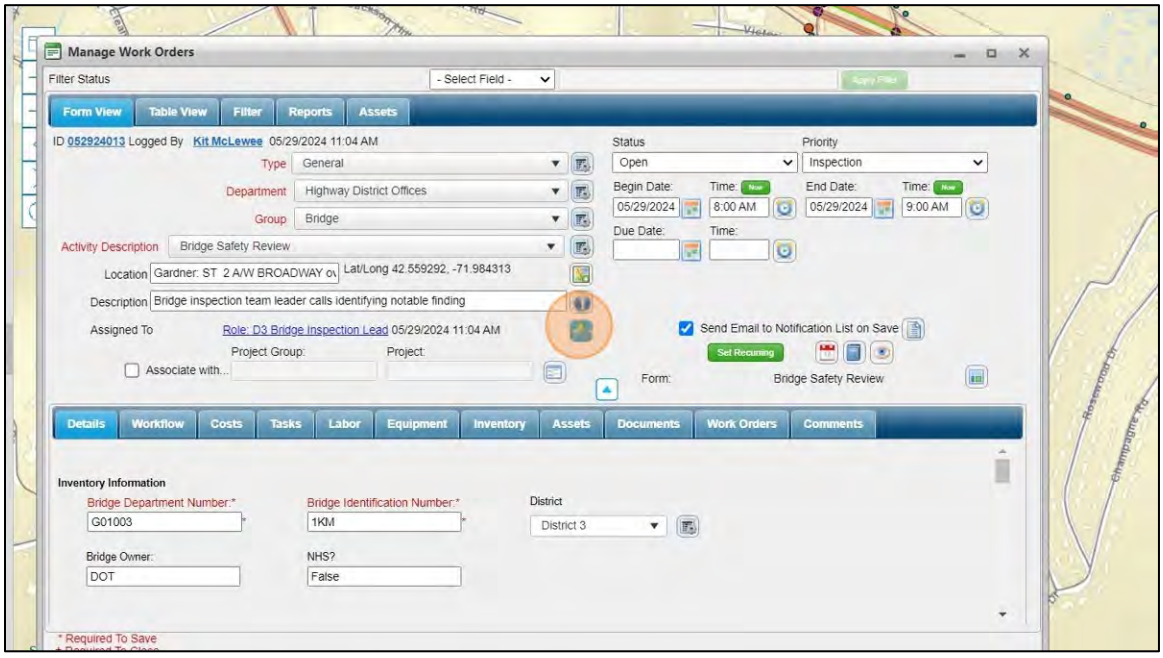


(8) Update "Description" field

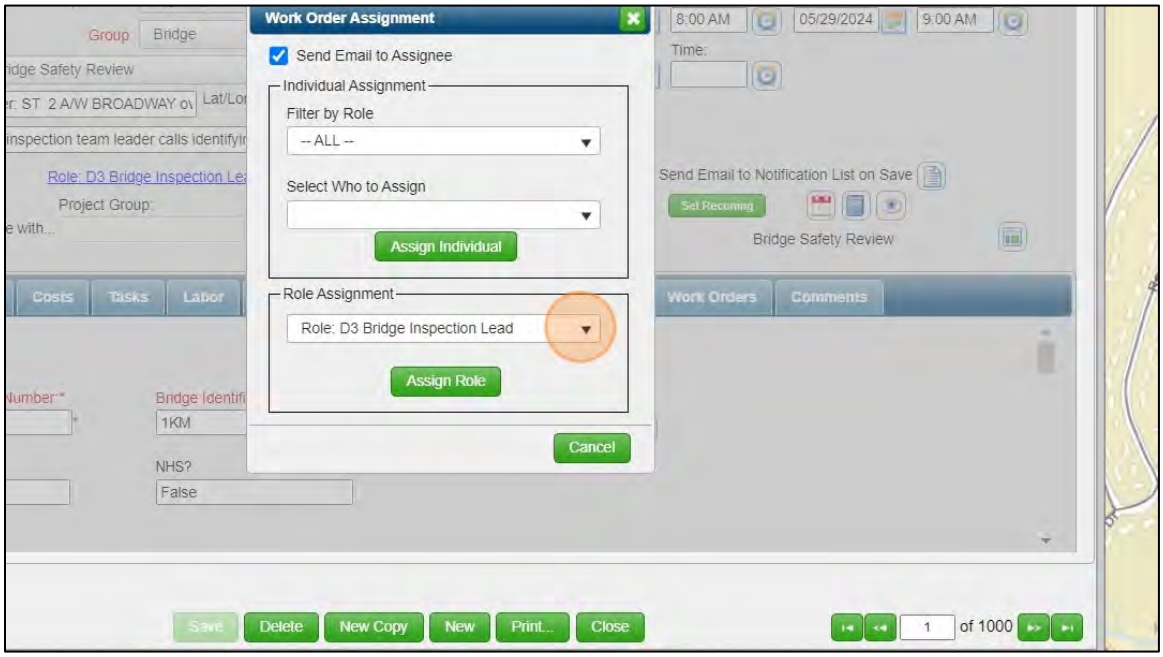


ASSIGNING

(9) Safety review is auto-assigned to the District Bridge Inspection Lead based on the "District" under Inventory Information. If you need to change the assignment, click the Change Assignment icon.



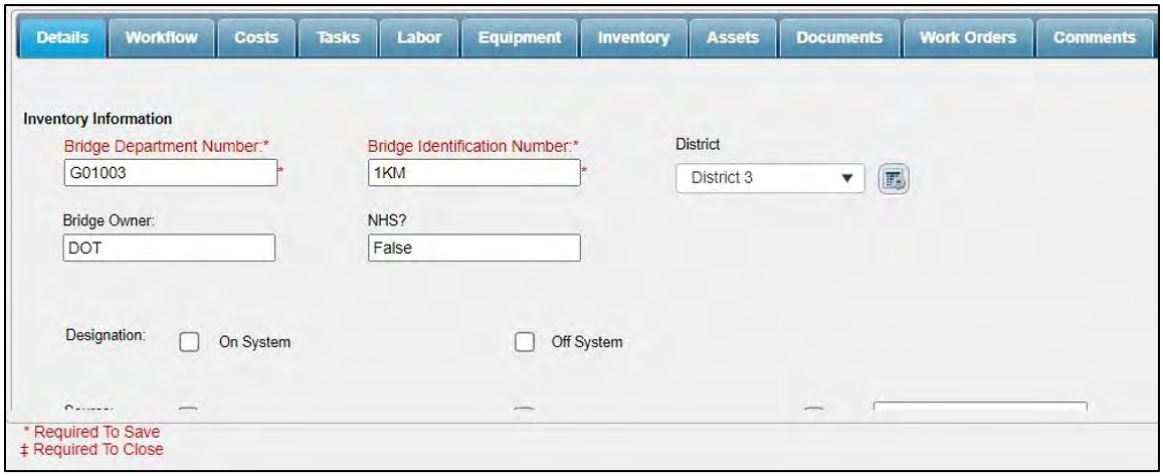
(10) You can change assignment to an individual or role.



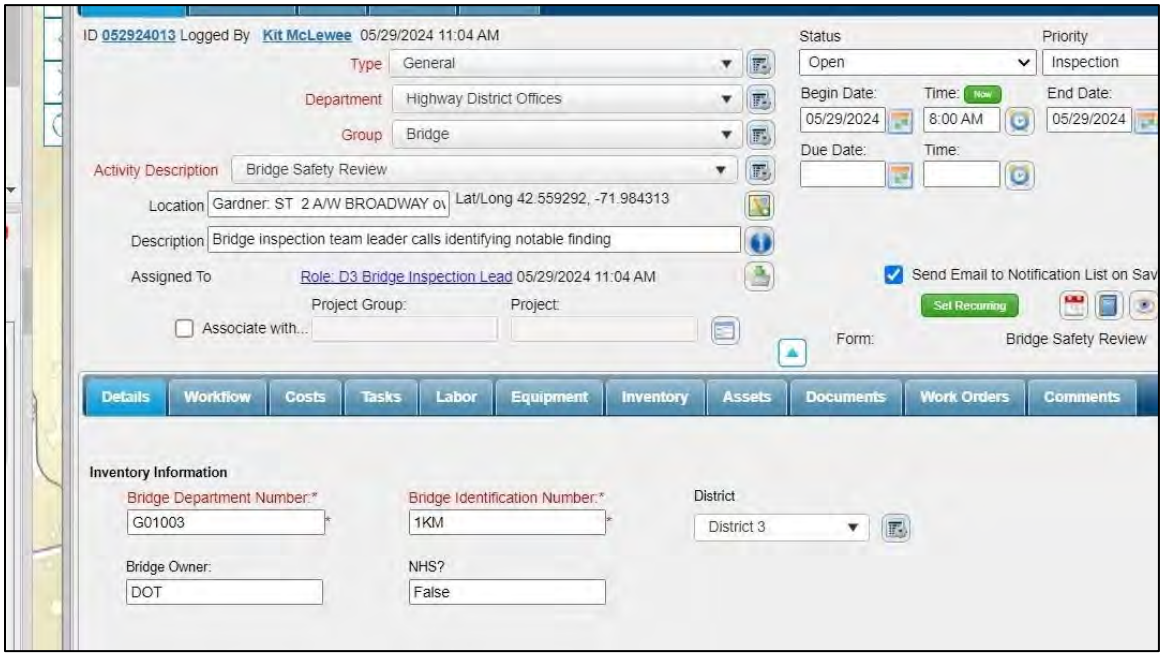
⚠ ⚠ You can only assign to one role OR one individual.

SAVING

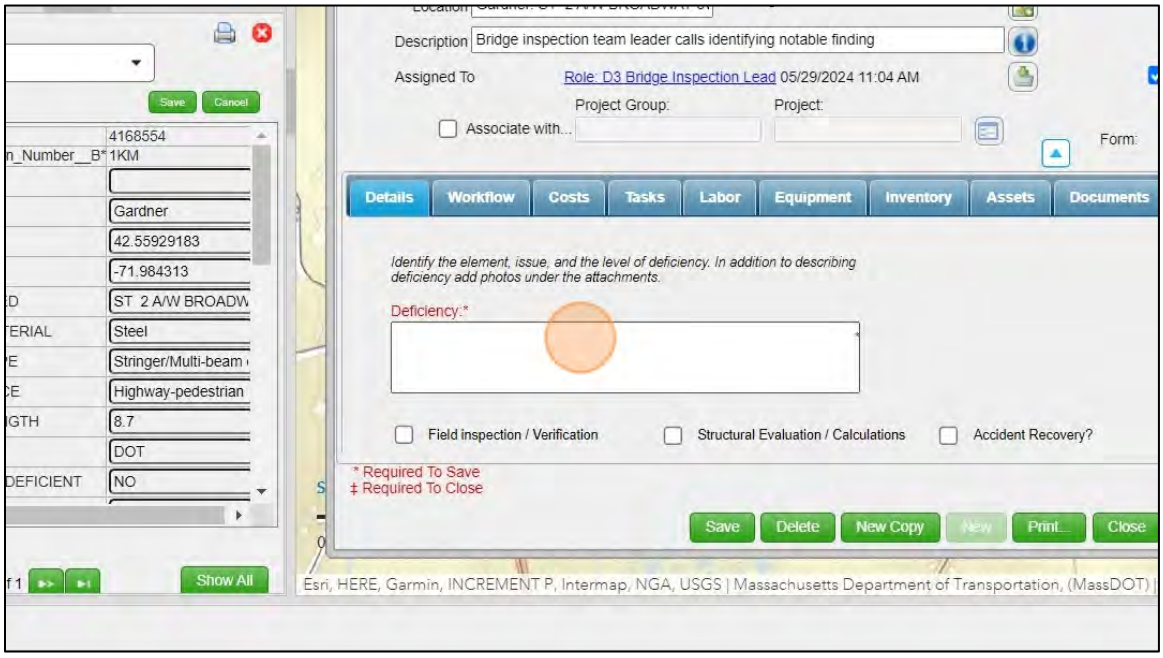
ⓘ **Fields in red are either required to save or to close, legend in the bottom left corner of the form.**



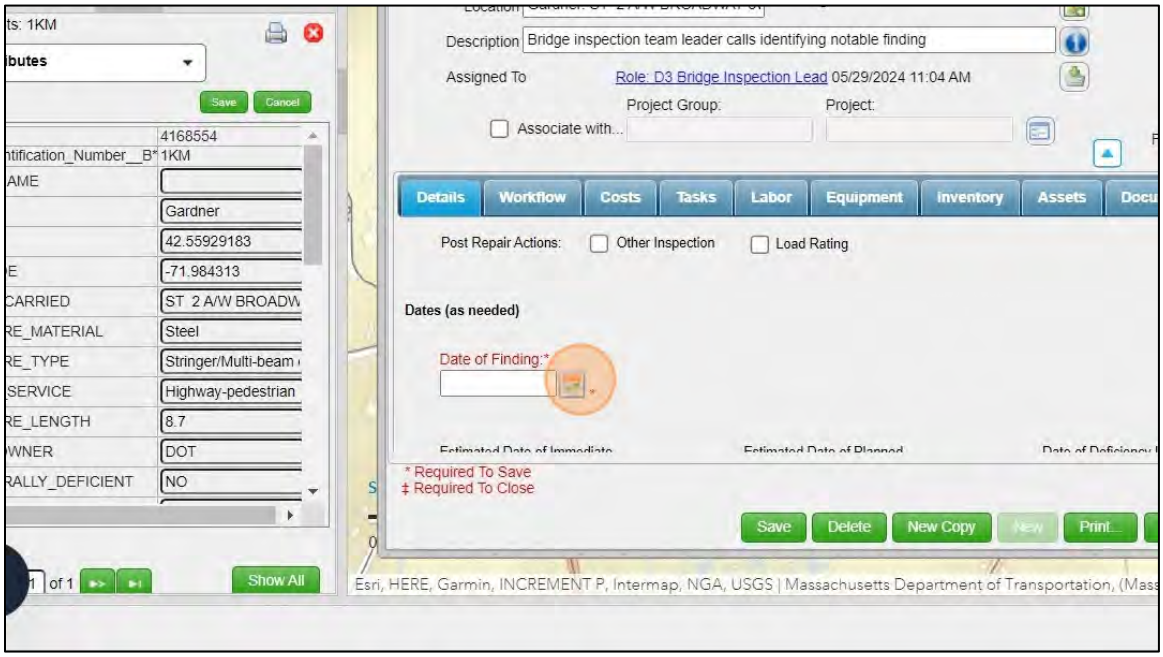
(11) Note "Inventory Information" auto-fills based on GIS information but you can still edit



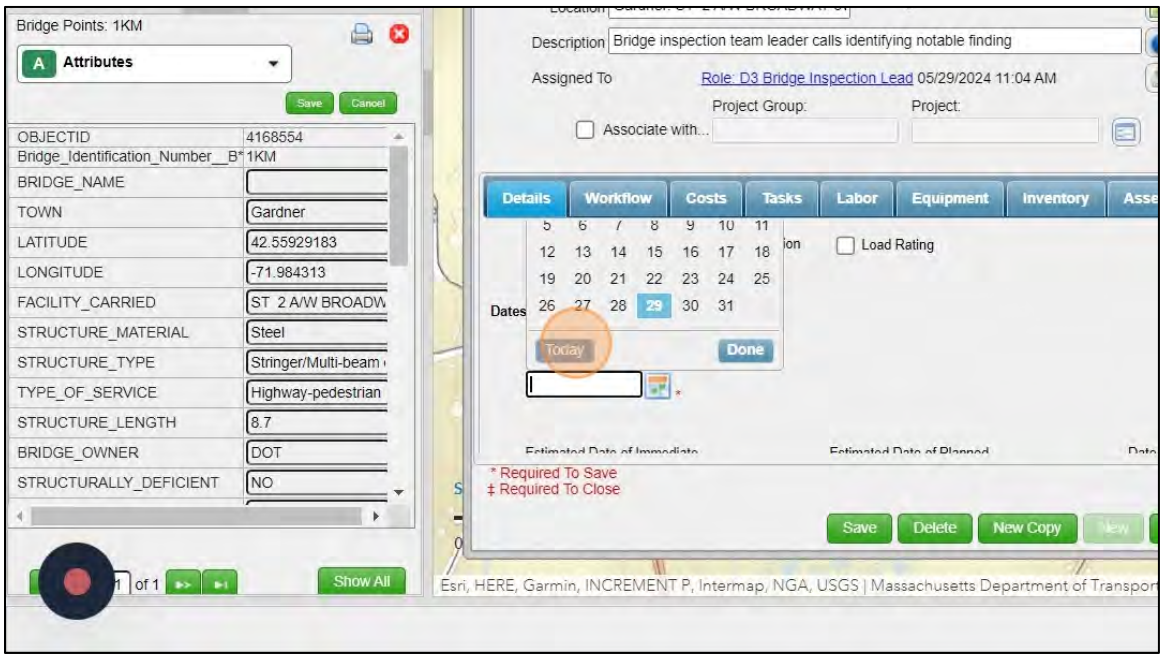
(12) Fill in "Deficiency" field.



