

From: Moelter, Chris <Chris.Moelter@icf.com>
Sent: Thursday, March 5, 2020 4:18 PM
To: Wayland, Joshua
Cc: Rogers, Debra; Wolff, Mikenna
Subject: FW: Grate-Separated Road Crossings/Bridges
Attachments: 2020.03.05 Response to ICF.pdf; RE Grate-Separated Road CrossingsBridges.pdf

Josh,

Amanda's email to Brent is below.

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From: Crawford, Amanda L. <ALCrawford@Venable.com>
Sent: Thursday, March 05, 2020 11:49 AM
To: Read, Brent <Brent.Read@icf.com>
Cc: Floyd, Kathryn K. <KKFloyd@Venable.com>; Michael@jonesanddemille.com; Keller, Kevin <Kevin.Keller@hdrinc.com>; Brian Barton <Brian@jonesanddemille.com>; coalition_UBRY@jonesanddemille.com; Rogers, Debra <Debra.Rogers@icf.com>; Moelter, Chris <Chris.Moelter@icf.com>
Subject: RE: Grate-Separated Road Crossings/Bridges

Brent,

Please see the attached in responses to ICF's questions regarding data previously submitted by the Coalition. Responses to ICF's questions are provided in red. Please let us know if you have any follow-up questions.

Best,
Amanda

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From: Floyd, Kathryn K. <KKFloyd@Venable.com>
Sent: Thursday, February 13, 2020 7:27 PM
To: Crawford, Amanda L. <ALCrawford@Venable.com>
Subject: FW: Grate-Separated Road Crossings/Bridges

Sent with BlackBerry Work (www.blackberry.com)

From: "Read, Brent" <Brent.Read@icf.com>

Sent: Feb 13, 2020 7:03 PM

To: Michael Hawley <Michael@jonesanddemille.com>; "Keller, Kevin" <Kevin.Keller@hdrinc.com>;
Brian@jonesanddemille.com

Cc: coalition_UBRY@jonesanddemille.com; "Floyd, Kathryn K." <KKFloyd@Venable.com>; "Rogers, Debra" <Debra.Rogers@icf.com>; "Moelter, Chris" <Chris.Moelter@icf.com>

Subject: Grate-Separated Road Crossings/Bridges

Hey Michael,

We have a few initial questions for you guys regarding the data we just received (see attached). I got Josh's permission to ask you guys these questions directly again, due to the technical nature of them.

Do you have time to hop on the phone and discuss them tomorrow?

Thanks,

BRENT READ | Senior GIS Analyst | +1.970.372.3907 direct | Brent.Read@icf.com | icf.com

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transmission and delete the message without copying or disclosing it.

Question 1a.

The new Whitmore Park alternative appears to cross BLM land in 4 locations (see screenshot). These are small slivers, but I wanted to discuss possible ways to deal with these issues. Thoughts I have had:

1. Perhaps you have a better Land Status data source than I do? I downloaded Land Status from the BLM <https://navigator.blm.gov/data?id=5942b612a6db4393> on Nov. 21, 2019, and the version I have was published Nov. 13, 2019. If you have a better dataset and the data adheres to it correctly, then there may be no issue.
2. These crossings into BLM land are just in the APE and they are small, so if you have the flexibility, I could simply remove the BLM polygons from the APE.
3. You guys could remove these areas from the APE?
4. Other?



Figure 1 BLM encroachment is circled in red

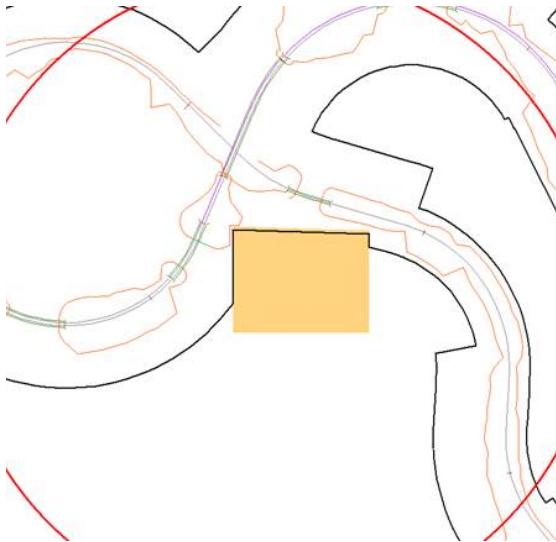


Figure 2 Western most crossing (Slivers near the Wye)

