

Sustainable Development and Resilient Communities – Public Utilities

Public Comment Summary

County of Hawai'i Draft General Plan 2045

The public comment period for the Draft General Plan 2045 was held from September 18, 2023 to April 1, 2024. This comment summary contains the key themes derived from community feedback on the Sustainable Development and Resilient Communities – Public Utilities section of the draft plan.

1. Energy Solutions with a Focus on Renewable Sources

The comments advocate for increasing renewable energy sources and exploring alternative sources such as wave and geothermal energy. The need for a robust and redundant energy supply is evident, with the suggestion to use localized grids to reduce energy loss during distribution. Comments indicate that creative design and financing for energy projects should be considered, and community engagement can help foster acceptance and understanding of innovative energy sources. There are also references to the challenges and controversies surrounding geothermal energy and the exploration of hydrogen energy as a newer, yet contentious solution. Concerns about energy production from waste and the use of hydrogen as an energy source reflect the need for public understanding and transparent policy development.

2. Water Conservation and Management

The need to improve water conservation is especially critical as climate change is expected to affect future aquifer recharge. Many comments emphasize the importance of conserving water resources through various means such as utilizing innovative technologies to reduce evaporation from reservoirs (e.g., floating covers), and promoting wastewater treatment for reuse in agriculture. Several challenges are noted, including poor reporting from private well operators, the need for education on conservation, and addressing issues with pumping data which impacts the understanding of aquifer sustainability. Commenters emphasize the importance of water conservation methods including the modernization of infrastructure to minimize leaks, considering alternative sources such as desalination, and pursuing new technologies.

The feedback also highlights key agricultural considerations including the importance of improving water quality and access for agriculture. There is a need to maintain, improve, and expand agricultural water systems where feasible. Other comments discuss the need for infrastructure improvements, groundwater recharge efforts, the development of new water sources, the prevention of polluted runoff, and ensuring sufficient water supply, including suggestions regarding wastewater management and the use of alternative water systems for irrigation.

3. Wastewater Management and Solutions

Comments raise concerns about wastewater management, infrastructure needs related to sanitation, and the approval process for septic systems and sewer extensions. Suggested improvements to wastewater management and infrastructure include more effective treatment systems, integration of green infrastructure, and updates to outdated systems. Regarding the expansion of sewer services, there is discussion about connecting subdivisions to existing sewer systems, implementing new wastewater policies, cesspool conversion mandates, and the need

for County Council approval for sewer extensions. The environmental impact of current state of wastewater infrastructure is a concern, with an emphasis on protecting nearshore areas and marine ecosystems. Comments suggest limiting the use of injection wells and promoting waste reduction and recycling. Environmental sustainability is seen as a collective responsibility. There is a significant push for life cycle assessment principles, viewing waste as a resource, and considering wastewater reuse for needs that do not require potable water.

Funding and financial support

Financial aspects of wastewater system developments feature prominently in the comments, reflecting the need for self-funding through dedicated funds, loans, grants, and subsidies. There is a recognized need for investment in infrastructure that supports cesspool conversion and other wastewater improvements. Comments point out the financial challenge for users and suggest looking for funding sources. Issues of equity are raised and comments underscore the benefits of clean water to the county as a whole.

Regulatory improvements

Comments suggest the need for regulatory and policy enhancements, such as updating codes regarding sewer service and connection requirements. There is a call for encouraging water recycling and the adoption of new standards, including revising county codes and considering incentive methods. Some of the feedback calls for integrated wastewater management plans and revisions of existing policies that could impact the effectiveness and sustainability of infrastructure. Commenters advocate for improving county oversight in extension approvals and adapting to technical and economic challenges. Strategic consideration around the design and funding of these services is mentioned, along with the importance of coordinating with county plans and ensuring efficient infrastructure development in sensitive areas.

Technology and innovation

There is interest in exploring technological advancements and alternative systems for wastewater treatment, such as low or no-water-use toilets, water recycling, and the use of renewable energy sources for wastewater pumping. This reflects a recognition that innovation can contribute to more effective, sustainable wastewater management and align with environmental goals. Comments touch on issues related to the production of biofuel from wastewater and compacted ash from solid waste as a housing material. Suggestions are made for alternatives to minimize landfills and regulate consumption and waste together with population density.

4. Environmental Protection and Sustainable Practices

There is a notable emphasis on environmental protection and promoting sustainable practices through the integration of green infrastructure, the use of native plants, and low-impact development (LID) strategies. The comments discuss the importance of preventive measures against pollution, management of wastewater to protect reefs, encouragement of groundwater recharge, and protection against overconsumption especially in agricultural practices. There is advocacy for ensuring water distribution targeted at wildfire protection and improving public access to basic services such as drinking water and public restrooms. Comments reflect a keen awareness of climate change impacts and the need to adapt. Views differ regarding the

approach. Some commenters question the emergency nature of climate change or the efficacy of certain technologies.

5. Infrastructure

Funding and financial considerations

A common theme across comments is the financial aspect of designing, implementing, and maintaining utilities and services. This includes creative funding options, cost analysis for system implementation, financial modifications to support water system expansion, and the responsibility of developers versus public entities in covering costs related to infrastructure. There is a call for clear, standardized definitions and considerations to balance costs and feasibility with development, economic stimulus, and public safety. Discussions center around the need for developers to bear the costs of large infrastructure expansions, the financing of such projects, and the importance of clear guidelines and regulations for developer responsibilities. They advocate for self-funding of utilities based on master plans, exploring financial modifications, and considering the full cost when implementing new systems. They also mention the potential benefit of reusing stormwater and streams for energy.

Infrastructure planning, development, and maintenance

The importance of maintenance as well as the proper designing of sustainable and resilient infrastructure is emphasized to withstand the pressures of climate change and population growth. Comments reflect a need for updating and developing infrastructure to modern standards. Careful and coordinated infrastructure and utility planning were highlighted in the comments. There is a strong focus on the integration of utilities into overall master plans, the acknowledgment of potential regulatory barriers, the exploration of public-private partnerships, and the need to address long-term, low-interest funding for utility expansions. Additionally, comments express concerns about the reliability and safety of various infrastructure systems. They mention the need for improved water access and quality, better storm drainage, and support for alternative energies. Suggestions include more localized grids to reduce power loss and the need to maintain and upgrade existing systems to modern standards.

Telecommunications and broadband technology

Participants express the need for improved telecommunications and technology systems that ensure coverage and functionality across the island. This includes broadband access as well as cell phone service, with an emphasis on the importance of public safety and readiness in times of emergencies or disasters. Concerns are expressed about the current gaps in service and the need for comprehensive coverage. The inadequacy of telecommunications coverage across the island and the need for robust power supply and redundancy are also highlighted.

Stormwater management

Other comments emphasize the importance of updating and maintaining infrastructure with a focus on multimodal transport, environmental considerations, and adherence to best practices such as low-impact development (LID) and Smart Growth principles to help manage stormwater. Vegetated shoulders are suggested over grassed shoulders for ecological benefits, and the need for proper maintenance to ensure ecosystem services is noted. There is a call for revising county codes to reflect current best practices including stormwater management, roadway and

landscape standards, building code, and site planning that support green and sustainable development. Comments suggest utilizing road rights-of-way and identifying county parks for green infrastructure demonstration pilot projects to model and promote sustainable design.

6. Community Engagement

There is a shared perspective on the need for better information and engagement in decision-making processes and policy implementation. Comments suggest that public awareness regarding utilities and safety measures, particularly after disasters, are critical. Recommendations include better education on proposed energy solutions and effective communication strategies between the county and the general population. Harnessing the idea of collaboration through partnerships among government, nonprofits, for-profits, and community groups is seen as a means to tackle complex challenges and improve service effectiveness. Several comments reflect on the need to improve community engagement through cultural awareness and increasing involvement among indigenous communities. The role of communities should be emphasized in the planning process as well as the impact of land use policies on sustainability and health.

Policy and regulation clarity

Comments indicate that current plans and regulations may lack clarity and specificity, leading to confusion or inadequate action. Suggestions include clarification of terms such as 'zone of influence' for wells, detailed criteria for water supply variances, and explanations for acronyms and phrases in policy documents. There is also a call for better ordinances to oversee land development activities.

Equity and accessibility of utilities

Comments show concern regarding the equitable distribution and accessibility of utilities such as broadband, water, and wastewater systems. The discussion includes the need for public access to water sources, public utilities with accessible restrooms, and addressing the inequity highlighted by similarities between wastewater lines and poverty maps. The commentary also emphasizes ensuring equal treatment and priority for low-cost solutions.