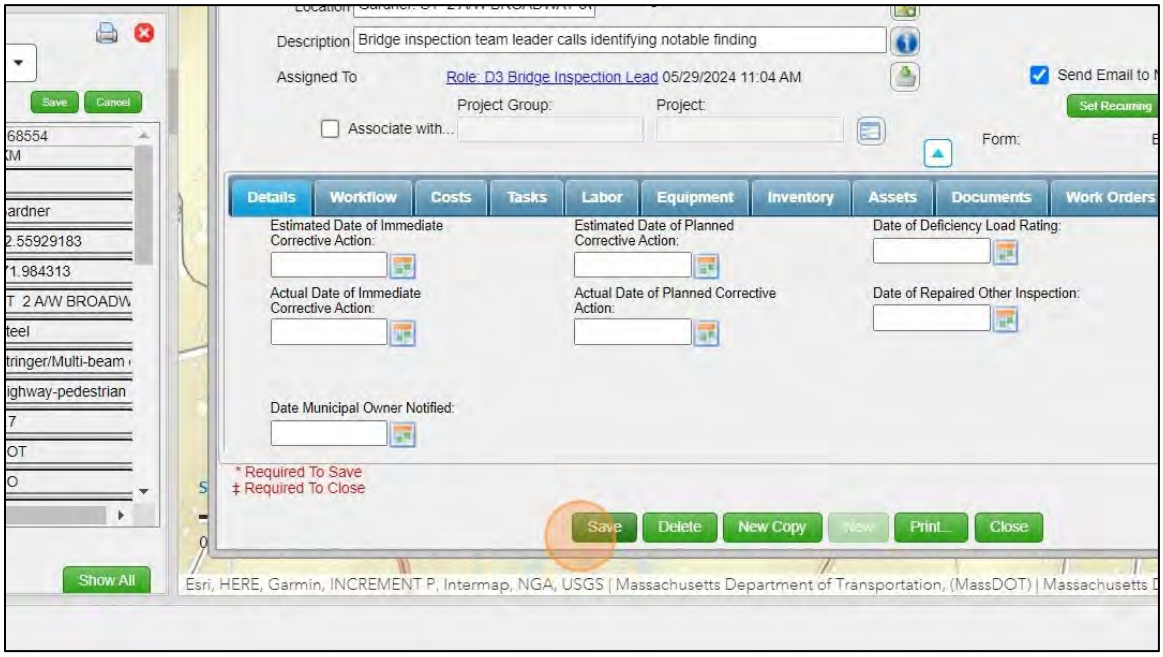
(13) Fill in "Date of Finding". You can type the date or select on a calendar.



(14) Example of filling date by calendar for "Today"



(15) Once the safety review is ready to be assigned, click "Save". This will notify assignee (step 9) of new safety review.

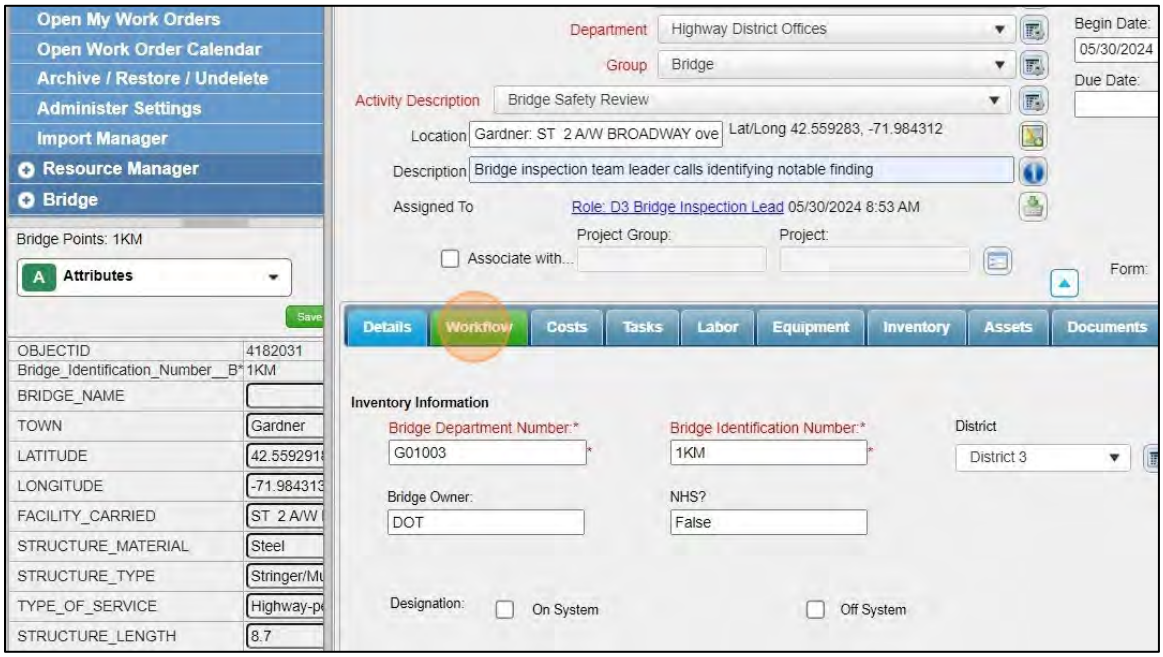


3 BRIDGE SAFETY REVIEW WORKFLOW STEPS (CREATING BRIDGE WO AND CLOSING SAFETY REVIEW)

This guide provides the steps for creating and managing child work orders linked to a parent safety review for bridges. It explains how to create and assign work orders, check their status, change the assignment of the safety review to the District Bridge Engineer and the DBE approval process.

A child work order is a work order that is linked to a parent safety review. Fields that carry over from parent safety review to the child work order include Asset and Description.

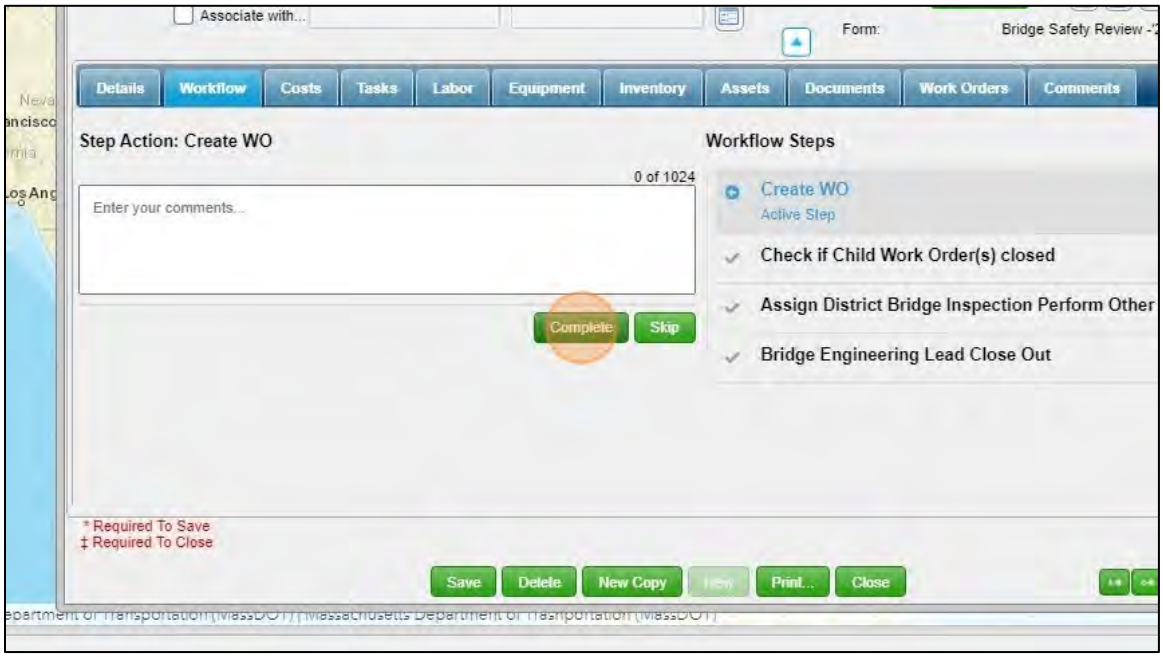
(1) If the safety review warrants a work order, next step will be to create a child work order. Click "Workflow"



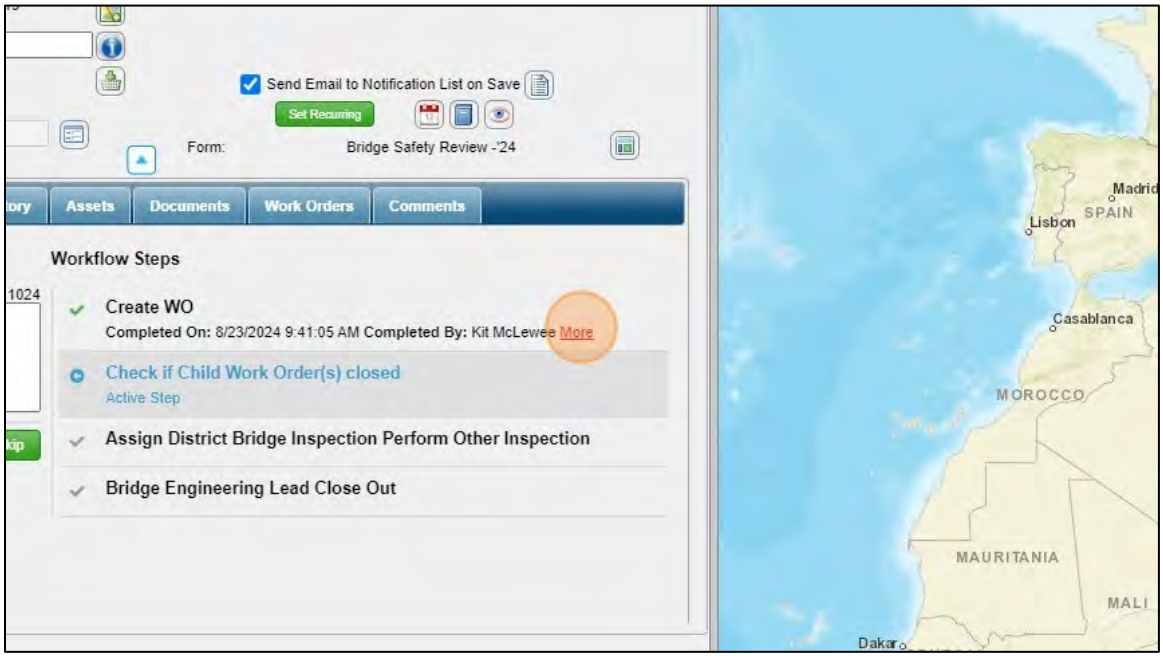
CREATE & ASSIGN WORK ORDER

⚠ Engineering Lead or Contract Lead can complete this workflow step.

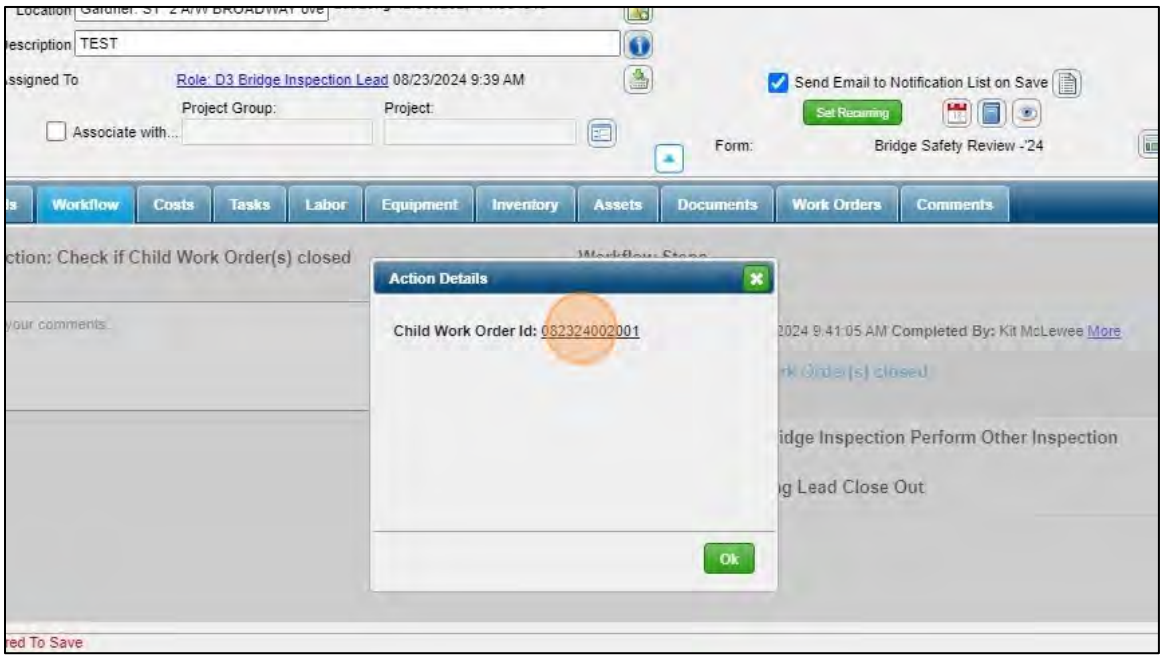
(2) To create a child work order from this safety review, click "Complete"



(3) To open work order, click "More" underneath the workflow step



(4) Click the work order number "082324002001"

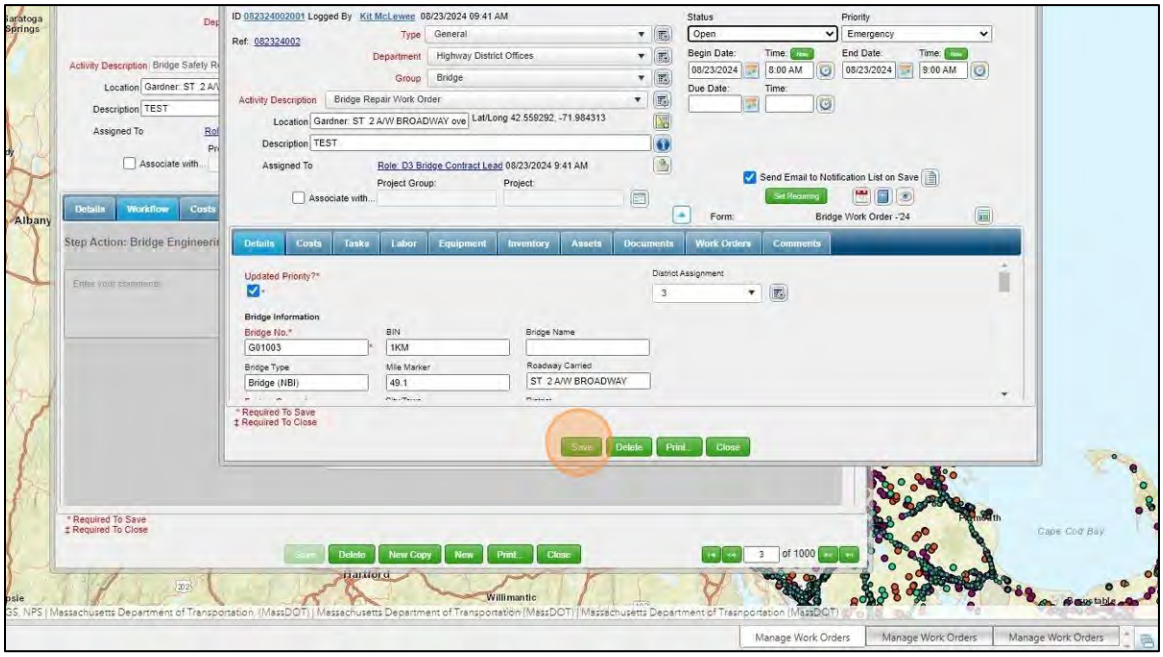


(5) Child work order appears in a new window. The work order auto-assigns to the District Bridge Contract Lead; you can always change the assignment.

