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DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793
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April 1, 2024

Honorable Richard T. Bissen, Jr.
Mayor, County of Maui
200 South High Street
Wailuku, Hawaii 96793

APPROVED FOR TRANSMITTAL

Richard T. Bissen 4-5-24

Mayor Date

For Transmittal to:

Honorable Tom Cook, Chair
Water and Infrastructure Committee
Maui County Council
200 South High Street
Wailuku, Hawaii 96793

Dear Chair Cook:

SUBJECT: RESOLUTION 24-47, AUTHORIZING THE MAYOR TO ENTER INTO A WATER SOURCE DEVELOPMENT AGREEMENT WITH FREE MARKET VENTURES, LLC., PURSUANT TO CHAPTER 14.01 MAUI COUNTY CODE (WAI-20)

In response to WAI Committee's request of March 15, 2024, the Department of Water Supply provides the following comments:

Councilmember Sugimura requested a budget and financial analysis of the Kula Ridge Mauka Water Purchase Agreement (WPA) with Free Market Ventures (FMV) proposed by the Administration. This memo is in response to that request and also presents thoughts relative to the written testimony submitted to the Water Board and other comments received.

It is organized in five parts: (1) a brief summary of the results of the County analysis, (2) a discussion of the multiple purposes of the wells, (3) a discussion of the numerous factors beyond simple cost that should be considered in making this

"By Water All Things Find Life"

significant policy decision, (4) a discussion of some features of the WSA, and (5) a comparison of the County analysis and the analysis by Dick Meyer published in *MauiNow*.

Budget Summary

The budget analysis is shown in Table 1 (see page 6) and in the attachment. It shows that the budgetary impact of this agreement, as adjusted after incorporating comments from various sources, is estimated at a 3.1% increase in revenues on Countywide rates per well.

In summary, for 2027, the water cost is estimated at \$2.61 million, the energy cost at \$1.9 million, and the land cost at \$48,000 for a total cost of \$4.59 million. Having this source means that the current cost of delivering this same water would not in most cases be needed, so subtracting the savings of \$1.75 million results in a net new cost of \$2.83 million. Assuming the DWS budget in 2027 is \$92 million, a 3.1% rate increase would be needed to cover the additional cost. All costs and revenues are escalated into future years including the addition of wells 2 and 3, which are the most probable future wells.

It should be noted that this analysis assumes that additional water could be provided by new sources at the same cost as the current sources (considering all water costs, i.e., purchase, treatment, pumping, etc.) In reality, this seems unlikely. Any new source will probably be *more* expensive than the existing sources. Therefore, if an additional water source is desired Upcountry, additional costs will be incurred no matter what the source is. In addition, the costs are somewhat offset by the water revenue from new customers and other economic benefits discussed below.

Multiple Purposes of the Wells

What makes this analysis complex is that the water from the well or wells can be used for three distinct purposes, and, whereas the *gross* cost can easily be determined, the *net* cost depends on which purpose is in effect at any moment in time.

- 1) Purpose 1 - The first purpose is providing a base water supply for Upcountry. With a take-or-pay contract, it is necessary that the water be used all of the time as a base load. Fortunately, the Lower Kula zone can absorb all of the production from the first well with minimal infrastructure improvements. Use of connections to the Upper Kula Zone and the Makawao Zone would be needed for follow-on wells and there is time to enhance those connections. Further, regardless of whether these wells are developed, connections such as these should be made for flexibility and resilience of the Upcountry system.

Under Purpose 1, the cost of providing water from other existing sources should be subtracted from the gross cost of the new well system, since that water is no longer needed. This cost includes the high cost of treatment since most of the current supply is from the ditches, and the cost of pumping the water up the hill. The high elevation of the wells are an advantage compared to most of the existing sources. And in the existing system, more and more water has to be pumped up the hill than in the past due to supply limitations in the upper ditches.

