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# GRAYS HARBOR COUNTY

STATE OF WASHINGTON

February 9, 2009

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LaDean W. Bunkers, Mayor  
City of Ocean Shores  
PO Box 909  
Ocean Shores, WA 98569

RE: Response to letter dated December 29, 2008

Dear Mayor Bunkers:

Attached, for your review, is our response to your previous letter regarding the County's planned water system. I apologize for the length of time needed for our response, but we found that some of the questions were more complex and that some study was needed to give good sound answers.

We hope you find this information helpful in your consideration of future water supply for the City. We also hope that this information will allow us to get back together and continue our discussions about water supply alternatives.

Please contact me if you have further questions. We look forward to continuing to work together to address water supply needs in this area.

Sincerely,

Kevin Varness, Director  
Utilities and Development

KJV/jif

Attachment

## County Responses to City Questions

- ◆ QUESTION: Is it possible for the City to enter into a contract agreement with the County for a period of less than 20 years or have options to withdraw from the contract since most of the debt service would be shifted towards the Hogan's Corner water system customers anyway?

There are numerous options on how we can structure a contract for water service. The attached discussion of revised service option proposals and associated rates and charges addresses potential service options with and without a Minimum Contract Amount (MCA) of water service. Service proposals are based on our understanding of water demands and economics within the City. The County is open to discuss other service options and contract periods as needed to meet City needs.

The County would prefer to have a long term MCA for certainty in meeting operating costs and debt service obligations. A defined MCA contract allows for the commodity rates to be set lower because of the level of confidence in collecting minimum revenue. Without the rate stability, more conservative rate policies (i.e. high commodity charges) are needed to ensure minimum revenue is collected. Setting an MCA would be advantageous to both entities, but is not a requirement for a service contract.

### Pipe Corridor Questions

In your letter dated October 27, 2008, you inferred that for the City to receive an additional 0.5 MGD, or a total 1.5 MGD peak capacity, a different pipe corridor would be required between the state park and the existing piping at the north end of Chickamin Road. The following questions were asked based on this information:

- ◆ QUESTION: If that corridor was unattainable, what other corridor would be available?

There are essentially four general corridors for bringing water to the City. The corridors include State Route 115, Oyehut Road, Chickamin Road and the Dunes. Each corridor has its own unique challenge. The corridor with the most certainty with regard to access and permitting is Oyehut Road. The SR 115 corridor likely has the second most certainty. The Chickamin and dunes routes currently have a relatively lower level of certainty with regard to overall feasibility and timing.

- ◆ QUESTION: Does your cost estimate include obtaining an alternative corridor or would this be the City's responsibility?

Any known specific City costs obligations are specifically mention in this and previous discussions. It is assumed that private property owners associated with the Chickamin option would benefit from a pipeline through their property, and as such, would not be offered significant compensation. If a property owner asked for a relatively significant amount for ingress and egress, we would probably not choose that specific corridor because the comparative cost for that route with regard to other routes would then be greater. Due to the relative certainty of pipe corridors and City questions, our updated analysis and attached discussion of costs for service alternatives only considers a parallel pipe within the Oyehut Road corridor. This corridor is currently available and provides a solid basis for developing conservative and responsible costs estimates.

- ◆ QUESTION: Would this pipe corridor be part of a loop system for redundancy? If so, are the costs included in your current estimates?

The 1 MGD service option does not include looping. Service options for provision of 1.5 MGD and 2.0 MGD peak capacity include looping south of the State Park. The provision for fully redundant capacity reliability is not included since it is assumed that the City will maintain 6 MG of storage as well as some level of full time or emergency source capacity.

- ◆ QUESTION: Would the pipe sizing be adequate for 2.0 MGD if needed?

During the process of responding to your letter, we have been able to put more time and thought into the various service options. The service option with a 12-inch parallel pipe within the Oyehut Road corridor would be able to supply the 1.5 MGD and 2.0 MGD options. A summary of those options are attached. This piping configuration will also be capable of peak supply up to 2.5 MGD.

#### System Development Charge Question

In your letter you also inferred that if the City paid up front for 1 MGD of peak capacity that this would essentially amount to a negotiated system development charge.

- ◆ QUESTION: Does this mean that the City would not have to participate in the county's capital improvement plan in lieu of this system development charge?

