



Technical & Legal Issues With Wastewater Reuse In Idaho

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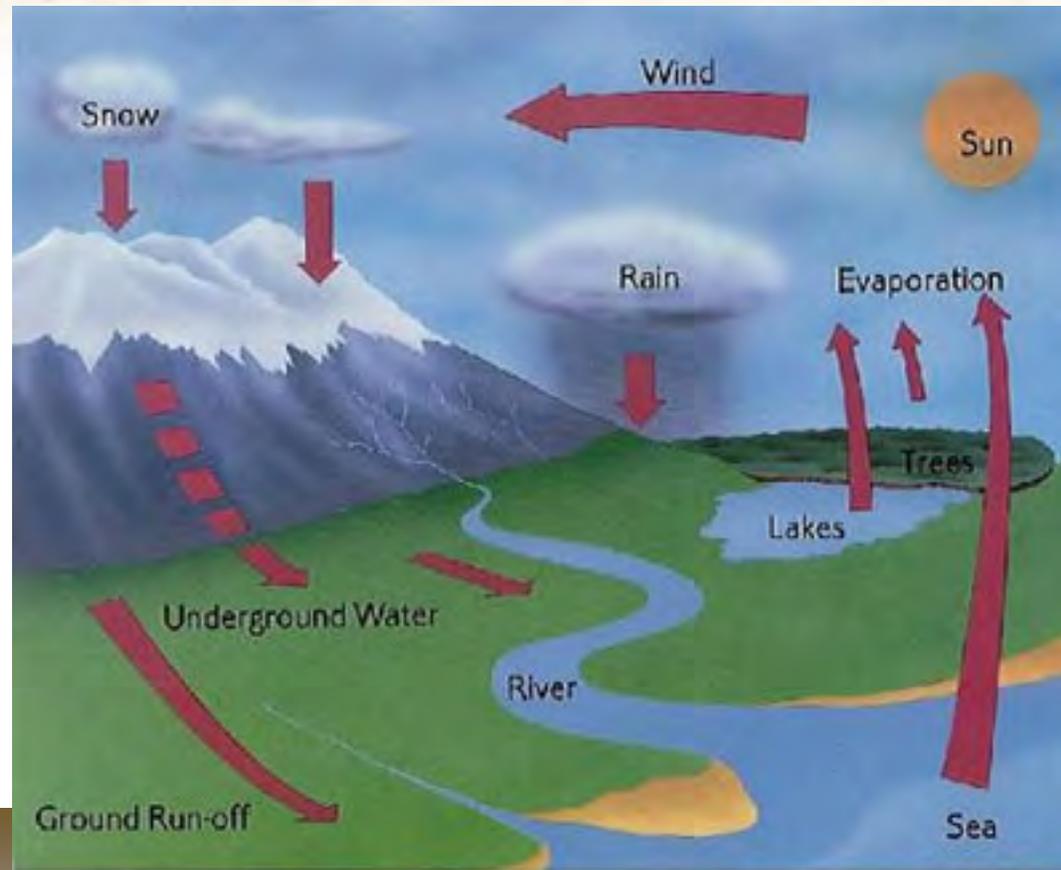
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Primer on Reuse History

- Total freshwater supply far exceeds human demand
- Available freshwater supplies are not evenly distributed
- Increased shortage due to contamination of ground water and surface water
- Reuse for domestic and agricultural purposes has been done for centuries
- Planned reuse has gained importance in the last two decades