Collaboration and partnerships

Several comments mention the importance of collaboration and partnerships as a strategy for county planning and infrastructure development. This includes leveraging public-private partnerships to meet goals, coordinating with different government levels, and adopting a collaborative approach to address social challenges more effectively.

7. Land Use Planning

Careful land use planning is key to ensuring reliable and equitable access to public utilities. Comments discuss the designation of lands for specific purposes, such as parks and recreational spaces, suggesting that areas should be mapped and possibly considered for multi-use including environmental and community benefit. There is a recognition of the need for regional-scale context in planning for urban and non-urban centers. Comments reflect a focus on how urban development and land use are planned in the context of utilities and services. Key points include the identification of valuable end-uses for land, prioritization and coordination of planning documents, development clustering for utility cost reduction, consideration of high-density areas, and the importance of matching water supply with growth in urban areas. Financial

models and public-private partnerships are suggested as tools for managing developments. Suggestions for policy adaptations and strategic planning are noted, including the idea of tailoring policies to fit Hawai'i's unique context rather than borrowing from continental models. Planning should consider procedural updates and involve innovative projects to serve as demonstrations for green infrastructure.

Comment	Page Number (in the online Konveio platform)
KS comment: Please clarify how Action 23.i relates to wastewater (ie. sewage) and reuse of wastewater. We agree this program has the potential to assist large landowners with continue forest stewardship activities and promotes the protection of important watersheds. But need clarity on its relationship to wastewater treatment and reuse	103
KS comment: Resulting cost burden could unfairly harm landowners and the split of responsibility between public and private entities should be considered under this guideline.	115
Clarification is needed on when private treatment systems are not required (e.g., definition of feasibility and compatibility as it relates to connection to nearby treatment plants and the County's long-range plans).	108
KS comment: Definitions and requirements surrounding water neutrality could make projects unfeasible and hinder development and economic stimulus to the local economy. Clear and standardized definitions will help ensure fairness in implementation.	102
Consider how energy needs will be met by shifting populations and ensure power generation facilities and the grid can sustain such a future.	95
After land use the second most important resource that sustains life is our water. Each island excluding Kaho'olawe resides over a functioning aquifer which provides sufficient fresh water along with rain runoff, streams and rivers which must be preserved and managed efficiently to support and sustain life. Consumption must be regulated along with population density as they are directly proportionate with waste both solid and liquid; in addition facilities around the world have been designed to process wastewater producing biofuel as well as sanitation facilities that process solid waste generating electricity and compacted ash as a byproduct for suitable housing material while minimizing landfills as the primary method of waste management minimizing aquifer pollution, also directly proportionate to population density. Alternatives to imported goods must also be addressed and regulated to minimize the generation of solid waste.	106
The order should be changed to reflect priorities: 1.Introduction 2.Drinking Water 3.Wastewater 4.Stormwater 5. Electricity 6. Telecommunications	90
Add-strengthen grubbing and grading ordinances to require permits for areas smaller than one acre. Put a computer chip on every earth-moving piece of equipment so the County can detect violations. Stop relying on complaints to discover violations-this pits neighbors against each other and puts an unfair burden on non-experts.	111
Amend HCC, Section 21-26-l(a) requiring "all sewer extensions shall be approved by resolution of the County council" to read, "all sewer extensions outside of Urban Growth Areas shall be approved by resolution of the County council." p 109 This should be deleted and County Council oversight should be maintained.	110
3.5: Wastewater Treatment and Reuse p. 105 Water recycling should be encouraged wherever possible.	106
Develop criteria and standards for all variances in water supply p 103 "Variances in water supply" should be explained.	104
There should be standard requirements for new water wells so parts are interchangeable. Presently, different developers install different types of wells. So when repairs are needed, parts are not interchangeable and must be special ordered, often with lengthy delays.	103
New water bottling plants should be prohibited to prevent depletion of the aquifer.	103
Drinking-Water Prioritization 23.10 Water demand projections shall include all consumptive and non-consumptive demands. p 101 Definitions of "consumptive" and "non-consumptive" should be included.	102

Policies 22.5 Siting of new communications facilities shall comply with performance standards and site co-location as stated in HCC, Section 25-4-12 Note: HCC update will include details p 98 The acronym "HCC" should be explained. The meaning of "HCC update will include details" should be clarified.	99
Stormwater p 92 Add objectives to increase the amount of water percolating down to the aquifer, such as rain gardens, more vegetation (especially native species), and avoidance of hard surfaces that cause water to run off swiftly.	93
Full Value Pricing of wastewater services. p 91 Explain "Full Value Pricing".	92
Table 25: Public Utility Opportunities Be a net power producer with hydrogen and waste management. p 91 The meaning of "Be a net power producer with...waste management" should be clarified. The plan should include the serious concerns that have been raised about hydrogen: Hydrogen measure supports an 'alliance' between county, two other cities By MICHAEL BRESTOVANSKY Hawaii Tribune-Herald / Thursday, May 4, 2023 https://www.hawaiitribune-herald.com/2023/05/04/hawaii-news/hydrogen-measure-supports-an-alliance-between-county-two-other-cities/ Despite serious misgivings, the Hawaii County Council on Wednesday signed onto a pledge by Mayor Mitch Roth to work with two other cities to develop hydrogen infrastructure. Roth currently is in California, where he intends to sign a memorandum of understanding with government officials from Lancaster, Calif., and the county's sister city, Nami, Japan, to form a Pacific Hydrogen Alliance. The partnership, sponsored by the U.S. Department of Energy, will promote the development of hydrogen technology and facilitate the sharing of practices to reduce dependence on fossil fuels between the participating cities. But a resolution supporting Roth to make that agreement ruffled council members' feathers. The resolution was scheduled to be heard by the council Wednesday without having passed through any council committees - two days before Roth is set to sign the memorandum. Kahala Councilwoman Cindy Evans initially said she couldn't support the resolution because it was too vague for the council to endorse on such short notice. The resolution is barely two pages long, with the most pertinent clause simply stating, "this agreement will establish the 'Pacific Hydrogen Alliance' (PHA) where parties will work together to implement hydrogen project deployment to advance towards a hydrogen society." "If it's not clear what we're agreeing to, then it should be delayed and brought back when there's more clarity," Evans said, adding that it was "very strange" the council didn't receive the resolution weeks ago. Kono Councilwoman Rebecca Villegas agreed, saying she was uncomfortable with the urgency with which the council was apparently expected to pass the resolution. "This is just poor planning and scheduling," Villegas said. "We have to authentically prove that we're being as transparent as possible." Doug Adams, director of the county's Department of Research and Development, appeared via video at the meeting and emphasized that, as a resolution, the document does not bind the council to provide funding or perform or endorse any particular action by the county. Despite being nonbinding, the resolution received a substantial amount of written testimony from residents opposed to the concept, to the extent that Council Chair Heather Kimball opened the meeting with an exhortation for people to remain civil in their testimony. "This resolution/MOU is the county stating that we have decided to become a 'hydrogen society,' which we absolutely have NOT," wrote Honokaa resident David Hunt. "It is positioning the county to receive funding and support to embark on this path when we never committed to it in the first place. It becomes increasingly difficult to unwind ill-conceived initiatives once funds are accepted. This commitment to hydrogen could well lead to missed opportunities regarding other more appropriate energy solutions." Much of the other testimony the council received on the matter - all of which was negative - drew comparisons to a previous resolution that was passed in March, which pledged to have all municipal waste converted on-island into clean materials by 2026, following meetings between council members and a private company that claims to be able to meet that goal. Several form letters submitted for Wednesday's meeting stated that both the hydrogen and the waste management resolutions indicate that the council often "rushes to 'innovate' without a diligent process." Other letters also raised environmental concerns tied to the generation and storage of hydrogen, adding that	92

