



**CITY OF MCCLEARY**  
**Regular City Council Meeting**  
**Wednesday, March 9, 2016**

ROLL CALL AND FLAG SALUTE	Councilmember's Orffer, Richey, Peterson, Blankenship and Ator were in attendance.
ABSENT	None.
STAFF PRESENT	Present at the meeting were Todd Baun, Wendy Collins, George Crumb, and Dan Glenn.
PUBLIC HEARING	None.
PUBLIC COMMENT	<p>Joy Iverson wants to report that the Summit Pacific Hospital offers guest speakers that address many issues and are very informative. They include dinner and it's all free. She also added the new clinic in McCleary will open officially on April 11, 2016 and the ribbon cutting will be on April 1st at 3:00 pm.</p> <p>Sue Portschy spoke to Todd Baun earlier this week about the fire lane issue. She wants to know who is going to monitor the parking if the City decides on time limited parking. She also wants to see good signage indicating the approved use. She asked the Council to think about these things when considering how the lane should be used.</p>
MINUTES APPROVED	<b>It was moved by Councilmember Peterson, seconded by Councilmember Orffer to approve the March 9, 2016 minutes. Motion Carried 5-0.</b>
VOUCHERS	<p>Accounts Payable vouchers/checks approved were 40832 - 40907 including EFT's in the amount of \$204,907.26.</p> <p><b>It was moved by Councilmember Ator, seconded by Councilmember Peterson to approve the vouchers. Motion Carried 5-0.</b></p>
CITY ATTORNEY REPORT	Dan Glenn has provided a report and is available to respond to any questions.
MAYOR'S COMMENTS	<p>After discussion, the Council decided on a summer schedule for City Council meetings. They will be held the second Wednesday of the month for the months of June, July and August. There will not be any meetings on the fourth Wednesdays, during the summer months.</p> <p>Mayor Schiller would like to see a clause added to the ordinance for connection fees to address turning on and off services. The City should receive compensation when the utilities are disconnected, and a realtor or owner wants them reconnected for a short time. Other agencies charge for this service to recover labor cost.</p> <p>Councilmember Blankenship provided information regarding a community solar project. He has a brother that works for Tacoma Light and Power and they implemented the community solar project that allowed the City to purchase solar panels for \$1,000. They were authorized to purchase up to ten solar panels. The program runs out in 2020 and he is hoping the City can take a look at the program and possibly pursue it, if it turns out to be worthwhile. Todd Baun said a couple areas of concern he has is first, where to place them with our limited space, and second, what maintenance will be required to keep them operational. More discussion is needed with staff and the Mayor to see if this is feasible for the City.</p>
DIRECTOR OF PUBLIC WORKS REPORT	Todd Baun has provided a report and is available for questions.
POLE ATTACHMENT AGREEMENT	Tabled.
GOLF CART DISCUSSION	Chief Crumb said someone approached him about using a golf cart on the city streets. After researching, he found an RCW that relates specifically to golf carts. He said the two golf carts he was aware of in town look a lot like an ATV. Mayor Schiller said they need to be street legal. Dan Glenn said the city has to make the decision to allow them and agreed they do need to be street legal.

4056-DR-WA GRANT  
EXTENSION AMENDMENT A -  
FEMA 2012 EVENT

Todd Baun said the FEMA grant from 2012 is still not final. They asked for a time extension so they can final the City out. **It was moved by Councilmember Orffer, seconded by Councilmember Blankenship to authorize the Mayor to sign the FEMA extension. Motion Carried 5-0.**

FIRE LANE - ACCESS TO  
NORTH SIDE OF PARK

Todd reviewed the files to find anything that had to do with the fire lane at Rainbow Park Apartments and there is nothing showing it was ever established as a fire lane. Right now, there are a lot of questions about what that lane is supposed to be used for. Todd is asking the Council to review the options and come up with something that may address all the special requests. Ambulances have used this lane but there is no proper turnaround so they have to back up into the park and tear up the grass. The City wants to put in a hammerhead turnaround to fix the issue. The road originally was a service road that was never finished. Todd would like to see the road used as a load/unload area to assist the residents of the apartments.

Mayor Schiller would like an ordinance to address the load/unload issue, add a hammerhead turnaround and allow occasional event parking. He will also contact the property manager and discuss this to see if they are on board with the City's vision.

GRAY & OSBORNE  
INTRODUCTION AND REVIEW  
OF CITY PROJECTS

Jon Hinton, the City Engineer from Gray & Osborne, gave the Council an update on three projects he has been working on. Wildcat Drive pump station had a 30-year old pump that died and we are now trying to get improvements done before the other one dies. He is 90% finished.

The water system comprehensive plan update is also being worked on and is now 99% complete. The Council needs to discuss rates before finalizing it. Another issue is the evaluation Jon performed on Thurston County PUD #1. They have a few small water systems that are adjacent to the city and one of the water systems has water rights. There is a grant available, which we have applied for, to fund an evaluation of consolidating smaller water systems with larger water systems, like the City's. Mr. Hinton needs direction from the Council whether to final this now or wait until we have everything finished. If we final it now, there will be a cost of a few hundred dollars. The City will need to purchase all the systems together. They are not offering them individually.

The Sewer system comprehensive plan is 45% complete. The Council will wait until we find out if we are approved for the grant before exploring.

ORDINANCE 816 MARIJUANA  
PRODUCTION

**It was moved by Councilmember Ator, seconded by Councilmember Peterson to adopt Ordinance 816 relating to zoning, regulating certain uses, amending section II, Ordinance 804, providing for enforcement, severability, and an effective date. Roll call taken in the affirmative with Councilmember's Ator, Peterson and Richey voting in the affirmative and Councilmember's Orffer and Blankenship voting against. Adopted 3-2.**

RESOLUTION 683 MRSC  
FUNDING SUPPORT

**It was moved by Councilmember Ator, seconded by Councilmember Peterson to adopt Resolution 683 stating the City's support for the legislature to include unconditional state funding of the Municipal Research and Services Center in the budget it adopts. Resolution Adopted 5-0.**

EXECUTIVE SESSION

None.

PUBLIC COMMENT

Chief Crumb thanked Councilmember's Orffer and Blankenship for voting against the marijuana ordinance.

