3.8 Land Use

3.8.1 Affected Environment

3.8.1.1 Overview

The primary land uses within the region of study are agriculture, grazing, and recreation. Land use categories are based on the Las Vegas and Ely RMPs (BLM 2008, 1998). Agriculture is addressed in this section; acres of soil designated as suitable for prime farmland, livestock grazing (including rangelands), and recreation are addressed in Sections 3.4, Soil Resources; 3.12, Rangelands and Grazing; and 3.9, Recreation; respectively. Land use categories also include areas of special designations by federal and state agencies. These categories are addressed in Section 3.14, Special Designations.

QUICK REFERENCE

ACEC – Area of Critical Environmental Concern

BARCAS – Basin and Range Carbonate-Rock Aquifer System

FLPMA – Federal Land Policy and Management Act

RFFA – Reasonably Foreseeable Future Actions

RMP – Resource Management Plan

ROD – Record of Decision

SWReGAP – Southwest Regional Gap Analysis Project

3.8.1.2 Region of Study

The region of study for land use includes the areas within 1-mile of the proposed and alternative ROWs and ancillary facilities and the groundwater development areas. The region of study for groundwater pumping includes the hydrologic basins associated with the groundwater model.

Land Ownership

Land ownership was identified from data maintained by the BLM. The federal government—primarily the BLM—is the primary administrator of land within the project vicinity. Other land owners include private entities and the State of Nevada. Other federal land owners within the project vicinity and groundwater drawdown areas include the USFS, NPS, and USFWS. **Figure 3.8-1** shows land ownership in the project vicinity.

Through the RMP process, the BLM identifies areas for potential disposal to non-federal ownership under Section 102(a)(1) of the FLPMA. These areas remain in federal ownership until another entity pursues the acquisition of an identified area within the RMP planning period (typically 20 years or until the RMP is amended or revised). **Figure 3.8-2** shows areas that the BLM has identified for potential disposal to non-federal ownership in the project vicinity, all of which are managed by the Ely Field Office.

Zoning

Zoning data was obtained from the Clark County and Lincoln County Web sites (Clark County 2009, Lincoln County 2007). Zoning information for White Pine County was not available electronically. Zoning in the project vicinity is primarily rural residential and agricultural. Small areas in southern Lincoln County and in the more urban areas of Clark County are zoned for commercial and industrial uses. **Figure 3.8-3** shows zoning in the project vicinity.

Residential Lands

Residential areas were identified by using satellite and aerial imagery. Almost the entire project area is rural, so the residential areas primarily are low density.

Figure 3.8-1 Land Ownership

Figure 3.8-2 Lands Available for Disposal

Figure 3.8-3 Generalized Zoning

Agricultural Lands

Agricultural lands were identified through interpretations of aerial imagery and field investigations as documented in the BARCAS, SNWA, and SWReGAP studies (USGS 2007, SNWA 2007, Utah State University 2004). Agricultural lands were identified in the BARCAS study, a regional water-resource assessment, by combining areas of similar vegetation, water, and soil conditions. The BARCAS data was merged with phreatophytes identified by SNWA and areas classified as "agriculture" in the SWReGAP dataset. The data from the BARCAS study took primacy over data from SNWA followed by SWReGAP data to eliminate duplication. The data pertains only to agricultural areas on privately-owned lands.

Figure 3.8-4 shows the private agricultural areas. Agricultural acreage in the project vicinity is dedicated primarily to alfalfa-hay production, using center-pivot, wheel-line, or furrow-flood irrigation. Other land-cover types that are common to the area are scrub/shrub, herbaceous grasslands, and evergreen forests. A detailed description of land-cover types is provided in Section 3.5, Vegetation.

Utility Corridors

"Section 503 of FLPMA provides for the designation of utility corridors and encourages utilization of ROWs in-common to minimize environmental impacts and the proliferation of separate ROWs. It is BLM policy to encourage prospective applicants to locate their proposals within corridors" (BLM 2008, Ely RMP ROD, page 65). However, "all public land within the planning area [except where identified in the RMP as an avoidance or exclusion area] is available at the discretion of the agency for ROWs under the authority of FLPMA" (BLM 1998, Las Vegas RMP ROD, page 19, RW-1-h). Several utility corridors are located throughout White Pine, Lincoln, and Clark Counties (**Figure 3.8-5**). These corridors were identified using the BLM land use planning documents (BLM and SNWA 2008).

Right-of-way Exclusion and Avoidance Areas

The BLM designates areas of ROW exclusion and avoidance to protect resource values. ROW avoidance and exclusion areas in the project vicinity were established in the Ely and Las Vegas RMPs (BLM 2008, 1998). According to the BLM Land Use Planning Handbook (H-1601-1 Appendix C, page 21), ROW avoidance areas are to be avoided but may be available for location of ROWs with special stipulations whereas ROW exclusion areas are not available for location of ROWs under any conditions. According to the Ely RMP (BLM 2008, page 65), "only facilities and uses that are consistent with the special designation associated with that area will be permitted in avoidance areas."

The Ely RMP (2008) identifies designated wilderness as exclusion areas (LR-41, page 71), WSAs as avoidance areas (LR-40, page 71), and specific ACECs as avoidance or exclusion areas (LR-42, page 71). The Las Vegas RMP (1998) identifies all ACECs and areas within a 0.25-mile of significant caves as ROW avoidance areas for linear ROWs (RW-1-e, page 19) except for the Hidden Valley District, Sloan Rock Art, and Big Dune ACECs which are identified as exclusion areas (RW-1-f, page 19). All ACECs in the Las Vegas Field Office are exclusion areas to site type ROWs, except within 0.5 mile of Federal Aid Highways (RW-1-g, page 19). Special designations (further discussed in Section 3.14) managed as avoidance or exclusion areas may be affected by the proposed project.

3.8.1.3 Right-of-way and Ancillary Facilities

Land Ownership

Approximately 97 percent of the land within ROWs and ancillary areas is owned by the public and managed by the BLM. Private lands make up only 2 percent of the total area. Other lands crossed by the ROWs and ancillary facilities include State of Nevada lands and, under one alternative option (Alignment Option 1), public lands managed by the USFS. There are no other land owners directly affected by the ROWs and ancillary facilities.

Using available data, land disposals were identified according to the Ely RMP, a total of 75,758 acres of land available for potential disposal in the Ely Field Office (BLM 2008, LR-20, page 68). There are no lands available for potential disposal within the region of study for the ROWs and ancillary facilities.

Zoning

Zoning within the ROW and ancillary facilities is primarily rural residential and agricultural. The proposed pipeline, power line, and ancillary facilities also pass through or are sited in some areas that are zoned for open space, industrial, or public facility uses.

Figure 3.8-4 Private Agricultural Lands

Residential Lands

The proposed ROW and ancillary facilities would be located in rural areas, almost entirely on BLM lands. An analysis of aerial-map data determined that there are no residences within a mile of the proposed ROW and ancillary facilities; the nearest farmstead is approximately 1.5 miles east of the Snake Lateral pipeline and power line, northwest of Baker. Baker, in eastern White Pine County, is the only community in which a segment of the proposed pipeline ROW and ancillary facilities would be located. Additional ROWs for collector lines and ancillary facilities could be added in the future that could be sited closer than 1 mile to the existing residences. Additional facilities would be addressed with subsequent NEPA analysis in the form of an Environmental Assessment or EIS.

Agricultural Lands

Only a small amount of private agricultural land is crossed by the proposed project ROW and ancillary facilities. Approximately 8.5 acres of private agricultural land in the southwestern portion of the construction-support area near Caliente would be used for construction management offices in temporary portable trailers.

Utility Corridors

There are approximately 273,290 acres of utility corridors within the region of study, primarily extending along a north-south axis. The ROWs and ancillary facilities occur primarily within utility corridors as shown in **Figure 3.8-5**. These utility corridors are associated with pipelines, electric transmission lines, and roads, as well as a few other ROW types.