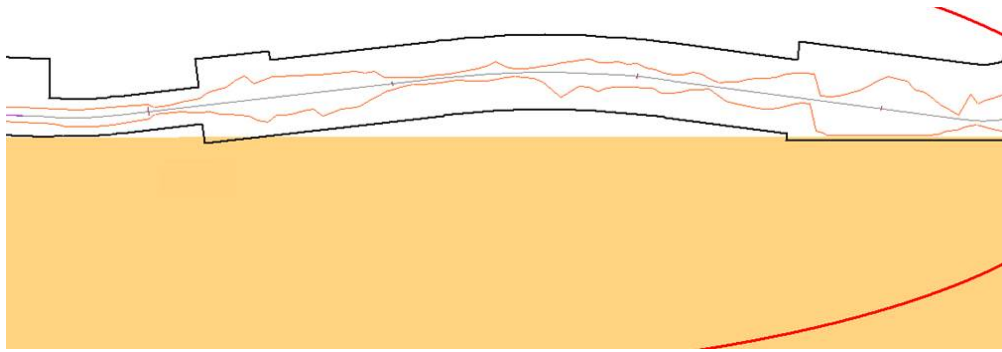


Figure 3 Corner of APE dips into BLM, and sliver to the right

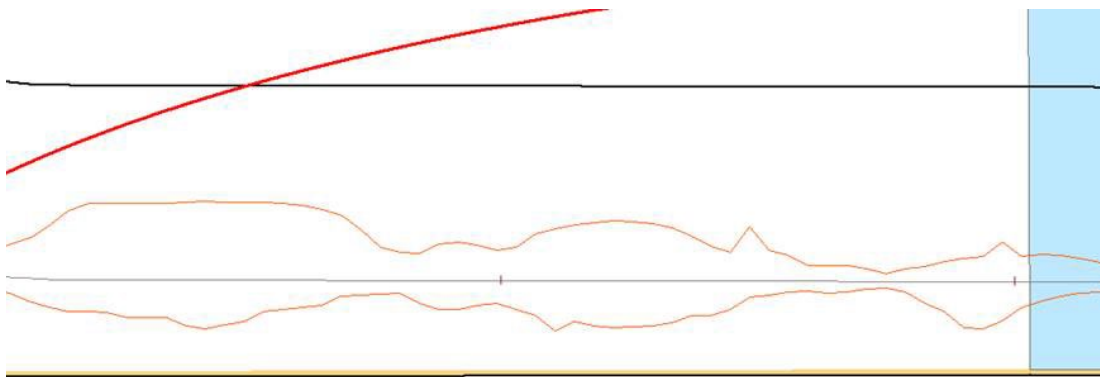


Figure 4 The APE runs parallel to the BLM sliver (initial problem area), however, the APE appears to include the BLM land

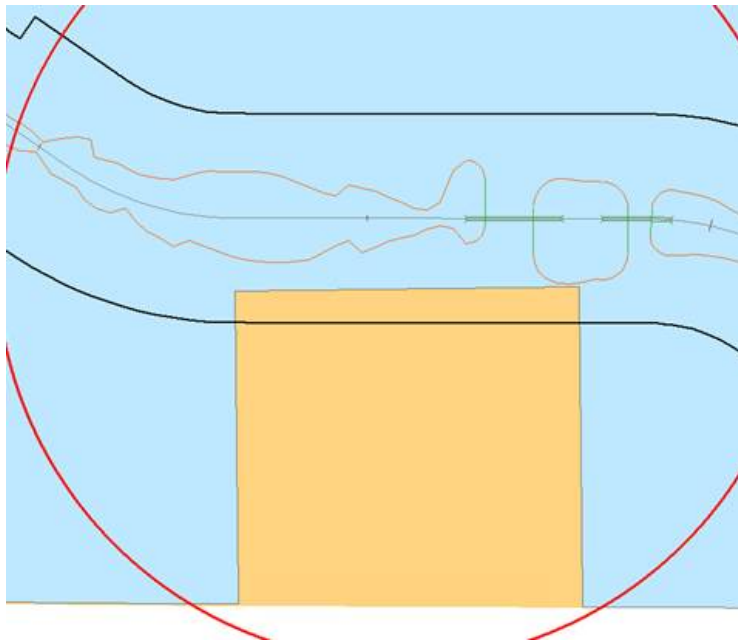


Figure 5 The APE crosses 1/4 mile of BLM land, seems like this BLM polygon should be cut out of the APE?

Response: Please see the attached email from Travis Tzoumis, dated February 13, 2020. The reason the new Whitmore Park alternative appears to cross BLM-managed land in these areas is because the data is being projected onto the wrong coordinate system. The data should be projected into the Utah State Plan Central-US Foot coordinate system. When all of the data is projected into the same, correct coordinate system, the results show that the final Whitmore Park alternative does not cross BLM-managed land.

