

**WASHINGTON COUNTY COMMISSION  
WORK MEETING MINUTES  
AUGUST 1, 2024**

The Work Meeting of the Board of the Washington County Commission was called to order by Chairman Almquist at 1:31 p.m. on August 1, 2024, in the Commission Chambers, 111 East Tabernacle, St. George, Utah. Those in attendance were Chairman Gil Almquist, Commissioner Adam Snow, Commissioner Victor Iverson, Deputy County Attorney Victoria Hales, County Administrator Nicholle Felshaw, Community Development Director Scott Messel, Washington County Water Conservation District Representative, Zach Renstrom, Washington County Planning Commissioner Mark Owens, Washington County Planning Commissioner Brandon Anderson, Washington County Planning Commissioner Kevin Jones, and Deputy Clerk Jayanne Lewis.

**REGULAR AGENDA ITEMS FOR CONSIDERATION:**

**Presentation from Rosenberg Associates**

Ray Alton Engineer with Rosenberg Associates presented on behalf of Brooks Pace regarding his proposal for SITLA lands development. Mr. Alton shared several slides regarding the placement of lots for the proposed development. Mr. Alton indicated the packet is ready to be submitted to the Washington County Planning Commission however it is lacking the sewer credentials. Mr. Alton stated that Mr. Pace is working with Washington County Water Conservation District to develop a solution.

**Motion By Commissioner Snow to amend the agenda to allow for item number 3 to move to item number 2 so that a presentation from the Water Conservation District can precede Ms. Johnson's Presentation. Motion seconded by Commissioner Iverson and carried by unanimous vote.**

**Presentation from Washington County Water Conservation District-Zach Renstrom**


Zach Renstrom from Washington County Water Conservation District presented a slide show highlighting sewer treatment options reviewed by WCWCD. Each option was presented with pros and cons regarding its use and functions. Also presented with each option was the estimated costs for install and maintenance.

**Presentation from Dammeron Valley-Becky Johnson**

Becky Johnson, a resident from Dammeron Valley, shared a PowerPoint Presentation. The presentation highlighted Dammeron Valley residents' concerns regarding creating a new sewer lagoon.

**Commission Discussion regarding Dammeron Valley Sewer**

Several sewer treatment options presented were discussed with consideration towards cost to the county, cost to the developer, and feasibility. Community impact was also discussed. Water recapture possibilities were deliberated. It was suggested Mr. Brooks take all the options presented under review before submitting his zone change application.

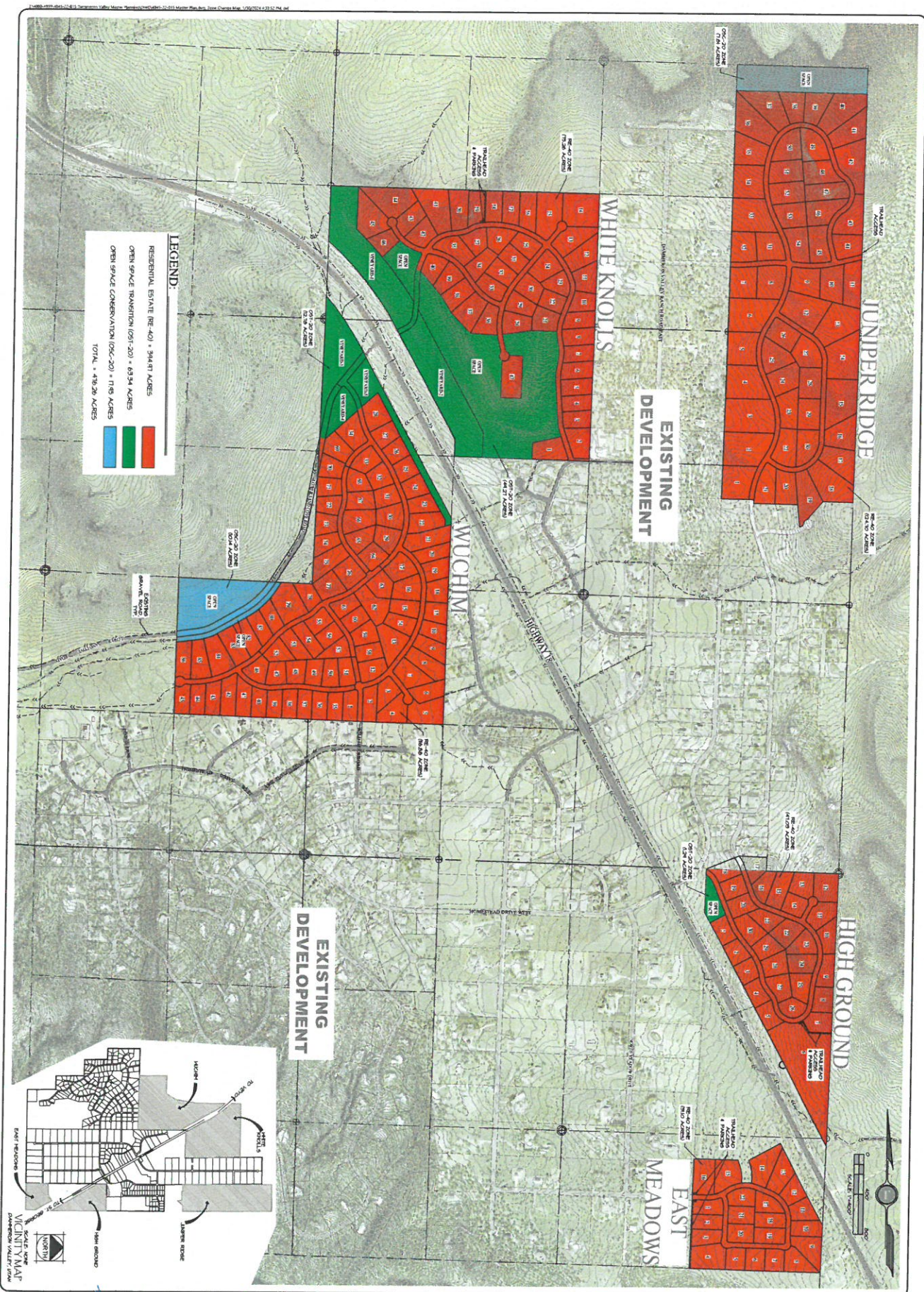


JAYANNE LEWIS  
DEPUTY CLERK



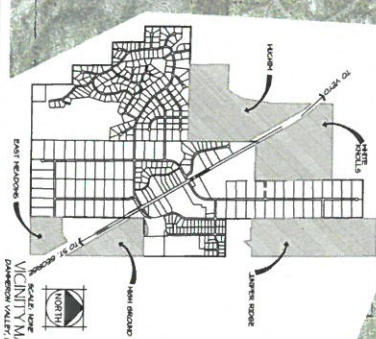
GIL ALMQUIST  
CHAIRMAN







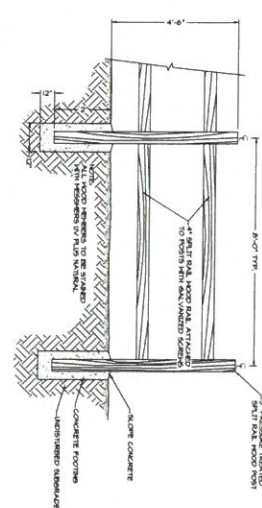
71-6200-4999-0545-77-015 Donnanville Valley Marine Humbird/7940-4945-77-015 Master Flyer, Overwing + Phoebe, 1/30/2024 8:42:57 PM, del