Right-of-way Avoidance and Exclusion Areas

The proposed project ROWs or ancillary facilities would cross two ROW avoidance areas—the Coyote Springs and Kane Springs ACECs. There are no ROW exclusion areas affected by the proposed project ROW or ancillary facilities.

3.8.1.4 Groundwater Development Areas

Land Ownership

As mentioned in Section 3.8.1.2, most land in the project vicinity is BLM-administered public land. There is no other government ownership within the groundwater development areas. A small portion of the land within the groundwater development areas is privately owned.

The Ely RMP identified a total of 75,758 acres of land available for potential disposal in the Ely Field Office (BLM 2008, LR-20, page 68), of which 4,924 acres occur within groundwater development areas (106 acres in Spring Valley and 4,817 acres in Snake Valley).

Zoning

Zoning within the groundwater development areas is primarily rural residential and agricultural.

Residential Lands

One residence was identified within a groundwater development area. Approximately 72 residences were identified within 1 mile of the groundwater development areas. Any facilities sited closer to residences than identified in this Draft EIS would undergo additional NEPA.

Agricultural Lands

No agricultural lands are within the groundwater development areas in Lincoln County. A total of 27 agricultural acres are associated with the Proposed Action in Snake and Spring Valleys (22 acres and 5 acres, respectively), of which only the 5 acres in Spring Valley are owned by SNWA.

Utility Corridors

Activities in the groundwater development areas, which would be subject to evaluation under subsequent NEPA, would occur primarily outside of the designated utility corridors shown in **Figure 3.8-5**.

Right-of-way Avoidance and Exclusion Areas

Three ROW avoidance areas—the Swamp Cedar, Baking Powder Flat, and Baker Archaeological Site ACECs—are located within the boundaries of proposed groundwater development areas. The groundwater development area boundaries were delineated to avoid ROW exclusion areas, including wilderness areas.

Figure 3.8-5 Designated Utility Corridors

3.8.2 Environmental Consequences

3.8.2.1 Rights-of-way

Issues

- Surface disturbance could be inconsistent with other local, state, and federal land-use plans.
- Land-ownership adjustments could be limited by the project land uses and aboveground facilities.
- The placement of ROWs or ancillary facilities could be incompatible with zoning.
- Residences within 1 mile of ROWs and ancillary facilities could be affected by pipeline and power line construction, operation, and maintenance.
- Agricultural lands could be altered by construction or converted to permanent facilities.
- Surface disturbance could occur outside of areas determined compatible for development, including utility corridors, and may encroach on ROW exclusion or avoidance areas.

Assumptions

- Identification of the effects on land uses focused on those areas that would be disturbed by construction of facilities or in which land-use changes would occur as a result of the proposed project.
- Department of Defense lands would not be used for the project.
- Facilities would not be approved in identified ROW exclusion areas. If facilities were approved in these areas, an RMP amendment would be required.

Methodology for Analysis

Any potential conflicts or conversion of existing land uses would be identified as an impact. Land-use constraints in the Ely and Las Vegas RMPs, as well as other land-use planning documents, were used to determine whether the proposed project would comply with existing land use and zoning. Any utilities that would be constructed outside of designated utility ROWs are identified where they occur. Any utilities proposed for ROW avoidance or exclusion areas, as identified through the BLM's RMPs, would be considered a change from existing plan requirements and would be identified as an impact.

3.8.2.2 Proposed Action, Alternatives A through C

Construction and Facility Maintenance

Land Ownership

As shown in **Table 3.8-1**, the direct effect of construction of the ROWs and ancillary facilities would occur mostly on lands that are managed by the BLM, followed by private lands, and State of Nevada land. Other federal lands are not directly affected under this alternative.

Table 3.8-1 Lands Affected by Construction of the Rights-of-way and Ancillary Facility Areas for the Proposed Action and Alternatives A through C (Acres)

Basin	BLM	Other Federal Agencies	Private	State of Nevada
Cave Valley	712	0	0	0
Coyote Spring Valley	1,675	0	52	0
Delamar Valley	891	0	0	0
Dry Lake Valley	2,631	0	0	0
Garnet Valley	304	0	1	0
Hamlin Valley	384	0	0	0
Hidden Valley (North)	478	0	0	0
Lake Valley	804	0	0	0
Las Vegas Valley	130	0	35	57
Lower Meadow Valley Wash	0	0	121	0
Pahranagat Valley	252	0	0	0
Snake Valley (Nevada only)	879	0	0	0
Spring Valley	2,568	0	0	0
Steptoe Valley	307	0	3	17
Total	**12,015**	**0**	**212**	**74**

As shown in **Table 3.8-2**, operation and maintenance of permanent ROWs and ancillary facilities would primarily affect lands that are managed by the BLM and private lands, with a nominal amount of State of Nevada land also being affected.

Table 3.8-2 Lands Affected by the Operation of the Rights-of-way and Ancillary Facility Areas for the Proposed Action and Alternatives A through C (Acres)

Basin	BLM	Other Federal Agencies	Private	State of Nevada
Cave Valley	21	0	0	0
Coyote Spring Valley	116	0	5	0
Delamar Valley	74	0	0	0
Dry Lake Valley	202	0	0	0
Garnet Valley	75	0	0	0
Hamlin Valley	2	0	0	0
Hidden Valley (North)	38	0	0	0
Lake Valley	57	0	0	0
Las Vegas Valley	9	0	2	6
Lower Meadow Valley Wash	0	0	121	0
Pahranagat Valley	4	0	0	0
Snake Valley (Nevada only)	52	0	0	0
Spring Valley	209	0	0	0
Steptoe Valley	20	0	0	0
Total	**879**	**0**	**128**	**6**

BLM lands available for disposal (shown in **Figure 3.8-2**), which are primarily located around existing communities for open space, parks, and community-related development, would not be limited by construction, operation, and maintenance of ROWs and ancillary facilities.

Zoning

No areas in which the construction of ROWs and ancillary facilities would conflict with current zoning have been identified.

Residential Lands

No residences have been identified within 1 mile of the proposed ROWs and ancillary facilities.

Agricultural Lands

Approximately 8.5 acres of agricultural land would be affected by surface disturbance and facility construction in the construction-support area near Caliente. This land would be temporarily converted from agriculture to a construction support area consisting of construction management offices in temporary portable trailers.

Utility Corridors

The miles of pipeline and power line that occur outside of designated utility corridors are summarized in **Table 3.8-3**. Overall, approximately 75 percent of the pipelines and power lines would be located within designated utility corridors for the Proposed Action and Alternatives A through C. Approximately 25 percent of the ROWs would be constructed on land that is not managed for or designated as a utility corridor, the majority of which would be in Lincoln County and some areas in White Pine County. Siting utilities outside designated corridors is reviewed on a case-by-case basis and would require a ROW permit from the BLM-authorized officer.

Right-of-way Exclusion and Avoidance Areas

The proposed project ROWs or ancillary facilities would cross two ROW avoidance areas—the Coyote Springs and Kane Springs ACECs. Facilities in ROW avoidance areas are subject to BLM approval depending on whether the uses are consistent with the special designation associated with the area (analyzed in Section 3.14, Special Designations). If facilities are approved in ROW avoidance areas, the BLM may impose additional stipulations for operations and maintenance.

Conclusion

Short-term construction disturbance associated with ROWs and ancillary facilities would occur on land that is managed by the BLM (12,015 acres), private owners (212 acres), and the State of Nevada (74 acres). Long-term operation and maintenance of permanent ROWs and facilities would primarily affect lands that are managed by the BLM (879 acres) and private lands (128 acres), with 6 acres of State of Nevada land also being affected. BLM lands available for disposal, zoning, and residential areas would not be affected by construction, operation, and maintenance of ROWs and ancillary facilities. Temporary disturbance of 8.5 acres would occur on private agricultural land near Caliente. Twenty-five percent of the proposed ROWs would be located outside of designated utility corridors, extending construction disturbance and facility maintenance beyond the utility corridors specified in RMPs for the area. Two ROW avoidance areas would be affected and additional stipulations may be imposed if facilities are approved in these areas.

