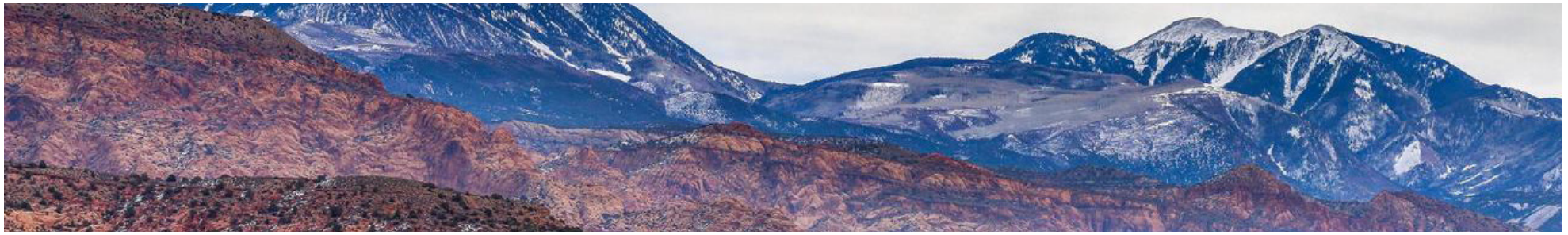
Spanish Valley

PC Zone Application and Preliminary Community Structure Plan



December 20, 2019

School and Institutional Trust Lands Administration
State of Utah

LANDMARK DESIGN
TEAM

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Property Owner and Applicant:
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1.0 - Site Characteristics

The School and Institutional Trust Lands Administration (SITLA) is considering developing approximately 5,245 acres in unincorporated San Juan County in the Spanish Valley immediately south of the northern county line near Moab. This project is currently known as Spanish Valley. The proposed development area is entirely owned by SITLA and is planned to be served by the Spanish Valley Water & Sewer Improvement District (SVWSID).

Existing Land Use and Form

The Spanish Valley is surrounded by large areas of open land that contribute to the broad views and unique vistas found here. Such areas also provide wildlife habitat and places to engage in outdoor activities and recreation. Ken's Lake is a reservoir located just east of the project area and is managed by the Bureau of Land Management (BLM). The area includes a campground with more than three miles of hiking trails. Fishing in the reservoir is popular, although boating is limited to non-motorized craft. Beyond the project area, much of land is managed by the BLM.

Geology and Landform

The Spanish Valley is a northwest-southeast trending valley that merges with the Colorado River north of Moab. The main geologic features in the area are the Glen Canyon Group sandstones and the La Sal Mountains. The Glen Canyon Group rocks form the steep walls on both sides of the Spanish Valley, as well as the mesas and dendritic canyons for which the area is famous.

Precipitation and Groundwater Recharge

The Spanish Valley averages 15 inches of precipitation annually. Most of this precipitation is lost to evapotranspiration, with only 0.25 inches infiltrating down and recharging the groundwater. Summer precipitation is usually in the form of thunderstorms, which are localized, intense and short-lived. Winter precipitation is less localized, less intense and of longer duration. The gradual melting of winter snow allows more time for precipitation to infiltrate and recharge the groundwater, especially during spring melting of the winter snowpack at higher altitudes.

The main source of groundwater recharge in the Spanish Valley occurs in the La Sal Mountains to the east. The slopes of the mountains are covered in areas by talus, which readily absorbs snowmelt runoff and precipitation. Several springs discharge from the sides of Spanish Valley, especially from the eastern side.

Drainage

PACK CREEK

Pack Creek is an intermittent stream through the study reach with flowing water occurring during periods of snow melt and rainfall events. The creek bed is dry much of the year (see **Figure 1**). The water table is deep in the valley floor and the stream channel lacks riparian vegetation. It flows through the study area and conveys storm runoff to Mill Creek which flows to the Colorado River. The tributary drainage area to Pack Creek in San Juan County is shown on **Figure 2**. Pack Creek is a critical resource for the project area and provides a natural storm drainage outlet for Spanish Valley. Pack Creek also represents a flood hazard for portions of Spanish Valley.

Mill Creek and Pack Creek both drain from the mountains east of Spanish Valley and are similar hydrologically. The Grand County Flood Insurance Study (FIS) provides hydrologic information for both creeks. The FIS provides an estimate for the 1 percent annual exceedance event (100-Year flood) for Pack Creek including the methodology used to arrive at the estimated flow rate. The FIS explains that historically Mill Creek had a USGS stream gage that recorded streamflow and peak streamflow. The period of record included 1915-1917 and 1975 to 1993 which provided about 20 years of peak streamflow data. A statistical analysis using the Army Corps of Engineers program HEC-FIA and the available peak streamflow data was used to estimate the 100-year flood for Mill Creek. Stream gage records for Pack Creek were very limited (about 5 years of records) and therefore a combination of regional regression equations and the results from the Mill Creek analysis were used to estimate the 100-year flood for Pack Creek.

The Flood Insurance Study (FIS) defines a 100-year flowrate for Pack Creek at Mill Creek Drive of 7,120 cfs which includes a drainage area of 57.4 square miles. The Pack Creek drainage area tributary to the SITLA lands in Spanish Valley is about 43.8 square miles. Assuming a linear relationship between drainage area and peak flow, the estimated peak flow on Pack Creek for a drainage area of 43.8 square miles is 5,430 cfs.

To develop a design 100-year flood hydrograph for Pack Creek and tributaries, a storm runoff model was prepared. An HEC-HMS rainfall runoff model using the SCS curve number approach was developed using design precipitation estimates from NOAA Atlas 14. Curve numbers were estimated based on available soil data and land cover conditions observed during a field visit. The watershed was then divided into subbasins of similar hydrologic characteristics (see **Figure 2**). The initial model run indicated a flowrate below the anticipated 5,430 cfs. The curve number for each subbasin was increased by 1 (for example a CN of 71 was raised to 72) and rerun and the model produced a peak flowrate of 5,200 cfs. The difference between the computed peak

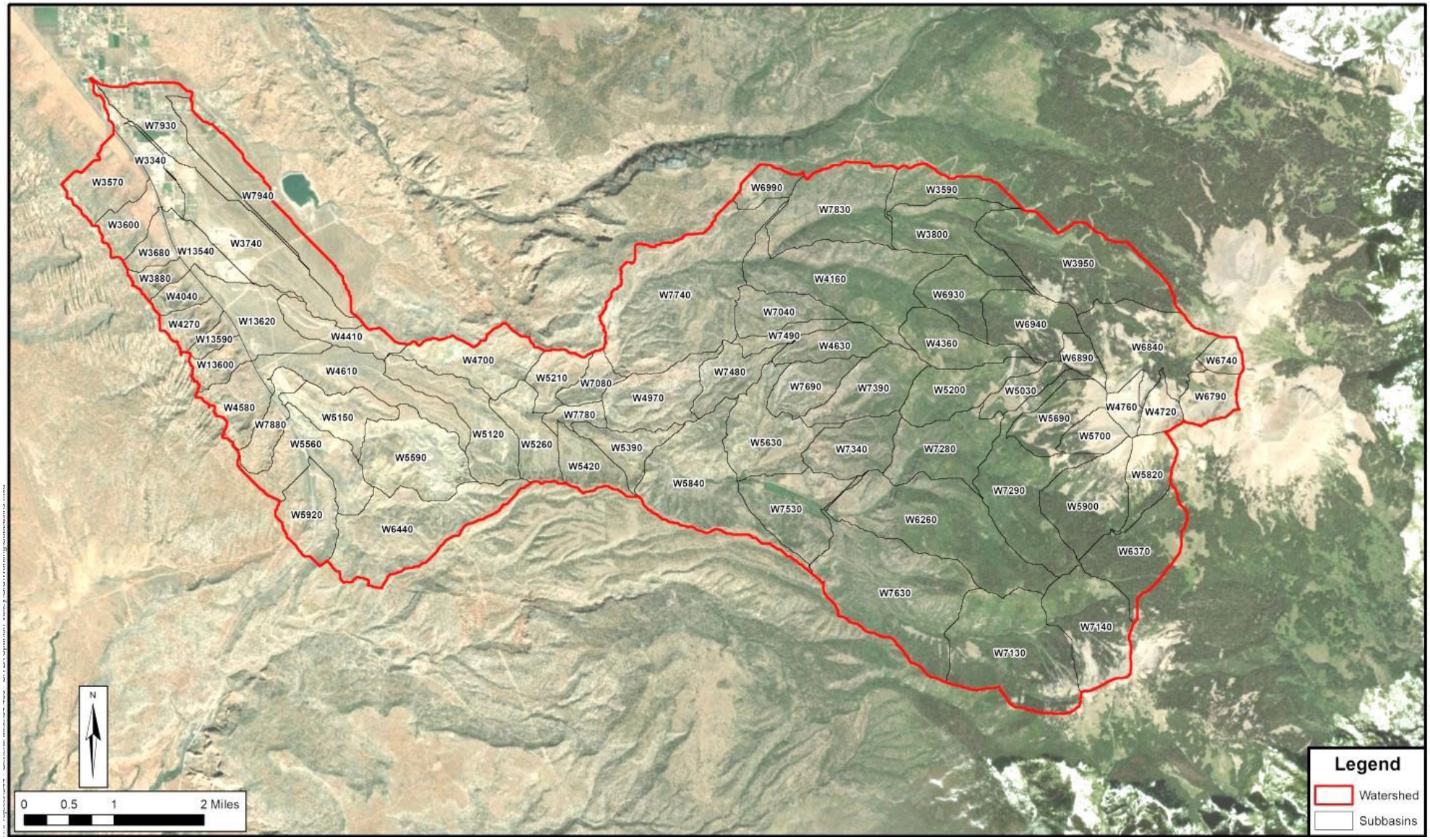
Figure 1 – Pack Creek Channel in Valley Floor

flowrate and the estimated peak flowrate based on the adjusted FIS flowrates for Pack Creek was less than 5% and was considered an adequate calibration for the purposes of this project. The computed outflow hydrograph was then used as a boundary condition in the hydraulic model used to estimate the 100-year floodplain.

Pack Creek poses a flood hazard risk to a significant portion of the San Juan County Spanish Valley floor. Results of a 2-dimensional flood analysis of the project area are presented on **Figure 3**. The braided nature of the channel network in the southern end of the valley is evidence of an alluvial fan. Above the valley floor, Pack Creek flood flows are confined in mountain ravines which have high gradients and convey large quantities of eroded sand, rock, and boulders out onto the valley floor. On the valley floor land slopes are reduced and flood flow velocities are reduced depositing sediment and debris, forming a fan shape. The erosion/deposition process results in channel braiding where channels are alternately cut and filled with sediment.