solar power seems to be a more viable green energy source based on current technologies. But despite their discomfort with the resolution, the council largely voted to pass it, with only North Kono Councilman Holeka Inaba voting against it. An emotional Hilo Councilwoman Jenn Kagiwada said she felt the council had little choice but to rubber-stamp the resolution, because Adams had said that delaying the signing at this stage would be a "black eye" on the county. Kagiwada asked Adams to convey the council's displeasure to the mayor. [underlines added] From letter from Sierra Club, Hawai'i Island Group, to Department of Energy, July 16, 202. The County of Hawai'i administration did not engage with the community, and in fact acted counter to the wishes of residents testifying on county council Resolution 1.63-23 (resolution) authorizing the mayor of Hawai'i County to sign the memorandum of Understanding (MOU) on May 5, 2023 with the City of Lancaster; California and Namie Town, Japan to form the Pacific Hydrogen Alliance. This occurred despite these guidelines from the Office of Clean Energy Demonstrations: "The H2Hubs will also include substantial engagement of local and regional stakeholders, as well as Tribes, to ensure that they generate local, regional, and national benefits. H2Hubs will be expected to carry out meaningful community and labor engagement. .. (1) As well as this DOE requirement: "Jeremy Ortz, a DOE [US Department of Energy] spokesman ...[was] pointing out that applicants [for hydrogen hub coalitions] were required to include a plan describing their engagements with community and labor groups ..." (2) The MOU was authorized by Resolution 163, passed by Hawai'i County Council on May 3, 2023. (3) Before May 3, Mayor Mitch Roth posted on Instagram that he was in Lancaster to sign the IVOU, according to one County Council member. (4) Also before May 3, the City of Lancaster website stated it "is now adding a mentee - the County of Hawai'i". (5) Resolution 163 came before the Council for a vote only two days before the MOU signing ceremony. The IVOU was not formally submitted to the council and the public until it was attached to Communication 269.001, dated one day before the public hearing and vote on Resolution 163. This may have been a violation of the Hawai'i State Sunshine Law because of inadequate notice. (6) Few people would agree there was sufficient time to decide whether the county should "advance towards a hydrogen society" and make "a deep transition to hydrogen" as stated in the IVOU. (6) All nine council members objected to the rushed timeline. (attached: minutes (excerpts) of May 3, 2023 County Council meeting) As for the community, there was less than one week's notice of the council agenda and the resolution. Despite the short notice, "the resolution received a substantial amount of written testimony from residents opposed to the concept...". In fact, all public testimony received was negative. (attached: Hydrogen resolution irks council, Hawai'i Tribune-Herald, May 4, 2023) Regardless, the MOU claims that the county has "a desire for a deep transition to hydrogen". (6) County administration staff told council it would be a "black eye" for the County if the MOU was postponed, creating pressure for them to vote immediately. (7) The importance of the MOU was downplayed to council members and the public. Council chair Heather Kimball e-mailed to residents on [Vay 1 that "the resolution is merely a formality." County administration staff told council "...the IV/OU (memorandum of understanding) provides no obligation on the county, particularly any financial obligation." (8) However, it would be difficult to live up to the MOU with no financial investment, since the VIOU says the county "agreed on a mission to strengthen hydrogen deployment" and the VIOU envisions a "hydrogen society" and "a deep transition to hydrogen". In addition, county administrative resources would be needed. (6) Further, it was not publicly disclosed during the council discussion of the resolution that Hawai'i county had already obtained two hydrogen-powered buses and had plans to acquire three more hydrogen-powered buses. comments from a citizen The only potential buyers for hydrogen on Hawai'i Island are a few hydrogen buses. There are few buyers elsewhere. It's expensive to store and ship hydrogen. The Navy needs jet fuel. Not hydrogen. Efforts at planes flying on hydrogen are just barely getting started. Many military jets are older as they keep them going for decades with minor modifications over time. These cannot be retrofitted for hydrogen. The market for transportation has overwhelmingly gone to batteries rather than hydrogen fuel cells or hydrogen combustion. Solid state batteries have been introduced and expected to hit mass production as they offer longer range, faster charging, and no dendrite formation meaning much longer service life and no fires. This will crush efforts at

hydrogen vehicles. Elon Musk of Tesla has announced a million-mile battery technology. That means batteries that will just be recycled, greatly lowering cost and the need for expensive lithium. Toyota, long a hydrogen promoter, has announced a new solid state battery with a range around 900 miles. Even the long haul trucking companies which have designed and tested hydrogen vehicles are instead focusing on batteries. Tesla's new semi is blowing away the competition with major commitments. Not only are these trucks faster going up hills, but there are huge maintenance savings due to reduced parts. Fleet owners want those savings. National Sierra Club policy: https://www.sierraclub.org/articles/2022/01/hydrogen-future-clean-energy-or-false-solution The Sierra Club only supports the use of green hydrogen- hydrogen made through electrolysis that is powered by renewable energy. Even in the case of green hydrogen, other conditions must be met for its use to be a good idea: 1. Green hydrogen is a promising solution only for uses that cannot otherwise directly rely on clean electricity, which is much more efficient. 2. Green hydrogen should not be used to justify a buildout of facilities that otherwise increase pollution or fossil fuel use. 3. If green hydrogen is being used, the goal should be to switch to 100 percent green hydrogen once the technology is available. We should not support projects that label themselves as "sustainable" because their fuel source includes a small fraction of hydrogen when the lion's share of it is frocked gas. ... There are some ways in which green hydrogen use could be part of getting to zero emissions economy- wide, but they are likely most appropriate for hard-to-decarbonize sectors, like long-haul freight trucking. Green hydrogen has the potential to help store intermittent renewable energy; be converted to a "zero- emissions" fuel for maritime shipping and aviation; be used in high-heat industrial processes that cannot otherwise be electrified; or, be used as a feedstock in some industrial processes, like steel production.	
Wastewater p 89 Alternatives to sewers and septic systems should be considered, such as toilets that use little or no water, and water recycling ..	90
Drinking Water p 89 The County, In cooperation with State and Federal government, should support people on catchment with information about system design, construction, operation, troubleshooting, and repair, including readily accessible information and assistance for safeguarding health.	90
Any large infrastructure expansions are paid for by developers and the costs are not to scale for financing. P89 The meaning of "costs are not to scale for financing" should be clarified.	90
Water recycling should be encouraged wherever possible. 24.n Amend HCC, Section 21-26-1(a) requiring "all sewer extensions shall be approved by resolution of the County council" to read, "all sewer extensions outside of Urban Growth Areas shall be approved by resolution of the County council." p 109 This should be deleted and County Council oversight should be maintained. This is an overreach of the government.	110
"Variances in water supply" should be explained.	104
There should be standard requirements for new water wells so parts are interchangeable. Presently, different developers install different types of wells. So when repairs are needed, parts are not interchangeable and must be special ordered, often with lengthy delays	103
New water bottling plants should be prohibited to prevent depletion of the aquifer.	103
Be a net power producer with hydrogen and waste management. p 91 The meaning of "Be a net power producer with...waste management" should be clarified. Add what are the benefits to hydrogen fuel, how will vehicles be retrofitted to carry this technology?	92
The County, In cooperation with State and Federal government, should support people on catchment with information about system design, construction, operation, troubleshooting, and repair, including readily accessible information and assistance for safeguarding health. Wastewater p 89 Federal government should be removed. This could be a simple information packet that supports off grid lifestyles. Alternatives to sewers and septic systems should be considered, such as toilets that use little or no water, and water recycling.	90