Additional mitigation measures:

None. Mitigation to address potential conflicts in the ROW avoidance areas is discussed under Special Designations in Section 3.14.

Residual impacts include:

Long-term, permanent disturbance from pipelines, power lines, and associated facilities would occur on land that is managed by the BLM (879 acres), private owners (128 acres), and the State of Nevada (6 acres).

Table 3.8-3 Miles of Pipeline and Power Line Outside of Designated Utility Corridors, Proposed Action and Alternatives A through C

Project Component	Basin	Miles Outside of Utility Corridor	Total Miles	Percentage Outside of Utility Corridor
Pipeline Centerline	Cave Valley	0	19	0
	Coyote Spring Valley	11	40	27
	Delamar Valley	9	23	39
	Dry Lake Valley	2	70	3
	Garnet Valley	1	7	14
	Hamlin Valley	10	10	100
	Hidden Valley (north)	0	12	0
	Lake Valley	0	21	0
	Las Vegas Valley	2	9	22
	Pahranagat Valley	<1	7	4
	Snake Valley	23	23	100
	Spring Valley	17	64	26
Total For Pipeline		**75**	**305**	**25**
Power Line Centerline	Cave Valley	0	19	0
	Coyote Spring Valley	12	41	31
	Delamar Valley	0	23	0
	Dry Lake Valley	0	68	0
	Garnet Valley	0	2	0
	Hamlin Valley	10	10	100
	Hidden Valley (north)	0	12	0
	Lake Valley	0	21	0
	Pahranagat Valley	0	6	0
	Snake Valley	23	23	100
	Spring Valley	23	71	33
	Steptoe Valley	13	27	49
Total For Power Line		**81**	**323**	**25**

3.8.2.3 Alternative D

Construction and Facility Maintenance

Land Ownership

As shown in **Table 3.8-4**, the direct effect of construction of the ROWs and ancillary facilities would occur mostly on lands that are managed by the BLM, followed by private lands, and State of Nevada land. Other federal lands are not directly affected under this alternative.

Table 3.8-4 Lands Affected by Construction of the Rights-of-way and Ancillary Facility Areas for Alternative D (Acres)

Basin	BLM	Other Federal Agencies	Private	State of Nevada
Cave Valley	712	0	0	0
Coyote Spring Valley	1,675	0	52	0
Delamar Valley	891	0	0	0
Dry Lake Valley	2,631	0	0	0
Garnet Valley	304	0	1	0
Hamlin Valley	0	0	0	0
Hidden Valley (North)	478	0	0	0
Lake Valley	804	0	0	0
Las Vegas Valley	130	0	35	57
Lower Meadow Valley Wash	0	0	121	0
Pahranagat Valley	252	0	0	0
Snake Valley (Nevada only)	0	0	0	0
Spring Valley	698	0	0	0
Steptoe Valley	0	0	0	0
Total	**8,575**	**0**	**208**	**57**

Note: Due to rounding, the totals may be different than the sum of individual acres.

As shown in **Table 3.8-5**, operation and maintenance of permanent ROWs and ancillary facilities would primarily affect lands that are managed by the BLM and private lands, with a nominal amount of State of Nevada land also being affected.

Table 3.8-5 Lands Affected by the Operation of the Rights-of-way and Ancillary Facility Areas for Alternative D (Acres)

Basin	BLM	Other Federal Agencies	Private	State of Nevada
Cave Valley	21	0	0	0
Coyote Spring Valley	116	0	5	0
Delamar Valley	74	0	0	0
Dry Lake Valley	202	0	0	0
Garnet Valley	75	0	0	0
Hamlin Valley	0	0	0	0
Hidden Valley (North)	38	0	0	0
Lake Valley	57	0	0	0
Las Vegas Valley	9	0	2	6
Lower Meadow Valley Wash	0	0	121	0
Pahranagat Valley	4	0	0	0
Snake Valley (Nevada only)	0	0	0	0
Spring Valley	91	0	0	0
Steptoe Valley	0	0	0	0
Total	**687**	**0**	**128**	**6**

The BLM lands available for disposal (shown in **Figure 3.8-2**), which are primarily located around existing communities for open space, parks, and community-related development, would not be limited by construction, operation, and maintenance of the ROWs and ancillary facilities.

Zoning

No areas in which the construction of ROWs and ancillary facilities would conflict with current zoning have been identified.

Residential Lands

No residences have been identified within 1 mile of the proposed ROWs and ancillary facilities.

Agricultural Lands

Approximately 8.5 acres of agricultural land would be affected by surface disturbance and facility construction in the construction-support area near Caliente. This land would be temporarily converted from agriculture to a construction support area consisting of construction management offices in temporary portable trailers.

Utility Corridors

The miles of pipeline and power line that occur outside of designated utility corridors are summarized in **Table 3.8-6**. Overall, approximately 90 percent of the pipelines and power lines would be located within designated utility corridors for Alternative D. Approximately 10 percent of the ROWs, primarily in Lincoln County, would be constructed on land that is not managed for or designated as a utility corridor. Siting utilities outside designated corridors is reviewed on a case-by-case basis and would require a ROW permit from the BLM-authorized officer.

Right-of-way Exclusion and Avoidance Areas

The proposed project ROWs or ancillary facilities would cross two ROW avoidance areas—the Coyote Springs and Kane Springs ACECs. Facilities in ROW avoidance areas are subject to BLM approval depending on whether the uses are consistent with the special designation associated with the area (analyzed in Section 3.14, Special Designations). If facilities are approved in ROW avoidance areas, the BLM may impose additional stipulations for operations and maintenance.

Conclusion

Short-term construction disturbance associated with ROWs and ancillary facilities would occur on land managed by the BLM (8,575 acres), private owners (208 acres), and the State of Nevada (57 acres). Long-term operation and maintenance of permanent ROWs and facilities would primarily affect lands that are managed by the BLM (687 acres) and private lands (128 acres), with 6 acres of State of Nevada land also being affected. Temporary disturbance of 8.5 acres would occur on private agricultural land near Caliente. Ten percent of the proposed ROWs would be located outside of designated utility corridors, extending construction disturbance and facility maintenance beyond the corridors specified in RMPs for the area. Two ROW avoidance areas would be affected and additional stipulations may be imposed if facilities are approved in these areas.

Additional mitigation measures:

None. Mitigation to address potential conflicts in the ROW avoidance areas is discussed under Special Designations in Section 3.14.

Residual impacts include:

Long-term, permanent disturbance from pipelines, power lines, and associated facilities would occur on land that is managed by the BLM (687 acres), private owners (128 acres), and the State of Nevada (6 acres).

Table 3.8-6 Miles of Pipeline and Power Line Occurring Outside of Designated Utility Corridors, Alternative D

Project Component	Basin	Miles Outside of Utility Corridor	Total Miles	Percentage Outside of Utility Corridor
Pipeline Centerline	Cave Valley	0	19	0
	Coyote Spring Valley	11	40	27
	Delamar Valley	9	23	39
	Dry Lake Valley	2	70	3
	Garnet Valley	1	7	14
	Hamlin Valley	0	0	0
	Hidden Valley (north)	0	12	0
	Lake Valley	0	21	0
	Las Vegas Valley	2	9	22
	Pahranagat Valley	<1	7	4
	Snake Valley	0	0	0
	Spring Valley	3	17	18
Total For Pipeline		**28**	**225**	**12**
Power-Line Centerline	Cave Valley	0	19	0
	Coyote Spring Valley	12	41	30
	Delamar Valley	0	23	0
	Dry Lake Valley	0	68	0
	Garnet Valley	0	2	0
	Hamlin Valley	0	0	0
	Hidden Valley (north)	0	12	0
	Lake Valley	0	21	0
	Pahranagat Valley	0	6	0
	Snake Valley	0	0	0
	Spring Valley	4	17	6
	Steptoe Valley	0	0	0
Total for Power Line		**16**	**209**	**8**

3.8.2.4 Alternative E

Construction and Facility Maintenance

Land Ownership

As shown in **Table 3.8-7**, the direct effect of construction of the ROWs and ancillary facilities would occur mostly on lands managed by the BLM, followed by private lands, and State of Nevada land. Other federal lands are not directly affected under this alternative.

