Valley County Planning and Zoning

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Cascade, ID 83611-1350

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STAFF REPORT:	C.U.P. 25-015 Vore Solar Panels
MEETING DATE:	August 14, 2025
TO:	Planning and Zoning Commission
STAFF:	Cynda Herrick, AICP, CFM Planning and Zoning Director
APPLICANT / PROPERTY OWNER	Abram Vore 4841 N Waterfront Way, Boise, ID 83703
LOCATION:	Part of parcel RP17N04E082403 located in the NENW Section 8, T.17N, R.4E, Boise Meridian, Valley County, Idaho
SIZE:	10-acre parcel
REQUEST:	Ground-Mounted Solar Panel Array
EXISTING LAND USE:	Agricultural (Timber) with Homesite (Yurt)

Valley County Code 9-5G-1 states that conditional use permits are required for solar panels greater than eight (8) square-feet that are detached from the primary structure. This requirement was adopted in Ordinance 10-06 on August 23, 2010.

Abram Vore is requesting a conditional use permit for ground-mounted solar panels for residential use on a 10-acre parcel. The solar panel array was constructed in 2023 without all the proper permits. The applicant did obtain the required electrical permit and inspection from the State of Idaho. The dimension of the array is 13.22-ft wide by 13.07-ft long and 19-ft high.

The approximate setbacks from the property lines to the solar array are:

- 300-ft to north property line,
- 200-ft to east property line,
- 150-ft to south property line, and
- 200-ft to west property line.

Access would be from Silver Fox Spur, a private road. The property is addressed at 420 Silver Fox Spur. The property has a yurt, shipping container, individual septic system, and a well.

FINDINGS:

1. The application was submitted on June 26, 2025.

2. Legal notice was posted in the *Star News* on July 24, 2025, and July 31, 24, 2025. Potentially affected agencies were notified on July 15, 2025. Neighbors within 300 feet of the property line

were notified by fact sheet sent July 17, 2025. The site was posted on July 29, 2025. The notice and application were posted online at www.co.valley.id.us on July 15, 2025.

3. Agency comment received:

   Brent Copes, Central District Health, stated an accessory application for the ground mounted solar panels is required to make sure all setbacks to the setback area are met. (August 1, 2025)

   Emily Hart, McCall Airport Manager, had no comments. (July 22, 2025)

4. Public comment received: *none*

5. Physical characteristics of the site: The area is sloped with a flatter building site. Mountainous terrain and high conifer cover.

7. The surrounding land use and zoning includes:
   North: Agricultural (Timber/Grazing)
   South: Agricultural (Timber) with C.U.P. 21-21 (short-term rental of Yurt)
   East: State of Idaho Land
   West: Agricultural (Timber)

8. Valley County Code (Title 9): In Table 9-3-1, this proposal is categorized under:
   - 7. Alternative Energy Uses (b) Solar panels – detached from primary structure and > 8-feet in area

   Review of Title 9 - Chapter 5 Conditional Uses should be done.

TITLE 9 LAND USE AND DEVELOPMENT

9-5G-1: SITE OR DEVELOPMENT STANDARDS
Alternative energy uses requiring a conditional use permit shall meet the following site or development standards:

A. Solar Panels Greater Than Eight Square Feet In Accumulated Area and Detached From Primary Structure:
   1. Must be a minimum of fifteen feet (15') from property lines.
   2. Glare shall not create a hazard to vehicular traffic.
   3. Cannot be over thirty feet (30') in height.
   4. Impact to neighbors will be a determining factor.

SUMMARY:

Staff's compatibility rating is a +31.

The Planning and Zoning Commission should do their own compatibility rating prior to the meeting (form with directions attached). Be prepared to submit your compatibility rating or state which lines on staff's compatibility rating needs to be changed.

STAFF COMMENTS / QUESTIONS:

1. This site is within the Donnelly Fire District and Water District 65D. It is not within a herd district.
2. All requirements of 9-5G-1.A appear to have been met. Idaho Power does not currently provide electrical power to this site. Full-time generator use would result in more noise.
3. If the site is rented out to guests for periods less than 30-days, a conditional use permit will be required.

Standards of Approval:

1. Will the application result in an increase in value of private property? VCC 9-5-2(B)(3).
2. Will the approval of the application result in an undue adverse impact on the environment? VCC 9-5-2(B)(3).
3. Will the approval of the application result in an undue adverse impact on adjoining properties? VCC 9-5-2(B)(3).
4. Wiil the approval of the application result in an undue adverse impact on governmental services? VCC 9-5-2(B)(3).
5. Is the application consistent with the Valley County Comprehensive Plan? VCC 9-5-2(B)(3).
6. Conditional uses may be approved only after a C.U.P. has been evaluated to determine that the impacts can be mitigated through conformance with conditions of approval. VCC 9-5-2(A).

These six standards should be a significant focus of attention during the public hearing and deliberations because they need to be resolved in order to justify approval. VCC 9-5-1(C) directs the decision-making body to encourage conditional uses where noncompatible aspects of the application can be satisfactorily mitigated through development agreements for the costs to service providers and impacts to surrounding land uses. Because mitigation measures are a requirement of approval the applicant needs to understand that he/she will be required to perform some off-site improvements. They are not mandatory but without them the application cannot satisfy the mitigation of impacts requirement and would be denied under the ordinance.

ATTACHMENTS:

- Proposed Conditions of Approval
- Blank Compatibility Evaluation and Instructions
- Compatibility Evaluation by Staff
- Location Map
- Aerial Map
- Photos taken July 29, 2025
- Pictures from Assessors Report
- Assessor Plat – T.17N R.4E Section 8
- Site Plan from Application
- Responses
- Septic System Handout

Proposed Conditions of Approval

1. The application, the staff report, and the provisions of the Land Use and Development Ordinance are all made a part of this permit as if written in full herein. Any violation of any portion of the permit will be subject to enforcement and penalties in accordance with Title 9-2-5; and, may include revocation or suspension of the conditional use permit.
2. Any change in the nature or scope of land use activities shall require an additional Conditional Use Permit.
3. The issuance of this permit and these conditions will not relieve the applicant from complying with applicable County, State, or Federal laws or regulations or be construed as permission to operate in violation of any statute or regulations. Violation of these laws, regulations or rules may be grounds for revocation of the Conditional Use Permit or grounds for suspension of the Conditional Use Permit.
4. Shall obtain a building permit for the solar panel structure by December 31, 2026.
5. Shall meet requirements of Donnelly Fire Department.
6. All noxious weeds on the property must be controlled.
7. All lighting on-site must be dark sky compliant.
8. When the solar array becomes damaged, replaced, or obsolete, all materials must be properly disposed of as required by federal and state laws and regulations.
9. A new conditional use permit will be required to enlarge or move the solar array location.

