Clean Water Services Advisory Commission

Meeting Summary and Minutes

February 17, 2010

Attendance

The meeting was attended by Commission members Molly Brown, John Kuiper, Victoria Lowe, George Marsh, Mike McKillip, Deanna Mueller-Crispin, Jerry Ward, and Tony Weller, and Clean Water Services General Manager Bill Gaffi.

Commission Chair Bill Young and Commission members Alan DeHarpport, Lori Hennings, Stephanie Shanley, Jim Spencer, and Julie Wilson were absent.

Clean Water Services staff members attending included Deputy General Manager Bob Cruz, Tom Andrews, Bob Baumgartner, Jeanna Hall, Mark Jockers, Kathy Leader, Mark Poling, and Tom VanderPlaat.

Meeting Minutes

1. Call to Order

In the absence of Chairman Bill Young and Vice Chairman Jim Spencer, the meeting was called to order by former chairman Mike McKillip at 6:37 pm. The meeting was held at the Clean Water Services Administration Building.

2. November Meeting Minutes

George Marsh moved to approve the minutes as mailed in the pre-meeting information packet. Molly Brown seconded. Motion passed.

3. Budget Committee Appointment

Mark Jockers, Clean Water Services Government and Public Affairs Manager, explained that every year five Commission members serve on the Budget Committee. However, this year Deanna Mueller-Crispin will be unavailable when the committee meets on May 7, so a replacement must be appointed. Ms. Mueller-Crispin moved to recommend Tony Weller to the Clean Water Services Board of Directors for appointment to the Budget Committee. Jerry Ward seconded. Motion passed unanimously.

4. Energy Policy Implementation Update

Mark Poling, Clean Water Services Wastewater Treatment Department Director, presented how the agency has begun to implement the Energy Policy Framework which was crafted with assistance from the Commission. Mr. Poling acknowledged Roger Dilts, Water Resources Analyst for Clean Water Services, who drafted the presentation ***(presentation attached)*** but was unable to attend the meeting.

As Mr. Poling reviewed, the Energy Policy Framework recommended by the Commission was approved by the Board last June and an Energy Policy Implementation plan was adopted by the Clean Water Services Leadership Team in December. Mr. Poling summarized the key points of the policy:

1) Maximize renewable energy use;
2) Plan for future needs;
3) Investigate innovative solutions;
4) Carry out research;
5) Assess financial impacts;
6) Maintain performance;
7) Consider community impacts;
8) Seek greater environmental benefit.

The implementation plan includes forming an Energy Resources Group (ERG) to manage small experimental conservation or generation projects and track payback, draft plans for maximizing renewable energy and carrying out other policy elements, act as an internal energy consultant for Clean Water Services staff, and report to the Leadership Team. The plan also calls for including "compliance with energy policy" as a selection criterion for Treatment Plant Services projects. The Public Affairs Department is also developing an outreach plan to educate staff and others.

Mr. Poling said the ERG held its first meeting in January and has already proposed an ongoing Capital Improvement Project (CIP) to fund investigative or pilot-scale energy conservation or generation projects of less than $50,000. The ERG will also seek grants to support such projects. The District will also work on larger projects outside the ERG.

Responding to questions from Mr. McKillip , Mr. Poling clarified that "payback" is calculated in terms of dollars (not energy) and that the full cost of an energy-saving measure is included, such as the energy cost of producing new, energy-efficient lighting installed in place of conventional light fixtures. Mr. Poling said a project must have a five-year (or shorter) projected payback period before it can be proposed to the Leadership Team.

Ms. Mueller-Crispin asked about maximizing renewable energy. Mr. Poling said there is no specific goal such as "50% of energy used will be from renewable sources within 5 years," because such a concrete statement could directly conflict with other policy elements such as financial return. The District is serious about using renewable energy but not at the expense of other resources.