The planning department should take into consideration that over 1,900 scientists from around the world have signed a declaration that there is no climate emergency. Climate change has been occurring on this planet all along, this is science. I'm sorry I can't share with you a link to watch a video on this very subject. "WASTE-TO-ENERGY" Two "waste-to-energy" proposals (2008 and 2015) for Hawai'i Island were rejected after months of divisive debate. It was concluded the island doesn't generate enough garbage to make it cost-effective. O'ahu taxpayers are paying penalties to H-Power because O'ahu can't generate enough waste to fulfill the contract. 4. While some advanced waste treatment technologies are promoted as alternative energy producing, the energy conserved by recycling and composting the source materials exceed the amount of energy produced by these technologies by three to five times. Incineration is a form of Destructive Disposal via combustion or thermal conversion/treatment, using high temperatures of discarded materials into ash/slag, syngas, flue gas, fuel, or heat. Incineration includes facilities and processes that may be stationary or mobile, may recover energy from heat or power, and may use single or multiple stages. Some forms of incineration may be described as resource recovery, energy recovery, trash to steam, waste to energy, energy from waste, fluidized bed, catalytic cracking, biomass¹⁵, steam electric power plant (burning waste), pyrolysis, thermolysis, gasification, plasma arc, thermal depolymerization or refuse-derived fuel.	95
Collaborate with government, private and nonprofit agencies, and other STAKEHOLDERS (you don't explain who these Stakeholders are) to monitor impacts that may be specific to Hawai'i County due to its unique exposure to climate change and sea level rise impacts. Hawaii County needs to first and foremost collaborate with the general public. Transparency is needed on exactly how government agencies, private corporations, and nonprofit agencies are involved and explain who these "stakeholders" are!	97
7)Composting - composting should not only be done on farmland but people should be composting all of their green waste on their own properties. I've been doing it for 35 years and I live on 8,000 Sq ft in Kona.	108
5)Energy - you mention all the ways to conserve Energy yet you NEVER talk about using clothes lines instead of electric dryers in areas like Kona where sunshine is so abundant. Why? Why are we allowing the use of electric dyers in Kona?	95
4)Stakeholders - please provide a clear definition as to WHO they are	97
ARTICLE 11, SECTION 8 OF HAWAII STATE CONSTITUTION OF 1978 NUCLEAR ENERGY Section 8. No nuclear fission power plant shall be constructed or radioactive material disposed of in the State without the prior approval by a two-thirds vote in each house of the legislature. [Add Const Con 1978 and election Nov 7, 1978] You may or may not be aware that there is a campaign underway for the preposterous idea to nuclear-ize Hawaii, as evidenced not only by the stricken language proposed above, but also evidenced by the three related bills during the 2024 state legislative sessions. One of them proposed to strike the Constitutional language above to ban nuclear fission. Luckily, all three bills died in session. Hawaii is not the only state that is now being pushed to nuclear-ize. It is a national and global trend, trickling down from decisions being made by the World Economic Forum. (see https://www.weforum.org/agenda/2024/01/nuclear-energy-transition-climate-change/). Predictably, the WEC -- which has interests ONLY in continuing down the current unsustainable and nihilistic path -- cites nuclear power as the answer to our climate-change woes. No regard is given to risk of accidents or waste-disposal issues, which never go away. Fukushima leakage is forever. Radioactivity in the Marshall Islands is forever. If we are working for sustainability, nuclear is NOT the answer! Nuclear is the answer only for the multi-billionaire members of the World Economic Forum who plan to hide out in underground bunkers when the cataclysm hits. Just because they have the money to pour into such destructive "opportunities" that ravage precious local communities and ecosystems like ours, does not give them the right to do so. Even so-called "micronuclear" reactors generate waste of which even the tiniest amount is deadly for tens of thousands of years. Waste management has been a problem in Hawaii for	95

decades. If we can't even manage used paper, plastic and garden trimmings, how the hell are we expected to handle radioactive waste from a nuclear power plant? What is our community to do with that waste? Take it down to Mr. K's recycling in Hilo??? The County already discontinued recycling plastic and paper, so Mr. K's fills in where the County left off. I hope someone from the County has talked to Mr. K's about receiving radioactive nuclear waste!	
Identify County Parks and Recreation sites for green infrastructure demonstration projects. Comment: Also utilize road rights of ways for demonstration pilot programs	115
Develop a monitoring and evaluation program for impervious surface coverage. Comment: "Add ""and configuration."" Low Impact development principles also call for the shapes and location of impervious and pervious areas to be discontinuous so that storm runoff from impervious areas can be received by appropriate sized adjacent pervious area. This minimizes generation of storm runoff and erosion and provides for better infiltration and groundwater recharge."	114
Maintain the Department of Public Works Storm Drainage Standards to reflect current data and to incorporate strategies and standards of green infrastructure and low-impact development. Comment: ""Add ""and upgrade""	114
The "Drainage Master Plan for the County of Hawai'i" should be updated every 20 years for urban centers to incorporate new studies and reflect newly identified priorities. Comment: "Not just urban centers. Need to look at regional scale context and identify areas that provide flooding buffers, natural water quality treatment i.e. wetlands, riparian edges, muliwai, etc. for these areas provide valuable ecosystem services way more effective than engineered solutions. Consider utilizing these areas as open space, recreation zones with trails that serve not only environmental function but cultural/community benefit.	113
Encourage grassed shoulder and swale roadway design where climate and grade are conducive. Comment: Suggestion. Vegetated shoulder rather than grassed. Grass/lawn is not the only option. Important to note that these policies need to be accompanied by capacity to properly maintain to ensure ecosystem service benefit	113
Green infrastructure is crucial for stormwater management, as it captures and absorbs runoff, reducing the volume and rate of runoff. Comment: And provides water quality treatment i.e. filtration of sediment and bioremediation of toxic pollutants.	113
Encourage on-site water reuse solutions for large developments. Comment: "Require,	109
Plans for wastewater reclamation and reuse for irrigation and biosolids composting (remaining solids from the treatment of wastewater are processed into a reusable organic material) shall be utilized where topographically feasible and needed for landscaping purposes. Comment: "While it is less expensive to use gravity flow to distribute reclaimed wastewater, we perhaps should not limit reuse to ""topographically"" appropriate areas. We have the technology to use sustainable energy sources such as wind, solar to pump reclaimed wastewater for reuse. All the more critical to ensure proper location of development and the associated waste/wastewater treatment facilities as part of an integrated plan, not just for urban areas but rural villages and our agricultural lands."	109
As communities generate wastewater through various sources such as residential, commercial, and industrial activities, effective treatment is necessary to remove harmful pollutants and contaminants before the water is discharged back into the environment. Improperly treated wastewater can have detrimental effects on marine ecosystems, coastal waters, and freshwater resources, jeopardizing both human and ecological health. Comment: "Recognize that the fact that combining waste with water and then having to separate, treat and convey the wastewater is a very inefficient and expensive process. At least consider at appropriate scale other alternative systems that avoid combining waste with potable water. As with recycling, instead look to view waste as resource with beneficial use	107

Maintain the water master plan to consider water yield, present and future demand, alternative sources of water, guidelines, and policies for the issuing of water commitments. [project I DWS I ongoing] Comment: Need to ensure that the Water master plan is in sync with the GP and COPS and other community plans so DWS actions are coordinated with the County's plans instead of the status quo of meeting their existing customers' needs and/or those who can afford to develop and pay for new water infrastructure.	104
The Hawai'i Electric Light Company, Inc. (HELCO) supplies electricity for Hawai'i Island and operates major switching stations (used to transfer the flow of power between different transmission circuits) at critical locations around the island. These transmission switching stations provide greater system flexibility and increase system reliability in supplying power to the various distribution substations and eventually, to customers. Distribution substations, which transform voltages to distribution voltages, are also located island-wide in proximity to communities and other developments. Comment: Wouldn't more localized/smart grids reduce the loss of power inherent in distributing electricity over long distances?	95
79.P. 94 Encourage the clustering of developments to reduce the cost of providing utilities. Comment: and higher density,	95
Public Utilities section on Stormwater: •Prioritize resiliency measures that support climate change impact scenarios. •Regularly amend County codes to be as current and innovative as possible •Comment: "suggest adding a priority action item that identifies specific County Codes need to be updated. Much of our current codes as it relates to stormwater are woefully outdated. For example our roadway and landscape standards and building code site planning standards need to be revised to reflect current best practices such as Low Impact Development (LID), green/sustainable standards, Smart Growth principles, etc as appropriate to our island environment."	93
Encourage groundwater recharge through on-site practices. Comment: "Not just through on-site practices. Encourage groundwater recharge PERIOD. If you want to define how, then include all scales from sound regional scale master planning down through site specific best management practices such as Low Impact Development strategies."	93
Prioritize sewer for sensitive urban areas. Comment: "Not just sensitive urban areas. We have sensitive areas in rural and residential areas that are no longer appropriate to rely on cesspools and even IWSs. Also need to ensure directing upgrades and new wastewater infrastructure to those desired areas as identified in the GP and COPS."	93
Here ye hear ye!! YES...The County should provide easy approval for catchment & recycled water systems for ag use.	110
HELCO was only given a 25 year charter by The Queen. They should be disbanded and an open competitive process should be worked on for some other organization to take control of our power grid...They have demonstrated lack of concern for public safety many times!!!	95
You might want to review and revise the wastewater systems management to reflect the recent AOC agreement with the EPA regarding repair and upgrading or replacing several WWTP's deemed to be polluting the environment and nearshore waters. Malama pono	106
What do private interests look like in terms of water? We need to stop bottling local water, for one thing.	102
Likewise, the state has a responsibility to make sure water is accessible. We need to ensure there are free spaces for folks to have access to potable, running water (in the case of emergencies). It would also be wise to create public showers in urban areas, so that houseless people can bathe and folks who have homes but are having trouble with running water can also bathe.	101
Geothermal remains contentious...	95