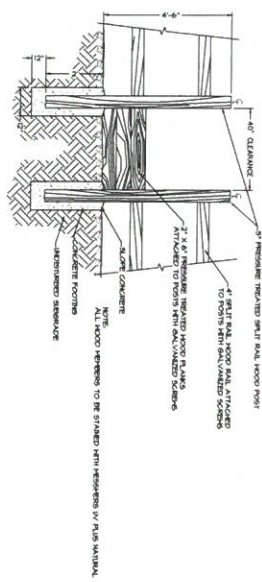




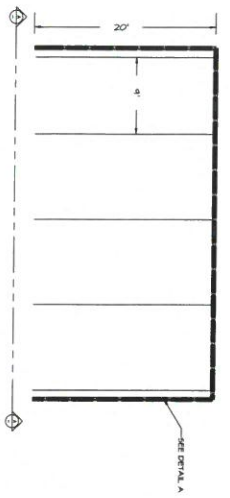




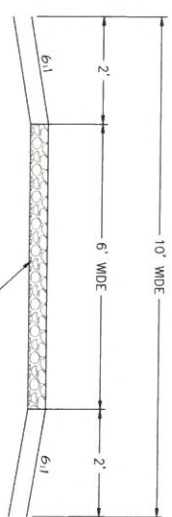
1 SPLIT RAIL FENCE



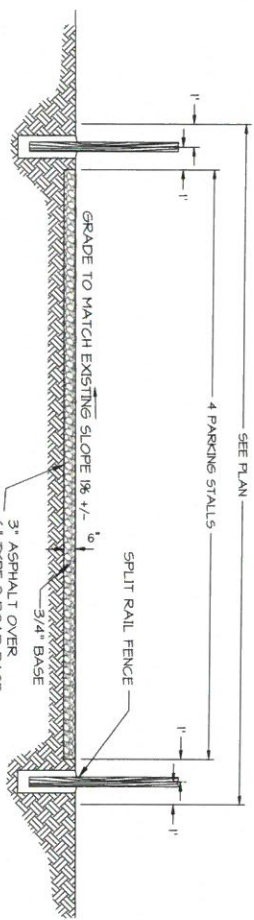
2 LOGS/STAMPED STEEL POWER FENCE



3 CLEAR PARKING SPACE



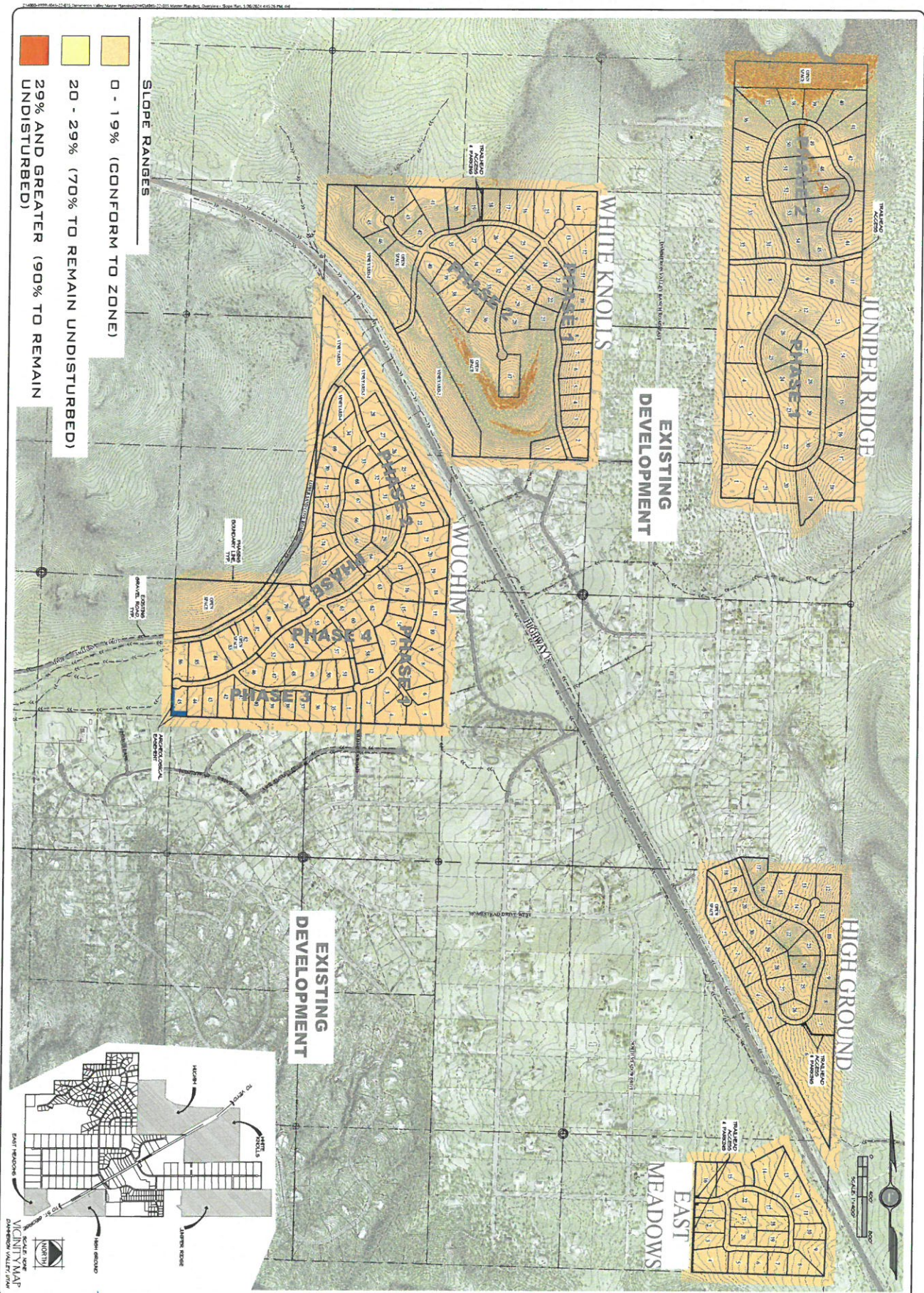
4 SPLIT RAIL FENCE



5 ACCESS ROAD - CROSS SECTION A-A

- CONCRETE NOTES**
1. ALL CONCRETE SHALL BE PLACED IN ONE LIFT UNLESS OTHERWISE NOTED.
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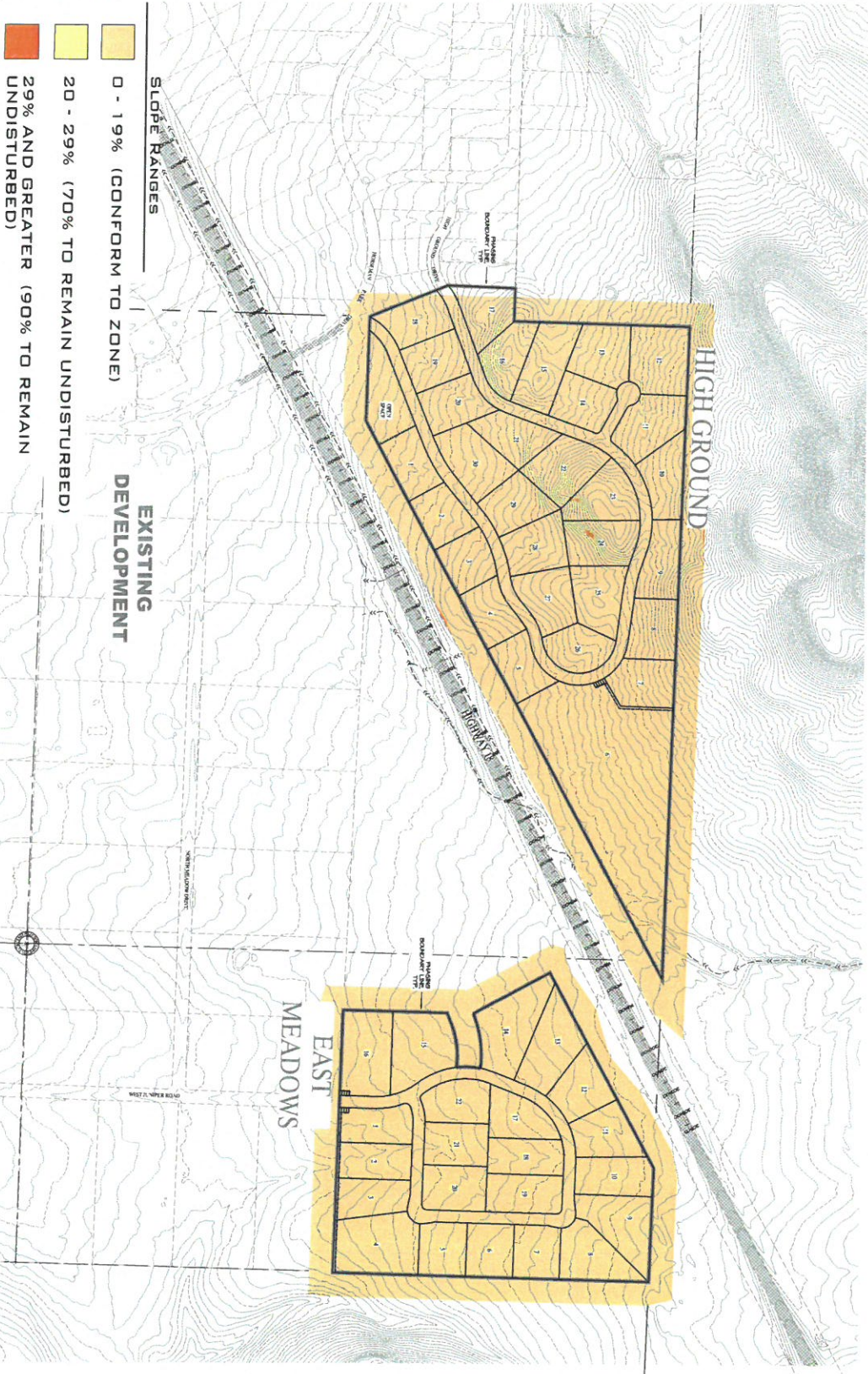