Mr. Weller said that "end-of-project" reporting on experimental projects is very important in assessing, learning, and preventing mistakes. He added that long-term costs of new approaches must be considered. For example, a pump might have a projected five-year payback period but requires replacement after six years; or a lighting element or fixture might cost half as much or use a third of the energy as the existing ones but would require four times as many of them to provide the same level or quality of light.

Mr. Poling described a major co-generation project using brown grease to produce electricity at the Durham Advanced Wastewater Treatment Facility. Brown grease is grease and other residue collected from restaurant sink traps that keep it separate from the sanitary sewer system. Under

current regulations, the traps must be cleaned out at least quarterly. The brown grease is very rich in calories (energy) and when introduced to the bacteria in a solids digester it quickly turns to gas, primarily methane. The digester bacteria convert almost all of the brown grease, leaving very little residue requiring disposal. Clean Water Services has drafted plans to build a receiving station for brown grease at the Durham plant. The generator there is 20 years old and nearing the end of its life cycle, so it is a good time to look at replacing it with equipment which could burn the gas from the brown grease. Some funds may be available from Energy Trust to help reduce the payback time.

He also mentioned that several wastewater treatment plants now accept food waste, which is ground up and sent through the plant with sewage. It will also produce methane in the digesters but unlike brown grease it contains a high proportion of inert material, which takes up digester capacity and ultimately requires disposal.

George Marsh asked if the brown grease is the same substance that is used to make biodiesel. Mr. Poling said there are several different types of oils and greases in brown grease, and only specific ones are useful for producing biodiesel. Clean Water Services has received a proposal from a company which would take that certain fraction of the brown grease and use it to make biodiesel, but the amount is actually quite small and probably not worthwhile for the District to become a biodiesel producer.

Mr. Poling said the ERG will next work on finalizing the CIP project selection criteria and formulate plans to encourage project proposals. The group will also begin researching and drafting a strategic plan for meeting long-term energy goals, and coordinate with the Public Affairs Department on outreach.

In response to questions from several Commission members, Mr. Poling clarified some details about the ERG. It is comprised of about eight Clean Water Services staff members representing all aspects of the District's work. Proposed conservation or generation projects could actually be more or less than $50,000; that amount was set to be sure it was in the budget. The Treatment Services Department uses the most energy and treatment is the District's most energy-intensive function, but projects can come from any department. Treatment Services includes pump stations and the motor fleet in addition to the treatment plants.

Mr. Jockers said the City of Gresham seems to be on the cutting edge of energy issues and their treatment plant will be generating almost half of their energy needs from cogeneration and a new solar array. Clean Water Services generates about 20% of its own power. Mr. Poling said Clean Water Services may replace some yard lighting with solar lights, but in general does not have the large amounts of land necessary to site significant solar equipment.

Mr. Poling offered to provide another update to the Commission in six to nine months.

Mr. Weller asked if there were any new developments related to the Ostara Crystal Green ™ fertilizer project, which is a joint venture to produce slow-release fertilizer from phosphorus at the Durham treatment plant. Mr. Poling said it continues to function successfully. The complementary technology developed by Clean Water Services, which makes it possible for Ostara's process to yield more phosphorus as well as some magnesium, has been patented and a licensing agreement is being worked out. Mr. Gaffi pointed out that the additional technology broadens the market for the Ostara

program because it can greatly reduce the deposits that can build up in treatment plant pipes. For some treatment plants, that aspect will be more attractive than the fertilizer production potential. He said the two technologies could provide significant income for Clean Water Services. Responding to Mr. Marsh's questions, Mr. Poling said the market for the fertilizer product continues to be good and even though bulk fertilizer prices have declined somewhat, the Crystal Green™ product fits a special market niche so the price has been fairly stable.

Mr. Jockers also said that since Clean Water Services opened its Crystal Green™ facility in June, two other utilities have signed agreements with Ostara and ordered about a million dollars' worth of equipment from the three local companies which manufactured the items for Clean Water Services. As a result, Senator Wyden and Senator Merkley have become interested in the Ostara partnership, which may lead to some appropriations or grants to support research in nutrient recovery.