Natural Water Cycle



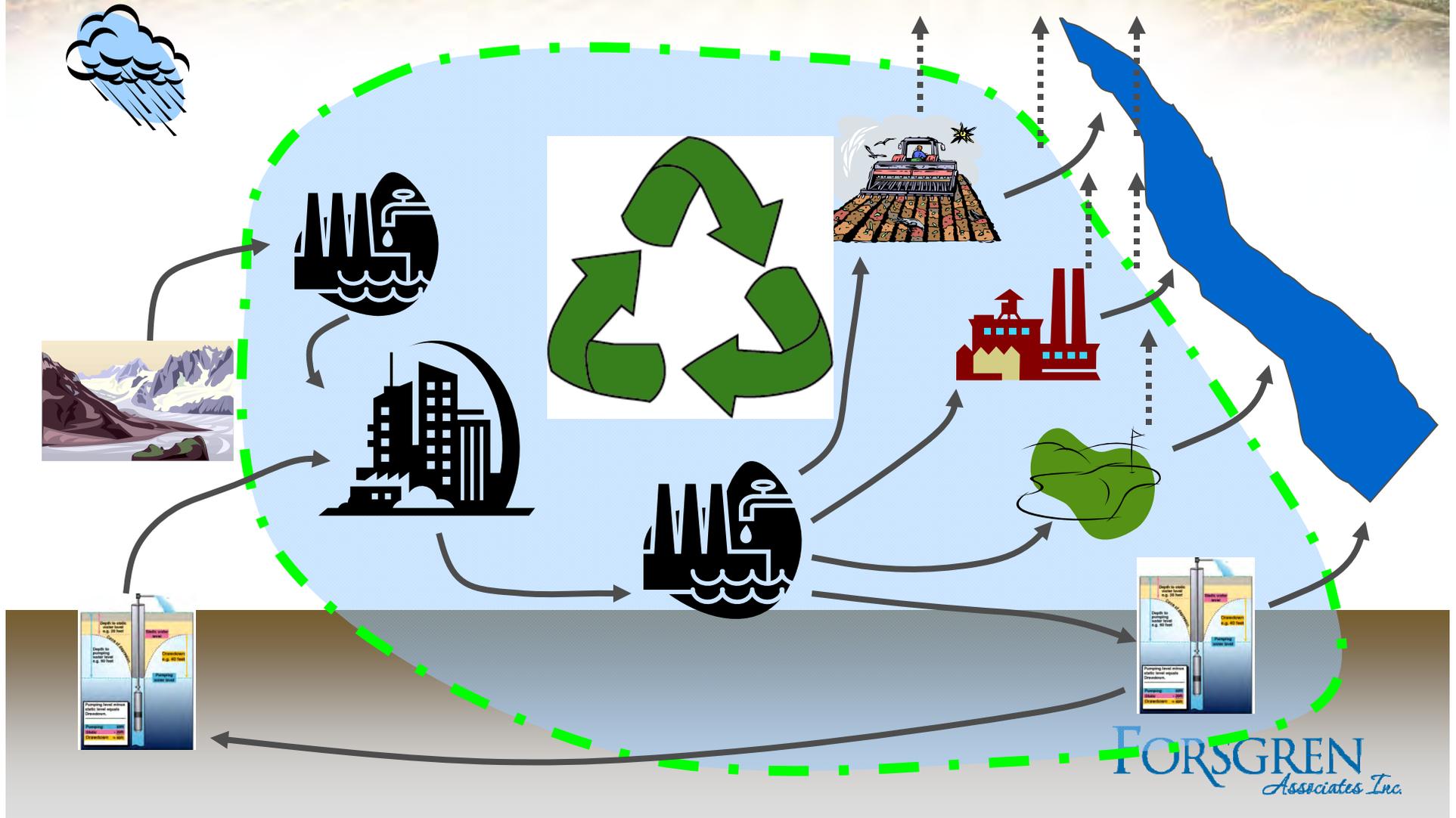
Natural Water Cycle



“Wastewater” and “Reuse”

- Wastewater
 - **IDAPA 58.01.07 Unless otherwise specified, waste and associated solids, whether treated or untreated, together with such water as is present, but not including sludge.....**
 - **Properly means water that is no longer wanted as there is no further benefit**
- Reuse
 - **IDAPA 58.01.07 The use of reclaimed water for beneficial uses.....**

Intercept the Water Cycle





Challenges to Wastewater Reuse

- Idaho WLAP instituted in 1988
 - **Widely implemented**
- Wastewater Reuse Rules 1985
 - **Tentative steps toward implementation**
- Stakeholders want reuse
 - **Technical Challenges (financial)**
 - **Legal Issues**