Public utilities need to include fully-accessible, code-free bathrooms. Gender-free bathrooms would also improve overall accessibility. Spaces with public showers would also be helpful, for houseless individuals as well as folks experiencing issues with running water.	89
Comment: There is a fine balance that good design finds between these measures and multimodal elements.	114
Land use in our area is limited by the lack of water, so lifting the DWS water meter moratorium in No Kohala is needed for our sustainability.	90
Who mandates which are allowed to have a public water line and who does not? There needs to be a lifting the DWS water meter moratorium in No Kohala.	90
Updates guidelines to include lifting the DWS water meter moratorium in No Kohala. Mahalo!	90
Equitable distribution means lifting the DWS water meter moratorium in No Kohala.	89
P. 91. Be a net power producer with Hydrogen and Waste Management. This directive should not be included in the General Plan. It is understood by the administration and much of the Public that the intent to use Hydrogen pervasively as energy storage mechanism, and various waste to energy strategies, whether by burning or a pyrolysis mechanism, are controversial and thus are of questionable propriety in such a 'foundational level' policy document as the General Plan. In evidence of this controversy I cite a recent Tribune Herald headline, "National Expert Questions County Energy Policy". The expert's comments were directed toward countering proposals for extensive use of hydrogen for energy storage and waste to energy proposals. The County has presented no response of which I am aware to the issues raised in that presentation. Until clarity is given as to how Hydrogen will add to our net power production or storage, and what technology will be embraced in converting waste to energy, placing hydrogen energy paradigms and waste management into County energy policy direction for the 20+ year interval until 2045 is inappropriate. There is no question that controversy exists over these energy strategies. It is not inappropriate that the current administration would take initiative toward careful examination and even endorsement of a perspective on these strategies. However, before enshrining their perspective as foundation for County policy over a 20 year period, a pedestal that the General Plan offers, that administration must undertake explanation and education of the Public of the desirability of their endorsement. None of this has taken place. The administration has not explained to the public how Hydrogen will be used in a 'net power' strategy. The inefficiency of Hydrogen fuel cell for vehicular power is well known and is approximated at one-half to one-third the number of vehicular miles traveled per life-cycle energy consumed when compared to battery electric vehicles. A vehicular hydrogen infrastructure would be exceptionally expensive and a commitment which the 2000 Hydrogen vehicles as opposed to over 900,000 electric vehicles (and rapidly becoming less) cannot justify. The inefficiency and infrastructure demands have led to abandonment of the vehicular hydrogen model. Whether Hydrogen should be visualized as back up grid storage, with longer capacity than current battery technology, is questionable and the subject of significant debate, particularly with the advance in battery storage capability. Any 'Green Energy' produced on this island should be applied directly to the grid with battery back up before diverting it to 'storage' in the form of Hydrogen production at a significant loss of efficiency for grid purposes. Producing Hydrogen from, for instance, virtually unlimited geothermal might make sense as an export product, but for grid back up on this island converting 'firm' geothermal energy to Hydrogen would be superfluous as well as inefficient. And geothermal may become a realistic energy resource on all islands. Hydrogen may have certain acknowledged applications in replacement of fossil fuel power such as maritime shipping, fertilizer production, possibly mass transit or trucking, and high heat applications such as foundry or steel production. These applications are in contention also. However, before Hydrogen is advocated as a basis for societal 'net power production' at the level of directives of the General Plan, the administration should be transparent and vigorous in its explanation to the Public of how this application of Hydrogen's potential will take place, well before its endorsement in the General Plan. Waste to energy strategies need clarity for the Public also. Perhaps the administration has been	92

convinced of the desirability of a waste conversion strategy involving a pyrolysis process. This has been opaque to the public consequent to a non-disclosure agreement made by the County. However that opacity should preclude this process as being foundation for Waste to Energy commitment enshrined in the General Plan, which should be available to the assent of the Public. If the Waste to Energy commitment in the Draft Plan (I use the term commitment because the General Plan should not be a document of Advocacy) is the more traditional burning of trash (most likely at the Pepeekeo Hu Honua facility) then this needs to be clarified. It is my limited second hand understanding that the Hawaii County Council has twice considered and rejected endorsing proposals of a waste to energy strategy, once in the Kim administration and once in the Kenoi administration. It would not be appropriate to place this in the General Plan if such controversy exists. Its presence there without explanation and justification should lead again to rejection of the Draft Plan by the County Council.	
Changed "updated every 20 years" to "revised as needed"	113
shall	103
What is an Individual Wastewater System? Is it a cesspool? Or a septic system? Or are both called IWS? The issue with all cesspools in the county unable to be converted to septic drain fields by the deadline due to lack of acceptable designers & approved contractors must be addressed.	91
The State of Hawaii and University of Hawaii have been pushing for geothermal development since the 1070's. There is even an expedited permitting scheme on the State of Hawaii website to try and entice applicants but NOBODY has signed up since Puna Geothermal Venture in the mid-1980's for a reason...Geothermal is very expensive to implement and the for-profit geothermal companies don't want to use their own funds and have it turn out like PGV - 35 years and they only made their 38MW quota one year out of that entire time, 2017...PGV has been allowed to operate without having to be responsible for emergency notifications or evacuations of area residents - all of that is left up to the taxpayers and Hawaii County Civil Defense Agency. The State of Hawaii has had an "undersea cable" program since the 1080's, which was stopped in 1995 for lack of anyone providing an Environmental Impact Statement. The area where the proposed geothermal development to power Oahu through the undersea cable was covered in lava in 2014.PGV was offline for over 2 years after the 2018 Kilauea eruption - not one MW was produced for HELCO, and even now, 6 years after the eruption, PGV can't even produce their contract, in fact, they are operating at reduced capacity due to changes underground since the 2018 lava flow and can't seem to get it together and produce power when needed. Geothermal is not renewable energy without constant drilling of wells or redrilling and/or repairing existing wells due to the tectonic activity in the Lower East Rift Zone. All the equipment and chemicals and supplies needed for Puna Geothermal Venture are shipped to Hawaii via Israel, over 2 oceans and through the Panama Canal and then have to be unloaded and shipped past Keaau and Pahoa schools on the one and only highway in the entire Lower Puna District, Highway 130.	90
Explore why geothermal is so controversial - look at the Hawaii Judiciary Website and see that the residents have had to resort to the legal system to try and obtain relief as Hawaii laws and rules do not call for adequate up-to-date monitoring of deadly Hydrogen Sulfide or seismic monitoring of a known generator of earthquakes on an active volcanic rift zone	90
Everyone should be treated equally, giving priority to simple low cost solutions and projects.	109
I think this policy is preventing development of new water sources. It's nice to have a backup, but not necessary.	102
There's nothing wrong with sprawl! I much prefer it to the 1 million people squashed together in a square mile on the mainland. It's unhealthy. The county should reevaluate it's views in this area.	91
Amend HCC, Section 21-26-1(a) requiring "all sewer extensions shall be approved by resolution f the County Council" to read "all sewer extensions outside of Urban Growth Areas shall be	110