Note the following fields are carried over from the parent safety review:

- Location/asset
- Description
- Bridge Information

(6) Fill out fields required upon save, and click "Save"



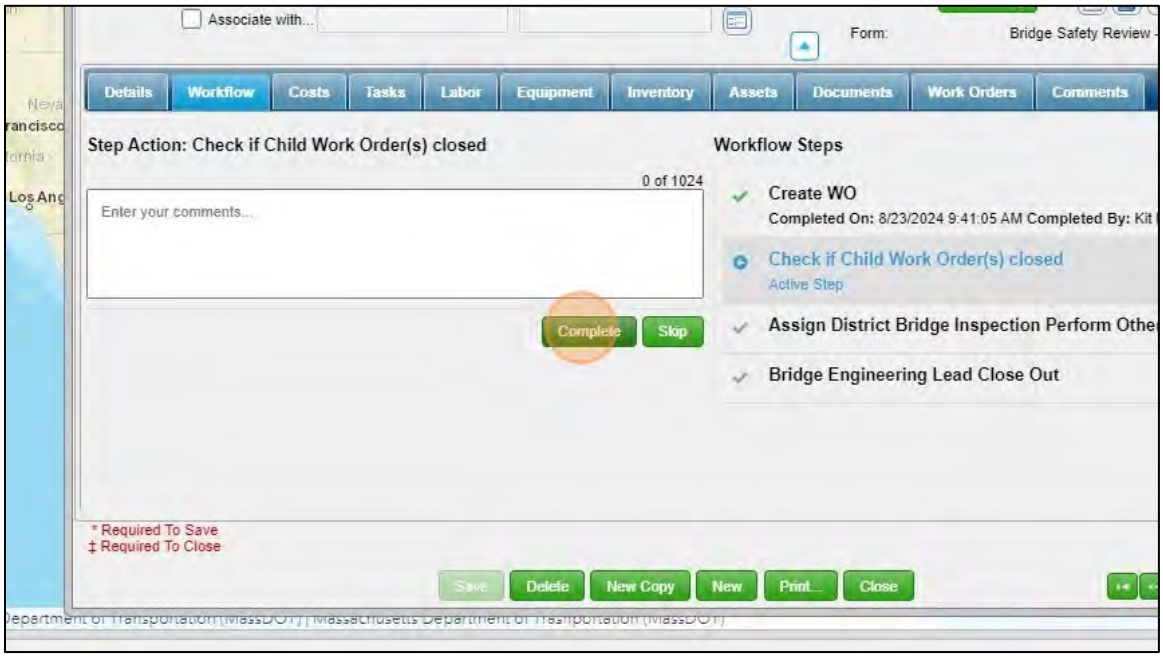
Every VUEWorks form has an ID number in the top left corner. The number of a child work order has the same number as the parent safety review plus a three digit number at the end indicating what number child work order it is.

A child work order also has the parent work order linked below the ID number labeled "Ref:"

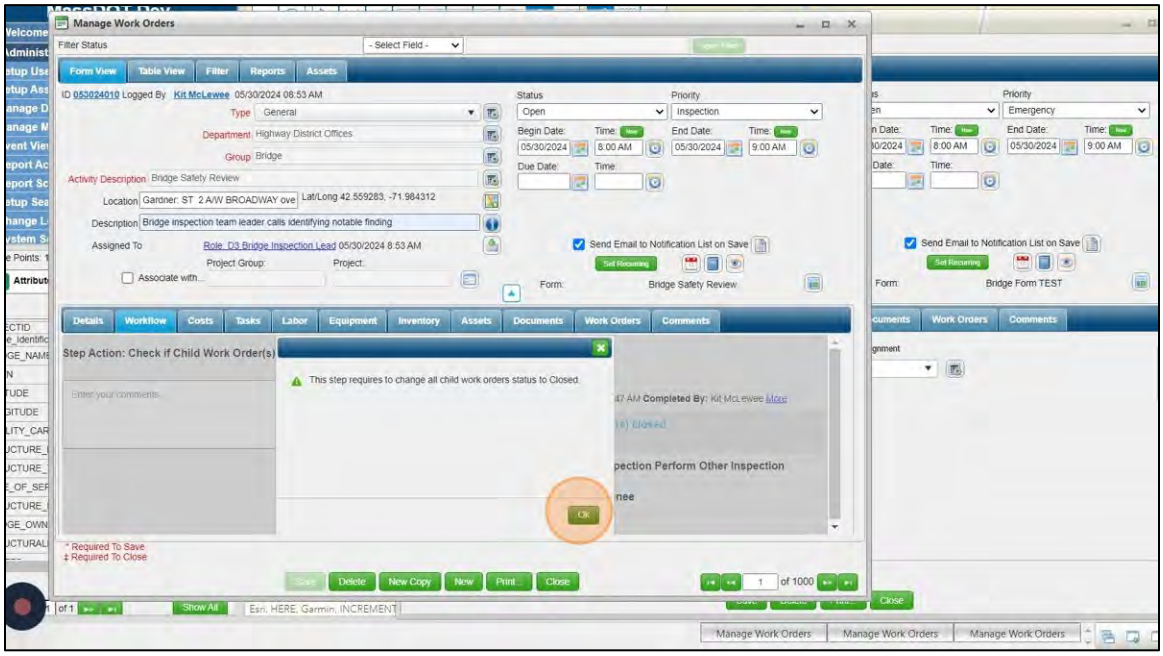
CHECK CHILD WORK ORDER STATUS

⚠ ⚠ Engineering Lead or Inspection Lead can complete this workflow step.

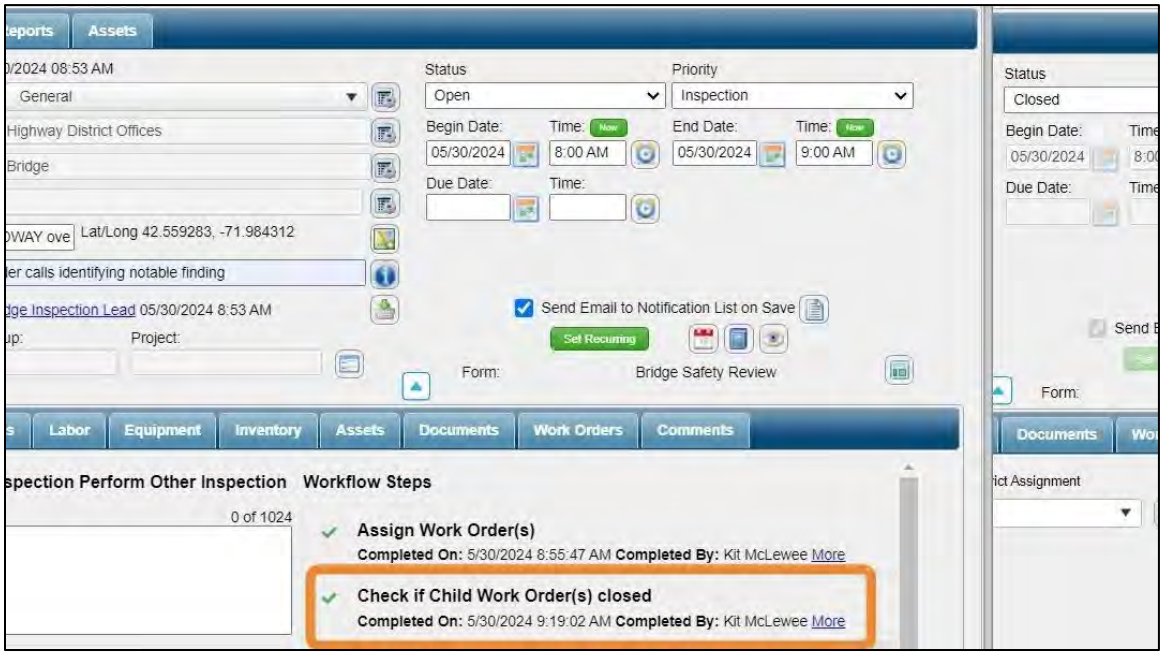
(7) To check status of child work order, click "Complete"



(8) If child work order is still open, a window will pop up alerting that this step cannot be completed. Click "Ok" to close window.



(9) If child work order is closed, the step will complete and you can move on to the next workflow step



ASSIGN DISTRICT BRIDGE INSPECTION

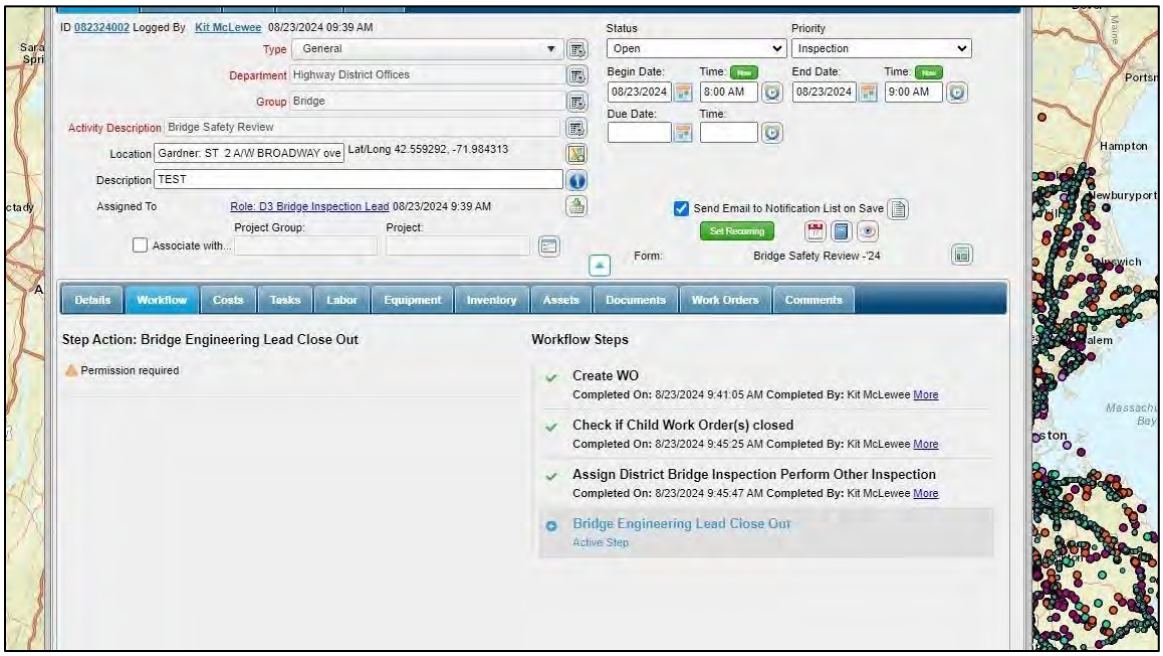
(10) The next workflow step signifies needing to change the assignment of the safety review from Bridge Inspection Lead to the District Bridge Engineer. If you click complete, you will need to manually change the assignment of the safety review to the District Bridge Engineer. To see how to change assignment, go to Creating, Assigning, and Saving Bridge Safety Review



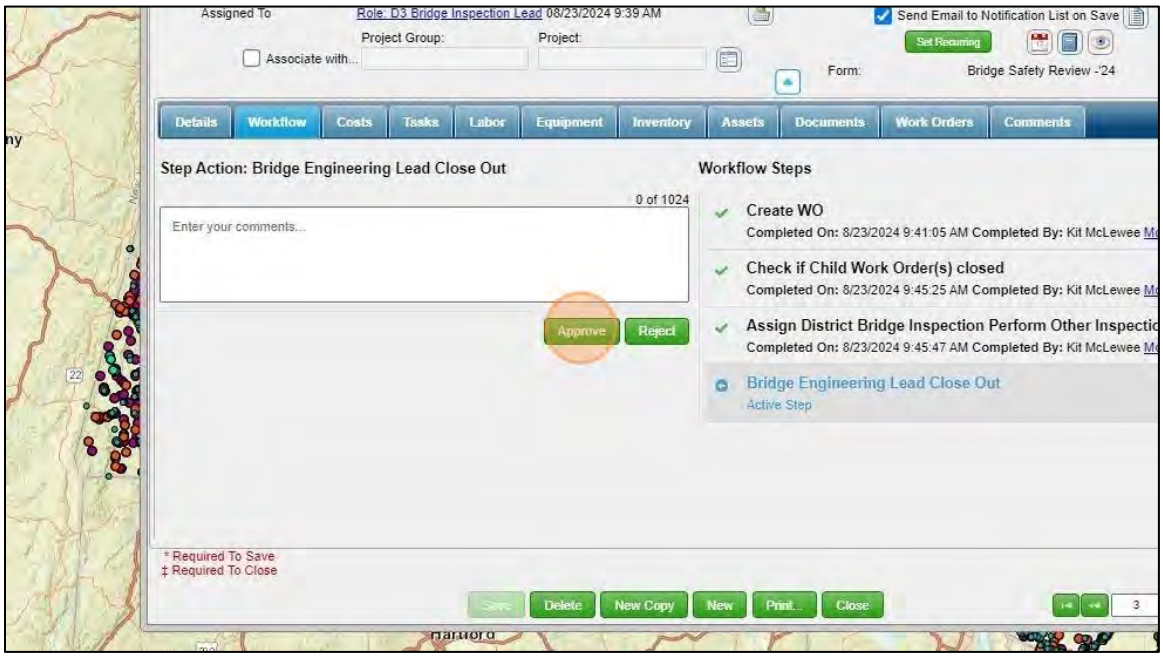
BRIDGE ENGINEERING LEAD CLOSE OUT

⚠ Only Engineering Lead can complete this workflow step.

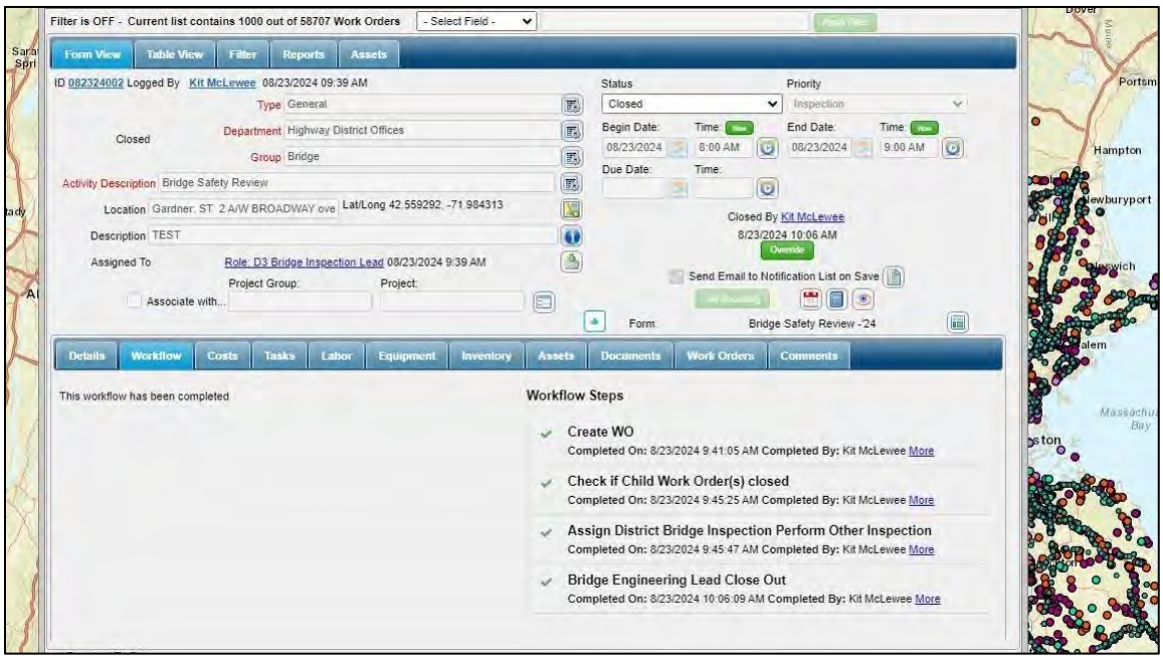
(11) If you are not the DBE or Designee, you will not be able to complete this workflow step.



