

Phase 4 Hazardous Material Management Checklist

Transportation Infrastructure Design and Construction Through Areas of
Contaminated Soil and Groundwater or other Hazardous Material

A. Project Management

1. Get assistance from the district hazardous materials specialist or other technical services environmental professionals. If none are available, contact the Bureau of Environment (BOE) directly.
2. Request a Phase 4 work order from BOE (petroleum/non-hazardous waste contamination) or DBM Risk Management (hazardous waste contamination). Make request a minimum of 12 months prior to PS&E. The Phase 4 services usually include:
 - a. Contracting for environmental consultant services;
 - b. Performing detailed environmental site assessments (field testing);
 - c. Developing and negotiating hazardous material handling plans;
 - d. Obtaining DNR concurrence for hazardous material handling plans;
 - e. Collecting samples for waste characterization analysis as needed, and obtaining the required treatment or disposal approvals (soil or water);
 - f. Writing special provisions (e.g., special notices to contractor, health and safety requirements, construction means and methods, schedule of operations, basis of payment, unique detail drawings as needed, etc.);
 - g. Estimating quantities of contamination;
 - h. Preparing plan sheets showing areas of contamination (plan, profile, and cross-section views);
 - i. Recommending cost share based on: design, source areas of contamination, environmental regulations, PECFA reimbursement eligibility and DOT policy;
 - j. Providing and evaluating bid item estimates for the Let contract;
 - k. Assigning the Department's Environmental Consultant and providing contact information in the Let Contract for coordination and inspection of waste management or remediation activities during construction;
 - l. Responding to construction emergencies (unexpectedly encountering petroleum contamination and leaking underground storage tanks);
 - m. Excavating contamination and managing the proper disposal of waste including contaminated groundwater for dewatering operations.
 - n. Documenting and reporting waste management activities and environmental compliance for WisDOT, DNR and Commerce.

note – many items above are completed during the Hazardous Materials Phase 2.5 process ([FDM 21-35-12](#)).

3. All WisDOT Phase 4 work included in the Let contract must be coordinated with BOE or Risk Management and their environmental consultant. BOE and Risk Management have special contracts (time and material) to provide this service, which is billed back to design, or construction ID #'s as appropriate. For the Local Roads Program, the municipality is responsible for contracting and managing Phase 4 activities. At the request of the district, BOE may provide this service and charges are billed back to the municipality.
4. The preferred method for Phase 4 hazardous materials management or remediation is to provide a simple notice to the contractor to allow a specified time window during construction for work to be performed by others (e.g., BOE or Risk Management environmental consultant and contractor, or the Responsible Party if they are willing to do so).

5. Phase 4 tasks can be included as bid items in the Let contract for select projects provided criteria mentioned in item 6 below are met. This usually includes excavation and disposal of petroleum contaminated soil, and occasionally there is a need for properly managing contaminated groundwater (could be incidental cost or bid item), constructing contamination migration barriers, or protecting ground water monitoring wells (notice to contractor).
6. The criteria for including Phase 4 Hazardous Materials Management or Remediation by the prime contractor in the Let contract include:
 - a. Total remediation bid item estimates exceed \$75,000;
 - b. Not practicable to coordinate remediation with BOE contractors or other 3rd party contractors;
 - c. Work includes handling, or constructing through, petroleum contaminated soil or other regulated, non-hazardous waste only; handling, or constructing through, regulated hazardous waste (in contrast to solid waste) is not allowed per WisDOT Risk Management policies and DTID agreements with WTBA;
 - d. A letter of approval for Phase 4 remediation from DNR is required (when applicable).
7. A pre-bid meeting is needed when Phase 4 hazardous materials management or remediation is included in Let contracts for any of the following situations:
 - a. The contractor is required to manage contaminated soils on site by construction of an engineered liner or cover;
 - b. The contractor will build part of an engineered remediation system;
 - c. Non-petroleum contamination is present below regulated hazardous waste concentrations;
 - d. A large volume of contaminated material will be handled (> 5,000 yd³);
 - e. Coordination with other "Responsible Parties" for contamination management during construction is necessary;
 - f. The project manager believes that a pre-bid meeting will help inform contractors of unusual conditions.
8. Determine cost share for contamination management and complete cost share agreements. This is based on "Responsible Party" status and who will be on record as the "Generator" of waste.
9. Cost shares will vary depending on project situations and examples include:
 - a. Standard cost shares (e.g., 80% state and 20% local);
 - b. 100 % local (e.g., only local work encountering contamination);
 - c. 100 % state (WisDOT the responsible party); and
 - d. Some other % ranges among state, locals, private party or industry.
10. Use non-standard bid item numbers, conform to STSPs when applicable, and use multiple bid item identifiers or categories to allocate cost shares as necessary. For example, do not use the bid item "Common Excavation." Instead, use item 205.0500S, "Excavation and Hauling of Petroleum Contaminated Soil" to distinguish the need for special handling.

