



Wastewater Design Challenges for Rural Alaska

Alaska Department of Environmental Conservation

Division of Water

Engineering Support & Plan Review

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Division of Water

Mission Statement:

- Improve and protect water quality

How?

- **Establishes standards for water cleanliness**
- **Regulates discharges to waters and wetlands**
- Provides financial assistance for water and wastewater facility construction and waterbody assessment and remediation
- Trains, certifies, and assists water and wastewater system operators
- Monitors and reports on water quality



Rural Alaska Challenges

- Logistics – no road system access, compressed construction schedules
- Soil Conditions – silty soils do not drain well
- Proper Operations and Maintenance
- Sub-Arctic and Arctic Climate
- Social, Cultural, and Economic Conditions
- Climate Change





So, Why Lagoons?

- Tend to work in widest range of soil conditions
- Passive wastewater treatment
- Accommodates land planning reality
- Can generally accept honey-bucket waste
- Collection system can be a challenge



What's Next?

- Develop design standards specifically for rural villages
- Establish design performance feedback with stakeholders
- Research alternative designs and their effectiveness



Lagoon Construction Guidelines

Alaska Department of Environmental Conservation
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DISCLAIMER: The following Lagoon Construction Guidelines are internal policy intended to insure program consistency for lagoon construction reviews. These guidelines were developed based on extensive literature research and numerous other state requirements. The guideline is a compilation of lessons learned and best practices of proven design methods which provide reliable treatment for the climatic conditions of Alaska. It is not regulatory in nature but is provided to help streamline the review of lagoon systems. If a plan uses alternative methods to determine the basis of design for a lagoon, a thorough explanation of the supporting data will be required. Please contact your regional wastewater engineer to discuss these construction guidelines prior to plan submittal, if you have any questions.



Questions?
Thank you for your time!

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