- 2) Purpose 2 – The second purpose is to supply additional water during shortages. An example is October 2023 when there was not sufficient supply to meet demand. With these wells in service, there would have been adequate supply. The value of avoiding shortages is difficult to estimate but is it very significant, undoubtedly more valuable than in Purpose #1. Not having water for domestic use and fire suppression would be devastating both in economic terms and personal losses.
- 3) Purpose 3 – The third purpose is to allow for additional connections. This would be applicable only after there was assurance that existing reliable supply exceeded existing demand. It is only under this use that FMV would receive the source portion of the meter fee. Passing through to FMV the source portion of the connection fee is appropriate since they are providing the source. Water supplied in this use category would have very significant economic and social benefits since people waiting decades on the meter list would be able to at long last get water service.

Policy Considerations Beyond the Simple Cost Analysis

The Administration believes there are economic and intangible benefits from the WSA that are not captured by a simple cost spreadsheet, especially when the spreadsheet considers only gross new costs, and even when it does include net new costs. Considering the spreadsheet alone is an incomplete foundation for a policy decision of this importance. Here are some of the other considerations:

- o This WSA is fully in alignment with the primary responsibility of the Department of Water Supply, which is to provide clean and reliable water to its citizens. The current portfolio of Upcountry water sources makes it impossible to carry out this responsibility.
- o Other water sources for Upcountry have proven to be problematic and will likely take many more years than this project. Further, since the future demand far exceeds the current reliable supply, all new sources should be pursued and added on to this source. A lot more water is needed Upcountry.

- The location of this project is beneficial both in terms of its high elevation and its ability to serve both Upcountry systems. The project also provides a large parcel of land that can be utilized for a variety of County needs.
- Perhaps the most significant advantage of these wells is that they will provide a vast improvement in fire suppression. Having additional wells and storage at this location provides multiple benefits including additional source, operational flexibility during an emergency, and the ability to isolate an impacted area while providing water from both directions.
- As noted in the previous presentation to County Council, the current demand for water Upcountry including the meter list and other expected demands is approximately double the current reliable supply. This project would be an important component of the water portfolio needed to serve those on the meter list and additional housing which is a high priority in Maui.
- Including the Hawaiian Homelands Upcountry demand, the expected future demand is over triple the reliable supply. This additional supply would benefit Hawaiian Homelands especially since the County and Hawaiian Homelands are integrally connected both in terms of source and infrastructure. All additional sources benefit all water needs.
- With additional Upcountry sources, the balance between instream needs and public needs can be more easily managed. This project in effect benefits the cultural and ecological needs and desires in East Maui by providing additional water for Upcountry residents.
- With additional Upcountry sources, additional agricultural needs can be met, likely with alternate sources. This project benefits the agricultural and green space needs in Upcountry and beyond.
- With respect to alternatives, the study being conducted in compliance with the Consent Decree recognizes deep wells in the Makawao Aquifer as a highly rated option for addition water supply development based on multiple criteria.
- A primary economic benefit of this project is that significant monies are being imported to Maui for the construction project itself. FMV will be using a local well driller and is committing to using local contractors. There is also the secondary benefit of the construction workers needing local services. In addition, allowing home building has multiple benefits including construction activity, relieving the housing crisis, and increased property tax revenue. It is true that the profits would be going off island as the price for the investors taking the risks and providing the capital funds.

- The severe economic and social consequences of water shortages and water black-outs should also be considered. Under the current system, Upper Kula would be the first area to experience water black-outs since it is at the end of the water system. Wells in this location would ultimately provide water to this area.
- There is also value to powering a major water facility almost entirely with renewable energy.
- This Agreement also positions the County in a very favorable position to secure federal funding for its infrastructure improvements and even a potential buy-out. Many federal programs favor public-private partnerships and innovative solutions to long-running problems.

Features of the Water Supply Agreement (WSA)

An additional policy consideration is the structure of the WSA. There are hundreds of similar agreements in use across the Country and this WSA is one of the most beneficial to the purchaser (the County). It is a "take or pay" agreement which is extremely common.

The well drilling risk is significant and being entirely borne by FMV. One option suggested by reviewers would be to conduct years of hydrogeological studies and analysis to determine the features of the aquifer prior to drilling. During this time, no additional source would be developed. This agreement allows a well and possibly additional wells to be developed at no risk to the County. Additional water can be made available with no risk. If the wells are less productive than projected, the only obligation of the County is to purchase the actual water produced. A permit is required from the State for any new well drilled.