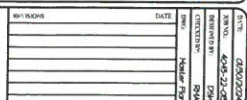








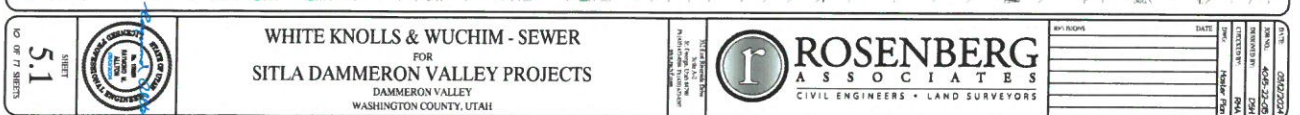






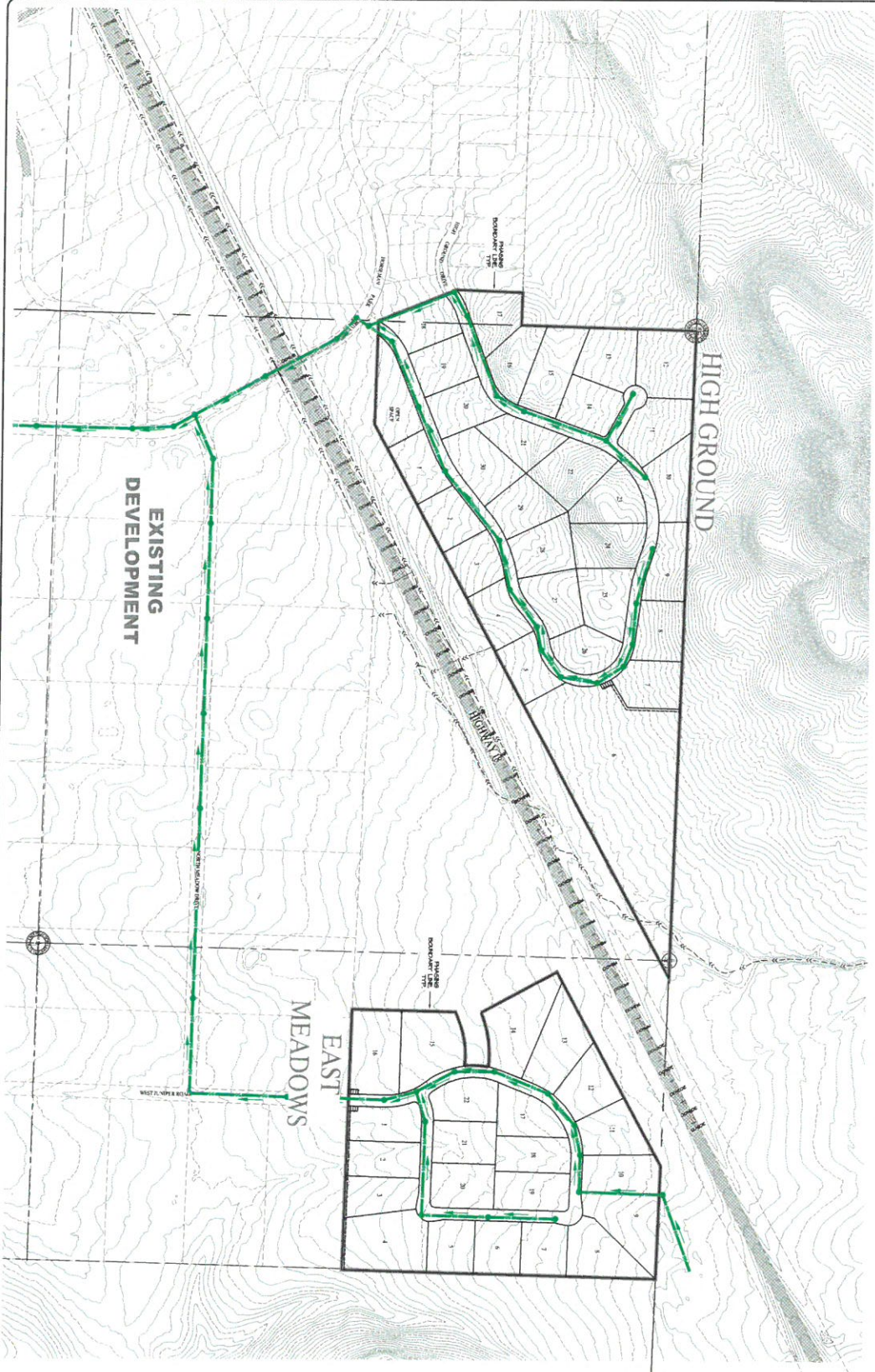






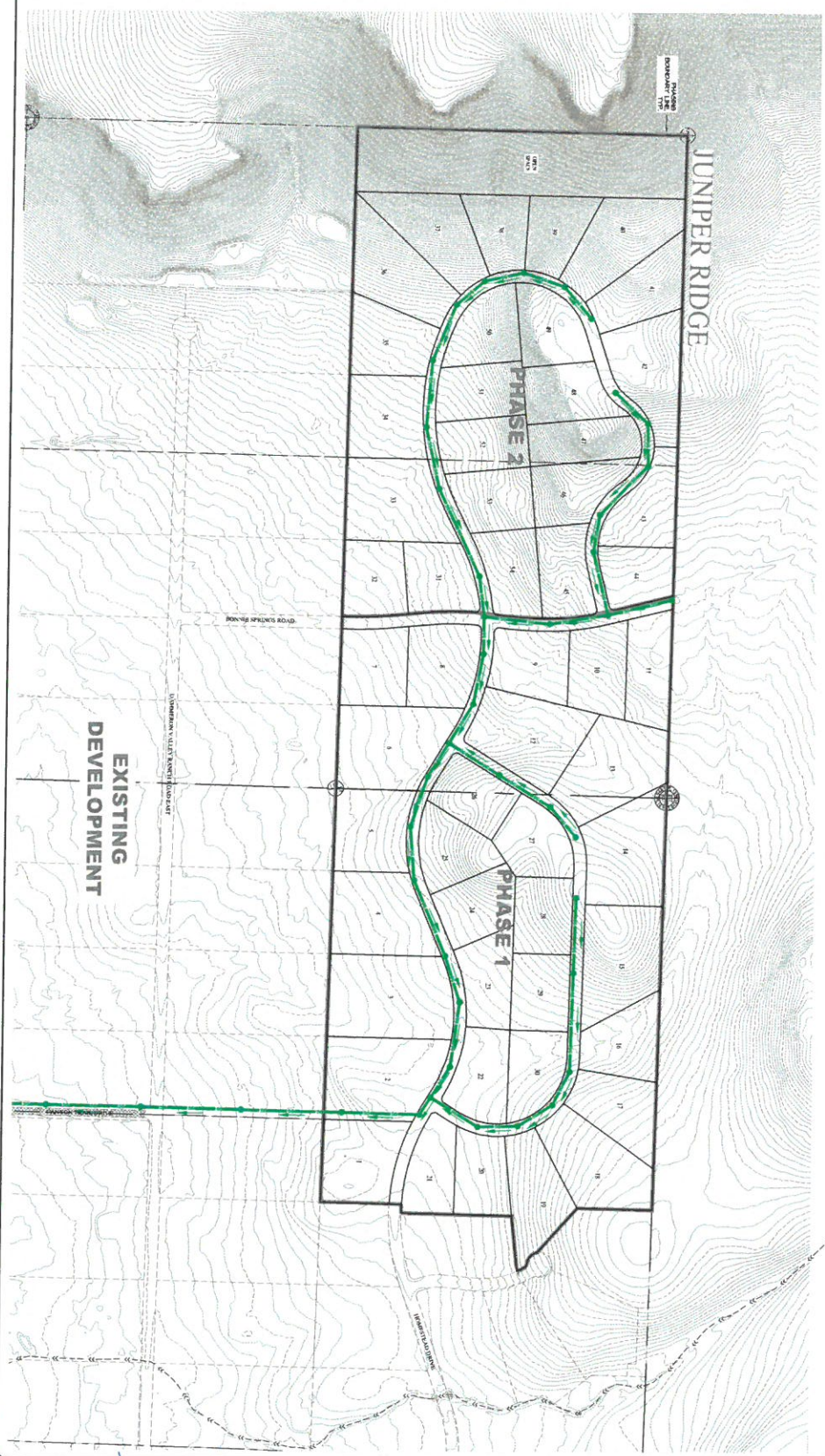


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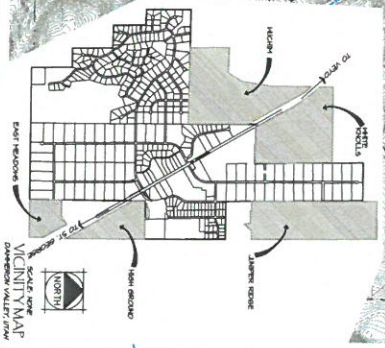
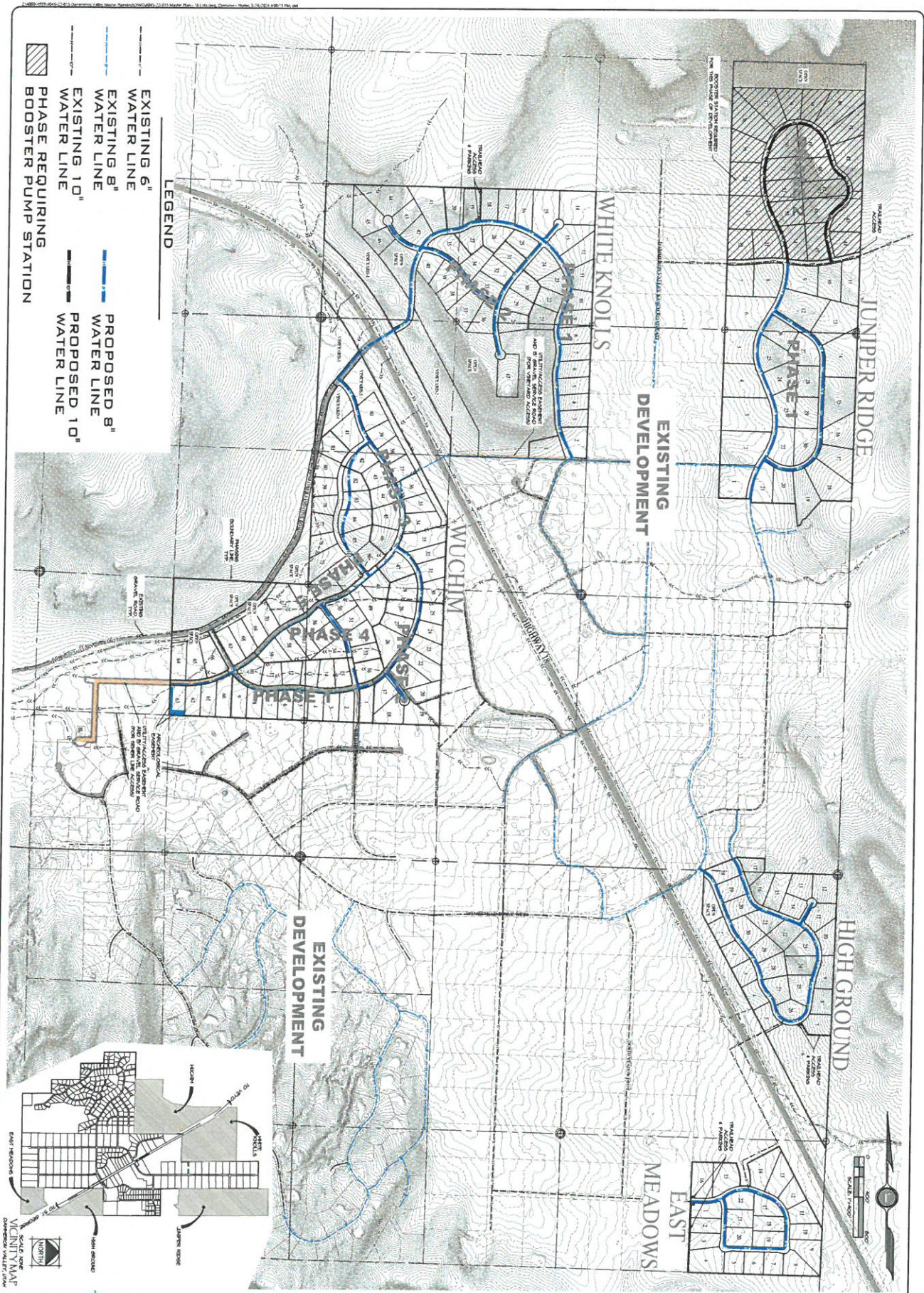


\\rosengb\proj\4006-22-00\JUNIPER RIDGE - SEWER - DAMMERON VALLEY - 12-01-2011\Map\Map - 12-01-2011.dwg



<p>5.3</p> <p>12 OF 17 SHEETS</p>		<p><b>JUNIPER RIDGE - SEWER</b></p> <p>FOR</p> <p><b>SITLA DAMMERON VALLEY PROJECTS</b></p> <p>DAMMERON VALLEY</p> <p>WASHINGTON COUNTY, UTAH</p>		<p><b>ROSENBERG ASSOCIATES</b></p> <p>CIVIL ENGINEERS • LAND SURVEYORS</p>	<p>DATE: 03/03/2011</p>
		<p>PROJECT NO.: 4006-22-00</p>			<p>BY: [Signature]</p>
		<p>CONTRACT NO.: 2004</p>			<p>SCALE: 1"=200'</p>
		<p>PROJECT NAME: JUNIPER RIDGE - SEWER</p>			<p>1"=200'</p>

