

**UDOT GUIDELINES FOR IDENTIFYING, RECORDING,
AND EVALUATING ARCHAEOLOGICAL AND
PALEONTOLOGICAL RESOURCES**

AVAILABLE ON-LINE AT [UDOT](#) WEBSITE

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ARCHAEOLOGICAL RESOURCES

INTRODUCTION

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations (36 CFR 800) sets forth the process that federal agencies must follow when planning undertakings that have the potential to affect historic properties: “Section 106 requires Federal agencies to take into account the effects of their undertakings on historic properties and afford the Council [Advisory Council on Historic Preservation] a reasonable opportunity to comment on such undertakings” (36 CFR 800.1(a)). Undertakings are defined as “a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval” (36 CFR 800.16(y)). A historic property is “any prehistoric or historic district, site, building, structure, or object included in or eligible for inclusion in, the National Register of Historic Places [NRHP]” (36 CFR 800.16(1)).

The Federal Highway Administration (FHWA) implements the Federal-aid Highway Program (FAHP) in the state of Utah by funding and approving state and locally sponsored transportation projects that are administered by the Utah Department of Transportation (UDOT). FHWA has assigned responsibility for ensuring compliance with the National Environmental Policy Act (NEPA), including Section 106 of the NHPA and with Section 4(f) of the DOT Act of 1966, as amended, through two Memoranda of Understanding. This assignment authorizes UDOT to act as a lead federal agency for FAHP projects. This authorization and procedure is established through a Programmatic Agreement among FHWA, UDOT, State Historic Preservation Officer (SHPO), and the Council (106 PA).

Section 404 of the Utah Code Annotated (U.C.A.) of Title 9, Chapter 8 (U.C.A. 9-8-404) states agency responsibilities regarding historic properties in much the same way as Section 106 of NHPA: “Before expending any state funds or approving any undertaking, each agency shall: (i) take into account the effect of the expenditure or undertaking on any historic property; and (ii) unless exempted by agreement between the agency and the state historic preservation officer, provide the state historic preservation officer with a written evaluation of the expenditure’s or undertaking’s effect on the historic property” (U.C.A. 9-8-404(1)(a)). UDOT administers the state-funded transportation program in the state of Utah and is responsible for ensuring that the department is in compliance with U.C.A. 9-8-404. This responsibility is implemented through a Programmatic Agreement between UDOT and SHPO (404 PA).

UDOT is divided into four regions (Attachment 1), each with a UDOT archaeologist assigned to the region. In addition, there are two cultural resource specialists located in the UDOT Complex in Salt Lake City, one Cultural Resource Program Manager and one Architectural Historian. Consultants will work directly with the appropriate UDOT Region Archaeologist and may work directly with the Architectural Historian if the

project includes historic buildings (UDOT Guidelines For Identifying, Recording And Evaluating Architectural Resources).

This manual is intended to instruct both consultants and others working on UDOT projects in the UDOT cultural resource compliance process. These guidelines apply to all projects, regardless of sponsor, funding instrument, or permitting agency. Consultants are an important part of the cultural resource compliance program of UDOT. These guidelines contain procedures and methods considered essential to completing surveys and reports. However, unique situations may occur and UDOT cultural resource professionals are open to appropriate creative solutions that may not be presented below. Thus, flexibility, as well as open communication with the UDOT Project Manager, the UDOT Region Archaeologist, and the Architectural Historian is a key element to the successful completion of any UDOT project.

PERMITS

Prior to entering the field, the Consultant must obtain all the necessary project specific permits. In accordance with U.C.A. 9-8-305, as implemented by R694-1, all archaeological consultants and others conducting archaeological field surveys on state lands must be either permitted by the Public Land Policy Coordinating Office (PLPCO) as a principal investigator, or working under the direction of a principal investigator who holds a valid permit. Testing for eligibility is not a common practice in Utah and will require a research design approved by UDOT and excavation permit from PLPCO. State project numbers are obtained from the Utah Division of State History (UDSH), Antiquities Section.

As early as possible, but at least prior to beginning field inventories, the consultant must obtain written authorization to proceed, using the UDOT Fieldwork Authorization Request Form (Attachment 2), discussed in more detail below. The consultant may also need a project-specific federal permit if federal lands are also included in the survey area. It is the consultant's responsibility to determine all land jurisdiction (UDOT right-of-way over federal land is usually by easement; the federal agency is the owner). If the project crosses land under the jurisdiction of another agency, that agency must be contacted before a survey is initiated. For the Bureau of Land Management (BLM), a BLM permit and project authorization is needed; for the Forest Service, the Forest Archaeologist should be contacted; for the Utah School and Institutional Trust Lands Administration (SITLA), the consultant must notify SITLA before conducting a survey. For requirements on other land jurisdictions, contact the UDOT Region Archaeologist or the appropriate agency.

The consultant must also obtain an encroachment permit from the appropriate UDOT Region Permits Officer for activities within the right-of-way (ROW), such as fence cutting, testing, heavy equipment operation, traffic control, or other signing.

DETERMINATION OF SCOPE AND LEVEL OF IDENTIFICATION EFFORTS

As stated in 36 CFR § 800.4(a) and (b), it is the agency's responsibility to determine and document the area of potential effects (APE) and the level of the identification effort, in consultation with the SHPO/THPO (Tribal Historic Preservation Officer). The APE is defined as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking" (36 CFR 800.16(d)). The APE may not be the same as the survey area or the project footprint, and must consider indirect and cumulative effects as well as direct effects. When determining the APE, the following factors should be considered:

- ❖ All alternatives being considered for the undertaking.
- ❖ All locations proposed for ground disturbance.
- ❖ The depth of any ground disturbance.
- ❖ All locations from which the undertaking may be visible or audible.
- ❖ All locations where the undertaking may result in changes in traffic patterns, land use, public access, etc.
- ❖ All areas where there may be indirect as well as direct effects.