5. 40 Years of Clean Water

Mr. Jockers reminded the group that Clean Water Services is celebrating its 40th anniversary this year (February 3 is its official birthdate). He shared a brief history of the organization, beginning with a Summer, 1959 photo of a man able to stand straddling the Tualatin River at Farmington Road ***(presentation attached)***. By 1969, the river was so compromised that 97% of the meager summer flow was effluent from the 26 treatment plants along its route. That year, the State of Oregon's Environmental Quality Commission placed an embargo on new construction in urban Washington County because the inadequate sanitary sewer capacity created a public health hazard for the current population, never mind future growth. Several conditions had to be met before the embargo would be lifted, including figuring out how to increase summer flow in the Tualatin. A diverse coalition of businesses and other organizations formed the Clean Water for Life Committee to promote creation of a single agency to manage sewage treatment and river flow ("dilution" was seen as key to reducing pollution at that time; the broader environmental benefits were not as widely recognized). A ballot measure creating the Unified Sewerage Agency (USA) passed 2:1, bringing the 26 small treatment plants under one management umbrella. Hillsboro, however, was not included initially as its treatment plants were meeting the water quality standards at the time so it opted to continue operating independently. Early in 1970, the voters approved by a similar margin a $36 million bond measure (the largest county bond measure ever issued in the state up to that time) to fund the new agency. Thirty-year bonds were issued and were actually paid off ahead of schedule using savings from a reorganization and downsizing of USA, which later became Clean Water Services. Mr. Jockers said the agency is fortunate to have a substantial archive, including numerous newspaper articles and the original Tualatin Basin Water and Sewer Master Plan, which is remarkably relevant today.

5. Tualatin Basin Water Supply Project and Stored Water Needs Review

Tom VanderPlaat, Clean Water Services Water Supply Manager, reviewed some information about the current water supply and projected demand and uses ***(presentation attached)***. As already mentioned by Mr. Jockers, the need to manage river flow is one of the reasons that Clean Water Services exists. Currently, Clean Water Services owns about 25% of the water stored in Hagg Lake, which was completed in 1976 with a total storage capacity of more than 53,000 acre-feet. The agency also owns about 10% of the water in Barney Reservoir, which was built about 1960 and expanded in 1999 for a total capacity of approximately 20,000 acre-feet. Clean Water Services participates in the Flow Management Committee, a group of technical staff representing the various

partners in the storage facilities such as the Joint Water Commission, Watermaster, and Tualatin Valley Irrigation District, which helps balance the competing interests.

River flow management in the winter consists mainly of making sure the reservoirs fill up without sacrificing capacity to hold water for flood control. The summer months are more challenging for managing river flow. Clean Water Services releases some of the stored water it owns to maintain at least the minimum flow as required by regulations. Releases must be balanced with discharges from wastewater treatment facilities to maintain flow and meet other water quality requirements such as temperature, sediment, and dissolved oxygen. The cooler water released from the reservoirs helps offset the warmer water discharged from the treatment plants. Increased volume from the released water also helps keep velocity up in the lower, flatter part of the river, which reduces sediment and increases dissolved oxygen. Proactive monitoring and adjusting for flow, velocity, and temperature enhances general water quality, and Mr. VanderPlaat feels that managing these things well reduces the likelihood of additional regulations.

Mr. VanderPlaat shared a handout (attached) showing how Clean Water Services contributes to river flow. Agricultural and municipal demands are at their peak mid-July to mid-August. The peak time for Clean Water Services to use its stored water is mid-August to late September, when natural flows decline but flow requirements must still be met. During such times, water released from Barney Reservoir and Hagg Lake, combined with discharges from treatment plants at Rock Creek and Durham, can account for as much as 80% of the total flow in the lower 30 miles of the river (from Farmington to its mouth at the Willamette River).