Just to make sure that we are on the same page with terminology, a System Development Charge (SDC) is typically implemented to pay for capital improvements that are anticipated over the next 10-year period. A facility charge is typically referenced as a mechanism to pay for debt on current investments. For many utilities, both SDCs and facility charges are typically part of a connection fee. Since we are not sure if the City will agree to purchasing water before or after the initial improvements are in place, we will simply refer to any capacity related charge as a "connection fee". The negotiated SDC is in regard to the City making an investment into the initial improvements (i.e. future improvements) in order to obtain a certain level of capacity (i.e. 1 MGD peak as referenced in our previous proposal). In this case, the City's negotiated connection fee would buy 1 MGD capacity in perpetuity. Then, the City's negotiated wholesale rate would primarily pay for operation cost, but would also have low to moderate capital reserve component. The reserve component of the wholesale rate would be used to pay for general system benefit projects and repairs, just as it is done in most every municipal water system. Therefore, yes, the City would pay for some general benefit capital improvements through the reserve component of the wholesale water rate, but not as a specific future charge unless more capacity is specifically requested and obtained by the City.

We are somewhat open to the concept of "no connection fee". However if no connection fee is paid, the City would literally be renting capacity instead of owning capacity.

#### Abandoned Landfill Questions

As part of Monday night's discussion, the City Council learned of an abandoned landfill that may be up-gradient of the Hogan's Corner well field. As you can imagine there was plenty of discussion on this issue.

◆ QUESTION: Was this landfill included in the December 2003 Source Approval Report, Section II, Susceptibility Assessment?

There are actually two abandoned landfills and one solid waste transfer station within the area. In our analysis, neither of the old abandoned landfills are a concern with regard to potential impacts to the County well site. One landfill, referred to as the 1960's landfill, is located about 1,000' down-gradient of the well site near wetlands that have also been somewhat of a concern to City staff. This landfill site was discussed during the early stages of the project and was not considered a significant issue due to the location and the time that has past since it was abandoned. Generally, the 1960's landfill should have been identified in the susceptibility assessment, but has no bearing on susceptibility rating or potential for impacts to the well site. The other landfill, referred to as the 1970's landfill, is located almost 2 miles northeast of the well site and is outside of the 10-year time of travel boundary and therefore was not included in the susceptibility assessment. Both landfills were open burn type landfills and have been closed for decades.

The 1960's landfill is downstream of the expected capture zone for the well. We are only planning to capture a small portion of the total aquifer flow on a daily basis. As indicated in the data from a City piezometer that was implemented during our pumping tests, the wetlands and related surface activity do not impact the aquifer. It is inconceivable to pull water upgradient from the downgradient landfill or wetlands. Based on the known aquifer conditions, a 1,000 gpm well, if pumped continuously, can only draw from about 250' to 500' downgradient. The highest expected level of continuous or average pumping from a 1,000 gpm well is about 750 gpm. In this case, the expected worst case downgradient influence is about 350'. The other thing to note is that water in the aquifer is continuously moving down gradient and any water that is captured from downgradient areas was just at the wellhead a day or two previously.

The 1970's landfill is too far north of the well site to have any potential impact. Evaluation of groundwater flow patterns based on the hydrogeology work completed by Pacific Groundwater Group (PGG) and Robinson & Noble (R&N) indicate that groundwater flow in the vicinity of the 1970's landfill will be predominantly due west. The recharge to the well site is likely coming from an east to northeast direction that would not intercept the expected groundwater flow past the 1970's landfill. Even if the contributing flow to the County well site did intercept the groundwater flow pattern for the 1970's landfill, there is no reason to expect that there is any contaminant leaching or that any contaminants would be of any detectable concentration given the proximity of the landfill, the prolific aquifer conditions, the time that has past since landfill closure and the type of landfill (small municipal open burn). There has been no indication of any impact from the landfill on water quality in the area. The initial Hogan's Corner area test well, Test Well No. 1, was drilled approximately 3,000' west of the 1970's landfill and there was no indication of any odd constituents within the samples collected that would indicate landfill influence. The wells for American Adventure and Ocean Shores Outdoor recreation are likely in the downstream path of the anticipated groundwater flow from the 1970's landfill and samples collected from those sources have not shown any indication of contamination for the 30-year period that data is available. Hopefully this discussion addresses any landfill concerns the City may have had.

Water Testing/Increased Capacity Questions

Based on past hydro-geologist reports and communications in addition to the information above, the City is concerned about the source of supply within the County's well field. Water quality analysis based on the original 72 hour pump test was deemed by the Council as insufficient and it was suggested by the council that the County pump and test the well field for a longer period of time in order to eliminate this concern.

