

DOCKETED	
Docket Number:	79-AFC-04C
Project Title:	Compliance - Application for Certification of DWR Bottlerock Geothermal Project
TN #:	266283
Document Title:	BRP_Response to DR2_Bio Resources_10022025
Description:	BRP_Response to DR2_Bio Resources_10.02.2025
Filer:	John C Casteel
Organization:	Mayacma Geothermal LLC
Submitter Role:	Applicant
Submission Date:	10/2/2025 11:03:34 AM
Docketed Date:	10/2/2025



Bottle Rock Power, LLC
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October 1, 2025

Anwar Ali, PhD
Senior Environmental Planner
Compliance Project Manager
Compliance, Monitoring and Enforcement Unit
California Energy Commission

RE: Response to Data Requests Set No. 2 – Bottle Rock Geothermal Power Plant (79-AFC-04C)

Anwar,

On behalf of Bottle Rock Power, LLC and Open Mountain Energy, please find attached responses to Data Request Set. No. 2 (Biological Resources) Bottle Rock Geothermal Power Plant (79-AFC-04C). These responses provide clarification and additional details as requested in Data Request Set No. 2. Please let us know if you wish to discuss these responses.

Regards,

A handwritten signature in black ink, appearing to read "John Demeter".

John Demeter
Acting CEO AltaRock Energy, Inc. (ARE)
Signing on behalf of BRP LLC, a wholly owned subsidiary of ARE

Cc:

J. Watz ARE
S. Petty ARE
M. Moore ARE
B. Olsen OME
J. Casteel OME
S. Heims Panorama Environmental

Enclosure Responses to Data Request Set No. 2 (79-AFC-04C)

BIOLOGICAL RESOURCES UNIT

1. Provide the exact locations of permanent impacts such as groundwater supply wells and above-ground pipelines, and temporary impacts such as buried pipelines, access paths, or areas of vegetation removal. Alternatively, provide a maximum extent that CEC staff can use to determine project impacts to biological resources. Impacts should be classified as temporary impacts or permanent impacts.

Response 1

The PTA included four optional locations for construction of the water supply well and additional options for routing of the pipeline to allow for flexibility in design and provide a maximum scenario for groundwater well construction. To allow for flexibility in final design, options are also provided for installing the pipeline on the ground surface or attaching the pipeline to existing steam pipeline supports along the existing access road and steam pipeline. The impacts from construction and operation of each well and each pipeline route/option are defined in Table 1 below and account for the maximum vegetation impact for each scenario (e.g., largest area of disturbance/most impact on vegetation) and the detailed maps that follow.

The assumptions for temporary and permanent impacts associated with the well construction and pipelines are as follows:

- The temporary impact area at each of the ground water wells would be up to 40-feet by 80-feet for temporary staging of equipment and equipment to support the drill rig as well as drill rig access.
- The temporary impact for underground pipeline segments would be up to 10-feet wide along the underground pipeline segments to accommodate the 18-inch-wide trench for the pipeline, sidecast materials, and access for tracked equipment.
- Areas where the pipeline is above ground would be accessed by workers on foot to install the pipeline above ground. The pipeline disturbance area above ground would be limited to the 4-inch width of the pipeline on the ground.
- No vegetation removal would be required in areas where the pipeline is attached to the existing steam pipeline supports as the work areas would be accessed on foot and the pipeline would be above ground and would not disturb vegetation.
- No trees would be removed for pipeline installation and the pipeline would be installed above ground where there is insufficient access available for tracked equipment due to steep hill slopes, wetlands, or dense trees.
- The pipeline would cross creeks above existing culverts and would not require disturbance of the creek or riparian areas.

Response to Data Requests Set No. 2 (Biological Resources) – Bottle Rock Geothermal Power Plant (79-AFC-04C)

Table 1 Temporary and Permanent Vegetation Disturbance Areas for Well and Pipeline Installation

Feature	Chaparral (acres)	Cismontane woodland (acres)	Lower Montaine Coniferous Forest (acres)	Valley and foothill grassland (acres)	Valley and oak savannah (acres)
Rig 1	--	--	--	0.0734 (T); 0.0001 (P)	--
Rig 2	--	--	--	0.0734 (T); 0.0001 (P)	--
Rig 3	0.0728 (T); 0.0001 (P)	--	--	0.0006 (T)	--
Rig 4	--	--	--	0.0693 (T)	--
Pipeline Segment 1	0.0001 (T) ^a	--	--	0.024 (T) ^a	--
Pipeline Segment 2	0.0014 (P) ^b	--	--	0.0005 (P) ^b	--
Pipeline Segment 3	--	0.0014 (P) ^b	--	0.0004 (P) ^b	--
Pipeline Segment 4	--	--	--	0.0013 (T) ^a	0.0005 (T) ^a
Pipeline Segment 5	--	--	--	--	--
Pipeline Segment 6	--	0.0035 (P) ^b	--	--	0.0018 (P) ^b
Pipeline Segment 7	--	--	--	--	--
Pipeline Segment 8	0.0012 (P) ^b	0.0061 (P) ^b	0.0044 (P) ^b	--	--
Total	0.0729 (T); 0.0027 (P)	0.0110 (P)	0.0044 (P)	0.168 (T); 0.001 (P)	0.0005 (T); 0.0018 (P)

Notes:

T= temporary impact

P = permanent impact

^a Temporary impacts for the pipeline segments occur in areas of buried pipeline where trenching or access would be required in areas containing vegetation.