Question 1b. Can you provide any additional information regarding what type of activities and disturbance are likely to occur in the APE?

Response: Activities and disturbances in the APE are likely to be limited to temporary construction activities. For example, these areas will be used for moving construction equipment and staging construction materials. These activities and disturbances are not likely to have permanent impacts.

Question 2 I noticed that you resent versions of the Indian Canyon and Wells Draw routes, and that the file sizes differ from the version we received in November.

Indian Canyon	Received Date	File Size	
20191122-UBRY-IC-Proposed APE and Bridge Locations.kmz	November 26, 2019	1,184	KB
2019-11-22 7-County UBRY Indian Canyon proposed APE and bridge locations.kmz	February 12, 2020	1,201	KB
	Difference	17	KB

Wells Draw	Received Date	File Size	
20191122-UBRY-WD-Proposed APE and Bridge Locations.kmz	November 26, 2019	1,516	KB
2019-11-22 7-County UBRY Wells Draw proposed APE and bridge lcoations.kmz	February 12, 2020	1,537	KB
	Difference	21	KB

I'll admit that I have not done a thorough comparison between the files, but was wondering if you know why the file size has increased? Have those alternatives been refined/alterd since November? If they have changed, can you identify what has changed, and the reason for the change?

Response: The Indian Canyon and Wells Draw routes have not been refined/alterd since November 2019. The slight variation in file size is likely caused by the fact that the kmz files were recreated from CAD software and re-processing the data may have slightly altered the file size even though the alignments remain the same.

Question 3a. I have also been reconciling the road crossing tables and bridge tables we received in November and I noticed a number of Grade-Separated road crossings that are not listed in the Bridges table, see below:

Response: Please see the “Response” column in the table below. The previously-submitted list of grade-separated road crossings included box culvert separations, which do not qualify as bridges, and therefore were not included in the bridges table. It is anticipated that these box culvert separations will be able to accommodate average vehicular traffic in these areas.

Alternative	MP	SubType	XingType	XingName	Response
Indian Canyon	13.49	Rail Bridge	Road	Unnamed	It is anticipated that a box culvert or small arch culvert type underpass or at-grade crossing will be used here depending on final design. No bridge is anticipated.
Indian Canyon	16.21	Rail Bridge	Road	Unnamed	It is anticipated that a box culvert or small arch culvert type underpass or at-grade crossing will be used here depending on final design. No bridge is anticipated.
Indian Canyon	59.2	Rail Bridge	Road	Unnamed	It is anticipated that a box culvert or small arch culvert type underpass or at-grade crossing will be used here depending on final design. No bridge is anticipated.
Wells Draw	1.27	Rail Bridge	Road	Unnamed	This is a rail bridge identified on the bridge list that crosses water and the UPRR tracks. This is not a road crossing and therefore is not identified in the grade-separated road crossings list.
Wells Draw	2.04	Rail Bridge	Road	Unnamed	This crossing is not identified on either list but does show a 2-lane road. It is likely that an at-grade crossing may be needed here depending upon negotiations with the landowner. No bridge or structure currently is anticipated here.

Wells Draw	13.49	Rail Bridge	Road	Unnamed	It is anticipated that a box culvert or small arch culvert type underpass or at-grade crossing will be used here depending on final design. No bridge is anticipated.
Wells Draw	61	Rail Bridge	Road	Unnamed	This crossing is included in both the bridge list and grade-separated road crossings list. However, it appears different in the drawing because it is an arch structure and is covered by earthwork. Please see response to Question 3b below for more information on small steel plate arch type structures.
Wells Draw	93.8	Rail Bridge	Road	Unnamed	It is anticipated that a box culvert or small arch culvert type underpass or at-grade crossing will be used here depending on final design. No bridge is anticipated.
Wells Draw	23..6	Rail Bridge	Road	Unnamed	This crossing is included in both the bridge list and grade-separated crossings list. However, it appears different in the drawing because it is an arch structure and is covered by earthwork. Please see response to Question 3b below for more information on small steel plate arch type structures.
Wells Draw	81.6	Rail Bridge	Road	Unnamed	It is anticipated that a box culvert or small arch culvert type underpass or at-grade crossing will be used here depending on final design. No bridge is anticipated.
Whitmore Park	16.7	Rail Bridge	Road	Whitmore Park Road	Proximity to the bridge at mile 16.8 may allow for a road realignment here. However, it is anticipated that a box culvert or small arch culvert type underpass or at-grade crossing will be used here depending on final design. No bridge is anticipated.