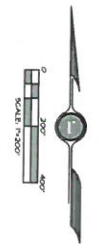
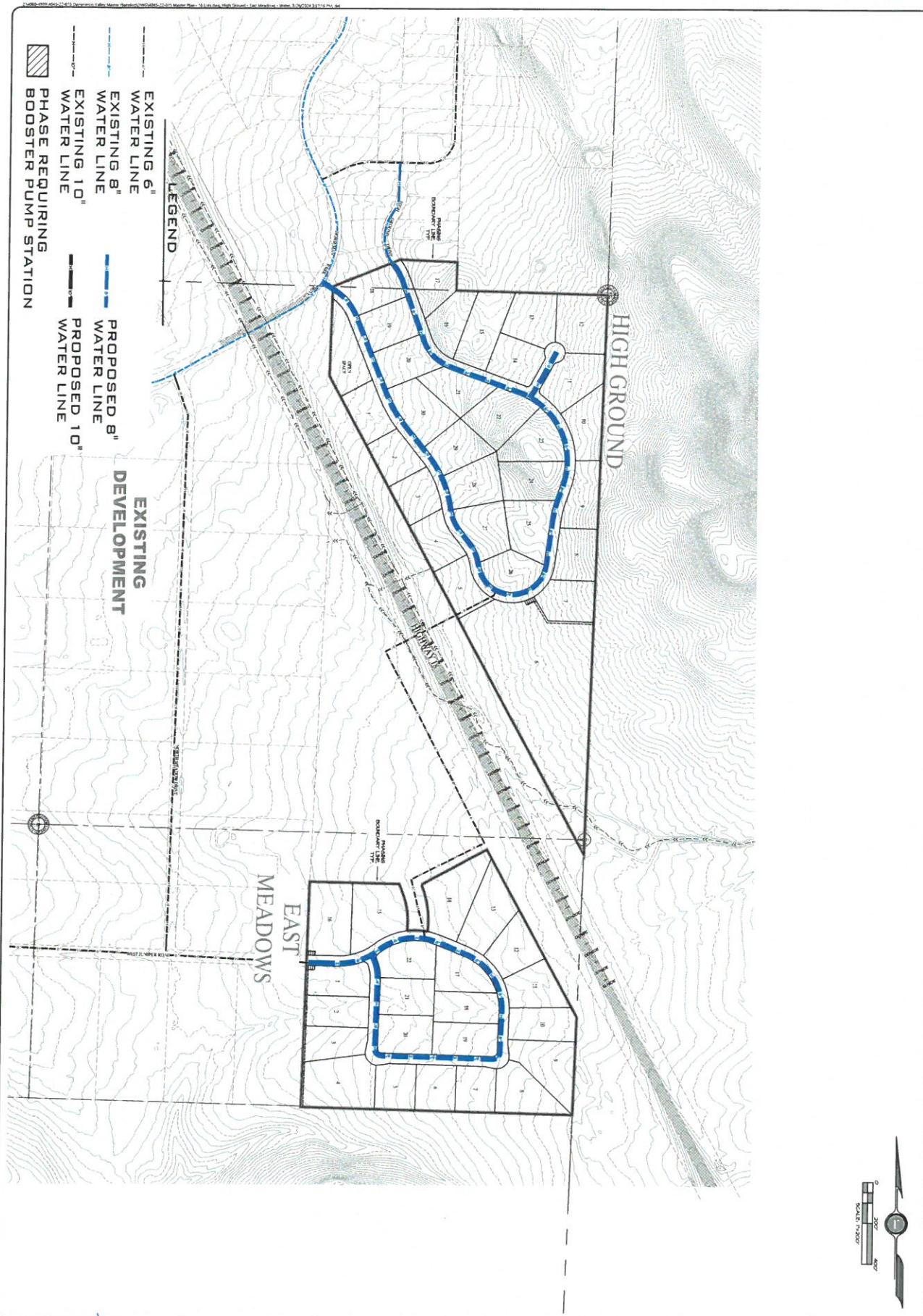








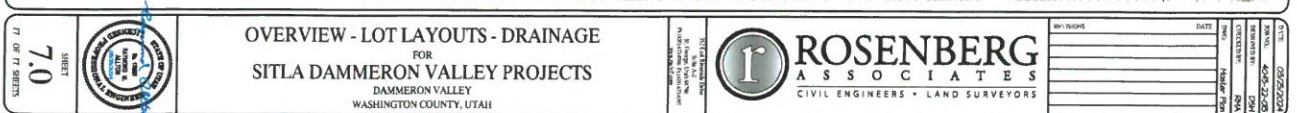
















# WCWCD Wastewater in Dammeron Valley



# Background

- The Washington County Water Conservancy District was appointed as the governing authority over wastewater management by the county commission in 2009
- Wastewater management is necessary to protect ground water recharge and drinking water resources





# History of Dammeron Valley System

 **2009**

District tasked with  
managing the system

 **2017**

\$650,000 expansion completed to  
comply with federal and state  
guidelines, protect groundwater  
supplies and allow for additional  
growth





## Existing System

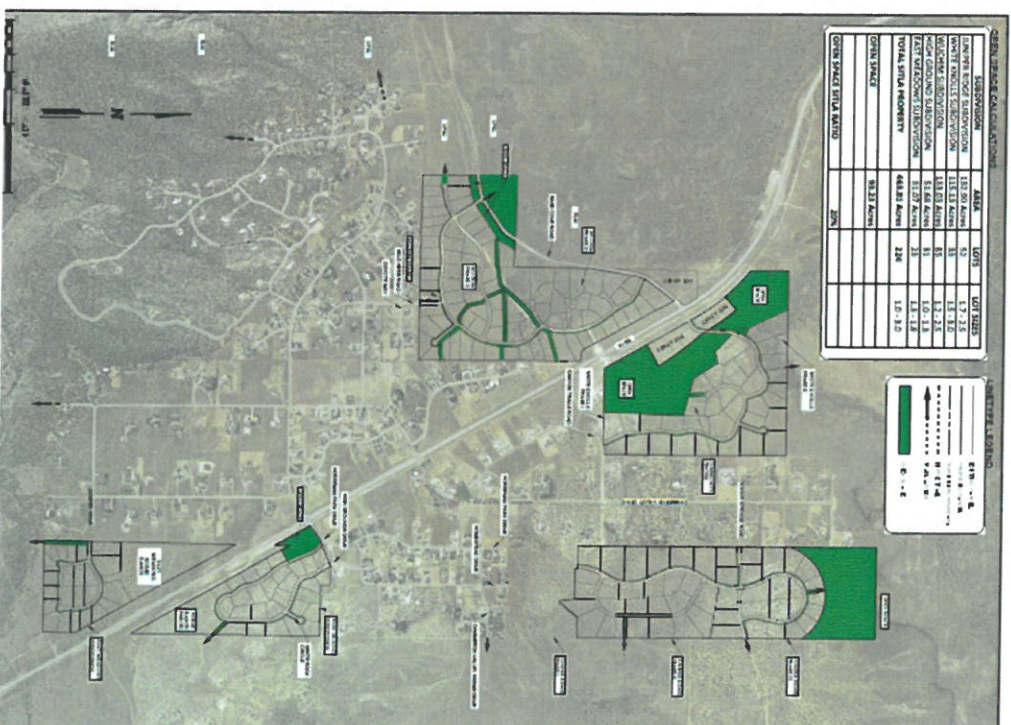
- Orenco Advantex System
  - Total system capacity: 124 connections  
(expandable to 167 with drain field addition)

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# Projected Growth

- Currently proposed development will add 224 connections
- Additional connections planned in the future
- Existing system is not sufficient to serve new growth





# Septic Systems

- Hansen Allen and Luce study requires 12 acres per connection
- The District would not be involved in operations or maintenance of the connections outside of the existing Pinion Hills connections





# Upgrade/Expand Existing LUWDS

- Larger volume will move LUWDS into a different, more restricting permit classification
- High capital cost
- Similar operational cost to existing
- Groundwater discharge will be challenging due to water quality



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# Sewer Lagoons

- Medium capital cost
- More expensive to operate than LUWDS, but less than mechanical treatment
- Needs to be constructed a minimum distance away from homes
- State permitting may be challenging



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# Membrane Bioreactor (MBR)

- High capital cost
- High operational cost
- Easier to permit/produces high water quality
- Could be used for reuse





## Outfall line to St. George City

- High capital cost
- Very low operational cost
- Allows for the addition of other developments
- Minimal permitting required
- Water could be reused in District's regional system