Ms. Lowe asked if upcoming new regulations would include increased minimum flow requirements. Bob Baumgartner, Clean Water Services Regulatory Affairs Division Manager, confirmed that is expected. Mr. VanderPlaat acknowledged those people 40 years ago who foresaw the current need for stored water. Mr. Gaffi added that just as they could not have known what today's permit requirements would be, we really can't know today what the requirements will be in another 30 or 40 years…and it would be hard to overestimate how important the stored water will be to the river.

As Mr. VanderPlaat has mentioned in previous presentations about the Tualatin Basin Water Supply Project, Clean Water Services expects to need about twice as much water—an additional 15,000 acre-feet per year—to meet future demand. He explained how that projection was developed. First, discharges from Rock Creek and Durham will increase with population growth, which will put more water into the river but will also require more water from the reservoirs to offset the higher temperature of the discharged water. Using the current ratio of discharged water to released water, release of an average additional 40 cfs (cubic feet per second) per day would be needed during the 180-day "summer" or "dry" period to maintain adequate flow to moderate the temperature effect. This equates to 14,280 acre-feet. There is also anticipation of some changes to the water temperature regulations which may require some additional water beyond the current 35 cfs per day that is released in July and August to complement the riparian shading program.

Secondly, Mr. VanderPlaat said extra stored water is needed for water quality enhancement, through anticipated regulatory changes and through flexibility to respond to unexpected events. He recalled a past plant upset where additional stored water was released to help dilute the effect of nutrient problems at the wastewater treatment facility in the river. Mr. Jockers mentioned the blue-green

algae bloom two years ago when extra water was needed to meet drinking water requirements and to help move the algae down the river.

Finally, the watershed-based NPDES (National Pollutant Discharge Elimination System) permit offers some possibilities for "trading" similar to that now being done for temperature management. Additional stored water could be used to enhance ecological functions, habitat, and/or tributary flow, which might then be credited toward meeting regulatory requirements.

As an example of how this might work, Mr. VanderPlaat mentioned the results of some small pilot projects on tributaries, including McKay Creek and Gales Creek. During several recent summers, stored water was moved into the creeks using TVID (Tualatin Valley Irrigation District) facilities. Water temperature was reduced and dissolved oxygen was improved. Mr. Baumgartner noted the dramatic effect on McKay Creek and said that adding even a small amount of water in tributaries can make a big difference in the habitat and health of the whole river system. Mr. VanderPlaat said the addition of only 3 cfs into the creek was still evident at a monitoring station six miles downstream. The overall environmental benefit of putting water into the tributaries was greater than if the same total amount of water had been released directly into the river's main stem. Clean Water Services would like to work with regulatory agencies in expanding recognition of cost-effective measures such as this within the regulatory system.

Mr. VanderPlaat said all these examples illustrate the need for additional stored water and the reason Clean Water Services supports the Water Supply Project.

Mr. VanderPlaat also updated the Commission on the Water Supply Project, including Reclamation's SEED (Safety Evaluation of Existing Dams) Program and the Water Supply Validation Study.

Reclamation has been working on the Scoggins Dam safety evaluation for about two years and will release an "Issue Evaluation" in March. Reclamation routinely evaluates all its facilities, but SEED became particularly important to the Water Supply Project when updated seismic information and projections became available. A key aspect of the Water Supply Project is raising Scoggins Dam, which does not meet the newest seismic standards. With the SEED work concluded and an Issue Evaluation to be released in March, the next step is the Corrective Action Alternative Study (CAAS). The CAAS phase would include analyzing alternatives (for modifying or replacing the dam) this summer (2010), developing cost estimates next spring (2011), and releasing a Modification Report next summer (2011).

Because the existing Tualatin Project is owned by Reclamation, SEED and CAAS deal only with the existing dam and do not take into account the possibility of raising it. Clean Water Services and its Water Supply Project partners have been working with a consultant on a Dam Raise Appraisal Study to identify several possible scenarios for an upgraded, raised dam, by modifying or replacing the existing structure. Reclamation will likely use some of that information this summer, which could shorten the CAAS process. The cost of upgrading the dam would be split, with Reclamation covering 85% and the local agencies (including Clean Water Services) which were partners in the original Tualatin Project sharing the remaining 15%. This is an unexpected expense for these groups and it will have to be paid even if they are not partners in the Water Supply Project. However, agricultural interests such as TVID can apply for a no-interest loan of up to 50 years for their portion, and others such as Clean Water Services may be able to get a low-interest loan of up to 25 years.