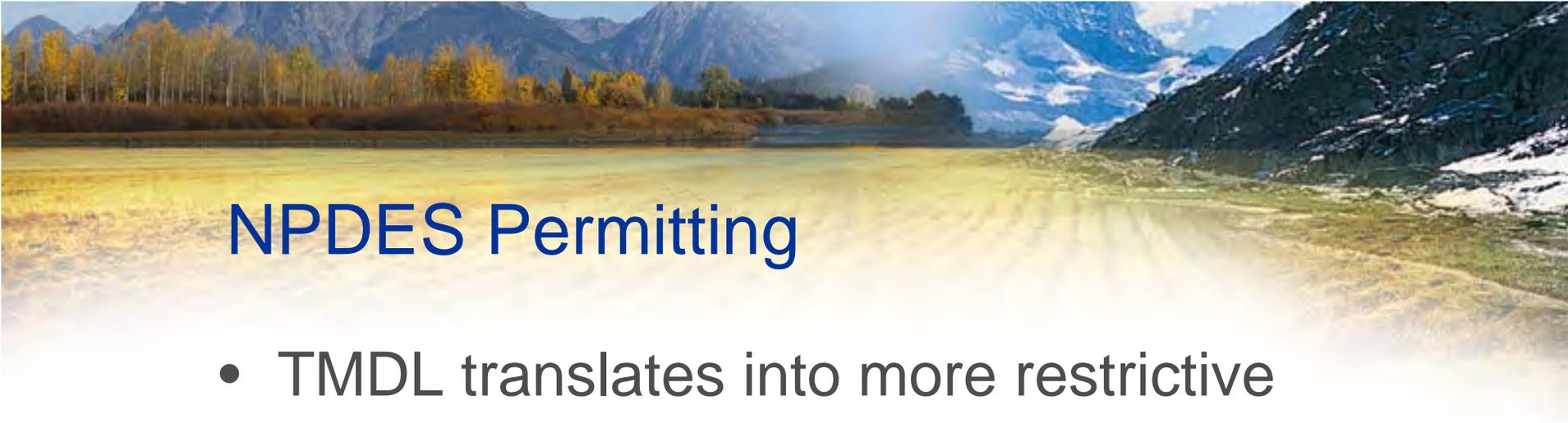
Impetus for Wastewater Reuse

- Regarding **rural** Idaho communities, recent experience
- Process for considering reuse
 - **TMDL allocation more stringent**
 - **NPDES Permit more restrictive**
 - **Community contemplates treatment upgrades**
 - **Community explores alternatives**
 - **Wants reuse to alleviate regulatory requirements on discharge**



TMDL Process

- TMDL reviewed for river reach
- Allocation reduced for point sources
 - **Particularly for nutrients**



NPDES Permitting

- TMDL translates into more restrictive NPDES permit
 - **Snake River**
 - Burley WWTP
 - Shelley WWTP
 - **Bear River**
 - Soda Springs
 - Franklin



Community Response

- Decide to upgrade
- Initiate Facilities Planning Study process
- Evaluate alternatives
 - **Dispersal of Effluent**
 - NPDES
 - Reuse (Land Application)



Reuse Alternatives

- Water Quality
 - Determine appropriate Class
- Uses
 - **Agricultural**
 - **Industrial**
 - **Municipal**
 - **Irrigation**
 - **Recharge**



Oxbow WWTP Capability-Reuse

Parameter	Class B Standards	Class A Standards
BOD		5 mg/l recharge 10 mg/l irrigation
Nitrogen		10 mg/l recharge 30 mg/l irrigation
Phosphorous		N/A
Total Coli form	< 2.2 cfu/100 ml	2.2 cfu/100 ml
Turbidity	< 2 NTU mean < 5 NTU	< 2 NTU (0.2) mean < 5 NTU (0.5)
Uses	Irrigate golf courses, playgrounds, etc	Recharge, residential irrigation

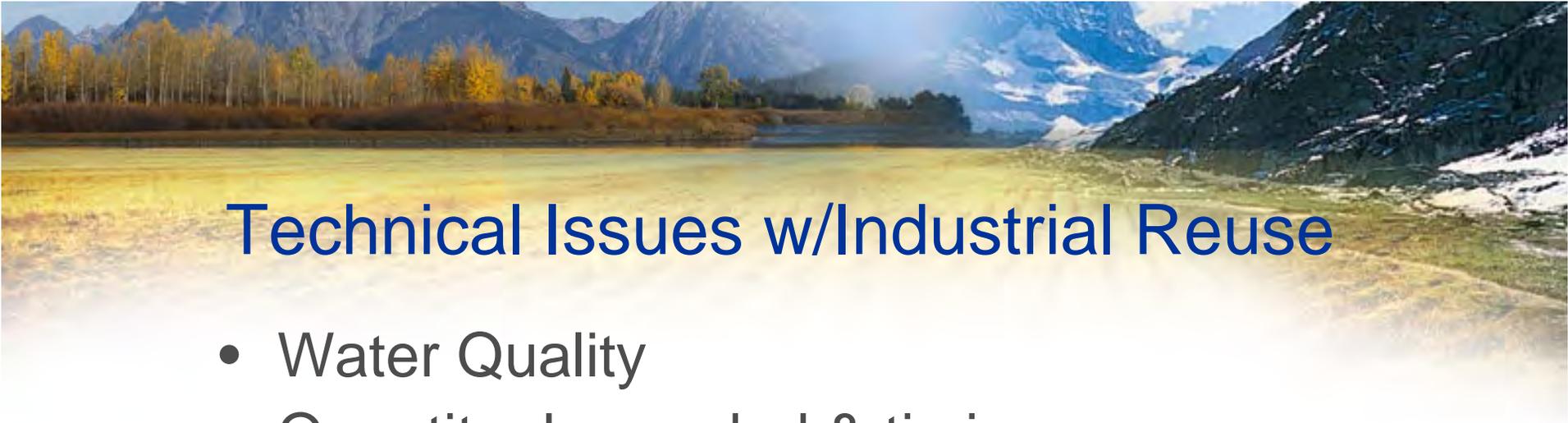


Technical Issues w/Agricultural Reuse

- Application period is seasonal
- Construct storage
 - **Storage must be lined**
- Land ownership/lease
- Sample Case – Franklin, Idaho
 - **Flows, 50,000 gpd**
 - **Del Monte Ponds, \$1M**
 - **Reuse Site, Need more land**
 - **Cost, \$30/month**

