

Highway Right-of-Way
Environmental Due Diligence Survey
October 2019

Q1: Please provide your contact information so other members of this work group can contact you for more												
Name	Jenifer Hill	Brian Kamnikar	Juliet Denniss	David Wilson	Brad Azeltine	Shawn Rapp	Theresa Santangelo	Cyrus Parker	Richard Bailey	Sharlene Te Beest	Rob McCleary	Will Packard
Company	Washington State DOT	MnDOT	Ohio DOT	Virginia Department of Transportation	Iowa Department of Transportation	Oregon DOT	Santangelo	NCDDOT	Wisconsin Dept of Transportation	Delaware DOT	Nebraska Department of Roads	
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City/Town	Tumwater	St. Paul	Columbus	Richmond	Ames	Troutdale	Golden	Raleigh	Sacramento	Madison	Dover	Lincoln
State/Province	WA	MN	OH	VA	IA	OR	CO	NC	CA	WI	DE	NE
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Q2: Do you perform due diligence activities related to the identification of sites of concern? If so, what activities do you perform and when?												
Yes, we perform due diligence activities related to the identification of sites of concern during pre-design, during design, and for bridge work. Pre-Design We conduct preliminary reviews to determine what level of investigative need regarding contamination or hazardous materials may be required for each project or site of concern. This usually entails using Washington State Department of Ecology's Facility Site ID Database. Using this we search for underground storage tank documents, leaking underground storage tank documents, or other sites of concern. During Design We create Environmental Review Summaries or Environmental Classification Summaries as part of the scoping process. Completing the HazMat Section of the ERS or ECS involves an informal review of known and potentially contaminated sites within or near the project area. This review helps identify what HazMat investigation must be done for the project and by when. The review also helps staff assess and document potential project impacts, mitigations, and required permits or approvals. If staff determines that no documentation is required based on project specifics, they justify the decision on the ERS or ECS.	Yes. We perform Phase I and Phase II investigations when necessary to obtain liability assurance determinations from the state regulatory agencies. We do this prior to property acquisition whenever possible. There is also a procedure to obtain liability protection after acquisition.	Review of consultant reports conducted under Ohio DOT Environmental Site Assessment Guidelines, provide guidance to ODOT Districts and environmental consultants for ESA issues as allowed under law and regulations for public entities, provide guidance on which properties require waste management plan notes for construction, provide direction to construction projects when unexpected contaminated materials are encountered, and teach classes concerning how to conduct environmental site assessment under ODOT guidelines, how to address in NEPA documents and the ways that contaminated materials are addressed during construction projects, both known and unknown. I also work with Real Estate for acquisition and arrange for investigations for possible price reduction of contaminated properties and/or if its feasible to avoid contaminated and/or highly regulated properties.	Yes. We conduct Phase I ESAs and where RECs are identified Phase II ESAs. Typically Phase IIs are conducted very early in the project development to determine if there are any locations that should be avoided due to the potential environmental liability exceeding the value of the project. Phase II are typically conducted as more detailed plans are available to refine the exact impact of potential contamination on the project, with updates conducted as warranted based on plan modifications.	The Iowa DOT performs limited Phase I ESAs of parcels located within the project study/impact area. For large urban corridors, these are typically performed using consultant contracts. In-house reviews are performed for smaller scale projects and involve accessing on-line regulatory databases, historic aerial photography, county assessor web sites, sanborn maps, Google Earth, etc. For large scale projects and small scale study corridors, these reviews are performed as part of location studies, early in the process. For small scale projects (e.g. bridge replacements), these reviews are performed at the time when final design is submitted to our Right of Way office.	I do not, people in my Program do. Phase I and II ESAs in advance of project planning.	Yes, we conduct Phase I, if required we conduct Phase II. Also we remove all structures and associated asbestos and hazardous materials and will conduct soil and/or groundwater remediation in front of the project is time allows.	Yes. Initial Site Assessments (ISAs) are performed for all acquisitions and relinquishments. ISAs may not necessarily conform to ESA standards under ASTM 1527. Caltrans ISAs are conducted following processes and procedures defined in the internal Caltrans ISA guidance developed in 2006. Typical ISAs evaluating the general and physical site settings, evaluating the intended use of the subject parcel and how the use may be impacted by hazardous materials/substances, review and compilation of reasonable available records including environmental and historical records, site reconnaissance of the subject property and surrounding properties, interviews with past or current property owners/occupiers and with local government agency officials. Evaluation and compilation of title records, environmental liens or activity and use limitations. Internal knowledge of the property provided by department staff. Review of geologic maps to identify naturally occurring minerals that may impact future uses or project activities. The ISA is typically conducted as part of the PA&ED stage prior to preparation of the draft Environmental Document for NEPA/CEQA. An internal ISA is also conducted during relinquishment to provide a prospective acquirer with all reasonably available information addressing property conditions.	Yes. WisDOT performs phase 1 and 2 investigations prior to acquisition during the environmental documentation stage. We may also perform a Phase 3 (definition of nature and extent) investigation on properties are proposed for full fee-title acquisition.	Yes. We conduct HazMat site assessments.	Yes. We complete a Hazardous Materials Review (modified phase I) following the NDOR Hazardous Materials Review (HMR) Guidance Document for partial acquisition of commercial properties. Depending on the risks associated with the site, NDOR may use our HMR process for a full take. Likely we would complete a Phase I and Phase II if needed for full commercial acquisition		

Q3: Do you access private property to perform investigations? If so, by what means, General Statute, written permission, other?												
We typically work with land owners to gain their permission when accessing private property is necessary using a written agreement.	We access private property when we are able to gain access from the property owner using a notification letter or with assistance by the state attorney general office using the condemnation process.	ODOT sends a land owner notification letters of ODOT and/or ODOT consultant entries as per Ohio Revised Code (ORC) 5517.01 and 163.03. These 2 regulations allow ODOT to enter the property for project investigations whether the property owner agrees to it or not.	Yes. Right of entry letters 15 days prior to entry. Code of Virginia Section 33.2-1011	In the past, access to private property was obtained via written permission to perform limited Phase II ESAs. When access was denied, borings were placed in the adjacent right of way. In recent years the Iowa DOT has dropped Phase II ESAs and has defaulted to acquisition via permanent easement for sites known to be contaminated and sites with a high potential for contamination.	Yes - generally written permission.	Typically no. We wait until we have ownership.	Yes, for intrusive studies we notify the property owner of our schedule and permission is granted by NCGS § 136-120. Entry for surveys. The Department of Transportation without having filed a complaint and a declaration of taking as provided in this Article is authorized to enter upon any lands and structures upon lands to make surveys, borings, soundings or examinations as may be necessary in carrying out and performing its duties under this Chapter, and such entry shall not be deemed a trespass, or taking within the meaning of this Article; provided, however, that the Department of Transportation shall make reimbursement for any damage resulting to such land as a result of such activities and the owner, if necessary, shall be entitled to proceed under the provisions of G.S. 136-111 of this Chapter to recover for such damage. (1959, c. 1025, s. 2; 1973, c. 507, s. 5; 1977, c. 464, s. 7.1.)	Access to private property is obtained when possible. Written access agreements for investigation purposes are used for access. If significant contamination is identified or suspected during the ISA, the property may be referred to local or state regulatory agencies for enforcement.	Yes. State survey statute. Section 84.01 of Wisconsin State Statutes. https://docs.legis.wisconsin.gov/statutes/statutes/84/01	Yes. In accordance with Title 17, Delaware Code Section 132 (c) (13) which states, "To these ends the Department may: Enter upon the lands or waters of any person for the purpose of surveys, repairs, reconstruction and operation of publicly financed improvements but subject at all times to responsibility for all and any damages which shall be done to the property of any such person or persons. Water levels to be maintained back of publicly financed sluices, water control structures, dams and similar structures shall be at a level that will not cause damage to adjoining property, such as seepage of water into basements and wells, and that no lands shall be flooded without the owners' full consent."	We can use a general state statute to access property for investigation if a subsurface investigation is not required. We generally contact the owner for permission as well. For a Phase I we need to get property owner permission. For a Phase II we need a Right of Entry Permit prepared by our ROW division.	