Table 3.8-7 Lands Affected by Construction of the Rights-of-way and Ancillary Facility Areas for Alternative E (Acres)

Basin	BLM	Other Federal Agencies	Private	State of Nevada
Cave Valley	712	0	0	0
Coyote Spring Valley	1,675	0	52	0
Delamar Valley	891	0	0	0
Dry Lake Valley	2,631	0	0	0
Garnet Valley	304	0	1	0
Hamlin Valley	0	0	0	0
Hidden Valley (North)	478	0	0	0
Lake Valley	804	0	0	0
Las Vegas Valley	130	0	35	74
Lower Meadow Valley Wash	0	0	121	0
Pahranagat Valley	252	0	0	0
Snake Valley (Nevada only)	0	0	0	0
Spring Valley	2,224	0	0	0
Steptoe Valley	307	0	3	0
Total	**10,408**	**0**	**212**	**74**

Operation and maintenance of permanent ROWs and facilities would primarily affect lands that are managed by the BLM (825 acres) and private lands (128 acres), with 6 acres of State of Nevada land also being affected (**Table 3.8-8**).

Table 3.8-8 Lands Permanently Affected by the Operation of the Rights-of-way and Ancillary Facility Areas for Alternative E (Acres)

Basin	BLM	Other Federal Agencies	Private	State of Nevada
Cave Valley	21	0	0	0
Coyote Spring Valley	116	0	5	0
Delamar Valley	74	0	0	0
Dry Lake Valley	202	0	0	0
Garnet Valley	75	0	0	0
Hamlin Valley	0	0	0	0
Hidden Valley (North)	38	0	0	0
Lake Valley	57	0	0	0
Las Vegas Valley	9	0	2	6
Lower Meadow Valley Wash	0	0	121	0
Pahranagat Valley	4	0	0	0
Snake Valley (Nevada only)	0	0	0	0
Spring Valley	209	0	0	0
Steptoe Valley	20	0	0	0
Total	**825**	**0**	**128**	**6**

The BLM lands available for disposal (shown in **Figure 3.8-2**), which are primarily located around existing communities for open space, parks, and community-related development, would not be limited by construction, operation, and maintenance of the ROWs and ancillary facilities.

Zoning

No areas in which the construction of ROWs and ancillary facilities would conflict with current zoning have been identified.

Residential Lands

No residences have been identified within 1 mile of the proposed ROWs and ancillary facilities.

Agricultural Lands

Approximately 8.5 acres of agricultural land would be affected by surface disturbance and facility construction in the construction-support area near Caliente. This land would be temporarily converted from agriculture to a construction support area consisting of construction management offices in temporary portable trailers.

Utility Corridors

The miles of pipeline and power line that occur outside of designated utility corridors are summarized in **Table 3.8-9**. Overall, approximately 85 percent of the pipelines and power lines would be located within designated utility corridors for Alternative E. Approximately 15 percent of the ROWs, primarily in Lincoln County with some area in White Pine County, would be constructed on land that is not managed for or designated as a utility corridor. Siting utilities outside designated corridors is reviewed on a case-by-case basis and would require a ROW permit from the BLM-authorized officer.

Right-of-way Exclusion and Avoidance Areas

The proposed project ROWs or ancillary facilities would cross two ROW avoidance areas—the Coyote Springs and Kane Springs ACECs. Facilities in ROW avoidance areas are subject to BLM approval depending on whether the uses are consistent with the special designation associated with the area (analyzed in Section 3.14, Special Designations). If facilities are approved in ROW avoidance areas, the BLM may impose additional stipulations for operations and maintenance.

Conclusion

Short-term construction disturbance associated with ROWs and ancillary facilities would occur on land that is managed by the BLM (10,408 acres), private owners (212 acres), and the State of Nevada (74 acres). Long-term operation and maintenance of permanent ROWs and facilities would primarily affect lands that are managed by the BLM (825 acres) and private lands (128 acres), with 6 acres of State of Nevada land also being affected. Temporary disturbance of 8.5 acres would occur on private agricultural land near Caliente. Fifteen percent of the ROW corridors would be outside of designated utility corridors, extending construction disturbance and facility maintenance beyond the corridors specified in RMPs for the area. Two ROW avoidance areas would be affected and additional stipulations may be imposed if facilities are approved in these areas.

Additional mitigation measures:

None. Mitigation to address potential conflicts in the ROW avoidance areas is discussed under Special Designations in Section 3.14.

Residual impacts include:

Long-term, permanent disturbance from pipelines, power lines, and associated facilities would occur on land that is managed by the BLM (825 acres), private owners (128 acres), and the State of Nevada (6 acres).

Table 3.8-9 Miles of Pipeline and Power Line Outside of Designated Utility Corridors, Alternative E

Project Component	Basin	Miles Outside of Utility Corridor	Total Miles	Percentage Outside of Utility Corridor
Pipeline Centerline	Cave Valley	0	19	0
	Coyote Spring Valley	11	40	27
	Delamar Valley	9	23	39
	Dry Lake Valley	2	70	3
	Garnet Valley	1	7	14
	Hamlin Valley	0	0	0
	Hidden Valley (north)	0	12	0
	Lake Valley	0	21	0
	Las Vegas Valley	2	9	22
	Pahranagat Valley	<1	7	4
	Snake Valley	0	0	0
	Spring Valley	8	55	26
Total For Pipeline		**33**	**263**	**13**
Power Line Centerline	Cave Valley	0	19	0
	Coyote Spring Valley	12	41	30
	Delamar Valley	0	23	0
	Dry Lake Valley	0	68	0
	Garnet Valley	0	2	0
	Hamlin Valley	0	0	0
	Hidden Valley (north)	0	12	0
	Lake Valley	0	21	0
	Pahranagat Valley	0	6	0
	Snake Valley	0	0	0
	Spring Valley	14	62	22
	Steptoe Valley	13	27	48
Total for Power Line		**39**	**281**	**14**

3.8.2.5 Alignment Options 1 through 4

Impacts for the alignment options (1 through 4) are identified in relation to the relevant segment of the Proposed Action and Alternatives A through C (**Table 3.8-10**). **Table 3.8-10** identifies differences in effects to landownership and miles of power line and pipeline centerline outside of designated utility corridors, as compared to the Proposed Action and Alternatives A through C. There are no differences between the alignment options and the Proposed Action with regard to impacts to lands available for disposal, zoning, residential lands, agricultural lands, and ROW avoidance or exclusion areas.