Whitmore Park	18	Vehicle Bridge	RD over Water	Minnie Maud Creek	It is anticipated that no bridge will be needed here because the road will be realigned.
Whitmore Park	36.6	Rail Bridge	Water	Unnamed	This is on the bridge list and shown on the kmz. It is not included on the grade-separated road crossing list because this is a water crossing; no roads will be crossed here.
Whitmore Park	59.6	Rail Bridge	Road	Unnamed	It is anticipated that a box culvert or small arch culvert type underpass or at-grade crossing will be used here depending on final design. No bridge is anticipated.

Do you know what type of bridge structures would be used for these? (PCB, BMS, DPG, SSPA)

Response: See table above for each. For most crossings listed above, a box culvert or small steel plate arch culvert could be used depending on clearance needs. Box culverts and small steel plate arch culverts are not classified as bridges in the bridge list.

Question 3b.

Our visual resource specialist had some questions about the bridges:

Google image search results for "Structural Steel Plate Arch" (see https://www.google.com/search?q=%22Structural+Steel+Plate+Arch%22&tbm=isch&ved=2ahUKEwjlrvgip8DnAhVHMD8KHeTHD3cQ2-cCegQIABAA&oq=%22Structural+Steel+Plate+Arch%22&gs_l=img.12...0.0..6979...0.0..0.0.0.....0.....gws-wiz-img.ra4cf5oggBI&ei=J8w9Xoj_Acfi_Abkj7-4Bw&bih=645&biw=1473) clearly show that these are not "bridges" in the conventional sense of the word "bridge." These are actually large, steel culverts (often of corrugated material) that pass through earth fill under a road or railroad. Hence my assumption that where GIS indicates an SSPA, and a large footprint of fill material is also indicated, we actually have a **tunnel** (for a road or stream) passing through a wide trapezoidal section of earth fill — not a "bridge".

- Can you confirm or clarify this assumption and provide approximate dimensions for these structures?

Response: These structures appear different from "bridges" in the conventional sense of the word because, as stated, they are large, steel culverts (often of corrugated material) that pass-through earth fill under a road or railroad. However, they still satisfy the technical definition of bridges because they "bridge an area with a structure to allow for the rail to pass over a feature." These structures do not meet the technical definitions of tunnels. Tunnels, as technically defined, include underground passages that are constructed by digging out soil or rock. Accordingly, these structures need not comply with standard tunnel guidelines.

The image below provides an example of what these structures may look like.



- MP 58. This refers to the bridge over the stream roughly half-way between the road crossings identified as RC 57.30 and RC 58.42 along Whitmore Park. We can assume a DPG 308 feet long and 57 feet high here?

Response: Yes. The stream crossing identified at MP 58 is anticipated to be a DPG structure, which will be approximately 308 feet long and 57 feet high.

Regarding communication towers: Can I assume a steel lattice tower, which will be more visible than a single pole?

Response: Communications towers for the project are anticipated to look similar to the tower depicted in the image below. These towers will be more visible than a single pole but are not as wide as steel lattice towers typically utilized for high voltage transmission lines.