Q4: How is environmental liability associated with contaminated sites avoided or reduced during acquisition such as permanent easement, deed language, other agreements?												
Cleanup costs for contaminated properties can be extraordinary and cleanup actions can take many years. For this reason, WSDOT seeks to reduce liability by identifying the nature and extent of contamination at properties prior to acquisition and construction. We perform environmental due diligence when performing our NEPA/SEPA required documentation. This may include a Phase I, Phase II or Environmental Discipline Report, or other right-sized environmental report. Additionally, WSDOT conducts investigations called Environmental Site Assessments (ESAs) to meet the standard of the industry for identifying potentially contaminated properties, and may be performed either independent of, or in conjunction with, the NEPA/SEPA process; however, ESAs are not necessary to satisfy NEPA/SEPA environmental documentation requirements. According to the conclusions of such reports, we may recommend that certain issues be taken into design consideration. If redesign is not possible we may negotiate a reduced property acquisition price. Ultimately we perform due diligence so that we may focus our responsibilities on: • Protecting public health and safety by ensuring that construction activities do not cause an inadvertent spill or release, or spread or contribute to existing contamination. • Managing HazMat issues in a cost-effective manner to avoid or minimize construction impacts. • Avoiding or managing agency cleanup liability.	We currently view any recorded interest in a property (acquiring in fee, easement, etc.) as having equal environmental liability. We seek liability assurance determinations and obtain approved response action plans from the state regulators for how we handle contaminated material during construction in order to manage our liability on higher risk contaminated sites.	Easement, forced sale through the court, and reduced amount of property acquisition and property avoidance where possible.	In certain cases, permanent easements can be obtained whereby the property owner retains title to the property as well as the ownership of the contamination issues. Depending on the situation, special provisions would be prepared to ensure that the construction activities would not exacerbate migration of the contamination.	Sites that are known to be contaminated, or have a high potential to be contaminated, are acquired via permanent easement. This involves analysis of known site conditions, site usage history, regulatory history, project impact (partial vs total take), etc.	Corridor surveys attempt to characterize liabilities in terms of project costs. Sometimes the costs for the NFA are evaluated depending on the nature of the acquisition. If eminent domain - we often offer market value with minimal deduction for contamination - at least that is what I am starting to hear. There is a poor feedback loop between HazMat and ROW.	CDOT is moving more towards conducting contamination remediation during the acquisition phase of the project.	Our most common method is by acquiring right of way by permanent easement. Sometimes we acquire by easement and after the contamination issue has been resolved, we convert the deed to Fee Simple. We have used Brownfield agreements as well as indemnity language in the deed on a few special cases. Contaminated remnants, such as uneconomic remnants, are not acquired unless/until the site is brought into regulatory compliance.	Caltrans policies prefer avoidance of contamination. Chief Engineer approval is required to acquire contaminated property with costs and liability above certain thresholds. The justification to acquire contaminated property in fee must address alternatives to purchase including surface easement, highway easement, delayed acquisition, regulatory agency "comfort letters" addressing responsibility for contamination and expected agency enforcement actions. Also used is language within cooperative agreements with local agencies (local transportation agencies, cities, counties, etc.) requiring the locals to obtain regulatory compliance and mitigating contamination on properties acquired for incorporation into the state highway system.	Easement, deed language, acquiring in easement and converting to fee upon completion of remediation, agreements with responsible parties to allow remediation during construction. We may also acknowledge and accept the liability as part of the cost of doing business and building the cost into the project estimate based on a full definition of the extent of contamination and an accepted remediation plan.	The appraised FMV of the land is often reduced as a result of the estimated clean up costs. It should be noted that Delaware finds it most expedient to avoid protracted negotiations and court proceedings to identify primary responsible parties or otherwise try to follow the chain of title to hold someone accountable for the cleanup costs. That process is expensive and slow. It is far cheaper to remediate the portion of the site that falls within the area of acquisition. We work closely with our counterparts at the Delaware Department of Natural Resources and Environmental Control to devise a clean up and monitoring strategy for the site. This will sometimes require a monitoring agreement between DelDOT and DNREC. We include special provision specifications in our contracts, but we also do remediation work in advance of the roadway contract to minimize impacts to construction schedules and budgets. We've been developing and implementing this approach on our road and bridge contracts for the last 25 years with great success. We believe the approach is faster and cheaper than other possible alternatives. We would be happy to share our specs and contracting approaches.	If there are concerns with contamination, NDOR environmental section passed along information gathered during our Hazardous Material Review process, Phase I or Phase II to our ROW division. They take the information into consideration during negotiations (allowable by law in Nebraska). If we feel CERCLA liability could be an issue, we complete the ASTM Phase I and if needed phase II. This is currently not completely clear when we should be completing a Phase I for liability protection and how that process should go. Phase I and II expire and it is difficult to plan the appropriate timing of completion when a planned project corridor has many potential takes. Some are proposed total takes and some are partial, but could both be subject to change during the ROW phase and negotiations.	

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City/Town	Tumwater	St. Paul	Columbus	Richmond	Ames	Trousdale	Golden	Raleigh	P.O. Box 942874	Room 451		
State/Province	WA	MN	OH	VA	IA	OR	CO	NC	CA	WI	DE	NE
ZIP/Postal Code	98512	55155-1800	43223	23219	50010	97060	80401	27699-1589	94271-0001	53707-7965	19901	
Email Address	jenhill7115@gmail.com	brian.kamnikar@state.mn.us	juliet.denniss@dot.ohio.gov	David.Wilson@VDOT.Virginia.Gov	brad.azeltine@iowadot.us	Shawn.R.Rapp@odot.state.or.us	theresa.santangelo@state.co.us	cfparker1@ncdot.gov	rich_bailey@dot.ca.gov	sharlene.tebeest@dot.wi.gov	robert.mccleary@state.de.us	will.packard@nebraska.gov
Phone Number	360-570-6656	651-366-3617	614-466-7946	804-786-5588	515-239-1938	503-667-7442	3035125524	919-707-6868	916-653-3421	608-266-1476	302-760-2305	402-479-4312

Q5: How is contaminated property appraised? As clean, as dirty, or other?