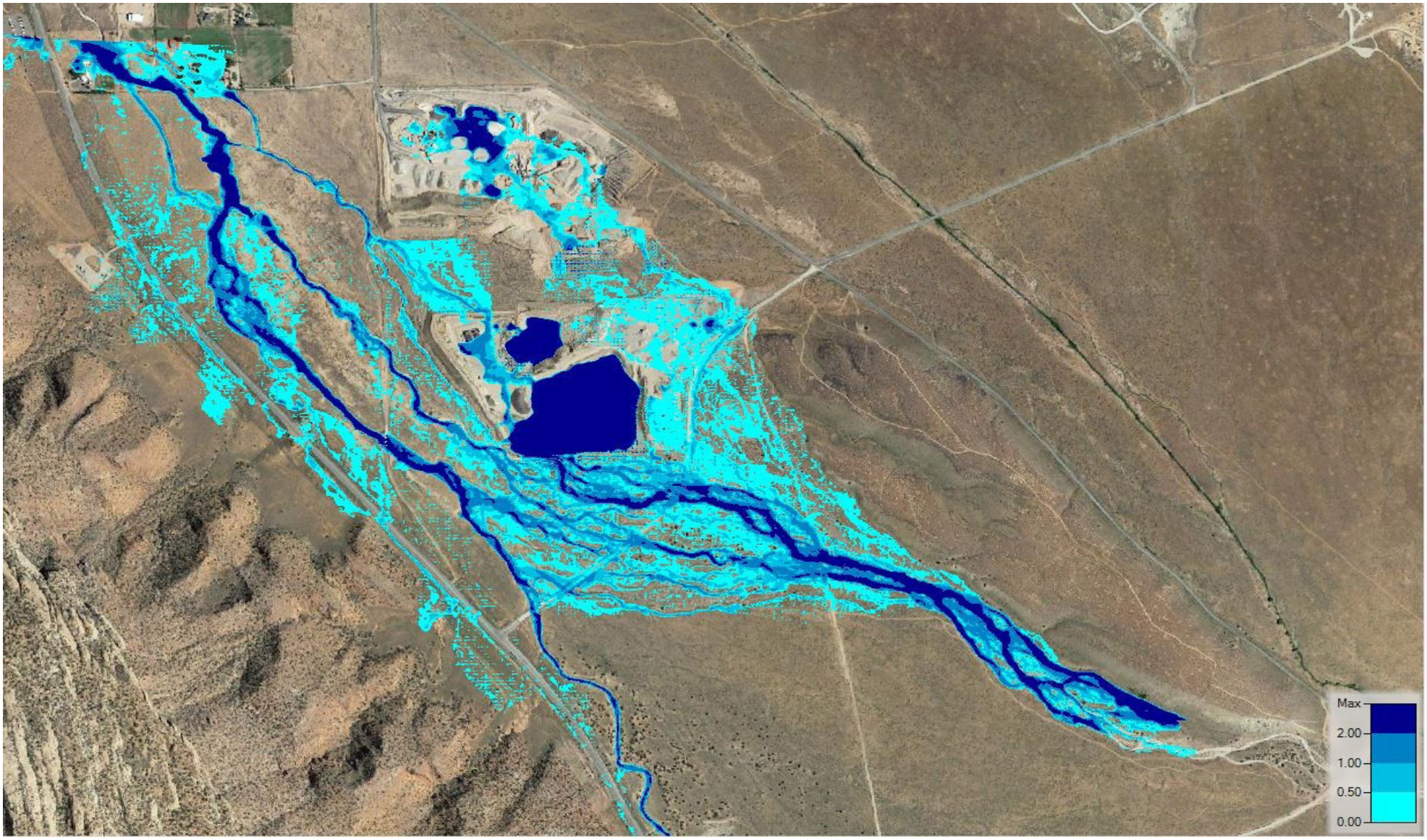
A majority of the San Juan County Spanish Valley floor is mapped by the Natural Resource Conservation Service as hydrologic soil group A with high infiltration rates (see **Figure 4**).

Figure 2 – Pack Creek Tributary Area



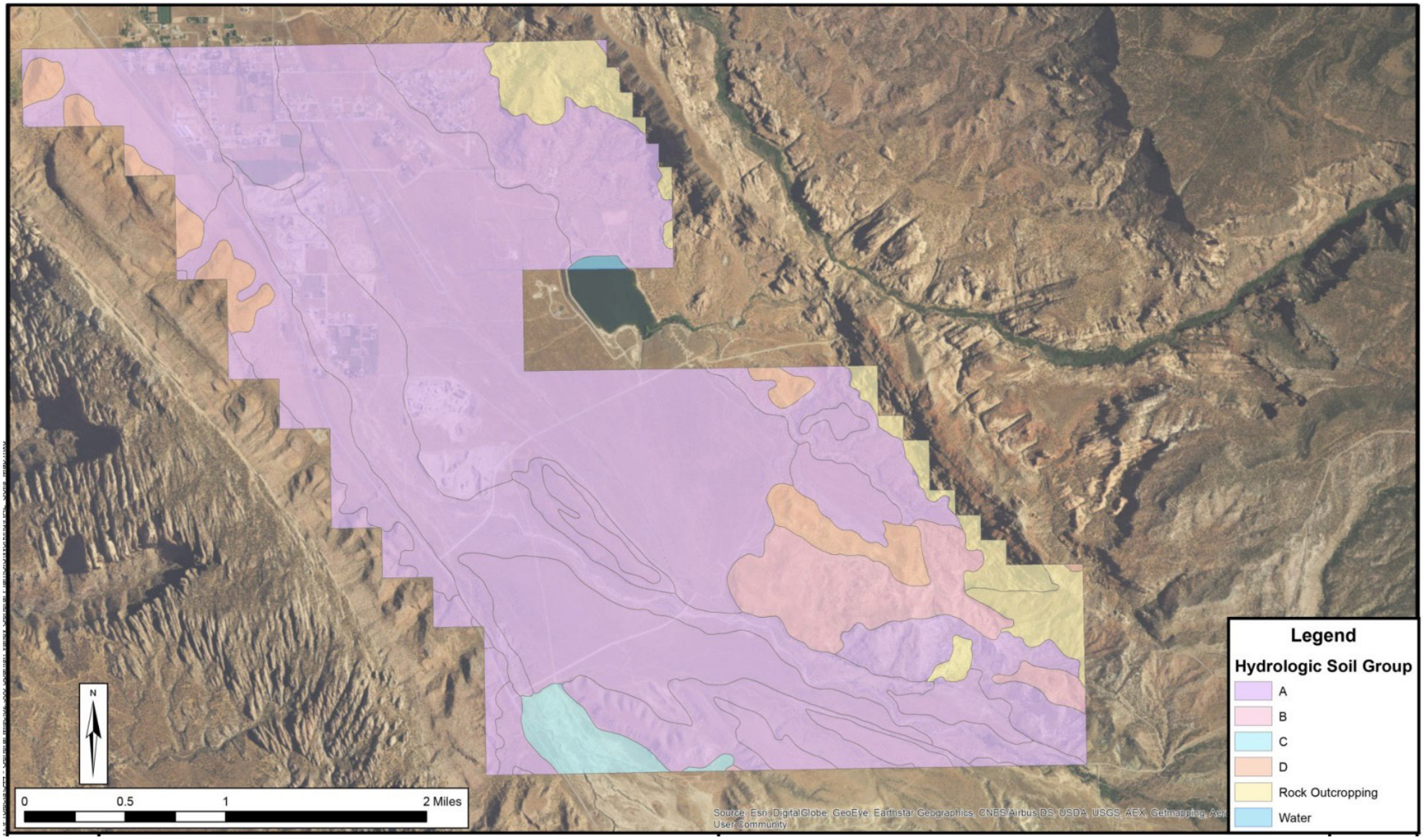
Prepared by Hansen, Allen & Luce

Figure 3 – Pack Creek Flood Analysis showing depth below surface in meters



Prepared by Hansen, Allen & Luce

Figure 4 – Hydrologic Soil Groups



Source: Natural Resource Conservation Service

2.0 - Legal Description

Legal Description of the Area to Be Managed Under PC Zone Ordinance

Aliquot parts of unsurveyed SITLA property with some portions of the property having been assigned parcel numbers:

T26S, R22E, SLB&M

Section 34:	NE4SE4 and the portion of SE4NE4 located in San Juan County – approximately S2 of each aliquot part (approximately 62.13 acres)
Section 35:	N2SW4, SE4SW4 and the portion of SW4NW4 located in San Juan County – approximately S2 of each aliquot part (approximately 142.13 acres)
Section 36:	The portion of SE4NW4 and S2NE4 located in San Juan County – approximately S2 of each aliquot part (approximately 66.39 acres)

T26S, R23E, SLB&M

Section 31:	Lots 3, 4, E2SW4, W2SE4, W2SW4NE4SE4, W2SE4SE4, W2SE4SE4SE4 and the portion of Lot 2, SE4NW4, W2SW4NE4, and W2E2SW4NE4 located in San Juan County – approximately S2 of each aliquot part (approximately 333.64 acres)

T27S, R22E, SLB&M

Section 1:	Lot 2, Lot 3, SW4NE4, W2SE4NE4, SE4 (approximately 306.64 acres) All of Parcel No. 27S22E010600
Section 2:	Lot 2, S2NE4, E2SE4 (approximately 203.42 acres) Includes Parcel No. 27S22E010600 (Lot 2 and SE4NE4) and portion of Parcel No. 27S22E022400 (E2SE4 and SW4NE4)
Section 12:	NW4NW4, E2NW4, NE4SW4, E2 (approximately 480 acres)
Section 13:	TNE4NE4 (approximately 40 acres)

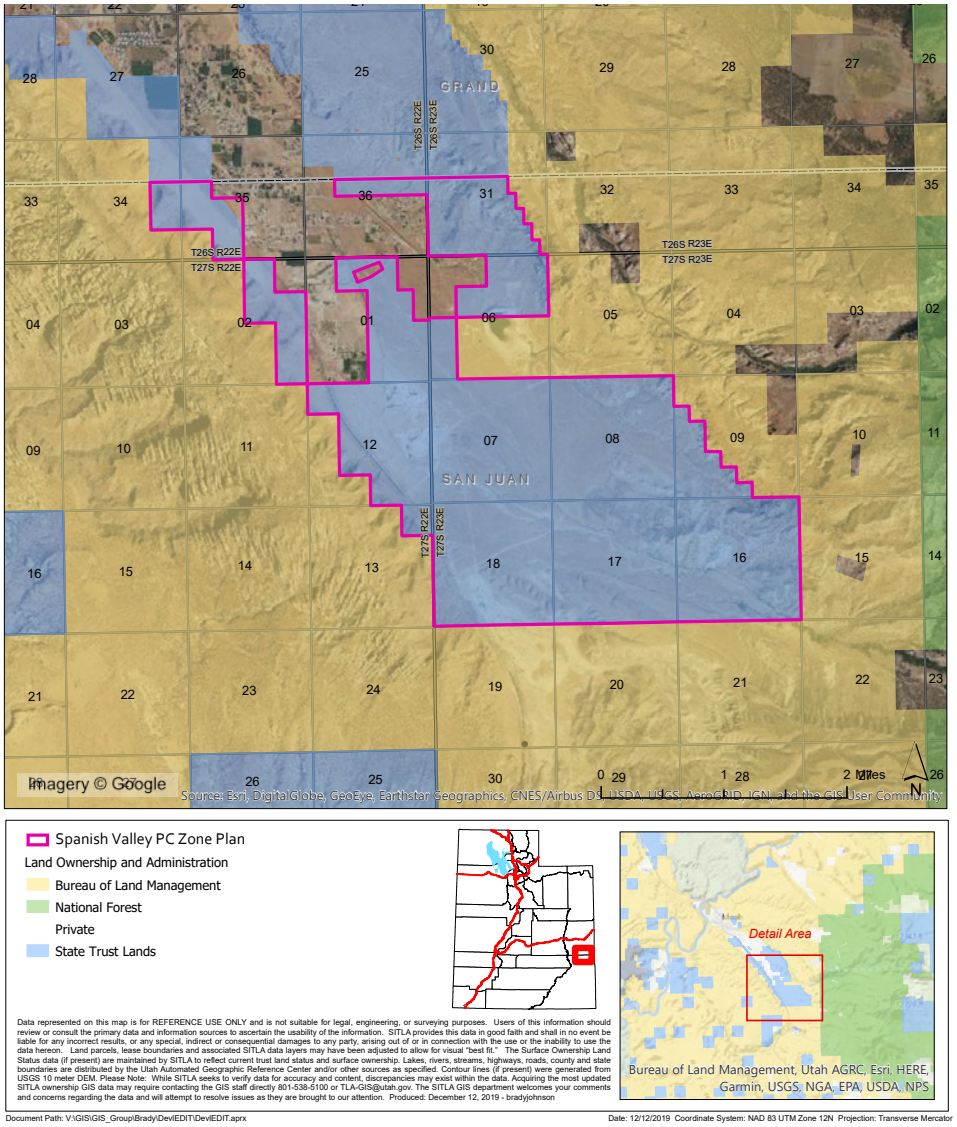
T27S, R23E, SLB&M

Section 6:	Lots 4, 5, 6, and 7, S2NE4, SE4NW4 (approximately 276.31 acres) Includes Parcel No. 27S23E065400 (Lots 4 and 5)
Section 7:	All (approximately 623.12 acres)
Section 8:	All (approximately 640 acres)
Section 9:	W2SW4NW4, SE4SW4NW4, SW4NE4SW4, W2SW4, SE4SW4, SW4SW4SE4 (approximately 170 acres)
Section 16:	All (approximately 641.40 acres)
Section 17:	All (approximately 640 acres)
Section 18:	All (approximately 624.12 acres)

Contains **5,245.45 acres**, more or less.

