

Hawaii Department of Health Functional Equivalent Discharge Strategy

Workshop #5

September 19, 2024

The mission of the Department of Health is to protect and improve the health and environment for all people in Hawai'i.



Agenda for Today

TOPIC

Meeting Kickoff: Welcome and Objectives

Review of Objectives and Recap of Workshop Discussions

Current Thinking on Potential Next Steps

Open Forum: Other Thoughts on FE Strategy Development

Workshop Series Close Out and Thank You

“Hallway Chat” – open time for anyone to stay to chat for a few minutes with DOH and others

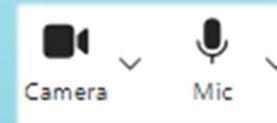
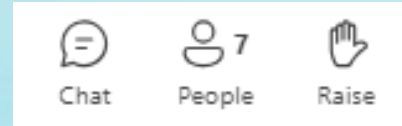
Meeting Approach and Ground Rules

- **Collaborative, Inclusive Environment**

- Be respectful and listen to others.
- No organizational or personal attacks.
- Meeting is not being recorded.
- Please ask questions as we proceed.

- **Active Participation Encouraged**

- Use “Raise Hand” button to indicate you would like to speak.
- Use “Chat” function with any questions or to share a comment.
- Turn on your camera if able and willing to do so when speaking.
- Mute your mic when not speaking.
- Please identify yourself when you speak.



Meeting Approach and Ground Rules

- **Helpful Mindsets**

- Share your experiences and wisdom.
- Be open-minded and solution-oriented.
- If clarification is needed, just ask for it!



This meeting is not being recorded

A serene landscape photograph of a calm lake reflecting the surrounding mountains and trees, all shrouded in a thick, soft fog. The scene is captured in a cool, muted color palette of blues, greys, and greens. The text 'Welcome and Objectives' is centered over the middle of the image.

Welcome and Objectives

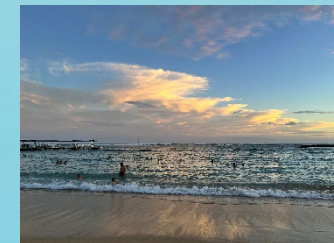


Welcome and Objectives

- Last meeting:
 - Reminder of SCOTUS factors for FE discharges and discuss applicability in Hawaii.
 - Consider the factors and discuss how they relate to developing criteria for prioritizing permitting of FE discharges in Hawaii.
- Today:
 - Recap of previous workshops and input received.
 - Current thinking on next steps and relative timeline.
- Overall, doing this work to protect aquatic life, human health, and other beneficial uses of State waters.



DELIBERATIVE



Overall Goals of Hawaii's FE Strategy



- Identify potentially affected facilities.
- Prioritize facilities for regulatory coverage.
- Develop permitting strategy that...
 - Acknowledges both general permits (for similar types of facilities) and individual permits may be needed.
 - Requires facilities to make the decision to seek permit coverage in accordance with the longstanding principles of the NPDES program.
 - Includes FE discharge determination criteria for applicability.
 - Creates regulatory certainty for potentially affected facilities.
 - Addresses the new FE requirement using DOH's current limited resources.
 - Creates cross-programmatic consistency between affected DOH programs regarding UIC, wastewater reuse, NPDES permits, OSDS approvals, etc.
 - Promotes “no discharge” alternatives, such as wastewater reuse.
- Determine what is needed to support the permitting strategy (e.g., revisions to statutes and rules, resources).

Collective Vision (from pre-workshops survey input)

- ✓ Collaborate and reach general stakeholder agreement on a path forward to developing and implementing FE strategy
- ✓ Protective of the quality of Hawaii's waters and the people who recreate in Hawaii's waters
- ✓ Not overly complex or cost prohibitive to implement
- ✓ No loopholes to enable pollution by dischargers
- ✓ In alignment with U.S. Supreme Court ruling
- ✓ Includes appropriate facilities with FE discharges
- ✓ Stakeholder input considered



Recap of Previous Workshops

Workshops – Timeline and Topics

May 21 –
Intro and
background



July 2 –
Additional
strategies



July 31 –
Permitting
options,
feasibility of
compliance



August 26 –
SCOTUS
factors,
potential
criteria for
prioritizing
permitting



September 19 –
Stakeholder
process wrap
up and next
steps



A background image showing a calm lake with misty mountains in the distance. The scene is hazy and atmospheric, with soft light filtering through the fog. The water reflects the surrounding landscape.

Workshop #1 – Kickoff, Court Case Background, and NPDES Overview

General Overview – NPDES Program Basics

- The CWA regulates discharges of pollutants into Waters of the U.S. (WOTUS). Point source discharges are regulated under the National Pollutant Discharge Elimination System (NPDES) Program.
- There are Individual Permits and General Permits under the NPDES Program. They contain similar components but are developed and administered differently.