approved by resolution of the County Council" Comment: Please explain the motivation for removing from the Council's authority the examination and ratification by Resolution the extension of sewer extensions within the Urban Growth Areas. Please submit this proposal to County Council for ratification before placing it in the Draft General Plan. Comment: Please show a mapping of any changes in Urban Growth Areas on the present Draft General Plan 2045 Land Use Maps from the previous 2005 Land Use Maps	
The County operates municipal sewerageComment: Add Honokaa to the list of county operated municipal sewerage.	106
Explore the feasibility of incentive methods such as property tax dedications, conservation easements, or transfer of development rights to protect the defined zone of influence of existing or proposed public and private wells. Comment: Please clarify the meaning of 'zone of influence' of wells. Please give examples of where and how this might be applied. How is the defined zone of influence of existing wells currently protected. Suggest: Ensure water distribution systems supply community perimeters with water availability to support intensive grazing for the purpose of firebreak and fuel break, or support of agriculture, or evens supporting community gardens for purpose of fire break and fuel break for retarding potential wildfire. Ensure the hardening of those systems against collapse from engulfing wildfire.	103
Collaborate with government, private and nonprofit agencies, and other stakeholders to remove regulatory barriers and seek funding to complete and improve the islands fiberoptic loop in an environmentally and economically appropriate manner. Comment: Please describe what regulatory barriers are being suggested for removal.	99
Pursue financial modifications to provide creative funding for significant expansion of water systems to reach new customers in non-service areas. Comment: Please describe the financial modifications and creative funding options being suggested here. Unless these are novel ideas there are probably reasons that such ideas have not gained traction.	92
This directive should not be included in the General Plan. It is understood by the administration and much of the Public that the intent to use Hydrogen pervasively as energy storage mechanism, and various waste to energy strategies, whether by burning or a pyrolysis mechanism, are controversial and thus are of questionable propriety in such a 'foundational level' policy document as the General Plan. In evidence of this controversy I cite a recent Tribune Herald headline, "National Expert Questions County Energy Policy". The expert's comments were directed toward countering proposals for extensive use of hydrogen for energy storage and waste to energy proposals. The County has presented no response of which I am aware to the issues raised in that presentation. Until clarity is given as to how Hydrogen will add to our net power production or storage, and what technology will be embraced in converting waste to energy, placing hydrogen energy paradigms and waste management into County energy policy direction for the 20+ year interval until 2045 is inappropriate. There is no question that controversy exists over these energy strategies. It is not inappropriate that the current administration would take initiative toward careful examination and even endorsement of a perspective on these strategies. However, before enshrining their perspective as foundation for County policy over a 20 year period, a pedestal that the General Plan offers, that administration must undertake explanation and education of the Public of the desirability of their endorsement. None of this has taken place. The administration has not explained to the public how Hydrogen will be used in a 'net power' strategy. The inefficiency of Hydrogen fuel cell for vehicular power is well known and is approximated at one-half to one-third the number of vehicular miles traveled per life-cycle energy consumed when compared to battery electric vehicles. A vehicular hydrogen infrastructure would be exceptionally expensive and a commitment which the 2000 Hydrogen vehicles as opposed to over 900,000 electric vehicles (and rapidly becoming less) cannot justify. The inefficiency and infrastructure demands have led to abandonment of the vehicular hydrogen model. Whether Hydrogen should be visualized as back up grid storage, with longer capacity than current battery technology, is questionable and the subject of significant debate, particularly with the advance in battery storage capability. Any	92

'Green Energy' produced on this island should be applied directly to the grid with battery back up before diverting it to 'storage' in the form of Hydrogen production at a significant loss of efficiency for grid purposes. Producing Hydrogen from, for instance, virtually unlimited geothermal might make sense as an export product, but for grid back up on this island converting 'firm' geothermal energy to Hydrogen would be superfluous as well as inefficient. And geothermal may become a realistic energy resource on all islands. Hydrogen may have certain acknowledged applications in replacement of fossil fuel power such as maritime shipping, fertilizer production, possibly mass transit or trucking, and high heat applications such as foundry or steel production. These applications are in contention also. However, before Hydrogen is advocated as a basis for societal 'net power production' at the level of directives of the General Plan, the administration should be transparent and vigorous in its explanation to the Public of how this application of Hydrogen's potential will take place, well before its endorsement in the General Plan. Waste to energy strategies need clarity for the Public also. Perhaps the administration has been convinced of the desirability of a waste conversion strategy involving a pyrolysis process. This has been opaque to the public consequent to a non-disclosure agreement made by the County. However that opacity should preclude this process as being foundation for Waste to Energy commitment enshrined in the General Plan, which should be available to the assent of the Public. If the Waste to Energy commitment in the Draft Plan {I use the term commitment because the General Plan should not be a document of Advocacy} is the more traditional burning of trash (most likely at the Pepeekeo Hu Honua facility) then this needs to be clarified. It is my limited second hand understanding that the Hawaii County Council has twice considered and rejected endorsing proposals of a waste to energy strategy, once in the Kim administration and once in the Keno'i administration. It would not be appropriate to place this in the General Plan if such controversy exists. Its presence there without explanation and justification should lead again to rejection of the Draft Plan by the County Council	
I noticed Kaua'i County has a section in their 2018 General Plan about partnerships. I wonder if the Hawai'i County General Plan might benefit if the Draft Plan were refer to partnerships. Recent case studies in San Francisco (source: The New Yorker) and Houston (source: The New York Times) demonstrate the effectiveness of partnerships in addressing complex social challenges like houselessness, substance abuse, and economic rejuvenation. If the Plan omits partnerships, Hawai'i County might be missing out on a useful tool that could help the County reach its goals more quickly and with fewer resources, and enable members of the community to contribute to he effort to realize the County's goals. With partnerships, the County can magnify its impact by coordinating disparate government programs and non-profits and for-profits and community groups so everyone may work more synergistically in the space where everyone's goals overlap. This helps all parties share information and resources, reduce redundancy, reduce gaps in service, and improve the effectiveness of programs by improving continuity for customers when they move between programs.	92
look to ICELAND they got it figured out! Hydrogen cars/geothermal electricity.	92
Definition please of "green infrastructure"	113
Low cost technology exists today to help DWS customers monitor their water consumption and identify leaks real time, instead of current practice of monthly usage bills. Potable water is very precious and needs to be conserved accordingly, especially with increasing droughts from climate change.	92
We would like to see the sewage/waste water situation at Puhi Bay and along the coastline in Hilo. We wonder if the breakwater could be taken down improve the water quality of Hilo Bay?	106
Is there any consideration for energy produced by waves, as is the case on coastal municipalities on West Coast and also in Europe? Is there any consideration for public infrastructure in Hilo (near town as well as near the university and out in HPP and elsewhere) for a changed mode of travel including bike lanes, sidewalks? What about more charging stations beyond target, HELCO, County building and UH Campus?	95

Hold County accountable for capacity building. Look at outsourcing labor (e.g, Kauai and DC grant writer)	108
Wastewater lines and poverty map = same. Highlight his inequity	101
Put more emphasis on geothermal opportunities, not only for Puna but Kawaihae and Kona. Cultural sensitives must be included. Think about economic incentive for Native Hawaiian populations. (similar to Mauna Kea Observatories) Possible resolution: Put greater emphasis in the narrative section.	95
or fire prevention	108
Not sure where this fits, but it applies to both solid and wastewater resource management and maybe to any infrastructure: County infrastructure will be more sustainable by following these guiding principles: 1. Apply Life Cycle Assessment principles to minimize adverse impacts to health, safety, and financial security short and long term for all affected stakeholders and the environment. 2. Think resource management vs waste management. Preserve resources through reduction of use, reuse and recovery of materials. 3. Affordable, reliable (don't over-engineer) and place-based to respect community and environment. 4. Be sustainable for communities and expected growth. 5. Be flexible to new technologies. 6. Practice continuous improvement toward vision of zero waste. 7. Work with public and private entities to achieve goals.	94
treatment development	109
this is part of integrated wastewater management planning effort	109
modify to describe ongoing integrated wastewater management planning.	109
there will need to be subsidies for many users who cannot afford the true cost of these systems. Arguably, the entire county benefits from clean waters and should contribute to adequate treatment of wastewater.	109
public-private partnership opportunities and	108
and public-private partnership opportunities	108
or agricultural	108
This section needs to be updated by DEM to discuss activities around a county-wide integrated wastewater management plan, as well as the cesspool conversion planning effort. As part of that, the GP needs to acknowledge that Hawaii County must look at place-based solutions where sewerage won't work because of technical and economic infeasibility. That doesn't mean we forego the best treatment we can afford.	106
Reduce utilization of potable water where treated recycled water can be used.	92
- Wastewater infrastructure is a complicated place-based consideration - population density , lot sizes, community organization (or lack thereof), geology, funding opportunities, etc. - Technical expert capacity in County DEM and private contractors is very limited to design and implement infrastructure improvements.	91
Get DEM to update this section with the new activities to develop an integrated wastewater management plan and regional plans incorporated regional plans.	90
Do more to support and expand collective wastewater systems (shared, sewer) on the Big Island.	108
Be more specific about discouraging overconsumption? Increase rates A LOT beyond Table 26 limits. Develop more agricultural water sources to offset drinking water use for landscaping and irrigation.	103
Maintain\improve\expand agricultural water systems and distribution where feasible to offset drinking water consumption for irrigation. For North Kohala this can be the Kohala Ditch or USGS wells.	104