* Lots 2-3 include 11.82 acres now owned by San Juan County.

Figure 5 – Parcel Map



3.0 - Zoning and Land Use

Existing Zoning

As illustrated in the accompanying diagram (see **Figure 6**), the application area is currently controlled by eight zones in the San Juan County Zoning Ordinance, as follows:

Spanish Valley Residential (SVR)
The Spanish Valley Residential (SVR) District is designed primarily to accommodate residential uses in large lot (one-acre or greater) and smaller lot (1/4 acres up to 1 acre) developments. In addition to the Uses and Lot Design Standards of this section, development in this district shall be in compliance with all other applicable provisions of the San Juan County Land Use Ordinance, and shall promote and protect public health, safety, and welfare.

Planned Community (PC)
The purpose of the Spanish Valley Planned Community (PC) District is to provide a regulatory tool that allows large properties in the San Juan County portion of the Spanish Valley to be developed in accordance with a specific plan. A PC Zone or PC Zones may include residential neighborhoods and subdivisions; neighborhood commercial centers; A PC Zone may include residential neighborhoods and subdivisions; neighborhood commercial centers; flex development areas that may comprise residential, business and highway business, research and educational campuses and facilities depending on the specific type of flex zone (see (Residential, Business and Highway Flex descriptions that follow). The District will also include parks, open space and trails and associated systems, with convenient and well planned roadways, pedestrian accesses and connections. Individual structures within each PC Zone may contain mixed uses. Permitted densities may be higher than those permitted in surrounding districts.

Residential Flex (RF)
These areas are meant to serve as a transition between adjacent residential, commercial and business areas. These areas may include residential neighborhoods and subdivisions; neighborhood commercial centers; business, research and educational campuses; highway commercial and flex development areas; well-planned roadways; and parks and open space with convenient pedestrian access and connections. Individual structures within each PC Zone may contain mixed uses. Permitted densities may be higher than those permitted in surrounding districts.

Business Flex (BF)
A wide-range of business operations shall be the primary uses. These shall include business parks, large-format commercial and office uses, ancillary and support uses and smaller-scale commercial uses as appropriate. A range of residential uses, including employee housing, short-term visitor housing and similar specialty residential uses may be included as part of large-scale, coordinated and flexible business-centric developments within the BF Zone.

Highway Flex (HF)
The wide range of commercial uses as detailed in the Highway Commercial Zone shall apply. These uses shall primarily be developed as part of large-scale, coordinated and flexible commercial-centric developments. A range of specialty residential uses may also be proposed, including employee housing, short-term visitor housing, and similar uses as part of large-scale, coordinated and flexible commercial-centric developments.

Highway Commercial (HC)
A district where highway commercial uses along U.S. Highway 191 are permitted, as supported in the San Juan County Spanish Valley Area Plan (2018) and San Juan County General Plan (2018). Specific uses should include establishments offering goods and services to motorists, and provide for non-pedestrian-oriented retail, wholesale, service and repair activities which do not contribute to the creation of unattractive, congested and unsafe highway conditions, with access provided primarily from driveways linking to east/west arterial roads linked to U.S. Highway 191, from UDOT-approved access driveways on U.S. Highway 191 in the short-term and via anticipated frontage roads along U.S. Highway 191 in the long-term.

Spanish Valley Water Efficient Landscape Requirements
An ordinance establishing minimum water efficient landscape requirements for the non-federal lands in the Spanish Valley within San Juan County. See Land Use Plan on page 28 of the San Juan County Spanish Valley Area Plan (adopted April 17, 2018) for a map and general description. The purpose of this ordinance is to protect and enhance the community's environmental, economic, recreational, and aesthetic resources by reducing water waste and establishing a structure for designing, installing and maintaining water efficient landscapes in the San Juan County Spanish Valley.

Outdoor Lighting and Sign Illumination Standards
An ordinance establishing outdoor lighting and design Illumination standards in order to preserve highly-valued dark skies in the region. The ordinance applies to the non-federal lands located in the Spanish Valley within San Juan County.

Spanish Valley Sign and Display Requirements
An Ordinance Creating the Spanish Valley Sign Requirements of the San Juan County Land Use Ordinance for the purpose of managing the design and implementation of signs and displays in the non-federal lands in northernmost portion of the San Juan County Spanish Valley.

Spanish Valley Overnight Accommodations Overlay District Requirements
An ordinance establishing an overnight accommodations overlay district that can be sought for sites located within the Spanish Valley Highway Commercial District. See Spanish Valley Zoning Map for the location of the Highway Commercial District in which the overlay can be applied. Overlay districts are established to provide standards addressing unique circumstances or conditions affecting single sites where the development of such sites is of special public concern. Upon approval of special purpose district zoning, the special purpose district replaces the previous base district. Overlay districts are established to provide for certain additional requirements for properties located in one or more base zoning districts. In addition to the requirements of the underlying base zoning district, the provisions of the overlay district would also prevail in the areas so zoned.

Controlled District - Highway (Cd-h)
An ordinance establishing Highway Commercial and other uses within 1,000' of either side of US-191 as both permitted and conditional uses. The indicated areas on the zoning map are properties and operations known and reported have valuable mineral deposits and are to remain as zoned per Utah Code 17-41-402. Similar properties may exist where the same or similar conditions apply. The zone includes other uses and other regulations that supersede those otherwise applicable in the Spanish Valley.

Agricultural (A1)
An ordinance intended to promote and preserve conditions favorable to agriculture and maintenance of greenbelt open spaces, including single-family residences, ranches and cabins; two-family residences are permitted as a conditional uses, and additional single-family units may be approved on a case-by-case basis for the use of employees and family members. The indicated areas on the zoning map are properties and operations known and reported have valuable mineral deposits and are to remain as zoned per Utah Code 17-41-402. The zone includes other uses and other regulations that supersede those otherwise applicable in the Spanish Valley.

Proposed Zoning

All lands within the Legal Description are proposed to be part of the Spanish Valley Planned Community (PC) Zone. As illustrated in **Figure 7**, the PC zone incorporates all of the zoning assumptions and requirements of the existing zoning illustrated in **Figure 6** and described in the preceding section.

Existing Land Use

Existing land use is predominantly vacant, including the remnants of an abandoned airfield located east of Spanish Valley Drive in the northern extents of the site. Two gravel extraction operations are located north of Flat Pass Road and west of Spanish Valley Drive. A small portion of the dam wall and of Ken's Lake is located within the boundaries of one parcel.

Proposed Land Use

The types of uses proposed within the proposed PC Zone correspond to those described in the Spanish Valley Area Plan (2018), shown in **Figure 8**, which was adopted as part of the San Juan County General Plan and include the following:

Central Development Areas
These are the flattest, least sensitive and easiest-to-develop areas in the Spanish Valley, which make them suitable for a wide range of residential and park/open space uses. These are the preferred areas for locating higher-density residential uses and mixed-use neighborhood centers, where a mix of residential, local commercial and civic services will be provided.

Perimeter Development Areas
These areas are relatively isolated, located in the foothills and topographically challenged edges of the Spanish Valley. These areas are proposed for lower-density residential uses.

Flex Development Areas
These areas are located in close proximity to US-191 and are intended to establish an economic base for the Spanish Valley. These areas should be buffered from nearby residential neighborhoods and allow a range of business, distribution, highway commercial, and specialty residential uses.

Highway Commercial Development Areas
These areas take advantage of the location along US-191, providing sites for highway-based commercial uses that meet community and regional needs.

Neighborhood Centers
These areas support mixed-use centers that serve the local retail and service needs of the Spanish Valley. Development emphasizes small-scale retail, commercial and recreational uses. These locations also include limited residential (single and multi-family), public/semi-public uses, and open space uses. Neighborhood Center residential densities are generally the highest permitted in the Spanish Valley.

Open Space
Landscaped areas including parks, natural areas or farmland that are established to provide and preserve outdoor recreational, agricultural, or other similar uses. In addition to the open space district, areas of open space may also be provided within the other land use districts.

