

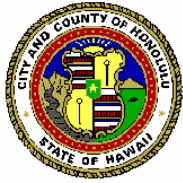
**DEPT. OF ENVIRONMENTAL SERVICES
STORM WATER QUALITY BRANCH**

**STORM WATER COMPLIANCE STRATEGIES
EROSION AND SEDIMENT CONTROL
AT CONSTRUCTION SITES IN HAWAII:**

THE CONSULTING ENGINEER'S PERSPECTIVE

**Sheryl E. Nojima, Ph.D., P.E.
ACECH
GRAY, HONG, NOJIMA & ASSOC., INC.
snojima@grayhongnojima.com**

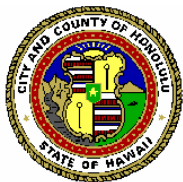
November 20, 2006



AGENDA



- ◆ What is the consulting engineer's current role in the permitting and approval processes?
- ◆ How should the engineering community be involved in the implementation of new permit requirements?
- ◆ What are the 'BIG PICTURE' questions to be considered as we move forward?
- ◆ Recommendations

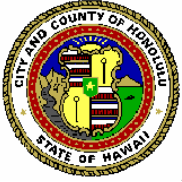


ACKNOWLEDGEMENTS



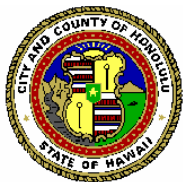
- ◆ **Ken Ishizaki and Dana Arakaki**
Engineering Concepts, Inc.
- ◆ **Jon Nishimura**
Fukunaga & Associates, Inc.
- ◆ **Greg Hiyakumoto and Jimmy Yamamoto**
R.M. Towill Corporation





**STORM WATER COMPLIANCE STRATEGIES AND
EROSION AND SEDIMENT CONTROL
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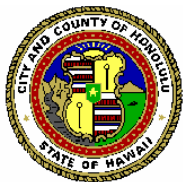
***ENGINEER'S ROLE
IN THE PERMITTING AND
APPROVAL PROCESSES***



TYPES OF PROJECTS

- ❖ **City's Capital Improvement Projects (CIP)**
- ❖ **Private Developments**
 - ***Dedicated (maintained by CCH DFM)***
 - ***Non-dedicated (maintained by private entity)***
 - ***Combination of dedicated & private***
 - ✓ Dedicated storm drainage system in ROWs
 - ✓ Private water quality treatment system





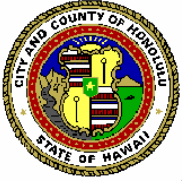
'TYPICAL' RESIDENTIAL DEVELOPMENT SCHEDULE



❖ SEQUENCE OF EVENTS

- *Topographical Survey*
- Preliminary subdivision submittal
- Tentative subdivision approval
- Drainage and water quality reports
- NOI Form C approval process
- Grading/erosion control plan approval process
- Construction plan approval process
- Bonding
- *Final subdivision approval*
- *Site grading*
- *Site work construction*
- *House construction*
- *House delivery*
- *Road/utilities dedication*





GOVERNING RULES AND ORDINANCES

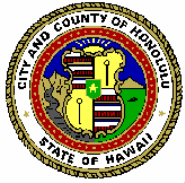


❖ ***Applicable Rules, Standards, and Practices***

- Rules Relating to Storm Drainage Standards (including Part II for Storm Water Quality)
- Rules Relating to Soil Erosion Standards and Guidelines
- Best Management Practices Manual for Construction Sites in Honolulu
- Subdivision Rules and Regulations

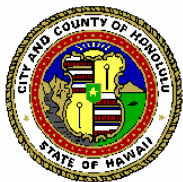
❖ ***Revised Ordinances of Honolulu (ROH)***

- Article 14. Permits, Bonds and Inspection for Grading, Soil Erosion and Sediment Control
- Article 15. Grading, Grubbing and Stockpiling
- Article 16. Violations, Penalties and Liabilities for Grading, Grubbing and Stockpiling



