



REPORT TO THE HAWAI'I COMMUNITY FOUNDATION



HAWAI'I COMMUNITY
FOUNDATION



O'AHU STORM WATER UTILITY FEASIBILITY STUDY

SUMMARY REPORT

DECEMBER 2020

This report, and the supporting technical studies, reflects the joint effort and contributions of consultants from many different firms who have collaborated in support the work of the Hawai'i Community Foundation, the City and County of Honolulu Department of Facility Maintenance, and the Storm Water Utility Stakeholder Advisory Group.

The participation and support of these firms is gratefully acknowledged.

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EXECUTIVE SUMMARY

Ola I Kai Wai – Water is life, and its stewardship is a responsibility shared by all. Recognizing the deep challenges and also the promise and opportunity inherent in storm water management, the Fresh Water Initiative at the Hawai'i Community Foundation, in partnership with the Department of Facility Maintenance of the City and County of Honolulu, have studied the feasibility of forming a storm water utility for O'ahu. Guided by an engaged and effective Stakeholder Advisory Group, and incorporating input from two rounds of robust and meaningful community engagement, this Feasibility Study provides the findings and recommendations of the comprehensive storm water utility evaluation process conducted from April 2019 through October 2020.

What is a Storm Water Utility?

Protecting and restoring O'ahu's water environment is a complex endeavor, from ma'uka to māka'i. Urban storm water runoff –rain water that flows off of impervious surfaces such as rooftops, driveways, parking lots, and pavements into surface waters and storm drains – is a documented and growing threat to O'ahu's water environment. Upstream conservation and watershed management, including maintenance of O'ahu's streams and channels and conservation of forest lands, is equally important to watershed and community health. All of these actions form part of the Island-wide storm water management system that requires human capital and financial resources to operate and maintain. For the City and County of Honolulu (CCH), these storm water management needs are acute and growing, requiring a clear-eyed assessment of the sustainability of funding now and into the future.

Over 2,000 municipal jurisdictions in the continental United States and Canada have adopted a storm water fee-based funding approach (storm water utility). Courts throughout the United States have upheld the use of storm water fees based on the amount of impervious area per parcel (lot).

Fundamentally, **a storm water utility establishes dedicated, fee-for-service based funding of a community's defined storm water management program.** In the same manner that water utility bills reflect water consumption, storm water utilities charge a periodic fee to each parcel (lot) based on the parcel's **measured square feet (SF) of impervious area:** the equivalent measure of how much storm water runoff the parcel generates, and thus the parcel's proportional impact on the overall cost of storm water services. Storm water fees are then segregated from regular municipal expenditures and dedicated to storm water-related expenses. If adopted by CCH, all storm water utility fees would be maintained in a restricted Special Fund established by City Council; by Ordinance, these funds would be used exclusively to fund storm water services.

Authority to Adopt a Storm Water Utility

Storm water utilities – or fee-based municipal storm water management programs – have been adopted by over 2,000 municipal governments in the United States (U.S.) and Canada. In 2015, Hawai'i's State legislature passed and Governor David Ige signed Act 42 (HB 1325), authorizing (but not requiring) Hawai'i's counties to adopt a storm water utility form of funding, and to charge storm water fees. The Legislature gave the counties wide discretion in the design of storm water utility programs and fees: Act 42 does not, for example, require counties to exempt certain categories of property owners from storm water fees. With the broad range of options thus offered by the legislation, this Feasibility Study was able to consider storm water utility options from leading programs across the U.S. in the context of O'ahu's unique needs and goals.

This study has found that a storm water utility, with an impervious area-based fee, is both feasible and desirable for the City and County of Honolulu. A storm water utility would support more efficient and consistent capital investments, as well as important improvements in storm water operations



The first meeting of the Stakeholder Advisory Group in the Mayor's Conference Room at Honolulu Hale, August 2019.

Why Advance a Storm Water Utility Today?

The technical studies, Stakeholder Advisory Group discussion, and citizen input summarized in this Feasibility Study have indicated that **a fee-funded storm water program, with the prospective budget and fee level outlined in this report, is both feasible and desirable for O'ahu.** However, due to the negative economic impacts of the COVID-19 pandemic to local businesses and residents, it was the decision of the Department of Facility Maintenance (DFM) that the bills to establish a Special Fund and fee be suspended in 2020. While this time presents great challenges and many transitions for the citizens of O'ahu, it is the conclusion of the involved stakeholders that **further work towards forming a storm water utility is vitally important, and it should be advanced in 2021.**

The Feasibility Study process highlighted many opportunities and benefits for citizens and the CCH, if storm water funding is shifted from reliance on general fund (i.e. property tax-derived) revenues to an impervious cover-based fee. First and foremost, **adopting a storm water fee to support the desired program outlined in this report would ensure consistent, sustainable investment in important storm water operations and vital capital improvement projects across O'ahu.** While the City Council has allocated an average of \$70 million annually from the general fund for storm water-related services, with no certainty of funding from one year to the next, DFM cannot undertake the same types of multi-year capital investments routinely used in fee-funded drinking water supply and wastewater sewer systems. With dedicated funding through a storm water fee and Special Fund, the DFM could commit to beneficial, multi-year storm water investments for O'ahu. Dedicated, fee-based funding would enable DFM to

achieve efficiencies and improvements through proactive system maintenance and repair; perform critical long range planning studies; fill staff vacancies; leverage external grants; and use low-cost debt financing for needed capital improvements.

Second, **a storm water utility would engage all of the parties who benefit from storm water management** – including state, federal², and local governments and non-taxable property owners – in the shared responsibility to fund these vital services. A storm water utility-based funding system provides a means of allocating financial responsibility more equitably than the present property tax-based method. Charging a fee based on the actual, measured amount of impervious area on each site ensures that the properties that are creating more runoff pay their proportional share of the overall cost. This is a more equitable approach than the property tax funded system, where costs to each parcel bear no relationship to the amount of storm water runoff generated – and where many runoff-generating properties are exempt.

Third, **a storm water utility offers many options to reward actions that benefit the system**, and can be structured to provide relief where fees create an undue hardship. Adopting a storm water utility could make available a set

of robust financial credits for actions that benefit O'ahu's water environment, providing a tangible reward for water harvesting, pollution prevention, and restoring natural hydrology.

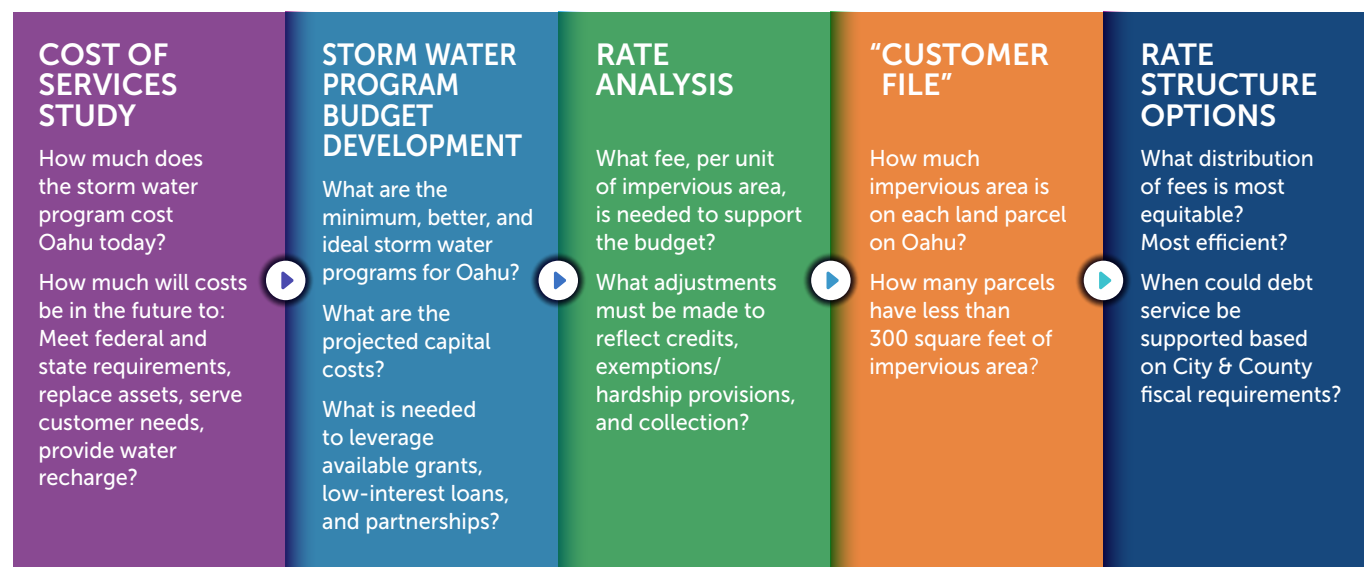
Technical Studies through the Partnership of The Fresh Water Initiative at the Hawai'i Community Foundation and DFM

The feasibility study process benefited from a strong and seamless partnership between DFM, its consultant teams, and the Fresh Water Initiative at the Hawai'i Community Foundation. To carry out the Stakeholder Advisory Process, the team of Birchline Planning LLC and Kearns & West was retained by the Fresh Water Initiative at the Hawai'i Community Foundation to develop and convene the Stakeholder Advisory Group, facilitating ten formal meetings over the fourteen-month study period. In addition, the Birchline/Kearns & West team worked with DFM's staff and its other consultants on the technical studies and public involvement process. This partnership on technical studies and community engagement ensured that the Stakeholder Advisory Group members and community alike were able to make meaningful contributions to the Feasibility Study.

From June 2019 through February 2020, the combined consultant team carried out five technical studies funded by DFM, with support from The Fresh

2 Pursuant to the U.S. Clean Water Act, federal government- owned properties must pay applicable, duly adopted municipal storm water fees. See P.L. 111-378, Jan. 4, 2011; Section 313(c) (2)(B) of the Clean Water Act.

TECHNICAL STUDIES COMPLETED FOR A STORM WATER UTILITY





The Storm Water Utility Stakeholder Advisory Group meeting at the Blaisdell Center, October 2019.

Water Initiative at the Hawai'i Community Foundation. These technical studies, listed in the figure on page iv, are essential steps in developing a storm water utility. Technical study findings have been incorporated into this Feasibility Study. Each element answers key questions for the feasibility of a Storm Water Utility. Collectively, these studies established the CCH's current and future storm water program costs and needs; the desired program investment for the next six to ten fiscal years; the amount of a storm water fee that would fund the desired program; and the prospective projections of revenues and financial impacts.

Prospective Storm Water Budgets and Investments

At the heart of the Feasibility Study process was the development of the program budget and activities that would be supported by a storm water fee. An in-depth [Needs Assessment and Cost of Service Study](#) was developed by AECOM Technical Services, Inc. This study, completed in May 2019, determined that the current annual average-- cost of storm water management is approximately \$91.6 million, split equally between operating expenses and capital costs. Capital costs are funded on a pay-as-you-go basis due to the limited availability of debt financing for storm water projects. Prospective budgets were prepared representing Basic Compliance, Better Program, and Ideal Program scenarios. The Basic Compliance option (\$77.5 million/ year) represents the minimum required to meet obligations of the Federal Municipal Separate Storm Sewer System (MS4) permit and directives from the CCH; the Ideal Program (\$174 million/year) represented an ideal case and was not evaluated further by DFM and the Stakeholder Advisory Group.

Ultimately, a hybrid budget (dubbed "Plan C" and known as the Program Working Budget) was developed representing the Better Program plus a revenue bond-funded approach to capital asset renewal and replacement beginning in Year 4 of a storm water fee-funded program. The Program Working Budget includes an average of \$62.4 million/ year in operating costs, an increase of roughly \$17 million/ year over current levels; and \$37.6 million/year in total capital and debt servicing costs, roughly \$5 million more than the current projected average. Overall, an average annual budget of \$98 million is recommended for the first six years of a fee-funded storm water utility. Access to revenue bond financing for capital, rather than the current, un dependable pay-as-you-go system (discussed in Section 2.3.3 of this report), will free up funds for badly needed operational investments and ensure consistent year-to- year funding in asset renewal and replacement. As outlined in this Feasibility Study, a storm water fee

A storm water fee in the range of \$4.85 per month per 1,000 square feet of impervious area would be required to fund the Program Working Budget. This rate accounts for necessary administrative costs, and also includes allowances for recommended exemptions, credits, hardship reductions, and account collections. A single-family home with the median amount of impervious area would pay approximately \$17 per month before credits.

in the range of \$4.85 per month per 1,000 square feet of impervious area would be required to fund this recommended budget.

Core Values

Early in this process, the Stakeholder Advisory Group developed a set of Core Values that members believe any storm water program – but particularly a fee-funded storm water utility – should reflect. These Core Values (see figure at left) will continue to guide work by DFM, The Fresh Water Initiative at the Hawai'i Community Foundation, the technical team, and the Stakeholder Advisory Group. In particular, *the Core Values stress accountability and transparency in determining how funds are spent and how investments are made*, pointing to two vital issues moving forward: Considering “revenue neutrality” or other accommodations for existing property tax payers if a fee is enacted and new revenues are raised; and developing an ongoing role for a Stakeholder Advisory Group in the operation and management of O'ahu's storm water program.

Community Outreach and Engagement

With direction and support from DFM, The Fresh Water Initiative at the Hawai'i Community Foundation, and the Stakeholder Advisory Group, two rounds of community engagement were conducted at key points in the technical study process. These were supplemented with ongoing presentations and dialogues with affected groups and organizations, who likewise provided valuable input and direction to the process.

In February 2020, the team held a series of eighteen public workshops and twelve smaller dialogue sessions with affected groups and organizations in neighborhoods throughout O'ahu. At these workshops, draft fees and program budgets were presented, offering participants a direct and straightforward look at the potential cost impacts and specific investments that would be supported. With the onset of COVID-19 the second set of workshops in May 2020 were held virtually instead of in-person, but these sessions attracted a new and engaged group of participants. Both specific ideas and general themes emerging from the community engagement process have informed and strengthened the recommendations and findings of the Feasibility Study, and additional public engagement is both strongly recommended and tentatively planned for 2021.

What does a Storm Water Utility mean for O'ahu?



CLEAN WATER

Managing storm water runoff
Improved water quality
Pollution prevention



HEALTHY & SAFE ENVIRONMENT

Conservation mauka to makai
Clean stream channels
Protecting ocean waters



COMMUNITY INVOLVEMENT

Deciding how funds are spent
Ensuring accountability
Meeting community needs



SHARED RESPONSIBILITY

Everyone pays a fair share
Everyone can get credits
Everyone makes a difference



IMPLEMENTATION PROCESS

Over the coming months and year, work will proceed on the technical, administrative, and outreach aspects of forming a storm water utility. As a new mayoral administration begins, briefings will be held with officials and City Council to ensure continuity of information and understanding. The Departments of Facility Maintenance and Planning and Permitting will be pursuing an update of O'ahu's parcel mapping – a long overdue improvement to O'ahu's geographic and property information systems. This work will support a refined rate structure proposal, and also ensure that O'ahu's property owners are able to visualize and understand their properties' impervious surface areas and prospective storm water bills. Discussion also will continue with the City and County of Honolulu Department of Budget and Fiscal Services to ensure common understanding of the mechanics of utility formation, billing, and financial reporting, and to ensure that sufficient allowances are made for the staffing and information management resources needed for the launch of a successful storm water utility.

RECOMMENDATIONS

Below are the recommended actions stemming from the Stakeholder Advisory Group process and associated technical analyses.

Advance a Proposal for a Storm Water Utility to the City Council. DFM should continue work to advance a Bill for an Ordinance through the Honolulu City Council to establish a Storm Water Special Fund, and a Bill for an Ordinance to establish a storm water fee. The rate should be sufficient to support the projected Program Working Budget. The Honolulu City Council should consider options for the timing of a storm water fee in light of economic considerations due to COVID-19, such as phasing in fees or using COVID-19 related economic recovery indicators to determine timing for fee implementation.

Plan for Investments in Accordance with the Program Working Budget.

The Program Working Budget, developed through this process and reviewed by the Stakeholder Advisory Group, would make new investments in stream channel cleaning, proactive inspection and maintenance, water quality monitoring, and water quality improvement projects. Funds also are designated for leveraging external grants, and for supporting partnership programs that invest in workforce development and green infrastructure. The Program Working Budget includes new and ongoing investment in asset renewal and replacement, which is needed to ensure system function, respond to population growth, and provide resilience to climate change.

Maintain a Fixed Storm Water Rate for the First Six Fiscal Years of the Utility.

It is recommended that the adopted storm water rate (i.e. the charge per 1,000 SF of impervious area) be fixed the first six fiscal years the fee is in effect. The rate should be set at a level sufficient to support the projected Program Working Budget over this six fiscal year period. Once a sufficient fund balance is achieved in a Storm Water Special Fund, the storm water program should begin issuing revenue bonds, backed by storm water fees, to fund its own capital improvement program, including asset renewal and replacement work of roughly \$25 million per year.

Adopt an Eight-Tier Fee Structure to Promote Equity.

Provided the accuracy of mapping developed through the upcoming DPP/DFM parcel and impervious cover update process has sufficient accuracy to determine impervious area, it is recommended that the Honolulu City Council adopt an eight-tier rate structure to provide greater equity among property owners.

Review Considerations and Options for Revenue Neutrality in Adopting a Storm Water Fee.

At present, the subset of O'ahu property owners who pay property taxes supply \$70 million annually in general funds to support the CCH storm water management program. The question of whether new revenues from a storm water fee would be fully or partially offset by property tax reductions was discussed (though not resolved) by the Stakeholder Advisory Group, and the issue was raised at every public outreach meeting.