An APE boundary can change during the course of a project as alternatives are modified, new alternatives are considered, or new impacts to historic properties are identified. The level of the identification effort required within the APE can vary, depending on the scope and nature of the undertaking, the nature and extent of potential effects on historic properties, and the likely nature and location of historic properties within the APE. For example, the area of the undertaking subject to direct effects may require a Class III field inventory, while the area of the undertaking subject to indirect effects may require only a literature search and a "windshield" survey.

The Section 106 and 404 PAs require that the SHPO be consulted on the APE and level of effort on all projects whose environmental document is an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) (or the state equivalent), or when a Categorical Exclusion (CE) document is completed for a project that is non-routine or has the potential for substantial indirect and/or cumulative effects. This consultation will be completed by the UDOT Cultural Resource Program Manager and Architectural Historian, when appropriate.

It is recommended that consultants contact the UDOT Region Archaeologist or Cultural Resource Program Manager before bidding on a project to discuss the APE and the level of identification effort. If the winning consultant has not already discussed these items with the UDOT, they should do so before submitting the Fieldwork Authorization Request form.

Prior to beginning field inventories, the consultant must obtain written authorization to proceed, using the UDOT Project Authorization Request Form (Attachment 2). If the

APE and level of identification effort have not already been determined, the consultant will make recommendations for these items (for both the archaeological and the architectural surveys) on the Form. If the UDOT Region Archaeologist, Architectural Historian (if applicable) concur, UDOT will return the signed form to the consultant. The form should also include details about the identification methods, resources present in the APE as indicated by the record search, and the form in which the final deliverables will be submitted to UDOT. The consultant should submit the Project Authorization Form early enough in the project to allow time for UDOT to consult with SHPO before fieldwork is to begin. Allow one week for UDOT to return an approved form.

UDOT has adopted the Utah Professional Archaeological Council's (UPAC) guidance document entitled *Linear Sites: Guidance for Identifying and Recording Under Section 106 of the National Historic Preservation Act*. Consultation with the UDOT archaeologist concerning the level of identification and recording efforts for linear sites must be conducted before fieldwork is initiated. The consultant should do as much pre-fieldwork research as possible before this consultation.

RECORDS SEARCH

The consultant must conduct a records search before entering the field. This is often referred to as a Class I inventory, although a true Class I is a regional overview and much more extensive than a project records search. At a minimum, a records search will entail examining the National Register of Historic Places, files and databases at the UDSH, and General Land Office (GLO) records. If undocumented linear resources are present in the records search area, all effort should be made to identify if it has been documented in other locations. Ethnographic literature should also be reviewed to identify potential places of traditional cultural importance to Native Americans or other cultural groups. The records search should include the APE and an additional buffer area around it. In general, a 0.5 mile buffer around the APE is appropriate, but confirm the buffer area with the Region Archaeologist if the APE is in a rural setting. If the APE crosses land under the jurisdiction of other agencies (BLM, Forest Service, SITLA, etc.), the consultant should also conduct a records search at the appropriate office. Mapping of previous projects and previously documented sites is not required.

SURVEY COVERAGE

The APE, the project area or footprint, study area, and the survey area may all be of different sizes, and it is important to be clear about what area will be surveyed. The APE includes all areas that may be affected by the project and may include areas of indirect effect not in proximity to the project. The project area refers to the project footprint, or the area that will be directly impacted by the project. A study area is generally used in NEPA documents, and includes all areas evaluated to environmental impacts. Finally, the survey area includes the area of actual survey and may be a subset of the APE. Additionally, there may be different survey intensities or methods in the survey area and those must be delineated.

The consultant will coordinate with the UDOT Region Archaeologist about the need to re-survey areas within the APE that have been previously surveyed. If the previous survey is more than 10 years old, a re-survey will most likely be required. Areas to be surveyed may also be surveyed at different intensities. UDOT generally follows the BLM definition of survey levels: A Class II inventory is defined by the BLM as a “statistically based survey [sample survey] designed to characterize the probable density, diversity and distribution of cultural properties in an area” (BLM Handbook H-8110, page 3). Class III inventories are “designed to identify and record all cultural properties visible from the surface They are continuous, intensive and complete surveys carried out by trained observers walking close-interval parallel transects” (BLM Handbook H-8110, page 3). Judgmental inventories, also known as selective or reconnaissance inventories, and “windshield” surveys are other methods of gathering information that is not a Class II or Class III inventory. An intensive survey is the most common, but Class sample surveys, judgmental, reconnaissance, or “windshield” surveys may be appropriate for certain projects, as determined in consultation with UDOT. Project maps included in reports must depict the APE, the surveyed area (if different), and the areas of differing survey intensities. These differences would also be described in the text of the report.

For an intensive level survey the intensity should be high with spacing between crew members no more than 15 meters. Ground visibility should be 80 percent or better, especially in snow conditions. In areas of dense vegetation, a reconnaissance or “windshield” survey may be adequate. Subsurface testing due to low ground visibility cannot be conducted without prior approval by the Region Archaeologist, development of a research design and PLPCO excavation permit. The level of the identification effort must be agreed to with the UDOT Region Archaeologist before fieldwork begins. If an unexpected situation is encountered while in the field, the consultant should also consult with the UDOT Region Archaeologist if possible.

Everyone working in the highway ROW is required to wear ANSI 107-2004 Class II clothing (or greater), in accordance with FHWA Final Rule Worker Visibility (23 CFR Part 634) and UDOT Policy 05D-2.

RESOURCE DOCUMENTATION

The goal of any documentation is to provide the agency archaeologists with sufficient information regarding a given resource so they can evaluate the context, physical characteristics, and physical integrity of the site; determine the eligibility of the site to the National Register of Historic Places (NRHP); assess the project effects (if any) on the resource; and determine the appropriate mitigation measures, if needed.