Figure 6 – Existing Zoning Map

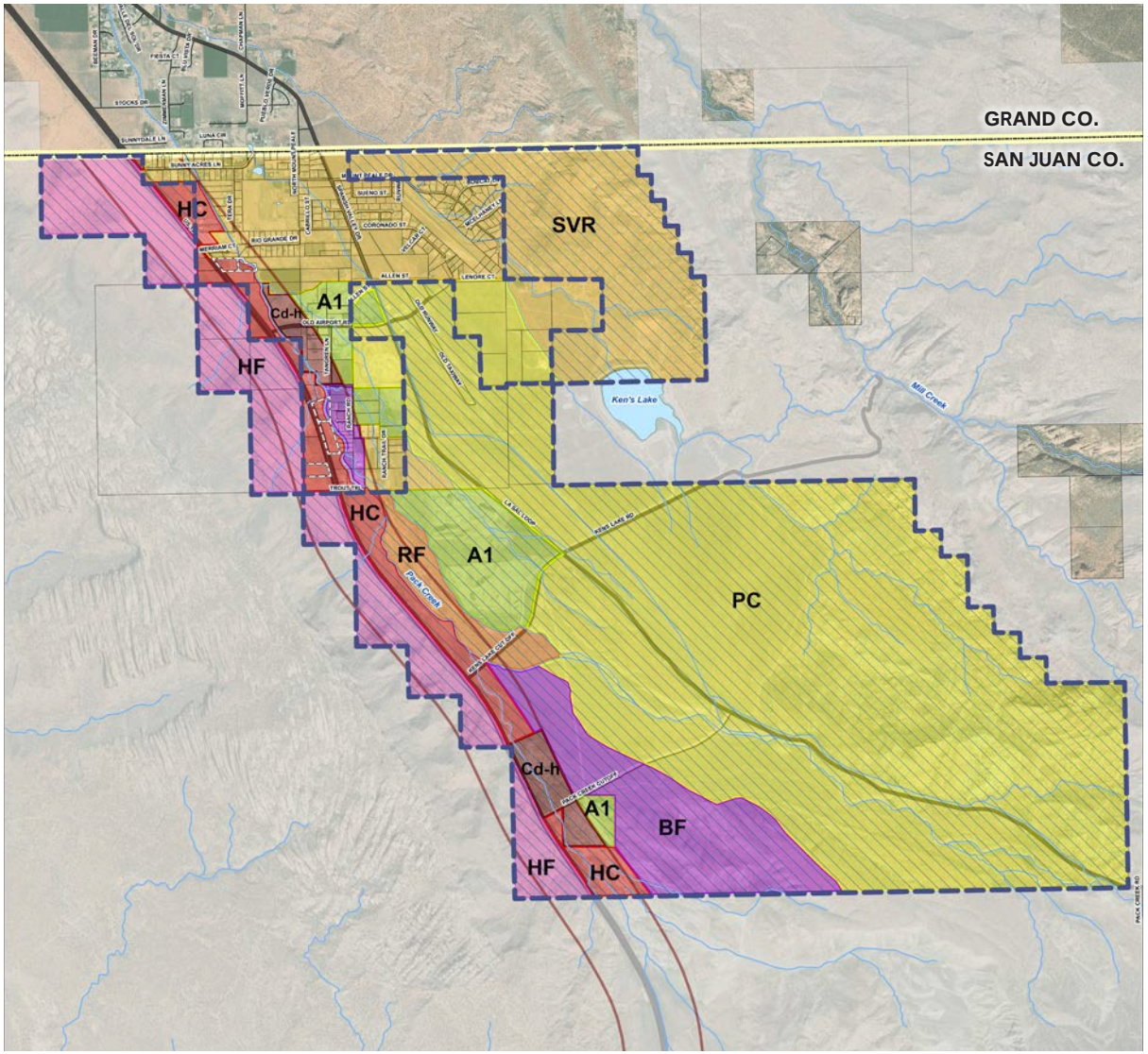
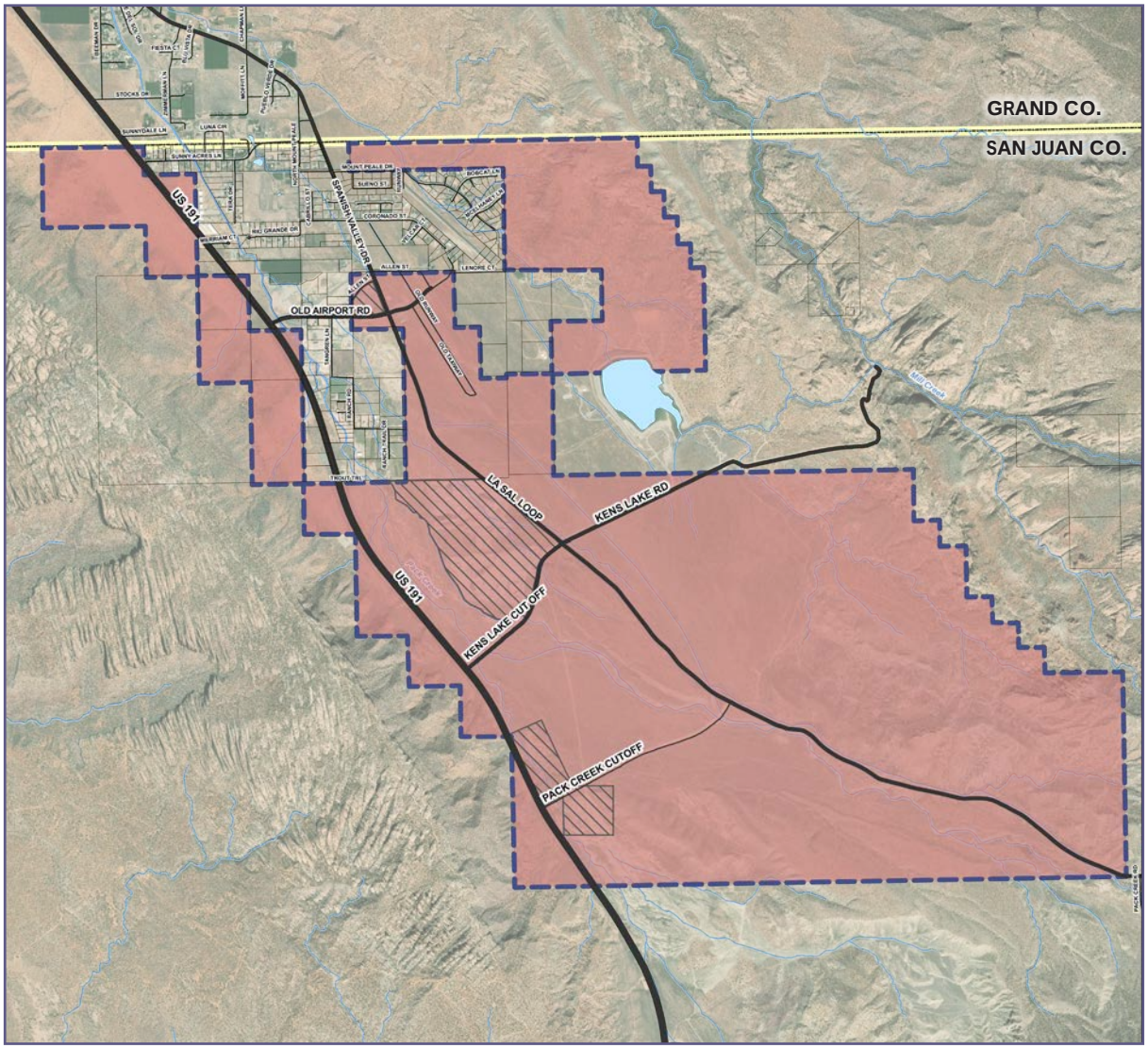


Figure 7 – Proposed PC Zone Map

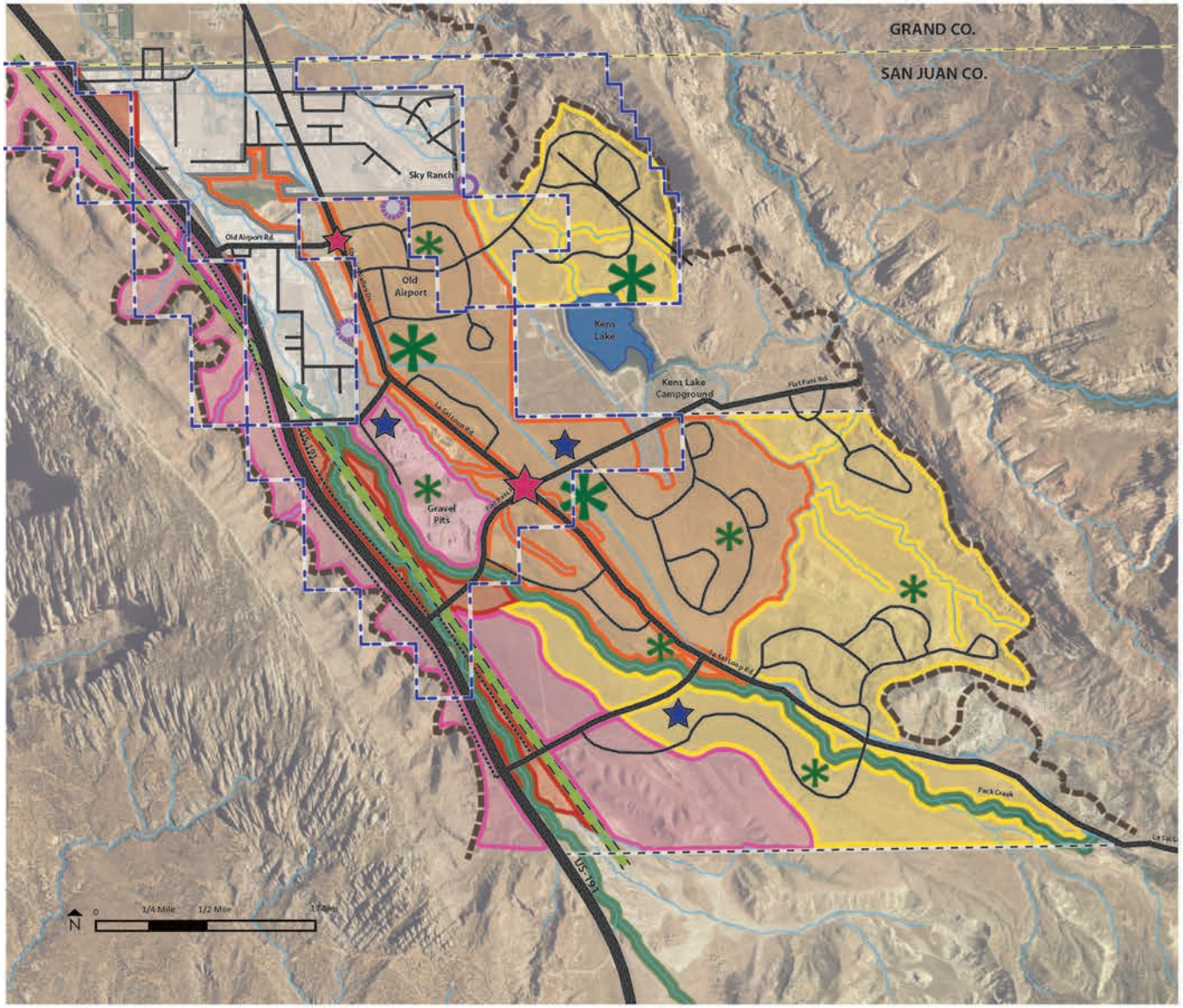


Legend

SITLA land to be developed

Known sand and gravel operations - existing zoning to remain per Utah code 17-41-402.

Figure 8 – San Juan County Spanish Valley Area Plan (2018)



Description

The San Juan County Spanish Valley Area Plan provides a rational land use and growth strateg that builds upon the key principles identified through the public input process and the directio county officials.

Accordingly, there are five types of potential Growth and Development Areas, each with uniq opportunities and considerations, as follow:

Private Land Areas
This area consists of both developed and undeveloped land that is owned by numerous privat parties. Since the area has been inconsistently planned, the focus is on meeting the following needs:

- Establishing a rational and coordinated system of road and storm water conveyance system
- Providing transitions between existing and future incompatible uses
- Facilitating limited subdivision and densification where opportunities exist
- Ensuring that future development follows a new system of guidelines that promote safe, coordinated growth and development

Central Development Areas
Located in the center of the valley, these are the flattest and easiest-to-develop areas. They a suitable for a wide range of development, including residential, civic, institutional and parks/o space uses. They also support limited development of local commerce and community servic The large tracts of contiguous land are primarily under single ownership, which promotes the application of coordinated development strategies.

Perimeter Development Areas
Located on the east and south edges of the valley, these areas are relatively distant from exist growth areas. The application of coordinated strategies and models for lower-density develop should be applied.

Highway Commercial Areas
Regional commercial uses and needs are supported along the highway near major intersectio Direct access from the highway should be limited to promote movement.

Flex Development Areas
These areas provide unique opportunities to create an economic base for the valley, due in la part to their location near they highway, yet buffered from nearby neighborhoods. A flexible development approach should be considered to allow market developments and opportuniti be addressed.

Legend

- BLM/SITLA Property Boundary
- Steep Cliffs Delineating Valley
- Lakes/Reservoirs
- Major Drainage
- Minor Drainage
- US-191
- Primary Road
- Secondary Road
- Frontage Road
- Power Corridors
- New Culinary Water Well
- Future Culinary Water Well (known)
- Regional Park
- Community Park
- Schools
- Neighborhood Center
- Private Land Area - focus on infill limited subdivision of acre + lots, and logical road/circulation linkages (700 acres)
- Central Neighborhood Development Areas (1450 acres)
- Perimeter Neighborhood Development Areas (1750 acres)
- Flex Development Areas - market-driven business/commercial/ residential development (1075 acres)
- Highway Commercial Areas (200 acres)
- Spanish Valley - Phase I boundary

Existing Ownership

As illustrated in the Existing Land Ownership Map (see **Figure 9**) the properties contained in this application are wholly owned by SITLA. The project area is primarily surrounded by private land to the north and public land elsewhere.