- ◆ QUESTION: Would the County be willing to pump its well at a rate of 1,000 gpm for a period not less than 120 days during the summer months with water quality testing and additional monitoring wells (piezometer)?

We understand the City's concerns about the long term viability of the aquifer, but we do not understand what specific problems have reportedly been pointed out in past hydro-geologist reports. There is a stark contrast between the City's aquifers and the Hogan's Corner Area aquifer. The Hogan's Corner area aquifer is a high quality water source that originates in a relatively well defined geologic area. Our previous peer reviewed aquifer tests and peer reviewed hydrogeologic reports and modeling work indicate that the aquifer can withstand an instantaneous withdrawal of up to 4,000 gpm (5.7 MGD) and a continuous withdrawal of up to 2,200 gpm (3.2 MGD). The proposed summer test will not verify or disprove the capability of the aquifer over the next 20-years any more than City tests have confirmed that the City's shallow wells will remain viable over the next 20-years. If there is a hydrogeologic basis for conducting the 120-day test or if there is a report or other peer reviewed study that indicates our work is not valid, please present this information to us as soon as possible so that we can consider it in regard to our project.

The County is confident with regard to the viability of the water supply, but the County is still moving ahead with a very responsible and conservative plan to develop the well site in phases so that we can identify any possible constraints before moving to the next phase of capacity development. It may help to understand that even if the County were to provide all of the City's current demand, less than one half of the rated capacity of the well site would likely be utilized over the next six to ten year period. We believe there is only a small risk if any in initially implementing less than one half of the conservatively rated capacity of the well site.

- ◆ QUESTION: Once the above concerns have been addressed, is it possible for the county to meet all of the city's current and future water demands at build out? If yes, could you provide a timeline and estimated rate/cost for these improvements?

Build out is a relatively elusive concept and is rarely considered in water supply planning for municipalities. Planning for and developing capacity for beyond 20-year is sometimes considered, but not always cost effective due to the risk of saddling current customers with too much of the burden of future growth. The County has never expected the Hogan's Corner Area system to be the sole source of supply for the City. However, depending upon actual realized growth and development, the 3.2 MGD annual quantity limitation on the current water rights could conceivably supply the City and the County area for the next 20 to 40 years. If the County water source is utilized to supplement City supply by as much as 1.5 MGD continuous supply as originally conceived 10-years ago, it is a very cost effective alternative that makes water supply more reliable and affordable for the entire area. Further discussion regarding County service options and costs is attached.

## UPDATED SERVICE OPTIONS AND COSTS - FEBRUARY 2009

General parameters and costs considerations for service in increments of 1.0 MGD (700 gpm), 1.5 MGD (1,050 gpm) and 2.0 MGD (1,400 gpm) peak capacity are provided below. Maximum monthly continuous or average water use is assumed to be about 75% of the peak capacity to allow for maintenance and general reliability considerations. The 1.5 MGD and the 2 MGD options include the assumption that the Oyehut Road corridor will be utilized for new piping (parallel to existing piping) to expand the existing hydraulic capacity that can supply up to 1.0 MGD. This Oyehut Road assumption is utilized to make sure that the options are feasible and conservative with regard to route availability.

Specific payment mechanisms and rates are dependent on contract arrangements between the City and County. Two general types of service contracts are identified, which include:

1. City pays a connection fee based on obligated capacity and pays for monthly water service without a "Minimum Contract Amount" (MCA).
2. City agrees to an MCA for a 20-year period and pays a reduced connection fee in consideration of the commitment to the MCA.

Where connection fees are referenced, it is assumed that the fee can be paid in a lump sum or integrated into rates over an agreed period. Payment of the connection fee obligates the County to supply the associated level of capacity to the City just as a connection fee obligates capacity to any other new customer on the water system. The City connection fee basis is the ratio of obligated City peak capacity to the total capacity of the County water system over the next 5 to 10 year period. For example, if the City obligation is 1,050 gpm peak supply and the expected ten year peak capacity development for the County water system is 2,000 gpm in that scenario, the connection fee basis for City supply would be about 50% of the estimated total general benefit project costs.

It is also assumed that the City will pay direct costs for any portions of projects that do not have system wide benefits. An exception may be made if the City agrees to an MCA type agreement prior to or during the early stages of the Hogan's Corner Area (HCA) project. A significant MCA contract would moderate rates for all users in the initial project, and therefore the control valve and Oyehut booster station modifications may potentially be included in the initial HCA project with no direct charge to the City.