Consultants must document all archaeological sites identified in the course of the inventory. A Utah Archaeology Site Form will be completed for all newly observed sites and site updates. Site numbers for all sites are obtained from the UDSH, Antiquities Section. UDOT has adopted the BLM’s site definitions. The minimum criteria for

defining archaeological sites are that they should contain remains of past human activity that are at least 50 years old and should consist of one or more of the following:

- ❖ At least 10 artifacts of a single class (e.g., 10 sherds) within a 10-meter diameter area, except when all pieces appear to originate from a single source (e.g., one ceramic pot, one glass bottle).
- ❖ At least 15 artifacts that include at least 2 classes of artifact types (e.g., sherds, nails, glass) within a 10-meter diameter area.
- ❖ One or more archaeological features in temporal association with any number of artifacts.
- ❖ Two or more temporally associated archaeological features without artifacts (BLM Handbook H-8110, page 6).

Archaeological resources that are less substantial than those defined by the criteria above may be recorded as sites if a professional archaeologist believes they have the potential to contain additional materials that are not currently visible or possibly in a buried context. Professional judgment should always be exercised in applying the criteria to cases that are questionable.

Isolates (isolated finds, isolated occurrences) are all other cultural resources not documented as sites. How they are recorded will be determined in consultation with the UDOT Region Archaeologist, but minimally they will be plotted on a 7.5' USGS topographic quadrangle map and briefly described.

All previously recorded sites in the survey area should be examined and re-evaluated if necessary. If there has been no change since the original recording, no updated site form is necessary. If an update was not prepared, this should be clearly stated in the report. However, if the site is different in composition from the original recording, the site's eligibility recommendation has changed, is in a different location or has altered boundaries; the site form must be updated. An abbreviated form can be used, only completing those fields whose information has changed. The updated form should include photographs, a site sketch map, and a 1:24,000 topographic map as appropriate.

Because the probability is high that a given site will be revisited by other archaeologists, the location data must be accurate. Both a 1:24,000 scale topographic map and a sketch map (or aerial map) must be produced for each site. These maps should include a scale, a bold north arrow, a legend, and clear labels for all major components discussed in the site form. Consultants are encouraged to illustrate or photograph diagnostic artifacts. GIS shapefiles of each site boundary must be submitted with the final report.

Photographs should include site overviews, features, artifacts, and at least one photo showing the horizon for relocation purposes. Close-up photographs must include a standard photo scale, *other items such as pens or GPS units are not acceptable as scales*. Formatted digital photographs should be included in the site form, but SHPO Antiquities Section is no longer accepting photograph prints.

To help facilitate relocation of sites, site datums may be established on site in consultation with the Region Archaeologist. If a site is in the UDOT ROW, the datum should be placed as close to the edge of the ROW as possible to facilitate road maintenance activities. Placement of datums is generally not necessary on linear sites. Datums should consist of a non-degradable site tag with the temporary or permanent site number attached to a non-corrosive stake. Datum locations should be depicted on the site sketch map.

Sites should be documented in their entirety and site boundaries drawn. Recording sites that extend outside the ROW onto private land generally requires the landowner's permission. If permission is not granted, approximate site boundaries can be shown as dashed lines. If the site is not recorded in its entirety, the reason why it was not recorded in its entirety should be given in the report and on the site form. In accordance with the Linear Sites guidance, a linear site that extends beyond the survey area generally should be field recorded to a maximum of 400 meters outside the survey area.

Bridges are not recorded as archaeological sites, but as architecture and should be documented on the historic site form developed by the UDSH, Historic Preservation Section. Rural homesteads/farmsteads are recorded on a site form, but will include a supplemental historic site form for the buildings.

Surface collection during survey is not permitted, unless it is associated with testing (see below) or prior arrangements have been made with the UDOT Region Archaeologist. If the consultant determines that a surface artifact should be collected, the UDOT Region Archaeologist should be consulted before materials are removed from a site.

TESTING

U.C.A. 9-8-302 defines "survey" as "a surface investigation for archaeological resources that may include: (a) insubstantial surface collection of archaeological resources; and (b) limited subsurface testing that disturbs no more of a site than is necessary to determine the nature and extent of the archaeological resources or whether the site is a historic property" [U.C.A. 9-8-302(21)].

This limited testing is rare and can only be done after consultation with the UDOT Region Archaeologist. Testing should be limited to the minimum amount of disturbance necessary and should not diminish or substantially alter the significance or integrity of a property. Testing should be terminated once the necessary data are obtained either to recommend the site as eligible or to address the nature and extent of the deposits. The tested areas should be mapped with a GPS and completely filled in when the testing is completed.

If the consultant recommends that more extensive testing is necessary, the UDOT Region Archaeologist must be contacted to discuss and agree upon a testing approach. The consultant may be asked to provide a testing plan that would indicate the type and location of the probes, test units, or trenches, and to obtain an excavation permit. The

testing plan should include research questions appropriate for the level of work and site type. The testing plan should also include a safety plan.

A consultant must obtain an encroachment permit from UDOT for testing in the ROW. All test units and trenches must be fully backfilled before leaving the site, unless other arrangements have been made. If a unit or trench is left open, all UDOT and Occupational Safety and Health Administration (OSHA) standards must be followed.

ELIGIBILITY

The evaluation of site significance and eligibility for the NRHP is extremely important for historic preservation compliance and for long-term management purposes. Therefore, the utmost care and thought should go into recommendations of a particular site's significance and NRHP eligibility. This process involves evaluating a particular site's qualities against the Criteria for the National Register, as given in 36 CFR 60.4 and outlined below.

The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association and:

- a) that are associated with events that have made a significant contribution to the broad patterns of our history; or
- b) that are associated with the lives of persons significant in our past; or
- c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- d) that have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years will not be considered eligible for the National Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within certain categories. These criteria considerations are presented in 36 CFR 60.4 and discussed with examples in *National Register Bulletin 15*.