Ensure Transparency and Accountability through

Annual Financial Reporting. A separate report of all storm water-related revenues and expenditures should be prepared annually. It is encouraged that DFM prepare such a report annually regardless of whether a Storm Water Special Fund ultimately is adopted.

Establish an Ongoing Stakeholder Advisory Group to Promote Transparency and Support Storm Water Management.

Continuation of the Stakeholder Advisory Group process is strongly recommended to support DFM and its partners through the implementation process. Transparency and accountability are critically important to the public and stakeholders. The Stakeholder Advisory Group should receive and comment on the annual financial report recommended above, provide input on projects and program development, and act as a liaison to affected communities on storm water quality, drainage, and flooding issues.

Provide Credit Opportunities to All Properties, Supporting a One Water Framework.

It is recommended that **all** properties on O'ahu be eligible for credits – ongoing reductions in storm water fees. Incentivizing projects that capture or recharge water through a storm water fee and credit program will further a One Water framework linking on-site storm water management to water supply, recharge, and conservation. Credits available to property owners should include reductions for (1) treatment and capture of the first inch of rainfall ("Water Quality Volume"), (2) compliance with other applicable federal storm water permits, (3) adopting and teaching an approved storm water education curriculum, and (4) actions such as trash removal or maintenance approved by DFM that actively reduce DFM's cost to manage the storm water system. A cumulative maximum bill reduction of 60% for all credit activities on a property is recommended.

Exempt Properties with Less than 300 SF of Impervious Area, and All Public and "Quasi-Public" Roads, from Storm Water Fees.

To ensure efficient and accurate program administration and equity in the assessment of storm water fees, it is recommended that the Ordinance include provisions exempting parcels with less than 300 SF of impervious area, and all roadways that are fully open to public travel, regardless of ownership.

Credits are ongoing reductions in storm water fees for actions that improve water quality, capture rain water on site, or reduce the cost to manage O'ahu's storm water system. These incentives support improved water quality and water supply sustainability projects across the island of O'ahu.

Provide Hardship Relief for Low-Income Households, and Cap Fees to Non-Profit Organizations.

The Stakeholder Advisory Group recommends that those residents who are responsible for utility bills, and who have qualified for the Low Income Home Energy Assistance Program (LIHEAP), be charged a flat storm water fee based on the lowest tier of the adopted storm water rate structure. It is further recommended that DFM offer temporary relief to those demonstrating ongoing financial hardship, and that DFM and the Department of Environmental Services (ENV) discuss a joint hardship provision in cases where the collective cost of sewer, water, and storm water exceeds 4% of gross monthly household income. Finally, it is recommended that non-profit organizations responsible for utility bills have their annual storm water fees capped at a maximum 0.5% of the organization's demonstrated annual revenue.

Develop Rebate, Grant, and Partnership Programs to Ensure Investment in All of O'ahu's Communities.

DFM is encouraged to develop rebate or grant programs that provide a regular and accessible source of investments in meaningful projects, including green storm water infrastructure, headwaters conservation, water conservation and recharge, environmental education, and clean-ups. Careful program design is needed to ensure that all communities have the opportunity to be involved; a focus on programs or projects benefiting kūpuna and rural communities is recommended, as is coordination with the Department of Hawaiian Home Lands.

Continue Public and Stakeholder/Affected Group Engagement through the Implementation Process.

In addition to continuing the work of the Stakeholder Advisory Group in a formal role, it is recommended that DFM and its partners continue active outreach to stakeholders and affected groups throughout the implementation process. Direct engagement with O'ahu's Neighborhood Boards is specifically recommended.

ABBREVIATIONS

BFS	Department of Budget and Fiscal Services of the City and County of Honolulu
CCH	City and County of Honolulu
CWA	Clean Water Act, 33 U.S.C. 1251 et seq.
DFM	Department of Facility Maintenance of the City and County of Honolulu
ENV	Department of Environmental Services of the City and County of Honolulu
ERU	Equivalent Residential Unit
GIS	Geographic Information System
HPU	Hawaii Pacific University
IA	Impervious Area
LIHEAP	Low Income Home Energy Assistance Program
MS4	Municipal Separate Storm Sewer System
NOAA CCAP	National Oceanographic and Atmospheric Administration Coastal Change Analysis Program
NPDES	National Pollutant Discharge Elimination System
OWOW	One World One Water
RPAD	Real Property Assessment Division of the City and County of Honolulu
SF	Square Feet
TMDL	Total Maximum Daily Load
US	United States
US EPA	United States Environmental Protection Agency
WQV	Water Quality Volume

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A watershed protection sign created by Kamehameha Schools students at their North Shore boat launch.

1.0 INTRODUCTION

“Storm water management” is a deceptively simple phrase for a complex and multi-faceted area of environmental management. For the City and County of Honolulu (hereafter referred to as “CCH”), its Island-wide storm water management program encompasses a host of different investments and actions. Far from being limited to management of O’ahu’s system of urban storm drains and pipes (the Municipal Separate Storm Sewer System or “MS4”), storm water management is a wide-ranging program integral to the health of O’ahu’s physical and natural systems.

1.1 Evaluating a Fee-Based Storm Water Program (Storm Water Utility)

Storm water utilities and storm water fees are increasingly common methods of funding storm water programs in the continental United States and Canada. There are at least 2,000 storm water utilities operating in the United States and Canada, in communities ranging from a few hundred residents to large municipalities such as San Antonio, Texas and Philadelphia, Pennsylvania. The formation of a storm water utility is not required by any federal law or regulation; however, there is increasing recognition among permit staff (including those at the Hawai’i Department of Health and United States Environmental Protection Agency (US EPA) who administer the CCH MS4 permit) that moving to a fee-based storm water funding system represents the most sustainable and successful means of supporting a strong storm water management program.

1.2 The Feasibility Study Process

This Feasibility Study for a storm water utility has evaluated whether and how a shift to fee-based financing could support a more robust and effective way for the CCH to meet permit obligations, and as important, could foster a shift to a “One Water” ethic wherein storm water is managed as a resource - not a nuisance. Work on this Study was completed with a seamless partnership of Department of Facility Maintenance (DFM) and The Fresh Water Initiative at the Hawai’i Community Foundation. Both DFM and the Hawai’i Community Foundation helped fund the consultant team’s services, reflecting DFM’s significant commitment and buy-in to the process and representing a significant leveraging of funds from The Fresh Water Initiative at the Hawai’i Community Foundation. Public and stakeholder input through this Feasibility Study process already has led to new approaches to storm water master planning and partnerships, and the Stakeholder Advisory Group has defined new and positive core values guiding O’ahu’s storm water program. Elements from high-performing SWUs throughout the U.S. have been brought in and considered at all phases to ensure that O’ahu benefits from their experience.

This report summarizes the technical and financial analyses that were conducted, and the discussions held through two channels: The Stakeholder Advisory Group process, convened in August 2019 and ongoing; and the community engagement work initiated in February 2020, which also continues. The report summarizes the process and findings from the overall effort, including an overview of the technical studies in Section 2. The ongoing Public and Stakeholder Involvement Process is described in Section 3. Finally, the core recommendations of the Stakeholder Advisory Group are summarized in Section 4.

OAHU’S STORM WATER SYSTEM BY THE NUMBERS

190,000 linear feet/yr
of drainline inspections
and maintenance

36,000 miles/yr of
street sweeping

27,946 catch basins

~4,000 green
infrastructure features to
maintain – with more to come

>2,000 construction projects
inspected

1,563 miles of culverts

1,553 miles of
drainage pipe

361 enforcement
actions in 2019

~100 streams
require cleaning

97 City industrial facilities

The recommendations that have emerged from the Feasibility Study are intended to guide further study, and if the CCH adopts a storm water utility form of funding, to support the implementation process. Regardless of the outcome of the political process, the Feasibility Study outcomes described in this report reflect successes already achieved: Greater recognition of the value of storm water management, stronger interest in how the CCH makes its investments, and a strategic planning process underway. These positive outcomes point to a better future for O'ahu's nearshore water environment in the years to come.

1.3 Addressing Transparency, Accountability, and Engagement

Any proposal for a fee will be greeted with some skepticism about the ultimate benefit citizens will see for their money, and whether that money will be used for the intended purpose. The processes involved in this Feasibility Study, and many of the recommendations, reflect a commitment on the part of DFM and The Fresh Water Initiative at the Hawai'i Community Foundation to increase accountability, reporting, and engagement in storm water management – regardless of whether a fee ultimately is adopted.

1.3.1 Complying with the Sunshine Act (Open Meetings Law)

The first element of accountability concerned the Stakeholder Advisory Group process. From the outset, DFM and The Fresh Water Initiative at the Hawai'i Community Foundation demonstrated a firm commitment to transparency and public engagement in the study process, and in any storm water utility that ultimately emerges from this work. While not strictly required to do so, meetings of the Stakeholder Advisory Group have been conducted as public meetings in accordance with Hawai'i's Sunshine Law², with opportunities for public comment. All of the public involvement likewise followed Sunshine Act procedures for public notice, comment, and access.

2 Hawai'i's Uniform Information Practices Act (Modified), chapter 92F, HRS (UIPA)

1.3.2 Developing Oversight and Reporting for Storm Water Management

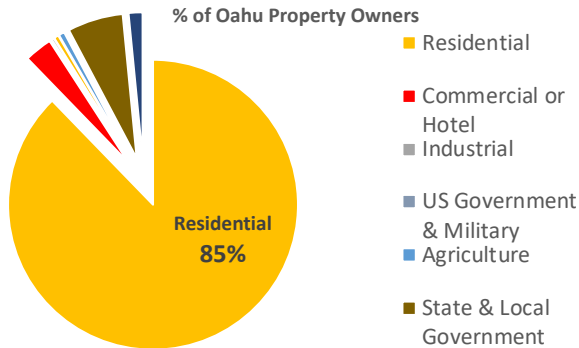
A second issue raised throughout this process concerned whether the shift to a storm water utility could address a chronic concern in Hawaiian public affairs: Transparency and accountability in how funds are spent. As noted in Section 3, the public outreach process found that citizens understand both the value of O'ahu's water resources, and the potential benefits of good storm water management. Citizens are seeking meaningful information about costs, funds, and expenditures for the utility. This can be achieved both through public-facing annual reports – which would be greatly facilitated by having a separate Storm Water Special Fund for all revenue and expenditures – and also by continuing to have a stakeholder advisory group. Separate accounting and reporting of storm water-related revenues and expenditures, buttressed by an external advisory group that would review and discuss these reports, was a feature of a prospective storm water utility that appealed to many citizens and stakeholders. It is a recommendation of this Feasibility Study that an advisory board or group have an ongoing role supporting DFM in its storm water management efforts, regardless of whether or when a fee is adopted, in order to provide the transparency and feedback that is strongly desired.

1.3.3 Considering Equity and Revenue Neutrality

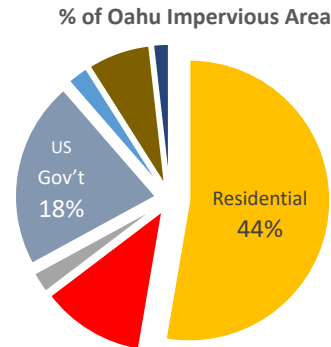
A final issue related to transparency concerns the financial impact on different property owner groups under different storm water funding approaches – and the approach Honolulu City Council ultimately will take to allocating responsibility among and between them. At present, the subset of O'ahu property owners who pay property taxes pay the \$70 million annually in general funds that go towards storm water management. Federal, state, and local governments, along with many entities such as universities, non-profit organizations, and other tax-exempt or tax-advantaged property owners, do not contribute significantly towards these general fund obligations. In a storm water utility, all property owners pay fees, including the United States Government – which owns nearly 5% of the impervious area on the Island of O'ahu³.

3 P.L. 111-378, signed into law on January 4, 2011 amended the United States Clean Water Act to require federal facilities to pay reasonable municipal service charges for storm water. U.S. v. City of Renton et al., No. C11-1156JLR (W.D.Wash. May 25, 2012) further clarified the responsibility of federal facilities to pay duly enacted local storm water fees.

Why is an Impervious Area fee a more equitable way to fund a storm water program?



Residential property owners make up 85% of all property owners on Oahu...



...but own about 44% of the impervious area, while non-taxable property owners own about 25%

Establishing a storm water fee, generally speaking, shifts the burden of storm water funding away from taxable residential property, and distributes it more broadly across all property owners, creating a more equitable funding system.

The prospect of a new storm water fee raised the central issue of **revenue neutrality**: If the CCH has new revenues from storm water fees, will those revenues be an additional cost to those who presently fund storm water services through property tax payments? Or would the Honolulu City Council reduce property tax demands by an amount equivalent to the new revenue raised from storm water fees? This question of revenue neutrality was raised at each and every public meeting and focused stakeholder meeting the project team and DFM held through the Feasibility Study process. The Stakeholder Advisory Group discussed the topic at many of its meetings. Members outlined and discussed the options that could be available to the Honolulu City Council upon consideration of a Bill for a Storm Water Utility, including:

- Reducing the total amount funded by the property tax levy by all or some of the amount that would have been allocated to storm water management in the absence of a fee;
- Rebating or reducing annual property tax bills to individual property owners, to reflect the amount a property owner pays in storm water fees; or
- Providing a partial rebate or reduction to individual property owners.

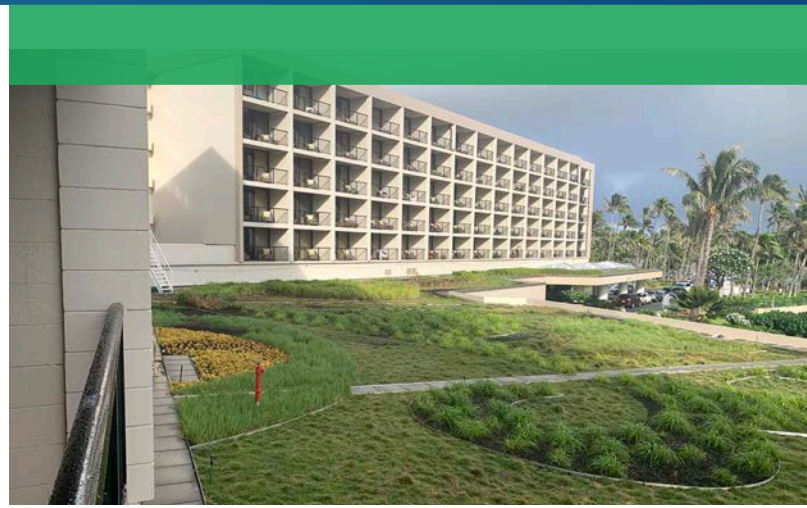
The Stakeholder Advisory Group's individual members, and the organizations represented, are not in full agreement on whether and to what extent revenue neutrality should be incorporated into a storm water utility, though roughly two-thirds of the members supported full or partial incorporation of revenue neutrality in concept. Other members noted the lack of sufficient budget allocations to date, and felt it was outside the Stakeholder Advisory Group's purview to determine whether other areas of the CCH general fund budget could be reallocated without having other impacts. Members did agree, however, on the importance of transparency and discussion around this topic, and in particular they agreed that any additional costs to constituents must be fully and clearly identified.

Courts across the U.S. have upheld the validity of storm water fees, finding that (1) storm water charges are a fee, not a tax; and (2) the use of impervious surface area is a valid basis for allocating storm water fees, as impervious cover is a valid – if not perfect – proxy for demand placed on a storm water management system.

(<https://stormwater.wef.org/wp-content/uploads/2015/01/NACWAs-Navigating-Litigation-Floodwaters.pdf>)

Honolulu's Neighborhood Boards are likely to have input on this topic in 2021, when additional outreach on a Bill for an Ordinance is planned to be conducted. To support this discussion, the consultant team has provided examples of communities in the United States that have reduced property tax levies by all or some of the amount raised by a new storm water fee. The team also has noted in the technical studies that billing and information management systems may need to accommodate a property tax rebate or reduction if a storm water fee, and some approach to revenue neutrality, are adopted.

Overall, the discussion of revenue neutrality has helped to highlight the vital importance of providing more and more detailed information about how monies are raised and spent. The deep and productive engagement of the Stakeholder Advisory Group and public on this topic, and the willingness of the Stakeholder Advisory Group to continue its role in support of the storm water management program, are positive signs of support for good environmental management, and good governance.



A green roof system at the Turtle Bay Resort, an example of green storm water infrastructure that provides water quality and aesthetic benefits.

1.4 Looking Ahead

The Honolulu City Council ultimately may or may not adopt a storm water fee in the form envisioned in this report. Nonetheless, the work and findings of this process provide valuable direction on how O'ahu's storm water investments and programs best can be shaped to achieve a vision that reflects the Core Values developed from this process, and to move towards the One Water vision for the Island's health and community.

2.0 THE FEASIBILITY STUDY PROCESS AND FINDINGS

Determining the feasibility of a storm water utility required coordinated work by DFM, The Fresh Water Initiative at the Hawai'i Community Foundation, a consultant team working on several fronts under different contracts, and individuals representing the organizations and boards on the Stakeholder Advisory Group. This section presents the principal findings of these studies, and important context related to the storm water system, permit requirements, and DFM operations.