The following is a summary of the general scope of each increment of County water supply:

### 700 gpm (1.0 MGD) Peak Supply Capacity

700 gpm (1.0 MGD) peak supply option would allow for up to 525 gpm (0.76 MGD) maximum average day supply. 700 gpm peak capacity also equates to about 1,090 ERUs.

County implements 1,350 gpm well capacity and 1,750 gpm booster station capacity with 160,000 to 320,000 gallons of storage as part of initial HCA project. Either City or County implements control valve, meter and Oyehut (Booster Pump Station) BPS modifications. No other upgrades or modifications are required for this level of service.

1,050 gpm (1.5 MGD) Peak Supply Capacity Option

1,050 gpm (1.5 MGD) peak supply option would allow for up to 785 gpm (1.13 MGD) maximum average day supply. 1,050 gpm peak capacity also equates to about 1,500 ERUs.

County implements 1,350 gpm well capacity and 1,750 gpm booster station capacity with 160,000 to 320,000 gallons of storage as part of initial HCA project. Either City or County implements control valve, meter and Oyehut BPS modifications. County increases HCA BPS capacity to 2,100 gpm, well capacity to 2,000 gpm and storage capacity to 480,000 gallons. City implements 12" water main in Oyehut Road and BPS at City entrance.

1400.gpm (2.0 MGD) Peak Supply Capacity Option

1,400 gpm (2.0 MGD) peak supply option would allow for up to 1,050 gpm (1.5 MGD) maximum average day supply. 1,400 gpm peak capacity also equates to about 2,000 ERUs.

County implements 1,350 gpm well capacity and 1,750 gpm booster station capacity with 160,000 to 320,000 gallons of storage as part of initial HCA project. Either City or County implements control valve, meter and Oyehut BPS modifications. County increases HCA BPS capacity to 2,100 gpm, well capacity to 2,500 gpm and storage capacity to 640,000 gallons. City implements 12" water main in Oyehut Road and BPS at City entrance.

Table 1 presents projected capital costs for the three supply options with and without a MCA of water service. General benefit project costs allocated to the City are in proportion to the service capacity. The total cost of direct benefit improvements are attributed to the City. The sum of the general benefit project cost (connection fee) and the direct project cost is the total capital cost obligation to the City. As discussed above, the connection fees for MCA type service agreement are reduced to account for the associated revenue certainty.

**Table 1 - Capital Cost to City for Supply Options (Million \$'s)**

Peak Supply Option	Without MCA			With MCA		
	Connection Fee	Direct Cost	Total	Connection Fee	Direct Cost	Total
700 gpm (1 MGD)	1.37	0.18	1.55	1.03	*0.18	1.21
1,050 gpm (1.5 MGD)	2.23	1.42	3.65	1.67	1.42	3.09
1,400 gpm (2 MGD)	2.85	1.42	4.27	2.28	1.42	3.70

\* May be included in general benefit work.

The 2.0 MGD option can be expanded to about 2.5 MGD peak supply by implementing a fifth well and an additional pump at the City BPS. Specific connection fee basis and direct costs have not been completed for 2.5 MGD service. However, if expansion to 2.5 MDG peak service capacity was needed, it appears that the cost to the City will likely be about \$0.5 Million above (in addition to) the cost for 2.0 MGD service based on the general cost considerations for the other options. Service beyond 2.5 MGD has not been considered to any great level of detail at this time.

Table 2 presents the average commodity charge for four different levels of service under the scenario where the City and County agree to either a summer peak MCA or a year round MCA. The lower average

cost for year round use reflects a significant economies of scale. It is anticipated that commodity charges would be structured so that use above the MCA would be less than the average rate to acknowledge those economies of scale, but the rate structure would also have some provision to acknowledge DOH and Ecology requirements for water use efficiency. The 750,000 gpd MCA option is at the upper limits of the maximum monthly average service capability of the 1.0 MGD peak supply option. Therefore, for this option, the County would expect the agreement to include provisions to eventually complete the improvements that would result in at least 1.5 MGD peak supply.

**Table 2 - Average Commodity Charges - w/ Minimum Contract Amount (MCA)**

MCA	Monthly Commodity (c.f.)	Summer Only (3 Months)		Year Round	
		Average Commodity Rate per c.f.	Total Annual Cost	Average Commodity Rate per c.f.	Total Annual Cost
250,000 gpd	1,000,000	\$0.01529	\$47,000	\$0.01159	\$139,100
350,000 gpd	1,400,000	\$0.01176	\$50,600	\$0.00892	\$149,800
500,000 gpd	2,000,000	\$0.00940	\$57,800	\$0.00713	\$171,200
750,000 gpd	3,000,000	\$0.00783	\$72,200	\$0.00594	\$214,000

Table 3 presents the average commodity charge for four different levels of service under the scenario where the City would not be subject to a MCA of monthly water service. In this case, the City would use as much or a little water as needed and there would be no monthly charge if no water is used.