Franklin, Idaho





Technical Issues w/Industrial Reuse

- Water Quality
- Quantity demanded & timing
 - **Total volume**
 - **Timing**
- Permitting
- Sample Case – Soda Springs, Idaho
 - **Flows, 0.8 MGD**
 - **Reuse Site**
 - **Cooling water discharge permit**
 - **Cost, \$3-4 million**

Soda Springs, Idaho





Technical Issues w/Municipal Reuse

- Irrigation on municipally owned property
- Seasonal
- Construct storage
 - **Storage must be lined**
 - **Cost Implications**
- Sample Case – Shelley, Idaho
 - **Flows**
 - **Reuse Site – Secondary Irrigation**
 - **Source of municipal water**
 - **Cost, \$12M or \$50/mo**



Technical Issues w/Recharge

- Coordination with IDWR
- Suitable location
- Credit for additional water right
- Sample Case – Shelley, Idaho
 - **Jensen's Grove Recharge Pilot Case**
 - **Surface Water**
 - **Water rights protest**



IDEQ Objective vs IDWR Objective

- IDEQ
 - Mission is to ensure the drinking water supply provides for the health and safety of the citizens
- IDWR
 - Mission is to preserve the integrity of the ground water supply and to regulate the use of the water owned by the State of Idaho by accounting for the various water rights
- Missions are not always compatible



Water Rights Basics

- **Water Right is a real property right**
- **State of Idaho owns the water**
 - Water right holder owns the right to divert the water for a specific beneficial use subject to various conditions and constraints.



Elements of a Water Right

Element	Example
Source	Snake River
Point of Diversion	Twp. 1N, R38E, Sec. 4, NW1/4NW1/4
Priority Date	June 1, 1940
Nature of Use	Irrigation
Diversion and/or Volume	1.5 cfs
Period (Season) of Use	April 1 st - October 31 st
Place of Use	Twp. 1N, R38E, Sec.4, NW1/4 NW1/4 (40 acres); SW 1/4NW1/4 (40 acres)



Definition of Waste Water

- Idaho Supreme Court:
 - **“(1) Water purposely discharged from the project works because of operation of necessities, (2) water leading from ditches or other works, and (3) excess water flowing from irrigated lands, either on the surface or seeping under it.”**



Definitions

- **Consumptive Use**
 - **Idaho Code § 42-202B(1): "Consumptive use" means that portion of the annual volume of water diverted under a water right that is transpired by growing vegetation, evaporated from soils, converted to nonrecoverable water vapor, incorporated into products, or otherwise does not return to the waters of the state. Consumptive use is not an element of a water right.**



Injury

- The information on this slide is from a Transfer Workshop held by IDWR regarding injury
 - <http://www.idwr.idaho.gov/water/rights/transferrmitigation.htm>:
 - **Quantity**
 - **Location**
 - **Timing**
 - Nonconsumptive use may still injure other water rights between diversion and return
 - **May require services of qualified professional engineer, hydrologist**



General Rule for Wastewater

- A person or entity who uses water can recapture wastewater and use it before it reaches a natural stream or aquifer.
- Limitation:
 - **No enlargement:** For irrigation, you can only use recaptured waste water on lands for which the water was originally appropriated.
 - For municipal or industrial reuse, the policy depends on who is causing the wastewater.