Work on the technical elements of the study (assessments of the cost of storm water services, projected budget needs, the distribution of impervious cover by parcels, rate analysis, and recommendations for credits and other fee adjustments) began with the foundational *Needs Assessment and Cost of Service Study* completed by AECOM Technical Services, Inc. in May 2019. Subsequent technical studies, led by AECOM Technical Services, Inc. with support from Jacobs, Birchline Planning LLC, and Focused Planning Solutions LLC, were completed between August 2019 and July 2020. This work ran on a parallel timeline to the Stakeholder Advisory Group and public outreach processes; public and stakeholder input helped inform key decisions throughout.

2.1 The Regulatory Context for Storm Water Management on O'ahu

Like many of its peer cities, the CCH's storm water management program must manage the competing and increasing demands posed by a changing climate, aging infrastructure, community growth and development, and a host of increasingly complex and expensive requirements imposed by federal, state, and local governments. Federal permits, administered by the Hawai'i Department of Health, represent a principal driver for storm water investments and activities. In the 1990s, the U.S. EPA expanded the jurisdiction of the Clean Water Act to cover the nation's Municipal Separate Storm Sewer Systems, or "MS4s," including Honolulu's. Specific investments and actions or "minimum control measures" have been required since 1994. Compliance is the responsibility of DFM, which serves as the lead agency or "principal permittee" for the CCH. Additional responsibilities and obligations are directed by federal Total Maximum Daily Load (TMDL) pollutant reduction requirements; Section 10 of the Rivers and Harbors Act of 1899 and Section

404 of the Clean Water Act, which regulate activity within stream channels; the State of Hawai'i, which has assigned responsibility for stream maintenance and the repair of erosional areas to the counties and thus DFM; and the Honolulu City Council, which has tasked DFM with the clean-up and storage of belongings from encampments of homeless persons.

Above and beyond these permit requirements and legislative directives, storm water management protects and defends O'ahu's *wai*: the water upon which the island and its people rely for life and livelihoods. Effective and consistent storm water management is O'ahu's "first line of defense" in protecting nearshore waters, whose quality has been shown to be directly and adversely affected by storm water runoff. Adapting to many elements of climate change, including longer dry periods, more intense storms, and sea level rise, also places new and different demands on the Island's surface waters and storm water infrastructure.

2.2 Past Storm Water Utility Studies and Enabling Legislation

Over the past decade, storm water utilities and fees have been under study in Hawai'i – and have been the subject of legislative action. Prior to the State's adoption of a clear enabling law, DFM had commissioned initial storm water utility evaluations by R.W. Beck in 2011 and 2013. These studies assessed what storm water services could be funded, and the general level of cost effort involved, but stopped short of a full feasibility study. The legal basis for a utility and fee was put in place in May 2015, when HB 1325 (Act 042) was signed into law and counties were authorized to establish storm water utilities and charge storm water fees⁴. Hawai'i Pacific University (HPU) and One World One Water (OWOW) followed with their 2017 study for The Fresh Water Initiative at the Hawai'i Community Foundation, *Looking Ahead: The Path to a Stormwater Utility for the City and County of Honolulu*. This important study outlined the experience of storm water utilities nationally, and the next actions required to evaluate and develop a storm water utility proposal for O'ahu. The HPU/OWOW study noted that a storm water fee system would provide an incentive for property owners and agencies alike to reduce their storm water "footprints," capture and conserve water on site, and recharge ground water. The study recommended

4 Hawai'i HB 1325 Legislative Session 2015 https://www.capitol.hawaii.gov/Archives/measure_indiv_Archives.aspx?billtype=HB&billnumber=1325&year=2015

HPU/OWOW RECOMMENDATION	FEASIBILITY & TECHNICAL STUDIES COMPLETED OR UNDERWAY
Develop an ongoing cost accounting process for tracking stormwater management expenditures now and in the future and to identify gaps and needs for funding	Needs Assessment and Cost of Service Study prepared by AECOM, May 2019; ongoing budget and expenditure analysis through the Technical Studies.
Develop strategies for public outreach, education, and stakeholder participation necessary for buy-in to and success of the SWU over the long-term.	Stakeholder Advisory Group process, comprehensive public outreach, and focused organizational outreach conducted from mid-2019 through the present.
Produce a five- or more year strategic plan and matching comprehensive budget that engages stakeholders and addresses current and anticipated stormwater drivers and needs.	Prospective budget options developed for the first six fiscal years of a fee-funded storm water utility; presented to community and Stakeholder Advisory Group; larger storm water master plan process initiated.
Develop protocols to best use available data and GIS to design the most appropriate, fair, and feasible SWU fee structure based on Equivalent Residential Units (ERUs).	Technical analyses completed including (1) GIS parcel impervious analysis and "customer file" development; (2) rate analysis, with two rate structure options under consideration; and (3) proposal for exemptions and hardship provisions to enhance equity. The ERU approach is not utilized.
Leverage the SWU structure to include a credit program to incentivize property owners to invest in a menu of appropriate and targeted best management practices for green stormwater infrastructure with the ultimate goal of water capture and recharge.	Core elements of a credit program have been developed and reviewed with DFM and the Stakeholder Advisory Group; the foundation of the credit program, management of the first inch of rainfall, would incentivize water capture and recharge.

that DFM and The Fresh Water Initiative at the Hawai'i Community Foundation take five actions, listed in the figure above, each of which has been addressed in this Feasibility Study.

2.3 Understanding Current and Future Needs of O'ahu's Storm Water System

A core output of this Feasibility Study and the associated technical studies is a comprehensive picture of the current and projected needs for investment in O'ahu's storm water infrastructure. Understanding the prospective costs of permit compliance and desired investments allowed the team to evaluate the range of storm water fees that would be needed to support O'ahu's program in a storm water utility model. This section briefly summarizes the extent of the storm water management system; the current and projected costs of permit compliance and desired investments; and how a desired level of investment, called the Program Working Budget, was developed.

2.3.1 O'ahu's Built and Natural Storm Water Infrastructure

O'ahu has a complex, multi-faceted storm water system stretching from ma'uka to māka'i. The system extends well beyond the physical MS4 network and encompasses mountain **headwater areas** protected for ground water recharge, which are essential for attenuating sediment and storm flows; the network of nearly 100 **streams** (including both natural bottom and partly or fully hardened channels) for which DFM has maintenance responsibility; **swales**, **roadside ditches**, and **culverts** in areas without constructed drainage systems; and the network of **storm drainage structures** including inlets, catch basins, pipes, and outfalls carrying water away from roadways and developed areas. These drainage system assets, which DFM tracks through a CityWorks® ArcGIS® system, require both regular maintenance and ultimately replacement at the end of their design life; when not monitored and maintained, inkholes, flooding, and collapsed culverts can result.

In addition, DFM has oversight responsibility for over 2,000 installed **green storm water infrastructure** features that treat runoff from developed impervious surfaces on public and private property. DFM must ensure these

are properly installed and maintained. The CCH's recent adoption of green storm water infrastructure (or "low impact development") requirements for new development and redevelopment, in its Rules Relating to Water Quality⁵, means that the inventory of green storm water infrastructure features will grow continuously, and DFM's responsibility for these essential water quality protection systems likewise will grow.

2.3.2 Current Storm Water Management Responsibilities and Costs

Today, responsibility for managing the storm water network is led by DFM, which coordinates the work of staff in ten CCH departments. Consultants and other agency partners also carry out different elements of the overall storm water program. Within DFM's core programs, including the Storm Water Quality (SWQ) Division, there are tremendous demands on the available staff, crews, and equipment. Protecting and improving O'ahu's water quality involves a host of actions, from capital improvements to "retrofit" existing developed lands (required in the MS4 permit) to installation of large trash capture devices (required in TMDLs), and labor to clean streams, remove trash, and maintain green storm water infrastructure. Also involved are the efforts of staff in the Departments of Design and Construction, Department of Planning and Permitting (DPP), Department of

Transportation Services (DTS) and Environmental Services (ENV), who carry out a range of permit review, project design, and inspection work.

In 2019, AECOM Technical Services, Inc. completed a comprehensive *Needs Assessment and Cost of Service Study for DFM*, cataloging in detail the personnel, contract services, equipment, and capital currently expended. The study found that **the storm water program today has an annual average cost of \$91.6 million, with 309 currently filled full-time equivalent positions**. Funding for this level of effort is derived from two sources: Approximately \$70 million annually comes from property taxes, via the CCH General Fund. The other roughly \$22 million comes from the CCH Highway Fund, a Special Fund of the CCH supported by State-administered gas taxes, which supports activities directly related to the public roadway system's storm water infrastructure.⁶

2.3.3. Limitations of the Current Funding Levels and Funding System

The *Needs Assessment and Cost of Service Study* highlighted three key limitations of the current system of property tax-based funding, and the current level of operational funding.

First, the study emphasized that **the CCH is in compliance with the terms of its current U.S. Clean Water Act (MS4) Permit**; however, the findings both of the Needs Assessment and Cost of Service Study and this Feasibility Study indicate that **O'ahu's storm water program often operates in an "emergency" and reactive mode and has little capacity to perform work beyond permit compliance and immediately necessary repairs**.

Second, to complete capital projects, DFM currently uses a "pay as you go" financing system. Today, construction of capital projects, which entail several years in design, permitting, and development, is funded through annual lump-sum appropriations from the CCH's general fund budget. This approach requires DFM to secure large sums in each of several consecutive annual budget requests. In the event an appropriation is not funded, the project "slips" until the following fiscal year – which could affect compliance with regulatory schedules. Moreover, **there is little or no ability to secure general obligation bond funds for storm water projects** when so many other CCH needs,

CITY & COUNTY OF HONOLULU STORM WATER COST OF SERVICE, FY 2020

Core program salaries	\$8.0 million
Core program operating expense	\$10.8 million
Related DFM salaries	\$19.3 million
Related DFM operating expense	\$6.9 million
Subtotal Salaries & Operating	\$45.0 million
Annual Average Storm Water Capital Investment	\$46.6 million
TOTAL COST OF SERVICE	\$91.6 million

*Cost with all defined positions filled \$106.6 million

5 Rules Relating to Water Quality; Revised Ordinances of Honolulu §20-3-1 through §20-3-77; <http://www.honolulu.gov/LinkClick.aspx?fileticket=2-F-Yiv5W8Y%3d&tabid=262&portalid=0&mid=3127>

6 It was noted during the Feasibility Study that if the Highway Fund is modified in the future to reflect declines in gasoline sales, the funding source for roadway-related storm water management costs may need to be revisited accordingly.

including parks projects, are in competition for the same property tax-backed funds. Storm water utilities, by contrast, are able to issue low-interest revenue bonds backed by storm water fee revenues, providing consistent funding for capital projects and ensuring that construction schedules can be planned and adhered to.

Third, *there are substantial staffing deficiencies* affecting the ability to complete stream cleaning, other important maintenance work, and grants administration. Maintaining sufficient levels of staffing has been a significant challenge, particularly when construction employment has historically been a robust, and higher-paying option to municipal work. As of 2019 there were approximately 309 full-time equivalent (FTE) CCH employees working on storm water management, but roughly 159 storm water-related positions within DFM – one-third of the positions needed for storm water management – were unfilled. Were the existing, defined positions all filled, the average total expenditure for storm water services would be \$106.6 million annually.

Chronic staff shortages are exacerbated by the current system of year-to-year, property tax-based funding for storm water. Because operational funds are determined on a year-to-year basis as part of the CCH's general budgeting process, it is challenging for DFM to retain budgeted positions when in the past, these have not been able to be filled. This has led to a "downward spiral" in staffing. Street sweeping, drainline maintenance, and stream channel cleaning – a key priority for the public – are the functions that suffer the most from staff shortages. Reliance on consultants and hired equipment has partly filled these gaps; however, this approach limits workforce advancement into career positions. This represents a substantial lost opportunity to build in-house knowledge and capacity.

The other lost opportunity represented by chronic staff shortages concerns the ability of the CCH to apply for and manage the many potential sources of external

funding available for storm water programs. Robust grant management programs are found in many of the high-performing storm water utilities studied through this process. The kind of grants leveraging that could support partnership programs with watershed organizations, green storm water infrastructure investments, or workforce development requires both dedicated grants management staff and the ability to budget and carry over cash matching funds from year to year. Building a storm water program that gains these potentially significant benefits for O'ahu became an important focus of the Feasibility Study.

2.3.4 Summary of Current Financial Limitations

In summary, this Feasibility Study has found that the chief limitations on O'ahu's storm water management program, which may be addressed by establishing fee-based funding, are:

Reactivity: The Storm Water program is chiefly reacting to permit and legislative requirements or system emergencies, and is not strategizing. A strategic vision or master plan for the program and for O'ahu's surface waters has not been developed. Doing so would help ensure that storm water investments are consistent with preparation for climate change, augmenting water supplies, leveraging funding and partnerships, supporting community development, and moving towards a "One Water" framework.

Variability in general fund-supported program budgets, particularly with respect to supporting staff positions and completing capital projects with a "pay as you go" approach, makes long-term program planning very difficult. The ability to issue revenue bonds for planned capital investments, rather than the current reliance on annual cash appropriations or limited CCH general obligation financing, would be a major advantage of a dedicated storm water fee.

"The main challenge reiterated at the February 2019 meeting was maintaining staffing. The department as a whole had approximately over 300 vacancies as of September 2019, representing over 30 percent of its workforce. This creates issues, not only for performing essential City functions, but because of horizontal movement among employees. Horizontal movements become an issue where employees can be temporarily assigned to another position, leaving their existing position vacant. The resulting vacancies cause staff shortage for necessary storm water functions such as street sweeping. Similarly, any movement in a top-level position, results in several vacancies down the chain as each employee moves up in position. Feedback from the DFM Director and Chief Engineer suggests that it could take months to fill the resulting vacancy at the end of the line. Succession planning is also important as several senior level employees will be eligible for retirement in the next 5 years. DFM also acknowledged that employees with industrial injuries may be off duty for several months or even years, leaving their position vacant."

Unpredictability of allocations: The MS4 permit and TMDLs both impose “hard deadlines” on the CCH to complete certain capital projects and operational measures. Under the present system of funding, if specific items are for any reason not funded by Honolulu City Council by a specific time, CCH faces the prospect of non-compliance with federal permits. Funding storm water through predictable and dedicated fees allows DFM to ensure that these deadlines are met.

Lack of authority for multi-year partnerships and investments: DFM has opportunities to leverage funding for water quality projects, such as treatment of agricultural runoff or livestock exclusion, through partner organizations. To do so, however, DFM must have the ability to set aside funds as grant match and establish multi-year cost share agreements. This is exceptionally difficult in the current year-to-year funding regime, but would become a new and important possibility if a storm water fee were implemented.

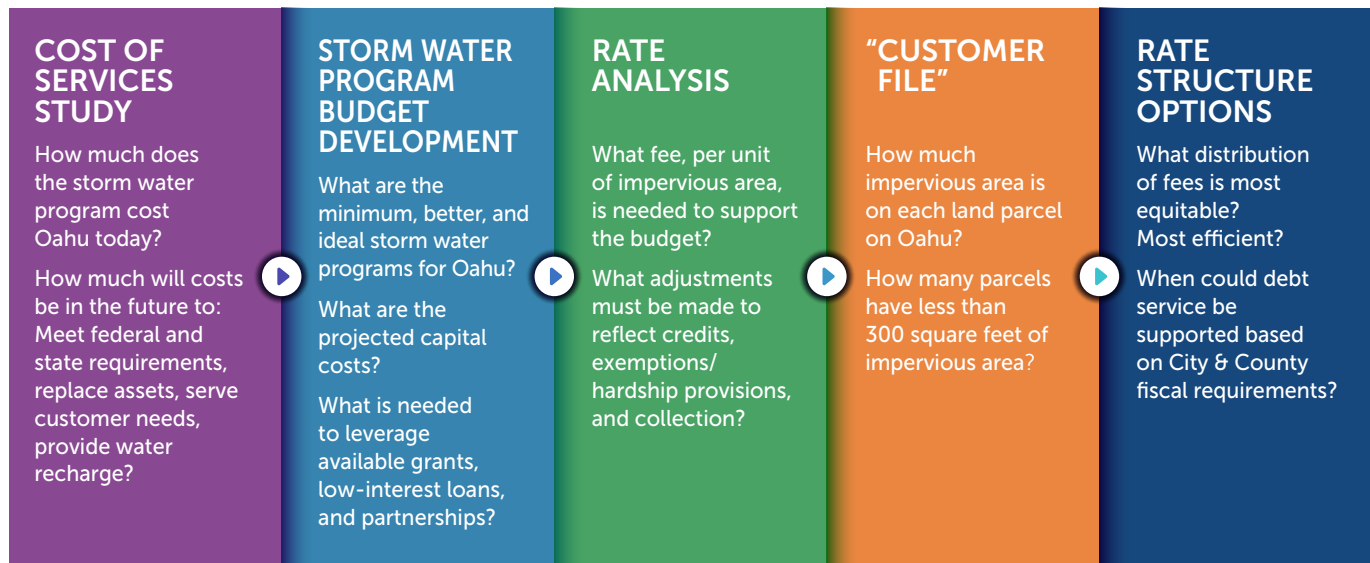
Growing maintenance backlog: Responsible management of O’ahu’s storm water system requires maintenance and repairs be addressed before becoming a significant burden on the public and environment. The increasing inventory of public and private green storm water infrastructure & storm water Best Management Practices (BMPs) that must, by permit, be inspected and maintained. Stable and independent funding from a storm water fee would support filling open staff positions. Increasing operational

funding for maintenance and repair — including a dedicated program to proactively inspect and repair critical drainlines — also would provide significant benefits.