END OF STAFF REPORT

Compatibility Questions and Evaluation

Matrix Line # / Use: _____ Prepared by: _____

YES/NO		X	Response Value	
				Use Matrix Values:
(+2/-2)	____	X 4	_____	1. Is the proposed use compatible with the dominant adjacent land use?
(+2/-2)	____	X 2	_____	2. Is the proposed use compatible with the other adjacent land uses (total and average)?
(+2/-2)	____	X 1	_____	3. Is the proposed use generally compatible with the overall land use in the local vicinity?
				Site Specific Evaluation (Impacts and Proposed Mitigation)
(+2/-2)	____	X 3	_____	4. Is the property large enough, does the existence of wooded area, or does the lay of the land help to minimize any potential impacts the proposed use may have on adjacent uses?
(+2/-2)	____	X 1	_____	5. Is the size or scale of proposed lots and/or structures similar to adjacent ones?
(+2/-2)	____	X 2	_____	6. Is the traffic volume and character to be generated by the proposed use similar to the uses on properties that will be affected by proximity to parking lots, on-site roads, or access roads?
(+2/-2)	____	X 2	_____	7. Is the potential impact on adjacent properties due to the consuming or emission of any resource or substance compatible with that of existing uses?
(+2/-2)	____	X 2	_____	8. Is the proposed use compatible with the abilities of public agencies to provide service or of public facilities to accommodate the proposed use demands on utilities, fire and police protection, schools, roads, traffic control, parks, and open areas?
(+2/-2)	____	X 2	_____	9. Is the proposed use cost effective when comparing the cost for providing public services and improving public facilities to the increases in public revenue from the improved property?
Sub-Total		(+)	_____	
Sub-Total		(--)	_____	
Total Score			_____	

The resulting values for each questions shall be totaled so that each land use and development proposal receives a single final score.

9-11-1: APPENDIX A, COMPATIBILITY EVALUATION:

A. General: One of the primary functions of traditional zoning is to classify land uses so that those which are not fully compatible or congruous can be geographically separated from each other. The county has opted to substitute traditional zoning with a multiple use concept in which there is no separation of land uses. Proposed incompatible uses may adversely affect existing uses, people, or lands in numerous ways: noise, odors, creation of hazards, view, water contamination, loss of needed or desired resources, property values, or infringe on a desired lifestyle. To ensure that the county can continue to grow and develop without causing such land use problems and conflicts, a mechanism designed to identify and discourage land use proposals which will be incompatible at particular locations has been devised. The compatibility evaluation of all conditional uses also provides for evaluations in a manner which is both systematic and consistent.

B. Purpose; Use:

1. The compatibility rating is to be used as a tool to assist in the determination of compatibility. The compatibility rating is not the sole deciding factor in the approval or denial of any application.

2. Staff prepares a preliminary compatibility rating for conditional use permits, except for conditional use permits for PUDs. The commission reviews the compatibility rating and may change any value.

C. General Evaluation: Completing the compatibility questions and evaluation (form):

1. All evaluations shall be made as objectively as possible by assignment of points for each of a series of questions. Points shall be assigned as follows:

Plus 2 - assigned for full compatibility (adjacency encouraged).

Plus 1 - assigned for partial compatibility (adjacency not necessarily encouraged).

0 - assigned if not applicable or neutral.

Minus 1 - assigned for minimal compatibility (adjacency not discouraged).

Minus 2 - assigned for no compatibility (adjacency not acceptable).

2. Each response value shall be multiplied by some number, which indicates how important that particular response is relative to all the others. Multipliers shall be any of the following:

x4 - indicates major relative importance.

x3 - indicates above average relative importance.

x2 - indicates below average relative importance.

x1 - indicates minor relative importance.

D. Matrix - Questions 1 Through 3: The following matrix shall be utilized, wherever practical, to determine response values for questions one through three (3). Uses classified and listed in the left hand column and across the top of the matrix represent possible proposed, adjacent, or vicinity land uses. Each box indicates the extent of compatibility between any two (2) intersecting uses. These numbers should not be changed from proposal to proposal, except where distinctive uses arise which may present unique compatibility considerations. The commission shall determine whether or not there is a unique consideration.

E. Terms:

DOMINANT ADJACENT LAND USE: Any use which is within three hundred feet (300') of the use boundary being proposed; and

1. Comprises at least one-half (1/2) of the adjacent uses and one-fourth (1/4) of the total adjacent area; or

2. Where two (2) or more uses compete equally in number and are more frequent than all the other uses, the one with the greatest amount of acreage is the dominant land use; or

3. In all other situations, no dominant land use exists. When this occurs, the response value shall be zero.

LOCAL VICINITY: Land uses within a one to three (3) mile radius. The various uses therein should be identified and averaged to determine the overall use of the land.

F. Questions 4 Through 9:

1. In determining the response values for questions 4 through 9, the evaluators shall consider the information contained in the application, the goals and objectives of the comprehensive plan, the provisions of this title and related ordinances, information gained from an actual inspection of the site, and information gathered by the staff.

2. The evaluator or commission shall also consider proposed mitigation of the determined impacts. Adequacy of the mitigation will be a factor.

APPENDIX A

MATRIX FOR RATING

	QUESTIONS 1, 2, and 3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
	1. AGRICULTURAL		+2	-1	-2	-2	-2	-2	+1	+1	+1	+1	+2	+1	+1	-1	-1	+2	-1	-2	-1	+1	+2	+2	1
RESIDENTIAL USES	2. RESIDENCE, S.F.	+2		+2	+1	+1	+1	+1	+1	+1	-1	+2	+1	-2	+1	-1	+1	+1	+1	-1	+1	+1	-2	-2	2
	3. SUBDIVISION, S.F.	-1	+2		+1	+1	+1	+1	+1	+1	-1	+2	+1	-2	+1	-1	+1	+2	+1	-1	+2	+1	-2	-2	3
	4. M.H. or R.V. PARK	-2	+1	+1		+1	+1	+1	+1	+1	-1	+2	+1	-2	+1	-1	+1	+1	+1	-1	+1	+1	-2	-2	4
	5. RESIDENCE, M.F.	-2	+1	+1	+1		+2	+2	+1	+1	-1	+2	+1	-2	+1	-1	+1	+1	+1	-1	+1	+1	-2	-2	5
	6. SUBDIVISION, M.F.	-2	+1	+1	+1	+2		+2	+1	+1	-1	+2	+1	-2	+1	-1	+1	+1	+1	-1	+1	+1	-2	-2	6
	7. P.U.D., RES.	-2	+1	+1	+1	+2	+2		+1	+1	-1	+2	+1	-2	+1	-1	+1	+1	+1	-1	+1	+1	-2	-2	7
CIVIC or COMMUNITY SERVICE USES	8. REL., EDUC & REHAB	+1	+2	+1	+1	+1	+1	+1		+1	+1	-1	+2	-2	-1	-1	+2	+2	+1	+1	-1	+1	-2	-1	8
	9. FRAT or GOV'T	+1	+1	+1	+1	+1	+1	+1	+1		+1	-1	+2	-2	-1	-1	+1	+1	+1	+1	-1	+1	-2	-2	9
	10 PUBLIC UTIL. (1A-3.1)	+1	-1	-1	-1	-1	-1	-1	+1	+1		+1	+	-1	+1	+1	+1	-1	+1	+1	+1	+1	+2	+2	10
	11. PUBLIC REC.	+1	+2	+2	+2	+2	+2	+2	-1	-1	+1		+2	-1	+1	+1	+1	+2	+1	+1	+1	+1	-1	+1	11
	12. CEMETERY	+2	+1	+1	+1	+1	+1	+1	+2	+2	+2	+2		+1	+1	+1	+1	+1	+1	+1	+1	+2	+1	+1	12
	13. LANDFILL or SWR. PLANT	+1	-2	-2	-2	-2	-2	-2	-2	-2	-1	-1	+1		-1	-1	-2	-2	-2	-2	-1	+2	+2	+2	13
	14. PRIV. REC. (PER)	+1	+1	+1	+1	+1	+1	+1	-1	-1	+1	+1	+1	-1		+1	+1	+1	+2	+1	+2	+2	-1	+1	14
	15. PRIV. REC. (CON)	-1	-1	-1	-1	-1	-1	-1	-1	-1	+1	+1	+1	-1	+1		-2	-2	-1	-2	-2	+2	-1	+1	15
COMMERCIAL USES	16. NEIGHBORHOOD BUS.	-1	+1	+1	+1	+1	+1	+1	+2	+1	+1	+1	+1	-2	+1	-2		+1	+2	+2	+1	+2	-1	-1	16
	17. RESIDENCE BUS.	+2	+2	+2	+1	+1	+1	+1	+2	+1	-1	+2	+1	-2	+1	-2	+1		+1	-1	+1	+1	-2	-2	17
	18. SERV. BUS.	-1	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1	+2	+2	+2	+2	+2	+1		+2	+2		+1	+1	21
	19. AREA BUS.	-2	-1	-1	-1	-1	-1	-1	+1	+1	+1	+1	+1	-2	+1	-2	+2	-1	+2		+1	+2	-2	-2	19
	20. REC. BUS.	-2	+2	+2	+1	+1	+1	+1	-1	-1	+1	+1	+1	-1	+2	-2	+1	+1	+2	+1			+2	-2	+1	20
INDUST. USES	21. LIGHT IND.	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1	+1	+2	+2	+2	+2	+2	+1	+2	+2	+2		+1	+1	21
	22. HEAVY IND.	+2	-2	-2	-2	-2	-2	-2	-2	-2	+2	-1	+1	+2	-1	-1	-1	-2	-1	-2	-2	+1		+2	22
	23. EXTR. IND.	+2	-2	-2	-2	-2	-2	-2	-1	-2	+2	+1	+1	+2	+1	+1	-1	-2	-1	-2	+1	+1	+2		23