<p>We rank sites as low/moderate/high levels of concern during construction. We use Model Toxics Cleanup Act Cleanup Levels as appropriate to determine management of certain soils or water. In terms of the Real Estate Services Office (RESO), the Region Appraisal Supervisor states the project environmental impact statement and/or the project design report for information. If toxic/hazardous waste is present in the project alignment, it should be tested and mitigation costs estimated prior to the PFE. The Region Appraisal Supervisor assures that any positive testing and mitigation cost estimates are forwarded to the parcel appraisers for consideration during the project funding and/or appraisal processes. If waste is found, the cleanup costs reported by the environmental unit are considered by the appraiser during the appraisal process.</p>	<p>As I understand it, current state regulations do not allow MnDOT to discount properties due to the presence of contamination. Therefore, we appraise as clean.</p>	<p>Fair Market Value for contaminated properties is assessed in a variety of ways. The first is to conduct a Remedial Options report. This is an assessment of what it would cost for a private developer to develop the site. ODOT doesn't often use an appraisal as dirty since it is extremely difficult to find other sites that are comparable even in an urban setting. The method used is decided by Real Estate and Chief Legal. ODOT has had one project with a group of parcels that were appraised well under their Fair Market Value. Because of this, ODOT elected not to pursue a price reduction and advised the property owner to take the money and run. In addition, they were directed by ODOT to remove the 30 feet of illegal fill, including the fill from around the pump island and USTs, they placed after the Fair Market Value appraisal and after the Remedial Options report.</p>	<p>Currently, cost-to-cure estimates are provided to RW by Environmental with a distinction made between cost to meet a regulatory requirement and cost to implement constructions. As such, RW has an option to assess as dirty. However, as a routine practice, properties are assessed as clean.</p>	<p>Known or potential contamination is not considered as part of the appraisal (i.e. appraised as if clean).</p>	<p>If being taken - generally clean, sometimes with a deduction that can come with a release of future liability.</p>	<p>As clean, unfortunately</p>	<p>As clean</p>	<p>Contaminated property is appraised at fair market value less estimated costs for investigation and mitigation.</p>	<p>See below</p>	<p>The appraised FMV of the land is often reduced as a result of the estimated clean up costs. This can reduce a parcel's value substantially, but we have the ability to negotiate above the FMV to bring a property owner to the settlement table.</p>	<p>Depends on the contamination. Minor amounts of petroleum contamination can be appraised as clean if the regulatory agency has completed cleanup and a NFA status is granted. Other types of contamination discovered can cause the property to be appraised as dirty.</p>
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Q6: Are you allowed to withhold funds from the real estate transaction for cleanup or other environmental costs? If so, how. If not, how do you account for these costs?

<p>If acquiring contaminated properties, WSDOT RESO staff follow predetermined guidance and mitigate risk as much as possible. Actions may include, but are not limited to, valuing the property as clean and holding funds in escrow for cleanup, including an indemnification clause, or a creating a Prospective Purchaser Agreement. Once the purchase of a contaminated property is complete, the RESO is required to report the information to the Environmental Services Office.</p>	<p>Not to my knowledge. We have an established department policy for acquiring contaminated properties. The policy includes a robust analysis of cost and benefit associated with acquisition of higher risk contaminated properties. This policy process includes consideration of both short-term and long-term costs associated with the property and identifying a funding source to cover the potential costs. The assistant commissioner reviews proposed the high risk acquisitions and determines if the high-risk property should be acquired or not.</p>	<p>ODOT can't force a property owner to clean up a site. Even if Ohio EPA or Bureau of Underground Storage Tank Regulations (BUSTR) become involved, their regulations allow a property owner more time than a project has to construction. ODOT rarely has had UST owners who wish to clean up their sites. This is only available if the site is outside the main project area. In these cases the amount with held was included as part of the real estate contract with a time limit to obtain a Further Action Letter from BUSTR.</p>	<p>By policy RW is provided cost-to-cure estimates, but as routine practice, funds are not typically withheld for cleanup or other environmental cost.</p>	<p>No, an Iowa court case (~early 1990s) found it to be inappropriate to withhold environmental clean up costs. Resulting clean up costs are charged to either the project or the Primary Road Fund.</p>	<p>I do not know the details of this. ROW negotiates based on estimated from HazMat.</p>	<p>We have in the past purchased the property as clean and paid for the remediation with project funds.</p>	<p>Yes, a cost estimate of the contaminated waste disposal required to build the project is deducted from the purchase price. Note, this is an estimate just to manage the waste generated by construction, not to clean up the site. Contaminated material not disturbed by construction remains in place.</p>	<p>Policy allows the withhold of funds sufficient to cover the anticipated cost of investigation and mitigation. Funds would be placed into internal accounts with costs for investigation/mitigation drawn from these accounts. The remainder is provided to the land owner upon completion of site activities.</p>	<p>See above answer.</p>	<p>Yes, but it is a matter of negotiation and DeDOT often accepts a substantial portion of those costs in order to move forward with our project and reduce overall costs to the project, such as by avoiding the time and cost of litigation.</p>	<p>I am unsure, but I don't believe NDOR withholds funds. We would want to negotiate the cleanup and other costs prior to purchase.</p>
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Q7: How are restrictive covenants addressed before, during, or after acquisition? Covenants such as those imposed by Brownfield and other such agreements that apply land use

<p>Covenants are read and appropriately addressed as language indicates per each covenant. If during construction we are able to adequately clean up a site, we may request that a specific covenant be removed. WSDOT may avoid acquiring property requiring covenants, or request perpetual leases for certain sites.</p>	<p>Our right-of-way staff have been trained to look for the restrictive covenants as part of their property review process. The right-of-way staff alert department environmental staff so that appropriate action can be made prior to acquisition.</p>	<p>Private use restrictions may be lifted by the courts since the ones ODOT has encountered have been placed to retain the private entity's control of the site's use. However, this is rare. The covenant restriction ODOT encounters is a restriction of removal of groundwater. However, both Ohio EPA and BUSTR both consider this to be a type of groundwater sampling which is allowed under the covenant. The restriction for commercial/industrial use is not an issue since roads are considered a common use. Landfills require an Ohio EPA permit for the drilling and sampling for both environmental and geotechnical investigations. A project construction on a landfill also requires an Ohio EPA permit. The landfills and all plan notes for contamination management during construction are commitments in the environmental document. The real estate acquisition occurs after the document approval, however, the ODOT district environmental coordinator is to notify and keep in close contact with Real Estate for the contaminated properties discovered during the planning/environmental process.</p>	<p>As part of the title search during the Phase I process, restrictive covenants are identified. To date, we have only had to address them on a few sites. For one location in the VRP, we negotiated with the regulators and land owner to perform a clean up within the portion of the property needed for the project. On another project, we prepared and entered special provisions within the contract to address groundwater and appropriate engineering controls to comply with the covenants.</p>	<p>Acquisition of properties which would have existing restrictive covenants is avoided if at all possible. Restrictive covenants have been entered into for some Iowa DOT right of way which was acquired prior to due diligence practices. To date, these covenants have involved restrictions which have not interfered with DOT operations (i.e. no water supply wells, no child care facilities, no basements, etc.)</p>	<p>Don't know yet - I have not been involved in a site we are taking that has a restrictive covenant associated with the property.</p>	<p>?</p>	<p>We try to address them with the regulators prior to acquisition. Land Use Restriction are not typically an issue because our construction activities rarely conflict with the restrictions. Some Brownfield restrictions are problematic but design changes can often accommodate the restrictions.</p>	<p>The ISA is anticipated to identify all parcels with land use covenants/restrictions during the PID and subsequently to a much greater extent during the PA&ED stage. LUCs/restrictions are infrequent and only apply to excess parcels with an APN. Active SHS properties do not have APN and, therefore, LUCs cannot be established for this property. The use as active highway R/W serves the purposes of a LUC.</p>	<p>Deed restrictions and continuing obligations for hazardous materials are addressed with our state regulatory agency (DNR or Department of Natural Resources). Most contaminated sites in WI no longer go through the deed restriction process, but rather are listed in a GIS database maintained by the DNR. WisDOT works with the DNR to come up with a materials handling plan for any remaining contamination we may encounter with our construction projects.</p>	<p>We negotiate these agreements during the project development phase with our Delaware Department of Natural Resources and Environmental Control (DNREC). Those agreements are typically worked out even before the acquisition phase is completed.</p>	<p>Usually the covenants and land use restriction would not apply to a roads construction project. Exceptions to this would require NDOR to coordinate with NDEQ or EPA on potential issues like not penetrating landfill soils caps</p>
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Q8: What other questions would you have liked to see on this survey and why?