Aging assets: The 2019 *Needs Assessment and Cost of Service Study* found that the CCH should be investing roughly \$25 million annually to replace aging and deteriorated storm water system assets. At present, the storm water program does not have a schedule in place, or a source of consistent funding, to replace these deteriorating assets. As described in Section 3, adopting a storm water fee and program budget at the recommended level, and beginning to issue revenue bonds in year 4 of a fee-funded program, would meet this need and set the CCH on a solid path of asset renewal and replacement.

Despite these challenges, the SWQ Division has continued to carry out an effective and fully compliant storm water management program. For example, SWQ staff have created environmental and water quality education partnerships with Waipahu High School and the ‘Iolani School. There is a strong base of staff capacity, community support, and collective energy and interest in the well-being of O’ahu’s waters from which to build a stronger financial foundation. With this picture in mind, the Stakeholder Advisory Group and DFM were able to identify the specific investments and approaches that could move O’ahu towards a desired future.

TECHNICAL STUDIES COMPLETED FOR A STORM WATER UTILITY



2.4 Evaluating Future Investments and Budgets

The next step in the Feasibility Study was evaluation of the desired level of services, and the associated storm water fee needed to support it. To be equitable and defensible, storm water fees must reflect the **cost of service** – the total amount spent by a jurisdiction to provide a specific level of storm water services. A storm water utility must then set a **fee per unit of impervious area** (typically 1,000 SF) that, under an adopted rate structure, will cover the cost of service. To address these two halves of the fee analysis, the consultant team simultaneously worked through a Geographic Information System (GIS) analysis of the distribution of impervious area on all defined parcels on O'ahu; and a budget analysis of the total desired storm water program budget.

2.4.1 Storm Water Budget Alternatives Evaluated

The first step in evaluating the feasibility of a storm water utility is to define the storm water-related services to be funded with a storm water fee, and their total cost. The Stakeholder Advisory Group and DFM considered, at length and in detail, the level and types of investments in storm water management that would balance financial impacts on storm water rate payers with the storm water investments needed to address current and future issues. The *Needs Assessment and Cost of Service Study*, which served as the foundational document for this phase, outlined the personnel, equipment, consultant, and capital costs involved with the current DFM-led storm water program. The study determined that the current annual average cost of service is \$91.6 million – but this figure would increase to \$106.6 million if all open, defined staff positions related to storm water were filled. The \$91.6 million cost includes work done across multiple CCH departments, as well as work by DFM's Division of Road Maintenance, whose staff maintain the storm water system for O'ahu's roads.

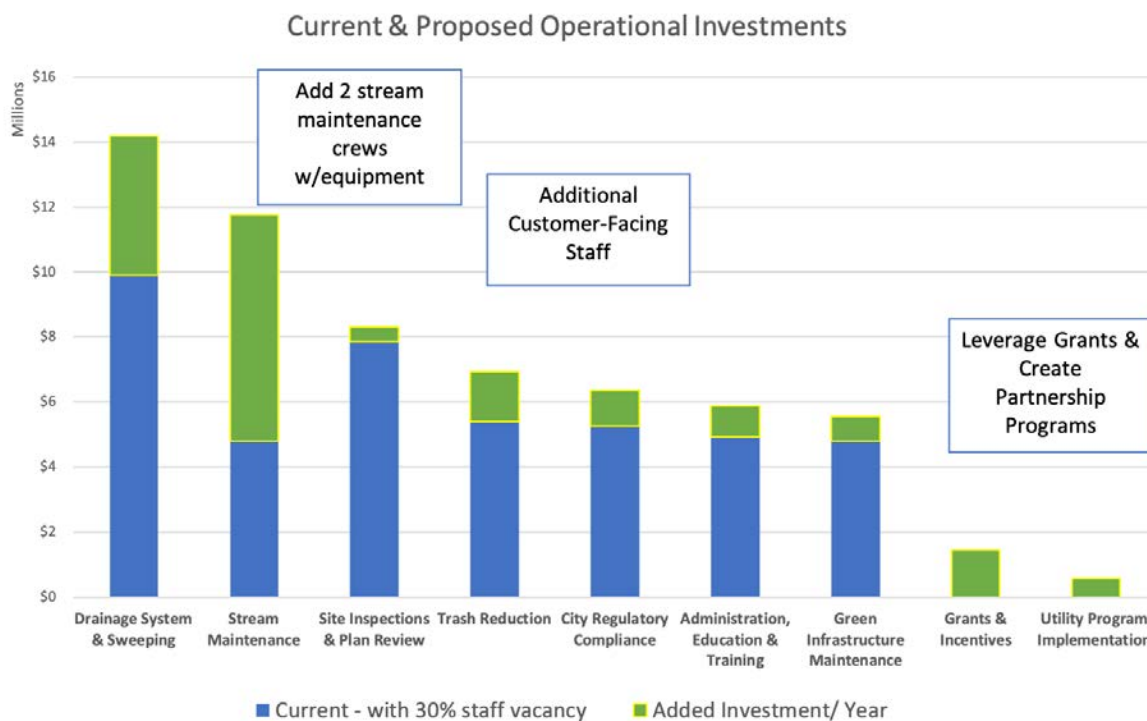
As noted in Section 2.3.2, storm water services are supported by two CCH sources: the Highway Fund, which provides approximately \$22 million per year; and property taxes (General Fund), which cover the remaining ~\$70 million. **The budget and rate development analysis assumed that annual financial support from the Highway Fund would continue at this level through the first six years of a fee-funded storm water utility**, reducing the amount that would need to be funded by a storm water fee.

With the current program costs (including the cost of open staff positions) defined, the study then provided cost projections for three different “Level of Service” budget scenarios for the future.

- **“Basic Compliance” or “Level of Service 1”** – the minimum level needed to maintain compliance with the MS4 permit, TMDLs, and State and local directives
- **“Better Program” or “Level of Service 2,”** – the Basic Compliance program with some program enhancements.
- **“Ideal Program” or “Level of Service 3”** – significant program enhancements and elements including additional capital spending.

Discussion of these options took place within DFM and allied departments, at the Stakeholder Advisory Group, and at the public outreach meetings held in February to March 2020. Based on feedback received by the consultant team on the level of service options and their associated costs, **a hybrid of the “Basic Compliance” and “Better Program” options was developed that addressed key community priorities, supported consistent capital investment, and provided a dedicated budget for leveraging the many sources of external funding and grants** available for storm water programs and green storm water infrastructure. This hybrid Program Working Budget (nicknamed “Plan C” in Stakeholder Advisory Group presentations) became the basis for the storm water rate analysis. The Program Working Budget, which is outlined in the table on page 12, has three elements that distinguish it from current operations or a ‘basic compliance’ budget:

1. The Program Working Budget assumes that **hiring and equipment additions would be phased in** over the first six years of a storm water utility. Hiring has long been a challenge, and it is reasonable to assume that the program will phase in hiring and new positions. This level of refinement ensured that the budget supported by a fee did not “over-shoot” in terms of its total cost.
2. Funds are identified for **grants leveraging** (i.e. funds available as the required cash match for external grants) and for **grants administration**. In the current budgeting regime, DFM is not able to hold or carry over cash funds that can be used to leverage grants (e.g. the 35% match required for U.S. Army Corps of Engineers Ecosystem Grants, the 50% match required



Key areas of investment in the Program Working Budget include stream channel cleaning, drainage system maintenance, providing leveraging grants for green infrastructure projects, and adding customer-facing positions that assist O’ahu land owners with compliance and credit projects.

by some U.S. Clean Water Act grants, or the 20% match required for many foundation grants, etc.). In addition to cash, staff positions are essential to ensure that there are trained and dedicated staff to identify, apply for, and manage these funds.

3. Funds also are identified to support **community partnerships for green storm water infrastructure, and credit or rebate programs**. Modeled on programs such as the Milwaukee Metropolitan Sewerage District’s Green Infrastructure Partnership Program⁷, this budget allocation would support desired investments in O’ahu’s neighborhoods and organizations.
4. Additional funds are identified for **storm water utility implementation**, to ensure that there is a sufficient allowance for temporary and permanent staffing to handle initial billing accounts set up and appeals.
5. The Program Working Budget makes investments in **priority maintenance areas**, which are strongly desired by the community and DFM, notably adding a full crew

for stream channel maintenance as soon as possible, increasing water quality monitoring, and proactively inspecting and cleaning drainlines.

6. **Customer-facing positions** would be added to the inspections program, including an “ombudsperson” position who can help the regulated community with regulatory compliance, enforcement issues, and credit program opportunities.
7. Perhaps most notably, the Program Working Budget reflects the **use of revenue bonds in Year 4 of the program**. These bonds would finance an asset renewal and replacement program providing an average investment of \$25 million per year. As noted in this Report, at present, nearly all storm water programs are funded on a “pay as you go” basis, with allocations from the General Fund; this results in unpredictable and highly variable capital budgets from year to year, which may lead to permit non-compliance if sufficient funds are not received to fully implement required projects on schedule.

⁷ <https://www.mmsd.com/about-us/news/green-infrastructure-partnership-program-2020>

Areas where the Program Working Budget increases investment over Basic Compliance

Items in the Program Working Budget not included in Basic Compliance/LOS 1

Areas where the Program Working Budget assumes a phased increase over 6 fiscal years

Annual average debt service on revenue bonds of \$25 million/year, starting in Year 4

Budget Category	Current, with staff vacancies	Current, all staff vacancies filled	Basic Compliance (LOS 1)	PROGRAM WORKING BUDGET: Six Year Annual Average	Better Program (LOS 2)	Ideal Program (LOS 3)
Administration	\$2,941,170	\$3,499,890	\$6,280,000	\$3,576,527	\$6,960,000	\$6,960,000
Grants Leveraging & Administration	\$0	\$0	\$0	\$1,450,000	\$0	\$0
All Other Equipment	\$1,210,000	\$1,210,000	\$1,210,000	\$1,210,000	\$1,210,000	\$1,210,000
Asset Management Software	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
Automotive & Equipment Maintenance	\$1,831,822	\$2,712,313	\$2,720,000	\$2,125,319	\$2,720,000	\$2,720,000
City Industrial & MS4 Facilities	\$1,314,263	\$1,595,312	\$1,600,000	\$1,595,312	\$2,070,000	\$2,070,000
Construction Site Inspections	\$4,597,802	\$4,770,563	\$5,100,000	\$4,741,769	\$5,300,000	\$5,300,000
Construction/Post Construction Review	\$2,402,308	\$2,356,814	\$2,360,000	\$2,286,938	\$2,360,000	\$2,360,000
Drainage System Inspection & Cleaning	\$2,999,667	\$2,999,667	\$3,000,000	\$6,636,867	\$6,640,000	\$17,480,000
Drainage System Repair	\$1,098,714	\$1,962,543	\$1,970,000	\$1,530,628	\$1,970,000	\$1,970,000
Green Infrastructure - DFM Maintenance	\$4,794,269	\$7,149,791	\$7,150,000	\$5,555,838	\$13,430,000	\$13,430,000
Green Infrastructure - Grants & Partnerships	\$0	\$0	\$0	\$983,333	\$0	\$0
Illicit Discharge Detection & Elimination	\$988,427	\$1,098,231	\$1,100,000	\$1,079,930	\$1,100,000	\$1,570,000
Industrial/Commercial/Post-Construction Inspections	\$861,262	\$971,066	\$980,000	\$1,284,465	\$2,090,000	\$3,060,000
Public Education & Outreach	\$991,688	\$1,134,569	\$1,140,000	\$1,315,502	\$1,140,000	\$1,140,000
Storm Water Fee Implementation	n/a	n/a	\$380,000	\$79,536	\$380,000	\$380,000
Stream Maintenance	\$4,813,924	\$4,813,924	\$4,820,000	\$11,758,403	\$13,490,000	\$14,970,000
Street Sweeping	\$2,767,830	\$2,872,460	\$2,770,000	\$2,702,283	\$3,060,000	\$3,810,000
Total Maximum Daily Load compliance	\$1,670,000	\$1,670,000	\$1,670,000	\$1,670,000	\$1,670,000	\$1,670,000
Training	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000	\$500,000
Trash Reduction	\$5,409,296	\$8,009,571	\$8,010,000	\$6,936,007	\$9,130,000	\$9,130,000
Water Quality Monitoring	\$1,285,490	\$1,285,490	\$1,290,000	\$2,015,090	\$2,170,000	\$2,170,000
Subtotal Operating	\$42,977,933	\$51,112,204	\$54,550,000	\$62,033,747	\$77,890,000	\$92,400,000
Erosional Area Repair	\$6,750,000	\$6,750,000	\$3,660,000	\$6,100,000	\$5,460,000	\$7,260,000
Trash Capture Devices	\$750,000	\$750,000	\$1,510,000	\$2,476,667	\$1,510,000	\$1,510,000
MS4 Permit-Required Retrofits	\$1,100,000	\$1,100,000	\$4,888,000	\$6,246,667	\$4,880,000	\$4,880,000
City Industrial Facilities Improvements	\$1,270,000	\$1,270,000	\$7,070,000	\$9,003,889	\$7,070,000	\$7,070,000
TMDL-Required Retrofits	\$1,250,000	\$1,250,000	\$2,370,000	\$1,811,111	\$2,370,000	\$2,370,000
City MS4 Facility Retrofits	\$10,470,000	\$10,470,000	\$4,420,000	\$3,426,667	\$4,420,000	\$4,420,000
Streambank Stabilization	\$2,899,044	\$2,899,044	\$0	\$2,899,044	\$2,900,000	\$5,800,000
Asset Renewal	\$27,377,627	\$27,377,627	\$18,430,000	\$4,077,850	\$27,380,000	\$54,750,000
Subtotal Capital	\$51,866,671	\$51,866,671	\$42,348,000	\$36,041,894	\$55,990,000	\$88,060,000
Total Annual Average Program Budget	\$94,844,604	\$102,978,875	\$96,898,000	\$98,075,641	\$133,880,000	\$180,460,000

2.4.2 Impervious Cover Analysis

Once the budget for a storm water utility program is established, the next step is to determine the rate per unit of impervious surface area needed to cover that cost. The process of evaluating the distribution of impervious cover by tax parcel is known in storm water utility parlance as developing the “customer file,” since each tax parcel ultimately would receive a storm water bill based on the amount of impervious surface present. Customer file development was the joint effort of Jacobs, Birchline Planning LLC, and Focused Planning Solutions LLC. Data was assembled from three sources: (1) the CCH’s Real Property Assessment Division (RPAD) property tax database; (2) the DPP’s Honolulu Land Information System (HoLIS) database of building footprints (outlines), which is maintained continuously as development occurs and shows the outline of all structures on O’ahu; and (3) aerial imagery from the National Oceanographic and Atmospheric Administration Coastal Change Analysis Program (NOAA CCAP), which identifies impervious surfaces. Focused Planning Solutions and Jacobs were able to integrate the DPP building layer with NOAA CCAP data and to “join” the data to the RPAD parcel

database, yielding the file on which a rate study was run to determine the storm water fee per unit of impervious area that would fund the Program Working Budget.

A number of limitations on the accuracy and utility of these data sets came to light in the analysis process. It is the technical team’s determination that none of these constituted a “fatal flaw” or significant limitation on the validity of this Feasibility Study or the rate analysis; nonetheless, these issues are being addressed as DFM moves towards implementation. One limitation is that the NOAA CCAP data set available in 2019 dated from 2011 and covered only the southern two-thirds of the island. This means that the analysis may have under-stated the amount of revenue generated by the storm water fee since some impervious cover (e.g. parking lots at North Shore attractions and commercial buildings, etc.) was not included in the customer file. This built some conservatism into the rate estimates, since billing for additional impervious area would lower the overall rate required to fund the budget.