RATE THE SOLID SQUARES AS +2

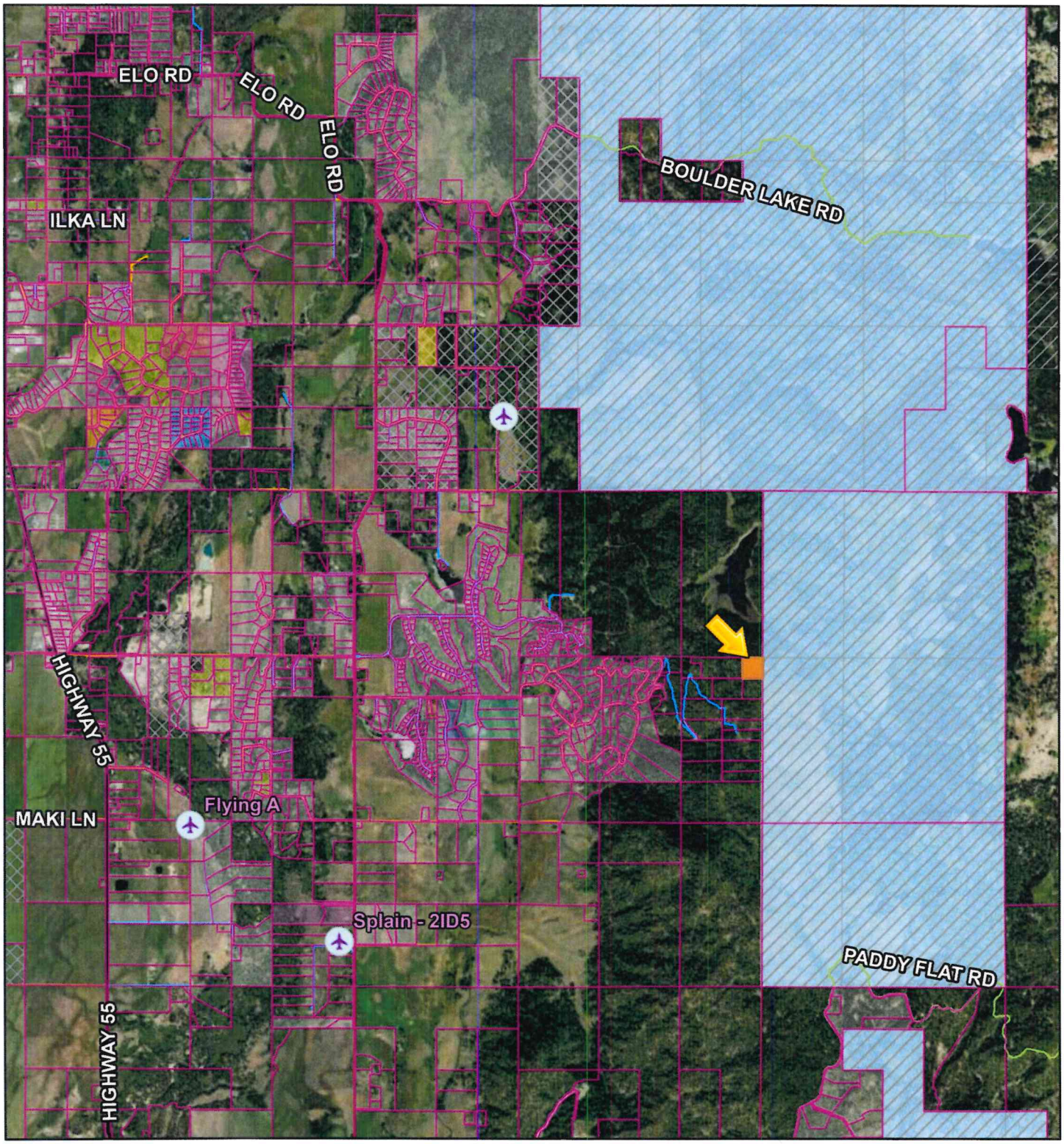
Compatibility Questions and Evaluation

Matrix Line # / Use: 14 Private Recreation Prepared by: CH

YES/NO		X		Response Value	Use Matrix Values:
(+2/-2)	+1	X	4	+4	1. Is the proposed use compatible with the dominant adjacent land use? Agricultural
(+2/-2)	+1	X	2	+2	2. Is the proposed use compatible with the other adjacent land uses (total and average)? Single Family Rural Parcels
(+2/-2)	+1	X	1	+1	3. Is the proposed use generally compatible with the overall land use in the local vicinity? 1 & 2 w/a PUD & Public Lands
					Site Specific Evaluation (Impacts and Proposed Mitigation)
(+2/-2)	+2	X	3	+6	4. Is the property large enough, does the existence of wooded area, or does the lay of the land help to minimize any potential impacts the proposed use may have on adjacent uses? Yes - very secluded
(+2/-2)	+2	X	1	+2	5. Is the size or scale of proposed lots and/or structures similar to adjacent ones? Yes
(+2/-2)	+2	X	2	+4	6. Is the traffic volume and character to be generated by the proposed use similar to the uses on properties that will be affected by proximity to parking lots, on-site roads, or access roads? No Traffic
(+2/-2)	+2	X	2	+4	7. Is the potential impact on adjacent properties due to the consuming or emission of any resource or substance compatible with that of existing uses? None
(+2/-2)	+2	X	2	+4	8. Is the proposed use compatible with the abilities of public agencies to provide service or of public facilities to accommodate the proposed use demands on utilities, fire and police protection, schools, roads, traffic control, parks, and open areas? Yes - provides power
(+2/-2)	+2	X	2	+4	9. Is the proposed use cost effective when comparing the cost for providing public services and improving public facilities to the increases in public revenue from the improved property? No Impact
Sub-Total		(+)		31	
Sub-Total		(--)		-	
Total Score				+31	

The resulting values for each questions shall be totaled so that each land use and development proposal receives a single final score.