(12) If you are the DBE or Designee, click "Approve"



(13) All workflow steps are completed!

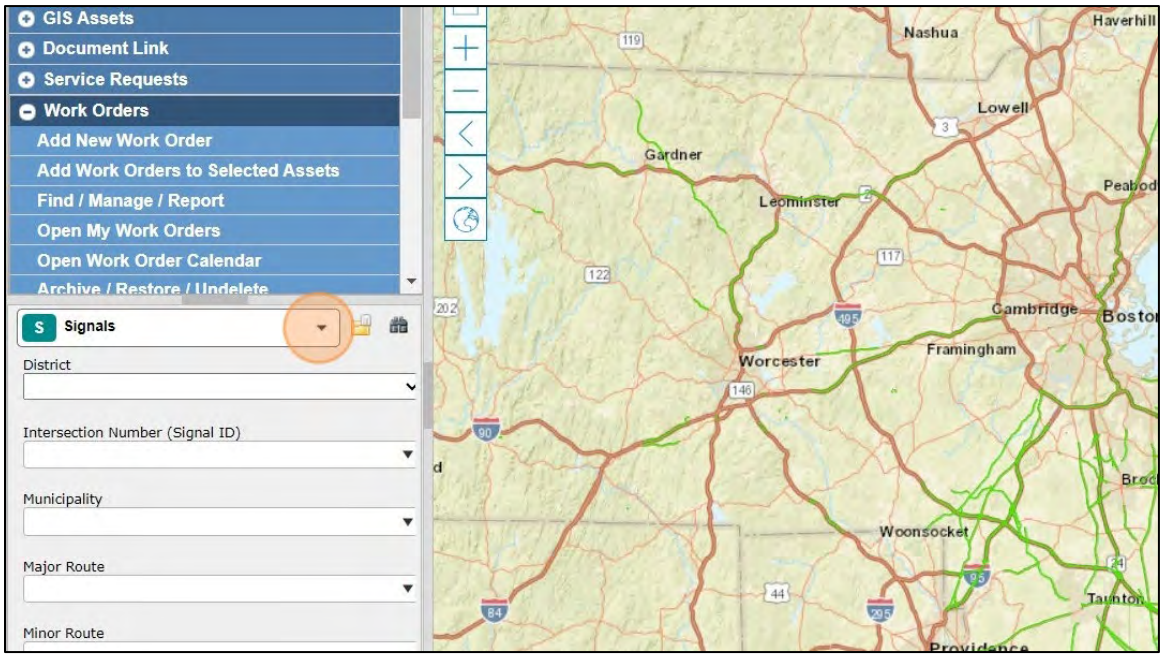


4 CREATING BRIDGE REPAIR WORK ORDER (NO SAFETY REVIEW)

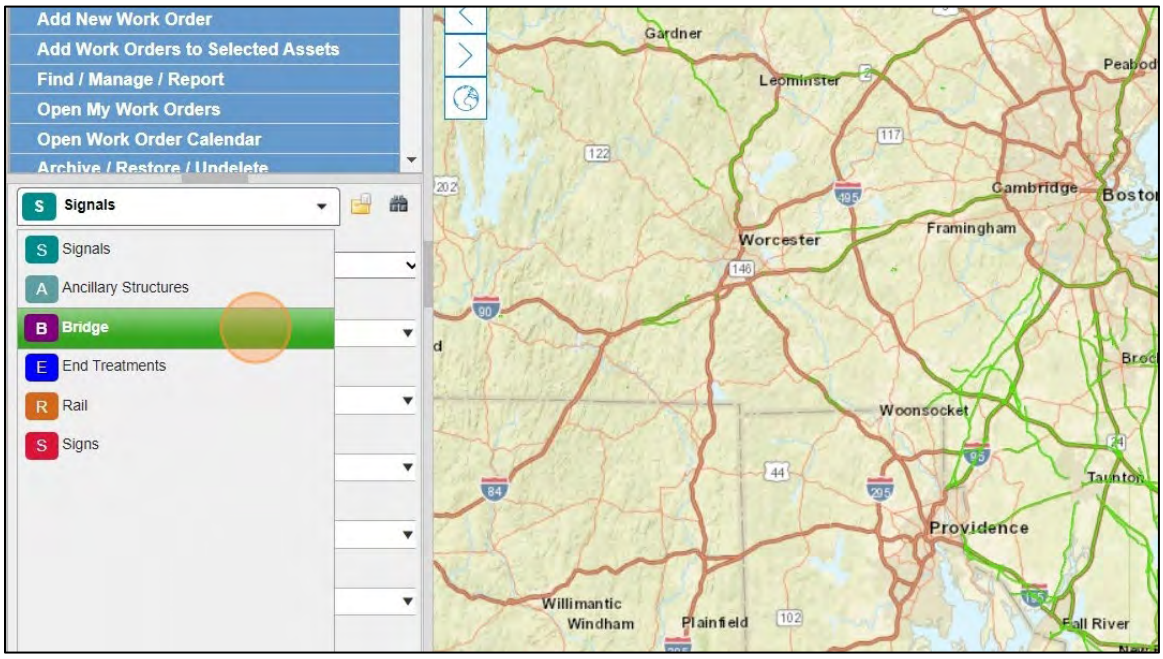
This guide provides step-by-step instructions on how to create a bridge repair work order, not related to a safety review. Instructions include how to locate the bridge, add it to a work order, and change the assignment. It also highlights the required fields and the process of saving the work order.

Have the bridge layer turned on!

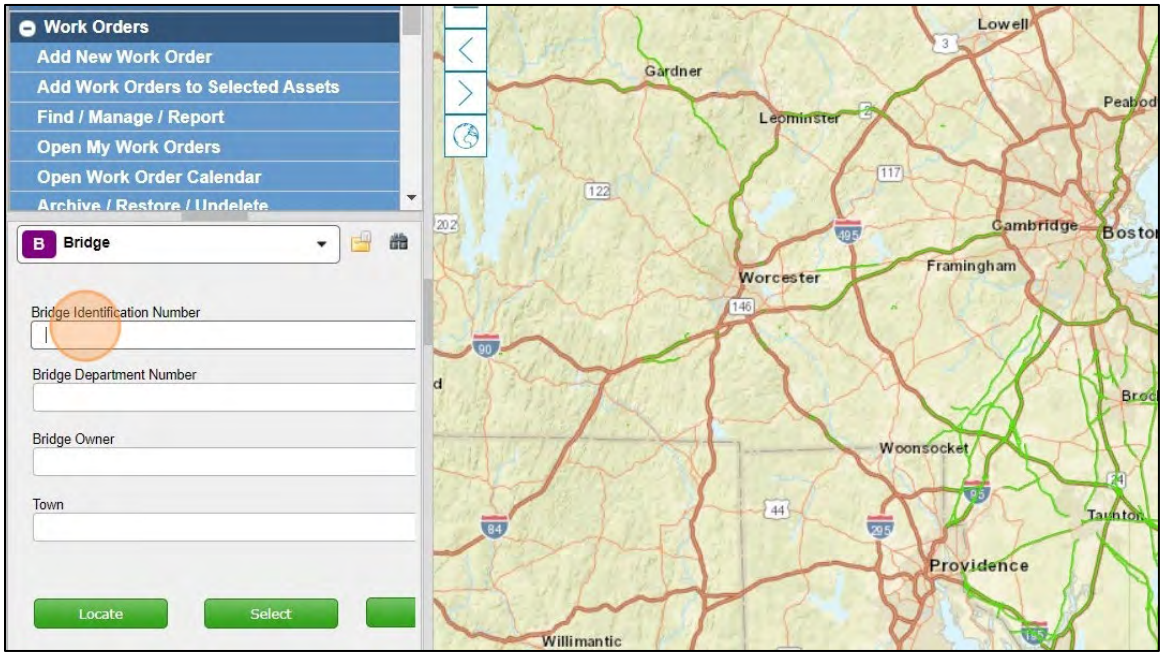
(1) Click to change search bar in bottom left corner



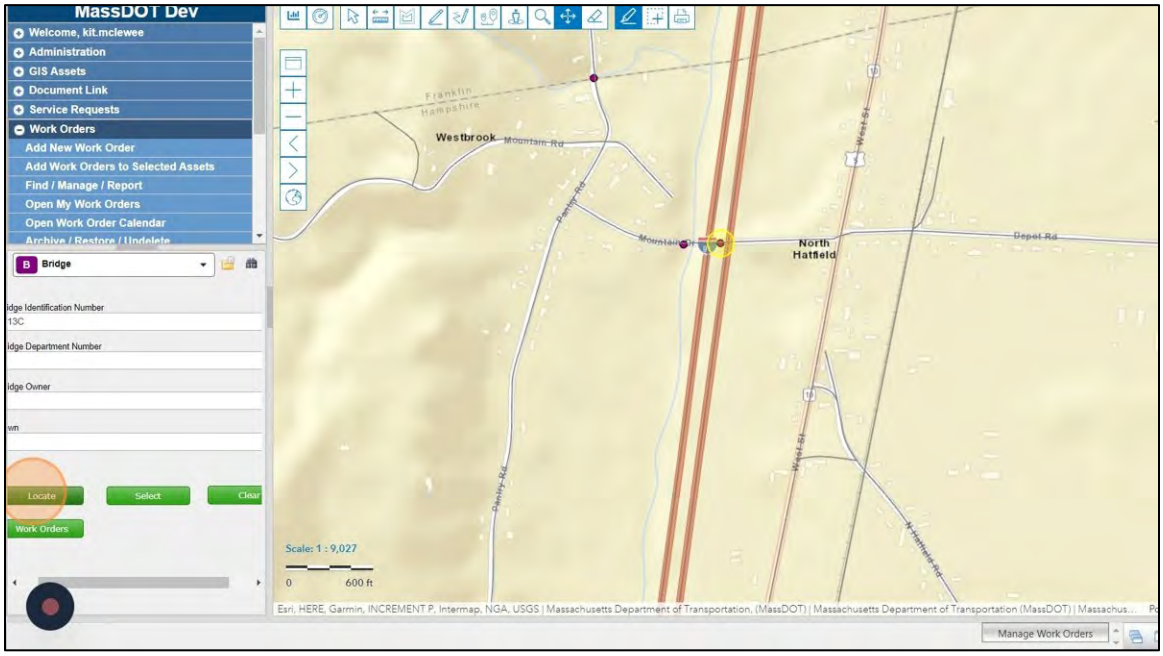
(2) Choose "Bridge"



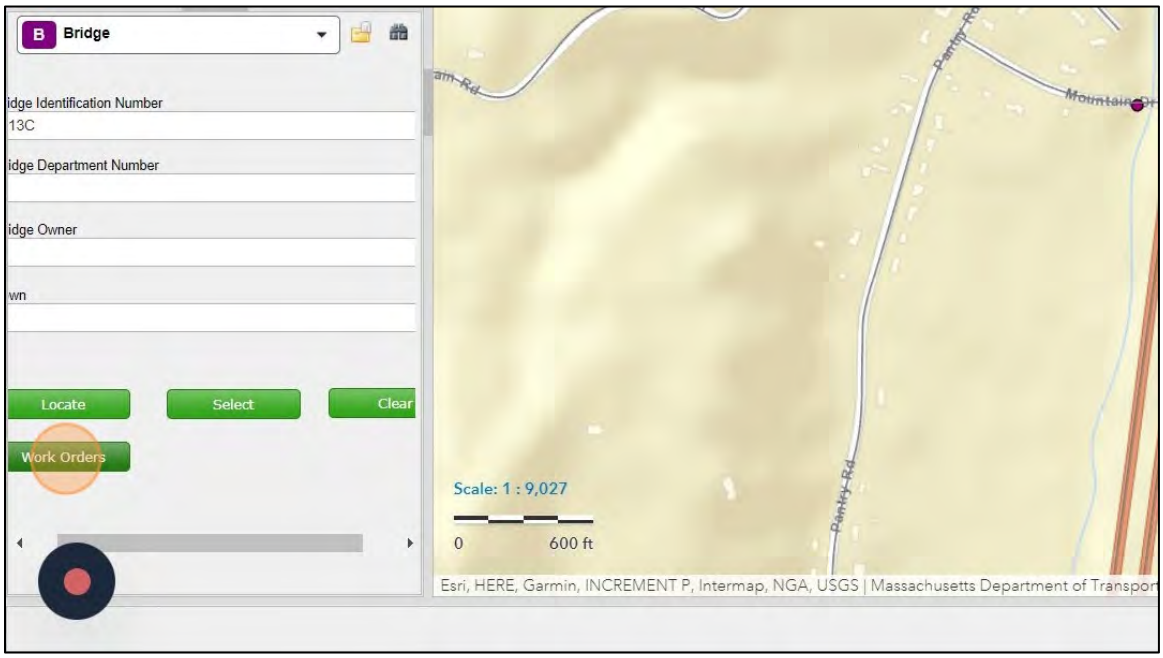
(3) Enter BIN



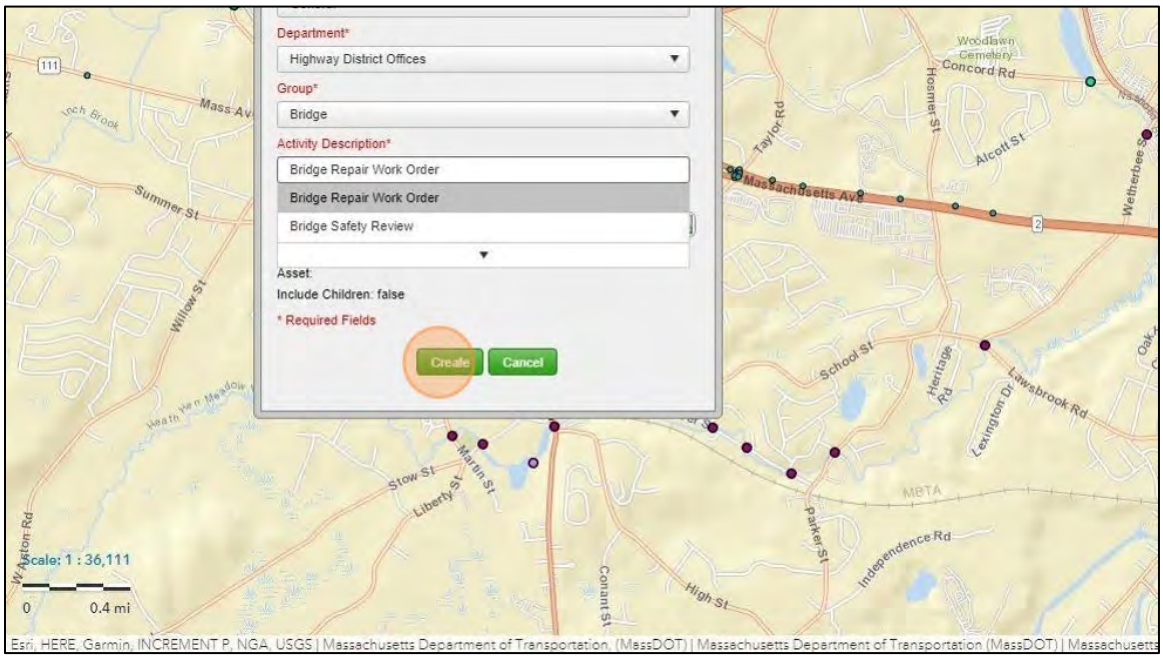
(4) BIN 13C used as an example here. Click "Locate" to move map to bridge. Bridge highlights in yellow.