<p>Respondent skipped this question</p>	<p>none</p>	<p>None, I'd like to see the results of the survey.</p>	<p>Respondent skipped this question</p>	<p>Respondent skipped this question</p>	<p>Respondent skipped this question</p>	<p>?</p>	<p>See below</p>	<p>Reinquishment of excess properties.</p>	<p>What is considered a contaminated property? Does your state have separate rules for soil and sediment?</p>	<p>We have on-call contractors to handle remediation of contaminated soils, spills, site assessments, etc. They play a huge role in our approach to streamlining how we deal with Haz Mat issues.</p>	<p>I am interested in how other states handle project corridors where they are many potential full and partial property acquisition. How do you time the Phase I and II to ensure CERCLA liability? Does the agency ROW initiate the ESAs or is this the responsibility of the Environmental Section.</p>
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Expanded answer to Q5 provided by Sharlene De Beest WIDOT: Currently valuation takes into account the existing condition of the property. Here is the language from our Real Estate Program Manual: Environmentally contaminated property must be appraised in the "as is" condition. The appraiser must take into account the affects, if any, that the environmental contamination may have on real property market value. WisDOT and the appraisal industry realize that environmental contamination may impact the market value of a property. Accepted appraisal techniques must be utilized to recognize the effects, if any, of contamination on market value. The Uniform Standards of Professional Appraisal Practice (USPAP) Advisory Opinion - 9 (AO - 9) provides an excellent guide for understanding the issue involved with the process, and much of the following verbiage for this sub-section is taken directly from this opinion. The issue: "Appraisals of contaminated properties, or properties suspected of being contaminated, are sometimes developed using either a hypothetical condition or an extraordinary assumption that the property is free of the contamination. While this is acceptable practice under certain conditions and for certain intended uses, there are assignments that require an appraisal of the "as-is" condition of the property, with full consideration of the effects of environmental contamination. In these assignments, the appraiser is asked to analyze the effects of known environmental contamination on the value of the subject property." So, how does an appraiser comply with USPAP when appraising properties that may be impacted by environmental contamination? Advice from the Appraisal Standards Board on the issue suggests these relevant USPAP references and characteristic of concern: • Definitions, specifically uniformity for the key definitions of "extraordinary assumption" and "hypothetical condition" • Ethics rule • Competency rule • Relevant property characteristics • Valuation issues - as if unimpaired • Valuation issues - as impaired Definitions and special associated with the appraisal of properties that may be impacted by environmental contamination include: • Diminution in value - difference between the unimpaired and impaired values of the property being appraised. This difference can be due to the increased risk and/or costs attributable to the property's environmental condition. The unimpaired value establishes the characteristics of similar properties not impacted by the environmental contamination. From these the appraisal can establish a background for capitalization rates, loan to value rates, population samples, etc. that can be used to determine the indicated change in value factors due to the impact of environmental contamination. • Environmental contamination - adverse environmental conditions resulting from the release of hazardous substances into the air, surface water, groundwater or soil. Generally, the concentrations would exceed the regulatory limits established by appropriate federal, state, and/or local agencies. • Environmental risks - additional or incremental risk of investing in, financing, buying and/or owning property attributable to its environmental condition. This risk is derived from the perceived uncertainties concerning the nature and extent of the contamination; estimates of future remediation costs and their timing; potential for changes in regulatory requirements; liabilities for cleanup (buyer, seller, third party); potential for off-site impacts; and other environmental risk factors, as may be relevant. • Environmental stigma - an adverse effect on property value produced by the market's perception of increased environmental risk due to contamination. Stigma is related to risk. • Impaired value - market value of the property being appraised with full consideration of the effects of its environmental condition on, adjacent to, or proximate to the property. Conceptually, this could be considered the "as-is" value of contaminated property. • Remediation cost - cost to cleanup (or remediate) a contaminated property to the appropriate regulatory standards. These costs can be for the cleanup of on-site contamination as well as mitigation of off-site impacts due to migrating contamination. • Remediation lifecycle - a cycle consisting of three stages of cleanup of a contaminated site: before remediation or cleanup; during remediation; and after remediation. A contaminated property's remediation lifecycle stage is an important determinant of the risk associated with environmental contamination. Environmental risk can be expected to vary with the remediation lifecycle stage of the property. • Source, non-source, adjacent and proximate sites - source sites are the sites on which contamination is, or has been, generated. Non-source sites are sites onto which contamination, generated from a source site, has migrated. An adjacent site is not contaminated, but shares a common property line with a source site. Proximate sites are not contaminated and not adjacent to a source site, but are in close proximity to the source site. • Unimpaired value - market value of a contaminated property developed under the hypothetical condition that the property is not contaminated. Relevant property characteristics may include: • Contamination constituents (petroleum hydrocarbons, chlorinated solvents, etc.). • Contamination conveyance (air, groundwater, soil, etc.). • Cost and timing of any site remediation plans. • Potential limitations on use of property due to contamination and its remediation. • Potential or actual off-site impacts due to contaminant migration (for source site). • Remediation life-cycle stage (before, during or after cleanup) of property as of appraisal date. • Responsible party(s), if known. • Status of the property with respect to regulatory compliance requirements. • Whether property is a source, non-source, adjacent or proximate site. • Whether the contamination discharge was accidental or permitted. The appraiser will frequently use third party reports for much of the above information. When relying on third party reports, the appraiser should consider use of extraordinary assumptions when this information serves as a basis for an opinion of value. Valuation issues - as if unimpaired - In some assignments, WisDOT will determine the acquisition is not affected by environmental contamination; however, the remainder of the site might well be contaminated. In these situations the appraiser should use a hypothetical condition that the site is free of contamination. In these assignments, an appraiser may appraise interests in real estate that is known to be contaminated under the hypothetical condition that the real estate is free of contamination when: 1. Resulting report is not misleading. 2. Client has been advised of limitations. 3. All requirements of the ethics rule have been satisfied. To avoid confusion in the market place, the appraiser should disclose available information about the contamination problem, explain the purpose of the hypothetical condition that the real estate is not contaminated, and state that the use of the hypothetical condition might have affected the assignment results. In other situations, the appraiser may be asked to appraise a property believed to be free of contamination or for which the environmental status is uncertain due to the lack of information or conflicting information. For these assignments, the property may be appraised under the extraordinary assumption concerning assumed factual information about its environmental condition and status. Indeed, since an appraiser is usually not an expert in detecting contamination, or confirming its absence, extraordinary assumptions regarding environmental condition may be necessary in many assignments. Valuation issues - as impaired - Highest and best use issues: The appraisal of properties that may be impacted by environmental contamination usually involves extensive highest and best use analysis. The appraiser must consider relevant factors in developing an opinion of the highest and best use of the property in its impaired condition. The valuation of properties impacted by environmental contamination usually involves the estimate of two values, unimpaired value and impaired value. As such two highest and best use analyses are typically required. The first does not consider any limitations on the property due to the environmental contamination. The second does consider limitations due to the contamination, its remediation, and any legal use restrictions associated with the cleanup of the contamination source. Environmental contamination and its remediation to appropriate regulatory standards may affect the feasibility of site development or redevelopment, use of the site during remediation, use of the site after remediation, marketability of the site, and other economic and physical characteristics of a contaminated property. The appraiser should consider the possibility that site remediation and any remaining limitations on the use of the site following remediation may alter or limit its highest and best use in the impaired condition. In addition, excessive environmental risk and stigma may deter site development or redevelopment and thereby limit the highest and best use until the property's environmental risk is reduced to levels acceptable to the relevant market participants. When the appraiser addresses the diminution in value of a contaminated property and/or its impaired value, the appraiser must recognize that the value of the interest in impacted or contaminated real estate may not be measurable simply by deducting the remediation or compliance cost estimate from the value as if unaffected (unimpaired value). Rather, cost use and risk effects can potentially impact the value of contaminated property. Cost effects primarily represent deductions for costs to remediate a contaminated property. These costs are usually estimated by someone other than the appraiser, and should include consideration of any increased operating costs due to property. Real Estate Program Manual Chapter Nine: Contamination Guide / Section 9.1 Last full review 06/13; format changes 04/15 Page 10 of 10 remediation. The appraiser should also be aware that the market might not recognize all estimated costs as having an effect on value. Use effect reflects impacts on the utility of the site as a result of the contamination. If the contamination and/or its cleanup rendered a portion of the site unusable, or limited the future highest and best use of the property, then there could be a use effect on value. Risk effects are typically estimated by the appraiser and often represent the most challenging part of the appraisal assignment. These effects are derived from the market's perception of increased environmental risk and uncertainty. The analysis of the effects of increased environmental risk and uncertainty on property value (environmental stigma) must be based on market data, rather than unsupported opinion or judgment. In general, the unimpaired value of the property being appraised can be estimated using the sales comparison approach, cost approach, and the income approach. Estimating the effects of environmental contamination on real property value usually involves the application of one or more specialized valuation methods. These methods should be consistent with the requirements related to the valuation approaches in USPAP. See USPAP Advisory Opinion - 9 for further discussion; Advisory Opinions 2012 - 2013, The Appraisal Foundation