C.U.P. 25-015 Location Map



7/3/2025, 3:45:45 PM

1:76,663

0 0.45 0.9 1.8 mi

0 0.75 1.5 3 km

Airstrips

Parcel Boundaries

State Subsurface Ownership

Minerals Only

Restricted Minerals Only

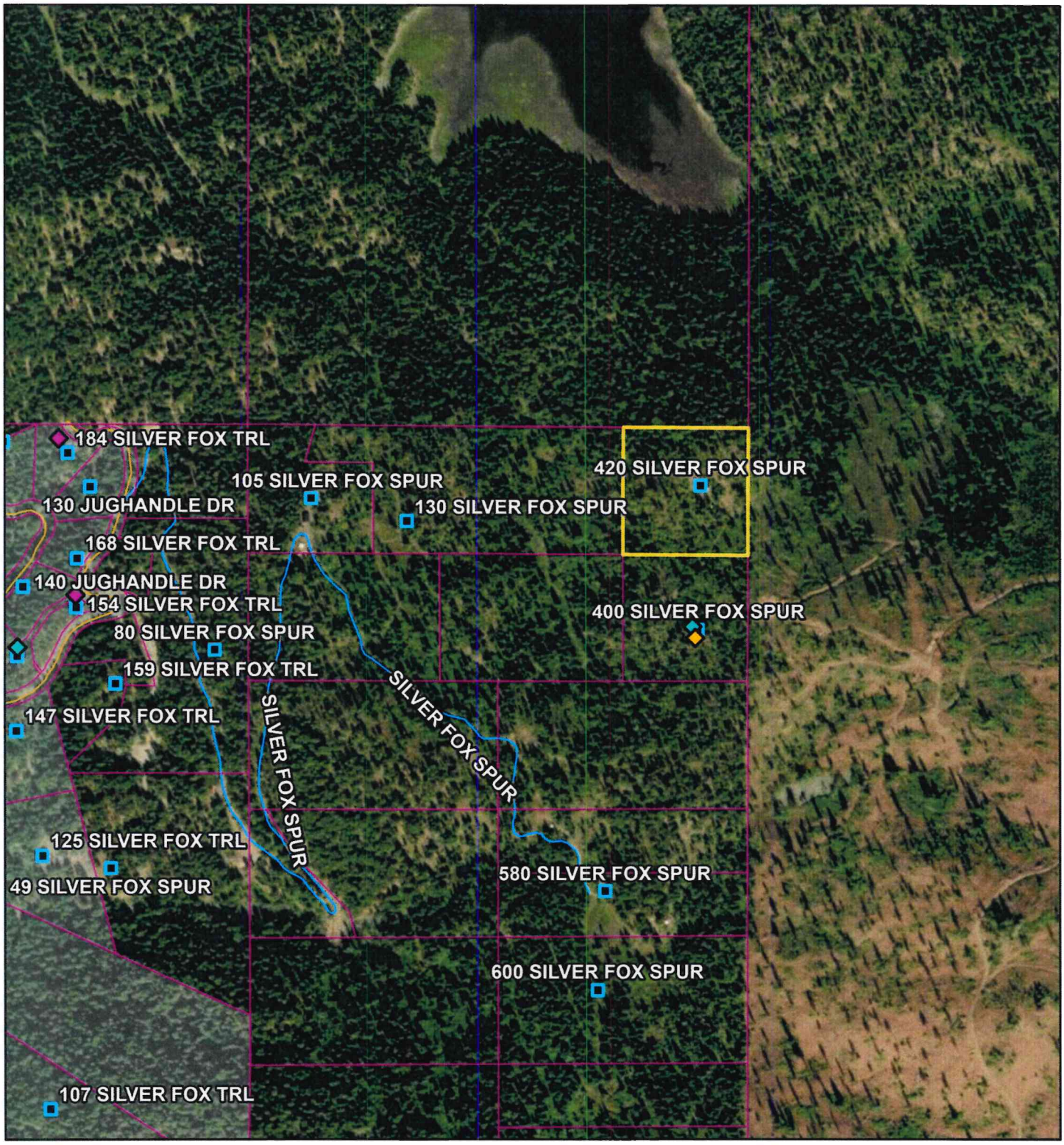
State Surface Ownership

Beneficiary: IDL Endowment

Earthstar Geographics, Chris Haines (GIS Analyst III) Idaho Department of Lands

Created by Valley County

C.U.P. 25-015 Aerial



7/3/2025, 3:41:34 PM

1:12,466

Permits

- VAR
- CUP
- Address Points
- Privy
- Parcel Boundaries

0 0.07 0.15 0.3 mi

0 0.1 0.2 0.4 km

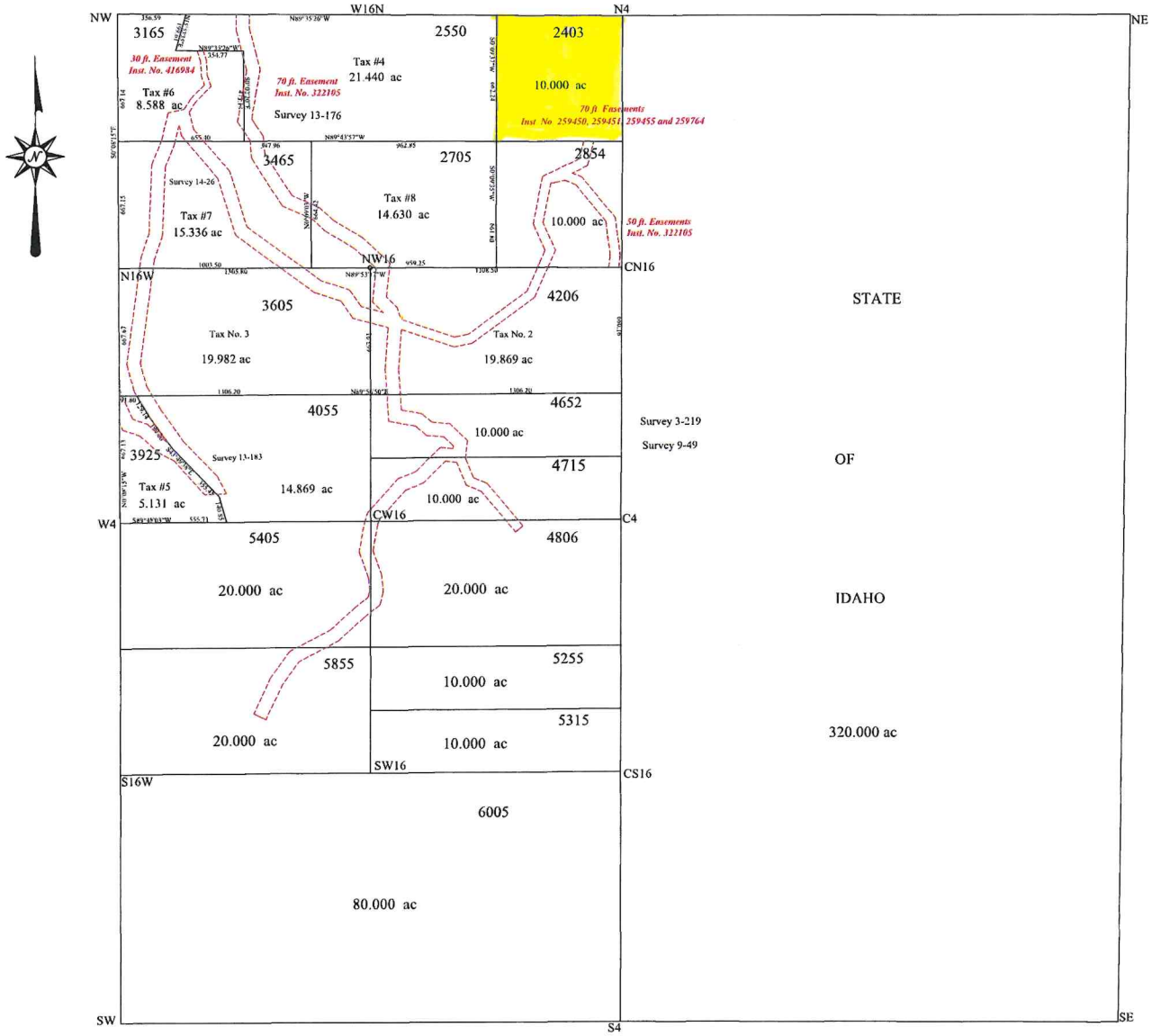
Maxar

Created by Valley County


PUBLIC
NOTICE


07/24/2025

IMAGES



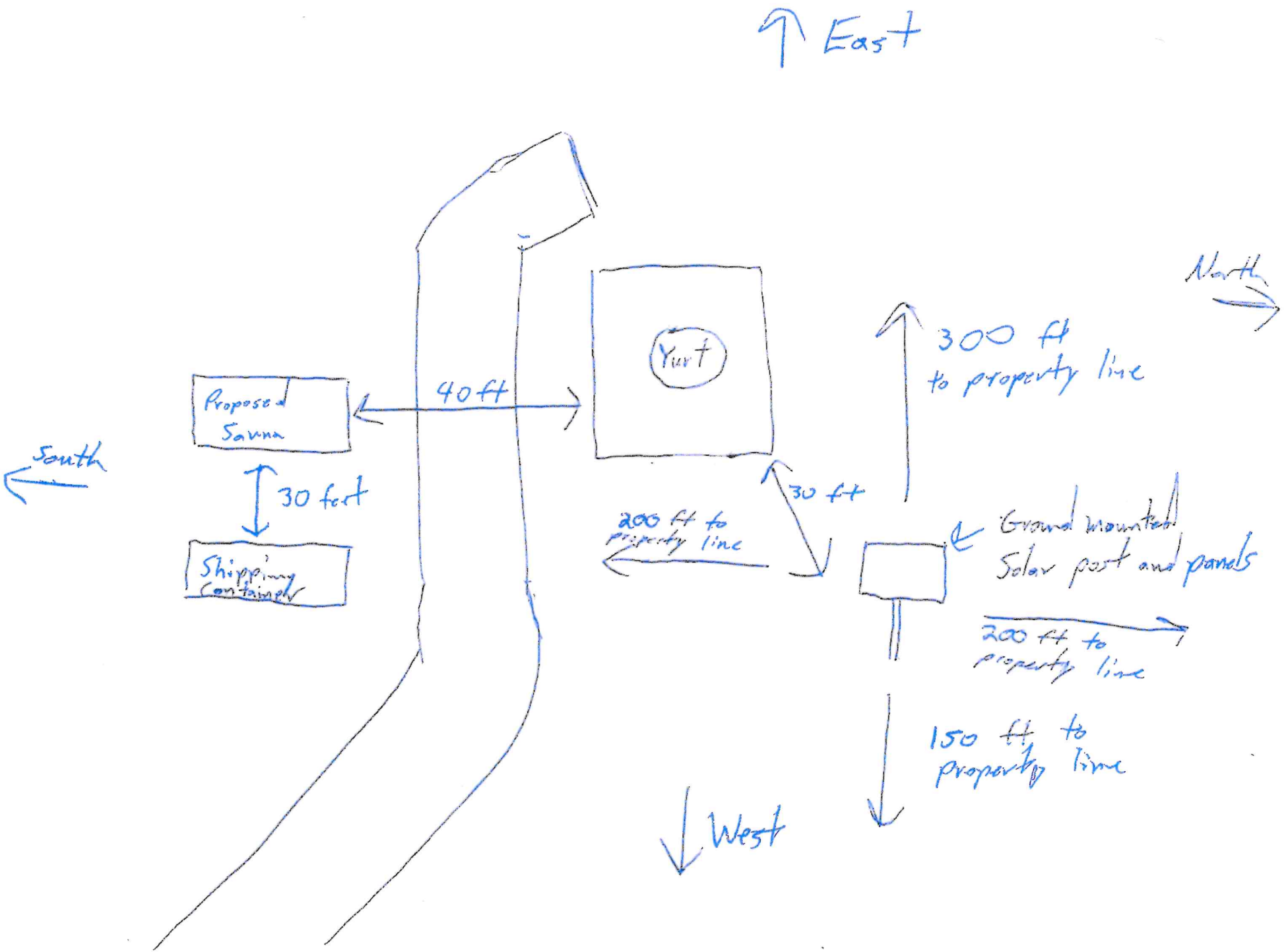
This Drawing is to be Used for Reference Purposes ONLY. The County is NOT Responsible for Any Inaccuracies Contained Herein.

PLAT TITLE

TWP. 17N R04E SEC. 08

VALLEY COUNTY
Cartography Dept.
Assessor's Office
Cascade, ID 83611

Filename:	Valley County Base Map
Scale:	[redacted]
Date:	1/23/2025
Drawn by:	L Frederick


East
North
South
West
Yurt
Proposed Sauna
40 ft
30 feet
Shipping container
300 ft to property line
30 ft
200 ft to property line
Ground mounted Solar post and panels
200 ft to property line
150 ft to property line

CENTRAL DISTRICT HEALTH

Valley County Transmittal

Division of Community and Environmental Health

Return to:
- ☐ Cascade
- ☐ Donnelly
- ☐ McCall
- ☐ McCall Impact
- ☑ Valley County

Rezone # _____

Conditional Use # CUP 25-015 Abram Vore

Preliminary / Final / Short Plat _____