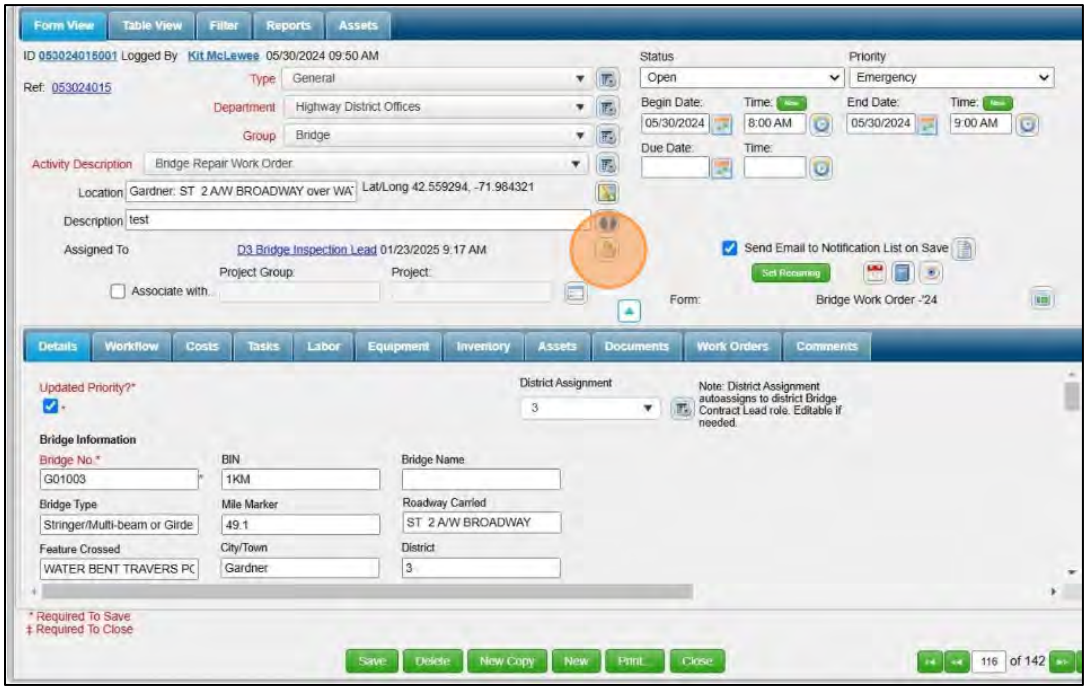
(5) Click "Work Orders" to add bridge to a new work order



(6) Set "Activity Description" as *Bridge Repair Work Order* and click "Create"

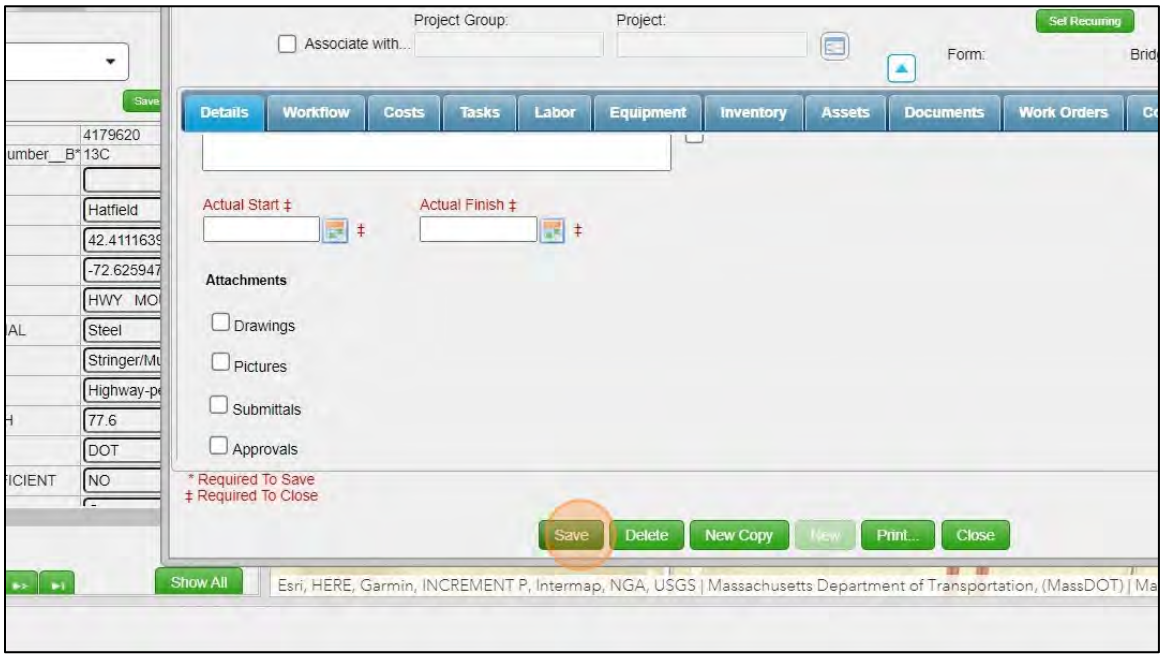


(7) Work order auto-assigned to the District Bridge Contract Lead based on "District Assignment" field under Details tab. If you need to change the assignment, click the Change Assignment icon.



⚠ You can only assign to one role OR one individual.

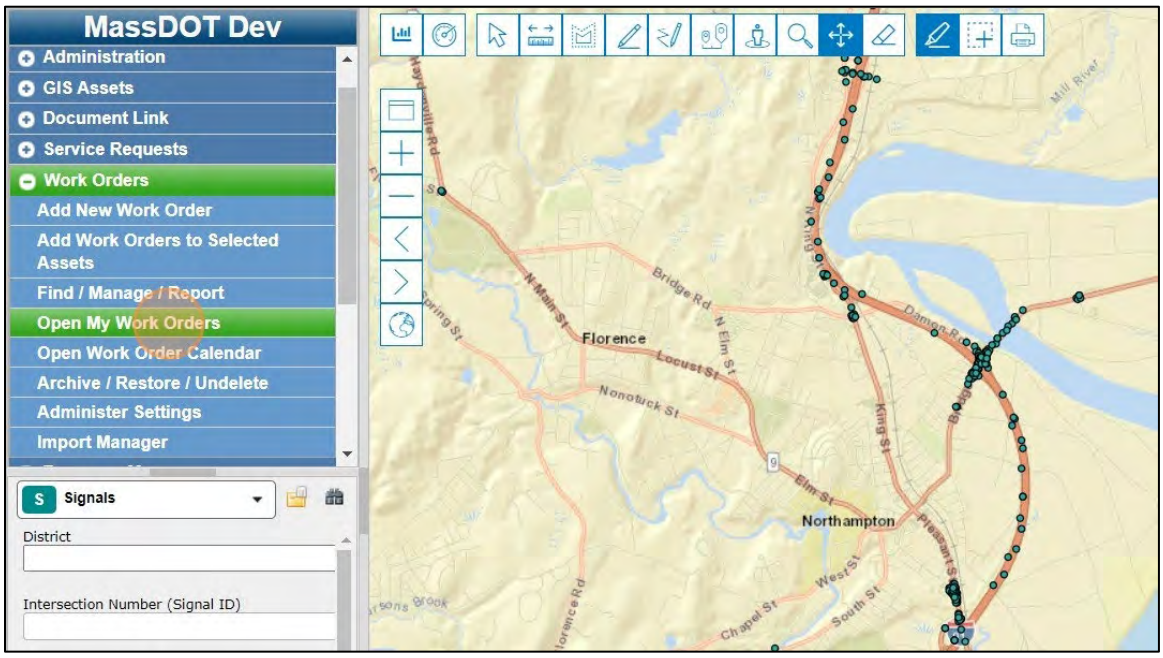
(8) Fill out fields required upon save, then click "Save". This will notify assignee (step 7) of new work order.



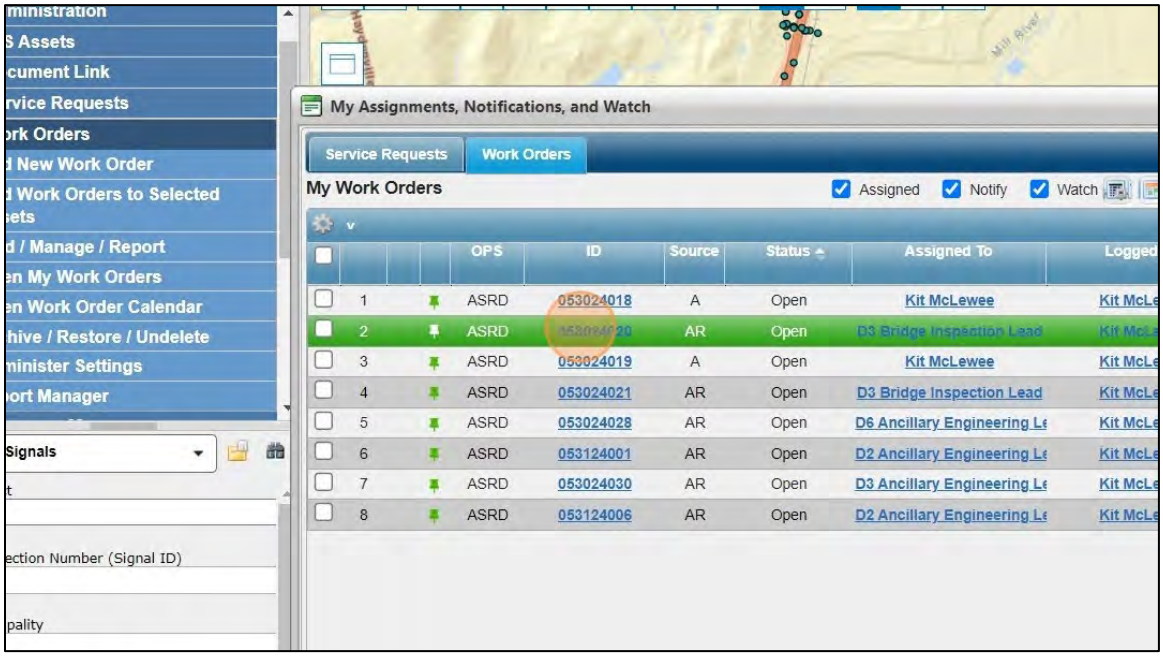
5 CLOSING BRIDGE WORK ORDERS

This guide provides a step-by-step process for closing bridge work orders in VUEWorks. By following these instructions, you will be able to easily update the status of work orders, ensuring that they are completed and closed out properly.

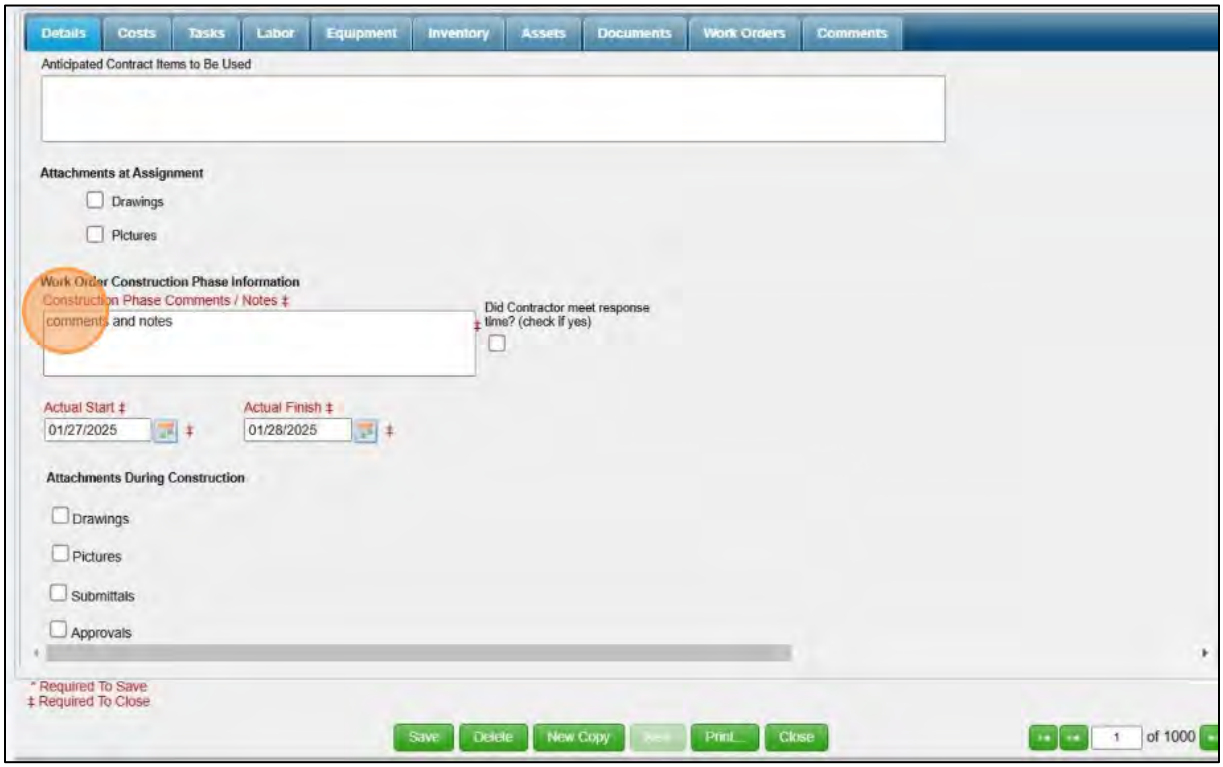
(1) Click "Open My Work Orders"



(2) List of safety reviews and work orders assigned to you as an individual or role appear. Click "ID number link" to open form.



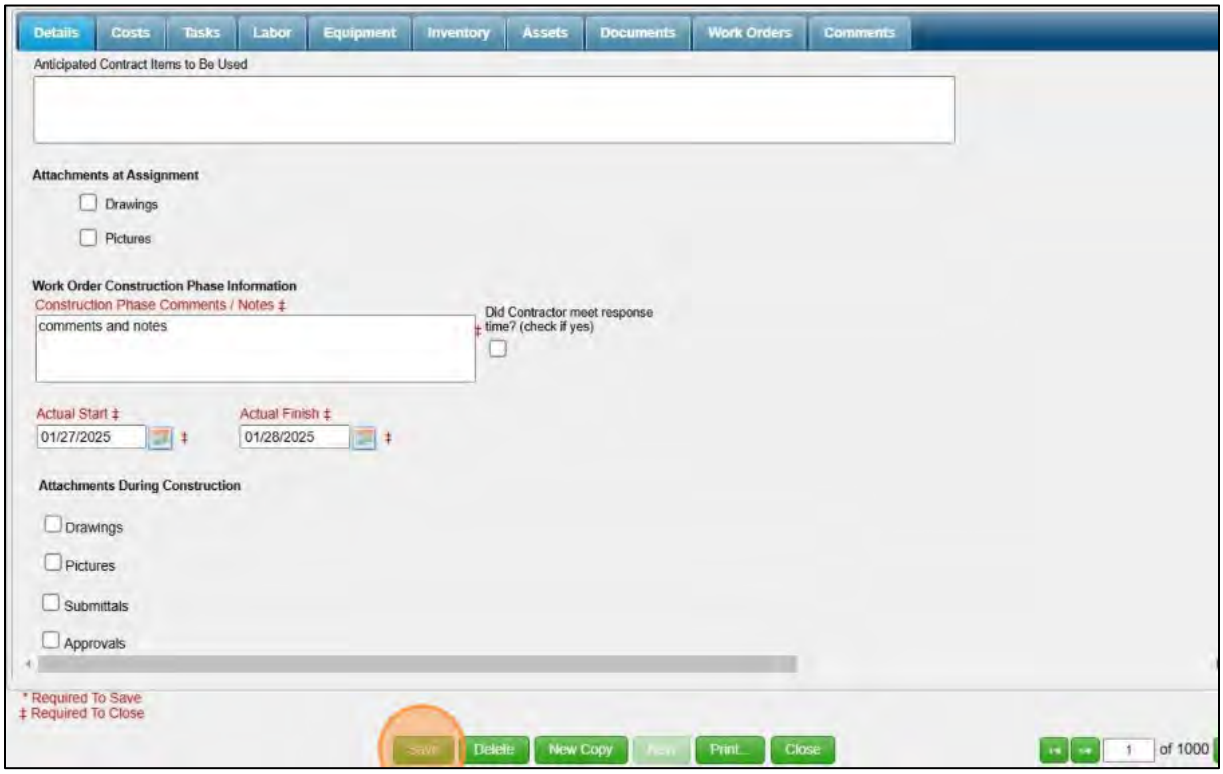
(3) Fill out fields required to close, which are red and marked with "‡"