11. Evaluate the bid item estimate and acceptable price range. Consult with BOE and recognize price changes in marketplace over time (planning, design, let, bid, and construction dates).

B. Design Related Issues

11. Avoid contaminated areas if practical.
12. Minimize disturbance of contaminated soil or water:
 - a. Reduce cut section;
 - b. Use geo-fabric membrane or impermeable liner material;
 - c. Use sewer liners instead of sewer replacement;
 - d. Control contractor operations through contaminated area (specify narrow trenching requirement at discrete locations, etc.); and
 - e. Use horizontal boring technology, or new methods versus traditional excavation trenching.
13. Beware of last minute design changes, particularly local and utility work, which may further encounter contamination (revise waste management plan as needed).
14. Notify WisDOT utility and permit coordinators of known contaminated areas in project limits. Follow the WisDOT Utility Accommodation Policy (96.08) and Appendix 96.97 (Discovery of Environmental Conditions). Per Trans 220, WisDOT will provide the utility companies with information regarding any environmental conditions when site assessments are performed as part of the Department's project investigation.
15. Protect or arrange for the proper abandonment of monitoring wells per DNR codes (NR 141.25 Well Abandonment), and protect or properly abandon remediation systems. WisDOT is not responsible for abandoning wells or remediation systems, unless the Department installed them. However, if the Responsible Party does not remove these features in time for construction, it may be necessary for the Department to assume that responsibility. The cost is billed to the project ID #. Contact BOE for help. Note there is significant liability for improper well abandonment.
16. Determine if there is a need for a contaminant migration barrier. New construction (sewers, backfill, bedding, under-drains, other infrastructure, etc.) must not create a conduit for contaminant migration to new locations or worsen existing contaminant conditions (e.g., causing petroleum vapors to migrate into buildings along utility lines). A low permeability, controlled low strength material (CLSM or "flowable fill") may become necessary to use in areas of contamination, or some other engineering options.
17. It might be necessary to specify anti-seep collars, seal joints or other special connections for sewers and water mains.
18. Standard Special Provisions (STSPs) are available for some Phase 4 work. These are periodically updated. "Hazmat STSPs" are identified as follows:

 - 107-100 – Notice to Contractor – Contamination Beyond Construction Limits;
 - 107-105 – Notice to Contractor – Contamination Removed Before Construction;
 - 107-110 – Notice to Contractor – Contamination Removed During Construction;
 - 107-115 - Health and Safety Requirements for Workers Remediating Petroleum Contamination;
 - 205-002 – Excavation and Hauling of Petroleum Contaminated Soil, Item 205.0500S

19. The BOE or Risk Management Consultant should write or review the Special Provisions for the district. Each project is unique and the STSP "canned language" will not apply for all projects, and should never be used without review by the district's environmental professional or BOE.
10. Show all estimated areas of contamination or special management zones on the plan and profile sheets and cross-sections. As a precaution to design changes during construction, also show areas of contamination adjacent to project limits and beneath expected grading depths. BOE responds to several "hazmat construction emergencies" a year because of a field decision to move a structure or change a grade. Contact BOE for examples of plan sheets indicating areas of contamination or special management.
11. Prepare notes to the construction engineer as needed.

C. Construction Related Issues

1. Confirm that the proposed waste management tasks and schedule, as specified in the special provisions and shown on plan & profile sheets, are indeed feasible during construction. Think about staged construction, detours, down time for special events for the locals (e.g., festivals), stockpile locations (odors and nuisance issues), hauling, dewatering flow rates, and coordination with outside contractors and utility companies. Think about the magnitude of the project, scale of construction machinery, and likely construction methods. Some waste management tasks are simple, others are not, and all are a function of toxicity, timing and scale.
2. If WisDOT is the generator of waste, there are very specific disposal restrictions and limitations imposed by WisDOT in addition to standard state and federal environmental regulations (consult with a district environmental professional or BOE).
3. There are fewer disposal restrictions if the local municipality or adjacent responsible parties accepts "generator" status for waste disposal (consult with a district environmental professional or BOE).
4. Beware of a change in field conditions and check with a district environmental professional, BOE and DNR before changing grading depths or locations of subsurface utilities and structures near or in contaminated areas.
5. Do not modify the Hazardous Materials Handling Plan without consulting the district environmental professional, BOE (or Risk Management), or DNR. In particular, if contaminated soil or material is approved to be beneficially re-used on a project, do not change the disposal location as specified without concurrence from BOE and DNR.
6. Beware of geotechnical limitations when planning the re-use of contaminated or treated material. It is common to try and re-use low level contaminated soils, or treated waste material on projects, but it is equally common that this material is unsuitable for roadbed material or drainage swales.
7. Select stockpile locations prior to construction and have a contingency to store extra material or USTs. It is important to note that hazardous material stockpiles must be maintained and are often controversial to the local public (odors, perceived environmental threat, aesthetics, etc.).
8. DNR stockpile requirements for contaminated materials are specified in NR 718.05 (storage of excavated contaminated soils). Additional volume limitations (<2,500 yd³), transportation requirements, treatment requirements, storage duration requirements and other key items are described entirely in NR 718 (Management of Solid Wastes Excavated During Response Actions). Usually the location criteria are critical for WisDOT. Per NR 718.05 (a), contaminated soil can NOT be stored in the following locations:
 - a. within a floodplain;
 - b. within 300 feet of any wetland or critical habitat;
 - c. within 300 feet of any navigable river, stream, lake, pond or flowage;
 - d. within 100 feet of any water supply well for on-site storage or within 300 feet of any water supply well for off-site storage.

