North Shore Watershed Management Plan

Notes from Public Review Draft Meeting #4
November 5, 2015

The meeting was opened by Cami Kloster and Barbara Natale of Group 70, who provided an overview of the North Shore Watershed Management Plan (NSWMP) Public Review Draft via PowerPoint presentation. The presentation is posted on the Board of Water Supply (BWS) website: http://www.boardofwatersupply.com/cssweb/display.cfm?sid=125022. Meeting participants were given the opportunity to comment and ask questions throughout the presentation.

Below are the various topics covered and comments made by attendees. BWS and Group 70 responses are *italicized*.

Issue – Water Demand

- There are extensive plans for growth, and low growth seems unlikely.

  Water demand projections incorporate a range of possible outcomes from low to high because the question is not if growth will occur, but at what rate. Planning for multiple levels of growth can aid in understanding water demand and supply impacts. Based on the Plan's low, mid, high and ultimate water demand projections, the North Shore has ample water supply for forecasted increases in population.

- How much is water use affected by tourism? There are about 450 illegal vacation units on the North Shore.

  The per capita or per person water demand numbers equals total water use divided by the population served. The population served includes the visitors present and subtracts residents absent. BWS tracks the overall usage and per capita usage over time. For the North Shore the 2010 BWS per capita number is about 200 gallons per capita per day (gpcd). The islandwide average is about 157 gpcd in 2010. Most districts with BWS service use less water per capita.

  The North Shore and Waianae BWS per capita numbers consumption is high. This is mostly due to these districts having more agriculture using BWS system water, and the North Shore has a relatively small population compared to other districts. Requests for BWS agricultural meters are on the rise due to food safety issues as water quality is important for food safety. The goal is to keep the North Shore per capita water consumption around 200 gpcd, and to do that, BWS has to focus conservation programs not only on urban usage, but also on those agricultural meter water users. With higher use, an additional well might be needed; however, it is usually less expensive to go with conservation.

- Where is military water consumption captured?

  Helemano Military Reservation is the largest military presence in the North Shore district. However, the Helemano water supply comes from Central O'ahu, and its water demand and supply will be covered in the Central O'ahu Watershed Management Plan. Dillingham Airfield is owned by the US Army but operated by the State Department of Transportation Airports Division, and the associated water system also provides a small amount of water to the US Air Force Ka'ena Point Satellite Tracking Station.

- How do the water use projections compare to what was used when the sugar company was in full operation?

  Water use has substantially decreased from 40 million gallons per day (mgd) to less than 25 mgd. The closing of the sugar plantations reduced the amount of irrigation water that was recharging the aquifer. Because of this State Commission on Water Resource Management dropped the sustainable yield by 15 mgd for the Waialua aquifer.

- The kalo projections seem very low.

  Kamehameha Schools (KS) is a major landowner and has strategically acquired lands in Anahulu. KS will be leading and guiding much of the future lo'i kalo expansion. Projections for lo'i kalo expansion will be reviewed with KS again.

- The North Shore agricultural community has a resolution to fund local food production. Diversified agriculture uses can tend to crowd out food production that is really needed. Not all agricultural uses are equal.

  Food self-sufficiency is reflected in NSWMP Objective #3: Protect Native Hawaiian Rights and Traditional Customary Practices, and Sub-Objective 3.2 "Restore and utilize kalo lands and fishponds for food production and cultural educational use." For water demand purposes, the same water demand factor (average gallons per acre per day) is used for general diversified agriculture and diversified agriculture for local consumption.

- The North Shore community would like the water from the North Shore to remain on the North Shore. How do we ensure that it will not be piped elsewhere? Can this be put into a policy?

  The policy is for North Shore water to remain on the North Shore. The North Shore Watershed Master Plan (WMP) is being developed before the Central O'ahu and 'Ewa WMPs so that the North Shore agricultural water needs are apparent.