MEETING ADJOURNED

**It was moved by Councilmember Peterson, seconded by Councilmember Orffer to adjourn the meeting at 8:02 pm. The next meeting will be Wednesday, April 13, 2016 at 7:00 pm. Motion Carried 5-0.**

*Approved by Mayor Brent Schiller and Clerk-Treasurer Wendy Collins.*

**MEMORANDUM**

TO: MAYOR AND CITY COUNCIL, City of McCleary  
FROM: DANIEL O. GLENN, City Attorney  
DATE: April 8, 2016  
RE: LEGAL ACTIVITIES as of APRIL 13, 2016

THIS DOCUMENT is prepared by the City Attorney for utilization by the City of McCleary and its elected officials and is subject to the attorney-client privileges to the extent not inconsistent with laws relating to public disclosure.

1. **BONNEVILLE ENVIRONMENTAL FOUNDATION:**

A. Memorandum of Understanding: Following up on the brief discussion which I believe occurred at the last meeting, Council Member Blankenship had discussions with Mr. Ramsey of the Foundation. As a result, Mr. Ramsey provided a draft Memorandum of Understanding in terms of services to be provided in relation to evaluating the installation of solar power equipment upon certain City buildings. Since it was a contractual commitment which, for itinerary reasons involved a meeting onsite prior to this meeting, I recommended that any commitment be conditioned upon ratification by the Council. The MOU was amended to include his provision.

I am certain that the MOU will be included in the Council packet. It does include commitments which go beyond the current stage of the project. From a legal standpoint, I have no problems with the terms as they exist. However, before moving forward the Council will need the benefit of input from Mr. Baun and Mr. Nott, the staff members whose departments would be most directly involved in the implementation of any program.

B. Proposal: As a result of the referenced meeting and follow up study, Mr. Ramsey has submitted a report with a suggested installation program for solar panels and associated equipment upon what I believe are two different sites. That report is likely also in the packet. The same recommendation in terms of receiving input from Paul and Todd as well as Mr. Ramsey. I believe that Ben will also have information to provide to you.

2. **SMALL WORKS ROSTER AGREEMENT WITH MRSC**: Some years ago the City adopted an ordinance allowing it to utilize the small works roster approach in terms of public works contract. Since its original adoption, the size of the contracts which may be let under the small works roster approach has increased to \$300,000.00. Rather than having to expend the funds for advertising for applicants to the roster on a calendared basis, the City took advantage of entering into a contract with the Municipal Research and Services Center which maintained, as allowed by law, a state-wide roster. Not only is the contract cost effective, it also provides the City a much broader scope of possible contractors.

The cost of the contract is minimal. It is subject to renewal at this stage. I would recommend authorizing its renewal.

3. **SEWER UTILITY TECHNOLOGY**: Historically, the City's sewer treatment and collection system has utilized the "gravity" system for collection of the waste. As suggested, it utilizes the force of gravity, with the assistance of pump stations, to transport the liquids and solid materials from the individual connection to the treatment plant. Some years ago the City discussed allowing two other alternatives to be utilized by developers in providing connections to properties. One is known as the "grinder system" and the second is identified as the "STEP" system. Both operate in such a manner as to be less sensitive to the gradient of the line although through different methods. As it always true, each carries with it the proverbial benefits and burdens. In recognition of projects which I observed in other cities I have represented, I included both in the definitional provisions of the extensive sewer code ordinance update done

at that time, although allowance of their utilization was not made specific.

A potential situation under which a developer would like to use of these systems to provide service to properties being considered for residential development. An electronic "discussion" has taken place between Todd, Jon Hinton, and myself. Since it has been some time since the discussion of the characteristics of the occurred, it is my understanding that Todd will be providing you information on at least the grinder system.

4. . **LEGISLATIVE ACTION:** Well, the Legislature's special session has come to an end. The budget has been adopted. It basically delayed a number of issues until the next session following the fall elections. However, from City's standpoint, several important actions are in the budget document which has been adopted and now signed by the Governor.

A. Budget Matters:

1. PWTF: From the City's standpoint, the Public Works Trust Fund, a source which historically the City has relied upon to provide funding for projects, will be pretty much drained with the moneys being repaid by cities and counties for previously completed projects being "swept" into the current expense fund to be used for other purposes. While I do not believe that McCleary currently has any projects pending funding from that source. Mr. Baun will have to confirm that fact. If so, likely will not go forward. Ironically, as seems to happen only too often any more, apparently they did provide \$50,000.00 to fund a "study" on development of a future "strategy" for this fund.

2. MRSC: The Service was funded. There is little doubt that the contacts such generated by local governments which the legislators received helped to make them very aware of how important that service is to their constituents. I do not know how many of you have accessed the information on their site, including the various publications. I do know from my standpoint, the publications, services and, even more importantly, their staff are an important resource. An example is the provision of the Small Works Roster service

being considered for extension this evening.

B. Public Records: No significant action was taken in terms of the bills dealing with making the Public Records Acts more reflective of the impacts upon the public agencies of various requests. Ironically, as I have let the Mayor and Ms. Collins know by email, in a 5-4 decision our Supreme Court upheld a decision against the Department of Labor Industries. The trial court decided that the Department had failed to timely respond and to disclose records. Thus, in addition to requiring the disclosures, it awarded a judgment against the Department in the amount of around \$502,000.00 in penalties and over \$50,000.00 in attorneys' fees. It will be interesting to see if perhaps the state agencies may now be more interested in clarifying how much time an entity has to respond after a judicial decision before a penalty may be imposed and in terms of narrowing the discretion the trial court has in deciding how much to impose per day.

5. **COUNTY-WIDE COMPREHENSIVE EMERGENCY MANAGEMENT**

**PLAN**: As you are aware from references in prior Reports, I have been in contact with the County official dealing with the update. It is nearing completion. He recently held two workshops on the matter, notice for which I hope you received. When I raised the issue to him, he was kind enough to set up one of the workshops in recognition that many elected officials of cities such as McCleary can not attend such workshops in the middle of a work week.

He has indicated that the goal is to have the plan in place this year.

As always, this is not meant to be all inclusive. If you have any questions or comments, please direct them to me.