_____

☐ 1. We have No Objections to this Proposal.

☐ 2. We recommend Denial of this Proposal.

☐ 3. Specific knowledge as to the exact type of use must be provided before we can comment on this Proposal.

☐ 4. We will require more data concerning soil conditions on this Proposal before we can comment.

☐ 5. Before we can comment concerning individual sewage disposal, we will require more data concerning the depth of:
☐ high seasonal ground water ☐ waste flow characteristics
☐ bedrock from original grade ☐ other _____

☐ 6. This office may require a study to assess the impact of nutrients and pathogens to receiving ground waters and surface waters.

☐ 7. This project shall be reviewed by the Idaho Department of Water Resources concerning well construction and water availability.

☐ 8. After written approvals from appropriate entities are submitted, we can approve this proposal for:
☐ central sewage ☐ community sewage system ☐ community water well
☐ interim sewage ☐ central water
☐ individual sewage ☐ individual water

☐ 9. The following plan(s) must be submitted to and approved by the Idaho Department of Environmental Quality:
☐ central sewage ☐ community sewage system ☐ community water
☐ sewage dry lines ☐ central water

☐ 10. Run-off is not to create a mosquito breeding problem

☐ 11. This Department would recommend deferral until high seasonal ground water can be determined if other considerations indicate approval.

☐ 12. If restroom facilities are to be installed, then a sewage system MUST be installed to meet Idaho State Sewage Regulations.