# Dammeron Valley Proposed Sewage Lagoon

Aug 2024

Prepared by concerned Dammeron Valley residents



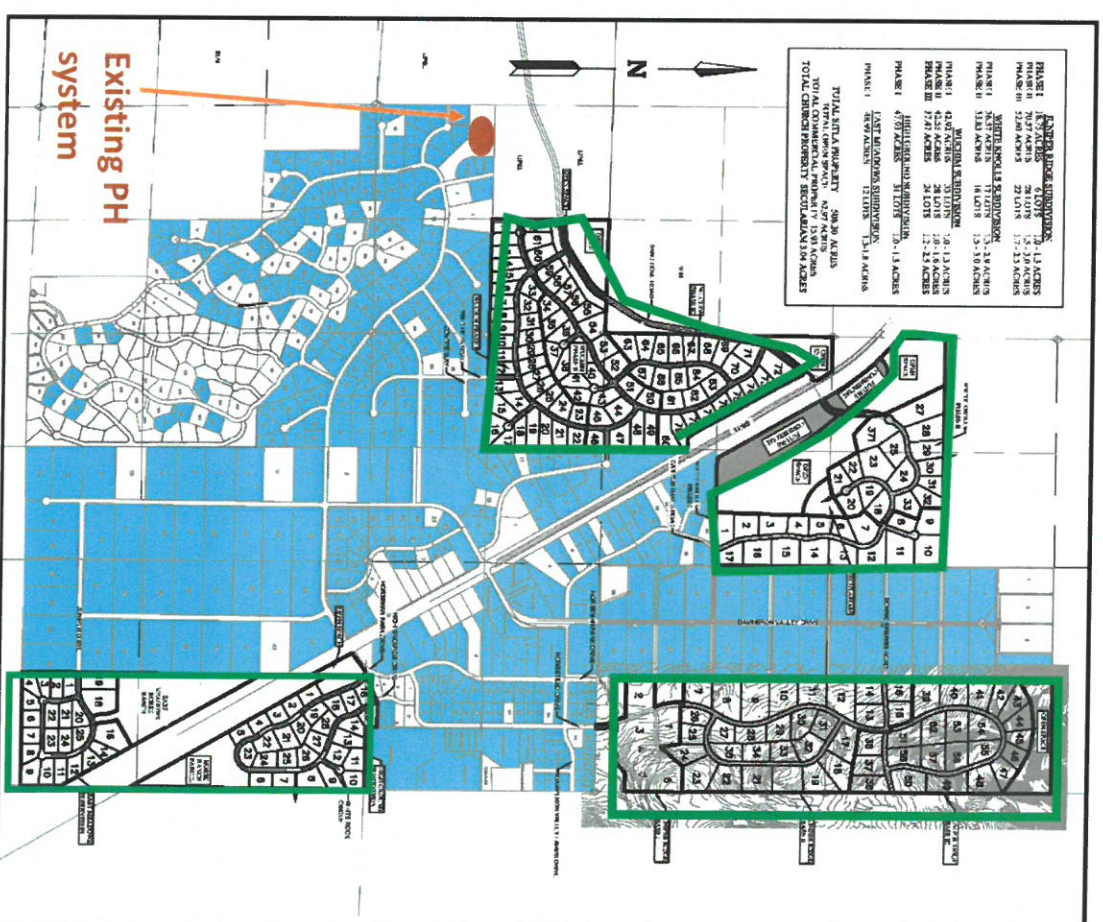
Google Earth, Imagery Date: 4-29-21



# DV Master Plan

- Most residents not opposed to the development as planned (>1 acre)
- SITLA parcels (green) - 250 additional houses.
- Developer must finance wastewater system.
- Cost to expand existing Orenco system: ~\$5 million (2024 dollars).
- Cost for lagoon construction: \$6 to \$10 million (case studies & professional experience).
- WCVCD contracted in April 2023 with Rosenberg for lagoon design for \$458,673.

Zach Renstrom, personal communication, 9-22-23  
 Dammeron Valley Wastewater Presentation, August 2023  
 2019 Dammeron Valley Master Plan by Alpha Engineering  
[https://www.pgh2o.com/sites/default/files/2019-12/7.\\_Cost\\_Estimates\\_Development.pdf](https://www.pgh2o.com/sites/default/files/2019-12/7._Cost_Estimates_Development.pdf)  
 Personal communication, Jack Smith





# EPA & UDEQ Sewage Lagoon Reports, 2022

## EPA study for ~8,000 lagoons in the U.S., including 29 in UT.

- Lagoons are the most neglected type of wastewater treatment.
- Lagoon communities typically <3,000 people
- 79% are located in socio-economically disadvantaged areas.
- 55% of UT lagoons have violations or exceedances in the last three years.
- 25% polluted or impaired receiving waters (BOD, TSS, fecal bacteria, pH, and ammonia).

## UDEQ Incident Reports for Sewer Lagoons:

- Allowable leakage through liner of 6500 gpd/acre (65,000 gpd for 10-acre lagoon)
- 45% have had overflows since 2005.
- 24% have had lagoon failures since 2016 resulting in overflows.
- **All failures degrade the environment** (through contamination of surface and groundwater, release of aerosols such as viruses and bacteria, and biohazards such as flies, mosquitos, rats, and mice).

[https://www.epa.gov/system/files/documents/2022-10/Lagoon%20Action\\_Plan\\_FINAL.pdf](https://www.epa.gov/system/files/documents/2022-10/Lagoon%20Action_Plan_FINAL.pdf)

<https://aspe.hhs.gov/topics/poverty-economic-mobility/poverty-guidelines>

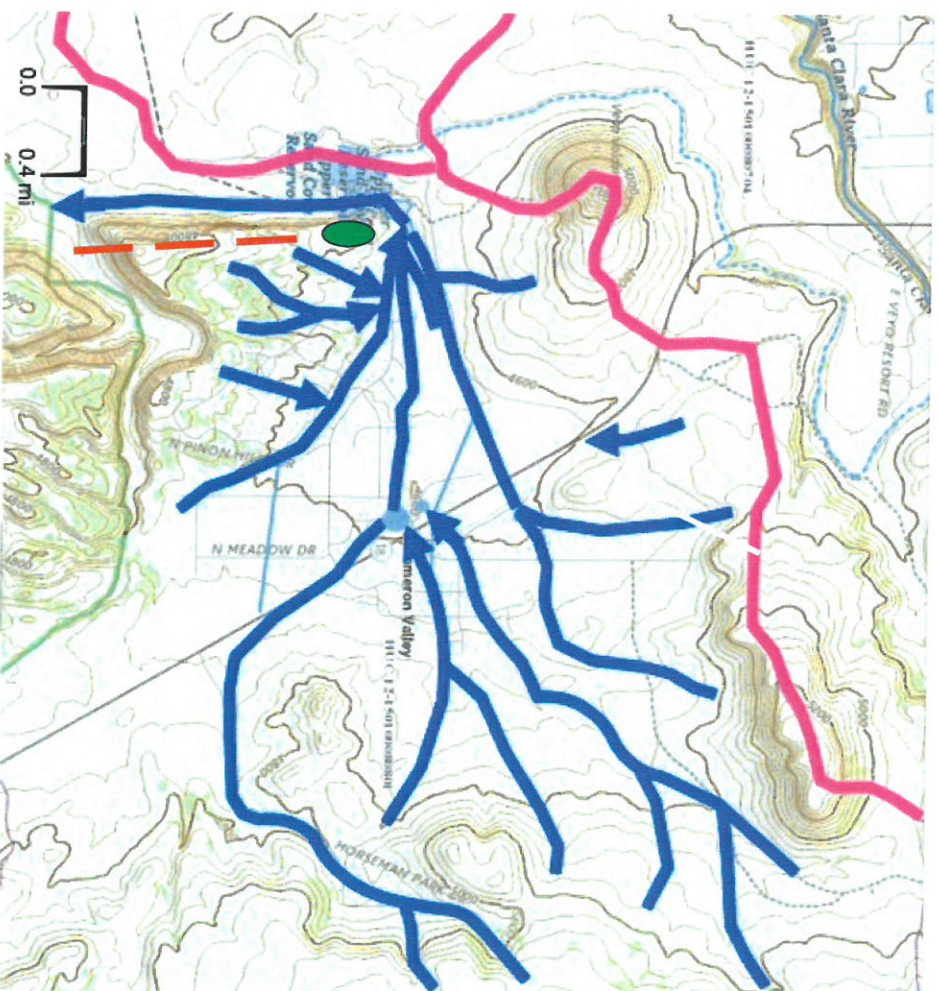
<https://www.rcap.org/be-proactive-the-importance-of-regular-wastewater-lagoon-maintenance/#:~:text=There%20are%20over%208%2C000%20wastewater,sewage%20in%20the%20United%20States>



# FLOODING - Major Drainage Basin for Dammeron Valley



- Runoff for the entire valley flows to the lowest point which is the proposed lagoon location.
- Runoff then empties into Sand Cove Wash, then Gunlock Reservoir, then Santa Clara River, then Shivwits Indian Lands.
- Lagoon sizing required by UDEQ is only 100-year flood event.