Another area of potential inaccuracy concerns developments that have been permitted but not yet built, as well as those that were built after the 2011 CCAP



Image showing DPP building footprints (red) and NOAA CCAP-derived impervious area (purple) with parcel boundaries from Honolulu Land Information System (HoLIS)

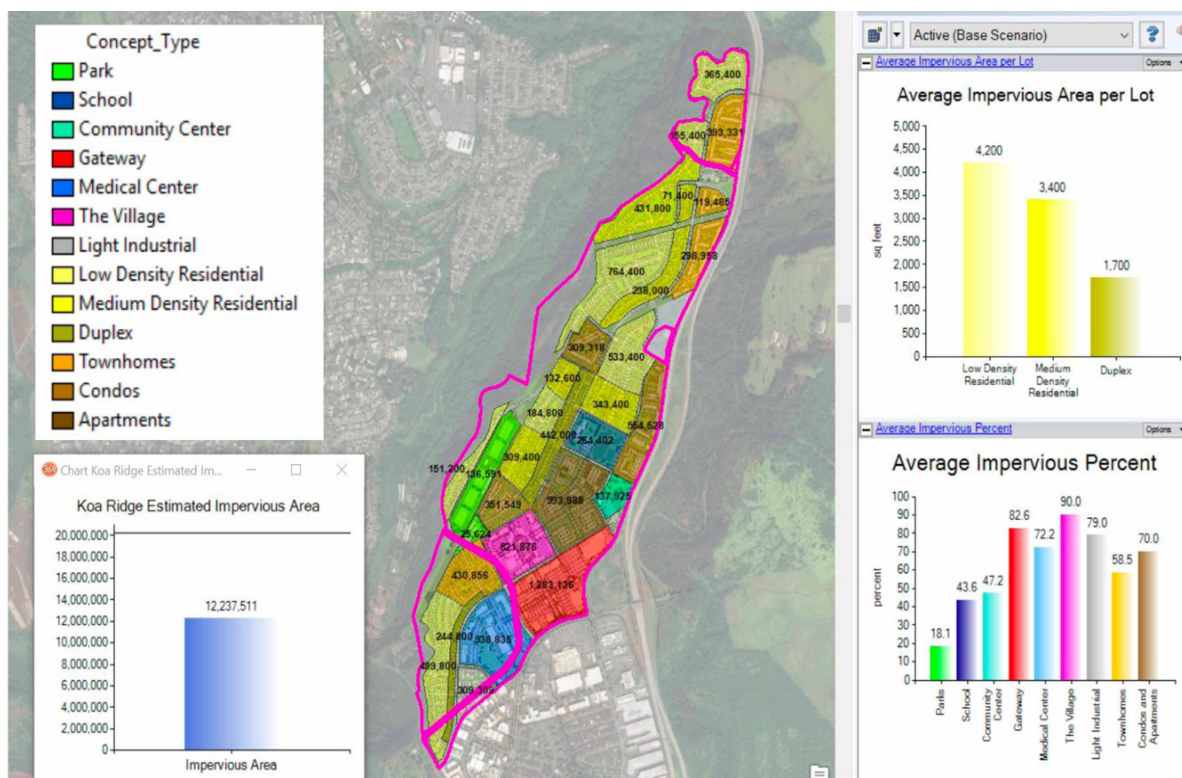
data. “Under-counting” impervious cover in this manner would tend to inflate the projected storm water fee since it excludes fee-paying customers. The project team made a number of adjustments to reflect these issues, including interpolations of the amount of impervious cover on lots where development was permitted, but not built, when the 2011 imagery was flown. Estimates also were prepared for the amount of impervious cover likely to be constructed in large planned developments already in the DPP approvals process. By incorporating data on permitted projects from the Department of Planning and Permitting into the impervious cover analysis, Focused Planning Solutions LLC estimated the amount and distribution of impervious area that will be built through permitted projects.

The most substantive issue discovered was **the mis-alignment of many of O’ahu’s parcel boundaries with the actual property lines**. This introduced a degree of error into the calculations that, while the team believes it is well within a margin of error for the initial rate study, should be corrected before bills are issued to avoid dealing with a large number of appeals. At present, DFM, DPP, and the project team are developing a scope of work for



An image from Focused Planning Solutions LLC, showing parcel boundary shifting/misalignment which can cause significant miscalculation of impervious area. CCH will be working to rectify the parcel boundary data set in 2021.

a contractor who can complete an island-wide parcel rectification, which will support better planning, public information, permitting, and record-keeping regardless of whether a storm water fee is implemented. Once that work is completed, the team will be able to integrate newly-released 2016 CCAP data.



By incorporating data on permitted projects from the Department of Planning and Permitting into the impervious cover analysis, Focused Planning Solutions LLC estimated the amount and distribution of impervious area that will be built through permitted projects.

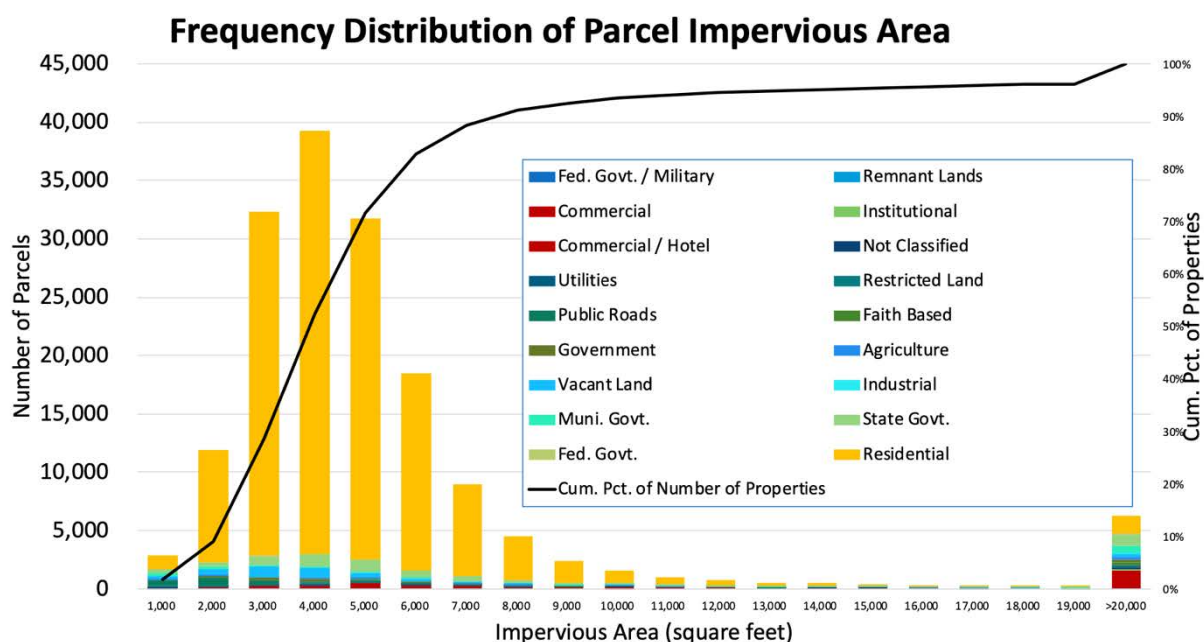
2.4.3 Storm Water Rate Analysis

With the “customer file” prepared and the budget established, the technical team then estimated the prospective storm water utility rate for O’ahu – the cost per unit of impervious surface. Storm water rates should be designed to raise required revenue equitably and consistently across the customer base. Because impervious cover is used as the basis to assess demand or impact on the storm water system, the core challenge is to ensure that bills reflect parcel impervious cover as closely as possible for individual properties, without creating an un-manageable administrative burden on the utility. Nationally, two different methods are used to accomplish this goal: Equivalent Residential Units or “ERUs,” and tiers.

ERU Approach. Many storm water utilities use an “Equivalent Residential Unit” or “ERU” approach, which identifies the median impervious area of a single-family home parcel (often a figure between 2,400 and 3,000 SF of impervious area). In a typical ERU approach, all single-family properties, regardless of the amount of impervious area, are charged the fee for one ERU and two-family homes typically are charged one-half of the fee per ERU. Non-single-family properties are then charged a rate based on the number of ERUs of impervious surface per parcel, which may be rounded up or down depending upon the particular rate structure involved.

The ERU approach, which was recommended for evaluation in the HPU/OWOW study for O’ahu, was used in most early storm water utilities to account for inaccuracies in impervious cover mapping. In communities where most residential properties are similar in size and impervious area, the ERU approach provides an equitable and administratively viable means of charging fees. On O’ahu, however, this is not the case. There is an exceptionally wide variation in the amount of impervious area among the Island’s single-family residential properties, and the median impervious area of a single-family residential property on O’ahu is 3,900 SF, an unusually high number among communities evaluated nationally. Applying a flat ERU to O’ahu’s single-family properties would “under-charge” homes with larger impervious surface areas and “over-charge” those with less. For this reason, *the ERU approach was not pursued in this Feasibility Study.*

The frequency distribution of impervious area by parcel (lot) for the island of O’ahu, from the analysis prepared by Jacobs (Storm Water Utility Rate and Financial Analysis, July 2020). As shown by the yellow bars in the graph below, the amount of impervious cover on residential parcels varies widely; this also argues against using an ERU-based fee structure.



The frequency distribution of impervious area by parcel (lot) for the island of O’ahu, from the analysis prepared by Jacobs (Storm Water Utility Rate and Financial Analysis, July 2020). The amount of impervious cover on residential parcels varies widely; this argues against using an ERU-based fee structure.

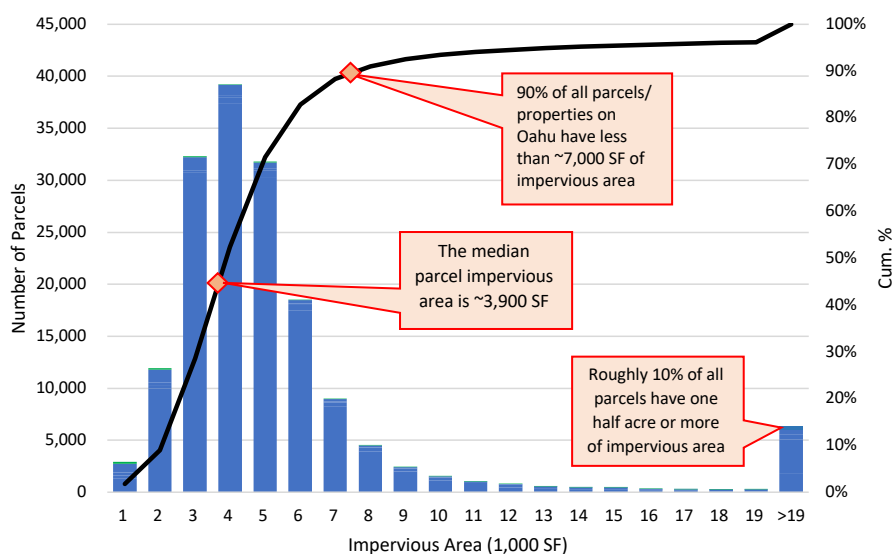
Tiered Approach. In this approach, properties with similar amounts of impervious area can be grouped into tiers that are based on the *frequency distribution of impervious area by parcel*. With recent improvements in the accuracy of impervious cover mapping, more storm water utilities have been determining rates using a combination of tiers for properties with smaller amounts of impervious area, and charging sites with the most impervious area based on the actual square feet of impervious surface. The storm water rate is then expressed in terms of the *fee per 1,000 SF of impervious area per month*. For O'ahu, where there are wide variations in impervious area among single-family properties, this approach is more equitable than the ERU-based approach.

Using this approach, the consultant team, led by Jacobs, developed two rate structure options: One using four tiers and one using eight tiers. In the tiered system, all parcels whose impervious area falls within the established range or tier are charged the same storm water fee per month. The fee charged to each successive tier is a multiple of the rate charged to the lowest tier, or Tier 1.

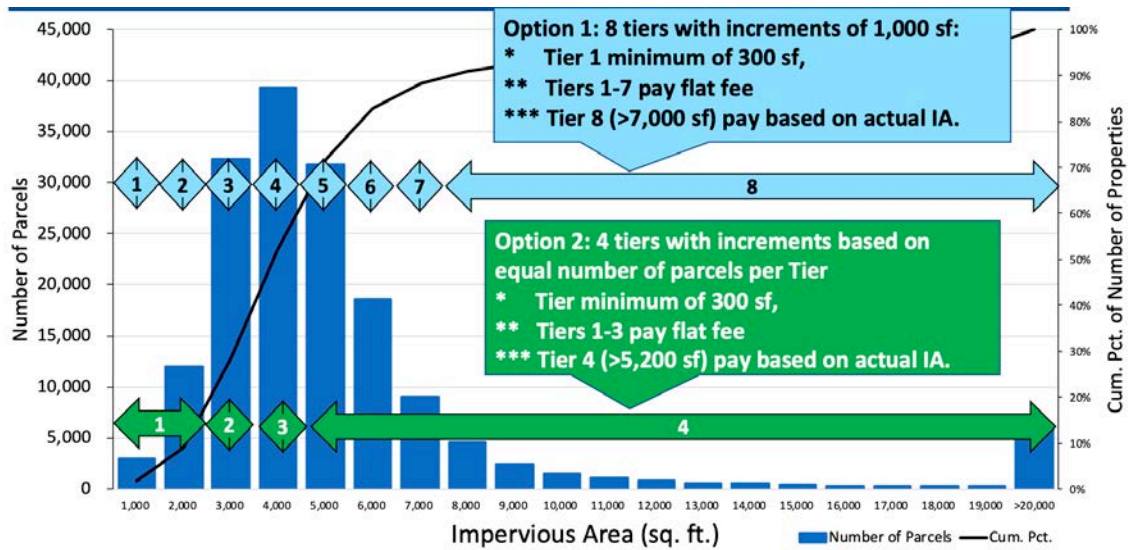
As shown in the figure below, properties that fall at the top end of the frequency distribution can be charged based on specific measurement of the parcel's impervious area. Using more tiers with narrower ranges of impervious area provides greater equity, as the fee more closely reflects each parcel's impervious area. Using fewer tiers provides more administrative efficiency,

including a lower likelihood of assigning a parcel to the wrong tier due to measurement inaccuracy.

At the top of Page 17 is a diagram of the four- and eight-tier rate structure options prepared by Jacobs and reviewed through by the Stakeholder Advisory Group (Storm Water Utility Rate and Financial Analysis, July 2020). The eight-tier option provides greater equity, provided impervious area mapping is sufficiently accurate. After considerable discussion the Stakeholder Advisory Group and project team determined that *the eight-tier approach likely offers the best option and greatest equity for O'ahu*, provided the parcel mapping inaccuracies described in Section 2.4.2 can be addressed. The core difference between the two rate options concerns the amount paid by the lowest tier, and the number of parcels for which an exact bill based on impervious area would be calculated. In the eight-tier structure, the two lowest tiers would represent a modest storm water charge to parcels with less than 1,000 SF and 2,000 SF of impervious cover, respectively, ensuring that the smallest homes are in fact paying less than larger properties. The Tier 1 rate also represents a very modest charge that can be treated as a base fee or hardship-level charge, as outlined in Section 2.7. Second, the project team and DFM determined that it is both feasible and realistic to determine impervious area and issue unique bills for properties with more than 7,000 SF of impervious area, provided the parcel mapping is updated.



The distribution of impervious area by parcel (lot) for the island of O'ahu, from the analysis prepared by Jacobs (Storm Water Utility Rate and Financial Analysis, July 2020). Roughly 90 percent of all parcels have less than 7,000 SF of impervious area, making this number an appropriate cut-off point for determining storm water fees based on measured impervious area instead of by tier.

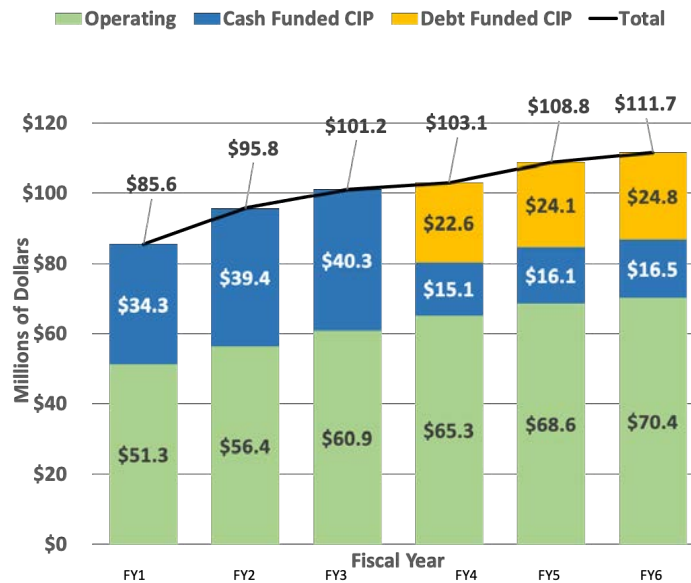


A diagram of the four- and eight-tier rate structure options prepared by Jacobs and reviewed by the Stakeholder Advisory Group (Storm Water Utility Rate and Financial Analysis, July 2020). The eight-tier option provides greater equity, provided impervious area mapping is sufficiently accurate.

2.4.4 Projected Storm Water Rates

Ultimately, the rate analysis answers the central question of “How Much Would Everyone Pay?” In its memo *Storm Water Utility Rate and Financial Analysis, July 2020*, the Jacobs team used the Program Working Budget to develop a detailed rate analysis incorporating expected inflation; anticipated growth in impervious area or billing units (i.e. new development); allowances for non-collection of accounts and use of storm water credits by property owners; and maintenance of an operating reserve consistent with guidelines for the CCH’s Special Funds. As noted in Section 2.4.2, a continued transfer from the Highway Fund of approximately \$22 million annually was assumed to support roadway-related activities, reducing the amount to be raised by the storm water fee. The 5% revenue reduction assumed for storm water management credits is based on national experience with comparably sized municipalities; this level of revenue reduction on a fee-funded budget of approximately \$78 million would reflect a well-developed and mature credit program.

Most notably, the rate analysis reflects a scenario in which the storm water program is able to be issuing revenue bonds, backed by storm water fees, in the fourth year of a fee-funded program. Based on CCH guidelines for required fund balances, three years of program operation and revenue would be required to accumulate a sufficient balance for debt issuance. The analysis assumes that \$73 million in revenue bonds would be issued in year 4 of a fee-funded program, covering 60% of the projected capital costs in years 4, 5 and 6 and initiating a program of asset renewal and replacement over and above the permit-required capital programs assumed in the “Basic Compliance” budget.



Projected storm water program budgets for the first six fiscal years of a fee-funded program, showing debt service beginning in Year 4 once a sufficient fund balance has been achieved. Derived from memo prepared by Jacobs: Storm Water Utility Rate and Financial Analysis, July 2020

This analysis ultimately yielded an estimate of \$4.75 per month per 1,000 SF of impervious area as the base storm water fee. However, subsequent to the initial rate analysis presentation in March 2020, it was the consensus recommendation of the Stakeholder Advisory Group and DFM that public and “quasi-public” roads should be exempt from a storm water fee; the project team estimated that this exemption would provide substantial administrative relief to DFM and equity to property owners, but would add roughly \$0.10 per month to the base storm water fee for a base rate of \$4.85 per 1,000 SF of impervious area per month.