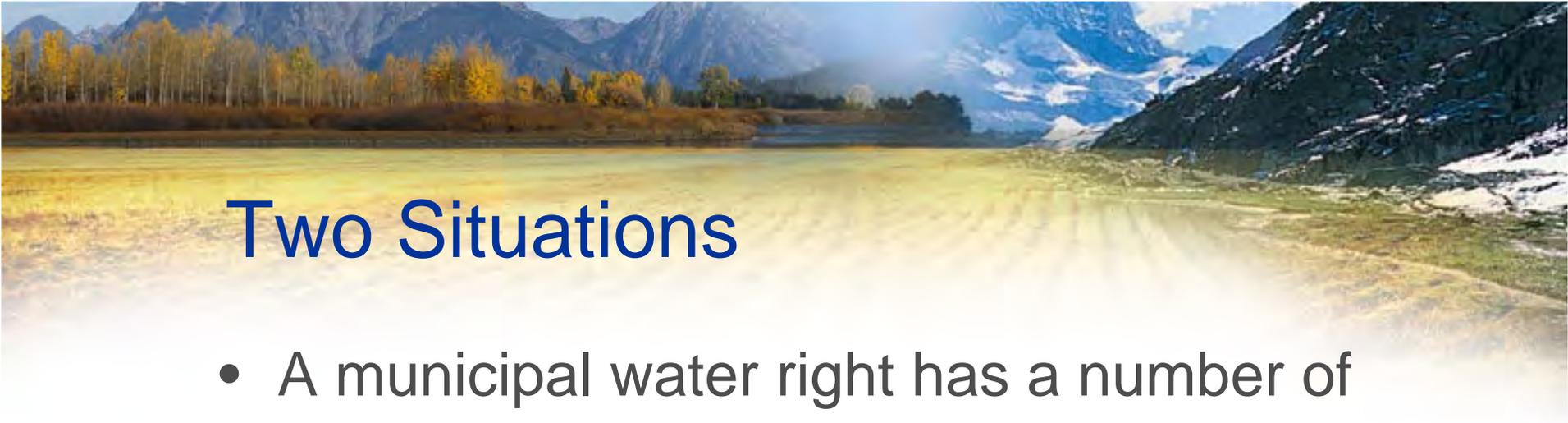
Two Pertinent Situations

- Authority:
 - IDWR Memo RE: Land Application of Industrial Effluent, Sept. 5, 1996, from Phil Rassier to Norm Young.
 - Administrator’s Memorandum, Application Processing Memo No. 61, Sept. 27, 1996, “Water Right Filing Requirements for Industrial Waste Water Use and Treatment,” from Norm Young to IDWR Staff.



Two Situations

- Situation #1: Municipal Reuse:
 - “In the case of municipalities, the majority view is that the proper disposal of effluent from waste treatment facilities comes within the parameters of the beneficial use of a municipal water right.” Rassier Memo.



Two Situations

- A municipal water right has a number of consumptive and non-consumptive beneficial uses built in:
 - **Domestic**
 - **Irrigation**
 - **Commercial**
 - **Industrial**
- The place of use is defined as the City boundary, and season of use is for the entire year.



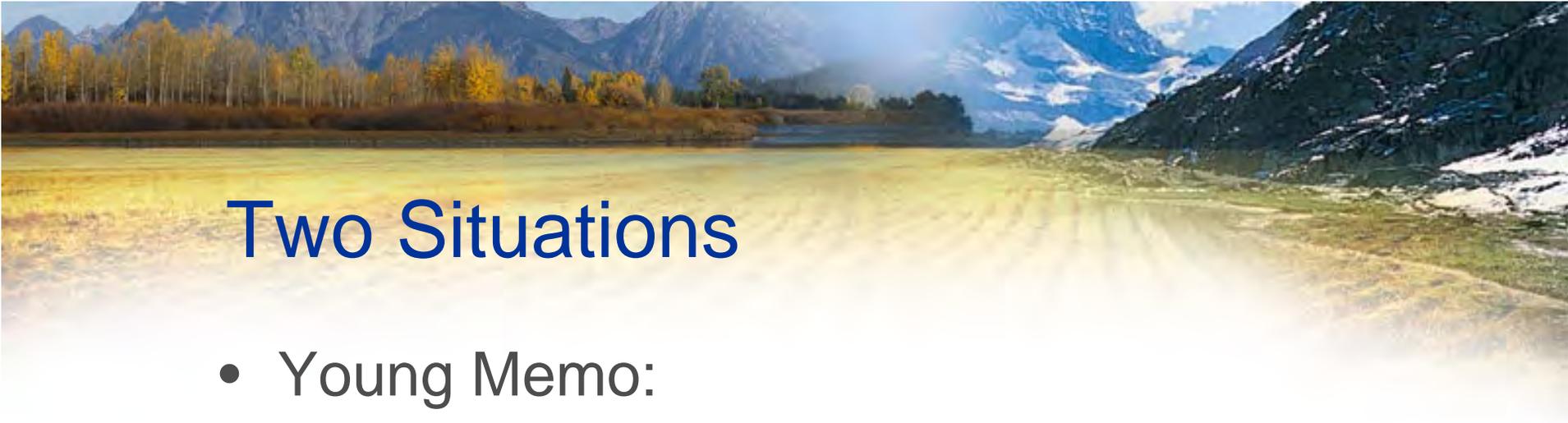
Two Situations

- Limitations:
 - **Must apply water on land that already has water rights.**
 - If applied within the City (parks, golf courses), then it is within the parameters of the municipal water right (place of use).
 - If outside city, land must have a water right.
 - IDWR may still require a city to obtain a water right in this situation if effluent has historically been discharged into a river or has been relied on by another water user.
 - **If the water is treated, it cannot be marketed and sold.**
 - Water becomes 100% consumptive.