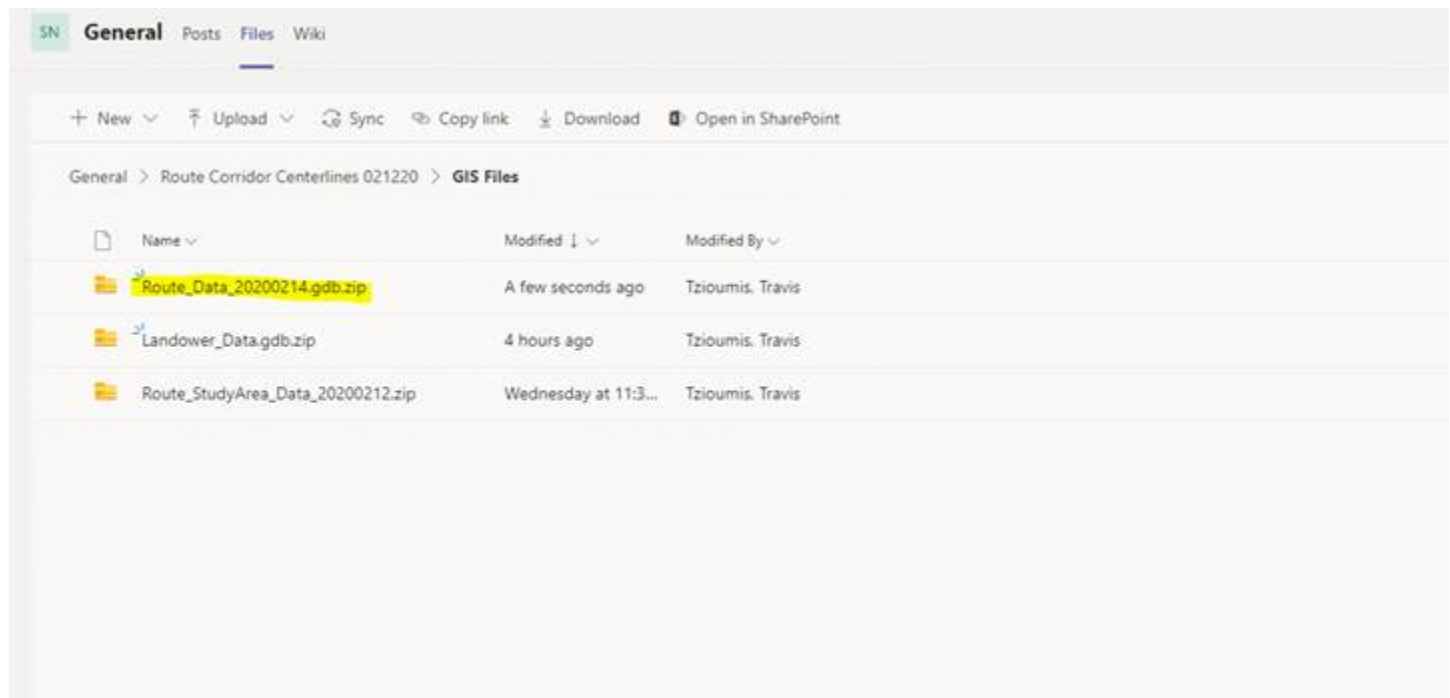


Crawford, Amanda L.

From: Tzioumis, Travis <Travis.Tzioumis@hdrinc.com>
Sent: Friday, February 14, 2020 3:41 PM
To: Read, Brent; Rogers, Debra; Moelter, Chris
Cc: Keller, Kevin
Subject: RE: Grate-Separated Road Crossings/Bridges

Brent,

I just uploaded a new .gdb to the sharepoint called Route_Data_20200214.gdb.zip. Responses to the layers you requested below in red. Our call today was very helpful. Please let us know if you need any other clarification or need any other files moving forward.



From: Read, Brent [mailto:Brent.Read@icf.com]
Sent: Friday, February 14, 2020 11:44 AM
To: Tzioumis, Travis <Travis.Tzioumis@hdrinc.com>; Rogers, Debra <Debra.Rogers@icf.com>; Moelter, Chris <Chris.Moelter@icf.com>
Cc: Keller, Kevin <Kevin.Keller@hdrinc.com>
Subject: RE: Grate-Separated Road Crossings/Bridges

Hey Everyone,

Just an FYI/Update for the team, Travis and I spoke and shared screens, and discussed the available data. This was very helpful to both of us, for me to see what was available, and for him to see what we needed. We reconciled many of the questions on my list, most importantly, the BLM overlap issues.

Based on our call, and seeing the data that Travis has available, here is a list of datasets that I would appreciate having fresh in GIS format. I divided it into 2 lists; Needed and Known is data that I extracted from past KMZ files, so I know it exists, and Wishlist data, which is data I do not have, but would appreciate having if it does exist.

Needed and known data:

- Alignments: Include attributes for Type (Mainline, Siding, Bridge, Tunnel, Wye)
DESIGN_WhitmorePark_Alignment_20200212_UtahStatePlane;
DESIGN_IndianCanyon_Alignment_20191122_UtahStatePlane;
DESIGN_WellsDraw_Alignment_20191122_UtahStatePlane
- Analytical Alignments: This is the line that has been dissolved to be used for mileage calculations
DESIGN_WhitmorePark_Centerline_20200212_USP; DESIGN_IndianCanyon_Centerline_20191122_USP;
DESIGN_WellsDraw_Centerline_20191122_USP
- Mileposts CARTO_WhitmorePark_MilePosts_20200212; CARTO_IndianCanyon_MilePosts_20191122;
CARTO_WellsDraw_MilePosts_20191122
- Bridges (Center Point): Include attributes for span type (BMS, DPG, PCB, SSPA, etc.), Crossing Type (Road, Water, Tracks), Crossing Name, Bridge height and length, milepost Lines are in the Alignment files. More attributes will come with Engineering Features Report on 2/21
- Bridges (Polygon): Include attributes for span type (BMS, DPG, PCB, SSPA, etc.), Crossing Type (Road, Water, Tracks), Crossing Name, Bridge height and length, milepost
- Communication Towers (point) Will come with Engineering Features Report on 2/21
- Communication Towers (Disturbance footprint (Permanent and Temporary) Will come with Engineering Features Report on 2/21
- Cut/Fill lines (differentiating Cut, Fill, SS) DESIGN_WhitmorePark_Alignment_20200212_UtahStatePlane;
DESIGN_IndianCanyon_Alignment_20191122_UtahStatePlane;
DESIGN_WellsDraw_Alignment_20191122_UtahStatePlane
- Cut/Fill polygons DESIGN_StudyAreas_20200212 (In "Routes" attribute)
- Drainage Crossings (Point) Will come with Engineering Features Report on 2/21
- APE (Polygons) I already have this, but if it is easy enough, it would be nice to have it packaged with the other datasets in a fresh transmittal DESIGN_StudyAreas_20200212 (In "Routes" attribute)
- Road Crossings (Points): Include attributes for milepost, Grade Separation, Type (RR over Road, RR under Road, RR over water, Road over...) If you have attributes for jurisdiction (i.e. Public vs private) and crossing name (i.e. Quarry Road, Wells Draw Rd etc.) include them, if not, I have them from previous work, and can copy attributes. Will come with Engineering Features Report on 2/21
- Road Realignments (line) and Permanent/Temporary disturbance buffers if you have them (we had estimated these) include attributes for road name, milepost. Will come with Engineering Features Report on 2/21
- Tunnels (polygon) lines included in Alignment files

Wishlist Data:

- Station points Working on getting this for Wells Draw and Indian Canyon from engineering
- Access Roads (line) and permanent/Temporary disturbance buffers I anticipate these being mostly existing roads that work crews and supplies would be hauled on, but there may be roads that need to be constructed? Will come with Engineering Features Report on 2/21. The temporary disturbance buffers are within the existing APE.
- Power lines (we understand there will be powerlines running along the alignments to power switches and signals). If you have data for them, it would be appreciated. Have not heard if these exist yet at this point in the design
- Facility/use types (polygons): If you have staging areas, laydown yards, worker camps, etc. polygons identifying the type of disturbance in the APE (I assume there are none outside the APE) I will try and get this from out engineering team
- Switch locations (point) Have not heard if these exist yet at this point in the design

Travis also mentioned the Engineering Features Report, which will be released on Feb. 21. I understand some of the data may not be ready until then, but he is planning to send me what he has available now, and noting what will be coming later.

Travis, thanks again for hopping on the phone with me, that was very productive.

BRENT READ | +1.970.372.3907 direct

From: Read, Brent
Sent: Friday, February 14, 2020 10:24
To: 'Tzioumis, Travis' <Travis.Tzioumis@hdrinc.com>; Rogers, Debra <Debra.Rogers@icf.com>; Moelter, Chris <Chris.Moelter@icf.com>
Cc: 'Keller, Kevin' <Kevin.Keller@hdrinc.com>
Subject: RE: Grate-Separated Road Crossings/Bridges

Feel free to call my direct line if needed too.

BRENT READ | +1.970.372.3907 direct

From: Read, Brent
Sent: Friday, February 14, 2020 10:23
To: 'Tzioumis, Travis' <Travis.Tzioumis@hdrinc.com>; Rogers, Debra <Debra.Rogers@icf.com>; Moelter, Chris <Chris.Moelter@icf.com>
Cc: Keller, Kevin <Kevin.Keller@hdrinc.com>
Subject: RE: Grate-Separated Road Crossings/Bridges

Hey Travis, lets go ahead and share screens. Can you set that up easily on your end?

In the last few minutes, I have looked at the Land Ownership you sent, and I downloaded a fresh dataset from the Utah AGRC (<https://data-sitla.opendata.arcgis.com/datasets/ut-sitla-ownership-landownership>) which is a dataset developed by SITLA. I think this is the one you were using as the source of your data. I projected it using NAD_1983_To_WGS_1984_5 and also the WGS_1984_(ITRF00)_To_NAD_1983, and am comparing the landownership data across different projections, and the project data from different projections, and they datasets all match, without shifting, and the APE is still hitting BLM land on my end.

The APE data I am using is coming from the Google KMZ, which has the data projected in GCS-WGS84, which I have also projected using the different transformations. Is there a chance that the transformation is getting thrown off between your project data in StatePlane and the KMZ that I am receiving? I also compared the WP centerline (Route_StudyArea_Data_20200212.gdb) which I received in StatePlane to the KMZ centerline, and they also match, so I am not sure what is going on.