Makapala-Niulii well has no backup link to the rest of North Kohala. It should be connected in across the gap at Halaula gulch.	102
Everybody should have their water meter on or adjacent to their property and be responsible only for the line from that to their house. Old plantation-era "spaghetti lines" crossing multiple properties to deliver water to a home should be phased out.	102
Telecommunications is not restricted to internet or broadband. Basic CELL PHONE service is included and should cover the entire island without gaps. This is a fundamental public safety issue.	98
Update legacy (plantation) systems (e.g., "spaghetti lines") to modern standards.	92
Create a category for Agricultural Water with actions	93
Add agricultural water	92
Add agricultural water	92
No mention of the mandated cesspool conversion and how the County plans to address it.	90
The County should ensure that cell-phone providers cover ALL of the island. This is a basic SAFETY issue in addition to its usefulness.	90
Every well-populated area on the Big Island needs a robust and redundant supply of power. North Kohala, for example, has a single line and no redundancy.	90
So happy to see this in the GP!	104
So happy to see this listed as a project !!	103
It's unclear to me when something should be a policy only or something that requires priority actions. Consider adding priority action: Develop and widely publicize an incentive program for residential and business energy improvements - with net 0 goal	97
Replace "Install" with "consider installation of"	110
Reconsider "shall"	110
Review requirements to required connection to sewer systems to include private systems where appropriate.	110
Change "amend" to "consider amending" Remove "Section 23-85(a)" Remove the sentence "The recommended requirement is:"	109
Replace "Shall" with "should"	108
This should not be a policy. (REMOVE)	108
Replace "Pollution shall be prevented, abated" with "Strive to prevent, abate and control pollution"	108
Replace "shall" with "should"	108
Add in "with a priority on areas within urban growth areas, along shoreline communities and sensitive inland areas."	108
Add in "Strive to" after "shall"	108
Replace "shall" with "should"	108
Replace "Private" with "In areas not served by a municipal, private" Replace "shall" with "should"	108
Replace "Shall" with "should"	108
Intend to mean variances from minimum public water system design requirements?	104
Replace "Shall" with "should"	102
This requirement to include non-consumptive demand will make it easier to designate Water Management Areas.	102

Replace "shall" with "should"	102
Change 23.8 to "Encourage water system improvements, including exploratory wells, to be developed in correlation with the County's desired land use development pattern"	102
Take out "should be designed"	102
Replace "Proposed discretionary permits for" with "Encourage design of"	102
Replace "shall" with "should"	102
Replace "shall" with "Should"	102
Change to "Support the State's efforts to protect water sources to prevent depletion and contamination from natural and man-made occurrences or events."	102
Reconsider "shall"	102
Replace "Maintain and improve" with "Encourage and support maintenance and improvement of"	99
Reconsider "shall" Remove "as stated in HCC, Section 25-4-12 Note: HCC update will include details"	99
Replace "shall" with "Should"	97
Replace "shall" with "Should"	94
Replace "shall" with "Should"	94
Replace "shall" with "Should"	94
Remove table 26. Some of the information shown is incorrect, but also the information may be subject to change over the duration of the GP.	105
Remove "Adopt one water" statement. It is unnecessary to make that statement and may create unknown, unintended obligations in the future.	92
Replace "the water systems serving" statement with "Capital infrastructure improvements island-wide for resiliency, operational redundancy and increased capacity will continually be needed. Water system infrastructure includes wells, storage tanks, booster pumps, watermain as well as appurtenant support facilities. "Additional unfunded safe drinking water compliance requirements by the Federal Environmental Protection Agency(EPA) and the State of Hawai`i, Department of Health(DOH)may require additional capital improvements, personnel, equipment, etc."	90
24. u Limit the approval of septic systems in new urban development within the Urban Growth Areas.	110
"A coordinated effort by the County and the State shall be developed to identify sources of additional water supply and be implemented to ensure the development of sufficient quantities of water for existing and future needs of high-growth areas and agricultural production."	102
The development of water sources should be the responsibility of government and not private interests. Developers of land within high-density and medium-density designations should be guaranteed sufficient water supply to serve designated Urban Growth Areas.	102
Remove definition of a cesspool. The latest report on the Hawaii Cesspool Hazard Assessment has provided the priority areas of cesspools around Hawai`i Island. Given the requirements and deadline set forth in Act 125, suggesting the County General Plan 2045 provide specific priority actions besides 24.e Perform a study to assess individual wastewater system (IWS) in unsewered urban areas to assess the rate of failures/negative impacts, determine rates of large capacity cesspools still in use, and develop plans to improve, connect, or develop new wastewater systems for unsewered urban communities. For example, the policies and priority actions under Objective 24could specifically address the upgrade and/or conversion of existing cesspools	106

into septic systems or aerobic treatment systems, or connected to sewage systems, as mandated by Act 125, SLH2017.	
Maintaining electrical systems should be a priority for power companies. Do not encourage or allow the power company to divert maintenance funds to green agenda projects. This is how you end up with fires (see: PG&E in California).	90
Add "and configuration." Low Impact development principles also call for the shapes and location of impervious and pervious areas to be discontinuous so that storm runoff from impervious areas can be received by appropriate sized adjacent pervious area. This minimizes generation of storm runoff and erosion and provides for better infiltration and groundwater recharge.	114
Add "and upgrade"	114
Require	109
While it is less expensive to use gravity flow to distribute reclaimed wastewater, we perhaps should not limit reuse to "topographically" appropriate areas. We have the technology to use sustainable energy sources such as wind, solar to pump reclaimed wastewater for reuse. All the more critical to ensure proper location of development and the associated waste/wastewater treatment facilities as part of an integrated plan, not just for urban areas but rural villages and our agricultural lands.	108
Recognize that the fact that combining waste with water and then having to separate, treat and convey the wastewater is a very inefficient and expensive process. At least consider at appropriate scale other alternative systems that avoid combining waste with potable water. As with recycling, instead look to view waste as resource with beneficial use.	106
Need to ensure that the Water master plan is in sync with the GP and CDPS and other community plans so DWS actions are coordinated with the County's plans instead of the status quo of meeting their existing customers' needs and/or those who can afford to develop and pay for new water infrastructure.	103
SHALL indeed!	103
Wouldn't more localized/smart grids reduce the loss of power inherent in distributing electricity over long distances?	95
and higher density	94
suggest adding a priority action item that identifies specific County Codes need to be updated. Much of our current codes as it relates to stormwater are woefully outdated. For example our roadway and landscape standards and building code site planning standards need to be revised to reflect current best practices such as Low Impact Development (LID), green/sustainable standards, Smart Growth principles, etc as appropriate to our island environment.	93
Not just sensitive urban areas. We have sensitive areas in rural and residential areas that are no longer appropriate to rely on cesspools and even IWSs. Also need to ensure directing upgrades and new wastewater infrastructure to those desired areas as identified in the GP and CDPS.	92
Not just through on-site practices. Encourage groundwater recharge PERIOD. If you want to define how, then include all scales from sound regional scale master planning down through site specific best management practices such as Low Impact Development strategies.	92
Also utilize road rights of ways for demonstration pilot programs.	115
Not just urban centers. Need to look at regional scale context and identify areas that provide flooding buffers, natural water quality treatment i.e. wetlands, riparian edges, muliwai, etc. for these areas provide valuable ecosystem services way more effective than engineered solutions. Consider utilizing these areas as open space, recreation zones with trails that serve not only environmental function but cultural/community benefit.	113

Vegetated shoulder rather than grassed. Grass/lawn is not the only option. Important to note that these policies need to be accompanied by capacity to properly maintain to ensure ecosystem service benefit.	113
There is a fine balance that good design finds between these measures and multimodal elements.	113
And provides water quality treatment i.e. filtration of sediment and bioremediation of toxic pollutants.	112
What public-private partnerships are you creating around water	104
Define One Water	104
What is the master water plan?	92
What does this look like?	92
What do you mean by lack of dedicated funding?	91
What is the source development that will be implemented?	90
"And development of additional, properly sited geothermal well fields in West Hawaii to buttress the island-wide grid and increase both regional and island-wide resiliency during regional natural disaster events."	97
This seems like a policy lifted from a continental high-density urban area. Really, now: how could this be actually deployed, outside of Hilo's Wailoa River Parklands/flanking urban use area? Maybe add in front, "Where feasible due to proximities and densities of flows and uses,..."	102
Add: "Diversity geothermal power sourcing from the one existing well field in Puna to one or more additional well fields in West and North Hawaii." this will radically increase predictably sustainable power generation as well as our shared resiliency in the event of regional disasters, natural or terroristic.	97
Add: "Develop one or more additional geothermal power sources in the west and north sectors of the island, consist with scientific studies identifying viable source locations, in order to diversify from the existing reliance on one geothermal well field located on the most unstable, overheated acreage in the entire Pacific Ocean."	92
"and wind turbines."	90
I would convert from cesspool now with a grant or long-term, low-interest, no fee loan. We should look for funding sources for ag people starting now.	108
Are the exempted areas on a map somewhere?	107
Utilizing non-hazardous controls before using known pesticides that impact the natural environment.	114
Suggest using injection wells only as a last resort for treated wastewater when all other potential uses are exhausted or not developed.	107
please list criteria for Urban Growth Areas ie. low impact on drinking water supplies, nearshore water quality...	108
Injection of wastewater into nearshore areas have also shown to contaminate shoreline habitats including coral reefs. This was demonstrated in a dye study in Lahaina last year.	107
what impact will this have on multimodal aspirations	113
Encourage in fill and higher densities in areas that are already being served by existing utilities	94
Consider a cost analysis when considering what type of system to implement	93
Suggest a more aggressive approach to constructing new wastewater piping systems in urban areas	92
Geothermal should be included in this and directly named as a firm renewable energy.	92