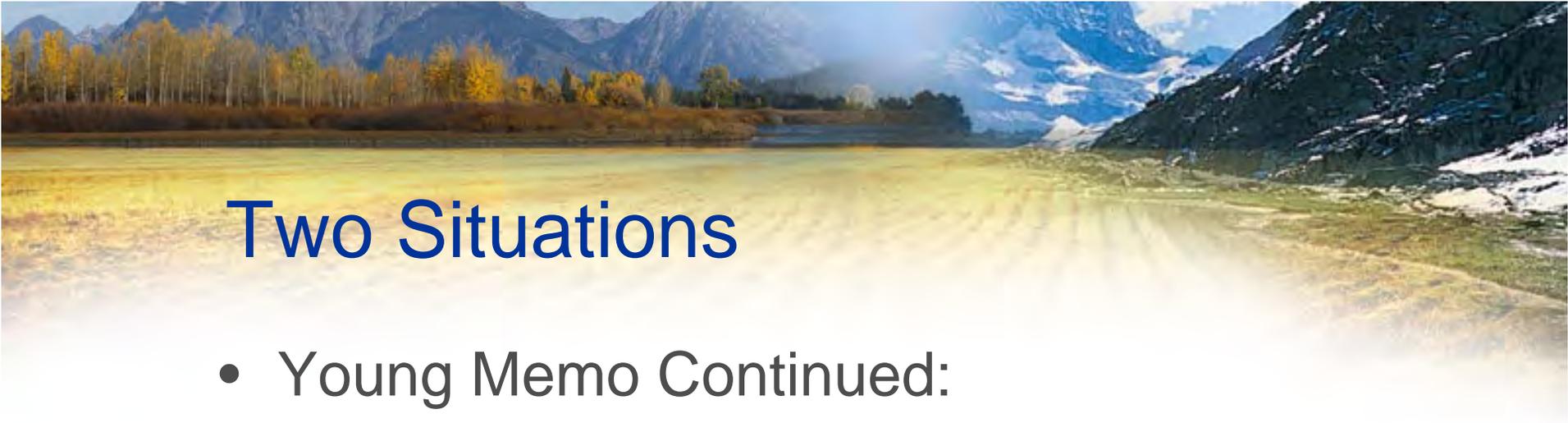
Two Situations

- **Situation #2: Private Industrial Effluent:**
 - **Rassier Memo mentioned City of Pocatello and Simplot situation:**
 - “Before the Department, we have the precedence of issuing waste water permit nos. 29-7437 and 29-7431 to the J.R. Simplot Company and to the City of Pocatello respectively in 1978. The two permits were for the use of waste water from the city’s sewage treatment plant and from the Simplot Fertilizer Plant at Pocatello. The waste water from both facilities was previously discharged to the Portneuf River.”
 - Regarding industrial effluent from a private entity, IDWR would likely require a new water right to land apply the effluent.
 - This means advertisement and opportunity for protest under Idaho law.