**STORM WATER COMPLIANCE STRATEGIES AND
EROSION AND SEDIMENT CONTROL
AT CONSTRUCTION SITES IN HAWAII**

***ENGINEERS' INVOLVEMENT IN
THE IMPLEMENTATION OF NEW
PERMIT REQUIREMENTS***



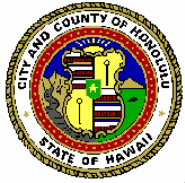
IMPLEMENTATION OF PERMIT REQUIREMENTS



❖ ***EARLY Participation in the Review of Rules and Standards*** [March 2008/page 11, D.d.(1)]

- Provide comments regarding the present rules and standards (storm drainage, water quality, soil erosion, etc.) prior to determining if modification is necessary
- Review and comment the draft rules and standards prior to final implementation





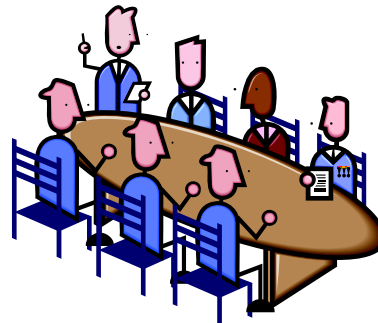
IMPLEMENTATION OF PERMIT REQUIREMENTS

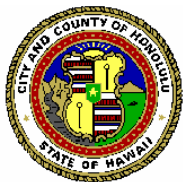


❖ ***EARLY Participation in the Review of Rules and Standards*** [March 2008/page 11, D.d.(1)]

● **Establish Technical Review Committee**

- ✓ *Composed of members of the local engineering community*
- ✓ *Advise the City and its consultant (M&E Pacific) in reviewing the various standards*
- ✓ *Provide technical guidance based on past experiences and current practices*
- ✓ *Assist in gathering technical comments from consulting engineers*





IMPLEMENTATION OF PERMIT REQUIREMENTS

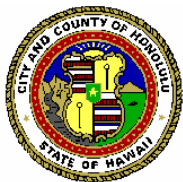


❖ *Plan Reviewer's Checklist for Construction*

BMPs [September 2006/page 12, D.d.(3)]

- **Are checklists already being used?**
 - ✓ *If so, where can we find them?*
 - ✓ *If not, when will they be available?*

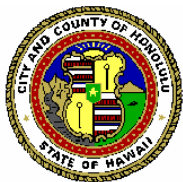




IMPLEMENTATION OF PERMIT REQUIREMENTS



- Involvement in development of **Post-Construction** BMP standards for project area disturbances exceeding 1 acre [March 2007/page 14, D.e(1)]
- Plan reviews for **Post-Construction** BMPs [March 2007/page 14, D.e(3)]
 - ◆ ***At what stage(s) will the review take place?***
 - Site construction plan review?
 - ◆ ***What will constitute "appropriate requirements" for "future continued maintenance" of permanent post-construction BMPs?***
 - Homeowner BMPs?



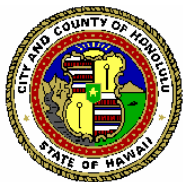
IMPLEMENTATION OF PERMIT REQUIREMENTS



➤ **Engineers (developers and contractors) need access to electronic database systems**

- ◆ **Permitting/construction** activity [March 2007/page 11, D.d.(2)]
- ◆ **Post-construction** maintenance and inspection of BMPs [March 2008/page 14, D.e.(4)]





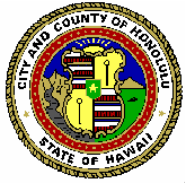
IMPLEMENTATION OF PERMIT REQUIREMENTS



➤ ***Education and Outreach Material for Consulting Engineers*** [March 2007/page 15, D.e.(5)]