- *All point sources*
- *Discharging pollutants*
- *Into waters of the United States*



Must obtain an NPDES *permit* from EPA or an authorized state, territory, or tribe

Court Case Background

- In April 2020, the US Supreme Court ruled that an NPDES permit is required for discharges of pollutants that are "**functionally equivalent**" of a direct discharge from a point source to navigable waters (County of Maui v. Hawai'i Wildlife Fund et al., 2020).
- The U.S. Supreme Court identified seven factors to determine if there is functional equivalency to a direct discharge.

EPA Draft Guidance

- In November 2023, EPA issued drafted guidance. The draft guidance describes the Supreme Court's functional equivalent analysis guidance on determining which discharges through groundwater may require coverage under an NPDES permit.



DOH Programmatic Impacts

- The SCOTUS determination impacts multiple DOH programs: CWB, SDWB, WWB.
- Functionally equivalent discharges must be addressed holistically amongst all affected programs.
- Depending on what types of facilities are included the universe of potential permittees could be over 100,000.
- Strategy needed to create more regulatory certainty, consistency between affected DOH programs, and to ensure efficient use of limited DOH resources.

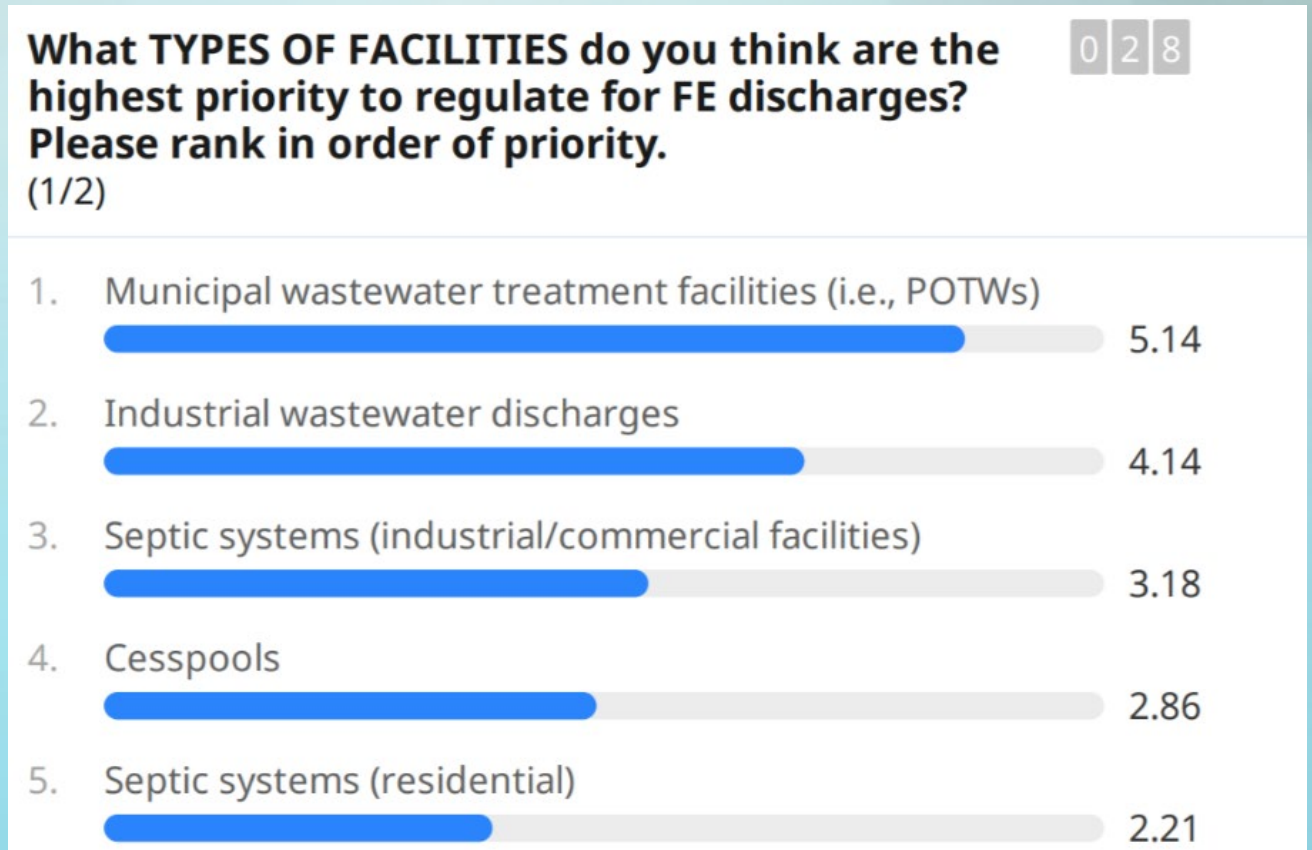


Examples of Challenges in Permitting FE Discharges through the NPDES Program

- Determining functional equivalency and identifying applicable facilities.
- Potential high number of applicable facilities and comparatively low permitting resources.
- Appropriately identifying pollutants of concern while accounting for subsurface dilution and chemical changes due to transit time, distance traveled and contact with different substrates and pollutants contained in the groundwater.
- Assessing the potential impacts on a surface water—does the discharge cause or contribute to an exceedance of applicable water quality?
- Establishing permit limits without knowledge of dilution or potential chemical changes.
- Low nutrient water quality criteria in Hawaii.
- Identifying discharge location(s).
- General permits are challenging to create with different facility types and pollutants.
- TMDLs can be difficult to address in a general permit.
- Discharger education and understanding of the NPDES program.
- Feasibility of new dischargers to comply.