DG/le

**STAFF REPORT**

To: Mayor Schiller  
From: Todd Baun, Director of Public Works  
Date: March 18, 2016  
Re: Current Non-Agenda Activity

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**City Wide Clean-Up**

The City wide clean-up is scheduled for April 23<sup>rd</sup> from 8:00 am to 2:00 pm. We will be picking up items from the elderly and disabled during the week leading up to the 23<sup>rd</sup>.

**Discolored Water Issue**

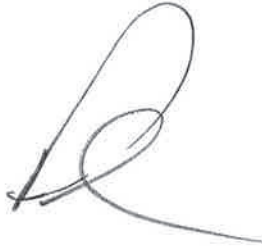
On Friday afternoon, March 25<sup>th</sup>, the city experienced a chemical feed pump malfunction causing an increase in potassium manganite, a form of sodium, causing a purple or pink tint in the water. This is not harmful and poses no health threat.

The issue was quickly identified and corrected shortly after the first complains starting coming in about “colored” water. It seemed to mostly affect the west side of the City, so we were able to flush hydrants in that area and correct the issue.



## STAFF REPORT

To: Mayor Schiller  
From: Paul Nott, Light & Power  
Date: April 6, 2016  
Re: March Report



	<b>Monthly Statistics;</b>	<b>YTD Totals;</b>
<b>New Services;</b>	<b>0</b>	<b>2</b>
<b>System Outages;</b>	<b>3</b>	<b>7</b>
<b>Pole Replacements;</b>	<b>1</b>	<b>2</b>
<b>Maintenance Work Orders;</b>	<b>4</b>	<b>12</b>
<b>Billable Work Orders;</b>	<b>0</b>	<b>2</b>

The month of March consisted of 4 new service connections, 1 underground fault, 5 transformer change outs, a vehicle vs. pole collision, and almost 40 crew hours inventorying our distribution system.

It seems that new construction is slowly picking up again in our community. We have connected 4 new residences this past month and I have sent out some estimates to other potential customers for service.

We did have another underground fault on Oak Meadows over the weekend. Thanks again to Mason Co PUD 1 for their assistance in locating the fault.

We have been changing out numerous transformers in the SE section of town. We are anticipating cutting this section over to the 12KV substation sometime in May. As we get closer we will schedule and advertise the outages.

The crew spent almost a complete week collecting an accurate count of poles and equipment in our distribution system. This data will be requested for the rate study. We also took advantage of this time to also collect accurate pole attachment data.

We will be continuing on the cut over project as time allows.

As always if you have any questions feel free to contact us...

**STAFF REPORT**

To: Mayor and Council  
From: Todd Baun- Director of Public Works  
Date: April 8, 2016  
Re: Home Inspection Connection Fee

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As the Mayor mentioned last meeting, Lori Hanson (Utility Account Manager) has been work on solving an issue that has been coming up numerous time over the last several months. I'm proving her problem and possible solution below.

I would like to revisit the idea of having a Home Inspection Fee.

Recently, there have been several requests to have the water/sewer turned on for a one day inspection. These homes have been on the market for quite some time and have incurred the \$450.00 Water/Sewer Reconnection Fee. (Resolution 655).

In 2015, I estimated an average of our Light & Power and Public Works hourly pay with benefits. The average is \$48.81 for one hour. I feel that a Home Inspection Fee of \$30 to \$40 would not only increase the City's revenue, but also increase the sales of homes and businesses in our city. The Home Inspection Fee would not take the place of the Water/Sewer Reconnection Fee, but instead allow the Real Estate Brokers to continue to the next step in selling of properties. The Water/Sewer Reconnection Fee would still be the responsibility of the buyer once they put the utilities in their name.

This Home Inspection Fee would be for a one day inspection only. If the water is needed to be on for more than one day, the Reconnection Fee (Resolution 655) would apply.

The Power utility would still fall under the same guidelines. If an address has not had power turned on in over a year, it would require an L&I inspection to be completed first.

**Action Requested:**

Please discuss and give direction on if we can have Dan draft an amendment to Resolution 655 to include a Home Inspection fee and for a cost in the range of \$30 - \$40.

**STAFF REPORT**

To: Mayor and Council  
From: Todd Baun- Director of Public Works  
Date: April 5, 2016  
Re: E-One Grinder Pumps

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We recently had an inquiry from a land owner that is developing some lots North of City limits. His question, would the city have an interest in allowing him to connect to the city sewer from his lots on Hicklin road? He proposes using the E-One system that would require a single line from the project and each lot would have its own grinder pump. He has a total of 15 lots that he would connect. Since they are outside of City limits the County only requires onsite septic but the developer will get more usable space if he connects to our sewer (this also provides less impact on the aquifer for our drinking water)

We had a similar request for the same type of system in September 2006 for the Cedar Heights development. That request was turned down for Cedar Heights by the City Council at that time, but the Council left the issue open to be revisited for future developments.

A possible drawback is once you allow grinder pumps, you will probably be getting requests to use them on almost every developer extension that needs a pumping system. This is a big decision because Ecology's policy is the City is responsible for any problems, even when the pump is on private property. The City should have an easement and a maintenance agreement with each property that is using a grinder pump. If there is a problem with the system, causing a potential health hazard (sewage spill) and the property owner won't fix it, the City needs documentation allowing them to come on the property, fix the problem and back charge the property owner. Cities that allow grinder pumps typically have a few new pumps on the shelf for this purpose.

On the PRO side, since grinder pump systems are cheaper to install than a conventional pump station, allowing them may stimulate the potential for development within the City. We just need to be aware of the potential for increased cost for engineering review, easements, maintenance agreements and maintenance.

I have attached a brochure about E-One systems. I have also asked Jon Hinton to attend the meeting to go over more pros and cons of this type of system and answer any questions you may have.

**Action Requested:**

Please discuss and give direction on if you are in favor or against connections of grinder pump to our sewer system.

**A** NYWHERE

**YOU SET  
YOUR  
SITES**



**E/ONE  
SEWER  
SYSTEMS**

**WILL SET  
YOU  
FREE**



**Environmentally Sensitive  
Economically Sensible™**



# E/ONE SEWER™ SYSTEMS GIVE YOU THE FREEDOM TO SEWER ANYWHERE –



**E/ONE SEWER™ SYSTEMS ARE COST-EFFECTIVE**, highly reliable central sewer systems that can be installed in any terrain flat, wet, rocky, even on sites with dramatic elevation changes. Plus, they are much more affordable than conventional gravity sewers, which require major excavation, and much safer for communities than septic systems, which can eventually fail, polluting ground and recreational water and endangering public health.