Under this WSA, all of the major decisions are under the complete control of the County. The County can choose to support additional wells or not. And if the costs get higher than projected, the County can buy out the water system at a cost determined by a third party. All decisions relating to additional water meters are under the full control of the County. And unless the County elects otherwise, the County will be the only customer for this water which will serve the residents of Upcountry.

Under this Agreement, the County is in complete control of the water. It is only if the County elects not to participate, or if the County defaults, that FMV has other options. Given that FMV is investing tens of millions of dollars, they must have a way to recoup their investment if the County pulls out. It is very unlikely that the County would not obligate all of the water from these wells.

The well allocation associated with each meter has been modified to reflect the different allocations for each meter size and zoning condition so FMV will only share in the meter charges for water allocable to the wells, and the \$12 million meter buy out has been modified to be reduced as meters are approved. The County now has the option to pay that declining meter buy out amount whenever the County determines that doing so benefits the County.

With respect to the cost of the Agreement, it should also be noted that the FY 2024 increase in rates resulting in 10% more revenue, a similar increase recommended in FY 2025, and all future rate increases are justified by three needs: inflationary cost increases, maintenance and upgrading of the existing infrastructure, and development of new water sources. The latter is perhaps the most important, and precisely what this WSA achieves.

Comparison of Cost Analyses

With respect to the spreadsheet developed by Dick Meyer and published in *Maui Now*, here are the major differences between the County analysis and that of Mr. Meyer.

Table 1: Budget Analysis

	COST ITEM	County Analysis	Meyer Analysis	Comparison
1	WATER COST	\$2,606,100	\$2,606,100	Water Cost calculation is the same.
2	ENERGY COST	\$1,930,704	\$2,032,320	The County energy cost estimate is 5% lower due to increased efficiency of pump systems and the integration of the energy and water systems. The sole purpose of the solar energy system, with the back-up batteries and generator, is to power the water system.
3	LAND COST	\$48,000	\$48,000	Land Cost calculation is the same.
4	50% OF METER FEE	\$0	\$405,000	The County treats the 50% allocation of meter fees going to FMV as a pass through, not a cost. This is logical since FMV is providing the source.
5	ADMINISTRATIVE COST	\$0	\$100,000	The County will manage the administration costs with existing staffing.

	COST ITEM	County Analysis	Meyer Analysis	Comparison
6	PUMPING UP TO 3,900 FEET	\$0	\$444,600	The County has determined that there is sufficient demand in the Lower Kula system to use all of the water from Well #1 so pumping to the Upper Kula System is not needed for the first well. In addition, the elevation of these wells is beneficial relative to any future pumping in the Kula systems.
7	SAVINGS FROM EXISTING SYSTEM	-\$1,752,000	\$0	Since under Purpose #1, the equivalent water from the existing sources will not be needed, this existing cost should be subtracted from the gross cost of the wells. The water from these wells used for Purposes #2 and #3 is even more valuable to the County and the residents of Upcountry.
8	INFRASTRUCTURE	\$0	\$0	Regardless of whether this project is developed, infrastructure improvements will be needed in the Upcountry system. The County has determined that the infrastructure specifically required for the wells is beneficial regardless of the future scenarios.
9	PROPERTY TAX WAIVER	\$0	\$0	This is a de minimis amount now clarified in the WSA as only applying to the water systems.
10	TOTAL FIRST YEAR	\$2,832,804	\$5,636,020	The major difference is that the County number is the net cost increase rather than the gross increase.
11	COST PER 1000 GALLONS (water only)	\$6.47	\$12.87	
12	(Current cost Countywide - all costs)	\$6.75		This is the current annual total cost of the entire County system divided by the number of gallons provided.
13	(Current cost for Upcountry - all costs)	\$8.75		This is the current annual total cost of the Upcountry system. It is higher than the overall County cost due to the need to treat all of the surface water and the extensive pumping required to serve the high elevations. As less and less water is available in the upper ditches, additional pumping is required.
14	(Current cost Upcountry water only)	\$5.00		This is the current cost of the water in the Upcountry system. It includes purchase, treatment, pumping, and maintenance and repair. It does not include planning, engineering, fiscal, debt service, and distribution.
15	ANNUAL BUDGET (projected 2027)	\$92,000,000		This is the projected 2027 budget of DWS.
16	COUNTYWIDE FEE IMPACT	3.08%		This is the projected increase in Countywide rates to pay for the net cost of the first well. The rate increases for the follow-on wells are similar.