Stakeholder Input

- Stakeholders suggested prioritizing municipal wastewater treatment facilities for FE discharge permitting.
- Concerns shared about:
 - How to handle nutrient limits
 - Enforcing on so many more permits
 - Ensuring the focus is not only on ocean discharges
 - Ensuring that DOH is looking at water impairments to help with prioritization of facilities for permitting



A background image showing a misty or foggy landscape with a body of water in the foreground and mountains in the distance. The scene is serene and somewhat obscured by the low-lying clouds.

Workshop #2 – Water Reuse, Groundwater Protection, and Nonpoint Source Considerations

Recycling / Reusing Treated Wastewater



- **Recycled water**
 - Treated wastewater that by design is intended or used for a beneficial purpose.
- **Reuse-related rules exist in Hawaii with 3 levels of recycled water (R-1 to R-3)**
 - Some current reuse implementation in Hawaii for non-potable applications
- **Key opportunities for reuse**
 - Agricultural irrigation
 - Landscaping irrigation
 - Other non-potable uses (toilet flushing, cooling, boilers, firefighting, dust control)



Recycling / Reusing Treated Wastewater

- **Various challenges related to water reuse implementation**
 - Money for improvements and maintenance of recycled water treatment and distribution infrastructure
 - Concerns about emerging contaminants in treated wastewater
 - Finite projects for reuse of recycled water in Hawaii
 - Limited DOH staff working on reuse
 - Public perception
- **Needs to further enable water reuse**
 - More investment into water treatment facilities, reuse water distribution projects, and human resources in DOH staff for recycled/reuse water program

Stakeholder Input

- Most participants thought water reuse should factor into Hawaii's FE strategy.
- Concerns shared about:
 - Ensuring reuse is done safely
 - Potential impacts of emerging contaminants such as PFAS
 - Needing to include water suppliers in reuse-related discussions
 - Climatic variability in rainfall and climate change impacts on potential reuse opportunities

Do you think water reuse should factor into Hawaii's strategy for reducing water quality impacts from FE discharges?

039

Yes



90 %

No



5 %

Unsure



5 %

Groundwater Protection

- Although groundwater is one of our most vital natural resources, it is perhaps the least protected. Not identified as a water of the United States and thus receives less protection in comparison to other waters.
- Not currently a regulatory program in Hawaii. No codified groundwater protection standards now, but DOH is making progress on standards.
- UIC program helps protect drinking water by allowing discharges to the ground in non-drinking water areas.



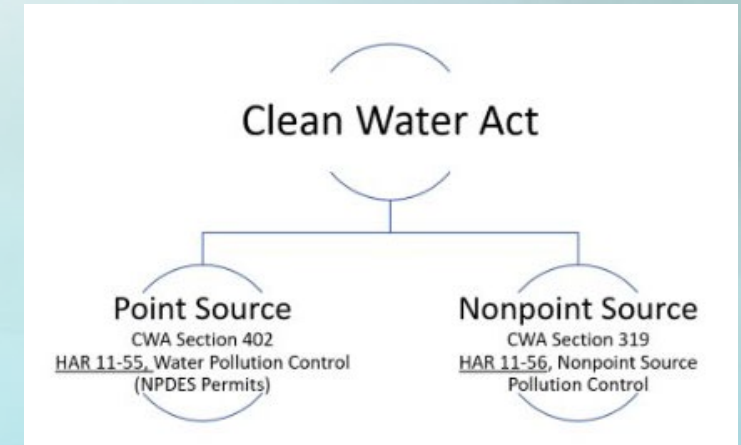
Groundwater Protection

- Nutrients are primary pollutants of concern.
- Groundwater discharged into State waters will be mix of injected and background nutrients.
- Opportunities through the groundwater protection program:
 - Close data gaps
 - Create groundwater protection standards (Regulatory)
 - Bridge WQS & MCLs & background concentration
 - Balance release cleanup goals with active disposal
 - Stop contamination at source
 - Data to help inform FE permitting prioritization

Nonpoint Source Pollution Control

- Point Sources:

- Water pollution from a single discrete source.
- Regulated by the Federal Government (and through Federal State Agreements as in Hawaii).
- Regulated by NPDES.
- The NPDES program and permitting tools were specifically created for point sources.



- Nonpoint Sources:

- Diffuse water pollution that does not originate from a single source and often the cumulative effect of pollution from large areas.
- Regulated by the State (excluded from regulation by the Federal Government).
- Not regulated or subject to NPDES. The NPDES program and permitting tools were not designed for nonpoint source.