note - In unique cases, WisDOT can get variances from the volume, location, or duration storage requirements (Contact BOE for help).

9. In addition to DNR requirements described above, there are WisDOT Risk Management requirements for contaminated material stockpiles. Stockpiles must be located within the project limits. If this is not possible, then a stockpile can be created on other WisDOT property (fee title ownership). Do not store contaminated material on private property (PLE or TLE). These restrictions do not apply if the local municipality is the generator of waste, or accepts generator of waste status, and is willing to place stockpiles on their property. Direct load, haul, and disposal of waste are preferred, but there are times when stockpiles become necessary (e.g., "hazmat construction emergency").
10. All unknown contamination discovered during construction must be reported to BOE for emergency response per Construction & Materials Manual 2.13.1.7 (Hazardous Substance).

D. PS&E Review and Completion of Summary of Review Documentation

1. Check the notice to contractor, means and methods, quantities, and coordination with BOE consultant.
2. Confirm DNR Letter of concurrence or approval of the hazardous materials handling plan is referenced in special provision and on file at the district.
3. Verify that areas of waste management are shown and labeled on plan & profile sheets, and cross-sections.
4. Make sure BOE or Risk Management has a signed work order for the consultant assigned to the project, if applicable.
5. Verify contaminated soil disposal methods are in accordance with Risk Management policy. Confirm disposal locations will be open during the construction season. Ensure waste characterization disposal analysis is complete. Confirm disposal facility has approved acceptance of the contaminated soil or waste material.
6. If applicable, verify that the treatment and disposal of contaminated water are acceptable to DNR and the necessary permit process was followed. Note, the DOT/DNR Cooperative Agreement Liaison Process exempts WisDOT from obtaining formal WPDES Permits but their requirements must still be achieved. Confirm water quality and quantity requirements are specified in the special provisions for various disposal options. These options can include: direct surface water discharge, discharge into storm sewer, discharge into sanitary sewer (per local flow rate and chemistry requirements), upland or ditch discharge, and onsite storage containers.

E. Other References and Resource Material

1. Contact BOE or check the dotnet site (DTID - Environment) for example sets of special provisions, plan sheets and bid item estimates.
2. BOE training course material for class #9160014 – Developing Special Provisions for Managing Hazardous Materials as Part of Highway and Bridge Construction Contracts.
3. Check the dotnet site (DTID - Environment) for updates and listing of WisDOT approved waste treatment and disposal facilities (periodic changes).
4. WisDOT Construction & Material Manual – Chapters:
 - 2.13.1 - Hazardous substance
 - 2.13.2 - Underground storage tank, hazardous materials and hazardous waste
5. WisDOT Standard Specifications for Highway and Structure Construction:
 - 105.5 - Cooperation between contractors

- 105.8 – Authority and Duties of Inspectors
- 107.1 – Laws to be observed
- 107.18 – Environmental protection
- 107.24 – Hazardous substances

6. *WisDOT Real Estate Manual Chapter 9 – Contaminated Sites*
7. *WisDOT Maintenance Manual Chapter 96.08 – Environmental Conditions*
8. *WisDOT Facilities Development Manual Chapter 21 Section 35 Contaminated Site Assessments and Remediation:*
9. *WisDOT Hazardous Materials and Waste Management information: (<http://dotnet/dtid-bees/extranet/environment/envareas/hazmat/lust.shtm>)*
10. *DNR Publication PUB-RR-664 Fact Sheet #6 Negotiated Agreements: Contracts for Non-emergency Remediation of Contaminated Properties (<http://dnr.wi.gov/files/pdf/pubs/rr/rr664.pdf>)*
11. *DNR Publication PUB-RR-649: Guidance for Documenting the Investigation of Utility Corridors (<http://dnr.wi.gov/files/pdf/pubs/rr/rr649.pdf>)*
12. *DHFS Vapor Intrusion and Residential Indoor Air - Guidance for Environmental Consultants and Contractors (<http://www.dhfs.state.wi.us/eh/Air/>)*