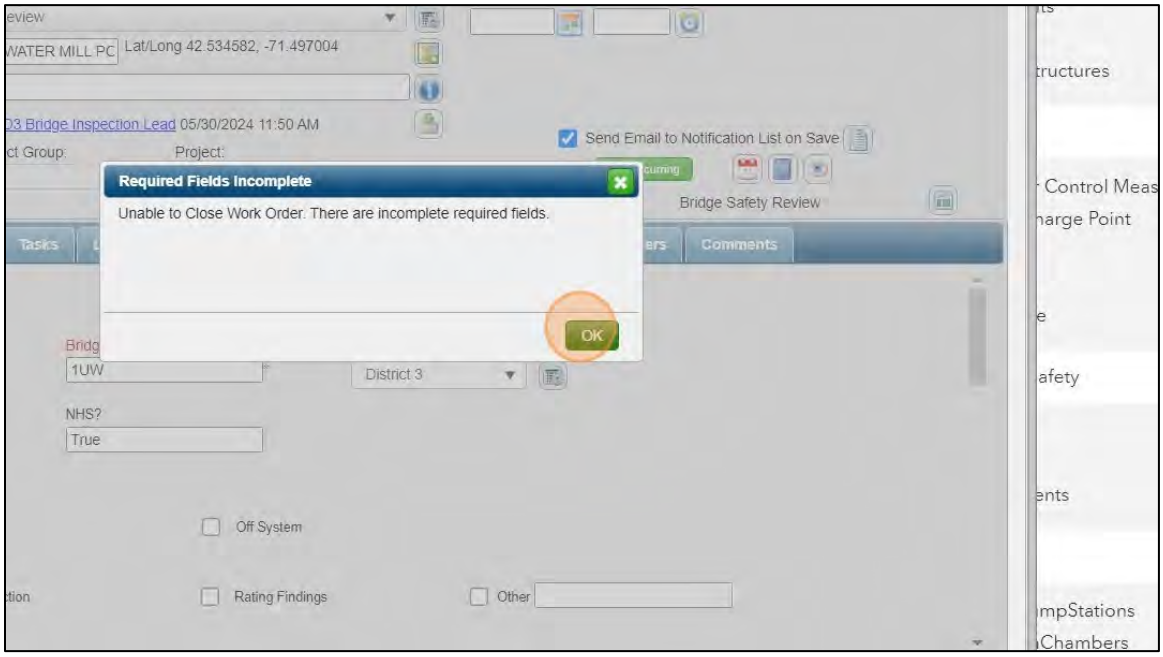
(4) Change "Status" in top right corner by clicking dropdown and change to *Closed*.



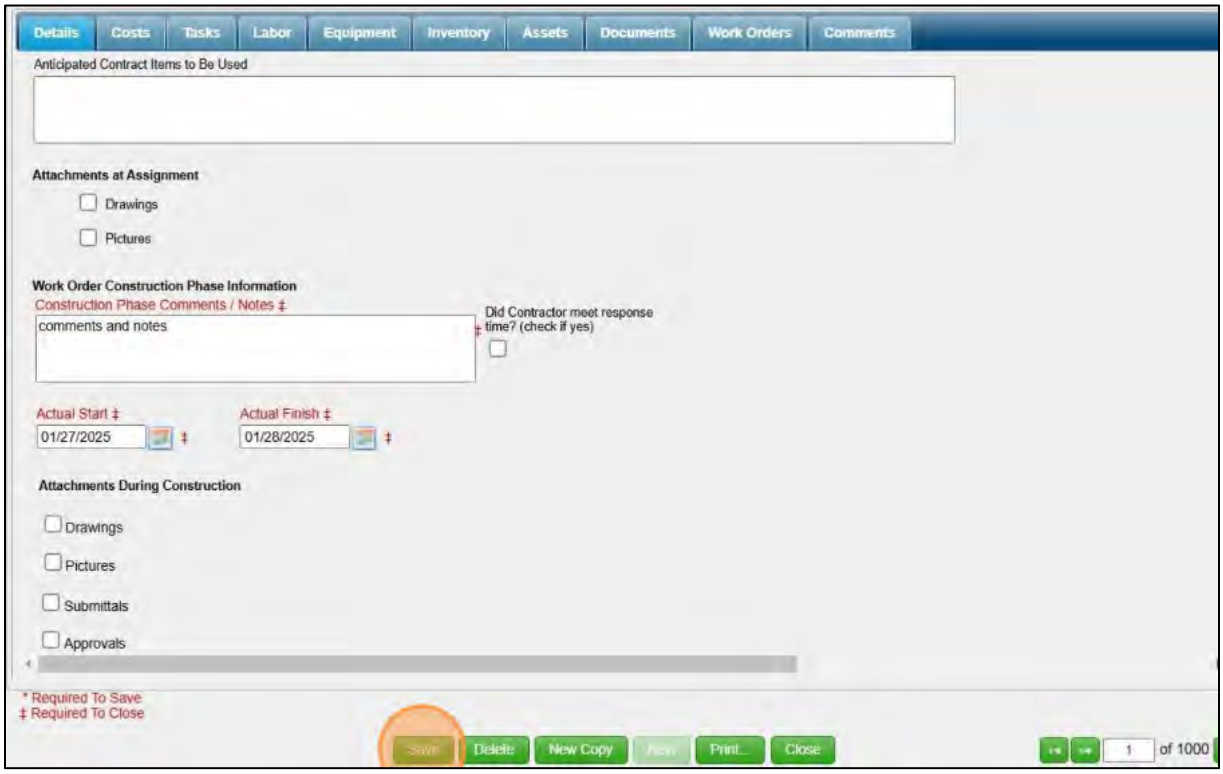
(5) Click "Save"



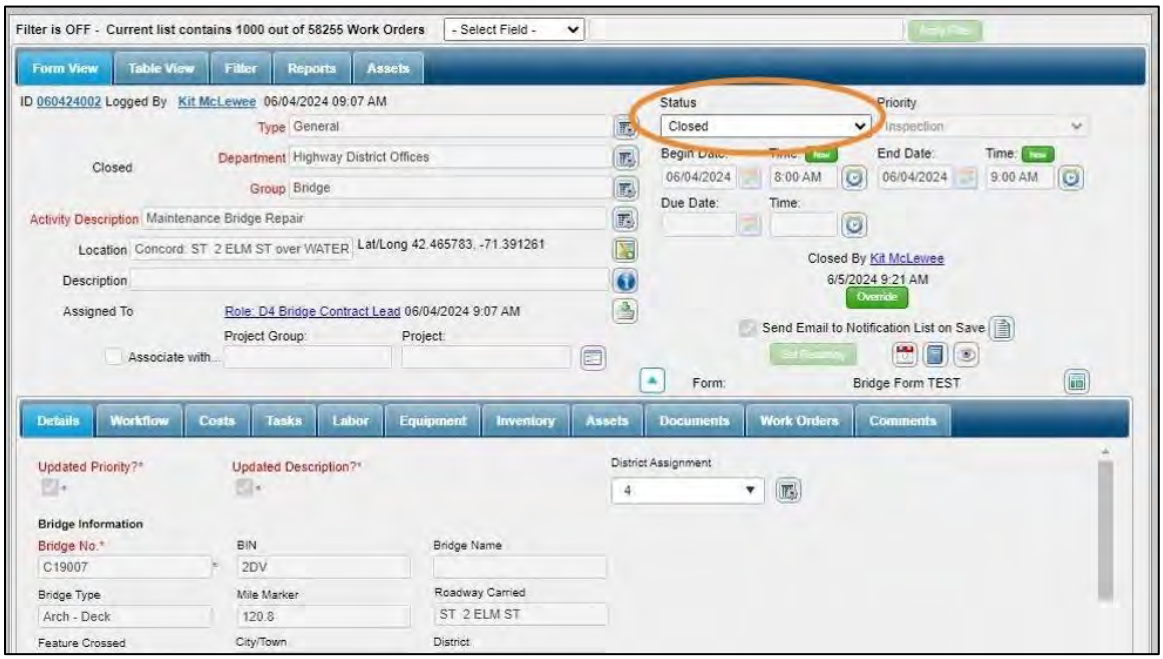
(6) If required fields to close are not filled out, this popup will appear. Click "Ok" to close popup and fill out required fields (step 3).



(7) Click "Save"



(8) "Status" is set to *Closed* and form will grey out



Appendix - D: Safety Review & Work Order Forms

Appendix D includes screenshots of the forms, maps and navigation built into VUEWorks to support MassDOT's Asset Management. The forms in this section are annotated with guidance designed to help users as they get familiar with the system and the safety review and work order forms.

Appendix D Contents

Safety Review Fields D-2

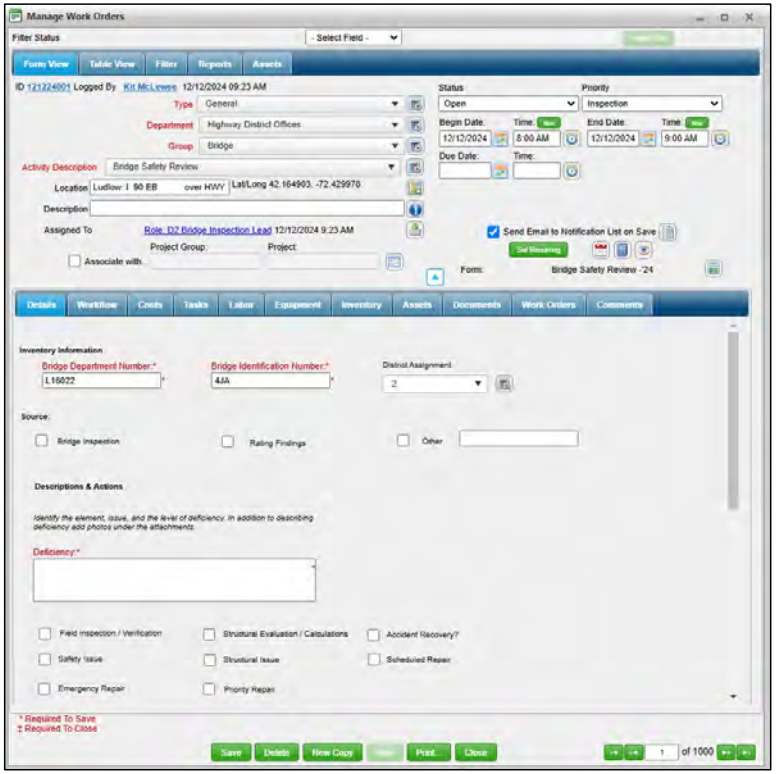
Bridge Safety Review D-3

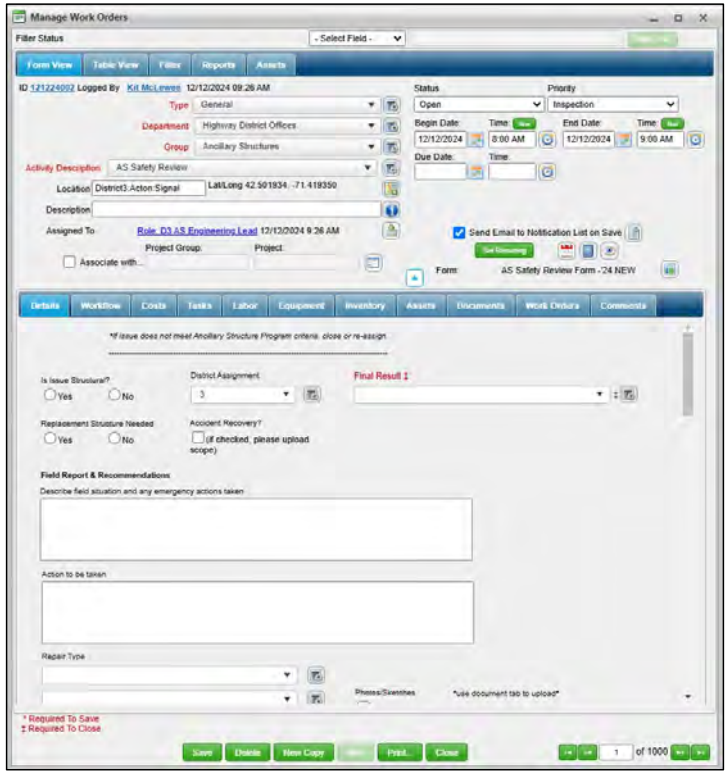
Ancillary Structure Safety Review D-7

Bridge Work Order D-11

Ancillary Structure Work Order D-16

Safety Review Fields

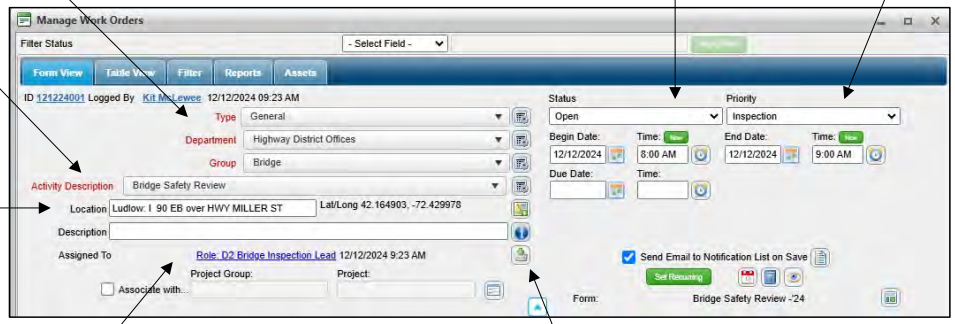




BRIDGE

SAFETY REVIEW

Bridge Safety Review Fields



Set Type, Department, and Group as *General, Highway District Offices, and Bridge* respectively

Set Activity Description as *Bridge Safety Review*

Auto-assigns location as *Town: Facility Carried over Feature Intersected*

Status should be "Open"

Priority should be "Inspection"

Auto-assigns to *District Bridge Inspection Lead since they will fill in the start and send to Engineering Lead*

Click green arrow in basket icon to change assignment

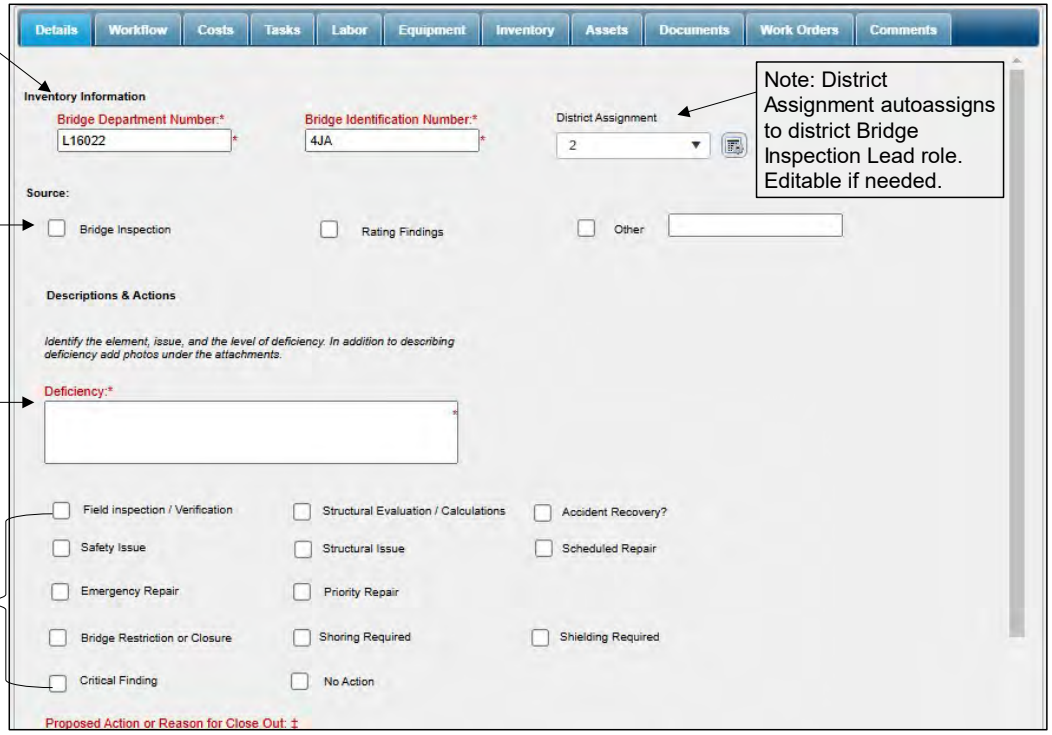
Bridge Safety Review Fields (cont.)