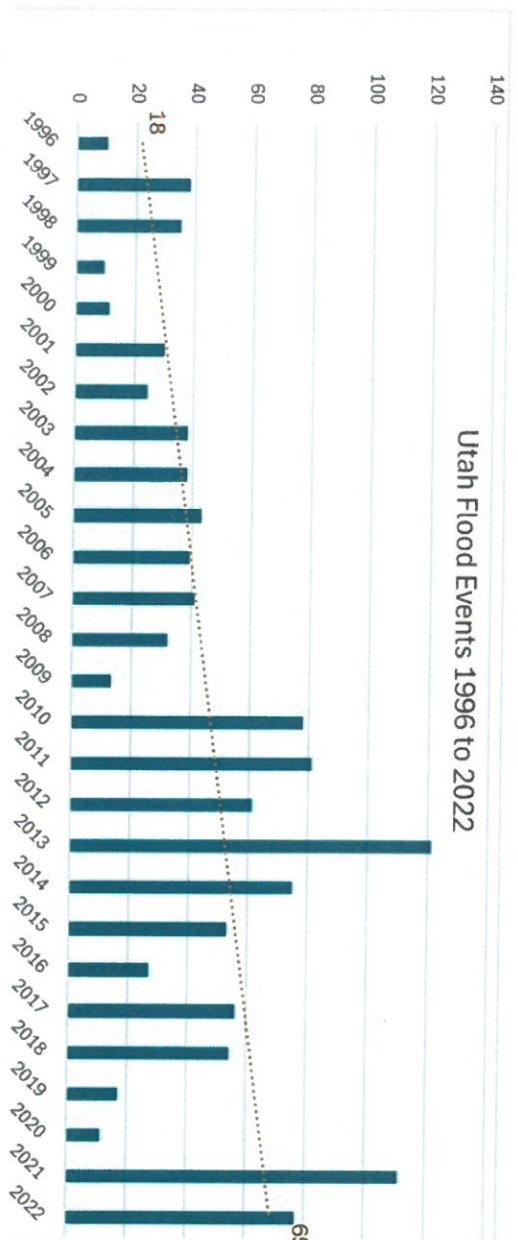




# FLOODING - Tracked Events 1996 - 2022

Utah tracked major flood events for the state (2019 & 2024 reports):

- Avg number of flood events statewide increased from 18 to 65.
- WashCo self-ranked in top 4 for highest potential flood losses and self-reported the highest number of residential units at flood risk.
- Four major flood events in WashCo since 2005:



1. 2005 Santa Clara River Flood
2. 2010 Virgin River Flood
3. 2012 Washington flood.
4. 2018 Dammeron Valley flood



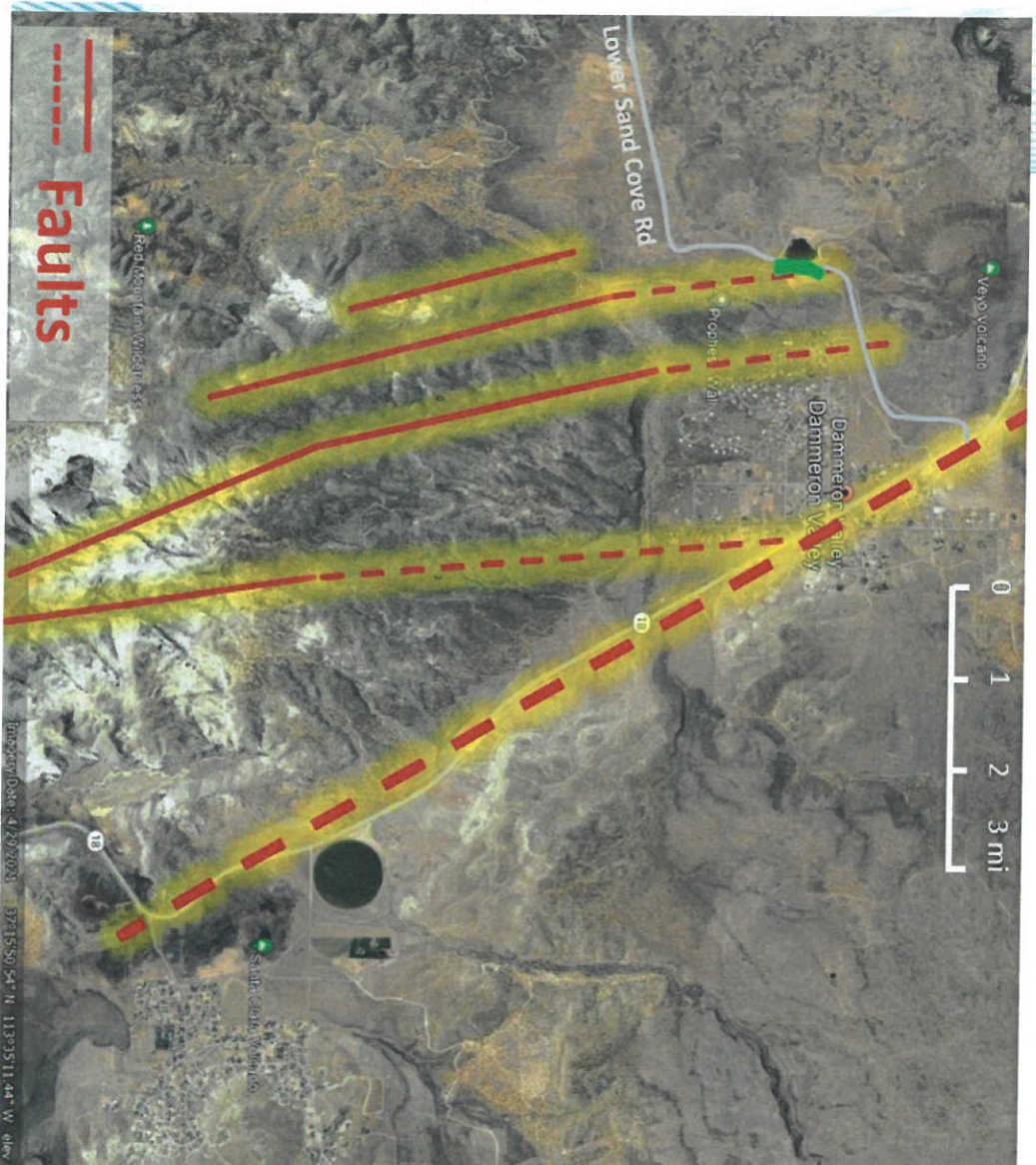
# 2018 Flood Crossing Hwy 18 in DV

Still captured from video: Flash flooding on SR-18, south of Dammeron Valley, Utah. July 2018. Raw footage courtesy of Mike Barker.