Unique Features, Topography and Site Conditions

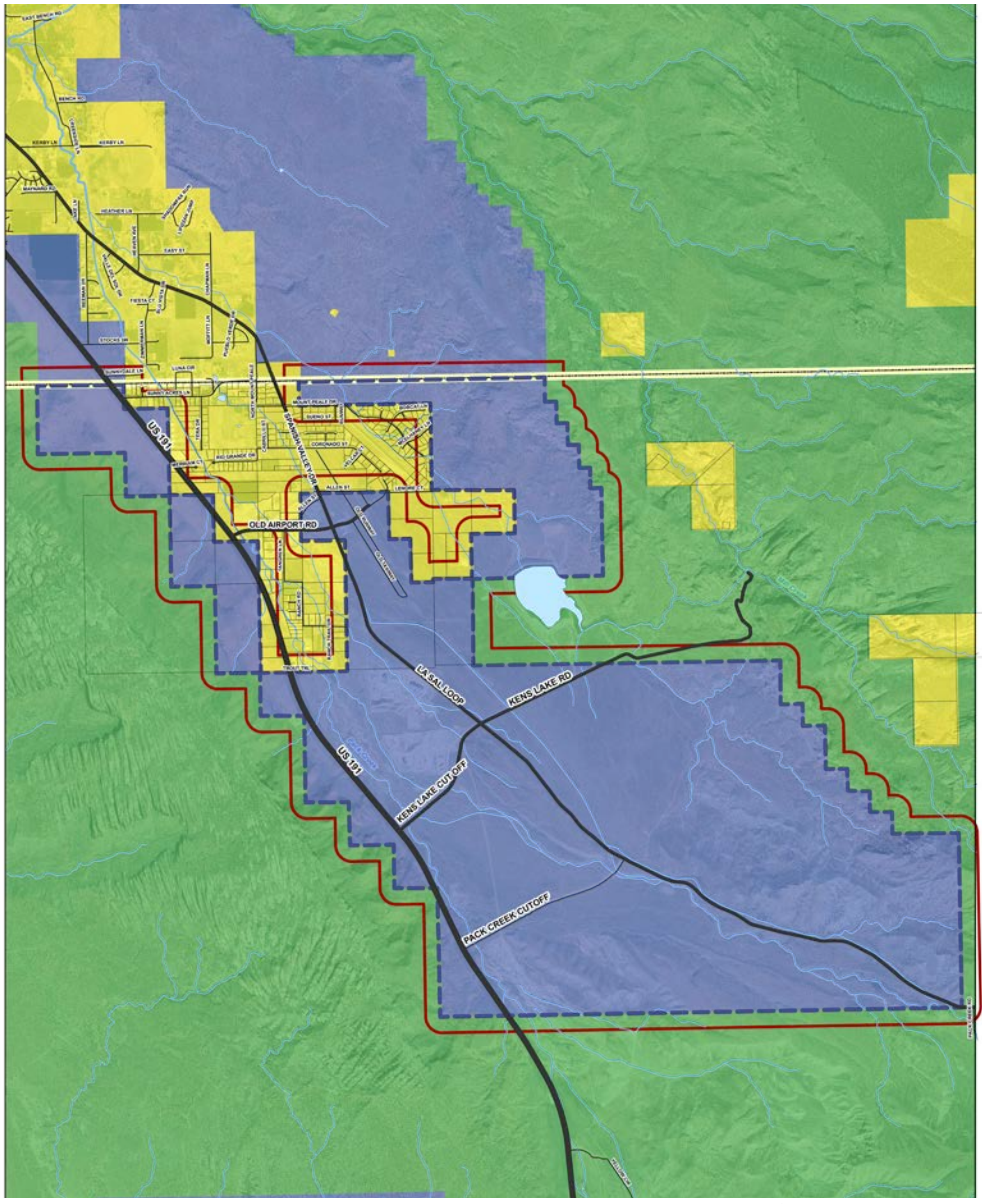
The planning for this area has been carefully considered to leverage the best qualities of the special landscape and setting as part of a fully-integrated and unified community. The densest and most intensive uses are concentrated along major roads and at key intersections in the center of the Spanish Valley, transitioning to less dense and less intense residential uses toward the east and west peripheries. The layout and design of distinct neighborhoods to the east balances regional commercial and similar highway-based uses to the west along US-191. The planning concept incorporates a robust open space system interlinked with a network of trail corridors, community parks and open space amenities. Topographic conditions have been well-considered throughout, feathering the most intensive uses along Spanish Valley Drive, which is also the flattest portion of the site. Lower density residential uses are concentrated in the eastern slope with similar transitions used to avoid environmental and safety issues related to Ken's Lake and Sky Ranch Airfield. Historic, geologic and natural features such as springs, ancient check dams and drainage ways are preserved within the parks and open spaces, ensuring that the unique sense of place and historic context of the area is preserved and branded as the area transforms and develops.

Relationship of the Proposed Spanish Valley – PC Zone with the General Plan

The proposed zone change supports the vision established in the recently adopted San Juan County Spanish Valley Area Plan (2018), shown in **Figure 8**, which was adopted as a chapter of the San Juan County General Plan. The Preliminary Community Structure Plan (see **Figure 10**) outlines the preliminary layout of the new community with highway-based uses along US-191 and a variety of residential and supportive commercial/community uses located within the center of the Spanish Valley. The community is further enhanced by two Neighborhood Centers at key intersections on either end of Spanish Valley Drive and by the seamless integration of an extensive park and open space system, encompassing drainages and multi-purpose trails. US-191, Spanish Valley Drive and four east/west collector roads form the primary road system, which is planned to support multiple modes of traffic and movement in the long -term. The planning concept incorporates and conserves key natural features including wet lands, Dry Creek, smaller drainages, springs and unique landscape features, which will help maintain the unique sense of place and connectivity with the natural beauty of the site and surroundings

As indicated in **Figure 7**, there are existing sand and gravel operations within the application area where Utah code 17-41-402 applies, requiring that the existing zoning remain in place. It is assumed that these sites may one day also be developed according to the vision indicated in Figure 10 once extraction operations are finalized.

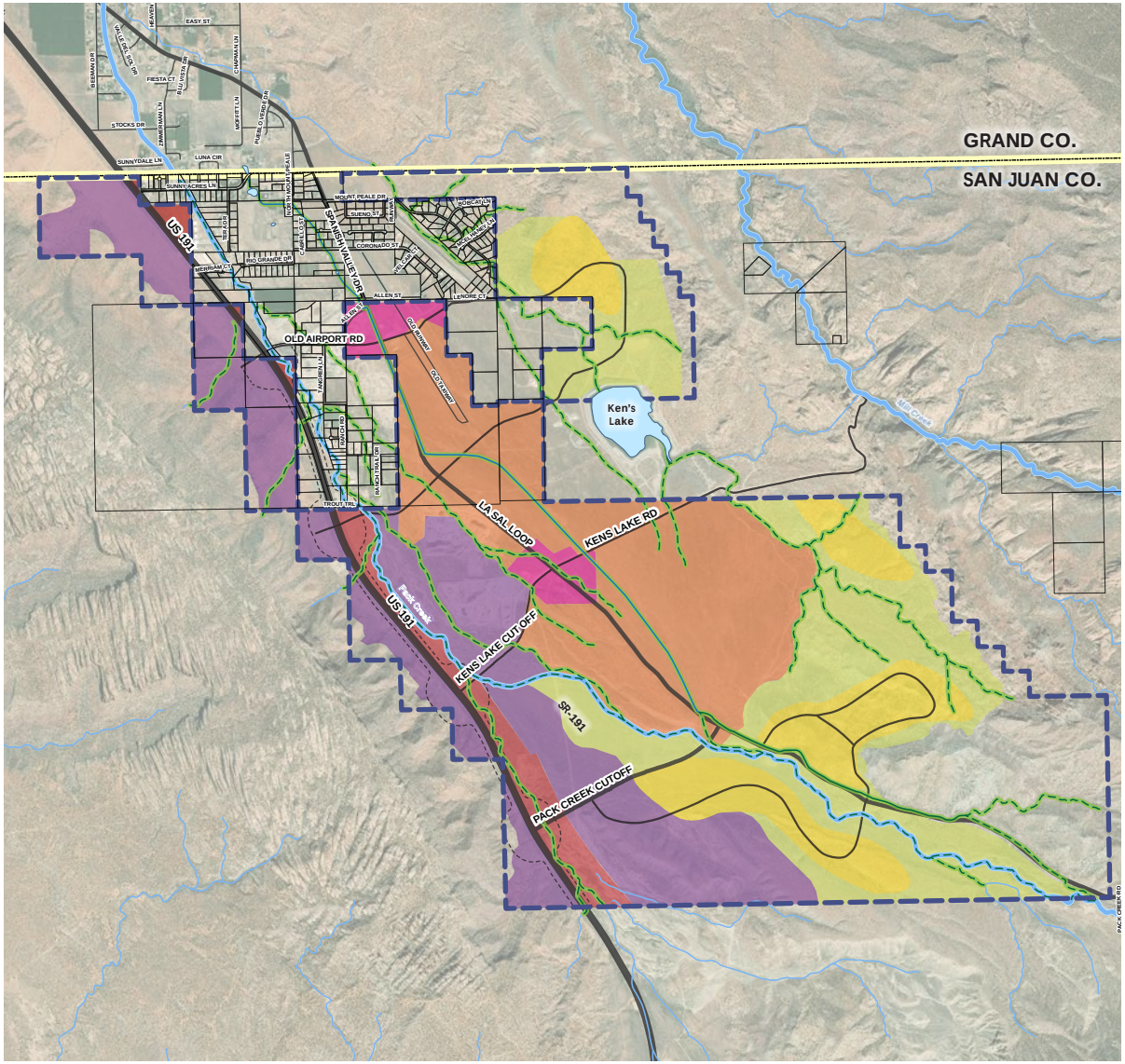
Figure 9 – Existing Ownership Map



Legend

- Land to be developed
- SITLA
- Private
- BLM
- 500' from Development Boundary

Figure 10 – Preliminary Community Structure Plan



Legend

- Flex Development Areas (601 acres)
- Highway Commercial Development Areas (253 acres)
- Neighborhood Centers (123 acres)
- Central Development Areas (540 acres)
- Perimeter Development Areas - land most suitable for development (60 acres)
- Perimeter Development Areas - primarily parks and open space/more detailed analysis needed to determine development potential (265 acres)
- Drainages/potential trail corridors
- Canals/potential trail corridors
- Pack Creek
- SR-191
- Spanish Valley Drive
- Collector roads
- Frontage roads