  The 'Ewa WMP is being developed, and the goal is for 'Ewa district to be self-sufficient. With climate change the dry areas may become drier, and wetter areas may become wetter. Because Wai'anae will likely become drier, it will need to import water from Pearl Harbor. While 'Ewa may also need additional water, the strategy is for water diversification, including desalinization, to meet the water demand. Although desalination is expensive, it is comparable to piping and pumping water over the middle of the island. (There is no existing connection between the North Shore and Central O'ahu/'Ewa Districts, and it would be very expensive to create one.) The Ho'opili development had a water plan using potable water to irrigate. This has changed, and now they will irrigate landscaping with recycled water from the Honouliuli wastewater treatment plant.

  Pearl Harbor aquifer can supply water to Wai'anae and Primary Urban Center (PUC). If 'Ewa is water self-sufficient, then there is more water for Central O'ahu. The plan is for the recycled water from Wahiawā wastewater treatment plant to be used for irrigation of the Galbraith lands. Schofield wastewater treatment plant recycled water could be used at Galbraith or Kunia lands. The Central O'ahu Watershed Management Plan will identify ultimate demands for that area. By asking about ultimate demand scenarios and limited supply, policies start to rise to the surface. BWS wants policies and solutions that are realistic, cost effective, economic, and environmentally viable.

Issue – Water Supply: Ground Water

- What is the condition of our aquifers and the quantity of ground water? Is it fresh or brackish? What is the recharge?

  The North Shore aquifers have high quality fresh water. However, the Kawailoa aquifer system area has naturally high salinity levels and is not highly pumped. With the 2015 hot weather conditions, BWS Waialua wells had depressed levels. After the rainstorms, the water level went back up. When the water levels get low, BWS will deliver a conservation notice to cut back on demand. A drier 2016 winter is expected, and BWS will be checking the wells every week.

- Are there plans for BWS to bring water to the Dillingham airport?

  BWS has not included Dillingham airport in their water infrastructure master plan because it is a private system. BWS must be able to ensure system integrity and the ability to supply water. Therefore, the current system would need to be upgraded before BWS could accept it.

Issue – Surface Water

- How many gallons of water are flowing through the streams today, and how much is being diverted?

  Most of the North Shore streams do not have stream gages so the amount of water flowing is not known. Streams with diversions have, or had, stream gages. Stream gages are expensive to maintain, and some are being taken out of commission. CWRM has estimated based on the 1992 Declarations of Water Use that about 33 mgd is currently allowed for diversion. Recent data from a newly metered area of the Wahiawā Irrigation System shows about 10 mgd is flowing through that area of the system.

  The definition of stream flow is challenging as it changes from year to year based on rainfall, and streams can have high stream flow during and after storm events. Most people want to know base flow, which flows most of the time and requires additional analysis of the stream flow data.

- Is there a scenario, such as a drought, that would cause flow to agriculture to stop?

  During periods of drought, streams do not receive much water and stream diversion amounts may decrease. Stream water should be used wisely as it can become very limited. Groundwater would be needed as a backup.

- Does the Wahiawā Reservoir affect recharge? Do portions of the water go back to the stream?

  There is some recharge of the Central aquifer from the Wahiawā Reservoir. Wahiawā Reservoir also contributes to North Shore aquifer recharge via field irrigation. During sugar production rates of aquifer recharge were high due to the large quantities of irrigation water applied on fields.With reduced field irrigation, the recharge rates are now much less, and the sustainable yield was lowered to reflect this. The unused irrigation system water is returned to Kaukonahua Stream.

- What might be the impacts of having the Wahiawā wastewater treatment plant effluent diverted away from the reservoir?

The wastewater treatment effluent is a small percentage of available Wahiawā Reservoir water. Diverting the effluent from Wahiawā Reservoir and Wahiawā Irrigation System would greatly improve reservoir water quality. This will provide higher quality water for fish in the reservoir and irrigation water for North Shore farmers.

Issue – Agricultural Practices

- Does the Plan consider soil quality, the life and health of the soil and its ability to retain water? Good soil quality is soil that retains water. Many Hawaiians talk about soil as living.

  A fuller discussion of soil health will be added to Project #6: Agricultural Best Management Practices in Chapter 4.

- Could the holistic practices of dryland farming and mob grazing be added to the draft report if not already included?