The primary difference in the two analyses is that Mr. Meyer's analysis only considers the *gross* cost of the WSA. The County believes that the appropriate metric is, at a minimum, the *net* cost of the WSA, and, in reality, many factors beyond even that as discussed above.

The County analysis recognizes that, with the implementation of these wells, the current cost of serving Upcountry customers under Purpose #1 will be significantly negated. This will likely be the case for well #1 which is the only obligation under this agreement. This cost is significant and higher than the average County cost due to the elevation, the need for pumping, and the need to treat all surface water. Further, using existing costs for the comparison is likely an understatement since any new source is likely to be more expensive. These savings were not recognized in Mr. Meyer's spreadsheet.

The County analysis does not include the portion of the meter charge that would be allocated to Free Market Ventures (FMV). The rationale is that this is the source portion of the meter charge and FMV is developing the source. For this budget item, the monies are in essence simply passing through the County from the meter applicant to FMV. The Administration does not consider this a cost to the County. In reality, additional meters will generate new revenue to the County, both the County portion of the meter charge and annual ongoing user fees. The annual user fee would exceed the FMV portion of the meter charge in a few years.

The County analysis assumes that the infrastructure improvements are beneficial and needed for the County water system regardless of whether the Agreement is approved or not. These improvements are being developed and they include additional Upcountry water storage and other measures designed to increase operational flexibility, resilience, and robustness. Therefore, these costs are not connected to the WSA. A fundamental advantage of these wells is their high elevation relative to most of the existing source. In addition to the need for less pumping, there are technologies for capturing the energy of water flowing downhill in pipes that could be implemented if this water is used at lower elevations.

Attachment 1 provides the County analysis of 30-year estimated costs. Any 30-year estimate with compounding increases results in large numbers in the later years. This is true for both the costs and the revenues. In the unlikely event that inflation is low, or for any other reason, the County has the option of buying the system at a price determined by a third party.

The County analysis assumes an annual rate increase of 3% each year after 2027. The 3% represents a reasonable increase based on typical water utilities, past practices, and future needs. In fact, this is low compared to most water utilities and Maui County water rates are already low compared to the needs of the water system. The actual future rate increases will of course be based on needs for that year. Mr. Meyer's analysis assumed no water rate increase for 30 years. A policy of no increases would be absolutely devastating to Maui County. That would allow for no new water

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sources and no ability to make the improvements to the infrastructure, which has been underfunded for years. Under the policy of this administration, all rate increases would be structured to have little or no impact on the lifeline water rates, focusing instead on high-usage water consumers.

Another impact not included in both spreadsheets is the option for the County to obtain the Kula Community Center at no cost after the development of the second well or purchase it at cost anytime.

Conclusion

The Administration appreciates the input from reviewers and the public in making improvements to the WSA. Water and investment from outside Maui County are clearly emotional topics for many, and it is important to listen to all viewpoints prior to making significant policy decision. The Administration does want to emphasize that a broad range of factors beyond just direct costs should be considered in making any decision of this magnitude.

Thank you for this opportunity to provide additional information. If you have any questions, please free to contact me.