Note: Development boundary indicated by blue dashed line

Figure 11 – Land Use Table

LAND USE	ACRES	% OF TOTAL ACRES	ACRES OF OPEN SPACE	% OF TOTAL ACRES DEDICATED TO OPEN SPACE	ASSUMPTIONS	CALCULATIONS	PROJECTED UNITS	% OF TOTAL UNITS	PROJECTED SF	% OF TOTAL SF
Neighborhood Center	123	2.3%	37	0.1%	Mix of residential, office, commercial and similar uses proposed as part of creating a discernible mixed-use town. Uses may be mixed vertically or horizontally. 30% of acreage is assumed to be dedicated to trails, open space, local parks, etc. It is assumed that 50% of the area will be dedicated to residential uses with an average density of 8 units per acre. The remaining 50% is assumed as office, commercial and similar uses with an F.A.R. of 0.25.	(0.5 x 123) x 8 (0.5 x 123 x 0.25) x 43,560	492	5.1%	670,000 SF	11.7%
Central Development Areas	1,193	22.7%	358	6.8%	A wide range of housing types and forms, including townhomes, apartments and single-family homes. 30% of acreage is assumed to be dedicated to trails, open space, local parks, etc. Average density of 4.5 units per acre.	1,193 x 4.5	5,368	55.7%	-	-
Perimeter Development Areas	1,622	30.9%	487	9.3%	Located along the eastern edges of the development areas, these neighborhoods are relatively isolated, located in the foothills and topographically challenged edges of the valley. 30% of acreage is assumed to be dedicated to trails, open space, local parks, etc. Clustered Development is the preferred pattern and an average density of 1.5 units per acre is assumed.	1,622 x 1.5	2,433	25.2%	-	-
Flex Development Areas	1,197	22.8%	359	6.8%	A range of business, distribution, highway commercial and specialty residential uses in response to market opportunities and conditions. 30% of acreage is assumed to be dedicated to trails, open space, local parks, etc. 25% of land is assumed as specialty residential uses with an average density of 4.5 units per acre. All other uses are assumed for the remaining 75% of land with a F.A.R. of 0.1.	(0.25 x 1,197) x 4.5 (0.75 x 1,197 x 0.1) x 43,560	1,346	14.0%	3,910,000 SF	68.5%
Highway Commercial Development Areas	260	5.0%	78	1.5%	Highway-based commercial uses along US-191 to meet community and regional needs. 30% of acreage is assumed to be dedicated to trails, open space, local parks, etc. Assumed F.A.R. of 0.1.	(260 x 0.1) x 43,560	-	-	1,130,000 SF	19.8%
Excluded Open Space	850	16.2%	850	16.2%	Areas with environmental and physical constraints limiting economic feasibility of development.	-	-	-	-	-
TOTAL	**5,245**	**100**	**2,169**	**40.7%**	**-**	**-**	**9,639**	**100%**	**5,710,000 SF**	**100**

Note: the calculation methodology is the same as used in the San Juan County Spanish Valley Area Plan (2018)

Parks, Trails and Open Space

The primary open space system includes a range of natural lands, major trail corridors and parks. The trails system is extensive and fully-connected, linking community destinations, parks and open spaces in the area with regional facilities. A finer-grain system of trails, parks and open spaces will be included as part of detailed site design as the development process moves along, and will focus on meeting the park, trails and open space needs of individual neighborhoods and sub-districts.

Neighborhood Centers

These areas are focused around two key intersections along Spanish Valley Drive that will become the main community service centers. Development is envisioned to encompass all sides of the intersections in order to create unified and thriving destinations.

These mixed-use districts will include concentrated areas of local commercial and civic services as well as a range of multifamily types. Each node is approximately 60 acres in size, and should be carefully designed to reflect the vernacular forms and historic themes of the region.

Central Development Areas

This category encompasses a range of residential forms, styles and densities, all laid out as part of engaging and coordinated neighborhoods. Townhomes, apartments and small lot single-family residential uses are envisioned to be the dominant form. Each area should include a range of neighborhood amenities, such as local gardens, parks, and trails. Sensitive lands and soils will need to be carefully assessed as part of the detailed design process to follow.









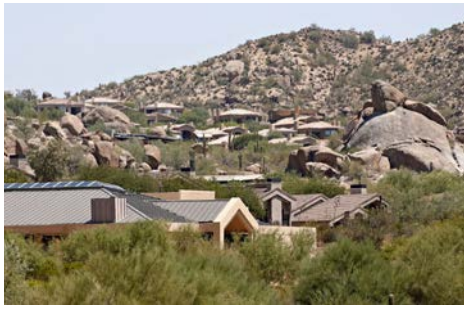

Perimeter Development Areas

Particularly suitable for the eastern foothills adjacent to current and planned open space systems, these areas are envisioned to take the form of single-family, large lot, specialty residential and ranch-type uses that are well-suited to the challenging terrain. The preferred pattern for these areas is Clustered Development. All types of development in these areas should respond to the topography and be sited in a way that blends into the landscape. This will ensure that views of the Spanish Valley are preserved for all residents and visitors to enjoy. In addition, sensitive lands and soils will need to be carefully assessed as part of the detailed design process to follow.







Flex and Highway Commercial Development Areas

Flex Development Areas provide opportunities to establish an economic base for the valley. Located along US-191, they are well-located to capitalize on highway traffic and access. These areas should be buffered from nearby residential neighborhoods, incorporating a flexible development approach that allows a range of office, distribution, highway commercial and specialty residential uses in response to market opportunities and conditions.

Highway Commercial Development Areas take advantage of the location along US-191, providing sites for a range of highway-based commercial uses to meet community and regional needs. For all areas, sensitive lands and soils will need to be carefully assessed as part of the detailed design process to follow.

4.0 - Transportation

Existing Transportation System

As illustrated in the Preliminary Community Structure Plan (see **Figure 10**), the Spanish Valley area is primarily served by US-191 and Spanish Valley Drive. US-191 is a state-maintained roadway, classified as a "System Priority-Rural Importance" (access category 2) roadway by the Utah Department of Transportation (UDOT). US-191 has one travel lane in each direction and acceleration/deceleration lanes at intersections. As identified and controlled by UDOT, a "Regional – Urban Importance" access classification allows minimum signalized intersection spacing of one mile (5,280 feet), minimum unsignalized street spacing of 1,000 feet, and minimum driveway spacing of 1,000 feet. The posted speed limit on US-191 in the area is 65 mph. According to UDOT records, UDOT has a designated right-of-way (ROW) of 400 feet along much of the US-191 corridor in Spanish Valley. Some sections of the roadway have as low as 100 feet of ROW, particularly between MP 117 and MP 118.5. The existing average daily traffic (ADT) on US-191 is approximately 8,000 vehicles per day.

Spanish Valley Drive is a county-maintained roadway, classified as a "major collector" roadway by UDOT. The roadway has one travel lane in each direction and a posted speed limit of 40 mph. Spanish Valley Drive serves as a direct connection to La Sal Loop Road, which is a scenic loop road through the La Sal Mountains. The existing ADT on Spanish Valley Drive is approximately 1,500 vehicles per day. Other public roads in the Spanish Valley area include Sunny Acres Lane and Old Airport Road.

Residential Land Use Assumptions

The Preliminary Community Structure Plan (see **Figure 10**) and Land Use Table (see **Figure 11**) present the approximate location and number of units of residential use. To summarize, the area is anticipated to include 9,640 Equivalent Residential Units (ERUs) in mixed-use development areas. While specific floor area has yet to be determined, it can be estimated to be slightly less than one million square feet assuming the average residential unit or ERU is 2,000 square feet. Specific building heights have yet to be confirmed.

Non-Residential Land Use Assumptions

Non-residential uses are anticipated to be concentrated in the Neighborhood Center, Highway Commercial, and Flex Development areas. These areas comprise approximately 843 acres. It is anticipated that there will be approximately 3,735,000 square feet of non-residential use in the Spanish Valley development area, based on the following assumptions:

- 0.25 Floor-to-Area Ratio (FAR) in Town Center
- 0.1 FAR in Highway Commercial and Flex Development

Future Roadways and Traffic Volumes

As illustrated in the Preliminary Community Structure Plan (see **Figure 10**), it is proposed that an additional major roadway be added in the east-west direction to connect US-191 to Spanish Valley Drive. These east-west connectors will create a grid-like transportation network for efficient travel and traffic management. In order to determine the necessary cross-sections of these roadways in addition to US-191 and Spanish Valley Drive, future traffic volumes were projected for the area.

Specific land uses were assigned to each planned area within Spanish Valley. Trip generation, or traffic volumes to and from these land uses, was estimated using trip generation rates published in the Institute of Transportation Engineers (ITE), Trip Generation, 10th Edition, 2017. The daily trip generation for the beginning phases is shown in the Trip Generation table (see **Figure 12**). As shown, it is anticipated that all land uses in the full build-out of the beginning phases generally north of Flat Pass Road will generate approximately 78,827 daily trips.

The trip generation was assigned to the roadway network based on the type of trip and the proximity of project access points to major streets, high population densities, and regional trip attractions. Existing travel patterns observed during data collection also provide helpful guidance to establishing these distribution percentages. As illustrated in the ADT Map (see **Figure 13**), 55 percent of the daily trips were assigned to/from the north, 12 percent were assigned to/from the south, and 33 percent were assigned completely within the internal Spanish Valley network.

The assigned daily trip generation was added to the existing ADT volumes, and the resulting projected volumes are shown in the ADT Map (see **Figure 13**). Based on the projected full build-out volumes, it is recommended that US-191 have a 5-lane cross-section, Spanish Valley Drive and the east-west connectors have 3-lane cross-sections, and local roadways have 2-lane cross-sections. These cross-sections are illustrated in the Proposed Cross-Sections diagram (see **Figure 14**). As shown, many of the 3-lane cross-sections have been designed with enough pavement to go to a 5-lane cross-section if that becomes necessary.

Note: Further road and transportation analyses will be conducted for the entire PC Zone in the Community Structure Plan as required.

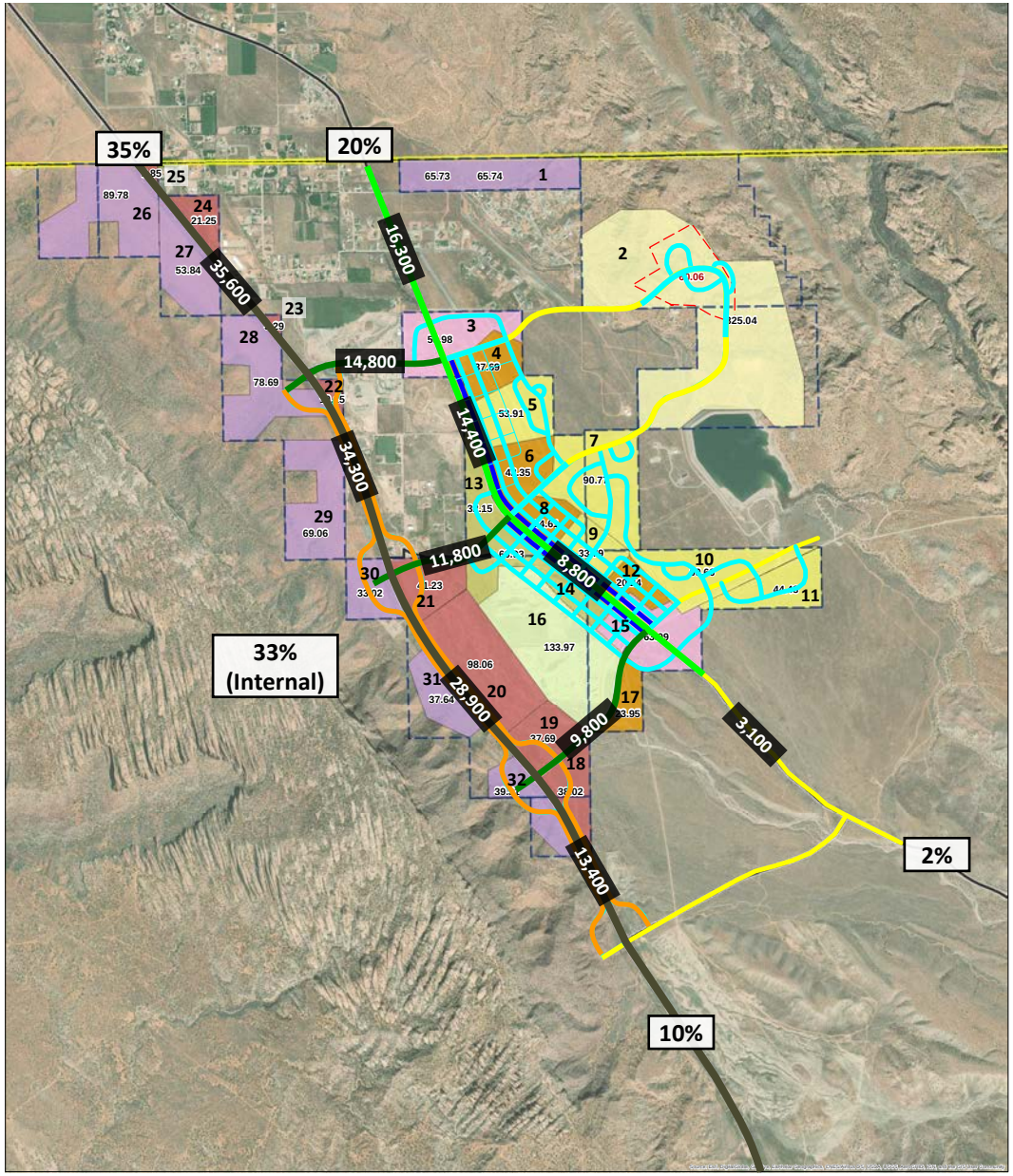
Figure 12 – Trip Generation: Spanish Valley Beginning Phases Buildout