Front cover: E/One Sewer Systems installations (from top): Paradise Valley AZ, Wilder, KY, Kitsap Peninsula, WA  
This page: Oak Grove, MN  
Page 3: Canton, GA

# AT A FRACTION OF THE COST OF GRAVITY SEWERS.



**With E/One, you can set your sites higher – or lower.** In fact, you can site new homes in formerly infeasible locations – rugged hills, isolated flatlands, coastal areas, below grade, or sites with high water tables.

For the developer or prospective homebuilder, E/One frees you to utilize the best sightlines on any plot – regardless of the location of the sewer main or septic field. This means better sightlines, aesthetics, and views, as well as the possibility of utilizing “difficult” or orphan lots, and maximizing the density of any development.

E/One Sewer systems also feature a lighter “footprint.” That’s because they follow the contour of the land, so they can go anywhere without destroying the landscape. Even around existing features like mature trees, streams, and rock formations.

They’re easier to install than conventional gravity sewers, so they greatly reduce the high cost of sewerage. And they’re highly reliable. So they lower operating costs.

Environmentally sensitive. Economically sensible. Plus the freedom to build anywhere.

**Break the restrictions of gravity – and enjoy true freedom.**

# THE E/ONE SEWER SYSTEM.

## HERE'S HOW THE E/ONE SEWER SYSTEM WORKS:

The E/One system stores, grinds and pumps wastewater under pressure to a treatment site or central sewer, depending on the location. Because the output is pressurized, the wastewater can be transported horizontally up to a mile, or uphill some 185 feet vertically. Because the system does not rely on gravity to carry the waste, it provides more options for siting and building, as well as system renovations.

## WHY THE E/ONE SYSTEM IS BETTER THAN GRAVITY:

Both the gravity sewer and the E/One Sewer system are known as central sewer systems. Most cities and villages use central sewerage, which simply means that waste is transferred, usually by pipe or a main, to a central treatment plant.

Gravity sewers are the "original" central sewers, with origins in the Roman aqueducts. Unfortunately, the technology behind gravity sewers is also centuries old: they're bulky

systems using a large main and usually require major excavation to install. They must be accurately placed and bedded along a continuous downward grade and often involve large, costly lift stations. Plus they're expensive and not entirely efficient in transporting waste because they can tend to leak, and can be compromised by storm water infiltration.

## ENGINEERED TO DO ONE JOB PERFECTLY.

The Extreme series grinder pump, the heart of the E/One Sewer, is the industry leader in ruggedness, watertight design, serviceability and reliability. It provides wastewater storage, grinding, and pumping in a single unit. Translation: it lowers operating costs, the cost of waste collection, and reduces maintenance.

The E/One grinder pump is engineered to do one thing perfectly and in the process, provides the best value for homeowners, builders, developers and municipalities.

## THE LEADER IN RELIABILITY.

The technically superior E/One Sewer system employs highly sophisticated technology that results in a 10 year average mean time between service calls, and requires no preventive maintenance. Plus, low upfront costs, reduced operating expenses, and the ability to be installed at any site, regardless of the challenges of topography.



## DEFY GRAVITY WITH E/ONE.

The beauty of the E/One Sewer system is that, unlike conventional central sewers, it defies gravity. Because installation follows the natural contour of the land, it is ideal for all terrain, including land that is flat, wet, rocky, or hilly. It gives the freedom to sewer anywhere including sites where old septic systems have contaminated water and posed severe public health issues.



# HOW DOES IT WORK? WHY IS IT BETTER?



## HOW WILL IT LOOK?

Aesthetics are a major consideration for homeowners. The E/One Sewer system is virtually out of sight — the only visible part is a

low-profile cover that blends seamlessly into the environment but provides easy access for servicing operations.

The E/One Extreme series indoor unit was specifically designed for installation in a basement mechanical room or in the slab foundation. Its clean look fits unobtrusively into any environment.

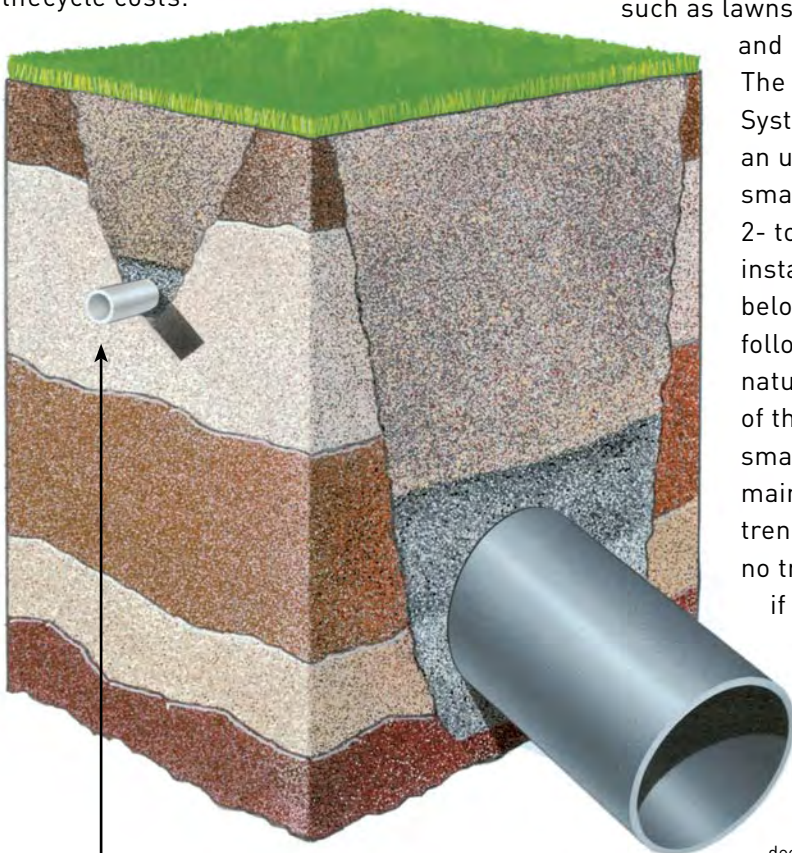
## PRICED RIGHT FOR INSTALLATION. AND FOR THE LONG TERM.