Lets screenshare and see if we can get to the bottom of this.

BRENT READ | +1.970.372.3907 direct

From: Tzioumis, Travis <Travis.Tzioumis@hdrinc.com>
Sent: Friday, February 14, 2020 09:57
To: Read, Brent <Brent.Read@icf.com>; Rogers, Debra <Debra.Rogers@icf.com>; Moelter, Chris <Chris.Moelter@icf.com>
Cc: Keller, Kevin <Kevin.Keller@hdrinc.com>
Subject: RE: Grate-Separated Road Crossings/Bridges

No problem Brent. If you need I am available for a call/screen share if there are still questions or issues you are having with any of the data.

From: Read, Brent [<mailto:Brent.Read@icf.com>]
Sent: Friday, February 14, 2020 9:36 AM

To: Tzioumis, Travis <Travis.Tzioumis@hdrinc.com>; Rogers, Debra <Debra.Rogers@icf.com>; Moelter, Chris <Chris.Moelter@icf.com>
Cc: Keller, Kevin <Kevin.Keller@hdrinc.com>
Subject: RE: Grate-Separated Road Crossings/Bridges

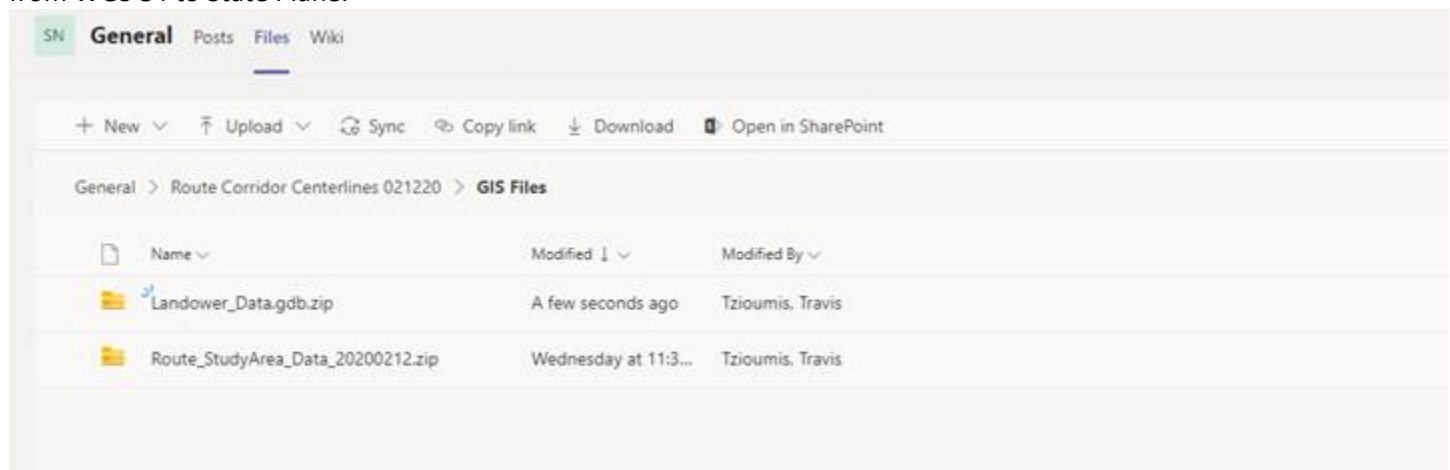
Thank you Travis, I'll take a look, and use the Transformation you mention.

BRENT READ | +1.970.372.3907 direct

From: Tzioumis, Travis <Travis.Tzioumis@hdrinc.com>
Sent: Friday, February 14, 2020 09:33
To: Read, Brent <Brent.Read@icf.com>; Rogers, Debra <Debra.Rogers@icf.com>; Moelter, Chris <Chris.Moelter@icf.com>
Cc: Keller, Kevin <Kevin.Keller@hdrinc.com>
Subject: RE: Grate-Separated Road Crossings/Bridges

Brent,

I just added a .zip file in Route Corridor Centerlines (I meant to include it on Wednesday, it was included with the original Biological Resources data submittal in December). It was downloaded from the Utah Automated Geographic Reference Center which is the State of Utah GIS clearinghouse. <https://gis.utah.gov/> Then clipped to the Uinta Basin and then projected into Utah State Plane. I have been using the WGS_1984 (ITRF00) to NAD 1983 transformation for projecting from WGS 84 to State Plane.