San Juan County - Spanish Valley TS Trip Generation											
Weekday Daily											
Pod	Land Use[1]	Acres	# of Units	Unit Type	Trip Generation	% Entering	% Exiting	Pass-by Reduction	Net Trips Entering	Net Trips Exiting	**Total Daily Trips**
1	Recreational Homes (260)	65.74	164	Dwelling Units	570	50%	50%	0%	285	285	**570**
2	Recreational Homes (260)	60.06	240	Dwelling Units	834	50%	50%	0%	417	417	**834**
3	General Office Building (710) [fitted curve equation]	58.98	206	1,000 Sq. Ft. GFA	2,140	50%	50%	0%	1,070	1,070	**2,140**
	Multifamily Housing (Low-Rise) (220)		246	Dwelling Units	1,820	50%	50%	0%	910	910	**1,820**
	Supermarket (850)		26	1,000 Sq. Ft. GFA	2,778	50%	50%	25%	1,042	1,042	**2,084**
	Elementary School (520)		500	Students	946	50%	50%	0%	473	473	**946**
4	Multifamily Housing (Low-Rise) (220)	37.69	264	Dwelling Units	1,956	50%	50%	0%	978	978	**1,956**
5	Single-Family Detached Housing (210)	53.91	216	Dwelling Units	2,112	50%	50%	0%	1,056	1,056	**2,112**
6	Multifamily Housing (Low-Rise) (220)	42.35	296	Dwelling Units	2,198	50%	50%	0%	1,099	1,099	**2,198**
7	Single-Family Detached Housing (210)	90.77	363	Dwelling Units	3,406	50%	50%	0%	1,703	1,703	**3,406**
8	Multifamily Housing (Low-Rise) (220)	24.61	172	Dwelling Units	1,260	50%	50%	0%	630	630	**1,260**
9	Single-Family Detached Housing (210)	33.79	135	Dwelling Units	1,372	50%	50%	0%	686	686	**1,372**
10	Single-Family Detached Housing (210)	69.66	279	Dwelling Units	2,674	50%	50%	0%	1,337	1,337	**2,674**
11	Single-Family Detached Housing (210)	44.48	178	Dwelling Units	1,768	50%	50%	0%	884	884	**1,768**
12	Multifamily Housing (Low-Rise) (220)	20.24	142	Dwelling Units	1,034	50%	50%	0%	517	517	**1,034**
13	Single-Family Detached Housing (210)	32.15	129	Dwelling Units	1,316	50%	50%	0%	658	658	**1,316**
14	Single-Family Detached Housing (210)	66.93	268	Dwelling Units	2,576	50%	50%	0%	1,288	1,288	**2,576**
15	High-Turnover (Sit-Down) Restaurant (932)	63.99	6	1,000 Sq. Ft. GFA	674	50%	50%	25%	253	253	**506**
	Multifamily Housing (Low-Rise) (220)		246	Dwelling Units	1,820	50%	50%	0%	910	910	**1,820**
	Elementary School (520)		500	Students	946	50%	50%	0%	473	473	**946**
	General Office Building (710) [fitted curve equation]		223	1,000 Sq. Ft. GFA	2,310	50%	50%	0%	1,155	1,155	**2,310**
16	General Light Industrial (110)	133.97	233	1,000 Sq. Ft. GFA	1,156	50%	50%	0%	578	578	**1,156**
	Public Park (411)		90	Acres	72	50%	50%	0%	36	36	**72**
17	Multifamily Housing (Low-Rise) (220)	23.95	168	Dwelling Units	1,230	50%	50%	0%	615	615	**1,230**
18	Shopping Center (820) [fitted curve equation]	38.02	17	1,000 Sq. Ft. GLA	1,802	50%	50%	25%	676	676	**1,352**
	General Light Industrial (110)		149	1,000 Sq. Ft. GFA	740	50%	50%	0%	370	370	**740**
	High-Turnover (Sit-Down) Restaurant (932)		5	1,000 Sq. Ft. GFA	50	55%	45%	25%	21	17	**38**
19	Shopping Center (820) [fitted curve equation]	37.69	16	1,000 Sq. Ft. GLA	1,730	50%	50%	25%	649	649	**1,298**
	General Light Industrial (110)		148	1,000 Sq. Ft. GFA	736	50%	50%	0%	368	368	**736**
	High-Turnover (Sit-Down) Restaurant (932)		4	1,000 Sq. Ft. GFA	40	55%	45%	25%	17	14	**31**
20	General Light Industrial (110)	98.06	342	1,000 Sq. Ft. GFA	1,698	50%	50%	0%	849	849	**1,698**
	Shopping Center (820) [fitted curve equation]		85	1,000 Sq. Ft. GLA	5,384	50%	50%	25%	2,019	2,019	**4,038**

Figure 12 (Cont.) – Trip Generation: Spanish Valley Beginning Phases Buildout

	~~Shopping Center (820) [fitted curve equation]~~		~~83~~	~~1,000 Sq. Ft. GLA~~	~~3,384~~	~~50%~~	~~50%~~	~~25%~~	~~2,019~~	~~2,019~~	~~4,038~~
21	Supermarket (850)	41.23	36	1,000 Sq. Ft. GFA	3,846	50%	50%	25%	1,442	1,442	**2,884**
	Shopping Center (820) [fitted curve equation]		72	1,000 Sq. Ft. GLA	4,810	50%	50%	25%	1,804	1,804	**3,608**
	General Light Industrial (110)		72	1,000 Sq. Ft. GFA	358	50%	50%	0%	179	179	**358**
	Gasoline/Service Station with Convenience Market (945)		8	Fueling Positions	1,644	50%	50%	50%	411	411	**822**
22	Shopping Center (820) [fitted curve equation]	10.15	13	1,000 Sq. Ft. GLA	1,502	50%	50%	25%	563	563	**1,126**
	General Light Industrial (110)		31	1,000 Sq. Ft. GFA	154	50%	50%	0%	77	77	**154**
23	Shopping Center (820) [fitted curve equation]	3.29	10	1,000 Sq. Ft. GLA	1,258	50%	50%	25%	472	472	**944**
	Fast-Food Restaurant with Drive-Through Window (934)		4	1,000 Sq. Ft. GFA	1,884	50%	50%	50%	471	471	**942**
24	Gasoline/Service Station with Convenience Market (945)	21.25	8	Fueling Positions	1,644	50%	50%	50%	411	411	**822**
	Warehousing (150)		83	1,000 Sq. Ft. GFA	126	50%	50%	0%	63	63	**126**
25	Shopping Center (820) [fitted curve equation]	2.85	9	1,000 Sq. Ft. GLA	1,170	50%	50%	25%	439	439	**878**
	Fast-Food Restaurant with Drive-Through Window (934)		4	1,000 Sq. Ft. GFA	1,884	50%	50%	50%	471	471	**942**
26	Business Park (770)	89.78	338	1,000 Sq. Ft. GFA	4,306	50%	50%	0%	2,153	2,153	**4,306**
	Recreational Homes (260)		180	Dwelling Units	626	50%	50%	0%	313	313	**626**
	Hotel (310)		100	Rooms	704	50%	50%	0%	352	352	**704**
27	Warehousing (150)	53.84	211	1,000 Sq. Ft. GFA	380	50%	50%	0%	190	190	**380**
	Recreational Homes (260)		119	Dwelling Units	414	50%	50%	0%	207	207	**414**
	Automobile Parts Sales (843)		15	1,000 Sq. Ft. GFA	832	50%	50%	0%	416	416	**832**
28	Business Park (770)	78.69	69	1,000 Sq. Ft. GFA	1,450	50%	50%	0%	725	725	**1,450**
	Recreational Homes (260)		157	Dwelling Units	546	50%	50%	0%	273	273	**546**
	General Light Industrial (110)		206	1,000 Sq. Ft. GFA	1,022	50%	50%	0%	511	511	**1,022**
	Warehousing (150)		69	1,000 Sq. Ft. GFA	156	50%	50%	0%	78	78	**156**
29	Business Park (770)	69.06	60	1,000 Sq. Ft. GFA	1,354	50%	50%	0%	677	677	**1,354**
	Recreational Homes (260)		138	Dwelling Units	480	50%	50%	0%	240	240	**480**
	Warehousing (150)		241	1,000 Sq. Ft. GFA	428	50%	50%	0%	214	214	**428**
30	General Light Industrial (110)	33.02	129	1,000 Sq. Ft. GFA	640	50%	50%	0%	320	320	**640**
	Hotel (310)		100	Rooms	704	50%	50%	0%	352	352	**704**
31	Warehousing (150)	37.64	131	1,000 Sq. Ft. GFA	254	50%	50%	0%	127	127	**254**
	General Office Building (710) [fitted curve equation]		33	1,000 Sq. Ft. GFA	362	50%	50%	0%	181	181	**362**
32	Business Park (770)	39.31	51	1,000 Sq. Ft. GFA	1,258	50%	50%	0%	629	629	**1,258**
	General Office Building (710) [fitted curve equation]		120	1,000 Sq. Ft. GFA	1,268	50%	50%	0%	634	634	**1,268**
	Total	1577.2			88,612				**39,417**	**39,410**	**78,827**

Figure 13 – ADT Map: Spanish Valley Buildout*



Legend

- Core - Higher Density
- Core - Lower Density
- Flex Development
- Gravel Pit
- Highway Commercial
- Perimeter Neighborhood
- Special
- Town Center
- Phase I boundary
- Perimeter area suitable for development

Key

- ##,### Projected Full-Build ADT
- ##% Assumed trip distribution percentage
- US-191 (5 Lanes)
- East-West Connectors (3 Lanes)
- Spanish Valley Drive (3 Lanes)
- 2 Lanes - Urban Side Treatment
- 2 Lanes - Rural Side Treatment
- Frontage Roads

Note: Further road and transportation analyses will be conducted for the entire PC Zone in the Community Structure Plan as required.