  These practices will be added to Project #6: Agricultural Best Management Practices in Chapter 4.

- Would BWS support a policy that electrostatic sprayers should be used when spraying pesticides?

  BWS strongly supports farming best management practices that protect the island's ground water supply. The use of electrostatic sprayers will be added to Project #6: Agricultural Best Management Practices in Chapter 4 as a way to reduce spray drift and amount of pesticide used.

  BWS does encourage farmers to use practices that minimize or eliminate impacts of ground water; however, BWS is not a regulatory agency. Department of Health would be the agency to put requirements for certain best management practices into law.

- Lots of concern about pesticide use. How does the document address this issue?

  Project #6: Agricultural Best Management Practices in Chapter 4 discusses proper pesticide use and promotion of alternatives to pesticides. In Chapter 2 and Chapter 4 Project #4 Potable Wellhead Protection, the Department of Health Hawaii Source Water Assessment Program (HISWAP) and susceptibility scores for wellhead protection capture areas are discussed along with the need to implement the HISWAP more fully by addressing risks raised (e.g. tracking of land uses and activities, and chemicals used).

  Pesticide use is also addressed in talking about past usage and the need to treat ground water. BWS has had a successful lawsuit against a pesticide manufacturer and that money is used to offset treatment costs.

- Was there an Environmental Impact Statement (EIS) done for the piping of the irrigation system? Did piping the system affect wildlife that might have previously accessed water in the irrigation system?

  The focus for impacts is usually on the stream systems because it is a better home/habitat for wildlife. While some organisms may have followed the water into the ditch system, it is not the preferred habitat. Piping the irrigation system was done to use water efficiently and to not use additional

stream water to expand agriculture on the North Shore. Piping of diverted water is not a trigger for doing an EIS. The irrigation system is privately owned, not owned by BWS.

- Are there plans to better manage Lake Wilson for fishing? Any plans to improve capacity of the lake?

  Lake Wilson or Wahiawā Reservoir is an agricultural irrigation water reservoir that also has a State agreement for fishing. The water level is set to provide some flood control capacity. The agreed upon level is a compromise of the DLNR dam safety program and the wildlife / recreational programs. There are no plans to increase the capacity of the reservoir.

Issue – Water Quality

- While there is a tax credit program for cesspool conversions, it currently has a "loophole." Tax credits are only available for those cesspools located within 200 feet from the shore and perennial streams. Hopefully the tax credit will be expanded to a larger area in the next legislative session.

  The Plan notes the current tax credit coverage and will note the need to expand the tax credit to more areas - not just those near waterbodies - in Chapter 4, Strategy E.

- Loko Ea Fishpond can't produce food for economic production because of water quality issues. Nitrates and pesticides are also ending up on the coral reef. The policies need to be changed. By not having any policies these problems persist. When people buy upland, they don't care what is happening down from them.

  Two important sources of nitrates and pesticides are addressed in the plan. Cesspools and other Onsite Sewage Disposal Systems (OSDS) are likely contributors of nutrients due to their proximity to the fishpond.

- **What role does fresh water have in the ocean? Don't we want to keep all of the water going to the ocean?**

  Mixing of fresh water with ocean water provides an estuary for many juvenile fish. It is important to keep the streams at a level that can sustain aquatic life, but water is also diverted to help feed and sustain human life. The caprock around most portions of O'ahu keeps much of this water in the aquifer and creates an "underground reservoir" where water is stored and from which groundwater is pumped.

General BWS Questions

- Being a municipal utility, who does BWS answer to?

  Board of Water Supply Board of Directors and the City and County of Honolulu Mayor

- The recent agreement between HECO and BWS allows for HECO to explore the development of pump storage. Would any of these facilities happen on the North Shore? The concern is that the projects would be exempt from PUC approval. Would rates go up?

  The agreement arose from BWS having issues with HECO that needed addressing, and BWS and HECO recognizing that there are also opportunities for cooperation. One opportunity is the potential

to create hydroelectricity with the Nu'uanu Reservoir. The flow could be dropped to the second reservoir to create power at night and then solar electricity could be used during the day to pump the water back up.