Nonpoint Source Pollution Control in Hawaii

- Nonpoint source (NPS) pollution control rules adopted in 2021.
- Created Surface Water Protection Branch (SWPB) to regulate NPS.
- Identifies six major categories of nonpoint source pollution:
 - Agriculture, forestry, marinas, urban areas, hydromodifications, wetlands and riparian areas
- SWPB is the implementing agency for the Operating Onsite Disposal Systems (OSDS) management measure; working together with Wastewater Branch
 - SWPB focusing on management measures for septic systems while WWB is focusing on cesspools
 - This relates to managing pollution from FE discharges from OSDSSs

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Workshop #3 – Permitting Options and Compliance Feasibility

Individual Permits vs General Permits

- Individual Permit
 - Resource intensive
 - Responsive to site-specific situations
- General Permit [§122.28]
 - Can be more efficient on resources
 - Contains necessary controls (same 5 components as individual permits), such as:
 - Effluent limitations
 - Best management practices
 - Additional monitoring/special studies
 - Compliance schedules could be included using 2-step NOI process



Image created using Bing Copilot

Developing Water Quality-Based Effluent Limitations

Reasonable Potential Analysis (RPA)

- Process to establish discharge limits for pollutants that are or may be discharged and cause or contribute to a water quality standard exceedance.
- Challenging to do without knowing dilution or fate of pollutants through discharge pathway.
- Standard RPA procedure and “alternative RPA procedure” exist.

Considerations / stakeholder suggestions:

- RPA must be done to develop NPDES permit.
- Without knowing dilution then assume no dilution which could result in more stringent effluent limits than might otherwise be required.
- Existing studies that meet Hawaii’s QA requirements should be considered.
- The most appropriate RPA approach still needs to be determined for FE discharge permitting.



Effluent Limit Types – Concentration and Loading Limits

- Limits can be expressed as either concentration, loading, or both
- Example:
 - **Concentration:**
 - Maximum Daily Effluent Limit: 5 ug/L
 - **Loading**
 - Maximum Daily Effluent Limit = $\text{Concentration (mg/L)} \times \text{Flow (MGD)} \times 8.34 = .005 \text{ mg/L} \times 5 \text{ MGD} \times 8.34 = 0.209 \text{ lbs/day}$
 - *May promote reuse as a compliance strategy*
 - Will allow for greater concentration at point of discharge at any given time, but not in totality
 - May make sense for nutrients where day-to-day variations aren't impactful
 - May not be appropriate for toxic pollutants where acutely toxic conditions may occur



Permitting Compliance Tools

- **Zones of Mixing:** limited and defined area around outfalls to allow for the **dilution** before compliance with the applicable WQC is achieved. Representative of initial dilution, dispersion, and reactions from substances which may be considered pollutants.
- **Compliance Schedules:** designed for permittees where it is determined that permittees cannot immediately comply with limits upon the effective date of the permit. Permittees must provide specific information to demonstrate they are eligible for a compliance schedule.
- **Variances:** A time-limited use/criterion for a specific pollutant, from a specific source or waterbody, that is reflective of the best water quality that is currently attainable. Ensures incremental water quality improvements when full attainment of a WQS cannot be immediately achieved.

Stakeholder Input

- General permits may be appropriate for some types of facilities.
- Avoid a “one-size fits all” way of writing the permits as this will create challenges for a lot of facilities.
- There should be more monitoring of biological aspects of receiving water to help determine permitting requirements.
- Permits should be site specific and discharges closer to the coast with more sensitive biota should be more regulated.
- Create an approach that is not overly complicated.

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Workshop #4 – Functional Equivalency Factors and Prioritization

SCOTUS Functional Equivalency Factors



Transit time



Distance traveled



Nature of material through which pollutant travels



Extent to which the pollutant is diluted or chemically changed as it travels



Amount of pollutant entering the navigable waters relative to the amount that leaves the point source



The manner by which the pollutant enters the navigable waters



The degree to which the pollution maintains its specific identity

- The US Supreme Court provided general guidance on what constitutes a functional equivalent discharges.
- Hawaii District Court provided further direction for determining a functional equivalent discharge, but it is still vague.
- The Hawaii District Court added two factors:

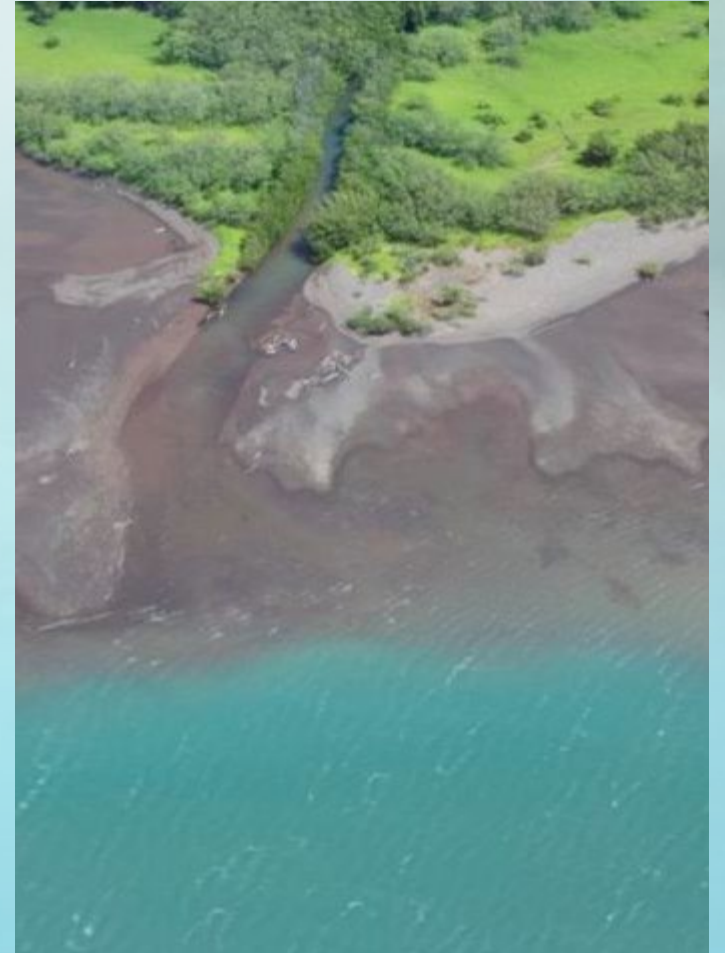


Volume of injection reaching the navigable waters



Impact to the ecosystem

- Noted that an 18–20 months of discharge travel time was sufficient to support an NPDES permit requirement but did not exclude longer travel times.
- Some factors may be more useful than others for determining functional equivalency.



Key Points

- The Hawaii District Court viewed the Lahaina WRF injectate as a mixture of contaminants with the wastewater itself being the pollutant. While some contaminants will degrade or be diluted, the pollutant (wastewater) still maintains its identity.
- The court case helped provide a point of reference for determining functional equivalency as it been legally established for the Lahaina facility at that time.
- DOH is using available data related to the FE factors to create “functional equivalency scores” as part of a ranking system to help prioritize permitting efforts.

Workshop 4 Meeting Poll - What do you think are the MOST USEFUL FACTORS for Hawaii in determining if a FE discharge exists that should be prioritized for permitting? (Select up to 4)

Top Selections at Beginning of Meeting (35 votes)

Amount of pollutant entering the navigable waters relative to the amount that leaves the point source	66%
Extent to which the pollutant is diluted or chemically changed as it travels	60%
Impact to the ecosystem	57%
Degree to which the pollution maintains its specific identity	40%
Volume of injection reaching the navigable waters	34%

Workshop 4 Meeting Poll - What do you think are the MOST USEFUL FACTORS for Hawaii in determining if a FE discharge exists that should be prioritized for permitting? (Select up to 4)