Figure 14 – Proposed Street Cross-Sections

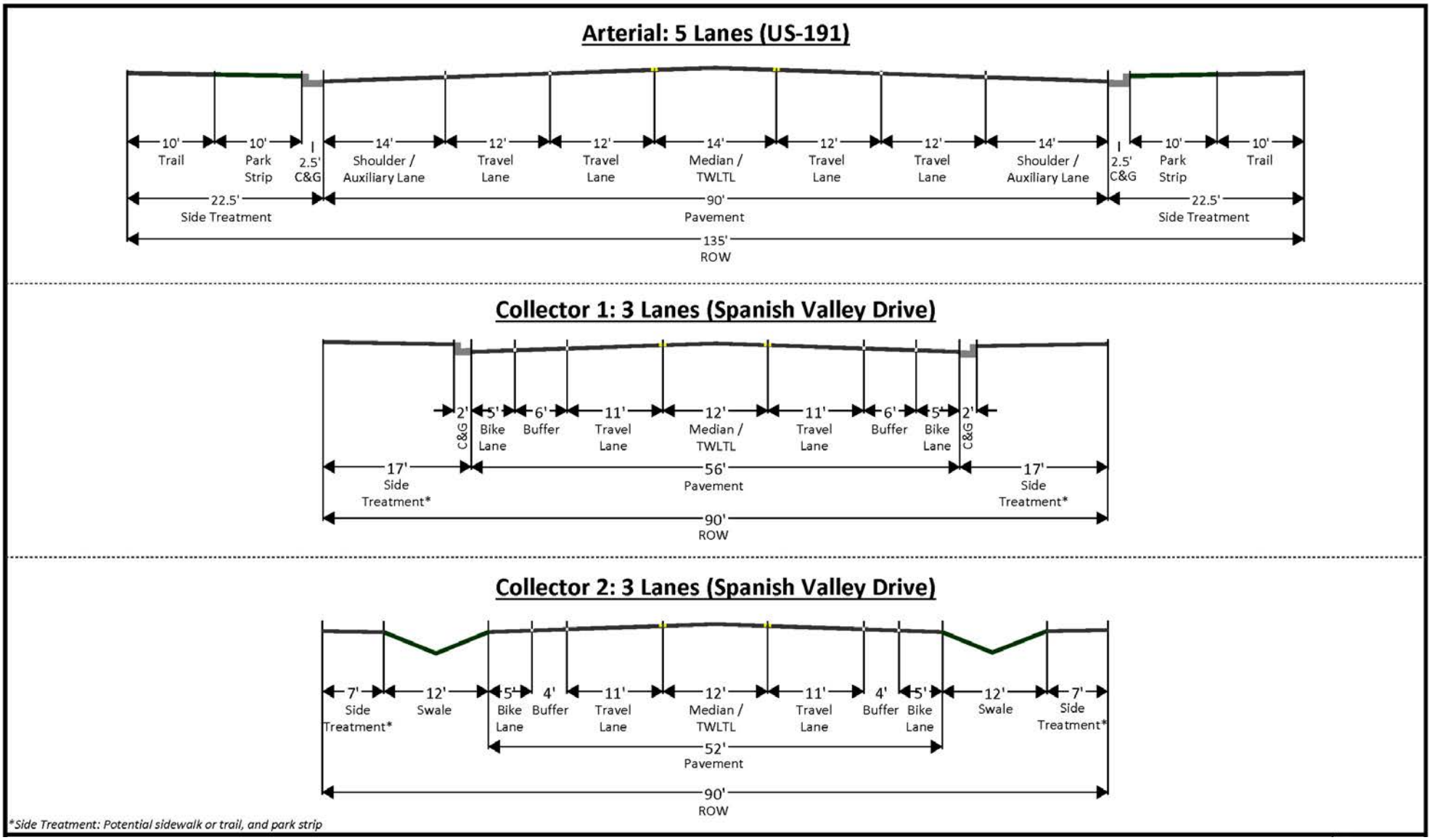
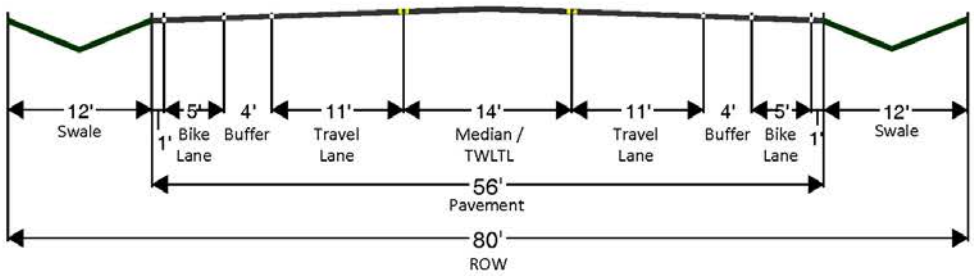
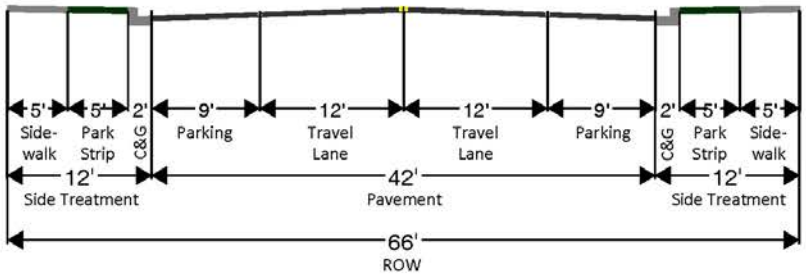


Figure 14 (Cont.) – Proposed Street Cross-Sections

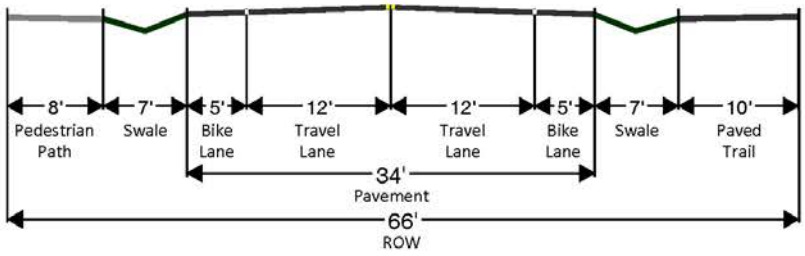
Collector 3: 3 Lanes (East-West Connectors)



Local Road 1: 2 Lanes



Local Road 2: 2 Lanes



5.0 - Utilities and Infrastructure

Existing and Proposed Utilities and Infrastructure

Spanish Valley Water and Sewer Special Service District (District) oversees water and sewer services for its services area in the San Juan County (County) portion of the Spanish Valley. The County oversees storm drain and flood control for the County's service area in the Spanish Valley. Transportation in the area is overseen by the County. The proposed project is expected to develop approximately 9,640 equivalent residential connections (ERCs) in commercial, mixed use, attached-unit residential and single family detached residential development. SITLA understands that the existing utility infrastructure will have to be expanded and construction of new infrastructure will be required to serve the development. The purpose of this summary is to provide a qualitative overview of existing utilities and SITLA's intent to expand and provide service to the Spanish Valley development area. Each utility is discussed by subject below.

SANITARY SEWER INFRASTRUCTURE

The District is installing a new sanitary sewer collection system to service existing residents in the County's portion of the Spanish Valley. The sewer system will have capacity for 747 ERCs. The sewer system will consist of 8" sewer collection lines that flow into a 10" trunk line, which is owned and maintained by Grand Water and Sewer Service Agency (GWSSA).

SITLA understands that the District does not currently have capacity to serve all of the project and expects that existing infrastructure will need to be expanded to serve the additional ERCs in the Spanish Valley development area. SITLA will work with the District to determine the long-term impacts to the system and the best course of action for improvements for the District. Improvements are expected, but not limited to, construction of new sewer collection and transmission lines.

POWER, GAS AND COMMUNICATIONS INFRASTRUCTURE

SITLA will work with Rocky Mountain Power, Dominion Energy, Frontier Communications and Emery Telcom to supply services to the project area.

WATER INFRASTRUCTURE

The District is developing a source, distribution and storage system to supply culinary water to the County's portion of the Spanish Valley, which includes i) a well facility with capacity for 576 ERCs, ii) a distribution system with 8", 10" and 12" lines, and iii) a 500,000 gallon storage tank near the well facility with a capacity of 800 ERCs.

SITLA understands that the District does not currently have capacity to serve all of the development area and expects that existing culinary water infrastructure will need to be expanded significantly to serve the additional ERCs in the project. SITLA will work with the District to determine the long-term impacts to the culinary water system and the best course of action for improvements for the District. Improvements are expected, but not limited to, construction of new source, distribution and storage facilities.

Proposed Storm Drainage Facilities

Pack Creek is a critical resource for the study area, providing a natural storm drainage outlet for Spanish Valley. Pack Creek also represents a flood hazard for portions of Spanish Valley. Careful planning is needed to assure that Pack Creek is not adversely impacted by development and that new developments are adequately protected from flood hazards.

FLOOD HAZARD MITIGATION

A large portion of the southern area of Spanish Valley is affected by an alluvial fan associated with Pack Creek (see **Figure 3**). Two strategies are often used to protect developments from flood hazards on alluvial fans. These systems are normally designed to provide protection for floods up to the 1% chance flood event.

- **Debris basin and channelization.** A debris basin is placed above the alluvial fan to slow the flow out of the canyon mouth sufficiently to remove debris, bed load, and suspended sediments. The downstream conveyance system is enhanced to provide for the conveyance of the 1% chance flood event.
- **Protection of Individual Developments.** Specific areas on the fan can be protected through use of levees with sufficient height and armoring to protect the development from debris flows.

STORM DRAINAGE SYSTEM

The major storm drainage system in newly developing residential areas or business districts should generally be designed for the 100-year event (flood event with a 1% chance of being equaled or exceeded in any given year) with the objective of preventing major damage and loss of life. This does not mean that storm drain pipe systems should be designed for the 100-year event. It means that the combination of storm sewers and channelized surface flow should be designed together to provide adequate flood protection to homes.

Low Impact Development

An approach that can be used for long term storm water management is Low Impact Development (LID). LID techniques minimize the directly connected impervious area

and infiltrate runoff from impervious areas near the source of the runoff, emphasizing conservation and use of on-site natural features and constructed swales to protect water quality. LID practices are especially helpful in areas of high soils permeability and low slopes.

Inherent in development is the increase of impervious area as roads, driveways, sidewalks, parking lots and buildings are constructed. Storm runoff from impervious areas can exceed ten times the runoff from natural areas. LID practices can help mitigate the effects of increased impervious areas by providing opportunities for infiltration near the source of the runoff. For example, in areas of suitable soils, the runoff from sidewalks and homes can be infiltrated prior to running off into the storm drain collection system. Stormwater detention basins are an effective means of reducing downstream runoff peak flow effects.

The Utah Department of Environmental Quality Division of Water Quality (DWQ) has recently made available a draft “Guide to Low Impact Development within Utah” (Utah LID Guide, Michael Baker International, September 2018). The Utah LID Guide describes alternate means of implementing low impact development practices. A key to low impact development is providing, to the extent practical, the infiltration of storm water near the source. Starting in 2019, municipalities who are permitted under the DWQ to discharge storm water will be required to develop an LID approach for new development and redevelopment projects. A key objective is the retention and infiltration on-site of the runoff from the 90th percentile storm event. The 90th percentile storm event for Spanish Valley is about 0.53 inches of rain.

Most of the soils in Spanish Valley are highly permeable and are conducive to LID practices. In particular the use of dry wells (sumps) to infiltrate runoff from roads and developments could be used to reduce the volume of runoff. Long term infiltration performance of dry wells requires pretreatment devices to remove organic material (leaves, loose bark, etc.) and sediments from flows prior to the dry well.