Water Supply Partners are requesting that Reclamation's obligation for dam upgrades be applied toward the cost of the Water Supply Project, whether the existing dam is improved and then raised or an entirely new, higher structure is built. The Water Supply Project partners cannot proceed much further until they have an idea what that amount will be, from Reclamation's cost estimates in the spring of 2011. Mr. Jockers mentioned that during discussions with the Northwest Congressional delegation and others in Washington, D.C., last November, the consensus was that Reclamation's estimates would be higher than those developed through the Project partners' Dam Raise Appraisal Study. He recalled that study estimated $389 million to make seismic improvements to the existing dam.

Mr. VanderPlaat noted there was earlier concern that one of the interim risk reduction measures until dam upgrades could be completed might be restricting the Hagg Lake water level, which would further reduce an already-limited water supply. He said the Water Supply Project partners were relieved to learn that measure will probably not be part of Reclamation's plan.

While Reclamation proceeds with the CAAS, the Project partners will be validating the Water Supply Project approach. The validation process will include reviewing demand projections and considering ways to bridge the water supply gap between the time the first additional water is needed and the time the Project can be completed. Some options rejected in the initial Water Supply Study may now be appropriate and cost-effective for those short-term needs. Having them in place would not preclude, and in fact might facilitate, the development of the longer-term Project.

Ms. Lowe asked if that included water from Portland. Mr. VanderPlaat said the partners will review cost, jurisdictional and operational issues surrounding Portland water and many other options to be sure nothing has changed significantly before continuing with the Project.

Mr. VanderPlaat pointed out that it will be very important to coordinate the partners' efforts with Reclamation's. Reclamation's CAAS schedule allows the partners time to do the validation, but also dictates that it must be completed by Spring, 2011 when cost estimates become available. The partners have spent almost $2 million on the Dam Raise Appraisal Study, which provides information useful to Reclamation's CAAS process, and Mr. VanderPlaat feels that should be acknowledged by Reclamation in the financial arrangements. Similarly, the partners have already gathered and developed information for the environmental review that would be required for modifying or relocating the dam, and Reclamation should not need to run a parallel process. Title transfer (transferring ownership of the dam and some other facilities from Reclamation to a local entity) is another aspect of the Project which requires coordination, but it is on hold until the seismic issues are resolved.

Mr. VanderPlaat said he and Jeanna Hall, Clean Water Services Public Involvement Coordinator, will be working on the validation study. They will also continue following the public communication strategy for the Water Supply Project, meeting with a variety of stakeholder groups including the Hagg Lake neighbors. He said Reclamation wants to use the same avenues for communicating about the CAAS process.

Ms. Lowe asked if the Water Supply Project dam raise would be hindered by the federal "no new projects" policy. Mr. Jockers said SEED funds can only be spent on an existing structure, unless it

can be demonstrated to the Office of Management and Budget that a new structure would save money. He does not foresee any conflict but acknowledged there is some risk.

Mr. Weller asked if the amount of the federal obligation to Scoggins Dam left any incentive to look at other locations, and wondered if siting a completely new project would be any slower than working with Reclamation and dealing with the seismic issues. He wondered if the partners should be looking beyond the short-term alternatives for a "Plan B" which could become a "Plan A" if the Scoggins Dam raise turns out to be impractical.

Ms. Lowe mentioned the idea of duplicate sources—having several smaller reservoirs in different locations rather than putting all the eggs in one basket as we seem to be doing with Hagg Lake—might be another layer of protection for the water supply in the long run. She said she was surprised Cherry Grove or other previous potential dam sites had not come up.