From: Read, Brent [<mailto:Brent.Read@icf.com>]
Sent: Friday, February 14, 2020 7:45 AM
To: Tzioumis, Travis <Travis.Tzioumis@hdrinc.com>; Rogers, Debra <Debra.Rogers@icf.com>; Moelter, Chris <Chris.Moelter@icf.com>
Cc: Keller, Kevin <Kevin.Keller@hdrinc.com>
Subject: RE: Grate-Separated Road Crossings/Bridges

Travis,

Thank you for the quick response. I have been using the Utah Stateplane Central (US Feet) NAD83 projection for all data, and do as you suggest, converting all data to this projection before use on the project. The Land Status data I have been using came to me in UTM 12 – NAD83, and was then re-projected to stateplane, so the WGS84-NAD83 conversion was not the issue. When data comes in WGS 84, I use the ESRI transformation WGS 84 – NAD83_5, is that consistent with the transformation that you use? (Not that it applies in this case, but for future reference).

I just checked the Teams site, and I am not seeing the land status layer you sent. Do you know if that has been posted to Teams for me to access yet? This is what I am seeing:

SN

General

Posts

Files

Wiki

+ New

↑ Upload

↻ Sync

🔗 Copy link

↓ Download

+ Add cloud storage

🔗 Open in SharePoint

General

Name

Modified

Archaeology Resources Baseline Report Revised 021320

Yesterday

Historical Architecture Baseline Report Revised 021320

Yesterday

Route Vertical Profiles 021220

Wednesday

Paleontology Baseline Report Revised 021220

Tuesday

Biological Resources Baseline Report Revised 021220

Tuesday

Waters of the US Baseline Report Revised 021220

Tuesday

Route Corridor Centerlines 021220

Tuesday

Imagery and Contour Data 012820

Tuesday

Archive Baseline Reports

Tuesday

Draft Cultural Resources Impact Memo 2020-01-28

January 2

Route Selection

January 8

Bridge and Culvert Drainage Crossings 122319

December

Imagery and Contour Data 122019

December

Route Vertical Profiles 121319

December

Response to STB RFI

December

Thanks again,

BRENT READ | +1.970.372.3907 direct

From: Tzioumis, Travis <Travis.Tzioumis@hdrinc.com>

Sent: Thursday, February 13, 2020 17:42

To: Read, Brent <Brent.Read@icf.com>; Rogers, Debra <Debra.Rogers@icf.com>; Moelter, Chris <Chris.Moelter@icf.com>

Cc: Keller, Kevin <Kevin.Keller@hdrinc.com>

Subject: RE: Grate-Separated Road Crossings/Bridges

Brent,

To answer question 1 about the BLM crossings. Please make sure that the data is all in the same projection before running the intersect. I sent a land management file along with the GIS files yesterday that is clipped to the Uinta Basin and projected into Utah State Plane Central – US Foot (which is the projection the rest of the GIS design data is in including the centerlines and APE boundaries that I sent). I ran our model on all layers in Utah State Plane Central and there were no crossings of the APE/Cut Fill into BLM land. Projecting from WGS84 or UTM into Utah State Plane will only shift the data a few feet but it is enough to move it into BLM. ICF will just need to make sure all the data is projected into the same coordinate system.

From: Keller, Kevin

Sent: Thursday, February 13, 2020 5:05 PM

To: Tzioumis, Travis <Travis.Tzioumis@hdrinc.com>; Robe, Kyle <Kyle.Robe@hdrinc.com>

Subject: FW: Grate-Separated Road Crossings/Bridges

FYI.

Kevin

Kevin Keller, PG

D 816.347.1183 **M** 913.638.2571

hdrinc.com/follow-us

From: Read, Brent [<mailto:Brent.Read@icf.com>]

Sent: Thursday, February 13, 2020 6:03 PM

To: Michael Hawley <Michael@jonesanddemille.com>; Keller, Kevin <Kevin.Keller@hdrinc.com>;
Brian@jonesanddemille.com

Cc: coalition_UBRY@jonesanddemille.com; kkfloyd@venable.com; Rogers, Debra <Debra.Rogers@icf.com>; Moelter, Chris <Chris.Moelter@icf.com>

Subject: Grate-Separated Road Crossings/Bridges

Hey Michael,

We have a few initial questions for you guys regarding the data we just received (see attached). I got Josh's permission to ask you guys these questions directly again, due to the technical nature of them.

Do you have time to hop on the phone and discuss them tomorrow?

Thanks,

BRENT READ | Senior GIS Analyst | +1.970.372.3907 direct | Brent.Read@icf.com | icf.com

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