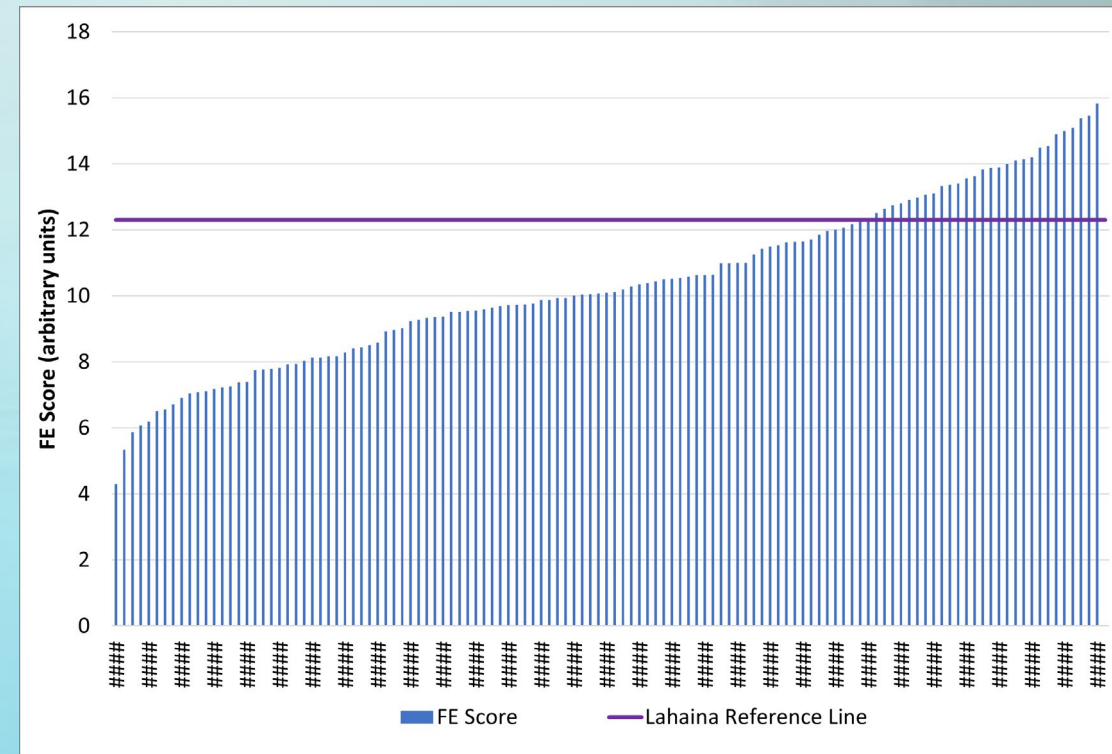
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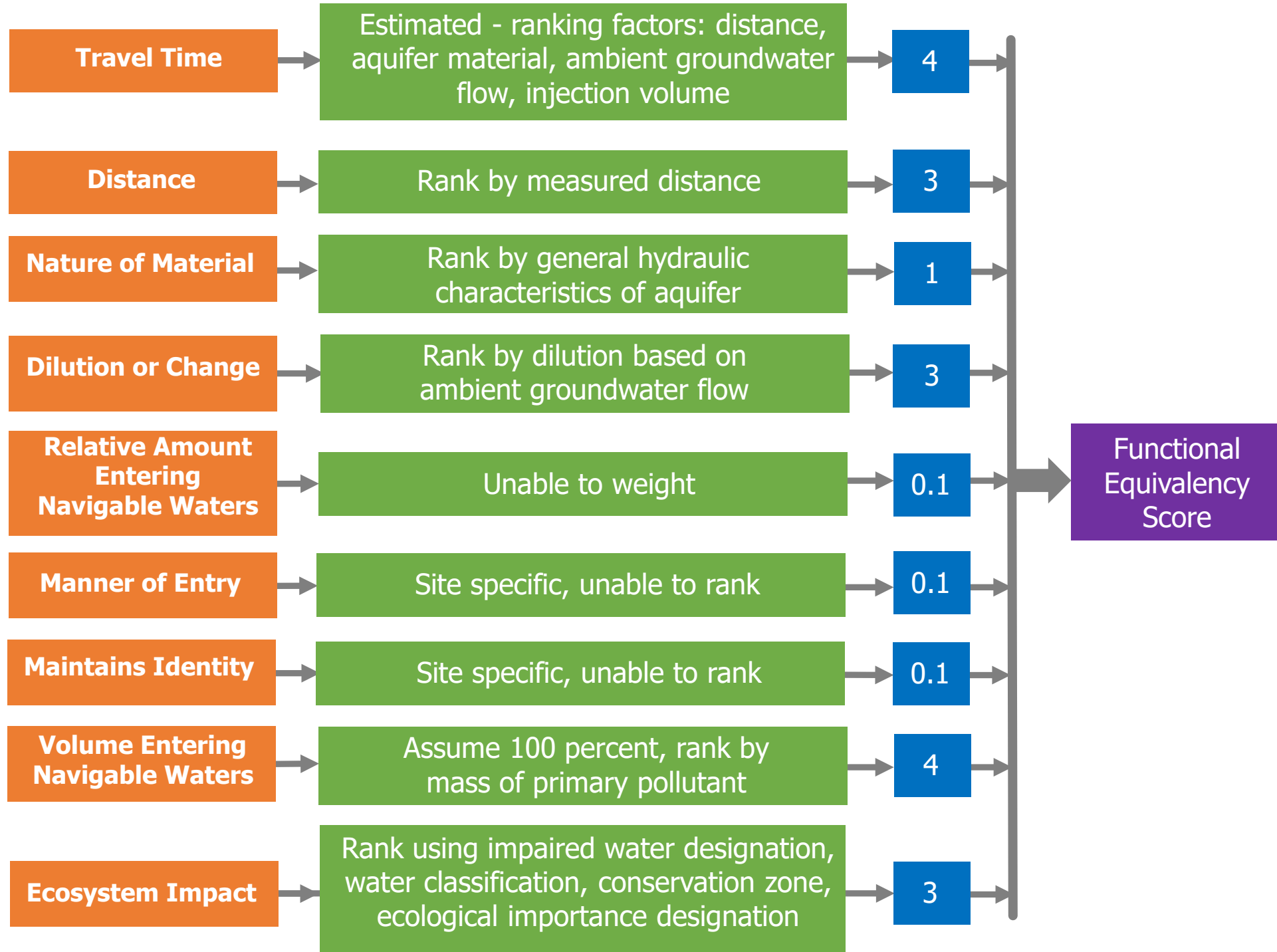
Top Selections at End of Meeting (24 votes)	
Impact to the ecosystem	71%
Amount of pollutant entering the navigable waters relative to the amount that leaves the point source	67%
Extent to which the pollutant is diluted or chemically changed as it travels	63%
+ Distance traveled	38%
+ Transit time	38%