☐ 13. We will require plans be submitted for a plan review for any:
☐ food establishment ☐ swimming pools or spas ☐ child care center
☐ beverage establishment ☐ grocery store

☑ 14. CDH has no objection to the CUP. CDH will require an accessory application for the ground mounted Solar panels to make sure all setbacks to the Septic are met. Reviewed By: Bob Copf

Date: 8/1/25

6/20 jm

Review Sheet

From: Emily Hart <ehart@mccall.id.us>
Sent: Tuesday, July 22, 2025 12:58 PM
To: Lori Hunter <lhunter@valleycountyid.gov>
Cc: Cynda Herrick <cherrick@valleycountyid.gov>; Meredith Todd <mtodd@mccall.id.us>
Subject: Re: Valley County PZ - Public Hearings - August 14, 2025

Hi Lori,

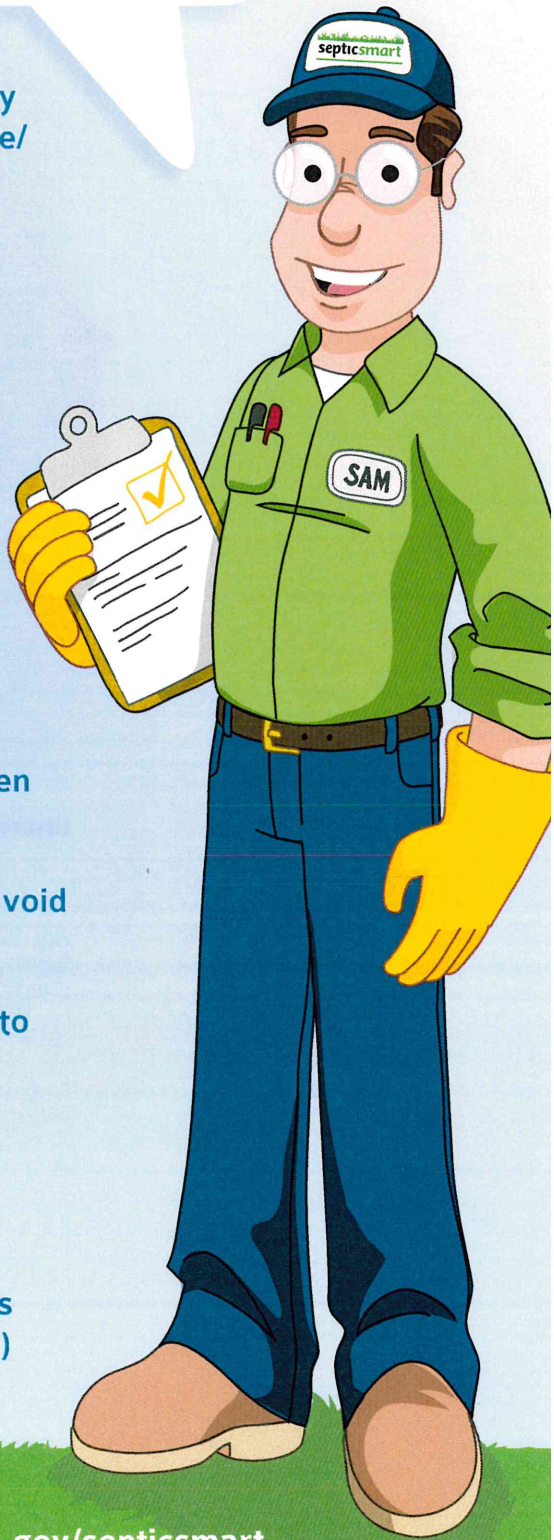
McCall Airport has no comment on any of the New Business items on this agenda. Additional written comment regarding SUB 25-009 Wood Run Heights will be submitted by 5:00 on August 6, 2024.

Thank you,
Emily

Emily Hart, C.M. | McCall Airport Manager
336 Deinhard Lane Hangar 100 | McCall, ID 83638
Direct: 208.634.8965 | Cell: 208.630.3441
www.mccall.id.us/airport

Top 10 Ways to Be a Good Septic Owner

- Have your system inspected every three years by a qualified professional or according to your state/local health department's recommendations
- Have your septic tank pumped, when necessary, generally every three to five years
- Avoid pouring harsh products (e.g., oils, grease, chemicals, paint, medications) down the drain
- Discard non-degradable products in the trash (e.g., floss, disposable wipes, cat litter) instead of flushing them
- Keep cars and heavy vehicles parked away from the drainfield and tank
- Follow the system manufacturer's directions when using septic tank cleaners and additives
- Repair leaks and use water efficient fixtures to avoid overloading the system
- Maintain plants and vegetation near the system to ensure roots do not block drains
- Use soaps and detergents that are low-suds, biodegradable, and low- or phosphate-free
- Prevent system freezing during cold weather by inspecting and insulating vulnerable system parts (e.g., the inspection pipe and soil treatment area)



septicsmart™
U.S. Environmental Protection Agency

For more SepticSmart tips, visit **www.epa.gov/septicsmart**

EPA EPA-832-F-16-010 | July 2016

A Homeowner's Guide to Septic Systems

Idaho Department of Environmental Quality
1410 N. Hilton
Boise, ID 83706

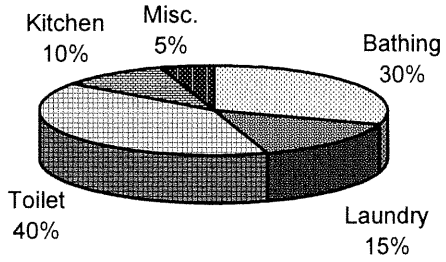
January 2001

Do you have a home septic system? As an Idaho resident, there is a good chance you do—thirty-six percent of Idaho's homes, or about 210,000 residences, use septic systems to treat their sewage. These systems discharge more than 53 million gallons of wastewater into Idaho's soils annually, and this figure grows each year. In 1999, Idaho's seven health districts issued over 6,100 permits for new septic systems.

Septic systems dispose of household sewage, or wastewater, generated from toilet use, bathing, laundry, and kitchen and cleaning activities. Because septic systems are underground and seldom require daily care, many homeowners rarely think about routine operations and maintenance. However, if a septic system is not properly designed, located, constructed, and maintained, groundwater may become contaminated.

Household Wastewater

Households that are not served by public sewers depend on septic tank systems to treat and dispose of wastewater. Household wastewater carries with it all wastes that go down the drains in our homes, including human waste, dirt, food, toilet paper, soap, detergents, and cleaning products. It contains dissolved nutrients, household chemicals, grease, oil, microorganisms (including some that cause disease), and solid particles. If not properly treated by your septic system, chemicals and microorganisms in wastewater can travel through the soil to groundwater and pose a health hazard.



The average person uses between 50 and 75 gallons of water per day; mostly in the bathroom. Reducing your water use will help your septic system to work more efficiently.

Your Septic System

A conventional septic system has three working parts: a septic tank, a drainfield, and surrounding soil.

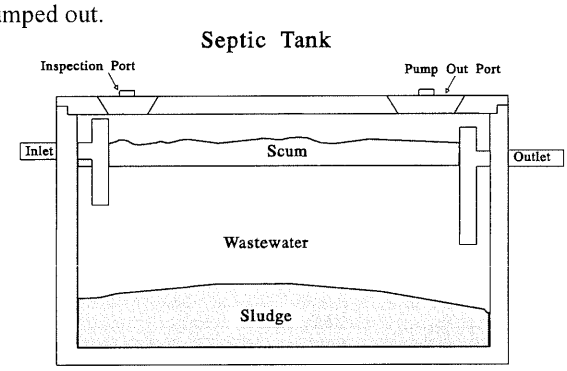
Septic Tank

Septic tanks can be made of concrete, fiberglass, or plastic and must be approved by the state. Minimum sizes of tanks have been established for residences based on the number of bedrooms in the dwelling. In Idaho, a 1,000-gallon septic tank is required for homes with three or four bedrooms. Larger tanks are required for larger homes. Local district health departments issue permits for septic systems and specify the minimum size tank. Some systems installed before the current rules and regulations may have smaller septic tanks.

A septic tank has three main functions:

- to remove as many solids as possible from household wastewater before sending the liquid, called "effluent," to a drainfield;
- to decompose solids in the tank; and
- to store solids that do not decompose.