^b Permanent impacts occur where the pipeline would be laid on the ground surface in areas containing vegetation.

Response to Data Requests Set No. 2 (Biological Resources) – Bottle Rock Geothermal Power Plant (79-AFC-04C)

2. Provide maps of permanent and temporary impacts, or the maximum extent of potential impacts.

Response 2

Detailed maps showing areas of permanent and temporary impacts including the maximum extent of potential impacts based on route options are included in the attached mapbook

3. Clarify the maximum number of groundwater supply wells proposed to be constructed.

Response 3

The maximum number of groundwater supply wells that would be constructed is four as shown on the figures and indicated in Table 1.

4. Provide a survey report for results of special-status plant surveys conducted where new earthmoving, vegetation removal, or soil disturbance would occur. These surveys should be conducted following the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2021). As staff has not received protocol-level survey data for special status plant species, staff may provide additional data requests upon receipt of the requested information.

Alternatively, provide information that all areas where work would occur are in locations not suitable for special-status plant species, particularly Geysers Panicum (*Panicum acuminatum* var. *thermale*), which is listed as state Endangered under the California Endangered Species Act. Clarify the maximum number of groundwater supply wells proposed to be constructed.

Response 4

Focused special-status plant species surveys have not been conducted to date for the drill rig sites and pipeline segments. Those surveys are currently being scheduled for Spring 2026. Special-status species with potential to occur in the pipeline and drill rig disturbance area are summarized in Table 3.2-2 of the PTA (inserted below). None of the special-status species with potential to occur in the disturbance area are state threatened or endangered species under the California Endangered Species Act. Habitat within the project disturbance area is not suitable for Geysers Panicum (*Panicum acuminatum* var. *thermale*). Geysers Panicum occurs in hydrothermally-altered soil around hot springs and fumaroles (NatureServe 2025). No hot springs or fumaroles are in or near the disturbance area; therefore, there is no suitable habitat for Geysers Panicum.

Table 3.2-2 Special-Status Plants Potential to Occur in the Study Area

Species	Status	Habitat, Elevation, and Blooming Period	Potential to Occur
Plants			
Dimorphic snapdragon	CRPR 4.3	Chaparral, Lower montane coniferous forest.	Potential. Suitable habitat is present.

Response to Data Requests Set No. 2 (Biological Resources) – Bottle Rock Geothermal Power Plant (79-AFC-04C)

Species	Status	Habitat, Elevation, and Blooming Period	Potential to Occur
<i>Antirrhinum subcordatum</i> (Plantaginaceae)		Microhabitat: Serpentine; 605-2,625 feet; April-July	
Konocti manzanita <i>Arctostaphylos manzanita ssp. Elegans</i> (Ericaceae)	CRPR 1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest. Microhabitat: Volcanic; 1,295-5,300 feet; (January) March-May (July)	Potential. Suitable habitat is present.
Rincon Ridge ceanothus <i>Ceanothus confusus</i> (Rhamnaceae)	CRPR 1B.1	Chaparral, Cismontane woodland, Closed-cone coniferous forest. Microhabitat: Serpentine, Volcanic; 245-3,495 feet; February-June	Potential. Suitable habitat is present
Calistoga ceanothus <i>Ceanothus divergens</i> (Rhamnaceae)	CRPR 1B.2	Chaparral (rocky, serpentine, volcanic). Microhabitat: none; 560-3,115 feet; February-April	Potential. Suitable habitat is present
Cascade downingia <i>Downingia willamettensis</i> (Campanulaceae)	CRPR 2B.2	Cismontane woodland (lake margins), Valley and foothill grassland (lake margins), Vernal pools. Microhabitat: none; 50-3,640 feet; June-July (September)	Potential. Suitable habitat is present
Brandegee's eriastrum <i>Eriastrum brandegeae</i> (Polemoniaceae)	CRPR 1B.1	Chaparral, Cismontane woodland. Microhabitat: Sandy, Volcanic; 1,395-2,755 feet; April-August	Potential. Suitable habitat is present
Greene's narrow-leaved daisy <i>Erigeron greenei</i> (Asteraceae)	CRPR 1B.2	Chaparral (serpentine, volcanic). Microhabitat: none; 260-3,295 feet; May-September	Potential. Suitable habitat is present
Snow Mountain buckwheat <i>Eriogonum nervulosum</i> (Polygonaceae)	CRPR 1B.2	Chaparral (serpentine). Microhabitat: none; 985-6,905 feet; June-September	Potential. Suitable habitat is present
Toren's grimmia <i>Grimmia torenii</i> (Grimmiaceae)	CRPR 1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest. Microhabitat: Carbonate, Openings, Rocky, Volcanic, boulder and rock	Potential. Suitable habitat is present