E/One can solve sewer problems and replace failing septic systems at a fraction of the cost of conventional gravity sewers. E/One Sewer systems sharply reduce both front-end installation costs and overall lifecycle costs.

## WHEN IT COMES TO SEWER SYSTEM TECHNOLOGY, BIGGER ISN'T BETTER.

Conventional gravity sewers can use up to a 24-inch large-diameter pipe, or main, which requires major excavation and severely disrupts the landscape and any built structures such as lawns, driveways,

and plantings. The E/One Sewer System uses an unobtrusive, small-diameter 2- to 4-inch main installed right below the frostline, following the natural topography of the land. The small-diameter mains mean small trenches — or, no trenches at all if directional boring is used.

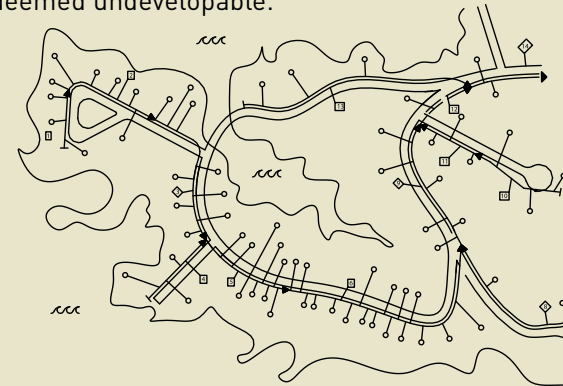


E/One Sewer System: 2-4" main, installed to follow the contour of the land.

← Gravity system: large 24" main. Installation requires deep excavation.

## SET YOUR SITES ANYWHERE

Multi-branch E/One Sewer systems serve the entire community and give engineers, developers, community planners, and homeowners the freedom to sewer anywhere, on any kind of site. Even sites that — to date — have been deemed undevelopable.



## SEPTIC SYSTEMS — POTENTIAL TIME BOMBS IN OUR MIDST

While septic systems may be a common way of disposing of residential sanitary waste, they are, at best, a temporary solution and come at a high cost to public health. Around the world, septic systems have degraded ground and recreational water, creating serious



safety problems. Because of failing septic systems, water is not safe to drink. In addition, failing septic systems decrease real estate values. E/One Sewer systems can go wherever septic systems were initially used, reclaiming water quality and quality of life while providing an efficient, cost-effective solution to wastewater disposal and treatment.



# “Without the E/One Sewer System...



...we wouldn't be standing here today.”

Situated on a steep Kentucky hillside overlooking the Ohio River and Cincinnati beyond is a breathtaking piece of real estate. But difficult terrain, uncertain easements, and expensive gravity sewerage solutions made it unattractive to prospective developers. Until recently.

The developer chose the E/One Sewer system to provide a simple, effective, and inexpensive solution for this problematic parcel. Only shallow, contour-hugging, small-diameter lines are needed to carry wastewater, which is critically important due to the extensive bedrock at this site. Best of all, the E/One system cost a fraction of the other alternatives.

# “Compared to gravity systems, we saved 50% on Operation & Maintenance with E/One Sewers



...and 75% on installation.”

Nestled between the Cascade and the Olympic Mountain ranges, the Kitsap Peninsula boasts 300 miles of scenic coastline in the Puget Sound. So when failing septic threatened that pristine coast, municipal engineers found a cost-effective solution – and an ally – in E/One Sewer systems.

They compared the construction and O&M costs of four distinct sewer collection systems, and E/One's pressure system came out on top - in both categories. Compared to a gravity system, the E/One system was less than a quarter of

the cost to install, and less than half projected O&M.

Nearly 350 E/One grinder pumps and six miles of high-density polyethylene pressure main were installed along the waterfront. A careful analysis of the operating and maintenance costs revealed that after seven years, only 16 service calls per year were required – less than half the number projected. And the mean time between service calls was 22 years – more than double the pre-project estimate of 10 years. The cost of those repairs came in at 68 percent less than projected.

## “People pay a premium for this natural setting.”

### E/One showed us how to preserve it... and our capital.”

This 2,200 site development is nestled in the rugged, hilly north Georgia terrain. A dramatic setting that offers fresh air, pristine forests, and breathtaking views. Plus considerable sewerage challenges.

That’s why the developer turned to E/One, a trusted resource, to help him engineer an elegant, simple solution. By using pressure sewerage, only shallow, contour-hugging small-diameter lines

were needed to carry wastewater – even uphill. Powered by E/One’s reliable grinder pumps, the system carries waste offsite, and away from the community reservoir. And, at a fraction of the cost of gravity sewers. This solution minimized the number of unsightly and expensive lift stations from 20 – to just three!

The developer says it best: “The E/One system allows us to offer the best environmental quality of life in a most attractive new community.”

Arizona’s Paradise Valley is no picnic for builders. These exclusive home lots present daunting challenges with steep grade, rocky terrain and restrictive land use covenants. No wonder other builders walked away from this challenging infill lot – except one.

This builder turned adversity into profit with E/One’s proven pressure sewage system. Instead of the expensive and disruptive lift station system proposed, he saved lots of money – and got an elegantly simple, cost-effective solution. He preserved the environment as well as his budget, with pumps mounted at grade and low impact, small diameter piping installed just below the surface.

The bottom line: E/One defied both gravity and conventional wisdom and rescued an “unbuildable” lot – for a lot less.