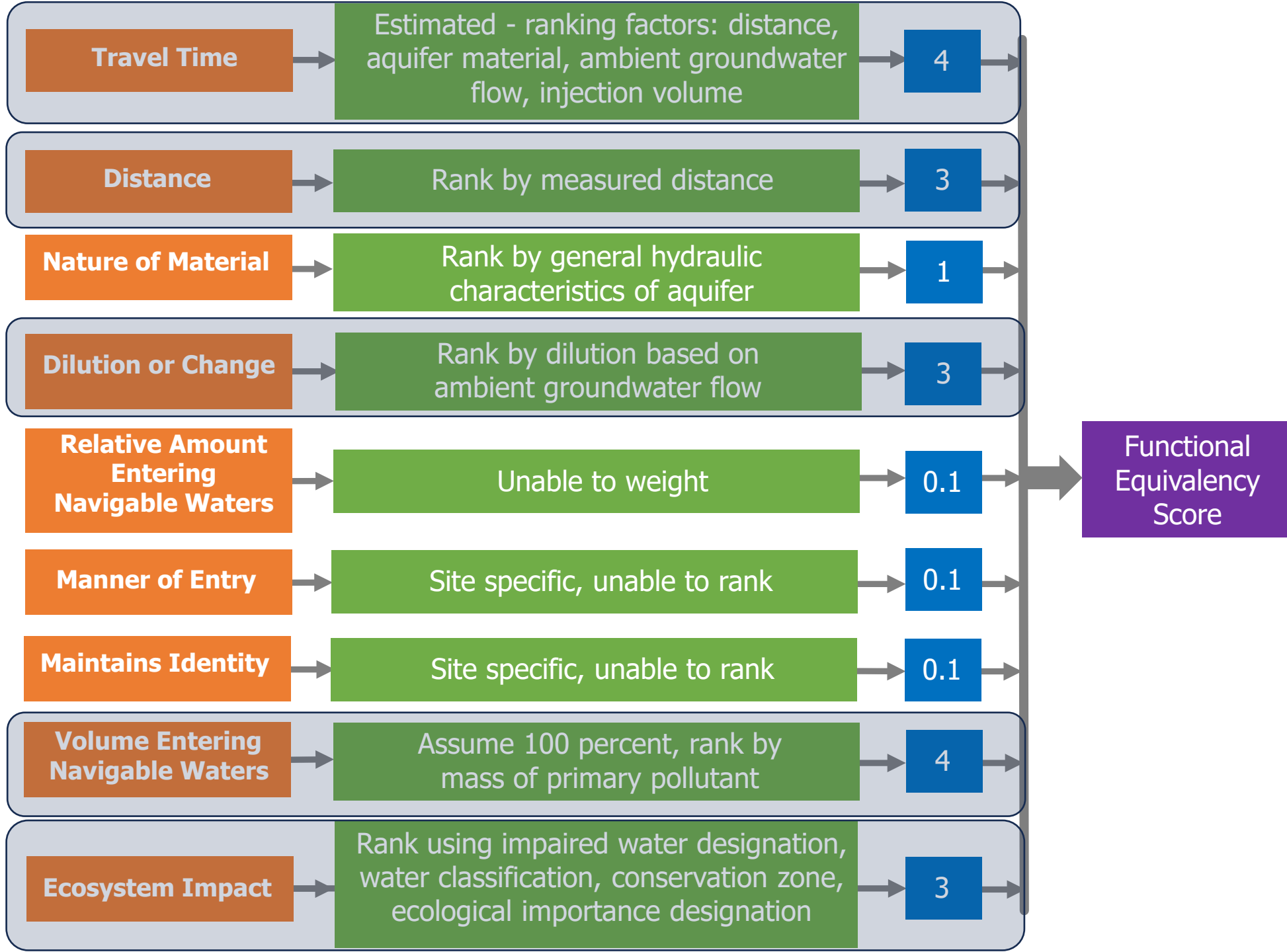


Approach to Evaluate Functional Equivalency and Prioritization for Permitting

- Determine which FE Factors can be evaluated without a site-specific investigation, compile, and analyze data
- Sum the factor ratings for final FE Ranking Score and do a relative ranking of UIC permittees based on the scores
- DOH is viewing these factors as the most helpful for prioritization:
 - Travel time
 - Distance
 - Volume entering navigable waters
 - Impact to ecosystem
 - Dilution / change due to influence of ambient groundwater flow
- Lahaina provides point of reference since FE has legally been established for this facility









Potential Next Steps

Short-term Goals (within 5 years and with existing resources)

- Identify potentially affected facilities.
- Receive input from stakeholders to consider in strategy development.
- Prioritize facilities for regulatory coverage.
- Develop permitting approach and conditions that protect beneficial uses.
- Permit(s) development and rule adoption.
- Permit highly prioritized facilities under appropriate permit mechanism.

Long-term Goals (5+ years)

- Obtain appropriation and staffing to develop capacity or new program to address all FE discharges statewide, groundwater pollution, wastewater management, and promote water reuse.
- Determine program jurisdictions to ensure DOH is clear and consistent in application of this requirement.
- Refine FE strategy and make iterative improvements, as necessary.
- Ensure sustainable program implementation to protect beneficial uses of State waters.