Expanded answer to Q8 by Cyrus Parker: How are Unidentified contaminated sites addressed if they are discovered during construction? In NC the following standard provision is used: 107-25 HAZARDOUS, CONTAMINATED AND TOXIC MATERIAL When the Contractor's operations encounter or expose any abnormal condition that may indicate the presence of a hazardous, contaminated, or toxic material, such operations shall be discontinued in the vicinity of the abnormal condition and the Engineer shall be notified immediately. Upon notification by the Contractor, the Engineer will investigate the work, consult the Geo/Environmental Section of the Engineering Unit and, if necessary, suspend the work in accordance with Article 108-7. The presence of storage drums or barrels; old or abandoned underground storage tanks; discolored earth, metal, wood, etc.; visible fumes; abnormal odors; excessively hot earth; smoke; or anything else that appears abnormal may be indicators of hazardous, contaminated or toxic materials and shall be treated with extraordinary caution as they are evidence of abnormal conditions. The Contractor's operations shall not resume until so directed by the Engineer. Disposition of the hazardous, contaminated, or toxic material will be made in accordance with Federal, State and local requirements and regulations. Where the Contractor performs work necessary to dispose of hazardous, contaminated, or toxic material, payment will be made at the unit prices for pay items included in the contract that are applicable to such work. Where the contract does not include such pay items, the Engineer may have the work performed by others or the Contractor may perform the work in accordance with Article 104-7 for extra work and the following paragraphs. The Contractor shall employ a fully experienced and prequalified geoenvironmental firm to oversee and document the disposal of contaminated material removed from within the project right of way. The Contractor shall furnish and deliver to the Department 3 Contaminant Removal Reports accompanied by all documents necessary to meet the laws, rules and regulations of the environmental regulatory agency(ies) having jurisdiction over each respective site from which contaminated materials are removed. Reports documenting the Contractor's work and laboratory analyses of collected samples shall be submitted to the Department within 30 calendar days after completion of the removal of the contaminated materials. If the Contractor removes any underground storage tanks (UST), a UST Closure Report shall be presented to the Department within 25 calendar days after receipt of laboratory data. The Contractor shall not submit any reports directly to the regulatory agencies. The Contractor shall provide to the Department a Certificate of Remediation from the disposing/treating facility within 60 calendar days after removal of the materials from the project site unless alternate arrangements are approved in writing by the Department. Contaminated material removed during construction shall be transported to a waste treatment and disposal facility that is fully approved and permitted by all applicable environmental regulatory agencies to receive, treat and/or dispose of the material. It shall be the Contractor's responsibility to locate such a facility. Departmental approval of the specific facility identified for use by the Contractor shall occur before removal of any materials from the project limits. Contaminated material shall only be removed to the extent necessary to complete a task or as directed by the Engineer. Remaining contamination shall be left in place and documented in reports provided to the Department. The Contractor shall provide the Department with all transportation manifests and certificates of acceptance from the receiving disposal facility weekly. The Department will be the regulatory generator of all waste excavated and removed from within its right of way. The Contractor, with the approval of the Engineer, is authorized to sign all waste transportation and disposal manifests on behalf of the Department. The Contractor shall maintain qualified personnel on-site at all times during removal of materials from within known areas of contamination for field screening and to monitor ambient air quality. The qualified personnel shall be knowledgeable with the use of an Organic Vapor Analyzer, Flame Ionization Detector, Photo Ionization Detector, or other appropriate monitoring equipment. In the event that there is a need to stockpile contaminated material, the Contractor shall stockpile all contaminated soil excavated from a parcel in a location within the property boundaries of the source parcel in accordance with the Standard Stockpile Containment Detail. If the volume of contaminated material exceeds available space on site, the Contractor shall obtain a permit from the NCDHEQ UST Section for off-site temporary storage. The Contractor shall be entirely responsible for compliance with all OSHA, EPA, DOT, DEQ and local rules and regulations pertaining to excavation, transportation and treatment/disposal of the contaminated material. Examples of such rules and regulations include, but are not limited to, 29 CFR 1910 and 1926, 40 CFR 260 - 265, 49 CFR 173 and 178, 15A NCAC 13A North Carolina Hazardous Waste Management Rules, NCGS § 130A-310 Inactive Hazardous Sites, the Federal Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the Federal Resource Conservation and Recovery Act (RCRA). It must be noted that inclusion of this paragraph is meant to highlight the Contractor's responsibility for regulatory compliance in all phases of work on this project.