Archaeological sites are most often determined eligible for the NRHP under Criterion D, significant for the information they can provide about history or prehistory. They can, however, also be found eligible under Criteria A, B, or C. To be eligible under Criterion A, not only must a site be associated with a specific important event or a pattern of events or a historic trend that made a significant contribution to prehistory or history, but the

property's specific association must be important as well. For example, a site where prehistoric Native Americans annually gathered for seasonally available resources and for social interaction could be eligible under Criterion A. Criterion B applies to properties associated with individuals whose specific contributions to history can be identified and documented. For example, an archaeological site associated with a historically important person, or a site with rock art depicting figures representing specific, known personages could be eligible under Criterion B.

Criterion C applies to properties significant for their physical design or construction, including such elements as architecture, landscape architecture, engineering, and artwork. For example, a Fremont village that illustrates the important concepts in prehistoric community design, or a mining site with unique architectural elements to the buildings or an intentional layout of operations, could be eligible under Criterion C. See *National Register Bulletin 15* for guidance on applying the criteria. Regardless of the Criteria, research and evidence must be presented to support the recommendation.

For each site identified for the undertaking, the following information must be provided on the site form and in the report:

- ❖ a recommendation of which elements of integrity (location, design, setting, materials, workmanship, feeling, and association) are intact;
- ❖ a recommendation of whether the site is eligible or not eligible to the NRHP; if eligible, which National Register criterion or criteria apply;
- ❖ if eligible under Criterion D, describe the types of research potential the site has;
- ❖ if not eligible, a clear statement justifying the recommendation in terms of the National Register criteria.
- ❖ if a site was previously documented with a determination of eligibility, the current documentation must acknowledge it and state whether the author concurs with the previous determination.

REPORTING

For every project for which a consultant conducts both an archaeological and architectural survey, the consultant will produce two reports (see the Architectural Guidelines for contents of architectural reports). This will allow the reports to be filed in the appropriate location at the UDSH and will ensure that sensitive archaeological information is not available to the public in the Historic Preservation Section. UDOT is accepting digital versions of draft and final reports, but hardcopies may be required by tribes or other consulting parties.

Draft reports and site forms will be submitted to UDOT for review, and must be labeled as "DRAFT". If there is more than one draft, label it according to the draft version (e.g., Draft, Draft 2, Draft 3, etc.). Once the consultant has addressed UDOT's comments, the revised draft report may be also be submitted for consulting party review. The consultant will provide the necessary number of copies as requested by the UDOT Region Archaeologist; these may include electronic copies. The final report is submitted by

UDOT to the UDSH for consultation. The consultant will not submit reports (either draft or final) directly to any party except UDOT, unless directed otherwise.

All sensitive information such as locations of archaeological sites, TCPs, sacred sites, or any information from which location could be derived, must be placed in an appendix. Appendices will have limited distribution, as directed by the UDOT.

Final site forms to be submitted to the UDSH must comply with the current UDSH site form submission guidelines and UDSH photographic standards. The IMACS site form has been replaced by the Utah Archaeological Site Form, and IMACS forms are no longer accepted. UDSH does not accept hardcopies of site forms or reports, all items must be in a digital PDF/A format. GIS data of the site boundary and project area are required in the final submission packet. Also, the IMACS encoding form has been replaced with a spreadsheet that must accompany the forms.

Although not required for the survey report, UDOT may request a map showing site boundaries in relation to the project area to assess project impacts.

If the project is being processed as a documented Categorical Exclusion, Environmental Assessment, or Environmental Impact Statement under NEPA, specific language must be included in the survey report to acknowledge UDOT's NEPA assignment. This language may be placed on the report title page, abstract or summary sections:

“The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by UDOT pursuant to 23 USC §327 and a Memorandum of Understanding dated January 17, 2017, and executed by FHWA and UDOT.” This language may be placed on the report title page, abstract or summary sections.

Report Content

The report should follow the most current version of the SAA Style Guide and contain the following sections. Negative reports (no cultural resources found) should briefly include the same information, except there will be no sites reported and therefore a cultural context is not necessary. For negative reports, also include a possible explanation of why no sites were located (e.g., topography, vegetation, disturbance, etc.). Short form reports are also accepted, but must contain the same content where applicable.

1. SHPO cover sheet as the first page of the report;
2. A cover page, which includes—at a minimum—the title of the report, the UDOT project name and number, the author(s), the name of the Principal Investigator (if different), the name of the company, and the UDSH Project Number;
3. An abstract page, which summarizes the project description, location, number of acres surveyed, number of cultural properties, which sites are recommended

- eligible and under which criterion each is considered eligible, and which sites are recommended ineligible (best represented in tabular format);
4. A table of contents, and a list of tables, figures, and appendices;
 5. An introduction, including the reason for the inventory (what is the construction project, client name, brief description of construction project), the name and PLPCO Permit number of the principal investigator, and the dates of fieldwork;
 6. A description of the project area, APE, and the surveyed area (maximum width and length, total acres, legal location, other federal and state agency jurisdiction by legal description, state highway route, and milepost (if applicable)), along with a 7.5' USGS map at 1:24,000 scale showing the APE and the survey area ;
 7. A brief description of the local environment;
 8. A cultural context summarizing the culture, period, and area reflected in the cultural resources identified during the survey. The purpose of the context is to provide a framework for evaluating the significance of the resources. For example, if only historic sites were observed, the culture history does not need to include a prehistoric summary;
 9. A summary of any previous research (projects and sites recorded) in the area, including, but not limited to, the name of the consulting firm, the year of the project, the sites recorded, site types, and which sites are in the APE. This is best presented in tabular form. Provide the distance from the project for which the record search was done. Provide information on other resources that were consulted, such as the General Land Office maps, aerial imagery, or records from other agencies. If a paleontological file search was conducted for the project provide a brief summary and reference to the UGS response letter in the appendix;
 10. The survey methods (including survey type, transect intervals, length and width of survey area, site and isolate definition, recording methods, etc.) employed, and any variations;
 11. The survey results, describing the cultural resources that were found. Do not simply copy the site description from the site form. The description in the report does not need the same level of detail about features or artifact concentrations. NRHP eligibility recommendations and justifications will be included in this section. A 7.5' USGS map showing all sites and isolated finds will be placed in an appendix and will include the APE;
 12. A summary that includes the number of sites and isolated finds recorded, and the number of sites recommended eligible and ineligible (best presented in tabular format). Discussion of the project effects, monitoring, or mitigation should not be included in the report;
 13. The references cited;
 14. Appendices containing the sensitive information (e.g., locations of archaeological sites, TCPs, sacred sites, and any other information from which location can be derived);
 15. An appendix containing the letter from UGS regarding the record search and the paleontological report (if applicable);
 16. Site forms including photographs and maps for all recorded sites;
 17. Shapefiles of the project area and site boundaries must also be submitted to