- ◆ Permits requirements
- ◆ Approving agency/agencies
- ◆ Fees
- ◆ Time lines
- ◆ Environmental impacts of storm water runoff
- ◆ Design
- ◆ Installation/construction
- ◆ Operation and maintenance





**STORM WATER COMPLIANCE STRATEGIES AND
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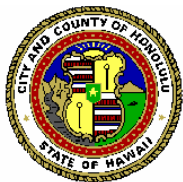
***NEED FOR CLARIFICATION:
'BIG PICTURE' QUESTIONS***

Receiving Water Limitations

Definition of MEP

Acceptance of Alternative Technologies and Methods

Other Considerations

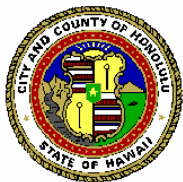


RECEIVING WATER LIMITATIONS



❖ BASIC WATER QUALITY CRITERIA [page 6, C.1.(6)]

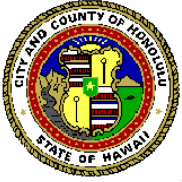
- ✓ Is this achievable? Is it feasible?
 - *“All waters free of substances..., including... soil particles resulting from erosion on land involved in earthwork, such as the construction of public works; highways, subdivisions...”*
- ✓ Is there evidence that construction-related storm discharges have contributed to violation of the State Water Quality Standards (HAR Chapter 11-54)?
- ✓ Is there evidence of the degradation of aquatic life?
 - *Have the beneficial uses of our receiving waters been compromised?*



DEFINITION OF 'MEP'

- What is the definition of **Maximum Extent Practicable (MEP)**?
 - ✓ How will the City/DOH/EPA determine which measures are **economically achievable**?
 - ✓ What is the **greatest degree** of pollutant reduction?
 - ✓ What are considered **best available** nonpoint source pollution control practices, technologies, processes, etc.?





OTHER CONSIDERATIONS

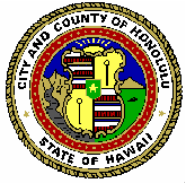


❖ **COORDINATION ISSUE – Permittee (CCH)**

- Overall administering of the MS4 Permit [ENV]
- Development and implementation of rules & standards [DPP]
- Approval of construction plans [DPP & DDC]
- Construction inspections [DPP & DDC]
- Acceptance of infrastructure [DFM]

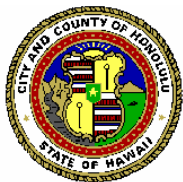
❖ **MEETING OVERALL OBJECTIVES - Enforcement (DOH)**

- Assurances that State Water Quality Standards are being satisfied?



**STORM WATER COMPLIANCE STRATEGIES AND
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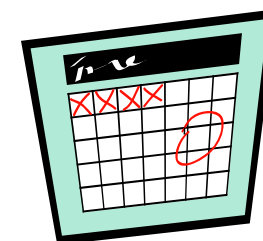
RECOMMENDATIONS



RECOMMENDATIONS



❖ **Engineers and Developers will need to build in added time and \$\$ to overall projects costs and schedules**



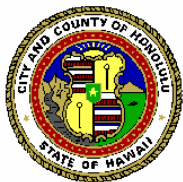
➤ **Engineers**

- ✓ Preparation and processing of construction plans, permit applications, etc.
- ✓ Review time by government agencies

➤ **Developers**

- ✓ Increases in associated project costs (design, construction, O&M) costs
- ✓ Prolonged responsibility of post-construction BMPs





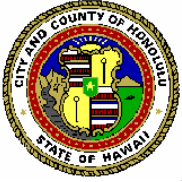
RECOMMENDATIONS



❖ Need for ongoing collaboration between government, consultants, developers, and contractors

- ✓ *Continued communication and dialogue*
 - Committee for ongoing Technical Review (represented by all of the above)
- ✓ *Training and outreach by the State Department of Health AND the City & County of Honolulu*





QUESTIONS