## “Sewering the site was an uphill battle.”

With E/One I found gold in these hills”



# THE ADVANTAGES OF THE E/ONE SEWER SYSTEM



## HOMEOWNERS

- Safe – protects water quality and enhances quality of life
- Reduces costs of housing – both initial and ongoing
- Visually pleasing – only evidence is a low-profile cover that is easily camouflaged
- Does not disrupt the beauty of the landscape or damage built structures
- Virtually no preventive maintenance required of homeowner
- Central sewer increases value of home

## CONTRACTORS/CONSTRUCTION MANAGERS

- Installation follows contour of the land – does not require major excavation
- Needs only shallow trenches – increases ease and safety of installation procedures
- Labor and material costs are much less than gravity sewer systems



## MUNICIPALITIES/DEVELOPERS

- Permits freedom to sewer anywhere in any kind of terrain
- Low initial costs make central sewers economically feasible
- Low initial costs make development economically feasible
- Central sewer increases value of development units
- High reliability – no preventive maintenance
- Reduces operating costs
- Protective of public health
- Permits regulatory compliance
- Closed system – not compromised by stormwater infiltration – plus zero exfiltration

## ENGINEERS/OPERATORS

- Proven engineering and design
- Ideal for every terrain and building environment
- Cost-effective central sewer solution for new construction or retrofits
- Engineering and technical support during design, construction, installation, and operation
- Reliable performance means reduced O&M costs – up to 50% or more savings over gravity
- When needed, E/One pumps are easy and safe to access and service
- Designed to keep maintenance to absolute minimum






Environmentally  
Sensitive

Economically  
Sensible

[eone.com](http://eone.com)



# E/ONE SEWER SYSTEMS ARE MAKING BETTER COMMUNITIES ALL OVER THE WORLD

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**KVA ELECTRIC, Inc.**

25829 Jim Creek Road Arlington, WA 98223 (360) 403-8301 Fax (360) 435-6145

# City of McCleary

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## Substation Transformer Oil Analysis & Test Report

**Project No.:** MCC0216A

**Project Location:** McCleary, WA

**Customer POC:** Paul Nott

**Date of Report:** March 22<sup>nd</sup>, 2015



# KVA ELECTRIC, Inc.

25829 Jim Creek Road    Arlington, WA 98223    (360) 403-8301    Fax (360) 435-6145

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## Summary

The project consisted of collection and testing of the insulating fluid from four transformers at the City of McCleary's two substations.

## Scope of Work

The generalized outline of the work performed:

1. Mobilize to the site
2. Collect and process oil samples from the following:
  - a. Three single-phase transformers
  - b. One three-phase transformer and LTC

## Findings & Recommendations

The oil test results indicate the following:

### 1. **Three-Phase Transformer, GE L252508**

The test report indicates that the transformer is in good health and shows no abnormalities with the current condition or operation.

Moisture content is low as is the Relative Saturation for this type and voltage class of transformer.

The dissolved gas analysis show little or no fluctuation.

KVA recommends continue operation and normal monitoring of the transformer.

### 2. **Three-Phase LTC, GE L252508**

The test report indicates that the LTC is in good health and shows no abnormalities with the current condition or operation.

Gas, moisture, metal content are normal for the type of LTC.

KVA recommends continue operation and normal monitoring of the LTC.

### 3. **Single-Phase Transformer, GE F965168**

The test report indicates that the transformer is in poor health and shows signs of aging.





Moisture content is low as is the Relative Saturation for this type and voltage class of transformer.

The dissolved gas analysis shows continued elevated levels of Ethylene, Carbon Dioxide, and Carbon Monoxide as well as minor amounts of Hydrogen.

The type of gas levels and their persistence when looking at the past samples are an indicator that the cellulose insulation is breaking down. The transformer shows no sign of excessive heating or moisture, therefore we believe age is the main factor in the degradation of the cellulose insulation.

The transformer has exceeded its designed service life. KVA recommends replacement of the transformer.

#### **4. Single-Phase Transformer, Standard 177065**

The test report indicates that the transformer is in moderate to poor health and shows signs of aging.

Moisture content is low as is the Relative Saturation for this type and voltage class of transformer.

The dissolved gas analysis shows elevated levels of Ethylene, Carbon Dioxide, and Carbon Monoxide as well as minor amounts of Hydrogen.

The type of gas levels and their persistence when looking at the past samples are an indicator that the cellulose insulation is breaking down. The transformer shows no sign of excessive heating or moisture, therefore we believe age is the main factor in the degradation of the cellulose insulation.

Although this transformer is in better condition than A and C phase units, the transformer has exceeded its designed service life. KVA recommends replacement of the transformer.

#### **5. Single-Phase Transformer, Standard 177064**

The test report indicates that the transformer is in poor health and shows signs of aging.

Moisture content is low as is the Relative Saturation for this type and voltage class of transformer.



The dissolved gas analysis shows elevated levels of Ethylene, Carbon Dioxide, and Carbon Monoxide as well as minor amounts of Hydrogen.

The type of gas levels and their persistence when looking at the past samples are an indicator that the cellulose insulation is breaking down. The transformer shows no sign of excessive heating or moisture, therefore we believe age is the main factor in the degradation of the cellulose insulation.

The transformer has exceeded its designed service life. KVA recommends replacement of the transformer.

The oil analysis shows that the gas and moisture levels in the single phase transformers are relatively stagnant and the trends will continue as the cellulose insulation degrades, ultimately resulting in an internal fault of the transformer.

KVA recommends that the single-phase transformers be replaced or taken out of service in the near future. The design life of the transformers has been exceeded and the transformer insulation system shows signs of failure.

### **Attachments**

1. Oil Test Reports

Please feel free to contact us at any time to discuss this report, the testing of the transformers, or suggestions on how to rectify this issue.

Thank you and best regards,

Lucas Smith  
Project Manager



**KVA ELECTRIC, Inc.**

25829 Jim Creek Road    Arlington, WA 98223    (360) 403-8301    Fax (360) 435-6145

## **Oil Test Reports**

**STAFF REPORT**

To: Mayor and Council  
From: Todd Baun- Director of Public Works  
Date: April 8, 2016  
Re: Solar Panel MOU and Discussion

---

Paul, Ben, Brent and I met with Evan Ramsey and Courtney Dale from Bonneville Environmental Foundation (BEF) on April 1<sup>st</sup> at 10:00 AM at City Hall. Evan has provided the following information on project costs, site assessments, and the MOU.

From our discussion, BEF is suggesting a small system in the range of 20 kW to 25 kW per year, which is equivalent to powering 2- 3 homes a year. The (est. 70-80) panels will require a minimum of 2,000 Square feet of space. I took Evan and Courtney to all City owned property and buildings and their top 2 recommendations are at the City Reservoir site and on the Park Kitchen.