UDOT as part of the UDSH packet.

MONITORING

UDOT recommends archaeological monitoring as an option of last resort on highway projects. Every effort must be made to identify all archaeological and paleontological resources in the preconstruction phase, since encountering previously unidentified historic properties during construction is extremely disruptive and very expensive. Monitoring should be recommended only if all other reasonable methods for identification and evaluation of archaeological or paleontological resources have been expended, and there is a high potential for encountering previously unidentified historic properties.

If archaeological monitoring is determined to be appropriate, a monitoring plan will be developed and approved by the UDOT Region Archaeologist and the SHPO prior to construction. The monitoring plan should include, at a minimum, the following elements:

1. A project description, including specific details about the types of ground-disturbing activities, the types of equipment being used, and distribution of equipment across the project;
2. Any training or briefing provided to construction crew;
3. Monitoring methods, including personnel qualifications, communication and coordination, and specific details about whether monitoring will be full time or by spot checking;
4. Definitions for different types of discoveries (significant vs. not significant) and methods of treatment for the different types (document but not stop construction vs. document, notification, treatment plan, treatment);
5. Procedures for discovery of human remains, including consultation with tribes;
6. Reporting requirements;
7. Curation requirements; and
8. Maps

DISCOVERIES

If previously unidentified archaeological or architectural properties are discovered after UDOT has completed the Section 106 or 9-8-404 review, and a discovery plan or monitoring plan has not been completed, Stipulation XI.B in the Section 106 PA will be followed. If a discovery or monitoring plan has been completed, Stipulation XI.A of the Section 106 PA will be followed. Regardless, when a discovery occurs, the contractor will follow UDOT Standard Specification 01355, Part 3.8.

Human Remains

Human remains and any funerary objects, sacred objects, or objects of cultural patrimony found during either archaeological investigations or construction will generally be treated in accordance with the Utah Native American Graves Protection and Repatriation Act

(Utah NAGPRA). Utah NAGPRA applies on non-federal land. If the remains are found on federal land, even if there is a UDOT easement, the federal NAGPRA applies and the federal agency would be responsible for implementing NAGPRA. When human remains are discovered, follow UDOT Standard Specification 01355, Part 3.8, which directs the contractor to cease activity and protect the discovery, and notify the UDOT Region Archaeologist. The UDOT Region Archaeologist will notify local law enforcement (even if on a permitted excavation); contact the UDSH, Antiquities Section; and contact the Division of Indian Affairs to coordinate tribal consultation. If the remains are found on federal land, the federal agency representative must be contacted as well.

PALEONTOLOGICAL RESOURCES

APPLICABLE REGULATIONS

Paleontology is the study of ancient or past life. Paleontologists study the fossilized remains of life, including vertebrate organisms such as fishes, amphibians, reptiles, mammals, and dinosaurs (vertebrate paleontology); invertebrate organisms such as ancient snails, clams, ammonites, foraminifera, and arthropods (invertebrate paleontology); and preserved plants such as leaf impressions and petrified wood (paleobotany).

The Paleontological Resources Preservation Act became law on March 30, 2009 as part of the Omnibus Public Land Management Act of 2009 (P.L. 111-011). This law provides for the management and protection of paleontological resources on federal land. The state law protecting fossils in Utah is found in Section 508 of Title 79, Chapter 3 of the Utah Code Annotated (U.C.A. § 79-3-508). The agency responsible for overseeing compliance with U.C.A. § 79-3-508 is the Utah Geological Survey (UGS), Office of the State Paleontologist. The statute reads as follows:

- (1) Before expending state funds or approving an undertaking, each state agency shall:
 - (a) Take into account the effect of the undertaking on a specimen that is included in or eligible for inclusion in the State Paleontological Register; and
 - (b) Allow the director or assigned staff a reasonable opportunity to comment regarding the undertaking or expenditure;
- (2) The director or assigned staff shall advise on ways to maximize the amount of scientific, paleontological, and educational information recovered, in addition to the physical recovery of specimens and the reporting of paleontological information, at current standards of scientific rigor.

ROLE OF UDOT AND CONSULTANT, AND QUALIFICATIONS

UDOT and UGS have an executed memorandum of understanding (UGS MOU) that outlines agency responsibilities for compliance with U.C.A. § 79-3-508. This agreement

is applicable to all classes of undertakings, including encroachment on UDOT ROW for excavation, access construction, or other incidental construction undertakings. Certain types of projects have been found to have no effect on paleontological specimens that are on or eligible for inclusion in the State Paleontological Register, and do not require individual UGS notification and concurrence. All other projects require consultation with UGS.