Response to Data Requests Set No. 2 (Biological Resources) – Bottle Rock Geothermal Power Plant (79-AFC-04C)

Species	Status	Habitat, Elevation, and Blooming Period	Potential to Occur
		walls; 1,065-3,805 feet; no bloom period listed	
Hall's harmonia <i>Harmonia hallii</i> (Asteraceae)	CRPR 1B.2	Chaparral (serpentine). Microhabitat: none; 1,000-3,200 feet; (March) April-June	Potential. Suitable habitat is present
Glandular western flax <i>Hesperolinon adenophyllum</i> (Linaceae)	CRPR 1B.2	Chaparral, Cismontane woodland, Valley and foothill Grassland. Microhabitat: Serpentine (usually); 490-4,315 feet; May-August	Potential. Suitable habitat is present
Two-carpellate western flax <i>Hesperolinon bicarpellatum</i> (Linaceae)	CRPR 1B.2	Chaparral (serpentine). Microhabitat: none; 195-3,295 feet; (April) May-July	Potential. Suitable habitat is present
Colusa layia <i>Layia septentrionalis</i> (Asteraceae)	CRPR 1B.2	Chaparral, Cismontane woodland, Valley and foothill Grassland. Microhabitat: Sandy, Serpentine; 330-3,595 feet; April-May	Potential. Suitable habitat is present
Cobb Mountain lupine <i>Lupinus sericatus</i> (Fabaceae)	CRPR 1B.2	Broadleaved upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest. Microhabitat: none; 900-5,005 feet; March-June	Potential. Suitable habitat is present
Sonoma beardtongue <i>Penstemon newberryi</i> var. <i>sonomensis</i> (Plantaginaceae)	CRPR 1B.3	Chaparral (rocky). Microhabitat: none; 2,295-4,495 feet; April-August	Potential. Suitable habitat is present
Socrates Mine jewelflower <i>Streptanthus brachiatus</i> ssp. <i>brachiatus</i> (Brassicaceae)	CRPR 1B.2	Chaparral, Closed-cone coniferous forest. Microhabitat: Serpentine; 1,790-3,280 feet; May-June	Potential. Suitable habitat is present
Freed's jewelflower <i>Streptanthus brachiatus</i> ssp. <i>hoffmanii</i>	CRPR 1B.2	Chaparral, Closed-cone coniferous forest. Microhabitat: Serpentine; 1,790-3,280 feet; May-June	Potential. Suitable habitat is present

Response to Data Requests Set No. 2 (Biological Resources) – Bottle Rock Geothermal Power Plant (79-AFC-04C)

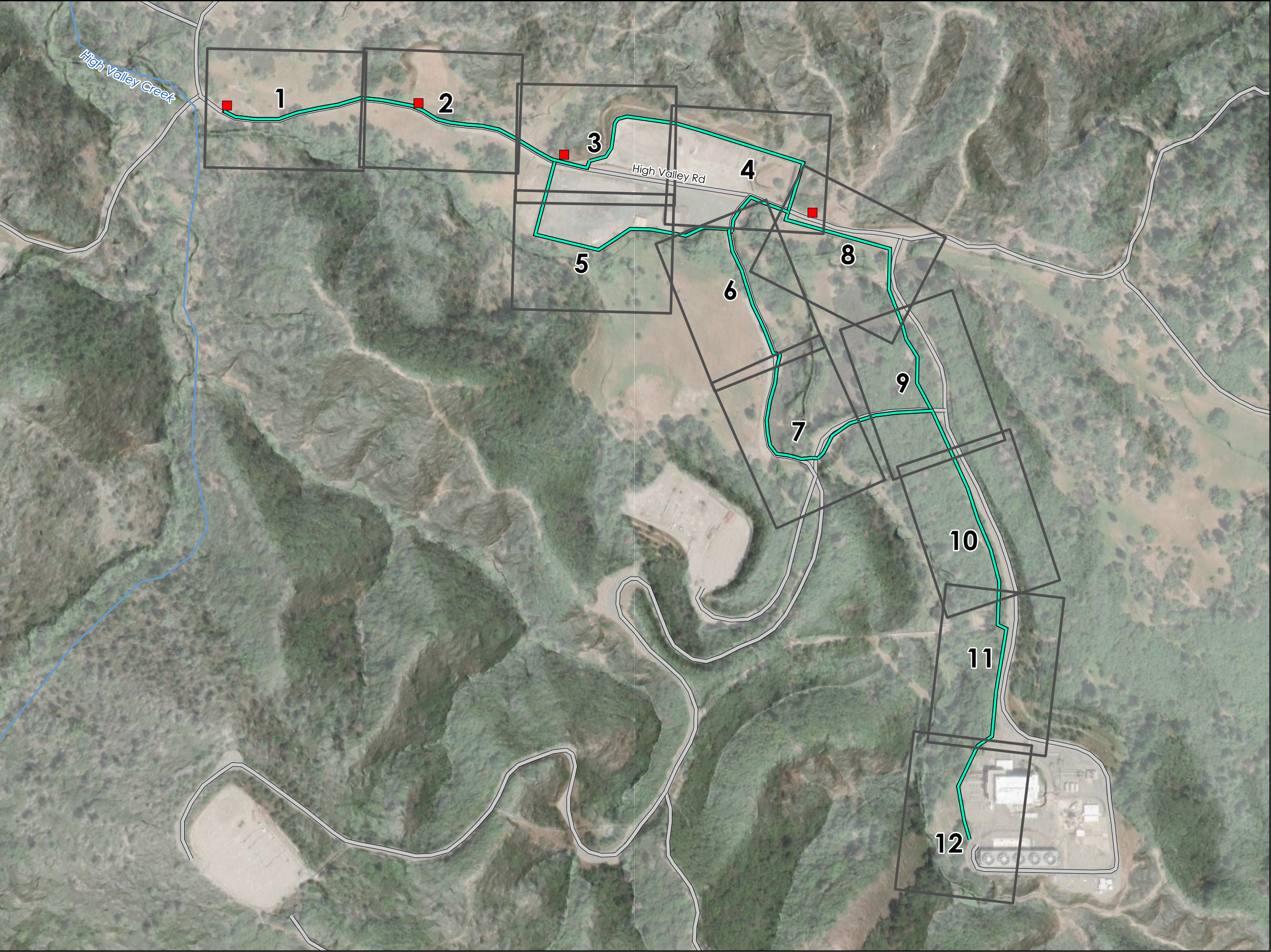
Species	Status	Habitat, Elevation, and Blooming Period	Potential to Occur
(Brassicaceae)			
Oval-leaved viburnum <i>Viburnum ellipticum</i> (Viburnaceae)	CRPR 1B.2	Chaparral, Cismontane woodland. Microhabitat: Serpentine; 1,610-4,005 feet; May-July	Potential. Suitable habitat is present