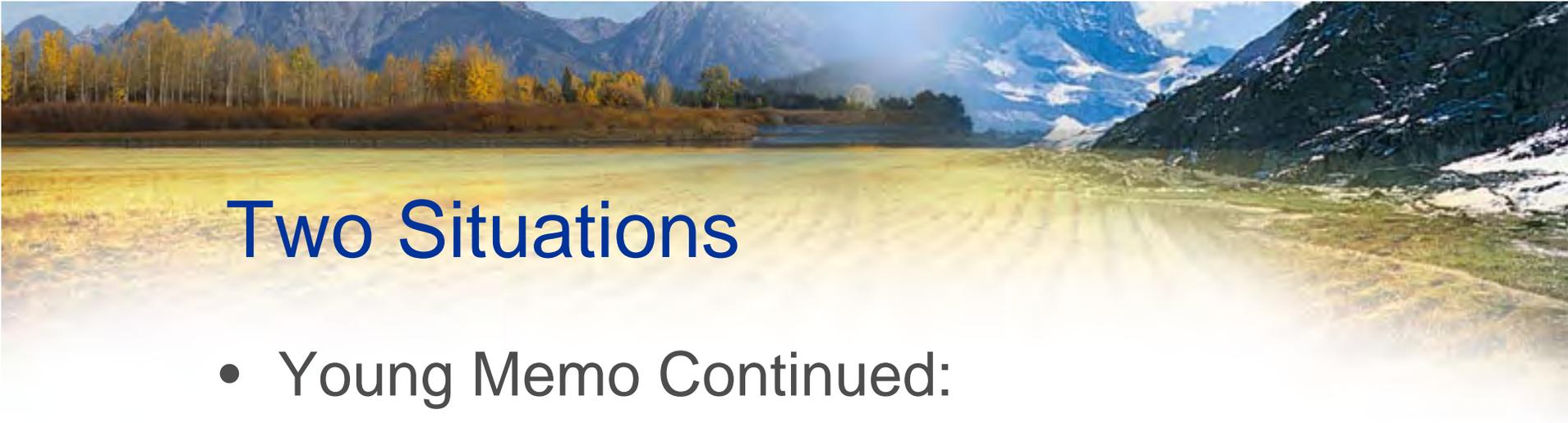
Two Situations

- Young Memo:
 - **“Waste water treatment necessary to meet adopted state water quality requirements will be considered part of the use authorized under the industrial right. The method of treatment must be ‘reasonable.’ IDWR will consider a treatment method to be reasonable if it is accordance with best management practices recognized by IDEQ, EPA, or other responsible state or federal agency.**



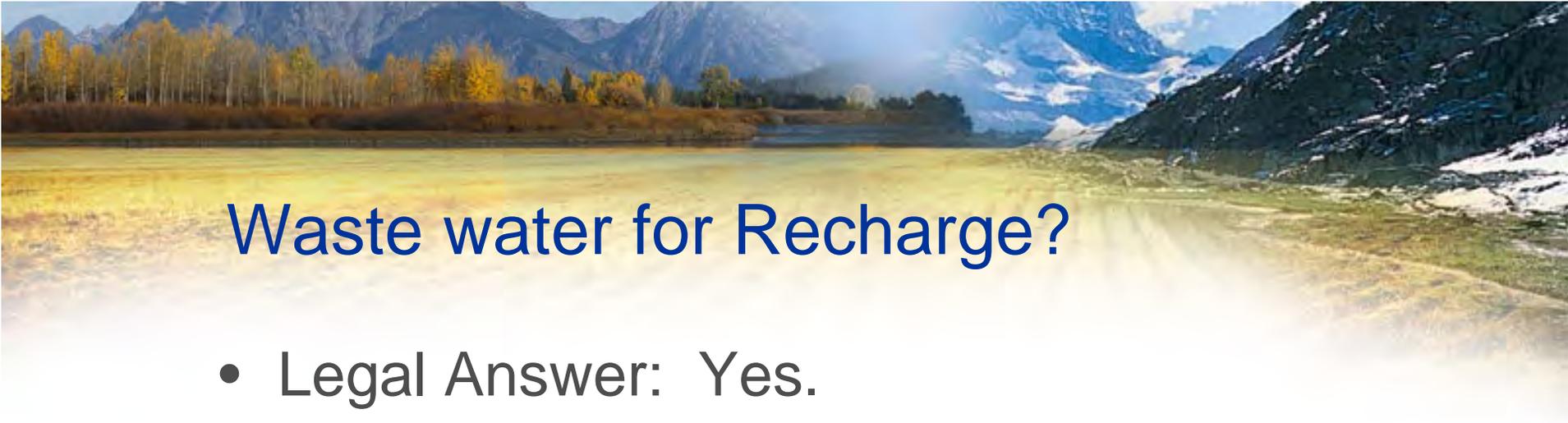
Two Situations

- Young Memo Continued:
 - **“Consumptive use can increase up to the amount determined to be consistent with the original water right as reasonably necessary to meet treatment requirements.” Elements of water right cannot be exceeded.**
 - **If treatment method is changed to land application, a water right “transfer” to add a beneficial use must be undertaken.**
 - This requires public notice and opportunity for protest.