BWS had concerns that HECO would raise power rates which would raise water rates. The plan to develop renewable energy is to use grants and loans, and if BWS can begin using more renewables, it could lower costs and the savings can be passed down to consumers. BWS is working to diversify its power generation because of the nexus with water. Whether or not the NextEra / HECO deal goes through, BWS has a long range energy plan.

- The BWS and HECO agreement (part of the BWS withdrawing from the merger proceedings) has numerous conditions including one related to pesticide use around the utility lines. Can you comment on this?

  HECO uses pesticides on its trans-Ko'olau power lines. They first cut down trees under the power lines and then apply pesticides. Primarily Roundup is used which is not a persistent pesticide. BWS brought up their concerns regarding pesticide use in the conservation areas with HECO as these pesticide applications could affect wells in the North Shore District and Manana wells (Pearl City). BWS reviewed the HECO list of pesticides and rejected a lot of the pesticides; Roundup is the only one that was approved. Pesticides are already used in the mauka conservation areas as the Watershed Partnerships apply pesticides (usually Roundup) to control invasive species.

  Instead of focusing on possible changes to this docket, BWS would rather see a broader law put into place. Areas other than the conservation area also have possible land uses that can impact ground water (e.g. landfills, urban areas). Termaticides are now being detected in drinking water sources. A broader law or ordinance would tell landowners what can and can't be done on their property which makes landowners nervous. There has been pushback on implementing this type of ordinance.

General Watershed Management Plan Questions

- How much teeth does this document have?

  The plan does have teeth ("baby teeth") because the entire document is adopted by ordinance. While this does not guarantee project implementation, the guidance of the plan as a whole is adopted by City Council. The plan is also adopted by the Commission on Water Resource Management which uses these plans as guidance when they review requested water use permits.

  The document presents problems and solutions in the form of policies and projects. By virtue of being in the plan the projects are elevated as important to implement in the context of the North Shore. Having the projects in the North Shore Watershed Management Plan says to decision makers and funders that these policies and projects should happen and hopefully make it easier to implement the projects. The Plan should also make it easier for non-profits and others to identify, partner and carry out the projects.

- If the BWS is using these regional plans to fold up under an islandwide plan, does this give the islandwide plan teeth as well?

  The BWS Water Master Plan will roll up infrastructure plans from the regional plans. The BWS Water Master Plan is mainly to address aging pipes and infrastructure. In the future new wells may be needed on the North Shore, but not at this time.

- Can we add to the projects information that we see is missing?

  Comments and suggestions on the public review draft of the North Shore Watershed Management Plan are requested by December 3rd.

THOSE PRESENT:

T. Basta (Resident)
S. Brewer (Waimea Ranch)
K. Chang (Kamehameha Schools)
C. Covell
J. Covell
J. Hernando
J. Hoʻopai
T. Ishii (Office of Councilmember Ernie Martin)
B. Justice (NSNB #27)
L. Learmont
B. Leinau (NSNB #27)
A. Miller (NS Chamber of Commerce /NSNB)
S. Mukai (Brown & Cladwell)
C. Murphy (DOT Airports)
D. Nakano (Brown & Caldwell)
B. Nations (Resident)
D. Nellis (Dole Food Co.)
J. Ng (NSNB #27)
M. Ortogero (Friends of Alii Beach)
M. Oshiro (Representative, District 46 Wahiawā)
T. Overley (Sunrise Dry Farms)
K. Pahinui (NSNB #27)
G. Park (ITC Water Management)
B. Philips (NSNB #27)
C. Philips (NSNB #27)
M. Philips (Office of Sen. Gil Riviere)
J. Reid (NSNB #27)
W. Schoettle (Haleiwa Town Center)
J. Scott (NB Ag Subcommittee)
K. Sokugawa (DPP)
E. Takahashi (C&C of Honolulu, DPP)
M. Takemoto (Pioneer Hi-Bred)
M. Watson (Resident)
B. Usagawa (BWS)
C. Kloster (Group 70)
B. Natale (Group 70)
J. Overton (Group 70)