Source: (Vollmar Natural Lands Consulting 2023)

References

NatureServe. 2025. "Dichanthelium Acuminatum Ssp. Thermale." NatureServe Explorer. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.153272/Dichanthelium_acuminatum_ssp_thermale.

Vollmar Natural Lands Consulting. 2023. *Biological Evaluation Report, Mayacma Geothermal Project, Lake County, California.*

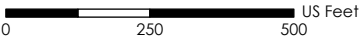


Impacts Overview

- Groundwater well
- Pipeline
- Mapbook page extent

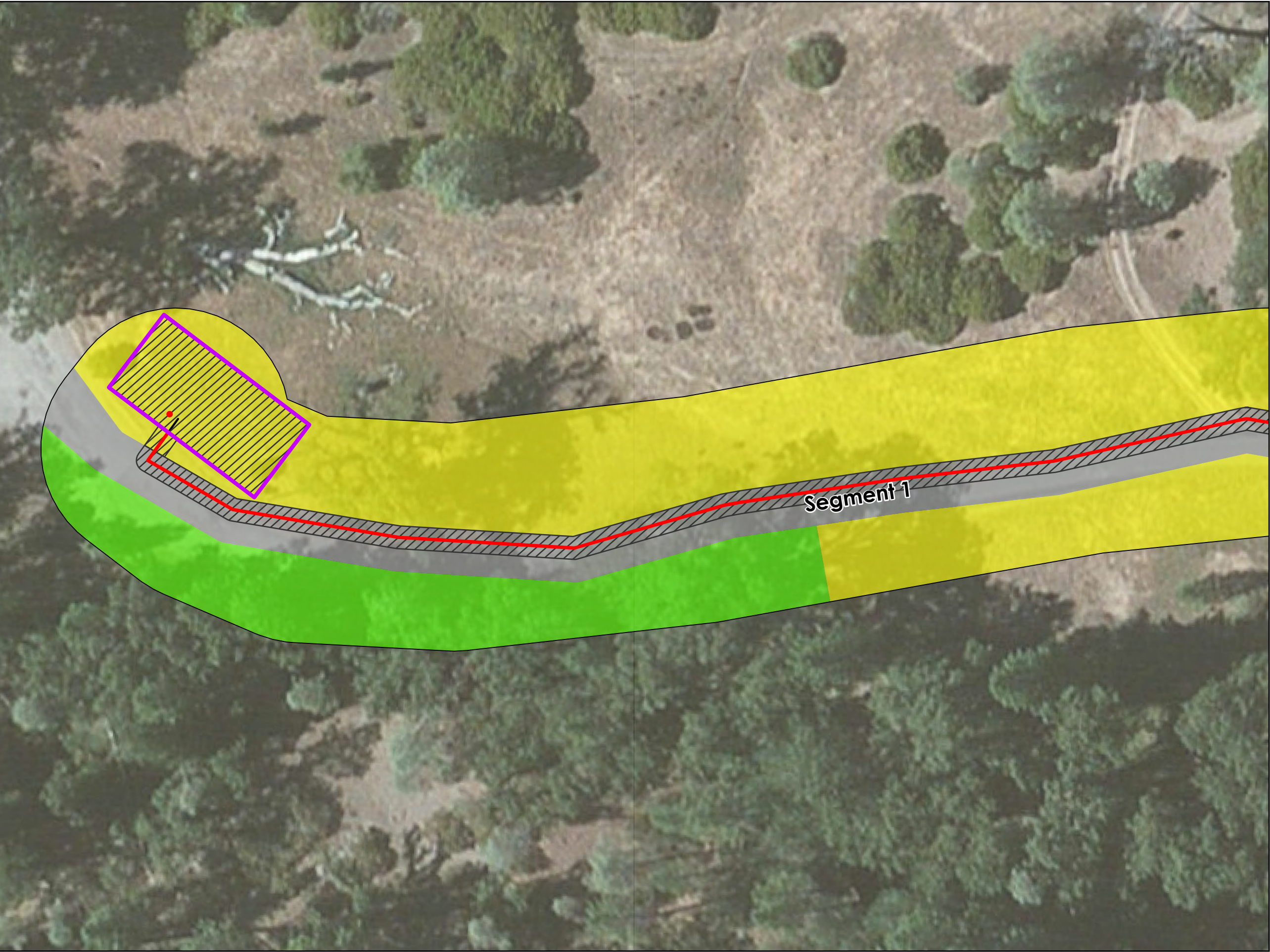


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Map Location





Impacts Mapbook

Page 1 of 12

— Pipeline

▭ Rig site

▭ Pipeline 50-ft buffer

Impacts

▭ Permanent (above ground, 4" wide)

▨ Temporary (buried, 10 ft wide)

Vegetation Communities

▭ Cismontane woodland

▭ Valley and foothill grassland

▭ Developed

Scale = 1:500

Created: 9/19/2025

0 25 50 Feet

Map Extent Indicator

A small map showing the extent of the main map segment. A red rectangle highlights the area shown in the main map. The map shows a network of roads and a river.

The logo for PANORAMA, featuring a stylized mountain range with a sun or moon above it.



Impacts Mapbook
Page 2 of 12

Pipeline

Rig site

Pipeline 50-ft buffer

Impacts

Permanent (above ground, 4" wide)

Temporary (buried, 10 ft wide)

Vegetation Communities

Valley and foothill grassland

Valley oak woodland

Developed



Scale = 1:500
Created: 9/19/2025

0

25

50

Feet

Map Extent Indicator

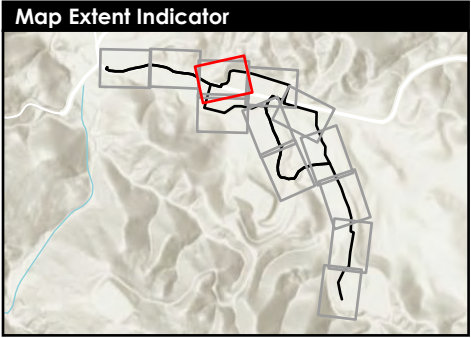
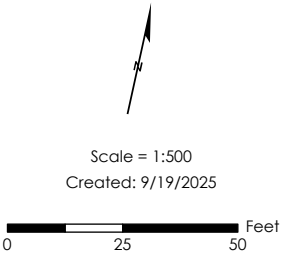