Highway Right-of-Way
Management of Soils
October 2019

Q1: Please provide your contact information so other members of this work group can contact you for more information													
Name	Will	Brad Azeltine	Don Arkle	Theresa Santangelo	Joe Radonich	Jay Carsten	?	Shawn Rapp	Cyrus Parker	David L. Wilson	Larry Hoffman	Brian Kamnikar	
Company	NDOR	Iowa DOT	Alabama DOT	CDOT	Montana DOT	TXDOT		Oregon DOT	NCDOT	Virginia Department of Transportation	Ohio DOT	MnDOT	
Address		800 Lincoln Way	1409 Coliseum Blvd	15285 S Golden Rd	P.O. Box 201001	118 E. Riverside Drive		HazMat Program Lead	1020 Birch Ridge Drive	1401 East Broad Street	1980 West Broad Street	395 John Ireland Boulevard, Mail Stop 620	
Address 2													
City/Town	Lincoln	Ames	Montgomery	Golden	Helena	Austin		OR	Raleigh	Richmond	Columbus	St. Paul	
State/Province	NE	IA	AL	CO	MT	TX		Shawn R Rapp@odot.state.or.us	NC	VA	OH	MN	
Zip/Postal Code	68502	50010	36110	80401	59620-1001	78701		503-667-7442	27610	23219	43223	55155	
Email Address	will.packard@nebraska.gov	brad.azeltine@iowadot.us	arkled@dot.state.al.us	theresa.santangelo@state.co.us	jradonich@mt.gov	jay.carsten@txdot.gov			cfparker@ncdot.gov	David.Wilson@VDOT.Virginia.Gov	Larry.Hoffman@dot.ohio.gov	brian.kamnikar@state.mn.us	
Phone Number	402-479-4312	515-239-1938	334-242-6319	303-512-5524	406.444.9204	512-416-2474			919-707-6868	804-786-5588	614-466-6439	651-366-3617	
Q2: How does your state handle health and safety issues when contaminated soil is identified during construction. Do you already have a plan in place, do you remove contaminants before construction, is that responsibility placed on the contractor through an environmental commitment or special provision, or are other measures taken													
	For most petroleum or metal based contamination, NDOR identifies the contamination and provides commitments and guidance to the contractor for disposal. The EPA risk-based screening tool is used to identify risk-based levels based on the time and type of exposure to workers. This can help identify appropriate person protective equipment for the contractor. If there is an EPA CERCLA site, the EPA has taken the lead on a health and safety and cleanup.	To the greatest extent possible the Iowa DOT removes identified contamination in advance of construction through the use of statewide service agreements held with environmental consultants. When unexpected contamination is encountered during construction these same agreements are utilized.	Please contact Kaye Davis at 334-206-2277	Depending on the due diligence of the project team any of the above scenarios can apply.	If the contamination is known, ahead of the project, contamination health and safety management is written to the project contract via a special provision. The special provision places the responsibility of health and safety of the Contractor employees on the Contractor. The Department works internally with our inspectors to minimize contact or involvement with any contamination. Often the Department with hire a third-party Environmental Consultant to assist the Contractor with management of contamination, but not with the Contractors health and safety. Sometimes, depending on the level of effort, internal Dept. staff will assist the Contractor with management. If unknown contamination is discovered during construction of the project, the Contractor is required to stop work until the Dept. determines whether a specialty environmental contractor is needed. This is executed through the Depts. Standard Specifications for all contracts.	Work typically stops when contaminated soil is encountered during construction as required by the standard language used in most construction contracts. To reduce the chances of this happening, a contamination survey is performed during NEPA clearance. The survey relies heavily on a review of records from the Texas environmental quality agency. Suspected locations of contamination are investigated further if it is likely they will be encountered during construction. Contamination is removed, if it is practical, prior to construction. If the impact of contaminated media is extensive and identified far enough in advance, management of contamination can be incorporated into the construction plans as a special provision. Unanticipated contamination found during construction, that was not previously identified, is handled by a specialty contractor separate from the prime contractor. This can result in lost time charged against the job.	The contractor is required to hire a Certified Industrial Hygienist to develop a Health & Safety Plan. The department reviews the HASP to ensure all aspects of the site work worker health and decon are adequately addressed per the specifications. However, do to potential legal ramifications the department does not approve the plan.	Encountered during construction - would be managed through the contractor in conjunction with the ODOT PM. Additional H&S costs and disposal options would need to be discussed as would payment. Most of the time, it's identified ahead of time through corridor surveys, but small scale releases can get missed at planning.	North Carolina DOT performs Phase I and II investigations on environmental sites of concern during the planning stage of project development. Sites of concern that will be encountered by construction and have underground fuel tanks and/or hazardous levels of contaminants are addressed by our on-call hazmat consultants or 2) during construction by the contractor via a special provision. By contract and special provision, the contractor is required to comply with all Federal and State OSHA regulations.	Contaminated soils identified with construction are either removed: 1) prior to construction by our on-call hazmat consultants or 2) during construction by the contractor via a special provision. By contract and special provision, the contractor is required to comply with all Federal and State OSHA regulations.	ODOT manages contaminated soil and groundwater during construction by plan notes in the contract plans. The plan notes contain health and safety references for the highway contractor. ODOT has a long and robust history of conducting Environmental Site Assessments (ESA) during the NEPA phase of project development. The ESAs determine if property has been impacted with regulated substances and then to avoid, minimize or remediate. ODOT has managed tires, garbage, PCS, ACM, solid, universal, hazardous, & TSCA wastes via plan notes with health and safety considerations for the contractor.	To ensure MnDOT prepares for management of contaminated materials on our projects (aware of added cost, obtain any permits or approvals for disposition of contaminated soil), we review the project area before construction begins. This may involve completion of Phase I and drilling investigations. Sampling data collected during the drilling investigation is shared with the MnDOT IH if contaminant levels exceed industrial soil reference values. In that case, the IH determines if a health and safety plan is needed for MnDOT employees, and is so, prepares one. Contaminant data is included in the project special provision to make the contractor aware. The contractor is responsible for preparing a health and safety plan for their workers.	
Q3: Is your state evaluating and/or implementing policies that address possible contaminants in clean fill? Either internally, or in conjunction/cooperation with the regulatory agency. This may be through some formal agreement, permit waivers, rule changes, etc. If so, please explain.													
	The NDOR Hazardous Materials Review Guidance Manual outlines the steps for investigating if contamination is present in the project footprint or fill. If contamination is unexpectedly encountered, NDOR has an unexpected waste guidance manual and outlines the steps for our project managers and contractors to follow. The Nebraska Department of Environmental Quality is coordinated with for both these processes when necessary.	The Iowa DOT isn't currently evaluating or implementing testing for contaminants in clean fill.	Respondent skipped this question	No formal policy exists	No - Montana DOT is not evaluating or implementing policies that address contaminants in fill. We do state that fill needs to be contaminant free but do not test to verify that.	TXDOT does not routinely test clean fill for contaminants. However, contractors have the responsibility to provide clean fill according to standard specifications and could be held responsible if contaminated material introduced on to the project. This would be addressed on a case by case basis.	All fill materials have to be certified clean from the vendor providing the material.	We currently have an ODOT Directive prohibiting the re-use of soil without testing for contaminants. Oregon has a Clean Fill provision in solid waste rules, and Oregon DEQ has an internal directive for solid waste to process permit waivers and Clean Fill Determinations.	Not that I am aware of.	Virginia Solid Waste regulations define what constitutes "Clean Fill". Our special provision reference our studies where soil meeting the clean fill requirement is identified and when the soil meets Materials standards for the project, the soil is specified to be reused within the project.	No	The state regulator has established a guidance document on use of "unregulated fill" which is generally considered soil that does have contaminant levels that exceed the residential soil reference value and does contain solid waste debris. MnDOT is currently working on special provision language to ensure that "clean" material is used as import on our projects.	
Q4: Is your state evaluating roadside shoulder soils on a regional or state-wide scale for pollutants? If so, please explain.													
	No, it's very rare that we come across any contaminants in our shoulder soils. NDOR's unexpected waste guidance manual will cover discovery of this type of contamination.	Iowa DOT - no.	Respondent skipped this question	No	No - roadside shoulder soils are only evaluating if a known environmental source exists, e.g. from a highway spill.	TXDOT does not have a state-wide initiative to evaluate road shoulders for contaminants or pollutants. When construction requires excavation of soil along the shoulder, visual staining or odor is used as indicators of contamination. If a soil appears affected it is not released to the prime contractor but characterized for disposal.	The department is aware that roadside soils and sediment deposits can contain heavy metals and long-chained hydrocarbons, however we have not conducted any extensive sampling of roadside soils. We have, however, conducted comprehensive testing of sweepings and drainage clean-out and those materials are managed as a regulated waste for disposal.	In the middle of a state-wide evaluation. Working with regulatory agency to draft options, etc.	Not that I am aware of.	Virginia is not currently evaluating shoulder soil. Our guidance details BMPs to contact Environment if suspect contaminated soil is identified during shoulder or ditching operations.	No - looked at briefly years ago - no action.	There is no current effort to characterize roadside shoulder soils in general. MnDOT conducted some soil sampling many years ago to get an idea of potential soil contaminants in the highway right of way profile - not sure if it included the shoulder or not.	
Q5: Are you aware of any risk evaluations or studies/white papers that look at low level contaminants in roadside soils from a risk standpoint? Have any states completed a Risk Assessment to determine "allowable" concentrations of trace metals?													
	We usually use our Department of Environmental Quality risk based levels for dermal soil exposure to judge the risk. NDOR uses the EPA risk-based tool occasionally to identify if PPE is necessary. No studies or white papers that we know of.	Iowa DOT - no.	Respondent skipped this question	None that I am aware of	Not sure but I think CA probably has something regarding lead in roadside soils.	It has been reported that Association of State and Territorial Waste Managers has done some research regarding the use of marginally contaminated soils on construction projects; however, TXDOT is not aware of the exact scope of the studies. If the focus of the question is whether TXDOT is aware of studies of road side soil containing low levels of contaminants that may be a hazard to the traveling public, the answer is no. The state of Texas has published levels for metals in soil that are health protective in commercial land residential scenarios.	No	California - HHRA completed and is bases for the statewide 80ppm lead limit for unrestricted reuse.	No, we do not sample roadside soils for contaminants. However, for sites of concern, we typically rely on background samples and the following 2 publications to determine if metals are contaminants or background: Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States by Hansford T. Shacklette and Josephine G. Boerngen. https://pubs.usgs.gov/pp/p1270/ Geochemical Landscapes of the Conterminous United States -- New Map Presentations for 22 Elements by N. Gustavsson, B. Balviken, D.B. Smith, and R.C. Severson https://pubs.usgs.gov/pp/p1648/	The Virginia Department of Environmental Quality published Statewide Variance Guidance Memo LPR-SW-04-2012 on the management and reuse of contaminated media. It is a Tiered approach based on land-use and risk to GW and sensitive receptors.	Yes. No.	Our state regulator recognizes naturally occurring concentrations of metals that generally allow for reuse of the material and has established soil reference levels to determine acceptable contaminant concentrations in residential, recreational and industrial settings for a variety of contaminants.	
Q6: What other questions would you have liked to see on this survey and why?													
	Respondent skipped this question	Respondent skipped this question	Respondent skipped this question	Respondent skipped this question	Asphalt millings used as shoulder gravel - are millings considered a solid or hazardous wastes. How are they managed when coming off projects.	TXDOT has considered the following questions regarding the reuse of marginally contaminated soils: 1) Can contaminated soils be replaced into an excavation without triggering any regulatory issues? 2) Can marginally contaminated soil below health based criteria be used elsewhere on the construction site or must it be disposed of once unearthed? 3) Is interaction with state regulators needed when reusing marginally contaminated soil elsewhere on a construction project? 4) Is there a reporting requirement when marginally contaminated soil is encountered?	Respondent skipped this question	Respondent skipped this question	Respondent skipped this question	Respondent skipped this question	Respondent skipped this question	Are states using recycled materials? Are states reusing PCS or other materials on projects?	Are any other DOTs or state regulators implementing or considering processes to ensure that import materials are clean or meet acceptable contaminant loading for use in highway right of way? This could include special provision language and/or a sampling strategy or other means to demonstrate that proposed import material is acceptable.