The resulting fees per tier at the \$4.85 rate are shown in the table at right. A single-family residential property with the median amount of impervious area for O’ahu (~3,900 SF) would pay the Tier 4 rate of approximately \$17 per month.

These findings demonstrate that, on the whole, a tiered rate structure and a storm water rate in range of \$4.85/month is feasible and would raise sufficient revenue

	Square Feet of Impervious Area	Multiple of Storm Water Rate	Base Monthly Fee (before credits)	Annual Equivalent	Number of Properties
Tier 1	300 – 1,000 SF	0.5	\$2.43	\$29.16	2,199
Tier 2	>1,000 – 2,000 SF	1.5	\$7.28	\$87.36	10,810
Tier 3	>2,000 – 3,000 SF	2.5	\$12.13	\$145.56	31,124
Tier 4	>3,000 – 4,000 SF	3.5	\$16.98	\$203.76	38,239
Tier 5	>4,000 – 5,000 SF	4.5	\$21.83	\$261.96	31,209
Tier 6	>5,000 – 6,000 SF	5.5	\$26.68	\$320.16	18,211
Tier 7	>6,000 – 7,000 SF	6.5	\$31.53	\$378.36	8,774
Tier 8	≥7,000 SF	n/a	\$4.85 x 1,000 SF/IA	\$58.20 x 1,000 SF/IA	18,487

Proposed eight-tier option and draft fees, with the base storm water rate set at \$4.85 per 1,000 SF of impervious area per month. Derived from memo prepared by Jacobs, Storm Water Utility Rate and Financial Analysis, July 2020; updated by Birchline Planning LLC, November 2020

both to fund the Program Working Budget, and to support a revenue bond-funded asset renewal and replacement program at the level recommended for O’ahu. As the utility proceeds towards implementation, this rate analysis will be refined to determine the final recommended rate.

2.4.5 Example Bills and Financial Impacts

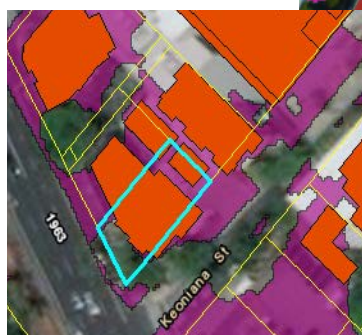
The team developed numerous examples to illustrate the storm water fees that would be paid by different properties under the proposed eight-tier rate structure and projected fee. Multiple examples of each type of property were presented both in Stakeholder Advisory Group meetings, and in focused outreach to groups such as faith communities, golf courses, and commercial property managers. The project team also estimated a “property tax equivalent” amount for the taxable sites that were used as examples. The “property tax equivalent” is the approximate amount of the site’s monthly⁸ property tax bill that goes towards storm water services under the current, general fund-supported system. This analysis has provided important context for the revenue neutrality discussions outlined in Section 1.3.3. The three examples shown provide the estimated monthly fee, before any credits, for a taxable commercial property, a taxable residential property, and a property owned by a non-profit faith community. Under the City and County’s property tax ordinances, many non-profit entities pay a minimum property tax bill (presently \$300 per year), but are not taxed on the value of the property. For these properties, the “property tax equivalent” is shown as \$0.



Commercial: 4,000 SF IA
Possible Fee: \$22-\$28/month
Property Tax Equivalent: \$73/mo



Residential: 4,618 SF IA
Possible Fee: \$22-\$28/month
Property Tax Equivalent: \$57/mo



Faith Community: 3,454 SF IA
Possible Fee: \$22-\$28/month
Property Tax Equivalent: \$0

8 CCH property tax bills are issued annually; for purposes of this analysis, the annual bill for the example properties was divided into 12 equal shares to create a monthly equivalent.

2.5 Proposed Credits, Rebates and Grants

The core principle of a storm water utility is charging fees based upon a property’s impact on the storm water system, as measured by impervious surface area, in the same way that a water utility’s charges relate to water consumption. For a utility’s fee structure to be legally valid, it must include provisions for reducing fees if those impacts are reduced. Storm water utilities also typically adopt policies related to exemptions (i.e. properties with impervious cover that are not required to pay fees), hardship provisions for those with limited ability to pay, and often, grants and rebates that encourage implementation of beneficial storm water management practice. The project team and Stakeholder Advisory Group carefully considered a range of policies for storm water credits, hardship provisions, and exemptions.

An April 2020 summary memo outlining credit options, prepared by Jacobs, *Credits, Rebates, Hardship Reductions, and Appeals*, was discussed at the April 21, 2020 meeting. These options, and provisions of a specific credit manual, will be further evaluated in the coming year. The discussion and direction around each type of incentive is summarized in the sections below.

2.5.1 Storm Water Fee Credits

Credits are ongoing reductions in a property’s storm water fees. Credits are issued in a storm water utility in large part because **a storm water utility charge is a fee – a charge based on how much of a service is used – rather than a tax, which is a general levy for public purposes**. Property owners who take steps to reduce the amount of impervious surface on a property, or the impact of then storm water runoff on the system, must be eligible for reductions in their fees. Credits thus are integral to any valid storm water fee system, and also provide valuable incentives for property owners to take actions that benefit O’ahu’s water environment.

The Feasibility Study process resulted in core recommendations for credit policies that will need to be further developed and codified in a Credit Manual. The evaluation of credits prioritized storm water management practices that support water recharge (infiltration) and onsite use, as outlined in the Fresh Water Initiative. Ensuring that credit project implementation is seamless with the design standards for permit compliance was another priority, along with providing realistic credit project options for tax-exempt properties, such as schools, non-profit organizations, and entities that have other

Clean Water Act permit responsibilities⁹. In addition, many ideas from the first round of public outreach were directly incorporated in the credit discussions, including input from community leaders, homeowners, watershed organizations, shopping center and golf course managers, and academics.

Indeed, the availability of credits for actions such as rainwater harvesting or on-site storm water management had broad public appeal and led to the **core recommendation that all properties be eligible to apply for storm water fee credits**. Many storm water utilities in the United States limit credit eligibility, and do not allow single-family (or in some cases any) residential properties to apply. There is broad support from the public, Stakeholder Advisory Group, and DFM for making credits universally available if a storm water fee is adopted, and for encouraging credit projects actively.

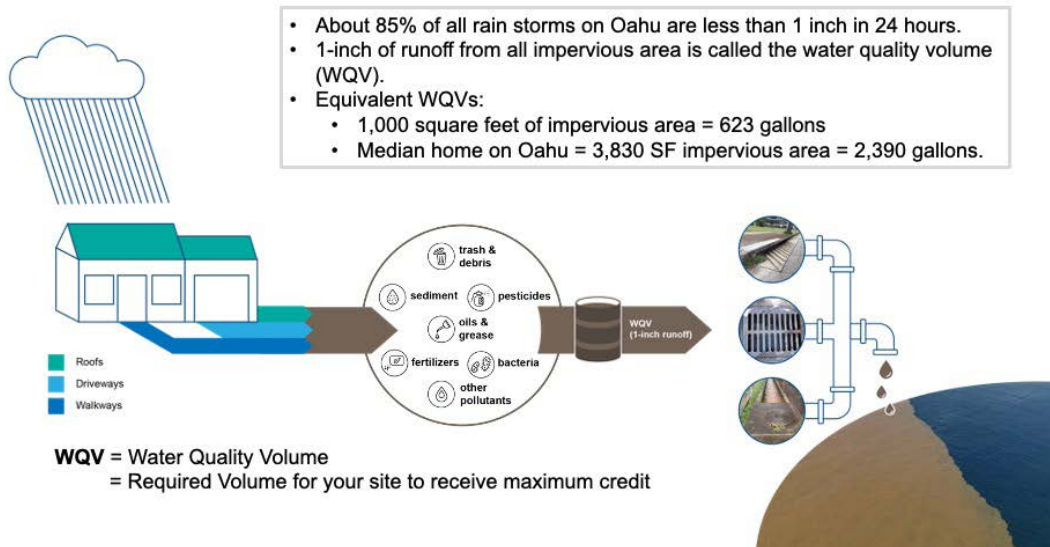
The chief type of credit in any storm water utility is **the implementation of storm water treatment measures that capture and infiltrate, reuse, or evapotranspire rain water**. These can range from simple rain barrels and rain gardens to complex, engineered treatment systems at industrial sites. The first goal of any of these systems is to manage what is called the “Water Quality Volume” (WQV), which is the amount of water generated by runoff from the first inch of rain that falls on a site’s impervious areas. This approach is strongly consistent with the Fresh Water Initiative’s goals for on-site water capture and use, and infiltration/recharge where feasible. DFM has both an adopted storm water management manual with technical standards for these systems, and a residential green infrastructure manual that provides excellent guidance on installation for owners of small properties. Thus, the project team has recommended that **treatment of the WQV be established as the main basis for storm water credits on O’ahu**.

In adopting a system of credits, elected bodies typically set some key policies by ordinance (i.e. by the Honolulu City Council), while others are outlined in a credit manual that is adopted administratively (i.e. by DFM). Based on community input, discussions at the Stakeholder Advisory Group, and project team experience, it is recommended that the Honolulu City Council consider adopting the following credit-related provisions by Ordinance:

1. **All properties should be eligible for credits** for the installation and proper maintenance of approved storm water management systems.
2. The design of these storm water management systems, and the associated credit, should be based **on management of the Water Quality Volume (WQV)** (i.e. runoff from the first inch of rainfall across impervious surface on a site), and should be fully consistent with adopted City permit and design standards. Any new development or redevelopment implementing treatment pursuant to the CCH’s *Rules Relating to Water Quality* would be eligible for this credit, upon application to DFM.
3. Credits should require **application and periodic renewal**; credits should be valid for up to 3 years for residential properties and 1 year for non-residential properties.
4. A 15% credit should be granted to **entities holding and in full compliance with other Clean Water Act NPDES permits** related to storm water management.
5. DFM should be authorized by ordinance to **adopt a Storm Water Credit Manual** which may specify other credits for site modification, non-structural controls, or activity-based payments, such as approved in-kind labor or implementing an approved education program. DFM should have authority to develop the specific application requirements, technical standards, review procedures, methods of appeal, and all other supporting information required to carry out the credit program consistent with these directives
6. The **maximum reduction from all credits should be capped at 60%** of the total applicable fee for the property, with the maximum granted only if applicants manage the WQV for all impervious area on the property, regardless of other credits granted.
7. DFM may consider adoption of a **supplemental credit in excess of 60%** for customers managing runoff from off-site properties, in addition to managing the WQV for all impervious area on the customer’s own property.

⁹ Many non-taxable entities, including the Hawai’i Department of Transportation, University of Hawai’i-Mānoa, and Hawai’i Pacific University, are subject to National Pollutant Discharge Elimination System (NPDES) storm water permits requiring on-site storm water management measures.

How does the “Water Quality Volume” (WQV) work?



An illustration of the calculation of the Water Quality Volume from a storm water utility credit manual; prepared by Jacobs. It is recommended that the credit program for a storm water utility provide financial incentives of up to 60% off of a property owner's bill for implementing measures such as rain water cisterns, bioretention, green roofs, or permeable pavements.

2.5.2 Rebate and Grant Programs

Many high-performing storm water utilities provide rebates and grants to support beneficial investments by individuals and organizations. Typically, **rebates** are provided to property owners who make investments in storm water treatment practices, such as rainwater harvesting or permeable driveways; property owners can apply for ongoing storm water fee credits once the projects are in place. Storm water program **grants**, by contrast, are payments made to organizations who sponsor different types of projects or activities, ranging from rain gardens at schools to trash clean-ups, to workforce development programs for green storm water infrastructure maintenance. The size of grants can range from small “mini-grants” to organizations that host storm water program events or install rain barrels, to multi-year partnership agreements that leverage significant external grants. As noted in this Feasibility Study, the present system of financing storm water management through annual appropriations does not support multi-year financial planning or setting aside funds for grants; as such, the ability to support a grants and rebates program would be one of the most positive outcomes of adopting a storm water utility approach.



Montgomery County, Maryland's RainScapes rebate program provides both a cash rebate for implementation of projects that treat all or part of the water quality volume (WQV), and the opportunity for an ongoing reduction in monthly storm water fees. <https://www.montgomerycountymd.gov/water/rainscapes/index.html>

Throughout the Stakeholder Advisory Group and public outreach process, strong support was expressed for making a range of rebates or grants available to organizations and individuals. There also is strong support for establishing consistent, multi-year partnerships with O'ahu's watershed organizations and other utilities to leverage funds and to invest in ma'uka (upstream) watershed conservation and improvements on agricultural sites. A wide range of ideas was received and incorporated into the prospective budget for grants, rebates, and partnership support. For example, participants in one of the February community meetings recommended a "Kūpuna First!" program to support credit projects on homes owned by O'ahu's elders.

Developing the budgets, procedures, and standards for a grants and rebates program will require substantial work in 2021. One of the more important considerations is how to ensure that future investment reaches all of O'ahu's neighborhoods; this is reflected in the Stakeholder Advisory Group's Core Values, and the issue was brought up throughout the public outreach process. Ongoing development of an effective grants and rebates program will require continued engagement by the Stakeholder Advisory Group, as well as the Fresh Water Initiative at the Hawai'i Community Foundation, Hawai'i Association of Watershed Partnerships, the Honolulu Board of Water Supply, and State agencies. These prospective investments are one of the means by which external funds can be leveraged to support the utility program; however, success requires up-front investment in staff time and matching funds. As such, the prospective budgets for administration include dedicated staff time and annual appropriations for individual grant programs, as well as cash match for securing external grants.

2.6 Proposed Exemptions and Hardship Provisions

Two other types of modifications to storm water fees, both of which were reviewed and discussed by the Stakeholder Advisory Group, are exemptions and financial hardship provisions:

- **Exemptions** are a category of financial adjustment that ultimately shift the burden of storm water fees onto other, non-exempt property owners who must make up for the parcels that do not pay storm water fees. In some cases, exemptions are dictated by state law; in others, storm water utilities create exemptions to reflect the relative cost of

administrative challenges versus revenue raised, or the *de minimus* nature of runoff from parcels with very small impervious surfaces.

- **Hardship** provisions are modifications based on the financial capacity of the storm water utility customer to pay.

2.6.1 Exemptions for Properties with Less than 300 SF of Impervious Surface

The Stakeholder Advisory Group and project team have recommended exemptions for two categories of properties or parcels: those with less than 300 SF of impervious area; and public and quasi-public roadways. Parcels with less than 300 SF of impervious area represent a *de minimus* case where the accuracy of parcel mapping may not support accurate impervious cover determinations. These parcels were assumed to be exempt from a fee, and therefore were excluded from the rate analysis.

2.6.2 Exemptions for Public and Quasi-Public Roads

The recommendation to exempt public and quasi-public roads is an important one. Nationally, the exemption of public and publicly-traveled roadways is common; the project team's research found that about two-thirds of U.S. utilities exempt public roadways from storm water fees, largely because the benefit of public roadways accrues to all citizens. In addition, the technical team evaluated the potential impact of exempting what are described as "quasi-public" roads: Those roadways, irrespective of legal ownership, that provide unrestricted public travel, are maintained by DFM, and function for all intents and purposes as a public roadway.

The technical team and Stakeholder Advisory Group recommend exempting public and quasi-public roads from storm water fees. It was determined that excluding quasi-public roads would reduce the administrative burden and potential for error in dividing up the cost of roadway impervious among related property owners, and would address the many cases on O'ahu where roads are publicly traveled or maintained or both, but their actual ownership is unclear. This provision also addresses the difficult process of transferring ownership of new roadways to the CCH, which can take years. Those private and public roadways to which access is restricted by gates or other means, or that lie within a campus and to which access is



Public and quasi-public roadways maintained by DFM would be exempt from storm water utility fees.

able to be controlled, would not be exempted from storm water fees -- but would be eligible for credits.

The resulting revenue impact of this recommended exemption represents a reduction of roughly 1.8%, or approximately \$0.10/month, on the base proposed storm water rate that would be paid by all rate paying properties. This cost is reflected in the draft estimated rate of \$4.85/month. However, the potential cost of challenges, appeals, and billing problems, as well as fundamental equity issues with the minimal differences between public and quasi-public roadways, prompted the Stakeholder Advisory Group to recommend this exemption.

2.6.3 Hardship Provisions

From the outset, DFM and the Stakeholder Advisory Group have considered carefully the financial and equity implications of shifting to a storm water fee. Because storm water utility fees apply not only to households but also to non-profit organizations, additional concern was expressed about the impact on O'ahu's small or disadvantaged organizations and faith communities. One of the advantages of changing to a storm water utility is the opportunity to adopt specific provisions addressing customer hardship, which is beyond DFM's control under the current, property tax-based funding system. To help the Stakeholder Advisory Group develop recommendations for hardship provisions, the project team presented affordability guidance from the U.S. EPA and other U.S. clean water agencies, reviewed the Honolulu Board of Water Supply guidance, and researched other approaches used by utilities in peer cities. Based on the research and discussion conducted through this Feasibility Study, it is recommended that the Bill for an Ordinance to establish a storm water fee include the following three provisions:

- **Income-based relief for households:** Households who are responsible for the payment of utilities, and who have applied for and been qualified through the Hawai'i Low Income Home Energy Assistance Program (LIHEAP), should pay the monthly fee applicable to the lowest tier (i.e. Tier 1) in the adopted rate structure. Annual reapplication through Hawai'i LIHEAP is recommended for ongoing relief.
- **Income-based relief for non-profit organizations:** The total annual storm water fee charged to non-profit (i.e. 501(c)(3)) organizations who are responsible for payment of utilities should be capped at 0.5% (one half of one percent) of the organization's annual revenue. For those that are part of a larger organization, such as a diocese or other umbrella organization, the determination would be based on the revenue reported by the individual parish or site rather than the larger organization.
- **Ongoing or circumstantial hardship relief:** DFM should be authorized to adopt guidelines for cases when it will provide relief to individuals demonstrating ongoing or circumstantial hardship conditions. The use of national guidance on affordability of water utility services is recommended as a benchmark for developing this guidance.