Inventory Information auto-fills based on GIS data. Editable if needed.

Identify where this finding requiring safety review came from.

Describe the deficiency

Identify all applicable fields for tracking.



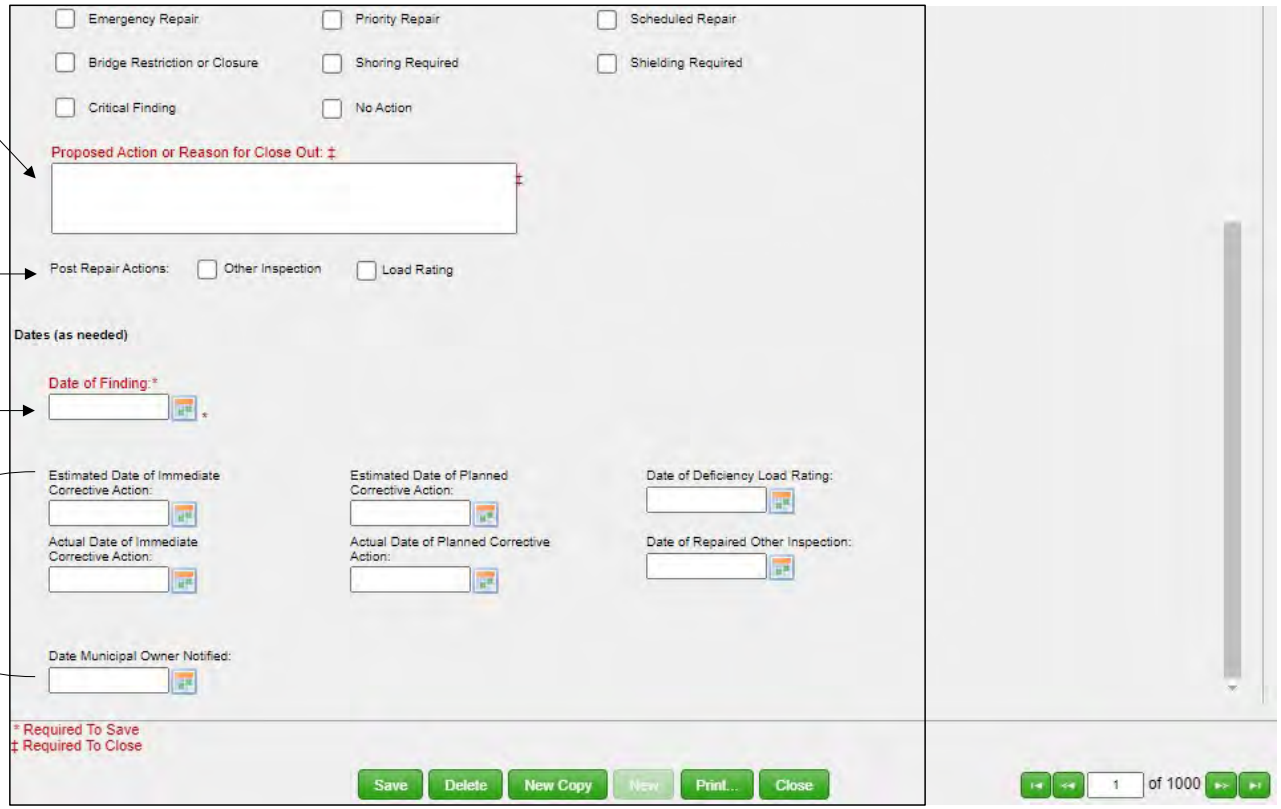
Bridge Safety Review Fields (cont.)

Engineering Lead shall provide a description of the action or if no action the reason for close out.

If there is a work order, identify if an inspection or load rating needs to be performed after

Date of finding that triggered safety review

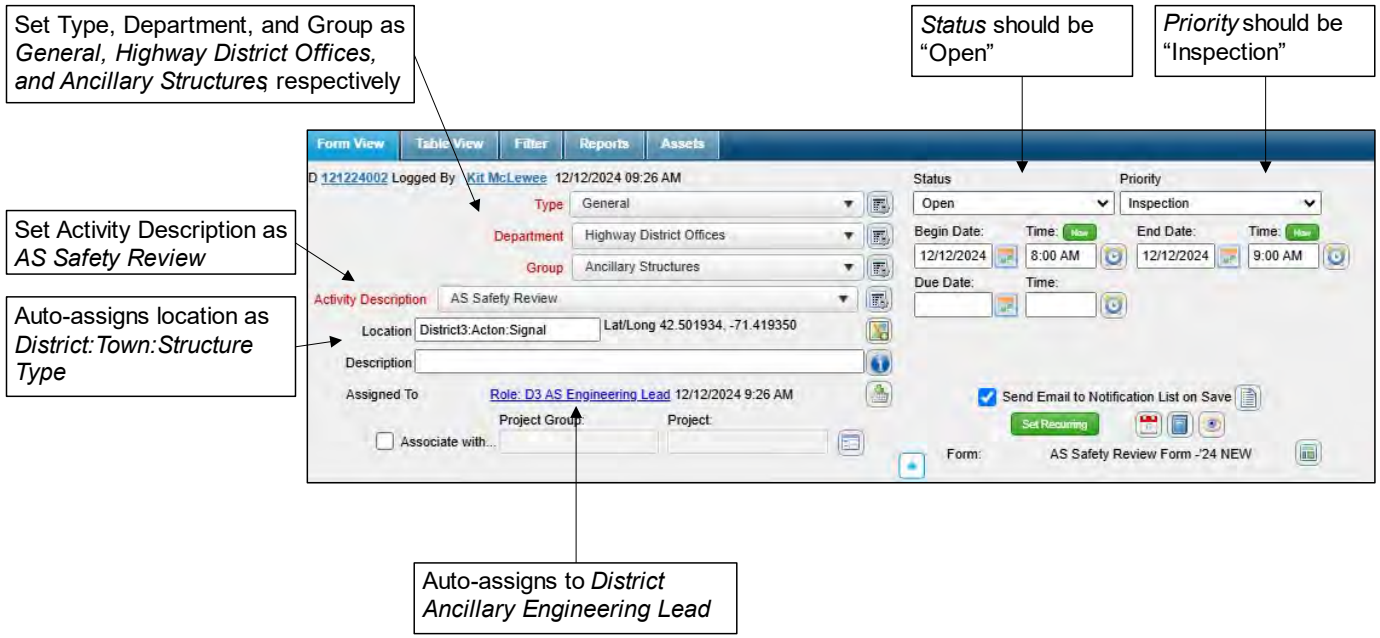
Additional dates to track when actions estimate versus taken.



ANCILLARY STRUCTURE

SAFETY REVIEW

Ancillary Structure Safety Review Fields

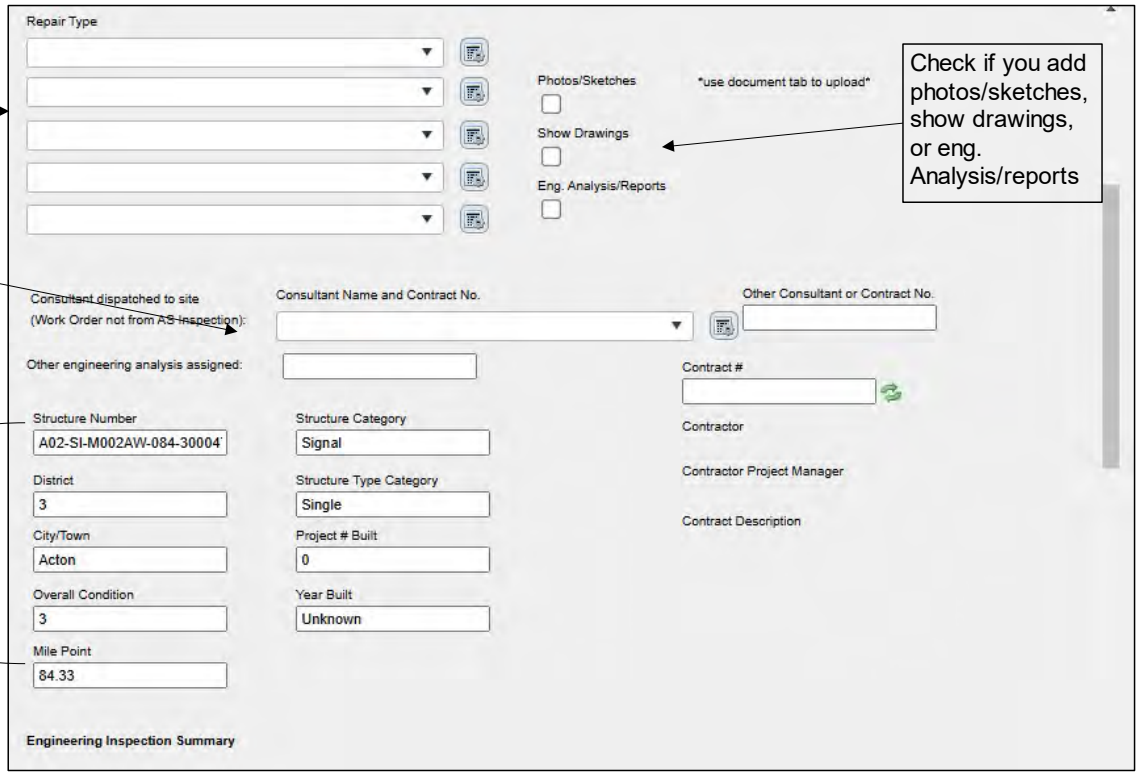


AS Safety Review Fields (cont.)

Repair Type like Anchor bolt loose, minor maintenance attachments, structural analysis.

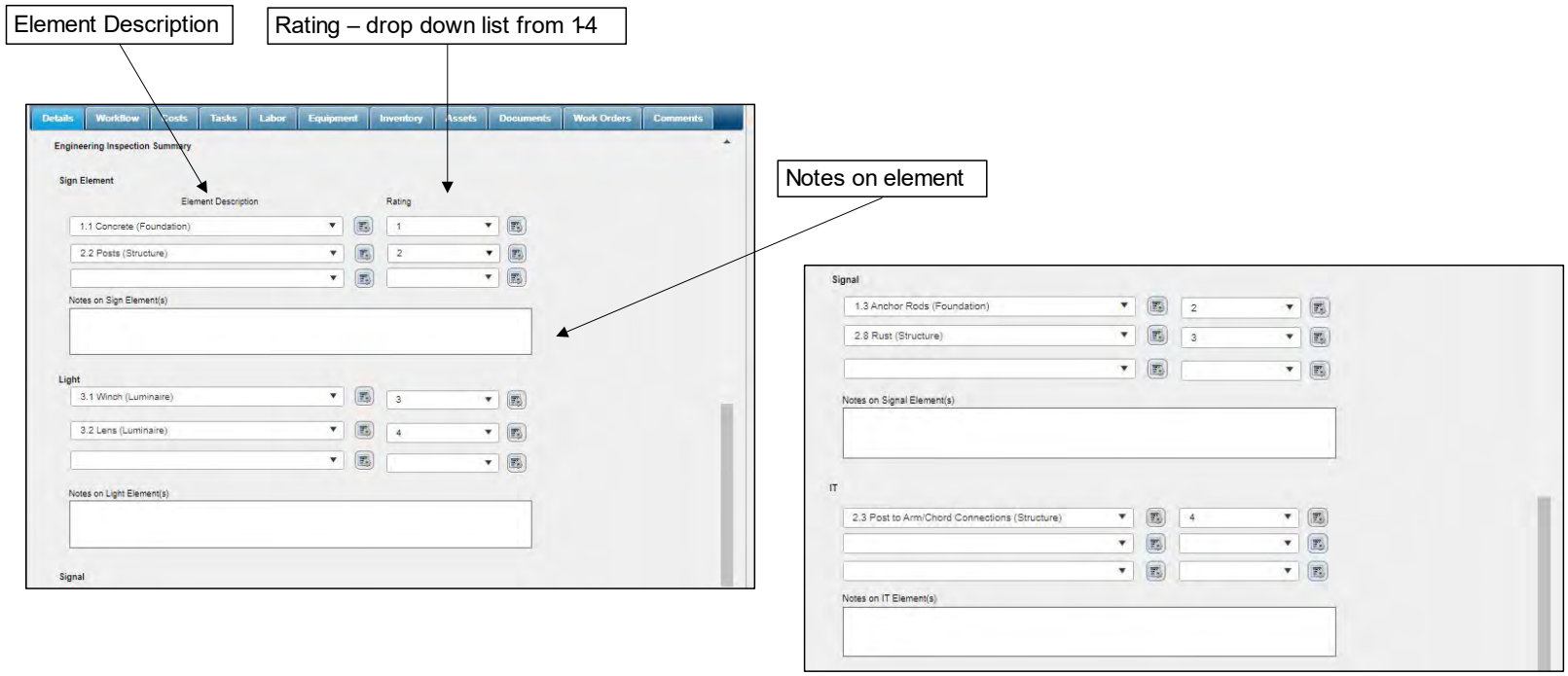
Consultant Name and Contract No. drop down. Use “Other Consultant or Contract No.” if not in drop down list.

Ancillary Structure information auto-fills based on GIS. Editable if needed.



Check if you add photos/sketches, show drawings, or eng. Analysis/reports

AS Safety Review Fields (cont.)

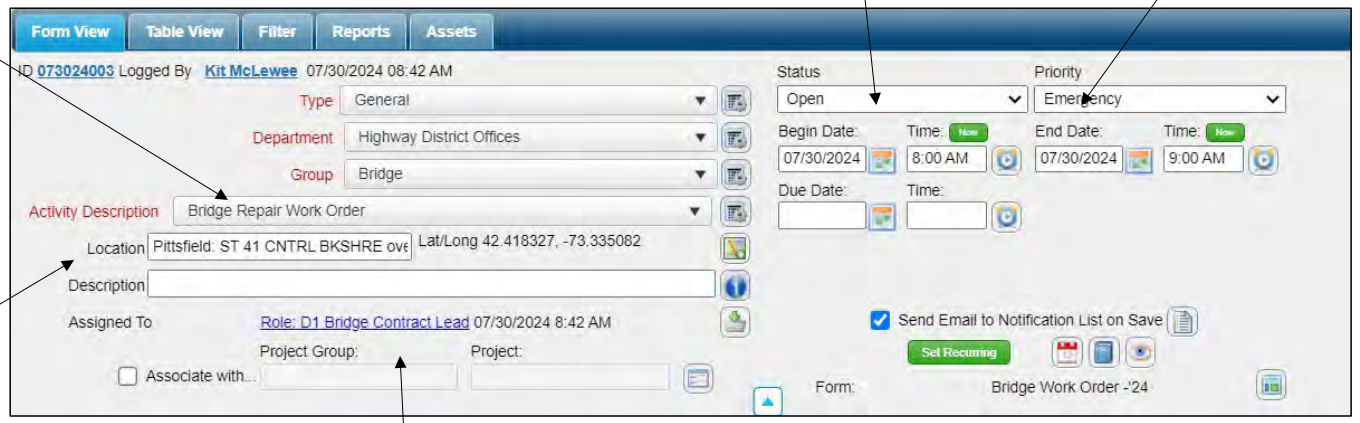


AS Safety Review Fields (cont.)