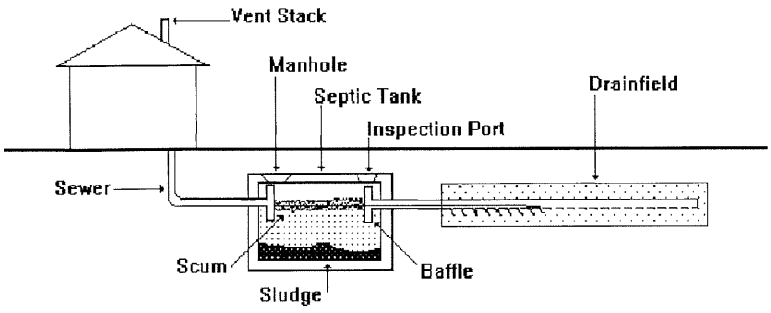
When raw wastewater enters the tank, heavy solids sink to the bottom of the tank as sludge. Light solids, such as grease and paper, float to the surface as scum. During the wastewater storage period, bacteria digest organic material in the wastewater. During this process, the solid material is reduced in volume and composition. Solids that do not decompose accumulate in the tank and eventually must be pumped out.



Tees, or baffles, are provided at the tank's inlet and outlet pipes. The inlet tee slows the incoming wastes and reduces disturbance of the settled sludge. The outlet tee keeps the solids and scum in the tank. As new wastewater enters the tank through the inlet tee, an equal amount of wastewater is pushed out of the tank through the outlet tee. The effluent that leaves the tank has been partially treated but still contains disease-causing bacteria and other pollutants.

Drainfield

Each time raw wastewater enters the tank it forces an equal amount of effluent into a drainfield. A standard drainfield is composed of a series of perforated pipes buried in gravel-filled trenches in the soil. The effluent seeps out of the perforated pipes and percolates through the gravel to the soil.



Soil

The soil below the drainfield provides the final treatment and disposal of the septic tank effluent. After the effluent has passed into the soil, most of it percolates downward and outward, eventually entering the groundwater. Soils are critical to the treatment of septic tank wastewater.

A system that is not functioning properly will release nutrient-rich and bacterial-laden wastewater into the groundwater and/or surface water. These contaminated waters pose a significant public health threat to people that come into contact with them. Wastewater that moves with groundwater can transport bacteria considerable distances. This can result in a threat to public health and adversely affect the quality of ground and surface waters.

Caring for Your Septic System

Installing Your System

In order to have a septic system installed on your property, you must first obtain a permit. Permit applications are available from your local district health department. Next, you must have a site evaluation performed. Make arrangements for this with your district health department and with a licensed septic system installer. Note that not all property is suitable for septic systems, so some permits may be denied. It is recommended that you have a site evaluation performed before you purchase property. Finally, have your system installed by a licensed installer and inspected by your local health district. Provide regular, preventative, maintenance to keep your system running smoothly.

Inspecting Your System

When too much sludge and scum are allowed to accumulate in your tank, the incoming sewage will not have enough time in the septic tank for solids to settle. Solids may flow to the drainfield and clog the pipes, causing the sewage to overflow to the ground surface, where it exposes humans and animals to disease-causing organisms. To prevent this from happening, it is very important to inspect your tank regularly and have it serviced when needed. All tanks have accessible manholes for inspecting and pumping. Some excavation work may be needed to uncover the manhole.

Properly designed tanks should have enough capacity for three to eight years of use before needing service. This is dependent upon the amount of wastewater generated. It is recommended that an average family of four have its septic tank pumped out every three to five years. Don't wait for signs of system failure to have your tank pumped. Your tank should be checked annually to measure sludge and scum levels. A licensed septic tank pumper can provide a septic tank inspection and recommend when the tank should be pumped. A tank inspection should include measuring the depth of scum and sludge and inspecting the tees in the septic tank.

If you do the inspection yourself, it is important to understand that septic tanks always appear full because both the inlet and the outlet are at the top of the tank. What you will need to know is how much of the tank's volume is being taken up by scum and sludge. When sludge and scum take up more than 35 percent of the tank volume, these solids need to be removed by pumping. A pole wrapped in a course weave cloth can be used to check the sludge depth. An extension on the pole can be used to measure the scum depth. Record these measurements as part of your pumping records. To check the tees, uncover the inspection ports.

Never allow anyone to enter your septic tank. Dangerous gases and the lack of oxygen can kill in minutes.

While it is impractical to inspect the pipes in your drainfield, it is important to watch for drainfield failure or overuse. See "Warning Signs of System Failure" in this booklet for information.

Maintaining Your System

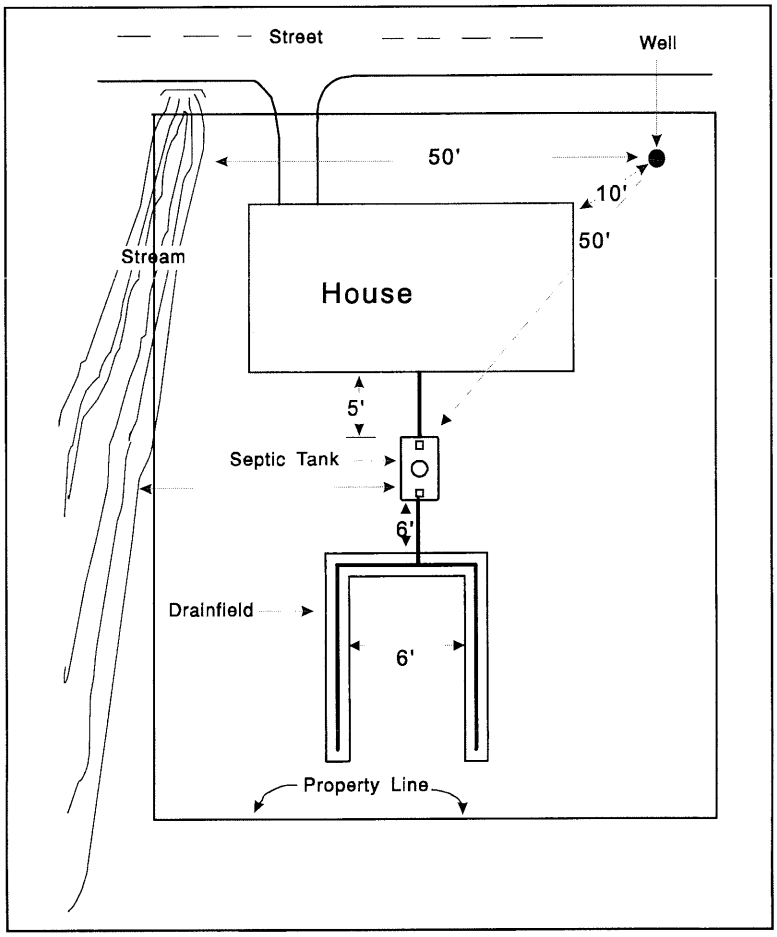
Pumping your septic tank every three years (or as determined by your inspections) will remove accumulations of solids, help keep the drainfield from becoming clogged, and help prevent you from experiencing sewage backups or septic system failure. An accumulation of sludge exceeding 35% of the total water depth in the septic tank could cause solids to enter the drainfield and clog the system. Hire a licensed septic tank pumper to pump your tank for you.

Mapping Your System

In order to take proper care of your septic system, you must know the location of the septic tank and drainfield. The location of your septic tank can be determined from plot plans, septic system inspection records, architectural or landscape drawings, or from observations of the house plumbing. If you do not have access to drawings, find where the sewer pipe leaves your house. Some installers mark the location where the waste pipe comes out of the house with an "S" on the foundation. You may want to do this as well. Probe in the ground 10 to 15 feet directly out from the location where the pipe leaves your house to find your tank.