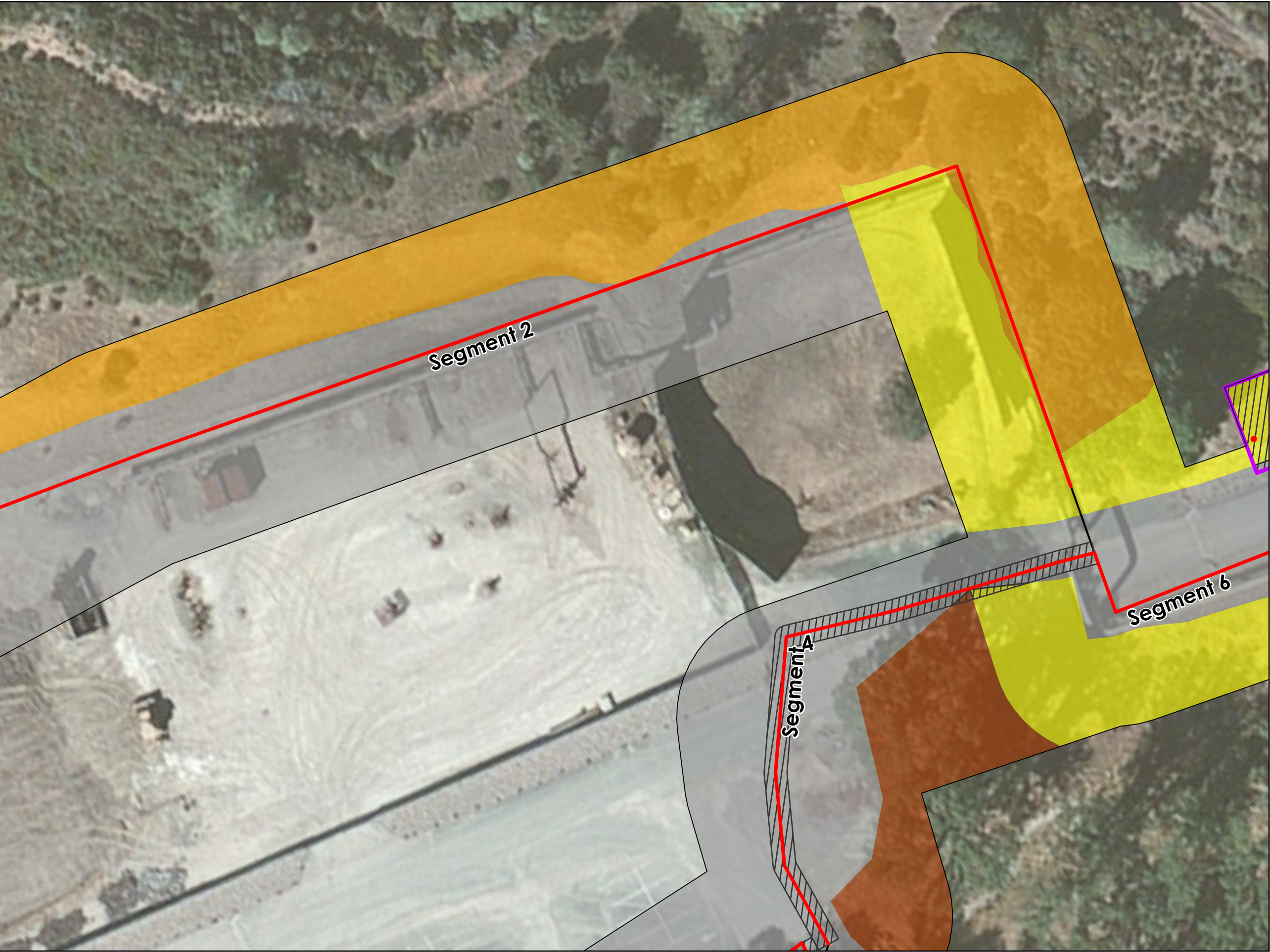


PANORAMA



- Pipeline
 - ▭ Rig site
 - ▭ Pipeline 50-ft buffer
- Impacts**
- ▭ Permanent (above ground, 4" wide)
 - ▨ Temporary (buried, 10 ft wide)
- Vegetation Communities**
- ▭ Chaparral
 - ▭ Valley and foothill grassland
 - ▭ Developed





- Pipeline
- Rig site
- Pipeline 50-ft buffer

Impacts

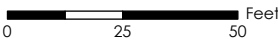
- Permanent (above ground, 4" wide)
- ▨ Temporary (buried, 10 ft wide)

Vegetation Communities

- Chaparral
- Valley and foothill grassland
- Valley oak woodland
- Developed



Scale = 1:500
Created: 9/19/2025



Map Extent Indicator





Impacts Mapbook
Page 5 of 12

— Pipeline
□ Pipeline 50-ft buffer

Impacts
■ Permanent (above ground, 4" wide)

Vegetation Communities
■ Cismontane woodland
■ Valley and foothill grassland
■ Developed

Stream/Drainage Habitats
■ Seasonal stream
■ Potential seasonal wetland

Scale = 1:500
Created: 9/19/2025

0 25 50 Feet

Map Extent Indicator

A small inset map showing a larger geographic area with a grid. A red rectangle highlights the specific area shown in the main map.