Finally, the Stakeholder Advisory Group noted that sewer fees charged by the Department of Environmental Services (ENV) represent the lion's share of most households' and businesses' total water utility fees. This would continue to be the case if a storm water fee is adopted. Engaging in discussions with ENV and the Honolulu Board of Water Supply around total affordability¹⁰, and the potential for shared responsibility to ensure affordability, is strongly recommended in 2021.

¹⁰ See *Affordability of Wastewater Service*; Water Environment Federation, 2007. U.S. EPA presently is updating its national Financial Capability Assessment (FCA) guidance, which may provide additional direction on this issue.

2.7 Responding to COVID-19 and Looking Ahead

The advent of the COVID-19 pandemic in March 2020 has changed much of the prospective timing for a storm water utility serving O'ahu, but the pandemic has not altered the fundamental recommendations of this Feasibility Study. Indeed, while significant modifications were made to the form of public outreach and Stakeholder Advisory Group meetings, and while some implementation has been delayed, both storm water utility-related work and a new strategic planning initiative that stemmed from this process both are advancing today.

2.7.1 Introducing Bills for an Ordinance to the City Council

It had been the intent of The Fresh Water Initiative at the Hawai'i Community Foundation and DFM to introduce a Bill for an Ordinance to establish a Storm Water Special Fund, and a Bill for an Ordinance to establish a storm water utility and fee, in the summer of 2020. These were to have been considered by Honolulu City Council in accordance with its requirements for City Council committee referral and public hearings, with a prospective adoption date by the end of 2020 and fee implementation potentially occurring in the middle of Fiscal Year 2022. With the onset of the COVID-19 pandemic in March 2020, DFM announced to the Stakeholder Advisory Group that DFM would not itself advance either Bill for an Ordinance in calendar year 2020.

However, DFM did state its intention to proceed with work towards forming a storm water utility and introducing both Bills for an Ordinance in calendar 2021. While there are grave economic challenges facing the State and facing Honolulu, it has been noted that having a storm water fee in place offers (1) greater equity and efficiency in funding, (2) the ability to leverage stimulus or relief funds into beneficial projects; and (3) the ability to leverage other available sources of funding, including grants and the Clean Water State Revolving Fund, relieving pressure on other sources. The Honolulu City Council may consider other options to respect and account for economic impacts and recovery related to the pandemic,

such as phasing in a fee, or making implementation contingent upon achieving specific economic indicators. In light of the pandemic and the logistics of implementing a fee, the earliest potential implementation date for a storm water fee and utility would be July 1, 2022 (i.e. Fiscal Year 2023) – if the required Bills for an Ordinance ultimately are advanced, and approved by Honolulu City Council in 2021.

2.7.2 Work Required in 2021-2022

Over the coming months and year, work will proceed on the technical, administrative, and outreach aspects of forming a Storm Water Utility. As a new mayoral administration begins in 2021, briefings will be held with officials and the Honolulu City Council to ensure continuity of information and understanding. Specific tasks that must be completed include (1) An update of the budgets and rate analyses described in Section 2 of this report; (2) development of the underlying geographic and financial information systems required to determine and ultimately collect storm water fees; (3) development of a credit manual, outlining how rate payers may take advantage of opportunities to lower their storm water fees; (4) refinement of hardship provisions; (5) development of rebate and grant programs; and (6) a detailed plan for managing implementation, including the specific processes for billing, customer service, appeals, and credits. These efforts will be led by DFM through 2021 and 2022.

DFM and DPP will be pursuing an [*update of O'ahu's parcel mapping*](#) – a long overdue improvement to O'ahu's geographic and property information systems. This work will support the refined rate structure proposal, and to ensure that O'ahu's property owners are able to visualize and understand their properties' impervious surfaces and prospective storm water bills. A recent and beneficial development was the discovery that new NOAA CCAP imagery for O'ahu appears fully sufficient for determining storm water fees, meaning that the CCH need not purchase new aerial imagery to implement a storm water utility. However, the parcel boundary data is not sufficiently accurate for billing and must be updated, a process which will benefit several departments and initiatives.

Discussion also will continue with the CCH's Department of Budget and Fiscal Services (BFS) to ensure common *understanding of the mechanics of utility formation*, billing, and financial reporting, and to ensure that sufficient allowances are made for the staffing and information management resources that will be needed for the launch of a successful storm water utility. Prospective budget refinement is underway, particularly to ensure that Fiscal Year 2022 acts as a 'bridge' to the potential for a fee-based program, whether phased or fully implemented, in Fiscal Year 2023.

Determining the appropriate *method for sending storm water bills* and collecting fees will be one of the trickier and more important logistical issues to tackle. Discussions will be required with the Honolulu Board of Water Supply, with BFS's Real Property Assessment Division, and with the Department of Environmental Services. It likewise will be essential to have discussions with the Department of Human Resources regarding several aspects of implementation and permanent staffing, including the use of temporary help when the first notices and bills are sent, storm water utility-related staffing within allied departments, and cooperative agreements for "green jobs" development. Finally, the frequency of billing and frequency of likely adjustments (such as credits, rebates, or hardship provisions) will need to be factored into the selection of a billing system.



Virtual meetings with the Stakeholder Advisory Group, stakeholder organizations, and the community maintained momentum in developing the core recommendations during the pandemic.

2.7.3 Continuing the Stakeholder Advisory Group Process

Continuation of the Stakeholder Advisory Group is strongly recommended. Thanks in large part to the commitment and engagement of its members, this process has yielded critical input that has shaped nearly every aspect of the proposed storm water utility program. Whether or not the Honolulu City Council ultimately adopts a storm water fee, the Stakeholder Advisory Group provides an essential, community-based sounding board that already has contributed tremendously to the transparency and effectiveness of O'ahu's storm water programs. It is recommended that the Stakeholder Advisory Group continue meeting quarterly throughout 2021 to support, at minimum, the following:

- Refinement of the budgets and rate study;
- Development of a storm water credit manual;
- Development and refinement of grant, rebate, and partnership programs, including provisions to ensure investment in all O'ahu neighborhoods;
- Public outreach and engagement;
- Continued outreach to elected and appointed officials and affected groups; and
- Recommended content of the Bill for an Ordinance to Honolulu City Council to establish a storm water utility, including any provisions related to revenue neutrality, exemptions for public and quasi-public roads, and phasing or timing based on economic recovery indicators.

3.0 PUBLIC AND STAKEHOLDER INVOLVEMENT PROCESS

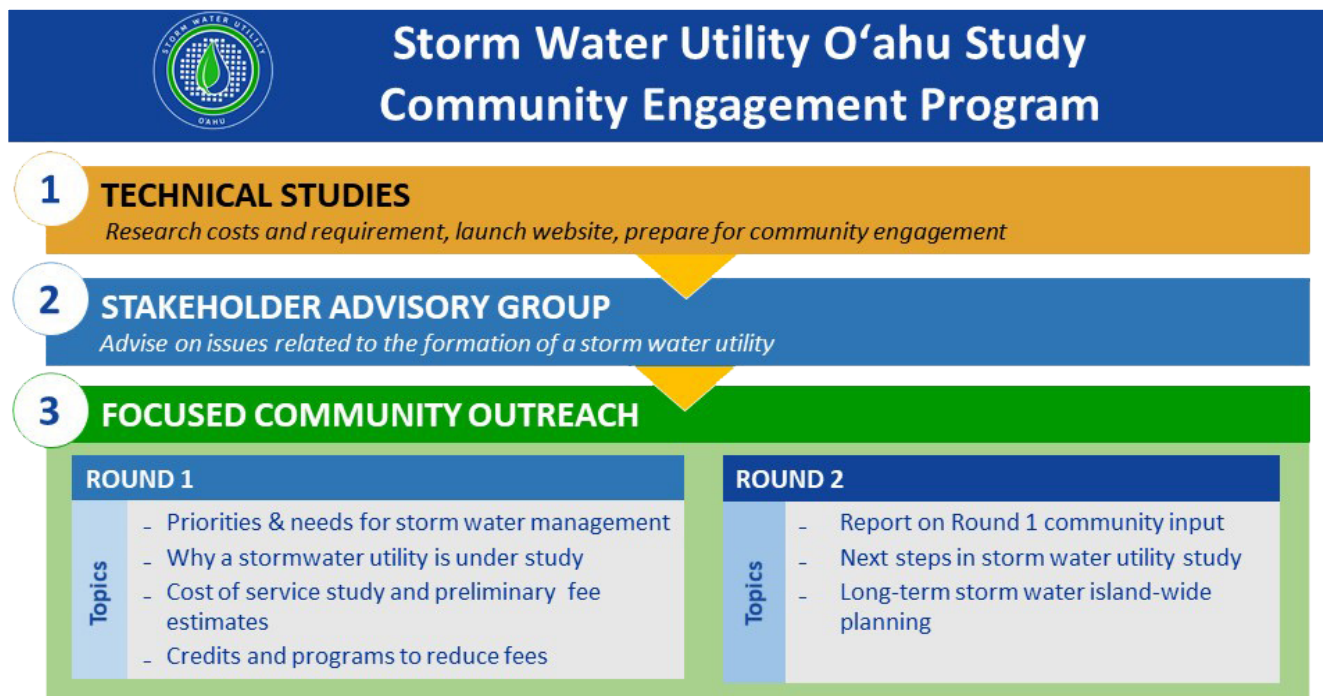
From the outset of this Feasibility Study, stakeholder and community involvement have been prioritized and incorporated. There are many ways for the public to have a say in the structure and operations of a storm water utility, including its guiding values, fee structure, credits program, hardship provisions, accountability mechanisms, and priorities for programs and projects. In addition to soliciting input that informed recommendations on these topics, the outreach process provided opportunities to expand community members' knowledge about storm water conditions, management issues, associated environmental and marine impacts, and actions that people can take at home and in their communities to reduce runoff and associated pollutants.

The public involvement process was integrated with the technical studies, resulting in an iterative process where input informed the research and analysis, and sharing the technical studies findings informed discussions about recommendations for utility formation and operation. In many cases, early feedback led to additional research and



Extensive public and stakeholder involvement across O'ahu informed the core recommendations developed during the study.

analysis, which in turn informed additional discussions and input on recommendations. The key components of the public involvement program are the Stakeholder Advisory Group, broader community outreach, and focused outreach to additional stakeholder organizations, institutions, and government agencies.



Integration of the technical studies, Stakeholder Advisory Group, and community outreach in the Feasibility Study.

3.1 The Stakeholder Advisory Group

Through grant funds provided by The Fresh Water Initiative at the Hawai'i Community Foundation, DFM formally convened the Stakeholder Advisory Group in July, 2019 to provide input on issues and priorities to consider in the study, including how to balance the diversity of needs, communities, and environments on O'ahu with the potential financial impact of a storm water fee. The Stakeholder Advisory Group composition reflects a cross-section of communities, interests, and perspectives. Members represent O'ahu neighborhoods, local and national organizations, and interest groups.

3.1.1 Study Role

The Protocols and Operating Principles, posted on the study website, establish the charge and role of the Stakeholder Advisory Group in the study, affirm a commitment to collaborative principles, provide meeting logistical information, and give additional considerations for productive meetings so all Stakeholder Advisory Group members can participate equally and effectively. Per the Protocols and Operating Principles, the Stakeholder Advisory Group's charge is to **advise on issues related to the formation of a storm water utility for O'ahu, and in particular the approach for the fee structure**, by providing input, ideas, comments, and feedback that incorporate members' expertise, knowledge, resources, and understanding of O'ahu's communities, environment, and commerce. The Stakeholder Advisory Group's charge also is to help improve the public's understanding of the needs and benefits of improved stormwater management and the funding requirements for achieving these improvements. Another important aspect of their charge is to **advise on effective community outreach and help to communicate about involvement opportunities**. The organizations represented do not necessarily endorse all of the recommendations in this report, but all have committed to participating actively in shaping a Storm Water Utility program.

3.1.2 Meeting Road Map

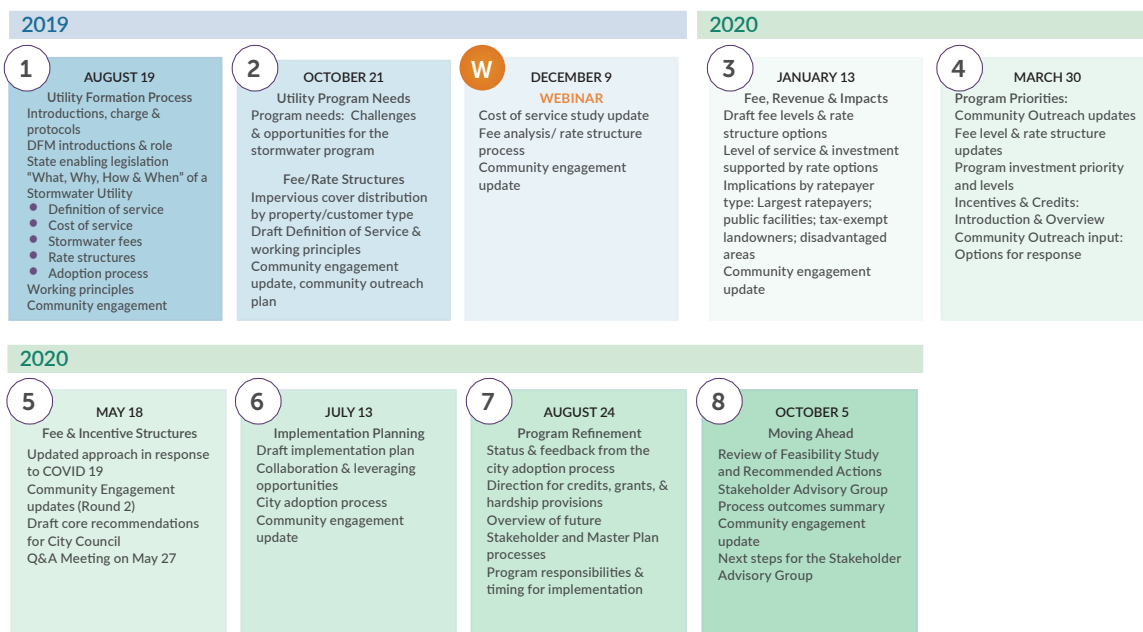
Stakeholder Advisory Group meetings were held on a bi-monthly basis beginning in August 2019, and were supplemented with additional Question and Answer sessions throughout. Meetings were held in town, in late afternoons, supported by a professional facilitator and leaders of the technical team and the DFM Storm

STAKEHOLDER ADVISORY GROUP MEMBERS

American Association of Retired Persons Keali'i Lopez	'Iolani School Student Representative Jaron Kawamura	NAIOP Commercial Real Estate Development Association, Hawai'i Chapter Darian Chun
American Council of Engineering Companies – Hawai'i June Nakamura	Kailua Area Neighborhood Boards Levani Lipton	O'ahu Resource Conservation and Development Council Hannah Hubanks
Hawai'i Appleseed Center for Law & Economic Justice Gavin Thornton	Kaimuki Area Neighborhood Boards Sharon Schneider	Sustainable Coastlines Rafael Bergstrom
Building Owners & Managers Association Melissa Pavlicek	Kalihi Valley Area Neighborhood Boards May Mizuno	The Nature Conservancy of Hawai'i Kim Falinski
Fresh Water Council Mark Fox	Kamehameha Schools Gary Evora	University of Hawai'i – Mānoa, Department of Civil & Environmental Engineering Roger Babcock
Hawai'i Association of Watershed Partnerships Shelley Gustafson	Ko'oulaulua Area Neighborhood Boards Dee Dee Letts	
Hawaii Auto Dealers Association Dave Rolf	Kua'Āina Ulu 'Auamo (KUA) Wally Ito	
Hawaii Reserves, Inc. Jeff Tyau	McCully Area Neighborhood Boards Tim Streitz	Wai'anae Area Neighborhood Boards Sharlette Poe
Honolulu Board of Water Supply Barry Usagawa	Mililani-Waipio Area Neighborhood Boards Bernie Marcos	Waikiki Business Improvement District Jennifer Nakayama
		Waipahu Area Neighborhood Boards Matthew Weyer

Water Quality Division. All meeting agendas, summaries, and materials are publicly available on the study website, and the meetings were open to the public per the State of Hawai'i's Sunshine Act (open meetings law), as noted in Section 1.3.1. When COVID-19 and social distancing requirements went into effect in March 2020, the Stakeholder Advisory Group meetings migrated to a virtual platform where members and the project team continued to discuss important matters and make progress.

STAKEHOLDER ADVISORY GROUP MEETING ROAD MAP



The Meeting Road Map guided the Stakeholder Advisory Group meeting agendas and discussions, with meetings held at key points in the technical studies for the storm water utility.