Table 3.8-10 Land Use Impact Summary for Alignment Options

Alignment Option	Analysis
Alignment Option 1 (Humboldt-Toiybe Power Line Alignment) **Option Description**: Change the locations of a portion of the 230-kV power line from Gonder Substation near Ely to Spring Valley. **Applicable To**: Proposed Action and Alternatives A through C and E.	Alignment Option 1 is the only alternative that would cross USFS land in Spring and Steptoe valleys. There would be 104 acres of temporary construction disturbance within a designated utility corridor on USFS land. Other effects to landownership compared to the Proposed Action include 2 percent less BLM land (58 acres less in Spring Valley and 145 acres less in Steptoe Valley) and 2 percent more private land (4 acres in Spring Valley). Permanent facilities would be located on 12 acres of USFS lands and affect 3 percent less BLM land (5 acres less in Spring Valley and 18 acres less in Steptoe Valley) and <1 percent more private land (1 acre in Spring Valley). Under Alignment Option 1, there would be 138 miles of ROWs outside of designated utility corridors (a 12 percent reduction compared to the Proposed Action).
Alignment Option 2 (North Lake Valley Pipeline Alignment) **Option Description**: Change the locations of portions of the mainline pipeline and electrical transmission line in North Lake Valley. **Applicable To**: Proposed Action and Alternatives A through C and E.	Alignment Option 2 would affect <1 percent less BLM land (246 acres more in Lake Valley and 248 acres less in Spring Valley) and 25 percent more private land (54 acres in Lake Valley). Permanent facilities would affect 1 percent more BLM land (89 acres more in Lake Valley and 79 acres less in Spring Valley) and 4 percent more private land (5 acres in Lake Valley). Under Alignment Option 2, there would be 197 miles of ROWs outside of designated utility corridors (a 25 percent increase compared to the Proposed Action).
Alignment Option 3 (Muleshoe Substation and Power Line Alignment) **Option Description**: Eliminate the Gonder to Spring Valley transmission line, and construct a substation with an interconnection with an interstate, high voltage power line in Muleshole Valley. **Applicable To**: Proposed Action and Alternatives A through C and E.	Alignment Option 3 would affect 3 percent less BLM land (44 acres less in Dry Lake Valley, 82 acres less in Spring Valley, and eliminate disturbance of 307 acres in Steptoe Valley), 33 percent less state land (eliminate disturbance of 17 acres in Steptoe Valley), and 1 percent less private land (eliminate disturbance of 3 acres in Steptoe Valley). Permanent facilities would affect 2 percent more BLM land (42 acres more in Dry Lake Valley, 9 acres less in Spring Valley, and eliminate use of 20 acres in Steptoe Valley). Under Alignment Option 3, there would be 138 miles of ROWs outside of designated utility corridors (a 12 percent increase compared to the Proposed Action).
Alignment Option 4 (North Delamar Valley Pipeline and Power Line Alignment) **Option Description**: Change the location of a short section of mainline pipeline in Delamar Valley to follow an existing transmission line. **Applicable To**: All alternatives.	Alignment Option 4 would affect <1 percent less BLM land (13 acres less in Delamar Valley and 38 acres less in Dry Lake Valley). Permanent facilities would affect 5 percent less BLM land (31 acres less in Delamar Valley and 14 acres less in Dry Lake Valley). Under Alignment Option 4, there would be 147 miles of ROWs outside of designated utility corridors (a 7 percent reduction compared to the Proposed Action).

3.8.2.6 No Action Alternative

Under the No Action Alternative, project construction and operation would be limited to that which is already approved. The majority of the surface-disturbing activities to construct pipelines would occur on public lands in Lincoln and Clark counties. The use of lands that are managed by other federal and state agencies would be handled in compliance with specific, existing management plans and guidelines. No changes to land use would occur.

3.8.2.7 Comparison of Alternatives

Table 3.8-11 provides a comparison of impacts for construction and facility maintenance of the action alternatives on land use resources.

Table 3.8-11 Comparison of Alternatives – Rights-of-way

Parameter	Proposed Action and Alternatives A through C	Alternative D	Alternative E
Land Ownership	Residual impacts to 1,013 acres (BLM – 879, Private – 128, and State of Nevada – 6).	Residual impacts to 821 acres (BLM – 687, Private – 128, and State of Nevada – 6).	Residual impacts to 959 acres (BLM – 825, Private – 128, and State of Nevada – 6).
Zoning	No conflicts between ROWs and existing zoning were identified.	No conflicts between ROWs and existing zoning were identified.	No conflicts between ROWs and existing zoning were identified.
Residential Lands	No residences have been identified within 1 mile of the proposed ROWs and ancillary facilities.	No residences have been identified within 1 mile of the proposed ROWs and ancillary facilities.	No residences have been identified within 1 mile of the proposed ROWs and ancillary facilities.
Agricultural Lands	8.5 acres identified as agricultural lands would be affected by the construction support area.	8.5 acres identified as agricultural lands would be affected by the construction support area.	8.5 acres identified as agricultural lands would be affected by the construction support area.
Utility Corridors	Approximately 75 miles of pipeline and 81 miles of power line would occur outside designated utility corridors.	Approximately 28 miles of pipeline and 16 miles of power line would occur outside designated utility corridors.	Approximately 33 miles of pipeline and 39 miles of power line would occur outside designated utility corridors.
ROW Exclusion and Avoidance Areas	Crosses 2 ROW avoidance areas; avoids ROW exclusion areas.	Crosses 2 ROW avoidance areas; avoids ROW exclusion areas.	Crosses 2 ROW avoidance areas; avoids ROW exclusion areas.

3.8.2.8 Groundwater Development and Groundwater Pumping

Issues

Construction and Facility Maintenance

- Surface disturbance could be inconsistent with other local, state, and federal land use plans.
- Land ownership adjustments could be limited by the project land uses and aboveground facilities. The groundwater development areas could be incompatible with zoning.
- Residences within 1 mile of groundwater development areas could be affected by well, collector pipeline, and distribution power line construction, operation, and maintenance.
- Agricultural lands could be altered by construction or converted to permanent facilities.

Groundwater Pumping

- Groundwater pumping could affect future land ownership uses.
- Groundwater pumping could affect the water available for agricultural irrigation.

Assumptions

Construction and Facility Maintenance

- Identification of the effects on land uses focused on those areas that would be disturbed by construction of facilities or in which land use changes would occur as a result of the proposed project.
- No agricultural lands would be disturbed by construction or converted to permanent facilities.
- Department of Defense lands would not be used for the project.
- Facilities would not be approved in identified ROW exclusion areas. If facilities were approved in these areas, an RMP amendment would be required.

Groundwater Pumping

- Because the exact locations of the wells and associated facilities that would be needed for pumping are unknown at this stage of the project, impact discussions are qualitative and general for effects in Spring, Snake, Cave, Delamar, and Dry Lake valleys.
- Agricultural lands are assumed to be the land use category that would be affected by groundwater drawdown.
- Assumptions about the potential changes in future groundwater availability from groundwater pumping do not incorporate additional assumptions about the effects of climate change because specific long term effects of climate change are not presently known, and the incremental contribution of climate change effects to project effects cannot be reasonably estimated. A general discussion of climate change effects is provided in Section 3.1.3.2, Climate Change Effects to All Other Resources.

Methodology for Analysis

Any potential conflicts or conversion of existing land uses would be identified as an impact. Land use constraints in the Ely and Las Vegas RMPs, as well as other land use planning documents, were used to determine whether the proposed project would comply with existing land use and zoning. Any utilities proposed for ROW avoidance or exclusion areas, as identified through BLM's RMPs, would be considered a change from existing plan requirements and would be identified as an impact. Any utilities constructed outside of designated utility ROWs would be identified where it they occur.

3.8.2.9 Proposed Action

Groundwater Development Area

Land Ownership

The groundwater development areas primarily would encompass lands administered by the BLM (728,977 acres) as well as some private lands (941 acres) as shown in **Table 3.8-12**. No other land owners would be affected by the future development. Future construction includes production wells, collector pipelines, power lines, substations, and pump stations distributed throughout the five groundwater basins (estimated to total 1,459 to 3,338 acres) and would permanently convert these land uses from previously undeveloped areas.

Table 3.8-12 Land Ownership within the Groundwater Development Areas for the Proposed Action and Alternatives A through C (Acres)

	Basin	BLM	Other Federal Agencies	Private	
				SNWA	Other Private
Proposed Action	Cave Valley	34,787	0	0	0
	Delamar Valley	71,889	0	0	0
	Dry Lake Valley	168,769	0	0	0
	Snake Valley	92,033	0	0	645
	Spring Valley	361,499	0	261	35
	TOTAL	**728,977**	**0**	**261**	**680**

BLM lands available for disposal (shown in **Figure 3.8-2**) primarily are located around existing communities for open space, parks, and community-related development. There are 4,817 acres identified by the BLM for land disposals in Snake Valley near the community of Baker and 106 acres in Spring Valley within the groundwater development areas. Depending on the intended use and placement of facilities in relation to these parcels, lands available for disposal could be affected. These effects are further discussed in Section 3.18 Socioeconomics.

Zoning

No areas in which the construction of the groundwater development areas would conflict with current zoning have been identified.

Residential Lands

Approximately 72 residences were identified within 1 mile of the groundwater development areas. Although these residences would not be directly affected by the construction on adjacent lands, they could be indirectly affected by well, collector pipeline, and distribution power line construction, operation, and maintenance. These effects are further discussed in Section 3.18, Socioeconomics.