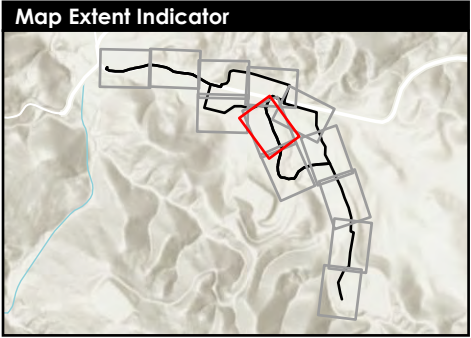
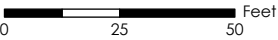
The logo for PANORAMA, featuring a stylized mountain range with a yellow sun above it and the word 'PANORAMA' in green capital letters below.



- Pipeline
- Pipeline 50-ft buffer
- Impacts**
 - Permanent (above ground, 4" wide)
 - ▨ Temporary (buried, 10 ft wide)
- Vegetation Communities**
 - Cismontane woodland
 - Chaparral
 - Valley and foothill grassland
 - Valley oak woodland
 - Developed
 - Potential seasonal wetland



Scale = 1:500
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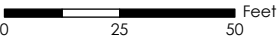




- Pipeline
- Pipeline 50-ft buffer
- Impacts**
- Permanent (above ground, 4" wide)
- ▨ Temporary (buried, 10 ft wide)
- Vegetation Communities**
- Cismontane woodland
- Chaparral
- Valley and foothill grassland
- Valley oak woodland
- Developed
- Stream/Drainage Habitats**
- Culvert



Scale = 1:500
Created: 9/19/2025



Map Extent Indicator





Impacts Mapbook

Page 8 of 12

— Pipeline

□ Rig site

□ Pipeline 50-ft buffer

Impacts

■ Permanent (above ground, 4" wide)

▨ Temporary (buried, 10 ft wide)