The City's investment for purchase and installation of this type system is going to be in the range of \$77,000 to \$113,500 depending on the site. We would offer to our customers the option to invest/purchase "solar units". Those who purchase units are expected to see a 6% rate of return for customers over 4 years, and 16% over 10 years.

My concerns are the following:

- In order to qualify for a full 4 years of State incentives, we need to complete this in 3 months. The 3 month schedule is aggressive and would necessitate quick action, most projects have taken 4-6 months from concept to operation
- Where are we going to come up with the cost of purchase and installation of the solar panels?
- Where are we going to put the solar panels- Reservoir site or Park Kitchen?
- Operation Maintenance cost is estimated in the range of \$5,000 to \$8,000 per year.

A couple of positives:

- The City is in control of the system.
- Solar panels and equipment have a 25 -30 year life.
- Promotes renewable energy.

**Action Requested:**

Please discuss and give direction.

MEMORANDUM OF UNDERSTANDING

Date: 3/29/2016

This Memorandum of Understanding ("MOU") is made this 31 day of March, 2016 (the "Effective Date") by and between **Bonneville Environmental Foundation ("BEF")**, a non-profit corporation located at 240 SW 1<sup>st</sup> Avenue, Portland, OR 97204 and the City of McCleary ("McCleary"), located at 100 S 3rd St, McCleary, WA 98557. McCleary may be referred to collectively herein as the "Parties".

**RECITALS:**

- I. The Parties' purpose is to collaborate on the development of a Community Solar Project (the "Project"). BEF will work with McCleary to provide its customers with the opportunity to participate in the Project by allowing them to invest in small increments of the system in exchange for reimbursement that is proportionate to the increment of the customer's investment. Both BEF and McCleary have a strong desire to advance the development of Community Solar and the purpose of this MOU is consistent with the missions, visions, and business of each of the Parties.
- II. The mission of McCleary Light and Power is to provide its customers with safe, reliable and locally-controlled utility services with the highest possible value at the lowest possible cost. To demonstrate its commitment to its customers and environmental responsibility, McCleary is interested in studying the development of a community solar project.
- III. BEF is an entrepreneurial nonprofit that believes addressing the planet's most pressing environmental challenges requires innovation, creative problem solving and discovering a new way of doing business that values the natural resources we depend on. Through a full suite of innovative energy, carbon and water solutions they help their partners – from the farmer to the corporation – redefine how business gets done. They help their partners meaningfully balance their environmental impact, invest in clean energy and carbon reduction, educate the next generation of clean energy leaders, and effectively and sustainably restore the health of our freshwater resources.
- IV. BEF and McCleary desire to perform the activities under this MOU in furtherance of the purpose stated above. It is the intention of the Parties that all activities conducted pursuant to the purposes of this MOU contribute to



accomplishing this purpose.

**NOW, THEREFORE,** the Parties agree as follows:

- 1) Services Provided by BEF:** At McCleary's request, BEF will provide assistance to McCleary in the following areas. These services will be provided to McCleary at no charge.
  - A. Scoping, feasibility, and preliminary design of the photovoltaic solar system for the Project.
  - B. Development of RFPs as needed to solicit bids from system installers or other third-party service providers and management of the bidding process.
  - C. Advising on the selection of contractors and other third-party service providers required for the installation and commissioning of the photovoltaic solar system.
  - D. Advising on community solar program design.
  - E. Advising on and providing support, as mutually agreed upon by the Parties, for the marketing of the community solar program.
  - F. Participation in other aspects of the Project as mutually agreed upon by the Parties.
  
- 1) City of McCleary's Responsibilities:** As the developer of any Project which its Council may approve as the results of the information obtained through the implementation of this MOU, McCleary will be solely responsible for all aspects of the Project and acknowledges that BEF is providing its expertise to provide information to be utilized in McCleary's making decisions regarding the Project. In order that BEF may assist McCleary in the most effective way, McCleary agrees to provide information, materials and requests for assistance in a timely manner and to provide a reasonable amount of time for BEF to respond to McCleary's requests.
  
- 2) Confidentiality:** Except in the furtherance of its obligations hereunder and subject to compliance with the provisions of RCW 42.56 (The Public Records Act), the Parties shall not disclose any Confidential Information without the prior written consent of the respective owner of the Confidential Information, and shall disclose Confidential Information only to the Parties' employees or contractor on a "need to know" basis, provided that such employee or contractor agrees to comply with the terms of this section. As used herein, the term "Confidential Information" means any technical, financial, or other business information, marked "proprietary" or "confidential," of the Parties, including but not limited to information about client lists, business process documents, and other information. The Parties' obligations under this section 3, shall not apply, or shall cease to apply to the extent that Confidential Information: (i) is or hereafter becomes generally known or available to the public or interested persons through no breach of this section by the Parties; (ii) is rightfully known to the Parties without restriction on disclosure at the time of its receipt from the respective owner of the Confidential Information; (iii) is rightfully furnished to one or more of the Parties by a third party without breach of an obligation of confidentiality; (iv) is



independently developed by one or more of the Parties without use or reference to the Confidential Information; (v) is required to be disclosed by applicable law or pursuant to order of the court, administrative agency, or other governmental body; provided the Party in question provides 10 day's prior notice to the respective owner of the Confidential Information for the owner to seek a protective order.

- 3) **Indemnification:** The Parties agree to defend, indemnify and hold each other and their employees, agents, officers, directors and permitted assigns harmless from and against any claims, judgments, expenses (including reasonable attorney's fees), damages and awards arising out of or resulting from the indemnifying Party's gross negligence or its willful misconduct, or any material breach of this MOU.
- 4) **Term and Termination:** The initial Term of this MOU will commence on the Effective Date hereof and continue until 12/31/16: PROVIDED THAT, in recognition of the authority of McCleary's City Council to approve agreements such as this, McCleary shall have the right to terminate the agreement immediately in the event that the City Council does not approve the MOU at its first regular meeting following the date of the execution of the Agreement by the Mayor. Subject to that exception, either BEF or McCleary may terminate this MOU prior to the end of the term for any reason with thirty (30 days written notice. Sections 2 and 3 shall survive any termination or expiration of this MOU.