**Hazardous Bridge Demolition Debris Management
October 2019**

Q1 Please provide your contact information so other members of this work group can contact you for more information							
Name	David L. Wilson	Larry Hoffman	Will Packard	John Hancock	Brad Azeltine	Robert Lane	Jeff Pearl
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Phone	804-786-5588	614-466-6439		404-631-1970	515-239-1938	609-530-2973	405-522-5195
Q2 How does your state handle the identification, management and disposal of hazardous bridge demolition debris such as asbestos containing material, lead and other metals, or other contaminants of concern?							
	VDOT conducts asbestos screening for potential asbestos containing components using bridge inspection staff. When potential ACM components are identified or it if the screening is inconclusive, a formal ACM inspection is performed by a licensed ACM inspector. Bridges are designated as either Type A - no coatings are present, or Type B - coatings are present. Coatings are not tested and work on Type B structures require the submission of an Environmental Protection Plan when more than 100 SF of coating is removed.	Asbestos containing materials are identified as a part of the notification process required by OEPA for demolition and renovation of bridge structures. The highway contractor would properly remove the identified asbestos and dispose of as a solid waste at a licensed landfill. Bridge blasting waste is tested and managed accordingly. Waste containing lead (or other metals) which test hazardous are managed with an OEPA waste identification number and code and are disposed of as a hazardous waste. Non-hazardous waste would be disposed of as a solid waste.	NE completes asbestos survey's for any replacement or rehab. We will complete a survey for some but not all repair activities. If positive, we include a special provision in the contract which includes, but not limited to, proper notification, hiring a licensed env. consultant to remove the asbestos, and proper shipping and disposal of asbestos. Anytime there is potential for painted bridge components to be disturbed, NDOT includes lead mitigation commitments to complete a TCLP on any waste paint waste generated.	Typically if we know it is there, we will identify it with a general note, and include the cost in the overall bid. If it is found during construction, then we will have it tested to determine if it is indeed a hazardous material and pay the contractor to remove. As far as management and disposal we put that on the contractor and that is covered by the section 107 specification. The spec states that disposition of the hazardous/toxic material will be made in accordance with the requirements and regulations of the Department of Human Resources and the Department of Natural Resources.	Iowa DOT - bridges are inspected for asbestos, lead and chromium as part of project development. When asbestos or lead paint is identified, appropriate bid items are included for proper removal and disposal in accordance with state and federal regulations.	Lead based painted members are considered non-hazardous if left intact, and can be landfilled. If the paint is removed then it must be handle as a hazardous waste, and the steel can be recycled. Asbestos has never been identified as an issue relative to bridge demo, only buildings.	Lead is managed in accordance with general hazcom requirements for worker protection (based on historical data on paint system used), with varying levels of controls for potential air excursions depending upon level of deterioration and nearby receptors. Based on informal consultation with state regulators, potential ACM on bridges is considered "de minimus" at this time
Q3 How does your state manage concrete slurry from hydro demolition of bridge decks? Is it landfilled, buried on the project, recycled, ect?							
	By Special Provision, the contractor is to submit a hydro-demolition plan detailing their mean of controlling the material generated during the hydro-demolition process.	ODOT is permitted for the land application of hydro-demo wastewater per the conditions on an OEPA General Permit. For more information see, http://epa.ohio.gov/Portals/35/pti/hydro-demo_gp/General%20PTI%20Fact%20Sheet.pdf	Hydro demolition is rare in NE, but we include an environmental commitment in the contract that required the contractor to test the waste as it could be hazardous based on elevated PH. If hazardous the contractor must follow RCRA and State Regs for disposal of a hazardous waste. If non-hazardous, we give the contractor the option of land applying, disposal at a Solid waste management facility, or to a permitted waste water treatment facility.	This is placed on the contractor. They are required to contain it in a container truck. They typically take it to a waste pit, so essentially landfilled.	Iowa DOT- The contractor is to ensure all water and debris is contained within the work area and collected for disposal in a manner approved by the Engineer (i.e. offsite disposal).	All concrete slurries from saw or hydro cutting must be contained and disposed of as a solid waste off site, typically dried and landfilled.	Such material is handled on a case by case basis, based largely on anticipated volumes and nearby receptors; options generally considered include on-site treatment for solids removal then discharge of resulting fluids, discharge to municipal sewer (with proper approvals), and possibly collection and disposal as industrial waste.
Q4 How does your state manage slurry from the grinding of new and old concrete pavement? Is it landfilled, buried on the project, recycled, ect?							
	By current Special Provision, the contractor is to collect "pavement residue" and dispose of in accordance with Section 106.04 of the Road and Bridge Specification, which include both disposal area criteria and landfilling. "Slurry" is not specifically mentioned in the Special Provision.	ODOT manages slurry per construction specification CMS 107.19 Environmental Protection. This specification directs the contractor to perform work so that materials are not discharged to waterways. This spec also controls fugitive dust from construction sites.	Usually buried, but sometimes landfilled. Unsure if ever recycled.	Same as hydro demolition on a major grinding job. Most of our jobs are just spot grinding, and essentially we just let it runoff on the shoulder. I guess you would classify this as buried on the project.	Iowa DOT - Slurry from grinding may be deposited on the foreslopes in rural locations with ditch sections except when in proximity of drainage ditches or waterways. In these areas, discharge of slurry must be stopped and can not resume until work is clear of these areas. Slurry must be contained when grinding in curb and gutter sections that drain into intakes. When slurry is contained, contractors typically utilize settling ponds and can then bury the dried residue. On occasion for small quantities ready mix plants will recycle the slurry.	See 3 above.	Such material is handled on a case by case basis, based largely on anticipated volumes and nearby receptors; options generally considered include land application to vegetated shoulders with sufficient area and lack of receptors, but if not possible, alternatives may include on-site treatment for solids removal then discharge of resulting fluids, or collection and disposal as industrial waste
Q5 How does your state manage street sweeping residuals from bridge decks and roadways? Are decks and roadways handled differently? Are you able to reuse or recycle the material?							
	There is no distinction made between street sweepings removed from bridges and roadways. All material is currently managed by landfilling.	Such materials would be subject to testing and proper disposal, generally as a solid waste.	Respondent skipped this question	No they are not handled differently. Yes we do reuse the material. Typically we will try and reuse in the same area so we do not have to haul it off (i.e. backfill a shoulder). If we cannot, then they will typically take it to a maintenance barn for later use.	Iowa DOT - street sweepings from bridge decks and roadways are collected in the same manner and all sweepings are landfilled. Some landfills will use this material as daily cover.	All sweepings are considered solid wastes, unless the contractor wishes to demonstrate otherwise via sample analysis, but this is rarely done.	Routine street sweepings are generally applied to the roadway shoulders
Q6 What other questions would you pose to the working group for this topic?							
	Respondent skipped this question	None at this time.	Respondent skipped this question	Respondent skipped this question	Respondent skipped this question	Respondent skipped this question	None at this time