Vegetation Communities

■ Cismontane woodland

■ Chaparral

■ Valley and foothill grassland

■ Valley oak woodland

■ Developed

Stream/Drainage Habitats

■ Seasonal stream

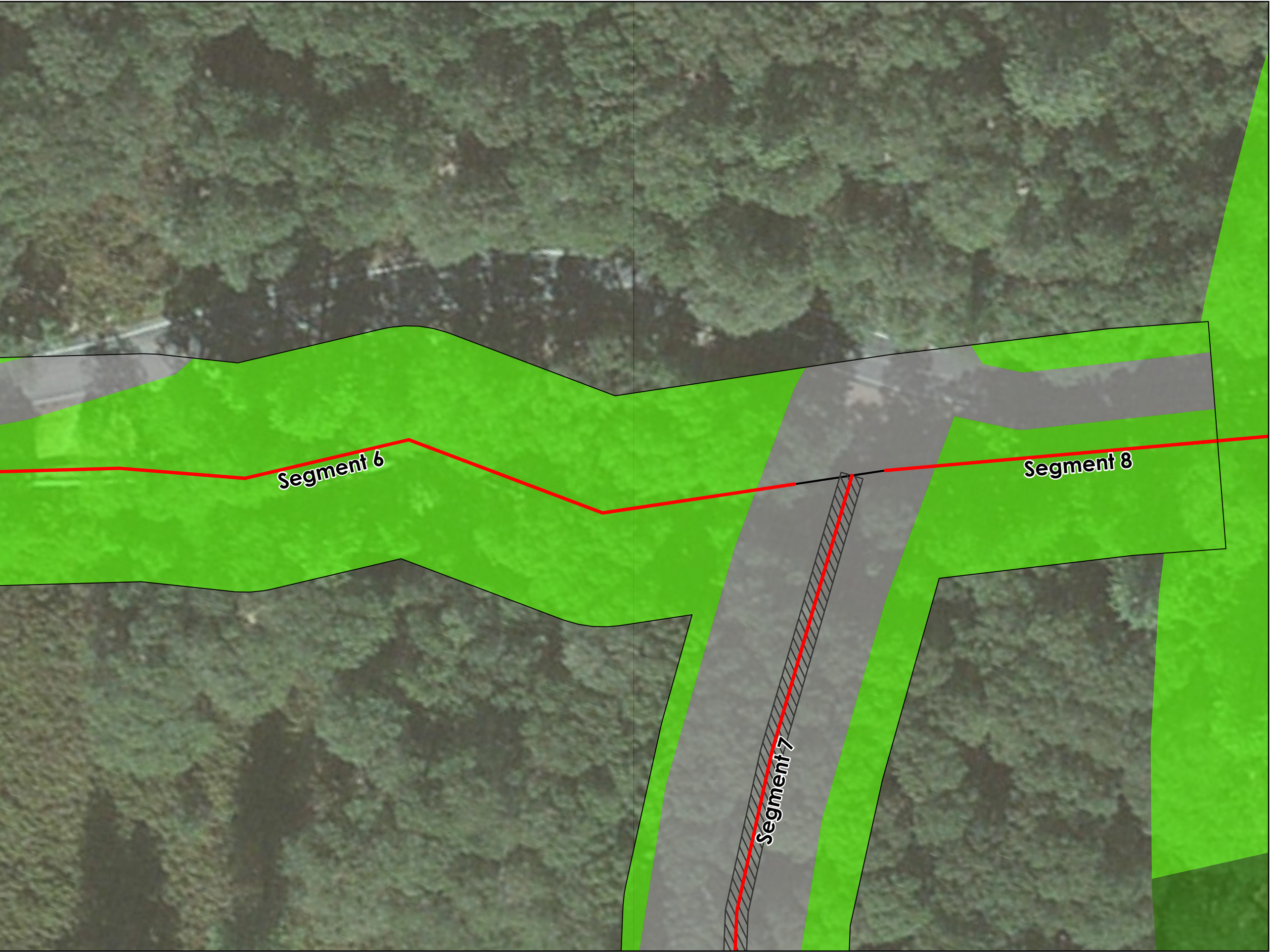
■ Culvert

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0 25 50 Feet

Map Extent Indicator



- Pipeline
- Pipeline 50-ft buffer

Impacts

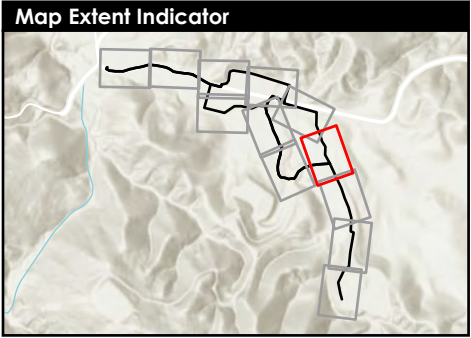
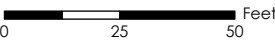
- Permanent (above ground, 4" wide)
- ▨ Temporary (buried, 10 ft wide)

Vegetation Communities

- Cismontane woodland
- Lower montane coniferous forest
- Developed



Scale = 1:500
Created: 9/19/2025





Impacts Mapbook

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Pipeline

Pipeline 50-ft buffer

Impacts

Permanent (above ground, 4" wide)