Agricultural Lands

A total of 27 agricultural acres are encompassed by the groundwater development areas in Snake and Spring valleys (22 acres and 5 acres, respectively), of which only the 5 acres in Spring Valley are owned by SNWA. However, it is assumed that no agricultural lands would be disturbed by construction or converted to permanent facilities.

Utility Corridors

The majority of the groundwater development areas fall outside designated utility corridors. Siting utilities outside designated corridors is reviewed on a case-by-case basis and would require a ROW permit from the BLM-authorized official.

Right-of-way Exclusion and Avoidance Areas

Approval of groundwater development construction in three ROW avoidance areas—the Swamp Cedar, Baking Powder Flat, and Baker Archaeological Site ACECs—is subject to BLM approval depending on whether the uses are

consistent with the special designation associated with the area (analyzed in Section 3.14). If facilities are determined to be inconsistent with the area designation, possible mitigation or relocation to outside of these areas may be required.

Conclusion. Future construction includes production wells, collector pipelines, power lines, substations, and pump stations distributed throughout the five groundwater basins (estimated to total 1,459 to 3,338 acres) and would permanently convert these land uses from previously undeveloped areas. The groundwater development areas would primarily encompass lands administered by the BLM (728,977 acres) as well as some private lands (941 acres). There are 4,817 acres identified by the BLM for land disposals in Snake Valley near the community of Baker and 106 acres in Spring Valley within the groundwater development areas. Approximately 72 residences were identified within 1 mile of the groundwater development areas. Effects of the groundwater development areas on land disposals and residences are further discussed in Section 3.18 Socioeconomics. Although 27 acres of agricultural lands are encompassed by the groundwater development areas in Snake and Spring valleys (22 acres and 5 acres, respectively), it is assumed that no agricultural lands would be disturbed by construction or converted to permanent facilities. Construction of ROWs outside of approved utility corridors would extend disturbance outside the corridors specified in RMPs for the area. Three ROW avoidance areas would be affected subject to BLM approval.

Proposed mitigation measures:

Potential mitigation measures for impacts to residences and lands available for disposal are discussed in Section 3.18 Socioeconomics.

Residual impacts include:

- The residual impacts from the construction, operation, and maintenance of the groundwater development areas would be the permanent conversion of land, estimated to be between 1,459 and 3,338 acres, from undeveloped to developed uses.

Groundwater Pumping

Impacts to Public Lands Available for Disposal

Groundwater pumping would result in the drawdown of groundwater levels. Public lands that are available for disposal might be less desirable for other land uses if they were within the 10-foot drawdown areas, as water and vegetation resources in some areas could be altered over time as discussed in Section 3.3 Water Resources and Section 3.5, Vegetation. While these disposal areas may be less desirable for parks, open space, or agriculture, other community uses such as active recreation or industrial uses would still be compatible in these areas if acquisition of these lands is pursued. Therefore, while these lands may be less desirable for some uses, the potential future disposal of these lands would not be precluded. Under the Proposed Action, approximately 4,926 acres of public land that are available for disposal would be affected by the drawdown of groundwater levels at full build out plus 75 years, and 5,399 acres would be affected at full build out plus 200 years. **Table 3.8-13** summarizes drawdown impacts to public lands available for disposal.

Table 3.8-13 Potential Impacts to Lands Available for Disposal for Proposed Action Drawdown (Acres)

Basin	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200 Years
Panaca Valley	0	0	473
Snake Valley	0	4,819	4,819
Spring Valley	0	107	107
TOTAL	**0**	**4,926**	**5,399**

Impacts to Private Agricultural Lands

The character of private agricultural lands in the 10-foot drawdown areas could be changed by the lower groundwater levels. **Table 3.8-14** summarizes acres of private agricultural lands that could be affected by the drawdown. Effects to private agricultural lands are further discussed in Socioeconomics, Section 3.18.

Table 3.8-14 Potential Impacts to Private Agricultural Lands for Proposed Action Drawdown (Acres)

Basin	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200 Years
Lower Meadow Valley Wash	0	0	11
Snake Valley	0	11,086	12,012
Spring Valley	1,206	4,706	5,180
Total	**1,206**	**15,792**	**17,203**

Conclusion. Approximately 4,926 acres of public land available for disposal would be affected by the drawdown of groundwater levels at full build out plus 75 years, and 5,399 acres would be affected at full build out plus 200 years. Approximately 1,206 acres of private agricultural land would be affected by the drawdown of groundwater levels at full build out, 15,792 acres at full build out plus 75 years, and 17,203 acres at full build out plus 200 years. This may reduce the value of lands for disposal and agricultural uses, which is discussed further in Section 3.18 Socioeconomics.

Proposed mitigation measures:

None.

Residual impacts include:

- Drawdown of groundwater levels would affect public lands available for disposal and private agricultural lands. This may reduce the value of lands for disposal and agricultural uses, which is discussed further in Section 3.18 Socioeconomics.

3.8.2.10 Alternatives A through E

Groundwater Development Area

The impacts to land use that could result from construction and facility maintenance of groundwater development areas for Alternatives A through E are summarized in **Table 3.8-15**.

Table 3.8-15 Summary of Land Use Impacts, Proposed Mitigation, and Residual Effects for Alternatives A through E

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Construction and Facility Maintenance				
Same as the Proposed Action.	Less total acreage, as compared to the Proposed Action, would be affected by surface disturbance under Alternative B. Less BLM-administered land (63,174 acres) and more private lands (1,790 acres) would be affected.	Same as the Proposed Action.	Alternative D would disturb less area and different corridors than the Proposed Action. In addition, impacts to land in Snake Valley and the White County portion of Spring Valley would be eliminated. Less BLM-administered land (335,193 acres) and no private lands would be affected.	Similar to the Proposed Action, except impacts to land in Snake Valley would be eliminated. Less BLM-administered land (636,944 acres) and less private lands (296 acres) would be affected.
Operation and Maintenance				
Same as the Proposed Action.	While the affected area would be reduced under Alternative B, the effects of operation and maintenance activities on land use would be the same as described for Alternative A.	Same as the Proposed Action.	While the affected area would be reduced under Alternative D, the effects of operation and maintenance activities on land use would be the same as described for Alternative A.	Same as the Proposed Action, except impacts to land use in Snake Valley would be eliminated.
Additional Mitigation				
Same as the Proposed Action.	Same as the Proposed Action.	Same as the Proposed Action.	Same as the Proposed Action.	Same as the Proposed Action.
Conclusion				
This alternative would have similar impacts compared to the Proposed Action.	This alternative would have fewer impacts compared to the Proposed Action. Less BLM-administered land and more private lands would be affected due to concentrated development.	This alternative would have similar impacts compared to the Proposed Action.	This alternative would have fewer impacts compared to the Proposed Action. Impacts to land use in Snake Valley and the White County portion of Spring Valley would be eliminated.	This alternative would have fewer impacts compared to the Proposed Action. Impacts to land use in Snake Valley would be eliminated.
Residual Impacts				
Same as the Proposed Action.	Less than the Proposed Action.	Same as the Proposed Action.	Less than the Proposed Action.	Less than the Proposed Action.

Groundwater Pumping

The impacts of groundwater pumping on land use for Alternatives A through E are summarized in **Table 3.8-16**.