Sincerely,



JOHN STUFFLEBEAN, P.E.
Director

JS:lk
Attachment

Attachement 1 - 30 Year Analysis

	1	2	3	4	5	6	7	8	9	10	11	12
Year	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
Water Cost	\$5.95	\$6.13	\$6.31	\$6.50	\$6.70	\$6.90	\$7.10	\$7.32	\$7.54	\$7.76	\$8.00	\$8.24
Water Purchased (MGD)	1.2	1.2	2.4	2.4	2.4	2.4	2.4	2.4	3.6	3.6	3.6	3.6
Annual Quantity (Kgal)	438,000	438,000	876,000	876,000	876,000	876,000	876,000	876,000	1,314,000	1,314,000	1,314,000	1,314,000
Annuaal Water Cost	\$2,606,100	\$2,684,283	\$5,529,623	\$5,695,512	\$5,866,377	\$6,042,368	\$6,223,639	\$6,410,349	\$9,903,989	\$10,201,108	\$10,507,141	\$10,822,356
Energy Cost	\$0.330	\$0.340	\$0.350	\$0.361	\$0.371	\$0.383	\$0.394	\$0.406	\$0.418	\$0.431	\$0.443	\$0.457
Cost per kGal to lift	\$4.41	\$4.54	\$4.68	\$4.82	\$4.96	\$5.11	\$5.27	\$5.42	\$5.59	\$5.75	\$5.93	\$6.10
Annual Energy Cost	\$1,931,580	\$1,989,527	\$4,098,426	\$4,221,379	\$4,348,021	\$4,478,461	\$4,612,815	\$4,751,200	\$7,340,603	\$7,560,821	\$7,787,646	\$8,021,275
Land acres	2	2	4	4	4	4	4	4	6	6	6	6
Cost per acre	24000	24720	25461.6	26225.448	27012.2114	27822.5778	28657.2551	29516.9728	30402.482	31314.5564	32253.9931	33221.6129
Annual Land Cost	\$48,000.00	\$49,440.00	\$101,846.40	\$104,901.79	\$108,048.85	\$111,290.31	\$114,629.02	\$118,067.89	\$182,414.89	\$187,887.34	\$193,523.96	\$199,329.68
Total Auunal Cost	\$4,585,680	\$4,723,250	\$9,729,896	\$10,021,793	\$10,322,446	\$10,632,120	\$10,951,083	\$11,279,616	\$17,427,007	\$17,949,817	\$18,488,311	\$19,042,961
Savings per Kgal	\$4.00	\$4.12	\$4.24	\$4.37	\$4.50	\$4.64	\$4.78	\$4.92	\$5.07	\$5.22	\$5.38	\$5.54
Annual Savings	\$1,752,000	\$1,804,560	\$3,717,394	\$3,828,915	\$3,943,783	\$4,062,096	\$4,183,959	\$4,309,478	\$6,658,144	\$6,857,888	\$7,063,624	\$7,275,533
Net Additional Cost	\$2,833,680	\$2,918,690	\$6,012,502	\$6,192,877	\$6,378,664	\$6,570,024	\$6,767,124	\$6,970,138	\$10,768,863	\$11,091,929	\$11,424,687	\$11,767,428
Countywide Revenue (\$M) 3% annual	\$92	\$95	\$98	\$101	\$104	\$107	\$110	\$113	\$117	\$120	\$124	\$127
Rate increase needed	3.08%	3.08%	6.16%	6.16%	6.16%	6.16%	6.16%	6.16%	9.24%	9.24%	9.24%	9.24%

[illegible]

28	29	30
2054	2055	2056
\$13.22	\$13.61	\$14.02
3.6	3.6	3.6
1,314,000	1,314,000	1,314,000
\$17,366,704	\$17,887,705	\$18,424,336
\$0.733	\$0.755	\$0.778
\$9.80	\$10.09	\$10.39
\$12,871,792	\$13,257,946	\$13,655,684
6	6	6
53310.9361	54910.2642	56557.5721
\$319,865.62	\$329,461.59	\$339,345.43
\$30,558,362	\$31,475,113	\$32,419,366
\$8.89	\$9.15	\$9.43
\$11,675,095	\$12,025,348	\$12,386,108
\$18,883,267	\$19,449,765	\$20,033,258
\$204	\$210	\$217
9.24%	9.24%	9.24%

WAI Committee

From: Michelle Santos <Michelle.Santos@co.maui.hi.us>
Sent: Friday, April 5, 2024 9:35 AM
To: WAI Committee
Cc: Cynthia Sasada; James Landgraf; John Stufflebean; Josiah Nishita; Keanu LauHee; Leo Caires; Linda Kimura; Louise Batoon; Pili Nahooikaika
Subject: MT#10577 Reso 24-47
Attachments: MT#10577-WAI Committee.pdf

NOTE: PLEASE DO NOT FORWARD MY EMAIL TO ANYONE OUTSIDE OF THE COUNTY OF MAUI. YOU MAY CLICK ON THE ATTACHMENT ITSELF AND CREATE YOUR OWN EMAIL TO FORWARD THE DOCUMENT TO ANOTHER PERSON OUTSIDE OF THE COUNTY.

Michelle L. Santos

Office Operations Assistant

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