Vegetation Communities

Cismontane woodland

Chaparral

Lower montane coniferous forest

Developed

Stream/Drainage Habitats

Seasonal stream

Scale = 1:500

Created: 9/19/2025

02550

Feet

Map Extent Indicator

PANORAMA



Impacts Mapbook
Page 11 of 12

— Pipeline

Impacts

Permanent (above ground, 4" wide)

Vegetation Communities

Cismontane woodland

Lower montane coniferous forest

Developed

Stream/Drainage Habitats

Seasonal stream

Riparian Woodland

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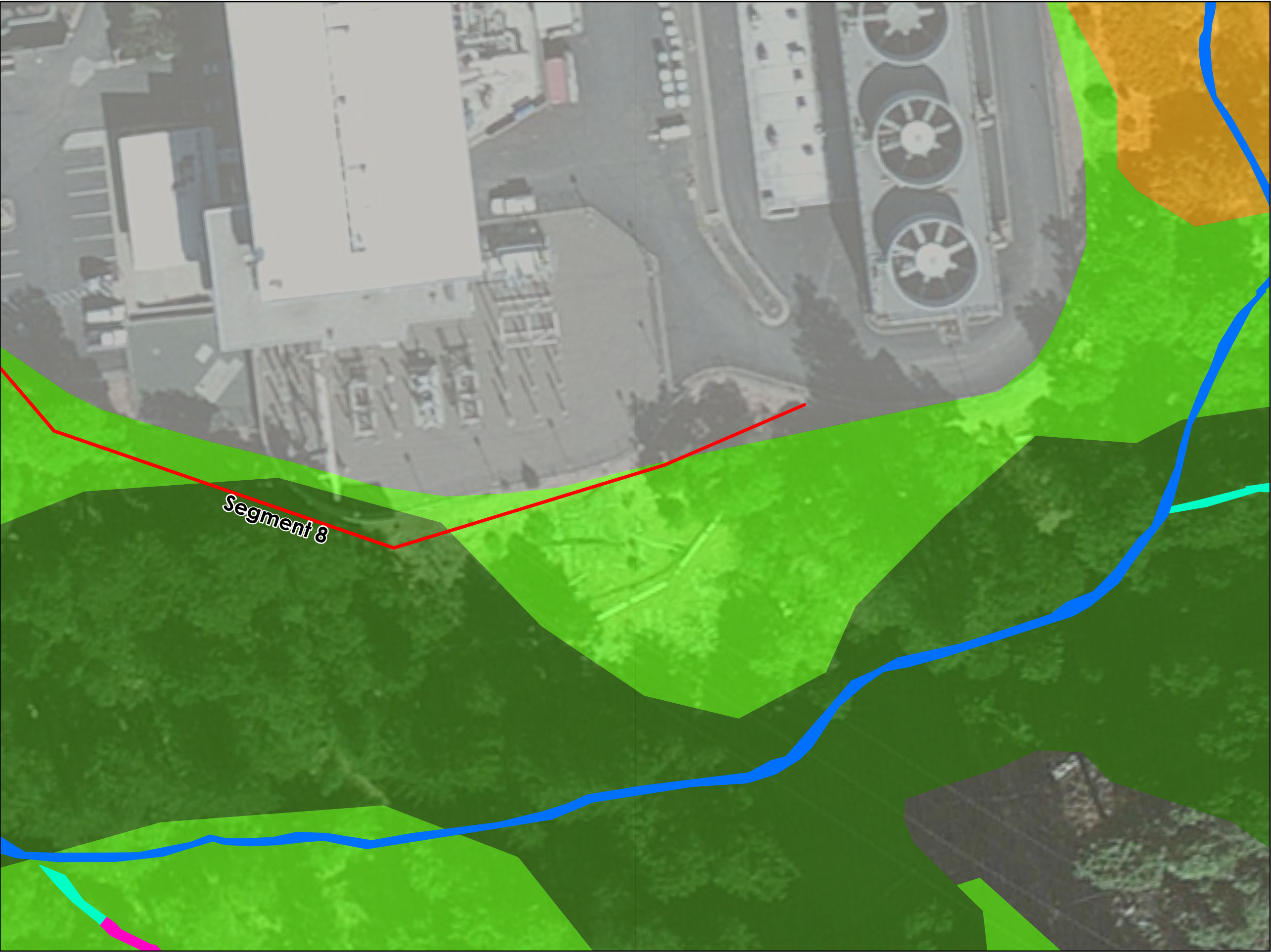
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Feet

Map Extent Indicator



Impacts Mapbook

Page 12 of 12

— Pipeline

Impacts

■ Permanent (above ground, 4" wide)

Vegetation Communities

■ Cismontane woodland

■ Chaparral

■ Lower montane coniferous forest

■ Developed

Stream/Drainage Habitats

■ Seasonal stream

■ Non-wetland Drainage

■ Culvert

Scale = 1:500
Created: 9/19/2025

0 25 50 Feet

Map Extent Indicator