Table 3.8-16 Summary of Impacts of Pumping on Land Use for Alternatives A through E

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Potential Impacts of Pumping				
Impacts to lands available for disposal would be the same as the Proposed Action. Fewer acres of private agricultural land would be affected: 332 acres at full build out, 14,605 acres at full build out plus 75 years, and 15,021 acres at full build out plus 200 years.	Acreage of lands available for disposal under full build out and full build out plus 75 years would be the same as the Proposed Action. Acreage would increase at full build out plus 200 years to 7,255 acres. More acres of private agricultural land would be affected at full build out (1,300 acres), fewer acres at full build out plus 75 years (13,865 acres), and more acres (17,522 acres) at full build out plus 200 years.	Impacts to lands available for disposal would be the same as the Proposed Action. Fewer acres of private agricultural land would be affected: 332 acres at full build out, 12,359 acres at full build out plus 75 years, and 13,749 acres at full build out plus 200 years.	Impacts to lands available for disposal would be less than the Proposed Action. Pumping effects would only occur to 915 acres after full build out. Fewer acres of private agricultural land would be affected: no acres at full build out, 299 acres at full build out plus 75 years, and 7,320 acres at full build out plus 200 years.	Impacts to lands available for disposal would be less than the Proposed Action. Pumping effects would only occur to 107 acres at full build out plus 75 years and full build out plus 200 years. Fewer acres of private agricultural land would be affected: 332 acres at full build out, 3,635 acres at full build out plus 75 years, and 3,791 acres at full build out plus 200 years.
Additional Mitigation				
Same as the Proposed Action.	Same as the Proposed Action.	Same as the Proposed Action.	Same as the Proposed Action.	Same as the Proposed Action.
Residual Impacts				
4,926 acres of lands available for disposal may be affected. Fewer acres of private agricultural land would be affected.	7,255 acres of lands available for disposal may be affected. Slightly more private agricultural lands would be affected at full build out.	4,926 acres of lands available for disposal may be affected. Fewer acres of private agricultural land would be affected.	915 acres of lands available for disposal may be affected. Fewer acres of private agricultural land would be affected.	107 acres of lands available for disposal may be affected. Fewer acres of private agricultural land would be affected.

3.8.2.11 No Action

For the No Action alternative, the ROWs would not be granted and the project would not be constructed as planned. However, other ongoing projects and activities could continue to impact groundwater levels. Projected drawdown impacts to lands available for disposal are summarized in **Table 3.8-17**. Projected drawdown impacts to private agricultural lands are summarized in **Table 3.8-18**.

Table 3.8-17 Potential Impacts to Lands Available for Disposal for No Action Drawdown (Acres)

Basin	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200 Years
Beryl-Enterprise Area	0	0	21
Clover Valley	2,659	2,659	5,227
Lower Meadow Valley Wash	4,583	5,176	5,176
Panaca Valley	2,955	10,871	14,180
Patterson Valley	809	10,689	10,812
Snake Valley	0	0	0
Spring Valley	0	0	0
White River Valley	0	216	216
Total	**11,006**	**29,612**	**35,632**

Note: Due to rounding, the totals may be different than the sum of individual acres.

Table 3.8-18 Potential Impacts to Private Agricultural Lands for No Action Drawdown (Acres)

Basin	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200 Years
Lower Meadow Valley Wash	282	282	282
Snake Valley	0	0	0
Spring Valley	748	1,654	1,691
Other Valleys	4,316	12,267	12,940
Total	**5,346**	**14,204**	**14,913**

Note: Due to rounding, the totals may be different than the sum of individual acres.

3.8.3 Cumulative Impacts

3.8.3.1 Issues

Groundwater Field Development

Construction and Facility Maintenance

- Surface disturbance could be inconsistent with other local, state, and federal land use plans.
- Land ownership adjustments could be limited by the project land uses and aboveground facilities. Residences within 1 mile of development areas could be affected by construction, operation, and maintenance.
- Agricultural lands could be altered by construction or converted to permanent facilities.
- Surface disturbance could occur outside of areas determined compatible for development, including utility corridors, and may encroach on ROW exclusion or avoidance areas.

Groundwater Pumping

- Groundwater pumping could affect future land ownership uses.
- Groundwater pumping could affect the water that is available for agricultural irrigation.

3.8.3.2 Assumptions

Groundwater Field Development

Construction and Facility Maintenance

- Identification of the effects on land uses focused on those areas that would be disturbed by construction of facilities or in which land use changes would occur as a result of the proposed project.
- No agricultural lands would be disturbed by construction or converted to permanent facilities.
- Department of Defense lands would not be used for the project.
- Facilities would not be approved in identified ROW exclusion areas. If facilities were approved in these areas, an RMP amendment would be required.

Groundwater Pumping

- Because the exact locations of the wells and associated facilities that would be needed for pumping are unknown at this stage of the project, impact discussions are qualitative and general for effects in Cave, Delamar, Dry Lake, Snake, and Spring Valleys.
- Agricultural lands are assumed to be the land use category that would be affected by groundwater drawdown.

3.8.3.3 Methodology for Analysis

The cumulative impacts of construction of the GWD Project should take into account all surface-altering actions that would be likely to occur and that might affect current and future uses of the land in the project region. Using the impact analysis for the ROWs and groundwater development areas, impacts from other RFFAs identified in Chapter 2 were considered. Any potential conflicts or conversion of existing land uses would be identified as an impact. Acreage of surface disturbance for RFFAs was estimated using best available information.

3.8.3.4 No Action

For the No Action alternative, the ROWs would not be granted and the project would not be constructed as planned. However, other planned projects and activities would occur that would draw down groundwater levels. Cumulative drawdown impacts to lands available for disposal are summarized in **Table 3.8-19**. Projected drawdown impacts to private agricultural lands are summarized in **Table 3.8-20**.

Table 3.8-19 Lands Available for Disposal Affected by 10-foot Groundwater Drawdown from Pumping of all Existing and RFFA Projects – No Action (Acres)

Basin	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200 Years
Beryl-Enterprise Area	0	21	21
Clover Valley	3,635	9,956	10,047
Lower Meadow Valley Wash	5,036	5,176	5,176
Panaca Valley	6,218	16,435	20,156
Patterson Valley	809	10,689	10,812
Snake Valley	0	0	0
Spring Valley	0	0	0
White River Valley	0	216	216
Total	**15,698**	**42,493**	**46,428**

Table 3.8-20 Private Agricultural Lands Affected by 10-foot Groundwater Drawdown from Pumping of all Existing and RFFA Projects – No Action (Acres)

Basin	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200 Years
Lower Meadow Valley Wash	282	283	391
Snake Valley	0	0	0
Spring Valley	748	1,654	1,691
Other Valleys	8,361	15,984	17,976
Total	**9,391**	**17,921**	**20,058**

3.8.3.5 Proposed Action

The majority of land use in the project area is undeveloped open land. Projects with a permanent aboveground component, such as buildings, pavement, power poles, or stations, would have more impacts on land use than projects with an underground component because the aboveground component could preclude use of the land for the foreseeable future. Underground components of any project would temporarily preclude use of the land during construction, but in many cases, land could revert to its preconstruction use after the facilities are built. So long as the construction of new facilities complies with existing land use plans, no additional impacts to land use are anticipated. Depending on the acreage of surface disturbance and the timing of construction, the other surface-disturbing activities that are necessary to implement the RFFAs could result in additional acreage of impacts, similar to those discussed under the Proposed Action.

The land within the 10-foot groundwater-drawdown areas have been estimated from the implementation of all reasonably foreseeable pumping projects in the region (discussed in Chapter 2). The acreage of public lands available for disposal that could be affected by groundwater drawdown is listed in **Table 3.8-21**. While these disposal areas may be less desirable for parks, open space, or agriculture, other community uses such as active recreation or industrial uses would still be compatible in these areas if acquisition of these lands is pursued. Therefore, while these lands may be less desirable for some uses, the potential future disposal of these lands would not be precluded. The acreage of private agricultural lands that could be affected by groundwater drawdown is listed in **Table 3.8-22**. This may reduce the value of lands for disposal and agricultural uses, which is discussed further in Section 3.18, Socioeconomics.

Table 3.8-21 Lands Available for Disposal (Acres) Potentially Affected by Groundwater Pumping (10-foot Drawdown Contour) for No Action Cumulative, Proposed Action, and Cumulative with the Proposed Action[1]

Affected Valley	Cumulative with No Action			Proposed Action			Cumulative with Proposed Action		
	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200 Years	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200 Years	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200Years
Clover	3,635	9,956	10,047	0	0	0	3,635	9,956	10,047
Lower Meadow Valley Wash	5,036	5,176	5,176	0	0	0	5,036	5,176	5,176
Panaca	6,218	16,435	20,156	0	0	473	6,218	16,682	20,403
Patterson	809	10,689	10,812	0	0	0	809	10,689	10,812
Snake	0	0	0	0	4,819	4,819	0	4,819	4,819
Spring	0	0	0	0	107	107	107	107	107
White River	0	216	216	0	0	0	0	216	216
Total	**15,698**	**42,472**	**46,407**	**0**	**4,926**	**5,399**	**15,804**	**47,645**	**51,580**

[1] Acreages are based on drawdown models outputs and are not additive. Information presented in approximate and intended to display incremental effects of the project in relation to other project in the region.