Once the septic tank has been located, make several plot plan diagrams (with measurements) that include a rough sketch of your house, septic tank cover, drainfield area, well, and any other permanent reference points (such as trees or large rocks) and place them with your important papers. You'll find a sample system diagram on the next page, and a place to draw your own inside the front cover of this booklet. You may also want to hang a diagram in your garage and provide one to your local district health office.

Maintain a permanent record of any septic system maintenance, repair, sludge and scum levels, pumping, drainfield condition, household backups, and operations notes.



Create a septic system diagram, similar to this one, for your system.

Warning Signs of System Failure

While proper use, inspections, and maintenance should prevent most septic tank problems, it is still important to be aware of changes in your septic system and to act immediately if you suspect a system failure. There are many signs of septic system failure:

- surfacing sewage or wet spots in the drainfield area;
- plumbing or septic tank backups;
- slow draining fixtures;
- gurgling sounds in the plumbing system;
- sewage odors in the house or yard (note that the house plumbing vent on the roof will emit sewage odors and this is normal); and
- tests showing the presence of bacteria in well water.

If you notice any of these signs, or if you suspect your septic tank system may be having problems, contact a licensed septic system professional or your local district health agency for assistance.

Septic System Dos and Don'ts

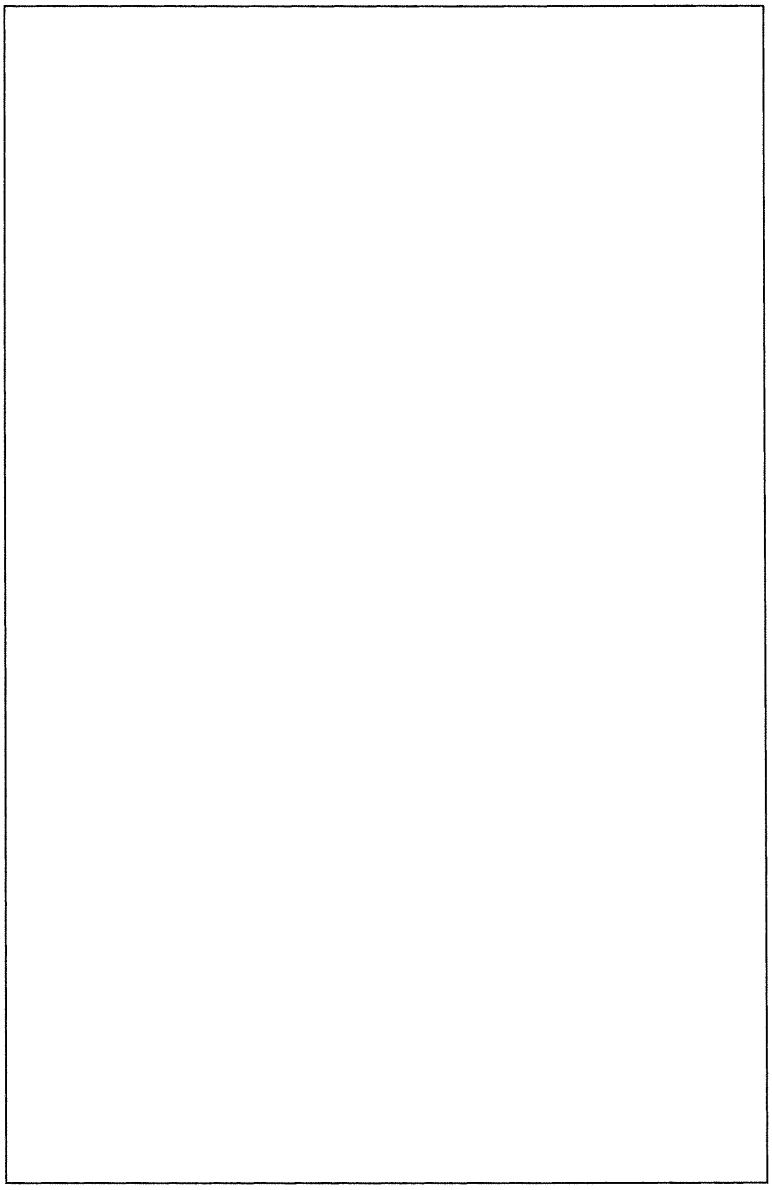
Proper operation of a septic system can prevent costly repairs or replacement. Observing the following guidelines will help to keep your system running efficiently.

Do

- ...practice water conservation. The more wastewater you produce, the more wastewater your system must treat and dispose. By reducing and balancing your use, you can extend the life of your system and avoid costly repairs.
    - Use water saving devices such as low flow showerheads.
    - Repair leaky faucets and plumbing fixtures immediately.
    - Reduce toilet reservoir volume or flow.
    - Take short showers.
    - Take baths with a partially filled tub.
    - Wash only full loads of dishes and laundry.
    - Shut off the water while shaving or brushing your teeth.
    - Balance your water use (e.g., avoid washing several loads of laundry in one day).
- ...keep accurate records. Know where your septic tank is, keep a diagram of its location using the space provided in this booklet, and keep a record of system maintenance.
- ...inspect your system annually. Check the sludge and scum levels inside the tank and periodically check the drainfield for odors, wet spots, or surfacing sewage.
- ...pump your system routinely. Pumping your septic tank is probably the single most important thing you can do to protect your system.
- ...keep all runoff away from your system. Water from roofs and driveways should be diverted away from the septic tank and drainfield area. Soil over your system should be mounded slightly to encourage runoff.
- ...protect your system from damage. Keep vehicles and livestock off your drainfield. The pressure can compact the soil or damage the pipes. Before you dig for any reason, check the location of your system and drainfield area.
- ...landscape your system properly. Plant grass over the drainfield area. Don't plant trees or shrubs or place impermeable materials, such as concrete or plastic, over the drainfield.
- ...use cleaning chemicals in moderation and only according to manufacturer's directions.

Don't

- ...flood irrigate over your system or drainfield area. The best way to irrigate these areas is with sprinklers.
- ...use caustic drain openers for clogged drains. Use boiling water or a drain snake to clean out clogs.
- ...enter a septic tank. Poisonous gases or a lack of oxygen can be fatal.
- ...use septic tank additives. They are not necessary for the proper functioning of your tank and they do not reduce the need for pumping. In fact, some additives can even harm your system.
- ...flush harmful materials into your tank. Grease, cooking oil, coffee grounds, sanitary napkins, and cigarettes do not easily decompose in septic tanks. Chemicals, such as solvents, oils, paints, and pesticides, are harmful to your systems operation and may pollute groundwater.
- ...use a garbage disposal. Using a garbage disposal will increase the amount of solids entering the septic tank and will result in the need for more frequent pumping.



Map your septic system here

For More Information

If you need to obtain a permit for a new or replacement septic system, or if you have questions about septic systems and their operation and maintenance, please contact your local health district.

Panhandle District Health Department
8500 N. Atlas Road
Hayden, ID 83835
208-415-5100

North Central District Health Department
215 10th Street
Lewiston, ID 83501
208-799-0353

Southwest District Health Department
920 Main Street
Caldwell, ID 83605
208-455-5400

Central District Health Department
707 N. Armstrong Place
Boise, ID 83704
208-327-7499

South Central District Health Department
1020 Washington Street North
Twin Falls, ID 83303
208-734-5900

Southeastern District Health Department
1901 Alvin Ricken Drive
Pocatello, ID 83201
208-239-5270

District 7 Health Department
254 "E" Street
Idaho Falls, ID 83402
208-523-5382