Many of the tasks associated with compliance can be done by either the UDOT Region Archaeologist or an archaeological consultant. Certain tasks, however, such as survey, excavation, and monitoring, must be conducted by personnel with the following qualifications:

- ❖ Professional instruction in paleontology, obtained through:
 - Formal education resulting in a graduate degree from an accredited institution in paleontology, or in geology, anthropology, biology, botany, or zoology if the **major emphasis** is in paleontology; **or**
 - Equivalent paleontological training and experience, including at least 24 months under the guidance of a professional paleontologist with the qualifications for formal education, providing increasing responsibility leading to professional duties similar to those proposed; **and**
 - Demonstrated experience in collecting, analyzing, and reporting paleontological specimens and data, similar to the type and scope of work proposed;
 - Demonstrated experience in planning, equipping, staffing, organizing, and supervising crews performing work of the type and scope proposed.
 - Demonstrated experience in carrying paleontological projects to completion, as evidenced by timely completion and/or publication or theses, research reports, scientific papers, and similar documents.

EXEMPTED PROJECTS

The UDOT Region Archaeologist reviews each undertaking to determine whether it is of a type that is exempted from UGS notification under the MOU. Types of exempted projects are as follows (see Attachment 1 of the MOU):

1. Curb, gutter, and sidewalk improvements (including ADA ramps) that are in an area that has been completely disturbed and no new terrain is altered;
2. Lighting and signalization projects. This exemption allows for installation of concrete footers that extend 6 to 8 feet into the ground in or adjacent to the already disturbed road prism. Trenching is exempted provided it is in the already disturbed road prism;
3. Intersection improvements/minor widening projects. This exemption allows for acquisition of 20 feet or less of ROW for turn lanes and minor widening projects, in areas already previously disturbed;

4. Resurfacing projects that are confined to the existing pavement surface. Shoulder flattening of no more than 8 feet and minor safety work may be included, in or out of areas previously disturbed;
5. Structure and bridge maintenance (deck replacements, joint sealing, overlays, etc.)
6. Cattle guards or grates;
7. Improvement of existing railroad crossings where all earth disturbance is confined to the already disturbed highway road prism;
8. Guardrail and barrier installation. Minor shoulder widening of no more than 8 feet in or out of previously disturbed areas may be included;
9. Signing, where disturbance is limited to installation of posts;
10. Installation of VMC/CCTV cables, provided they are installed in previously disturbed areas;
11. Utility relocations that are moved to previously disturbed areas to accommodate proposed highway upgrades;
12. Minor changes during construction, including changes in cut and fill slopes, staging areas, locating office sites, water storage ponds, and material stockpile locations, if consultation on the project's area of potential effects (APE) has already occurred;
13. Permitted encroachment undertakings if they are contained within previously disturbed ROW or that do not require any excavation;
14. Landscape or enhancement projects that are in previously disturbed ROW;
15. Bicycle/pedestrian pathways that involve restriping existing transportation facilities and/or minor widening by the addition of a graded pathway no more than 8 feet beyond the edge of the existing traveling surface.
16. Administrative or non-construction projects.

UGS NOTIFICATION

For all other projects, UDOT Region Archaeologists or an archaeological consultant submits a letter to UGS, Office of the State Paleontologist (for example letter, see Attachment 3) requesting a literature search for paleontological specimens or sites. The letter includes a description of the project and its area of potential effects (APE), with as much detail as possible about ground disturbance; legal location; and a copy of the 7.5-minute USGS topographic quadrangle map at 1:24,000 scale showing the APE. If a GIS shapefile of the project is available, it should be submitted to UGS as well.

UGS RESPONSE

UGS and the Utah Bureau of Land Management (BLM) have developed a classification system for geologic units, based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts (BLM Instruction Memorandum (IM) 2008-009). UDOT has adopted this classification system:

- ❖ Class 1 – Very Low. Geologic units that are not likely to contain recognizable fossil remains

- ❖ Class 2 – Low. Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant non-vertebrate fossils.
- ❖ Class 3 – Moderate or Unknown. Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential.
- ❖ Class 4 –High. Geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. This class can be either an exposed unit (Class 4a) or areas where the geologic unit with high potential is buried (Class 4b).
- ❖ Class 5 – Very High. Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils. These units are further classified by exposed units (5a) and buried units (5b).

UGS responds within two weeks of receiving the written request. If UGS responds that the geologic units in the project area are either Class 1 or Class 2, compliance with U.C.A. § 79-3-508 is complete, unless UGS indicates otherwise.

If UGS responds that the geologic units in the project area are Class 3, the UDOT Region Archaeologist or the consultant should determine if construction activities will impact those geologic units. The UGS website contains geologic maps, particularly the 30 x 60 quad maps, which can aid in this determination. If the geologic units are exposed and will be impacted, a survey should be conducted by a qualified paleontologist. If significant fossil localities are found and will be impacted, consultation continues with UGS to seek ways to avoid, minimize or mitigate the impacts. If the geologic units in the project area will be impacted, but are not exposed, monitoring or spot checking by a qualified paleontologist during construction may be required.

If the geologic units in the project area are either Class 4 or Class 5 and are exposed, a survey by a qualified paleontologist is required. If paleontological specimens are found during the survey, or if there are known paleontological specimens in the APE, their significance is evaluated by the paleontologist and a determination is made whether or not they will be impacted by the project. If known paleontological specimens are significant and will be impacted, consultation continues with UGS to seek ways to avoid, minimize or mitigate the impacts. Even if there are no known paleontological localities, or if the geologic units are not exposed before construction, monitoring may be required.

If UGS responds that there are known fossil localities in the APE, a paleontological survey and/or monitoring will be conducted, as determined in consultation with UGS. If fossil localities will be impacted, an appropriate mitigation plan will be prepared.

If UGS responds that Class 3, 4, or 5 geologic units are in the project area and the project is on or adjacent to lands under Federal jurisdiction (BLM, Forest Service, etc.) or other state jurisdiction, the paleontologist for these agencies will be consulted as well. If the agency does not have a paleontologist, the agency archaeologist will be consulted. If a

paleontological survey is to be conducted across BLM lands, a BLM Paleontological Resources Use Permit must be obtained by a qualified paleontologist. Other agencies may have similar permit requirements.