**Soil Vapor Intrusion in Transportation Corridors Survey
October 2019**

Q1 Please provide your contact information so other members of this work group can contact you for more information							
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Q2 How does your state approach soil vapor intrusion (SVI) investigation and mitigation in transportation corridors?							
	To date, VDOT has not experienced vapor intrusion issues on our road construction projects and as a consequence hazardous materials investigations have not had to specifically target soil vapor intrusion or design specific mitigation requirements to address vapor intrusion and migration.	I am unaware of this topic.	We don't currently investigate for SVI on transportation corridors. If we are constructing buildings over known contaminated sites, we have the contractor include a vapor barrier.	We have none to date.	Generally soil vapor investigations are not completed by ODOT in corridors. When contaminant concentrations exceed the regulatory limit for volatiles in soil (to outdoor or indoor air), that is because an RP on an adjacent property has been identified and they are responsible for mitigating soil vapor concerns. Generally, an SVI will only be required then contamination is known and going to be left in place for some reason, and soil vapor data is needed to evaluate risk (as opposed to partitioning models that soil of groundwater concentrations rely on for estimating risk).	In our state, SVI is only regulated in areas where there is human occupancy. The transportation corridors are not designed, built or used for this.	MnDOT follows the Minnesota Pollution Control Agency's (MPCA's) SVI guidance documents for initial screening, and developed a process for investigation and mitigation in at-risk zones for utilities and subsurface design features. The process includes a flow chart and white paper, and allows initial screening using soil and groundwater sampling analytical data from Phase II investigation work. MPCA approved the process as a BMP for transportation corridors.
Q3 Does your state use screening values for soil and groundwater sampling laboratory analytical results to determine the need to address soil vapor intrusion or are only soil vapor sample results considered?							
	The Virginia Voluntary Remediation Program guidance issued by the Virginia Department of Environmental Quality outlines the use of groundwater, deep soil gas and sub-slab soil gas data in vapor intrusion screening criteria.	Not that I am aware of.	As noted above, the few times we considered SVI on proposed buildings, we utilized the soil and groundwater results. We did not collect soil vapor samples	Have not had to apply.	Yes. See above for distinction.	Our state does implement screening values for both soil matrix and groundwater samples but there is no program or lab screening to address SVI.	MnDOT uses screening values for soil and groundwater sampling laboratory analytical results to determine the need to address SVI, and use of those results may lead to actual soil vapor sampling.
Q4 The main issue in transportation corridors is impact to and migration along utilities (either within the utility or in the utility backfill). Does your state have investigation, mitigation and/or engineering controls guidelines for this setting?							
	To date, mitigation related to hazardous materials impacts to utilities have been primarily related to those installed within areas of contaminated groundwater or saturated soil. Within these areas of contamination, VDOT used special provisions for utility protection to limit contaminant infiltration through the pipe and joints by using contaminant resistant coatings and gaskets. Likewise, additional measures such as the use of bentonite or flowable fill, to establish areas of discontinuity in utility bedding and anti-seep collars are specified to limit contaminant migration.	I am unaware of any.	No, but if we have proposed drainage planned for installation in groundwater plumes, we recommend the pipes be sealed to prevent contaminated groundwater and vapors from entering the system. We have also poured concrete into drainage excavations to prevent the bedding material from becoming a preferential pathway	We do not.	The state? No. General environmental practices guide investigations, and when (during utility construction) potential off site contamination is known, there are engineering tools to mitigate contaminated water and/or vapor to migrating to utility corridors. There are regulatory requirements for RPs to investigate contaminants at depths and locations where utility corridors are or may be present, but there is no state policy or guideline. I can't see where the risk in these scenarios would warrant it, beyond standard H&S practices.	Utilities within the transportation corridor are investigated. Depending on type of impact, typical mitigation and engineering controls consist of upgrading water lines to ductile iron, use of nitrile gaskets and installation of bentonite plugs within the utility trench to mitigate the possibility of contaminate migration.	MnDOT has the investigation process noted in No. 2 above, and then standard mitigation and engineering control responses (trench dams, utility wrapping, specified utility materials or gasket material, etc.). We are working with local transportation partners to further formalize the entire process.
Q5 Does your state have any guidelines for addressing SVI in pedestrian tunnels and other enclosed or partially enclosed spaces associated with transportation corridors?							
	To date, this has not been an area of concern in Virginia.	I am unaware of any.	Not that I am aware of	We do not.	Not that I am aware of. There are relatively few that I know of, and are generally in urban areas. The distinction in a pedestrian tunnel between VOCs in exhaust background and migrating through an impermeable (possibly cracked) foundation and walkway would be fairly difficult. I'd suspect that airborne fumes would in a tunnel would present most to all of the inhalation risk from volatiles (adding in particulates, etc.).	No	MPCA's guidelines are specific for evaluating sources and receptors, but the receptors are mainly buildings and to some extent, utilities. We are in the process within MnDOT and with local transportation partners of addressing features more associated with transportation corridors.
Q6 Other ideas/questions you would like to see on this topic? Who in your organization can be contacted for more information on this topic?							
	David Wilson	Cyrus Parker	Cyrus Parker	Buck Brooks or Kevin Kelly	Shawn Rapp	Joe Radonich	James Deluca