**Table 3 - Average Commodity Charges - w/out Minimum Contract Amount (MCA)**

Average Daily Use	Monthly Commodity (c.f.)	Summer Only (3 Months)		Year Round	
		Average Commodity Rate per c.f.	Total Annual Cost	Average Commodity Rate per c.f.	Total Annual Cost
250,000 gpd	1,000,000	\$0.01790	\$53,700	\$0.01790	\$214,800
350,000 gpd	1,400,000	\$0.01376	\$57,800	\$0.01376	\$231,200
500,000 gpd	2,000,000	\$0.01100	\$66,000	\$0.01100	\$264,000
750,000 gpd	3,000,000	\$0.00917	\$82,500	\$0.00917	\$330,000

Due to the uncertainty of revenue, the average commodity charge is quite a bit higher for the non-MCA scenario compared to the MCA scenario. However, if the City paid a connection fee and made significant investment in direct benefits, these rates could possibly be lowered since that would mean that the City is committed to using the water. More detail can be developed and provided if the City is serious about looking into this type of service option.

General Service Options and Costs

Discussions with City staff indicate that proposed 2 MGD peak capacity source and treatment upgrades by the City will cost \$6 Million with an annual operating cost of \$300,000. The above analysis indicates that the City could buy 2 MGD of peak capacity from the County at a cost of \$3.7 Million and meet current average day demand for an annual operating cost of \$214,000. The City could also buy 1.5 MGD peak supply capacity at a cost of \$3.09 Million and meet current average day demand for the same \$214,000 annual operating cost. Additional capacity would be made available to the City upon request and the City

could maintain some existing source and treatment capacity for emergency use (as currently planned). The cost for County supply to the City is significantly less than City options. The County is not necessarily advocating total City reliance on County water supply. However, the numbers do suggest that reliance on County water supply may be a viable option. Because the City has a greater level of apprehension about relying on the County source of supply than the County does, the County is willing to look at ways to reduce the overall apprehension.

One of the ways to minimize apprehension may be to minimize up front cost and shorten contract periods. The lowest initial investment for the City under the County supply options is probably a short term non-MCA service agreement and pay with an up front cost of an estimated \$180,000 for the meter and control valve at the City entrance and Oyehut BPS modifications to enable the supply of up to 1.0 MGD peak capacity. In this case the County could defer the connection fee for the initial trial period and the City will initially rent capacity instead of own capacity. The City would then purchase water at the non-MCA commodity charge for the trial period. If the City wanted to pay for the capacity and enter into an MCA service contract at the end or even during the initial trial period, the County could potentially reduce the connection fee at that time by a portion of the difference between the non-MCA rates and the MCA rates for the amount of water that was used. For example: If the city used 500,000 gpd for three years, the difference in the cost of service between the non-MCA rates and the MCA rates would be about \$280,000. It would be reasonable to assume that 60% to 80% of the difference could be allocated to capacity reserves and then credited against a connection fee payment. On the other hand, if the City did not want to continue using County water at any time during the trial period, the City could simply not use County water. The County source would then revert to an emergency intertie or non-guaranteed peak supply as applicable and water use could then be billed at about what the City Charges the County unless otherwise negotiated down.

Another option that has been discussed is utilizing the County water supply for peak summer use. Costs for summer use only are provided in the above tables. If the City implements their own 1 MGD of new source and treatment capacity instead of 2 MGD and utilizes the County supply for peak capacity in the summer months, the total capital cost for the combined option will probably be in the range of about \$4 Million to \$5 Million and the annual source related operating cost should be about \$220,000 to \$250,000. It appears that the City can save at least \$1 Million in capital costs and \$50,000 in annual operating costs by using the County source to meet peak summer demands. This is more expensive than the option of the City obtaining all source of supply from the County, but there is some added benefit from increased source reliability and reduced overall risk of relying on one source of supply from one area. The City would obviously have to weigh some of these reliability benefits against the additional costs.

In summary, there are many ways to address City water supply concerns. The above discussion leads to the fact that the County supply is cost effective for use by the City. The County is not presenting this information to try to sway the City in one direction or another, but to provide more detailed information for use as a basis for sound decision making.