3.1.3 Core Values

One of the early contributions of the Stakeholder Advisory Group was a statement of Core Values to guide the study analysis and recommendations, and ultimately to shape the utility structure and operations. The values coalesced around clean water, a healthy and safe environment, community involvement, and shared responsibility. Work on the Core Values occupied much of the second meeting in October. From the outset, members expressed the need to build trust and demonstrate transparency in the storm water program – regardless of whether

or when a fee ultimately is implemented. The Core Values discussion became a means of expressing what orientation and actions members believed the storm water program should embody, as well as the specific goals for O'ahu's water environment and community outcomes. Members worked in small teams to refine the values. These are now important benchmarks guiding much of the implementation planning for the utility, including budgeting, the development of a grants and rebates program to serve all of O'ahu's communities, and the ongoing role of the Stakeholder Advisory Group.

What does a Storm Water Utility mean for O'ahu?



CLEAN WATER

Managing storm water runoff
Improved water quality
Pollution prevention



HEALTHY & SAFE ENVIRONMENT

Conservation mauka to makai
Clean stream channels
Protecting ocean waters



COMMUNITY INVOLVEMENT

Deciding how funds are spent
Ensuring accountability
Meeting community needs



SHARED RESPONSIBILITY

Everyone pays a fair share
Everyone can get credits
Everyone makes a difference

www.StormWaterUtilityOahu.org



3.2 Community Outreach and Engagement

The second prong of the outreach program was a focused investment in community outreach and engagement at two key points in the Feasibility Study. The process prioritized soliciting input from the many communities across O'ahu, and the range of storm water management interests, to inform the core recommendations for a storm water utility. Significant attention was given to creating multiple paths for involvement, so that people could participate in the Feasibility Study regardless of their situation or knowledge base.



Community input from Rounds 1 and 2 is documented and summarized in two reports, available at www.StormWaterUtilityOahu.org

3.2.1 Round 1, February-March, 2020

The first round of community outreach was conducted during February and early March 2020. DFM, with their consultant team, held 18 community meetings, facilitated numerous smaller meetings with stakeholder groups, and set up outreach booths at several community events. This multi-pronged approach was employed to make the outreach process as inclusive, accessible, and comfortable as possible for O'ahu's many communities and stakeholders. The intent of Round 1 was to inform community members about storm water utilities – the “why, what, how, and when” – and options for implementation on O'ahu. They also served as a forum to share the project team's research and analysis to date, including preliminary fee estimates and the Core Values prepared with the Stakeholder Advisory Group. Just as importantly, Round 1 served to solicit questions, ideas, concerns and priorities for a potential storm water utility for O'ahu. Participants were encouraged to stay engaged and to help involve others. Each of the 18 community meetings began with a short introductory video and a presentation by project team members. Meeting participants were given multiple options for providing input, including comment cards, a Q&A session, polling questions, and open house stations.

In Round 1 community meetings, some participants expressed support for better storm water management and a storm water utility, and others expressed a desire to learn more. While most expressed concern about a new fee, they engaged in conversations about what is needed to make a storm water utility acceptable. The questions, comments, and ideas reflected these themes:

- Consideration of revenue neutrality / property tax reduction provisions, if a storm water fee is implemented
- Assurances of program accountability and fund protection
- Credits and financial incentives – yes!
- Expectation for long-term planning & vision
- Fee adjustments for on-site storm water management
- Investment in ALL O'ahu neighborhoods!
- Address impacts to the elderly and low-income households, given O'ahu's high cost of living!

During Round 1, the project team also set up booths at multiple community events and hosted small focused meetings with stakeholder groups. The focused meetings addressed specific concerns of potentially affected parties such as **faith communities** and **non-profit land owning**



Scenes from 18 Round 1 community meetings



organizations, who presently do not pay substantial property taxes but would pay storm water fees; **golf courses**, which often provide storm water management for surrounding areas in basins and ponds; **commercial property managers**, who would need to distribute the cost of a storm water fee among tenants; and **educational and community facilities**, which would pay fees but also have substantial opportunities to obtain storm water fee credits for providing education, hosting events, or implementing storm water management on site. These focused meetings helped ensure that each community's concerns were heard well before the rate structures and particularly the credit manual were developed. Many of the credit program recommendations in particular reflect direct input from participants at the meetings.

3.2.2 Round 2, Virtual Outreach

Scheduled to begin in April 2020, Round 2 of the outreach process was quickly shifted to virtual platforms to comply with COVID-19 social distancing requirements. Ultimately, nine virtual meetings were held on several different days of the week (including the Memorial Day holiday), and at a variety of times of day, to ensure that as many people as possible had an opportunity to participate. The second round meetings presented updated information about the storm water utility study, reflected back feedback and ideas received in the first round, and gathered additional community input.

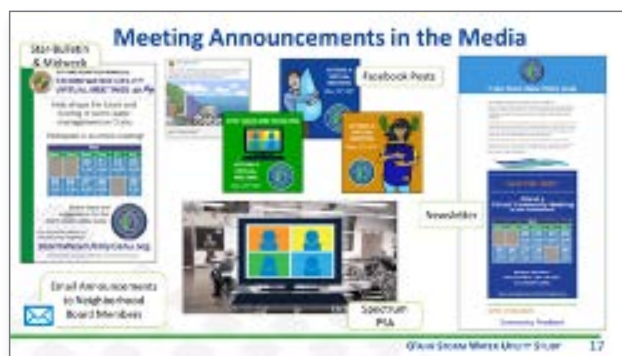
For Round 2, the team intensified social and traditional media efforts to publicize the virtual community meetings. Announcements were made via email blasts, boosted posts on Facebook, print advertisements in newspapers, public service announcements on radio and television, and press releases. The level of public engagement varied by platform, but boosted Facebook posts successfully reached thousands of users and drove traffic to the study website.

Round 2 Storm Water Utility Meetings Media Metrics (May 2020)

- 78 virtual community meeting attendees
- 1,200 website visits:
 - ~200 from e-newsletter
 - ~500 from social media posts specific to the outreach events
- 42,000 Facebook users reached per post (4 regular posts; 4 video posts)
 - ~350 website visits direct from video posts

Many more reached by print ads and public service announcements.

Community input received in Round 2 overlapped significantly with the input from Round 1. For the project team, the similar input themes reinforced that they were operating from a representative understanding of community members' concerns, questions, and ideas.



Social media and other notifications, stepped-up for Round 2, successfully achieved virtual meeting participation and accelerated awareness of the study.



Welcome slide from Round 2 virtual community meetings.

3.3 Organizational Outreach

During each round of community outreach, the team also conducted focused stakeholder group meetings, organized for groups of businesses and organizations with similar interests. As noted in Section 3.2.1 above, the categories of potentially affected groups included educational institutions, environmental groups, golf courses, land-owning nonprofits, malls, shopping centers, and attractions, and faith-based organizations. Extensive calls and emails were made to create an initial contact list and ensure that meeting invitations were directed to the best organizational contacts, as well as to follow up on attendance. Invitations were extended to approximately 112 contacts, including faith-based organizations that represent multiple properties. In addition to the organizations contacted for Round 1, the consultant team reached out to approximately individual 350 churches and faith-based organizations in Round 2 to obtain email addresses and extend meeting invitations. A flyer with an overview of the study was included with each email invitation. This outreach process served to inform many stakeholders about the study process.

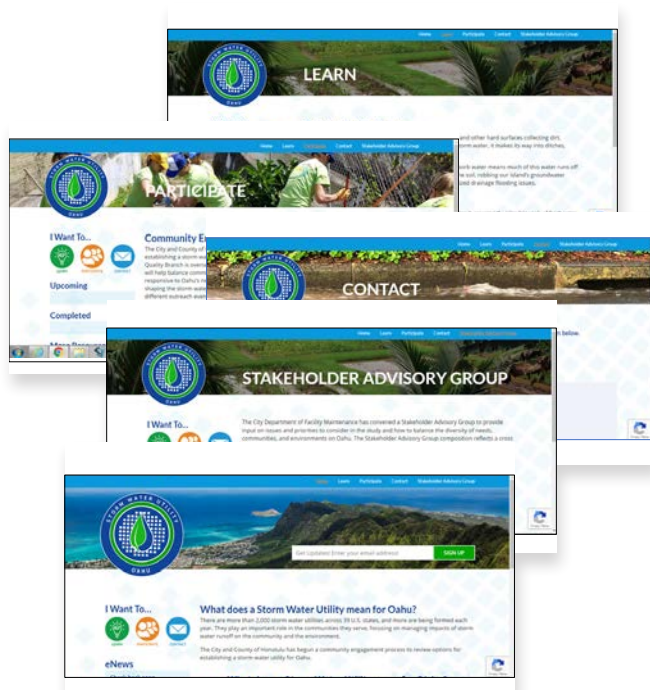
3.4 Outreach Materials

Well-crafted, branded informational materials developed through this project with funding both from DFM and The Fresh Water Initiative at the Hawai'i Community Foundation contributed to the success of public and stakeholder involvement. Used during in-person, virtual, and online communication, the materials convey the value of water and the environment, the pressing needs for improved storm water management, and the benefits of a storm water utility. Other themes woven into materials include the importance and role of public involvement, the technical basis of the study, and process transparency. Connecting the diverse audiences on O'ahu was always a priority, and the Stakeholder Advisory Group's feedback played an essential role in developing and fine-tuning content. Themes and content from these materials dovetailed with DFM's regular outreach materials, including the residential green storm water infrastructure guide that provides a helpful basis for home owners to understand what types of actions could earn storm water fee credits.

3.4.1 Project Website

Building and launching www.StormWaterUtilityOahu.org was an important component of public outreach for the study. The site's design allows visitors to quickly access basic information and, if desired, dive into details. The [Learning](#) page contains an extensive [FAQ](#) and a document library spanning many topics including storm water impacts on marine resources, articles on legal foundations for storm water utilities, and example materials from storm water utilities in other places. The [Participate](#) page provides an accessible platform for postings about public involvement opportunities and input summaries.

Another important feature is the [Stakeholder Advisory Group](#) page, which houses all meeting agendas, summaries, and presentation materials. Not only has this served as a convenient hub for Stakeholder Advisory Group members, it also provides full transparency by enabling community members to access all materials from public presentations and Stakeholder Advisory Group meetings.



The project website supported strong information-sharing, transparency, and engagement. An extensive reference library has been developed in support of the utility and other water quality efforts.



A public outreach event at Lāi'e Elementary School, February 2020.

3.4.2 Our Island-Our Water-Our Future Video

The “Our Island-Our Water-Our Future” video proved to be one of the team’s most effective communication tools. In just under four minutes, it addresses O’ahu hydrology, the effects of storm water pollutants on land and coastal environments, the role of impervious area, in storm water runoff, the actions that everyone can take to reduce impacts, the role of a storm water utility, the mechanics of a fee system based on the extent of impervious area, and options for credits if a fee is adopted.

Community meetings and smaller stakeholder meetings opened with the video, after which the project team typically delivered a more detailed presentation to supply additional information and results of technical analyses. The video was also split into smaller clips for social media posts, which significantly furthered engagement according to analytics. The video is easily accessed from the website [Home](#) and [Learn](#) pages.



The video was instrumental in quickly conveying the who, what, why, and how for a storm water utility.

4.0 CORE RECOMMENDATIONS FOR A STORM WATER UTILITY

Through the Feasibility Study process, core recommendations for moving ahead with a storm water utility have been developed and reviewed with the Stakeholder Advisory Group. These recommendations are presented in this section. It is essential to note, however, that while these overall recommendations are general outcomes of the process, individual members of the Stakeholder Advisory Group may not support all aspects of each recommendation. The final form of a storm water utility and storm water fee will be shaped by upcoming studies and evaluations, and ultimately, by the Honolulu City Council.

4.1 Establish a Storm Water Utility & Charge a Fee to Fund the Program Working Budget

It is the core recommendation from this process that DFM should continue work to advance a Bill for an Ordinance through the Honolulu City Council to establish a Storm Water Special Fund, and a Bill for an Ordinance to establish a storm water fee. The Honolulu City Council should consider options for the timing of a storm water fee in light of economic considerations, such as phasing in fees or using economic recovery indicators to determine timing.

Advance a Proposal for a Storm Water Utility to the City Council. DFM should continue work to advance a Bill for an Ordinance through the Honolulu City Council to establish a Storm Water Special Fund, and a Bill for an Ordinance to establish a storm water fee. The rate should be sufficient to support the projected Program Working Budget. The Honolulu City Council should consider options for the timing of a storm water fee in light of economic considerations due to COVID-19, such as phasing in fees or using COVID-19 related economic recovery indicators to determine timing for fee implementation.

Plan for Investments in Accordance with the Program Working Budget. The Program Working Budget, developed through this process and reviewed by the Stakeholder Advisory Group, would make new investments in stream channel cleaning, proactive inspection and maintenance, water quality monitoring, and water quality improvement projects. Funds also are designated for leveraging external grants, and for

supporting partnership programs that invest in workforce development and green infrastructure. The Program Working Budget includes new and ongoing investment in asset renewal and replacement, which is needed to ensure system function, respond to population growth, and provide resilience to climate change.

Maintain a Fixed Storm Water Rate for the First Six Fiscal Years. It is recommended that an adopted storm water rate (i.e. the charge per 1,000 SF of impervious area) be fixed for six fiscal years. The rate should be set at a level sufficient to support the projected Program Working Budget over this six fiscal year period. Once a sufficient fund balance is achieved in a Storm Water Special Fund, the storm water program should begin issuing revenue bonds, backed by storm water fees, to fund its own capital improvement program, including asset renewal and replacement work of roughly \$25 million per year.

Adopt an Eight-Tier Fee Structure to Promote Equity. Provided the accuracy of mapping developed through the upcoming DPP/DFM parcel and impervious cover update process has sufficient accuracy to determine impervious area, it is recommended that the Honolulu City Council adopt an eight-tier rate structure to provide greater equity among property owners.

Review Considerations and Options for Revenue Neutrality in Adopting a Storm Water Fee. At present, the subset of O'ahu property owners who pay property taxes supply \$70 million annually in general funds to support the CCH storm water management program. The question of whether new revenues from a storm water fee would be fully or partially offset by property tax reductions was discussed (though not resolved) by the Stakeholder Advisory Group, and the issue was raised at every public outreach meeting.

Exempt Properties with Less than 300 SF of Impervious Area, and All Public and "Quasi-Public" Roads, from Storm Water Fees. To ensure efficient and accurate program administration and equity in the assessment of storm water fees, it is recommended that the Ordinance include provisions exempting parcels with less than 300 SF of impervious area, and all roadways that are fully open to public travel, regardless of ownership.

Provide Hardship Relief for Low-Income Households, and Cap Fees to Non-Profit Organizations. The Stakeholder Advisory Group recommends that those residents who are responsible for utility bills, and

who have qualified for the Low Income Home Energy Assistance Program (LIHEAP), be charged a flat storm water fee based on the lowest tier of the adopted storm water rate structure. It is further recommended that DFM offer temporary relief to those demonstrating ongoing financial hardship, and that DFM and the Department of Environmental Services (ENV) discuss a joint hardship provision in cases where the collective cost of sewer, water, and storm water exceeds 4% of gross monthly household income. Finally, it is recommended that non-profit organizations responsible for utility bills have their annual storm water fees capped at a maximum 0.5% of the organization's demonstrated annual revenue.

4.2 Develop Credits, Grants, and Rebates that Support Equity and Advance a "One Water" Framework

Provide Credit Opportunities to All Properties, Supporting a One Water Framework. It is recommended that all properties on O'ahu be eligible for credits – ongoing reductions in storm water fees. Incentivizing projects that capture or recharge water through a storm water fee and credit program will further a One Water framework linking on-site storm water management to water supply, recharge, and conservation. Credits available to property owners should include reductions for (1) treatment and capture of the first inch of rainfall ("Water Quality Volume"), (2) compliance with other applicable federal storm water permits, (3) adopting and teaching an approved storm water education curriculum, and (4) actions such as trash removal or maintenance approved by DFM that actively reduce DFM's cost to manage the storm water system. A cumulative maximum bill reduction of 60% for all credit activities on a property is recommended.

Develop Rebate, Grant, and Partnership Programs to Ensure Investment in All of O'ahu's Communities. DFM is encouraged to develop rebate or grant programs that provide a regular and accessible source of investments in meaningful projects, including green storm water infrastructure, headwaters conservation, water conservation and recharge, environmental education, and clean-ups. Careful program design is needed to ensure that all communities have the opportunity to be involved; a focus on programs or projects benefiting kūpuna and rural communities is recommended, as is coordination with the Department of Hawaiian Home Lands.

4.3 Support an Ongoing Public Engagement and Stakeholder Process

Establish an Ongoing Stakeholder Advisory Group to Promote Transparency and Support Storm Water Management. Continuation of the Stakeholder Advisory Group process is strongly recommended to support DFM and its partners through the implementation process. Transparency and accountability are critically important to the public and stakeholders. The Stakeholder Advisory Group should receive and comment on the annual financial report recommended above, provide input on projects and program development, and act as a liaison to affected communities on storm water quality, drainage, and flooding issues.

Ensure Transparency and Accountability through Annual Financial Reporting. A separate report of all storm water-related revenues, expenditures, should be prepared annually. It is encouraged that DFM prepare such a report annually regardless of whether a Storm Water Special Fund and storm water fee ultimately are adopted.

Continue public and stakeholder/affected group engagement through the Implementation Process. In addition to continuing the work of the Stakeholder Advisory Group in a formal role, it is recommended that DFM and its partners continue active outreach to stakeholders and affected groups throughout the implementation process. Direct engagement with O'ahu's Neighborhood Boards is specifically recommended.

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