Mr. Gaffi said our resource agencies currently are not too interested in new dam sites, but that may change as there is more discussion of climate change and whether that can be addressed without new storage capacity.

Mr. Kuiper asked what it would take to pump the effluent from Durham and Rock Creek to the Willamette instead of discharging into the Tualatin, and whether that would be any more expensive than the dam raise and pipelines. Mr. Jockers said that was actually the initial plan back in 1969, until the idea of a single sewer management agency was proposed. He said pumping effluent to the Willamette would remove the obligation to meet water quality standards in the Tualatin, but would not address the flow issues.

Mr. McKillip noted that most of the water going through the treatment plants is either stored or imported anyway; it is not "native" to the basin. Ms. Lowe said all the water we use is processed—you are treating it at the wastewater plant or you are treating it for drinking water—and it seems like we should be moving closer to the time when the two processes are integrated. Mr. Gaffi observed that people get hung up on what they think is the source of their water but seem to have lost track of the fact that there is a water cycle (i.e., all water is reused water); he agreed that eventually it will gain acceptance but it is a slow process. He recalled a recently proposed program in California which was called off at the last minute due to the public misperception of "toilet to tap," yet as Mr. Miller pointed out that same area has had dual systems in place since at least the 1970's to facilitate water reuse. Mr. Gaffi noted the irony in having a wastewater treatment facility discharging effluent that is cleaner than the river water, then having a drinking water plant downstream pulling water out and applying more treatment than would have been necessary if they had just used the effluent directly from the plant.

Ms. Brown asked if Reclamation's Modification Report requires a public comment process. Mr. VanderPlaat said it is mainly technical information. Reclamation will do the engineering and design work but when they get to the Environmental Impact Statement (EIS) stage there will have to be a public process. Ms. Brown questioned why Reclamation would want to spend money doing an EIS when the Water Supply Project partners have already compiled EIS information and would be doing a Project-related public process anyway. Mr. VanderPlaat said he has made the point to Reclamation staff that it is not necessary and does not make sense from a public standpoint to run parallel processes. Reclamation wants to do its own process because they feel a responsibility to adhere to

their standard NEPA practices for CAAS. Mr. Weller wondered why the EIS could not be developed locally, once Reclamation has done its reports and recommendations. Mr. VanderPlaat said the likely response from Reclamation would be that because it is federal money being spent, a federal agency should do the work. Mr. Weller and other Commission members suggested that Reclamation could contract the work to a local government consortium, retaining federal management and oversight but gaining the benefit of local input. Mr. Gaffi pointed out that while the Water Supply Project partners understandably want to minimize the time and money wasted in advancing the Project, Reclamation is still obligated to carry out its responsibilities as owner of the existing Tualatin Project unless or until the title is transferred, and that process is on hold at least until Reclamation completes the CAAS process.

5. Announcements

Mr. Jockers mentioned a recent email to Commission members regarding Clean Water Services sponsorship of a documentary, "Wetlands: Seasons of the Mind." The film details how local artist Deborah DeWitt has taken inspiration for her paintings from Cook Park and the nearby wetland area developed by Clean Water Services on the former Thomas Dairy property. The park and wetland are adjacent to the Durham Advanced Wastewater Treatment Plant in Tigard. There will be a hosted premiere of the film Saturday, March 6, 3 pm at the Joy Theater in Tigard. Commission members can request a complimentary ticket to the event from Sheri Wantland at Clean Water Services. There will be a second showing on Sunday, March 7 for the general public. Mr. Gaffi said the film was presented in Portland recently and so many people showed up that organizers offered a second showing and people were still waiting in line. Mr. Jockers said DVD copies of the documentary should be available by the next Commission meeting. As part of its sponsorship, Clean Water Services has commissioned a painting by Ms. DeWitt to be placed near the conference room here at the Administration Building.

6. Adjournment

Mr. McKillip declared the meeting adjourned at 8:33 pm.

(Meeting notes prepared by Sue Baumgartner)