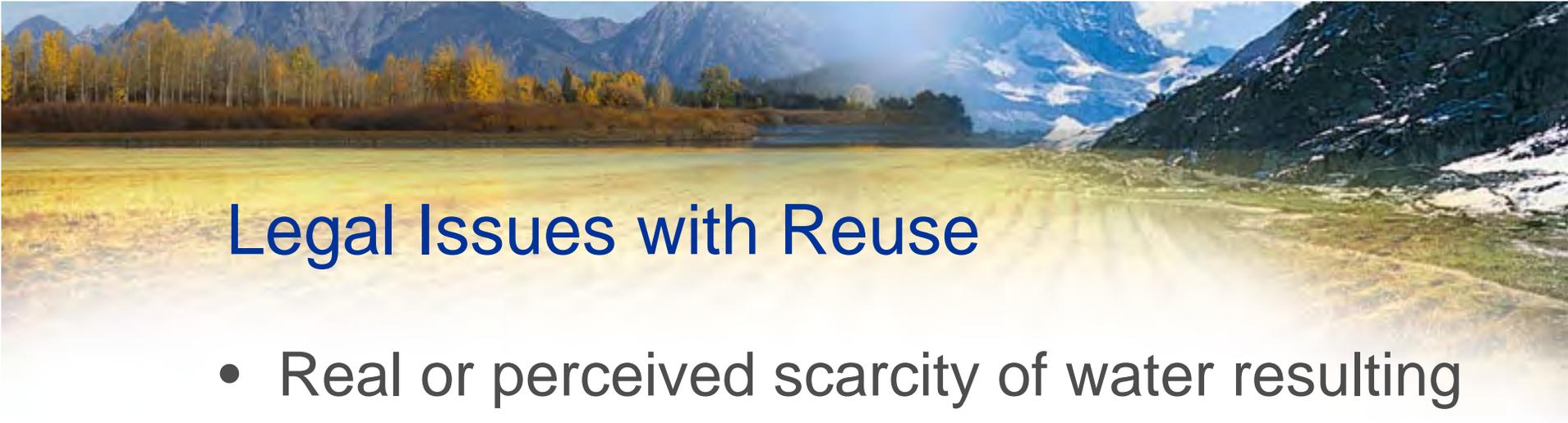
Two Situations

- Young Memo Continued:
 - **“For new uses of industrial waste water that are not necessary to meet water quality requirements,” a new permit must be obtained.**



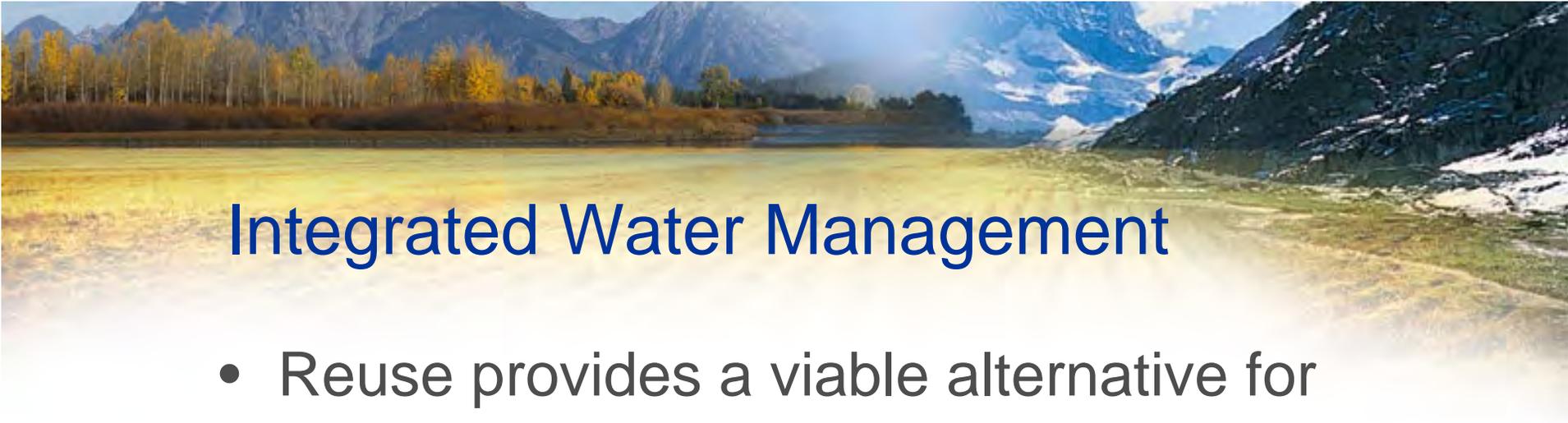
Waste water for Recharge?

- Legal Answer: Yes.
- Practical Answer: It depends.
 - **Why?**
 - Recharge is not a use within municipal water right use.
 - Consumptive Use: Effluent generally comes from non-consumptive uses, and recharge is consumptive.
 - Presumption by IDWR that non-consumptive returns to aquifer.
 - Injury: Most municipalities likely have discharged into a river, therefore, IDWR would likely require a new water right application to address potential injury to other water users.
 - Location.



Legal Issues with Reuse

- Real or perceived scarcity of water resulting in increased scrutiny on applications for new water rights.
- Potential legal implications
 - **Place of Use**
 - **Consumptive fraction**
 - **Mitigation (recharge)**



Integrated Water Management

- Reuse provides a viable alternative for beneficial dispersal of treated effluent.
- Various technical, financial, and legal issues need resolution on each individual project.
- Practices implemented 10-20 years ago may be reviewed with increased scrutiny today.
- Consult with both IDEQ and IDWR before implementing a reuse project.