REPORTING

Following the completion of a field survey, a report by a qualified paleontologist is prepared. This report is submitted to the UGS by the UDOT Region Archaeologist for a 30-day review and comment period. Comments will be addressed and a final report will be submitted to UGS. A request for concurrence by the UGS on significance evaluations will be submitted with any report that contains specimens.

The report of findings should include, at a minimum, the following elements (BLM Manual H-8270-1 and IM 2009-011):

1. Brief description of the project, emphasizing potential impacts to paleontological resources;
2. Description of background research conducted (include overview of known paleontological information, institutions consulted, previous surveys in the area, previous projects in the area, and general description of survey techniques employed);
3. Summary of regional and local geology and paleontology;
4. Summary of survey results and significance of findings;
5. Locality forms and 7.5-minute USGS maps or other appropriate scale maps showing fossil localities identified during the records search or during the field survey. Exact locations of fossil localities are considered sensitive and must not be included in any public document. This information will be contained in a detachable appendix;
6. Recommendations to the UGS for mitigation and/or monitoring if determined necessary; and
7. A mitigation plan if mitigation is recommended. Such a plan may include recommendations and procedures for monitoring during construction, including recommendations for handling unanticipated fossil discoveries. Concurrence must be obtained from UGS on the mitigation plan.

MITIGATION

Mitigation of impacts may include, but is not limited to, avoidance, minimization of impacts by redesign or by adding features such as retaining walls, collection of data and fossil material, obtaining representative samples of the fossils, and monitoring. The mitigation plan will be submitted by the UDOT archaeologist to UGS either as part of the paleontological survey report, as described above, or will be submitted as a stand-alone document if no survey was conducted but known significant fossil localities are located in the area that will be impacted by the project.

A mitigation and monitoring plan must address, at a minimum, the following elements:

1. The extent of specimen collection (e.g., total or partial recovery, no action, or avoidance);
2. The specific intensity of monitoring recommended for each geologic unit/area impacted. Monitoring intensity is determined based on findings of the formal analysis of existing data and/or field survey;
3. An agreed-upon process for specimen recovery that will have the least impact on the project;
4. An agreement with a repository that will curate specimens collected during the field survey, and during mitigation and/or monitoring (BLM Manual H-8270-1).

MONITORING AND DISCOVERIES

Monitoring must be performed by a qualified paleontologist. If the geologic units in the project area are Class 3 and will be impacted, but are not exposed, monitoring or spot checking by a qualified paleontologist during construction may be required. Monitoring may consist of only spot checking for geologic units that are Class 4 that will be impacted. Monitoring by spot checking should be done when bedrock is initially exposed, occasionally during active excavation, and when the maximum exposure is reached and before backfilling has begun. Geologic units determined to be Class 5 that will be impacted require monitoring at all times when surface-disturbing activities are occurring. The monitor has the authority to briefly pause any activity to inspect a possible find.

If significant paleontological resources are discovered, the construction contractor must follow UDOT Standard Specification 01355, Part 1.13, Discovery of Historical, Archaeological, or Paleontological Objects, Features, Sites, Human Remains, or Migratory Avian Species. If a mitigation plan has been agreed to by UGS prior to construction, it will be followed. If significant paleontological resources are discovered and there is no mitigation plan in place, the UDOT archaeologist will consult with UGS within 48 hours to determine the appropriate treatment.

CURATION

Fossil specimens and related data collected during field surveys and mitigation must be placed in an approved repository as soon as practical.