BRIDGE
WORK ORDER

Bridge Work Order Fields



Priority should be "Emergency" for anything needing immediate action. Priorities shall be aligned with Various Locations contract language.

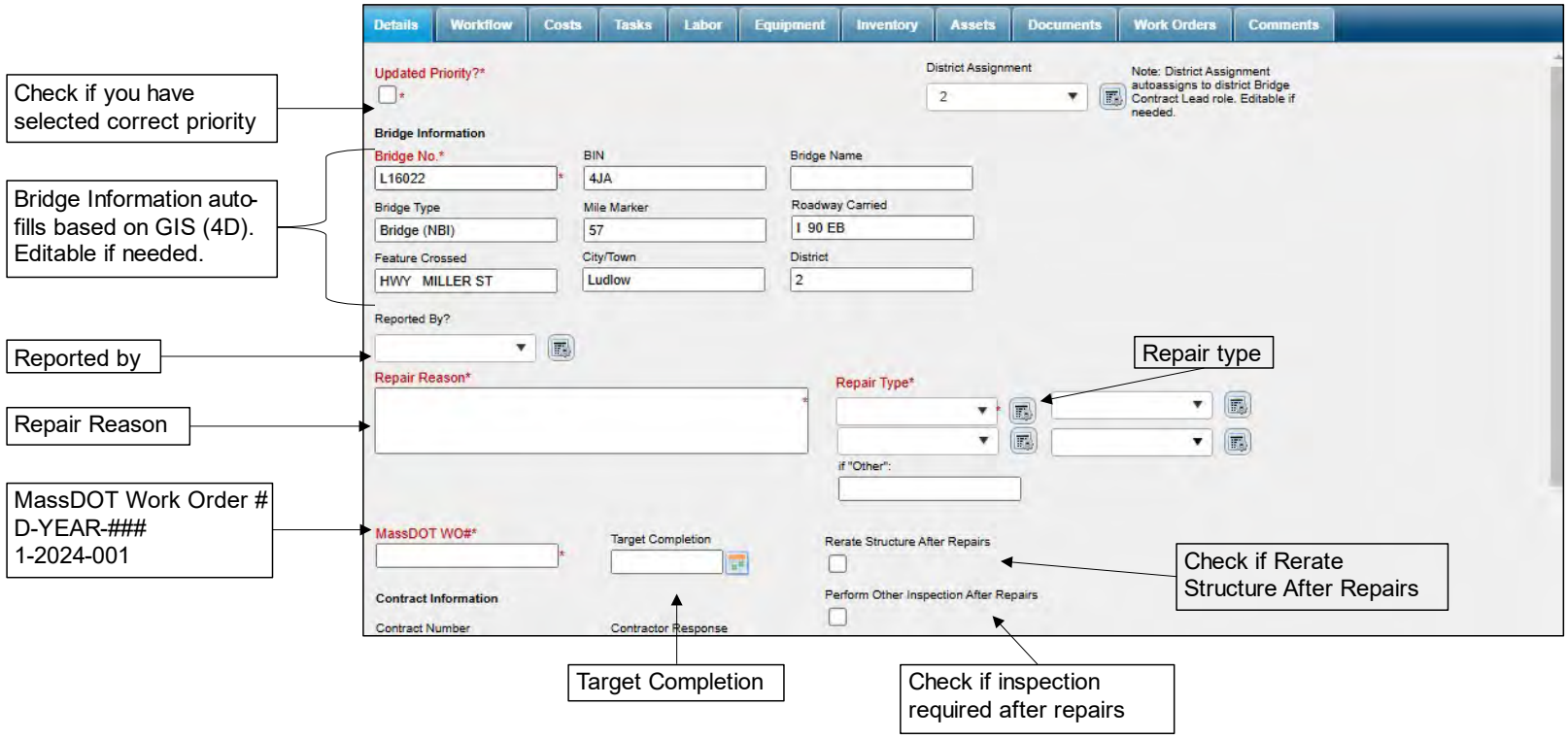
Status should be "Open"

Type, Department, Group, and Activity Description will default to Bridge Work Order

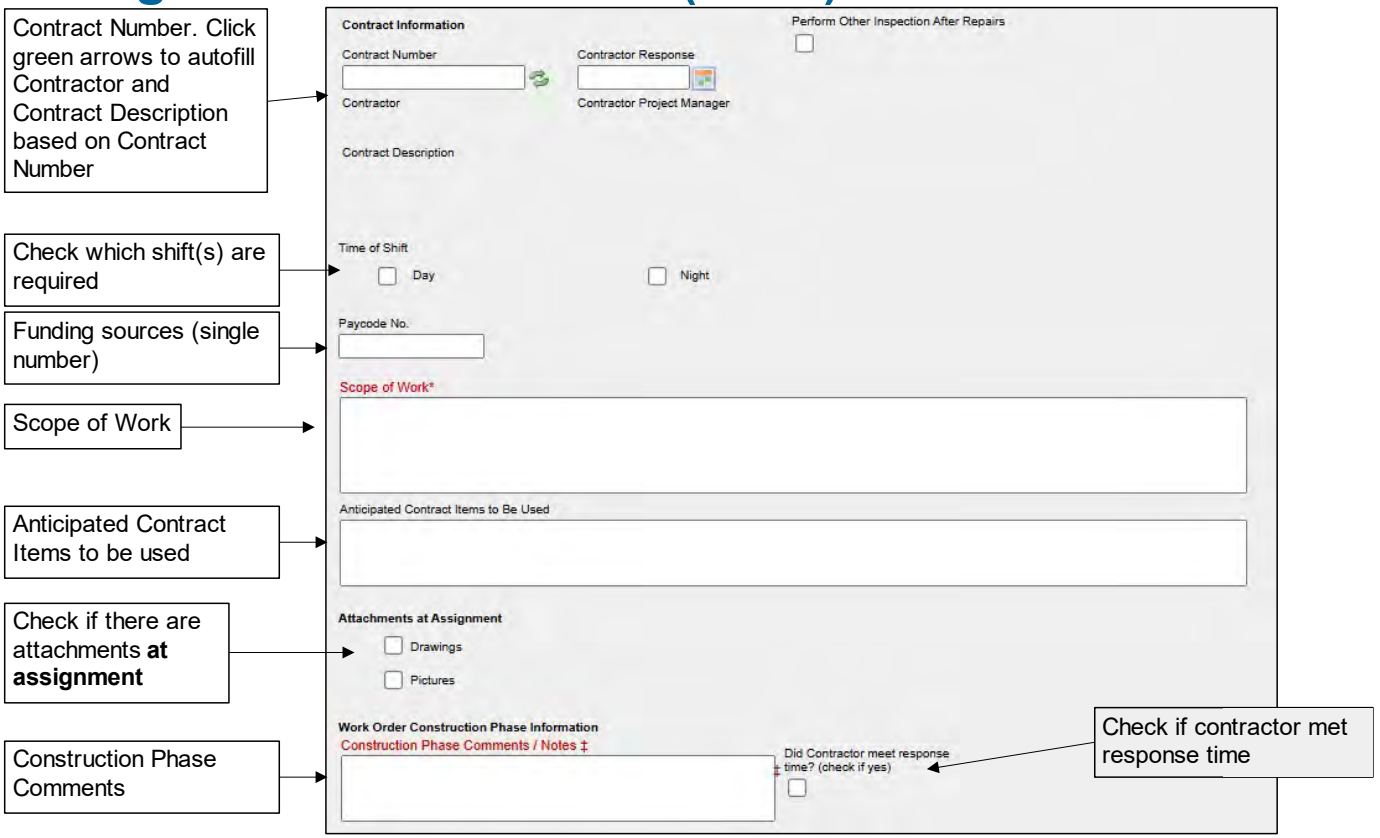
Location carries over from safety review when a child work order. When doing a standalone work order this will be from the point selected on the map.

Auto-assigns to *District Bridge Contract Lead*

Bridge Work Order Fields (cont.)



Bridge Work Order Fields (cont.)



Bridge Work Order Fields (cont.)



ANCILLARY STRUCTURE

WORK ORDER

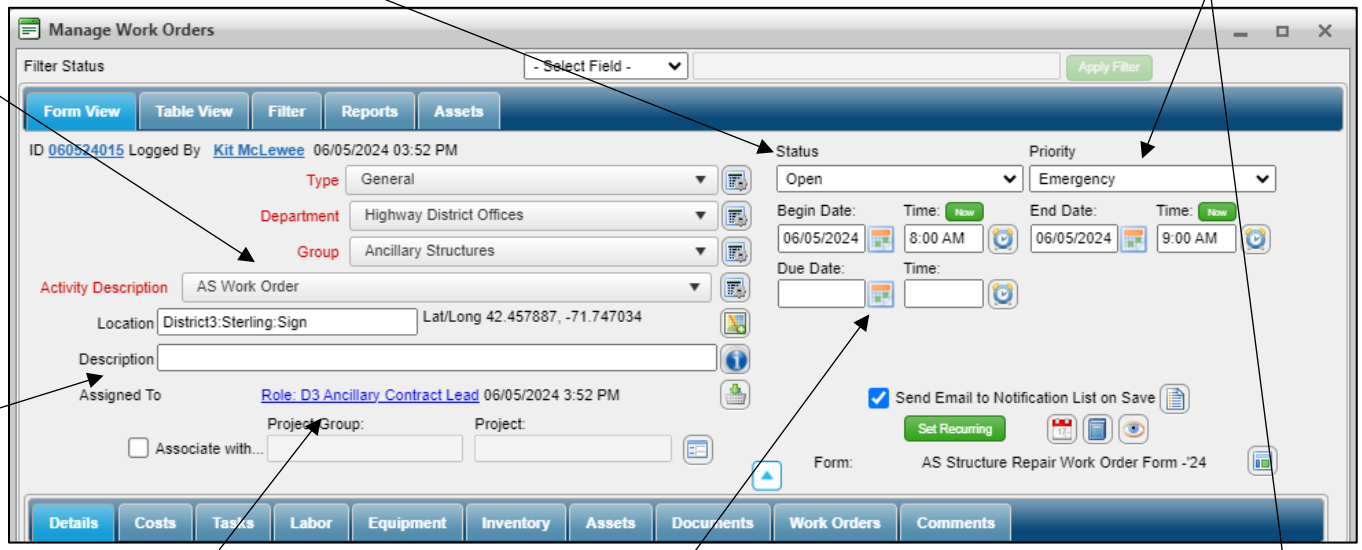
Ancillary Structure Work Order Fields

Priority should be "Emergency" for anything requiring a Safety Review (needing immediate action). Priorities shall align with the new AS Manual urgency ratings

Status should be "Open"

Type, Department, Group, and Activity Description will default to *AS Work Order*

Location carries over from safety review when a child work order. When doing a standalone work order this will be from the point selected on the map.



Auto-assigns to *District Ancillary Contract Lead*

Not necessary to be filled out for Emergency Priorities.

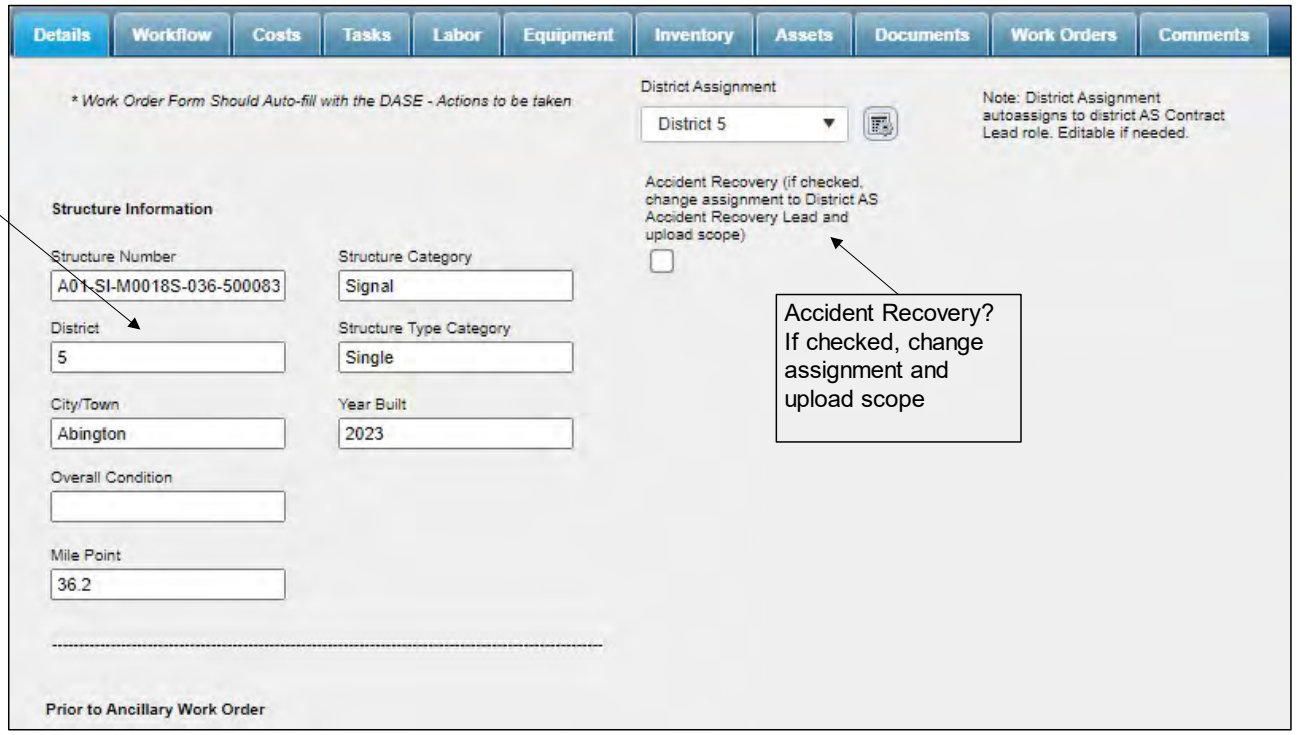
Must be entered to align with timelines in the new AS Manual urgency ratings

URGENCY

I*	Immediate
A3	Action within 3 Months
A12	Action within 12 Months
A24	Action within 24 Months
P	Prioritize

Ancillary Structure Work Order Fields

Structure Information automatically populates based on GIS; editable



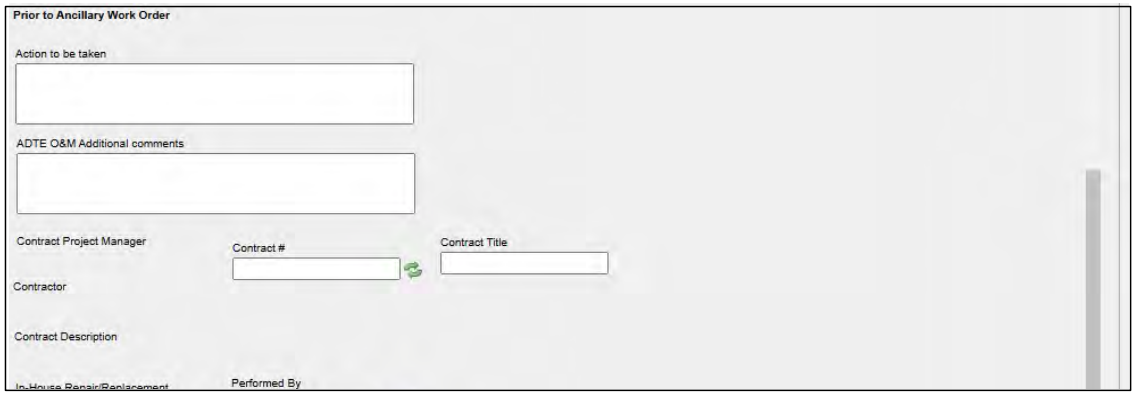
Accident Recovery? If checked, change assignment and upload scope

AS Work Order Fields (cont.)

Action to be taken carries over from safety review. Fill out here when creating a standalone work order.

ADTE O&M Additional comments

Contract information. Click green arrows to autofill Contractor and Contract Description based on Contract Number



AS Work Order Fields (cont.)