# GEOLOGIC HAZARDS

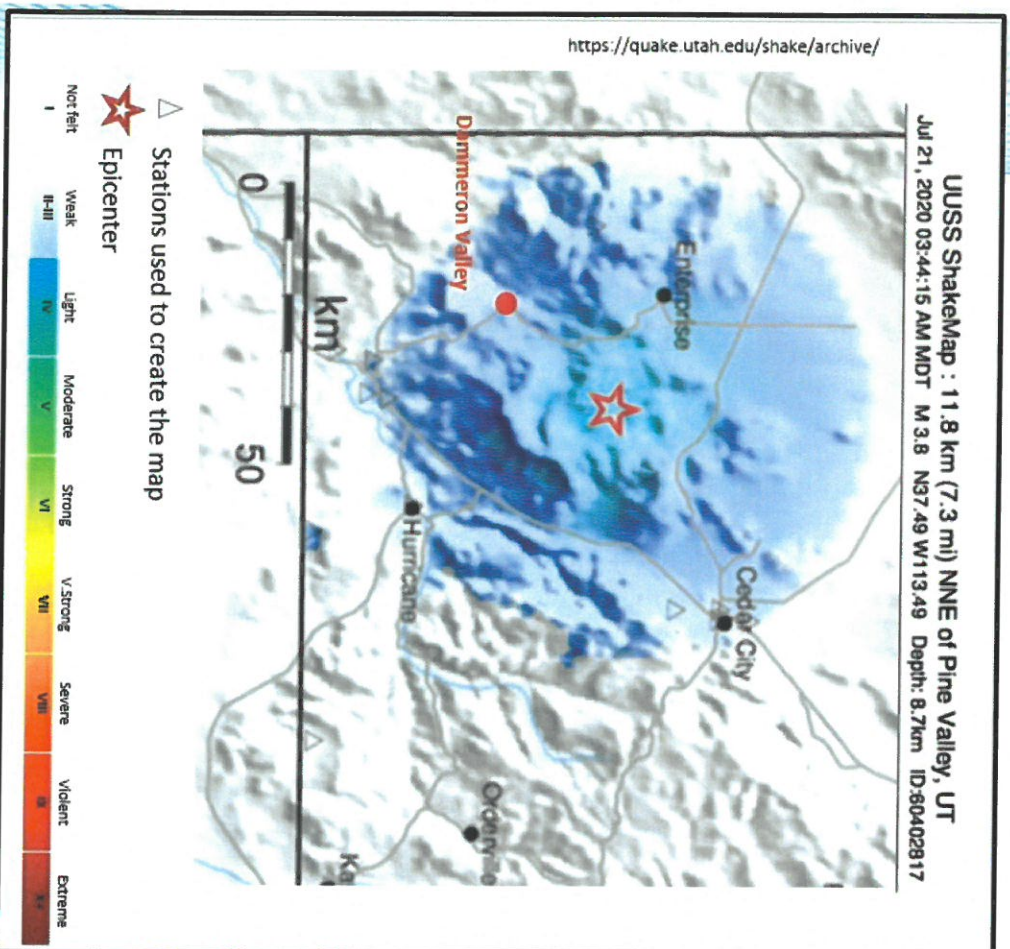


- Proposed site is on a fault.
  - Underlain by 45-60' of alluvium.
  - Groundwater in DV ranges from 33-100' bgs (public water well records).
  - No barrier between alluvium and underlying Kayenta and Navajo aquifers, designated Pristine 1A.
  - High vertical and horizontal conductivities mean that the allowable leakage could impact nearby wells in 2 to 412 days.
  - Can travel down fault to impact deeper wells at Snow Canyon
- $K_H = 0.2$  to  $32$  ft/day.
  - $K_V = 0.08$  to  $22$  ft/day

<https://www.waterrights.utah.gov/app/DOCDB/DocImageToPDF.asp?file=/docsys/v908/c908/c908046k.tif>  
<https://deq.utah.gov/wp-content/uploads/Washington-County-Aquifer-Large.jpg>  
 Hellweil, V.M., Freethy, G.W., Wilkowske, C.D., Strop, B.J. and Wilberg, S.E., 2000, Geohydrology and Numerical Simulation of Ground-Water Flow in the Central Virgin River Basin of Iron and Washington Counties, Utah; U.S.G.S. Technical Report 2000-1-A, 7



# GEOLOGIC HAZARDS



- DV is seismically active: 85 low-ML (0.1ML) quakes in the last 2 years.
- Four quakes over 3.0 ML since 2018 in the area.
- DV is almost always in the “halo” of shaking for these larger quakes.
- This seismic activity enhances the risk of liner fracture and failure for any type of surface lagoon.

**SITLA has been warned of numerous geologic hazards by the USGS and state.**





State of Utah

GARY R. HERBERT  
Governor

SPENCER I. COX  
Lieutenant  
Governor

Office of the Governor  
PUBLIC LANDS POLICY COORDINATING OFFICE  
KATHLEEN CLARKE  
Director

March 13, 2015

Sent by electronic mail: [kentpage@utah.gov](mailto:kentpage@utah.gov)

Kent Page  
Trust Lands Resource Specialist  
School and Institutional Trust Lands Administration  
2303 N Coral Canyon Blvd  
Washington, UT 84780

Subject: Dammeron Valley Development Lease  
RDCC Project No. 47083

Dear Mr. Page:

The Public Lands Policy Coordinating Office received the following comments from Utah Geological Survey (UGS), Geologic Hazards Program, concerning the development of SILLA parcels located in Dammeron Valley Community:

Prospective developers should be aware of the potential hazards so they can be addressed in a manner appropriate to the intended use of the property. Potential geologic hazards in the region that could affect the property may include flash flooding, debris flow/alluvial-fan flooding, earthquake hazards associated with Quaternary faults including ground shaking, problem soils including gypsiferous, shrink/swell and/or collapsible, landslides, shallow bedrock, caliche, wind-blown sand, piping/erosion, and moderate to high indoor radon potential.

Geologic hazards are best addressed early in the land-use planning process prior to development and construction. UGS has general geologic hazard information available at our offices and online at:

<http://geology.utah.gov/utahgeo/hazards/index.htm>

Kent Page  
March 13, 2015  
Page 2

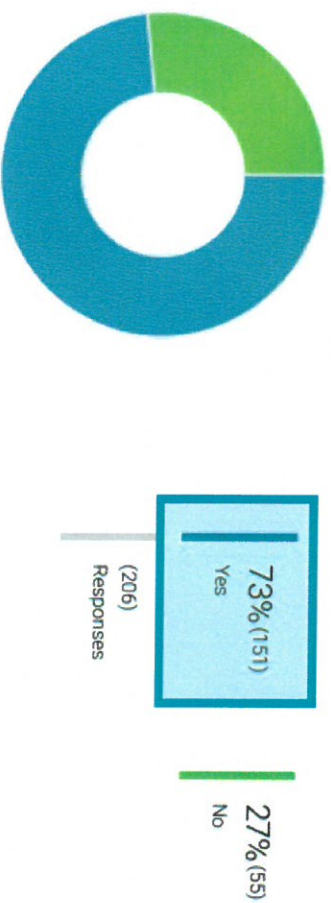
Thank you for the opportunity to provide comment on the proposed Dammeron Valley Community Lease located in Washington County. Please direct any other written questions regarding this correspondence to the Public Lands Policy Coordinating Office at the address below, or call to discuss any questions or concerns.

Prospective developers should be aware of the potential hazards so they can be addressed in a manner appropriate to the intended use of the property. Potential geologic hazards in the region that could affect the property may include flash flooding, debris flow/alluvial-fan flooding, earthquake hazards associated with Quaternary faults including ground shaking, problem soils including gypsiferous, shrink/swell and/or collapsible, landslides, shallow bedrock, caliche, wind-blown sand, piping/erosion, and moderate to high indoor radon potential.



# Community survey highlights

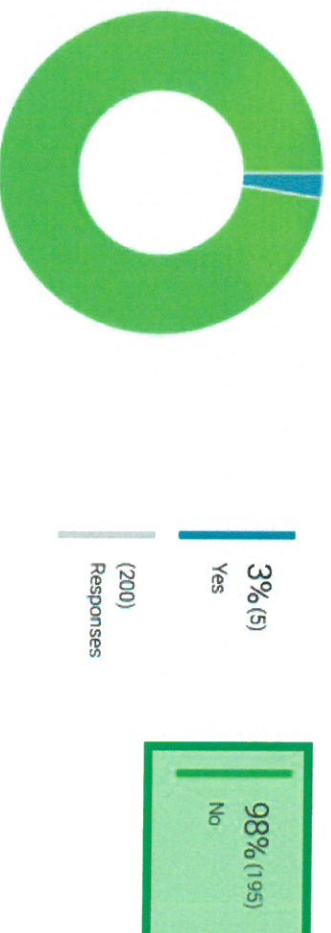
**12** Are you familiar with sewage lagoons and do you know what they entail?



216 Respondents  
(n=216)

197 (92%) live  
here full time

**13** Would you be in favor of the installation of a sewage lagoon near your community?



98% said no to an  
open sewer  
lagoon.





# Requests

We request that the County Commissioners:

- Acknowledge the potential hazards of and disallow this lowest-available-technology that will compromise the drinking water resources in the region.
- Exercise your sworn duties to provide for the health, safety and welfare of the residents of Washington County.
- Respect the voices of DV Residents who do not want an open sewer lagoon.
- Implement a feasibility study for wastewater management of the entire Pine Valley-Veyo-Dammeron-Diamond area that preserves quality of life, recreation, and property values PRIOR to permitting additional development that requires new wastewater management.