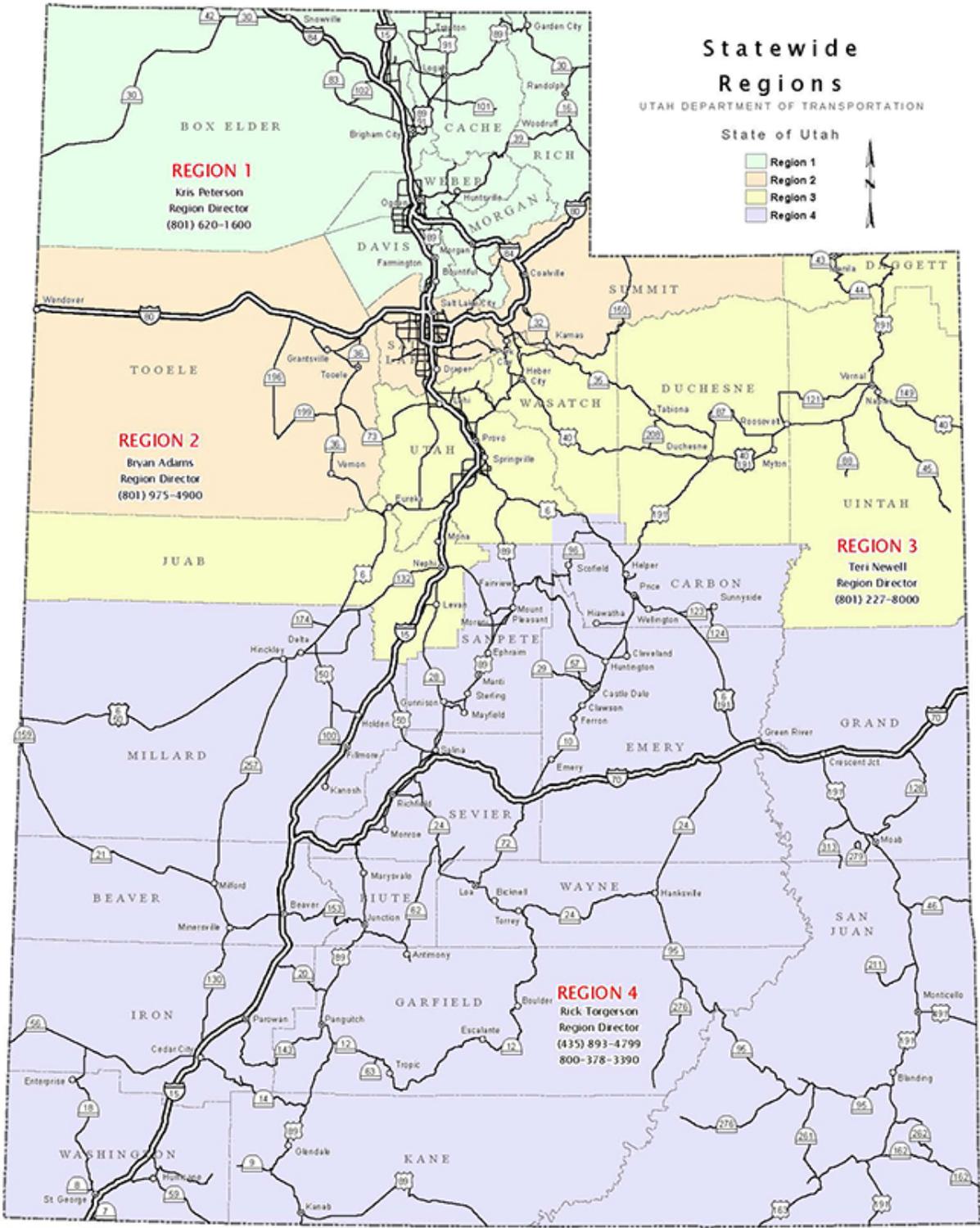
ATTACHMENT 1- UDOT REGION MAP

Statewide Regions

UTAH DEPARTMENT OF TRANSPORTATION

State of Utah

- Region 1
- Region 2
- Region 3
- Region 4



REGION 1
Kris Peterson
Region Director
(801) 620-1600

REGION 2
Bryan Adams
Region Director
(801) 975-4900

REGION 3
Teri Newell
Region Director
(801) 227-8000

REGION 4
Rick Torgerson
Region Director
(435) 893-4799
800-378-3390

ATTACHMENT 2 – PROJECT AUTHORIZATION FORM
(this form is also available as a Word document)



**CULTURAL RESOURCES SURVEY
FIELDWORK AUTHORIZATION REQUEST
AND PROJECT INFORMATION FORM**

**Contact Region Archaeologist before submitting form. Submit form directly to Region Archaeologist.
All work must comply with current UDOT Guidelines for Archaeology and Architecture.**

UDOT PIN, PROJECT NUMBER & NAME:	REGION, CITY & COUNTY:
NAME OF FIRM & CONTACT PERSON:	TYPE OF ENVIRONMENTAL DOCUMENT:
MAILING ADDRESS:	TELEPHONE NUMBER & EMAIL ADDRESS:
PRINCIPAL INVESTIGATOR & PERMIT NO.:	ANTIQUITIES PROJECT NUMBER:
OTHER AGENCIES/LANDOWNERS (Check GIS landownership database):	WORK SCHEDULE (field dates, proposed draft report date, and ending date of authorization):
PROJECT DESCRIPTION (including scope of work, nature of ground disturbance, potential ROW acquisitions):	
PROPOSED SURVEY AREA AND SURVEY METHODS FOR ARCHAEOLOGY AND ARCHITECTURE (include overview map showing project location and land ownership, as well as specific 7.5' USGS 1:24000 scale map):	
REPORTING REQUIREMENTS (electronic drafts may be acceptable for review; verify number of final report copies, IMACS/ILS/RLS and photo requirements, and GIS/tabular data needs):	
GIS DATA REQUIREMENTS (Region may request final GIS data submitted with final report; Region may require specific GIS format or technology):	
OTHER INFORMATION:	

Submitted by Principal Investigator

Date

Approved by UDOT Archaeologist

Date

Approved by UDOT Architectural Historian
(Region Archaeologist will coordinate signature, if needed)

Date

**PLEASE NOTE: Must comply with current UDOT safety policies for accessing and working within UDOT right-of-way.
Encroachment permit may be required—contact UDOT Region Permits office before beginning field work.**

ATTACHMENT 3 – EXAMPLE LETTER TO UGS



State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

DEPARTMENT OF TRANSPORTATION

JOHN R. NJORD, P.E.
Executive Director

CARLOS M. BRACERAS, P.E.
Deputy Director

April 7, 2010

Ms. Martha Hayden
Utah Geological Survey
1594 West North Temple, Suite 3110
P.O. Box 146100
Salt Lake City, Utah 84114-6100

RE: UDOT Project STP-0071(11)10:900_East Widening, 6300 South to 6000 South, Murray
City and Salt Lake County
U.C.A. 79-3-508 compliance

Dear Ms. Hayden:

The Utah Department of Transportation is proposing to widening 900 East between 6300 South and 6000 South in Murray and Salt Lake County. Road improvements will include constructing five lanes plus shoulders, curb and gutter, a six-foot sidewalk, and a park strip (east side only). Shoulders will provide room for bicyclists, traffic making right turns, and driveway access. A continuous striped median will provide storage for left-turn movements.

The project is located in the W1/2 of the SE1/4 of the SW1/4 of Section 17, and the W1/2 of the NE1/4 of the NW1/4 of Section 20, T2S, R1E, as shown on the 7.5-minute USGS quadrangle Sugar House, Utah (1963, photorevised 1969 and 1975). A map of the area of potential effects (APE) is attached. A shapefile of the project area is provided on the enclosed CD.

Could you please conduct a literature search for paleontological specimens or sites in the area and, in accordance with the MOU between UDOT and UGS (executed 3/25/2010), inform us which classes of geologic units are present.?

If you have any questions or need additional information, please call me at (801) 965-4159.

Sincerely,

Betsy Skinner
UDOT Environmental Manager

Calvin L. Rampton Complex, 4501 South 2700 West, Salt Lake City, Utah 84119-5998
telephone 801-965-4000 • facsimile 801-965-4338 • www.udot.utah.gov