Two more public wastewater facilities need to be mentioned:Honoka'a Wastewater Treatment Plant Kaloko Wastewater Treatment Plant - serving Ulu Wini housing	106
And have golf courses utilize turf compatible with Hawaii's plan to minimize use of agricultural products and/or pesticides and use of xeriscaping on areas with low rainfall.	114
Golf course, resorts and public land use areas...	113
Why not edible crops for food banks?	113
Native plants, edible plants...	112
And infrastructure updates	109
Consider utilizing a desalination plant to generate water for agricultural purposes	104
Do you mean deductions?	103
Who decides which end use is most valuable?	102
Including a desalination plant to assist with future water needs due to climate change combined with increasing population needs	102
Add needs after fire protection	102
Educate public to communicate via text after hurricanes etc. Easier to get through via text as opposed to telephone use	100
Change "with" to have	100
Especially utilizing underground conduits on the dry side re fire risk and hurricane risks.	99
On behalf of COH DEM:The Draft General Plan 2045 identifies several priority actions and proposed standards that would modify existing Hawaii County Code relative to sewer service. These modifications include the following: •Priority Actions - Wastewater and Environmental Quality Prioritization o24.g - In collaboration with the Department of Health Wastewater Branch, amend Hawai'i County Code (23-85(a)) to extend the minimum distance required for subdivisions to connect to existing sewer systems. The recommended requirement is: "sewer lines shall be installed where the subdivision is within one thousand three hundred twenty lineal feet (1/4 mile) of the existing sewer system. o24.l - Amend the Hawaii County Code (including developing criteria and exceptions) to require connecting to accessible private sanitary sewer treatment facilities (PUC regulated and with existing capacity) to Section 21-5 (a) instead of only requiring connection to public sewer. •Standards All General Plan urban areas within 500 feet of the shoreline and less than 50 feet elevation shall be sewerred. The Department of Environmental Management (DEM) is currently developing an Integrated Wastewater Management Plan for the County which includes an evaluation of the condition and capabilities of existing wastewater infrastructure as well as a comprehensive roadmap for cesspool conversions. Guidance on the sewer service for new development will also be included. This work will be completed in 2024 and will likely result in new County-wide policies related to sewer service for both existing and new development. To avoid the possibility of conflicts in County policy developed as part of the General Plan vs. the Integrated Wastewater Plan, DEM recommends that any code modifications related to sewer service not be adopted until Couty-wide wastewater service evaluations are complete. An additional standard proposed as part of the Draft General Plan is as follows:oAverage Daily Per Capita Wastewater Flow. Sewer systems shall be designed based on 500 gallons per home per day average wastewater flow unless other current data has been established by the County. Given that the County does not currently have a standard for average daily per capita wastewater flow, DEM follows the standards developed by the City and County of Honolulu (CCH) as required by Hawaii Administrative Rules. CCH per capita flow values are based on 105 gallons/capita/day and 4 people per home, or a total of 420 gallons per home per day. Although the CCH flow standard is less than what is proposed on the Draft General Plan, DEM has found that it to be a conservative value. The Integrated Wastewater Management Plan we be evaluating tributary flow within each existing wastewater service area to better understand average household and per capita flows that are typical for	109

Hawaii County. DEM recommends that no new per capita flow standards be considered until this work is complete.	
And wave energy	95
Have hello buy back solar from individual stakeholders	92
Also need public education in order to have public buy in for innovative energy sources	92
Saltwater is also a source of water. Desalination plant makes sense here. Especially on islands like Maui where there are struggles over water rights	92
Increasing permeable surfaces in urban areas helps to decrease polluted water runoff	108
Not sure what this means.Add: encourage CWRM to follow the developing science on water resources that indicate there is much more water here than suspected previously	92
Only extend minimum distance if the County will bring services in a timely manner and adequate funding.	109
Will Hilo WWTP be retrofitted to treat wastewater for reuse in the surround ag lands instead of feeding in the beach at Puhi Bay.	106
Check website for water infrastructure funds https://www.epa.gov/wifia	108
Why?	91
Why not?	91
So at their next rate hike request mandate a future plan that accommodates a growth in volume of users of 2, 4 or 7% per year before any hike can be approved by PUC	90
Build a desalination plant to increase water availability	90
Spend more time on education if the public is change resistant to geothermal or nuclear power	90
In order to promote more agriculture development, improve the safety, reliability and access to the lower Hamakua ditch. Watering greenhouse vegetables, animals, and other crops with ditch water containing high bacteria counts and dead animals floating in it is not safe. Why wasn't the planned piping system in the ditch implemented? The potential is enormous for this ditch system to expand agriculture and hydroelectric production.	104
With increasing drought occurrence what about and increase in available potable water for the hundreds of households/properties on catchment in Hamakua? Water haul prices have gone over \$1000 for 4000 gallons.	90
P and R "as well as other County owned sites"	115
on-site	113
Could we design something to capture energy generated when storm drains and streams have rapid flow???	104
Build a desalination plant in the future. Manufacture salt. Sell the Hawaiian salt.	102
Why is helco NOT buying back energy from generated solar in homes?	96
Incomplete thought	109
Suggest Develop instead of Create	104
capitalize County	103
must or shall instead of should?	103
....coordinate priorities (based on the GP?). Aren't the planning documents the tool used for this purpose? Is this sentence in here because the depts have not collaborated in the past to the detriment of the island?	102
How is most valuable end-use identified? Resorts for the economy or residents or sustainable agriculture?	102

and/or	102
Replace 'and' with 'which shall then' be implemented.....	102
An 'effort' cannot be developed and implemented as stated later in the sentence. Suggest using alternate: collaborative team or Inter-agency collaboration or ???	102
Suggest delete the word adequately	102
Suggest One Water be defined	101
incomplete thought. Restructure sentence.	100
and siting	99
delete the word 'has'	98
delete the word 'and'	98
with limited or no broadband access.	98
Suggest you say 2023 Ukraine-Russia war or something. Or "the Ukraine-Russia war ongoing at the time of developing this GP." Otherwise, in another decade this reference will seem odd.	96
delete comma after Hawaii	96
delete comma after geothermal	95
This sentence is incomplete in some way. ...predominantly electricity or ?? fossil fuels used for transportation or ????	95
Does this General Plan accomplish this?	92
Funding and financing examples could also be dedicated funds for each utility, each utility then develops and maintains a master plan on which systems developments charges (or equiv) could be computed, as well as usage charges. So each and every utility becomes self funded as some of them already are.	92
delete commas after serving	90
creative design and financing solutions?	90
Are you saying the costs are too high for a single development to absorb or something else? Can you make this sentence more meaningful for most people to read?	90
delete 'and'	90
Why not just say "greatly influences the design capacities for utilities and services" instead of saying in twice in slightly different ways?	89
Why is there nothing in this plan to address the need for "reliable access to drinking water" and a plan to address the well/pumping problems of the past?	92
This should include employing new technologies to decrease evaporation from drinking water reservoirs (e.g. floating covers).	103
Another challenge is that many private water well operators are not reporting their pumping data to the state or the water commitments they have made, making it hard to know how close an aquifer is to its sustainable yield. Also, given climate change and increasing droughts, future recharge of aquifers will be lower, thus lower sustainable yields. Much more needs to be done on water conservation, minimizing distribution system leaks, evaporation from drinking water reservoirs, etc.	90