Potential Timeline

May 21st –
Aug. 19th
Stakeholder
workshops



Jan. 2025 –
Introduce
legislative bills
for DOH
resources

Sept. 2024 –
Continue FE score ranking
effort and exploring facility
permitting prioritization tool

2025 –
Start drafting 3
general permits
for FE
discharges

Ongoing:

- Continue to receive feedback and input from stakeholders
- Process individual NPDES permit applications from facilities that submit for FE discharges (based on own determination or court-ordered)

Perspectives on FE “Criteria”

- No “bright line test” with clear criteria for determining FE based on information from courts, federal regulations, or state rules.
- Until there are criteria from the court or federal regulations, the court will likely continue to make decisions on a facility-by-facility basis.
- DOH anticipates processing individual permits as needed based on a facility’s decision to apply on their own accord or because of a court decision.



Facility Permitting Prioritization Tool

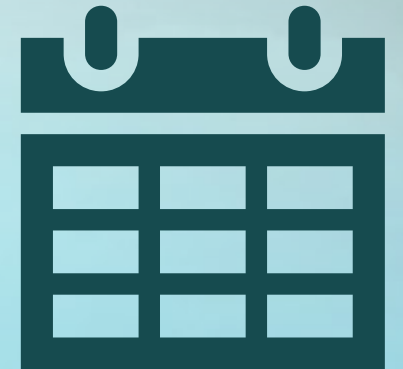
- Continue work on FE ranking approach based on available data
- Begin to incorporate industrial facilities in addition to wastewater facilities
- Explore the creation of public web-based tool with purpose of:
 - Letting public know if their facility is in a high priority area that may have FE discharges
 - Providing information so each facility can make their own determination on whether to seek NPDES coverage for a FE discharge



Development of 3 NPDES General Permits

(1) POTWs, (2) Non-POTW Wastewater, (3) Industrial

- General permits are needed for facilities needing NPDES permit coverage for FE discharges determined by the court or any discharger that knows they have an FE discharge
- General permit development could potentially begin in 2025
- Would use a “two-step” approach to enable compliance schedules
- Public participation could potentially begin in late 2025
- DOH would continue to process individual permit applications as needed before and after creating the general permits



Coverage for Other Types of Potential FE Discharges

- Potential stormwater FE discharges could be covered under existing general permits in HAR 11-55, Appendices B and K
- Other types of potential FE discharges (e.g., dewatering, hydrotesting, well drilling, etc.) can be covered under other existing general permits

FE General Permits – Key Considerations

- Facility applicability
- Technology-based effluent limits
- Water quality based effluent limits
- Pretreatment requirements
- Dilution assumption
- Monitoring and point(s) of compliance
- Compliance schedule

Facility Applicability

POTWs

- County facilities
- State facilities

Non-POTW Wastewater

- Federal facilities
- IWS/cesspools from homeowners and businesses, and other wastewater releases to ground

Industrial Process Wastewater

- Industrial facilities

Technology-Based Effluent Limitations

POTWs

- Secondary treatment standards

Non-POTW Wastewater

- Federal facilities similar POTWs: secondary treatment standards
- Other facilities: narrative requirements based on proper O&M

Industrial Process Wastewater

- Applicable limits in 40 CFR

Water Quality Based Effluent Limitations

POTWs

- Numeric limits for nutrients, whole effluent toxicity, and certain toxics
- Nutrients and toxics as **loading or mass-based limits based on design flow**

Non-POTW Wastewater Industrial Process Wastewater

- Numeric limits for nutrients, whole effluent toxicity, and certain toxics
- Nutrients and toxics as **loading or mass-based limits based on a reasonable estimate of effluent flow**

Water Quality Based Effluent Limitations

Current Permitting Practices for Limits

- Total nitrogen and total phosphorus applied as mass-based effluent limits, not concentration-based
- Ammonia nitrogen applied as a concentration limit
- Toxics have both concentration and mass-based limits

Reasonable Estimates of Flow

- Would need to have guidance on determining reasonable estimate of flow
- Rationale for estimates would need to be documented in the permit fact sheet

Other Key Considerations

Pretreatment Requirements

- Applicable within POTW General Permit only

Dilution Assumption

- No dilution assumed

Monitoring and Point(s) of Compliance

- After treatment and before effluent released into ground and mixes with groundwater and potential pollutants from other sources

Compliance Schedules

- Discharger submit NOI with proposed compliance schedule
- Includes interim milestones for compliance in shortest time possible
- Existing effluent quality used for interim effluent limits
- 2nd step would include public notice of proposed compliance schedule
- NGPC issuance with proposed compliance schedule

Questions / Comments

Legislative Bills for DOH Resources

- Three current proposals:
 - CWB proposal for 7 positions, not specific to FE program but will free up some time of existing staff
 - CWB special fund using NPDES permitting fees to help pay for DOH activities on water quality management, which could include FE discharge permitting
 - SDWB special fund
- Stakeholder support is welcomed on these or future proposals

A background image of a calm lake surrounded by misty mountains. The water is still, reflecting the surrounding landscape. The overall tone is serene and quiet.

Open Discussion

THANK YOU!

FE Strategy Workshop #5

September 19, 2024