Table 3.8-22 Private Agricultural Lands (Acres) Potentially Affected by Groundwater Pumping (10-foot Drawdown Contour) for No Action Cumulative, Proposed Action, and Cumulative with the Proposed Action[1]

Affected Valley	Cumulative with No Action			Proposed Action			Cumulative with Proposed Action		
	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200 Years	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200 Years	Full Build Out	Full Build Out Plus 75 Years	Full Build Out Plus 200Years
Lower Meadow Valley Wash	282	283	391	0	0	11	282	293	400
Snake	0	0	0	0	11,086	12,012	0	11,089	12,199
Spring	748	1,654	1,691	1,206	4,706	5,180	3,719	4,817	5,606
Other Valleys	8,361	15,984	17,976	0	0	0	8,361	15,984	18,027
Total	**9,391**	**17,921**	**20,058**	**1,206**	**15,792**	**17,203**	**12,362**	**32,183**	**36,232**

[1] Acreages are based on drawdown models outputs and are not additive. Information presented in approximate and intended to display incremental effects of the project in relation to other project in the region.

Conclusion. Cumulatively, approximately 15,804 acres of public land available for disposal would be affected by the drawdown of groundwater levels at full build out, 47,645 acres at full build out plus 75 years, and 51,580 acres at full build out plus 200 years. The Proposed Action would contribute all of the incremental effects on disposal lands in Snake and Spring valleys for cumulative pumping at full build out plus 75 years and full build out plus 200 years. This alternative also would contribute approximately 1 percent of the cumulative impacts for disposal lands in Panaca Valley at full build out plus 200 years. No Action pumping contributes all of the cumulative effects on disposal lands in Clover, Lower Meadow Valley Wash, Patterson, and White River valleys. Approximately 12,362 acres of private agricultural land would be affected by the drawdown of groundwater levels at full build out, 32,183 acres would be affected at full build out plus 75 years, and 36,232 acres would be affected at full build out plus 200 years. The Proposed Action also would contribute all of the incremental effects on private agricultural lands under cumulative pumping in Snake Valley at full build out plus 75 years and full build out plus 200 years. This alternative would contribute between 32 and 98 percent of the cumulative effects on private agricultural lands in Spring Valley for the three model periods. In Lower Meadow Wash, Proposed Action pumping would contribute approximately 3 percent of the cumulative effects on private agricultural land. This may reduce the value of lands for disposal and agricultural uses, which is discussed further in Section 3.18, Socioeconomics.

Proposed mitigation measures:

Potential mitigation measures for impacts to residences and lands available for disposal are discussed in Section 3.18, Socioeconomics.

Residual impacts include:

- Drawdown from the project in combination with other existing actions and RFFAs would affect public lands available for disposal and private agricultural lands. This may reduce the value of lands for disposal and agricultural uses, which is discussed further in Section 3.18, Socioeconomics.

3.8.3.6 Alternatives A through E

Table 3.8-19 summarizes the impacts arising from construction, operation, and maintenance of the groundwater development areas for Alternatives A through E, as compared to the Proposed Action.

Table 3.8-23 Summary of Land Use Impacts and Lands Affected by 10-Foot Groundwater Drawdown from Pumping of All Existing Projects, RFFAs, and Alternatives A through E

Alternative A	Alternative B	Alternative C	Alternative D	Alternative E
Potential Cumulative Impacts of Pumping				
Impacts to lands available for disposal would be the same as the Proposed Action. Fewer acres of private agricultural land would be affected: 11,588 acres at full build out, 31,220 acres at full build out plus 75 years, and 33,476 acres at full build out plus 200 years. The patterns of incremental contribution from Alternative A on overall cumulative effects on land use parameters would be the same as the Proposed Action. The alternative would contribute effects in Snake, Spring, Panaca, and Lower Meadow Valley Wash. The magnitude of contribution would be lower than the Proposed Action.	Impacts to lands available for disposal would be the same as the Proposed Action. Acreage affected at full build out plus 200 years would increase by 247 acres. Fewer acres of private agricultural land would be affected: 11,999 acres at full build out, 30,449 acres at full build out plus 75 years, and 33,476 acres at full build out plus 200 years. The patterns of incremental contribution from Alternative B on overall cumulative effects on land use parameters would be the same as the Proposed Acton. The alternative would contribute effects to the same basins as noted for the Proposed Action. The magnitude of incremental effects is noted in the Proposed Action, but impacts to private agricultural lands would be lower than the Proposed Action.	Impacts to lands available for disposal would be the same as the Proposed Action. Fewer acres of private agricultural land would be affected: 11,588 acres at full build out, 29,891 acres at full build out plus 75 years, and 32,697 acres at full build out plus 200 years. The patterns of incremental contribution from Alternative C on overall cumulative effects on land use parameters would be the same as the Proposed Action. The alternative would contribute effects in the same basins as noted for the Proposed Action. The magnitude of incremental effects is noted in the Proposed Action, but impacts to private agricultural lands would be lower than the Proposed Action.	Impacts to lands available for disposal would be similar to, but less than the Proposed Action: 2,961 fewer acres at full build out, 5,469 fewer acres at full build out plus 75 years, and 4,838 fewer acres at full build out plus 200 years. Fewer acres of private agricultural land would be affected: 9,043 acres at full build out, 19,228 acres at full build out plus 75 years, and 23,784 acres at full build out plus 200 years. Patterns of incremental contributions and affected basins were the same as the Proposed Action. The magnitude of incremental effects from Alternative D would be less than the Proposed Action.	Impacts to lands available for disposal would be similar to, but less than the Proposed Action: 4,819 fewer acres at full build out plus 75 years and 4,820 fewer acres at full build out plus 200 years. Fewer acres of private agricultural land would be affected: 11,588 acres at full build out, 20,178 acres at full build out plus 75 years, and 22,285 acres at full build out plus 200 years. Patterns of incremental contributions and affected basins would be the same as the Proposed Action except for no impacts to disposal lands and private agricultural lands in Snake Valley. The magnitude of incremental effects from Alternative E would be less than the Proposed Action.
Additional Mitigation				
Same as the Proposed Action.	Same as the Proposed Action.	Same as the Proposed Action.	Same as the Proposed Action.	Same as the Proposed Action.
Residual Impacts				
At full build out, <1 percent more public lands available for disposal would be affected than No Action. At full build out plus 75 years and full build out plus 200 years, 8 percent more public lands available for disposal would be affected than No Action. Fewer acres of private agricultural land would be affected than the Proposed Action.	At full build out, <1 percent more public lands available for disposal would be affected than No Action. At full build out plus 75 years and full build out plus 200 years, 9 percent more public lands available for disposal would be affected than No Action. Fewer acres of private agricultural land would be affected than the Proposed Action.	At full build out, <1 percent more public lands available for disposal would be affected than No Action. At full build out plus 75 years and full build out plus 200 years, 8 percent more public lands available for disposal would be affected than No Action. Fewer acres of private agricultural land would be affected than the Proposed Action.	At full build out, 22 percent less public lands available for disposal would be affected than No Action. At full build out plus 75 years, 0.7 percent less public lands available for disposal would be affected than No Action. At full build out plus 200 years, 0.2 percent more public lands available for disposal would be affected than No Action. Fewer acres of private agricultural land would be affected than the Proposed Action.	At full build out, full build out plus 75 years, and full build out plus 200 years, <1 percent more public lands available for disposal would be affected than No Action. Fewer acres of private agricultural land would be affected than the Proposed Action.