5) **Miscellaneous:**

- a. **Relationship of the Parties.** Nothing in this MOU shall be deemed to constitute a partnership or joint venture between the Parties. Nothing in this MOU shall constitute any Party to be the agent of the other Party for any purpose, except as explicitly granted by one Party to the other Party in writing separate from this MOU.
- b. **Assignment.** This MOU may not be assigned by either Party without the prior written consent of the other Party. Subject thereto, this MOU is binding upon and shall inure to the benefit of the Parties and their respective successors and permitted assigns.
- c. **Governing Law.** This MOU shall be interpreted and construed under the laws of the State of Washington.
- d. **No Third Party Beneficiaries.** This MOU is made solely and specifically between and for the benefit of the Parties and their respective successors and assigns, and no other person will have any rights, interests, or claims hereunder or be entitled to any benefits under or on account of this MOU whether as a third party beneficiary or otherwise.
- e. **Tax Exempt Status.** The Parties intend to conduct this MOU in line with



BEF's tax-exempt purposes.

- f. **Entire MOU.** This MOU constitutes the complete agreement between the Parties concerning the subject matter of the MOU and supersedes and replaces all prior agreements between the Parties, written or oral, concerning the subject matter hereof and no other representations have induced either party to execute the MOU. No amendment, change or variance from this MOU shall be binding on either party unless executed in writing by a principal officer or authorized executive of both Parties.

**IN WITNESS WHEREOF**, the Parties below have executed this MOU on the dates indicated below..

Bonneville Environmental Foundation

By: 

Print Name: Felicia Phillip

Date: 4/4/16

City of McCleary

By: \_\_\_\_\_

Brent Schiller Mayor

Date: \_\_\_\_\_

Attest:

By \_\_\_\_\_

Wendy Collins, Clerk-treasurer

Approved as to Form

\_\_\_\_\_  
Daniel Glenn, City Attorney

Print Name: \_\_\_\_\_

Date: \_\_\_\_\_





# City of McCleary, Project Cost Comparison

Apr-16

## Roof Mount 20.1kW DC Capacity

### Capital Costs

<i>Base Roof Mount Estimate (\$3.75/watt)</i>	\$	75,000.00
Admin/O&M/Marketing/Insurance	\$	12,000.00
BEF Grant	\$	(10,000.00)
<b>Subtotal</b>	\$	<b>77,000.00</b>

### Revenue

	Years 1 to 4			
PBI through June, 30 2020	\$	81,596.43		
			Years 5 to 10	11 to 20
Net Metered Value			\$ 8,045.18	\$ 15,101.63
				21 to 33
				\$ 23,286.68

	Year 4	Year 10	Year 20	Year 33
<b>Simple Payback</b>	\$ <b>4,596.43</b>	\$ <b>12,641.61</b>	\$ <b>27,743.25</b>	#####
	ROI	5.97%	16.42%	36.03%
				66.27%

## Ground Mount, 20.4kW DC Capacity

### Capital Costs

<i>Base Ground Mount Estimate (\$4.50/watt)</i>	\$	90,450.00
Site Prep/Data	\$	6,000.00
Interconnection	\$	5,000.00
Admin/O&M/Marketing/Insurance	\$	12,000.00
<b>Subtotal</b>	\$	<b>113,450.00</b>

### Revenue

	Years 1 to 4			
PBI through June, 30 2020	\$	94,891.93		
			Years 5 to 10	11 to 20
Net Metered Value			\$ 9,356.08	\$ 17,562.33
				21 to 33
				\$ 27,081.07

	Year 4	Year 10	Year 20	Year 33
<b>Simple Payback</b>	\$ <b>(18,558.07)</b>	\$ <b>(9,201.99)</b>	\$ <b>8,360.34</b>	#####
	ROI	-16.36%	-8.11%	7.37%
				31.24%



bonneville environmental foundation

240 SW 1<sup>st</sup> Avenue  
Portland, OR 97204  
[www.B-E-F.org](http://www.B-E-F.org)  
503.248.1905

## **CITY OF MCCLEARY PHOTOVOLTAIC ARRAY SITE ASSESSMENT**

**Date:** April 5th, 2016

**Host Site Information**

City of McCleary, WA  
Various Sites

**Prepared By:**

Evan Ramsey  
Sr. Project Manager – Renewable Energy Group  
Bonneville Environmental Foundation  
240 SW 1<sup>st</sup> Ave  
Portland, OR 97204  
p: 503-553-3933  
[eramsey@b-e-f.org](mailto:eramsey@b-e-f.org)



**Community Solar Basics:**

The State of Washington provides incentives for solar and community solar in the form of renewable energy cost recovery payments. This program will allow the City of McCleary to claim up to \$25,000 per year in public utility tax credits. By using made in Washington componenet a community solar project can provide \$1.08 per kilowatt hour of cost recovery payments to each participating utility customer, up to \$5000 per customer. The term for the program can be anywhere from 4 to 25 years that participating customers can subscribe to the proportional output of the share they purchase.

Detailed information on the program can be found here:  
<http://apps.leg.wa.gov/WAC/default.aspx?cite=458-20-273>

**Preface:**

The following solar site survey report has been prepared to assist the The City of McCleary with their efforts to investigate the development of a community solar project. Time is of the essence in developing a community solar project in Washington and BEF has provided the most critical information need to determin if pursuing a project is of interest to the City. The surveyor assumes that the required products would be made in Washington State to allow for the maximum state cost recovery incentive. Consideration has been given to maximize the timeline and schedule of the project in order to maximize the available incentive payments to participants.

Two sites were evaluated: the Kitchen near City Hall and the City Water Reservior up on the hill. Preliminary desigs, production estimates and payback scenarios were calculated for both.

<b>Role</b>	<b>Name</b>	<b>Phone</b>	<b>Email</b>
Facility Contact	Todd Baun	360-495-3667 x103	<a href="mailto:ToddB@CityofMcCleary.com">ToddB@CityofMcCleary.com</a>
Administrative Contact	Ben Blankenship	360-593-0389	<a href="mailto:blbmlb12@comcast.net">blbmlb12@comcast.net</a>



**Proposed Project Schedule**

	<b>TASK:</b>	<b>DATE:</b>
1	Issue RFP	04/15/2016
2	Site visit (optional)	04/22/2016
3	Proposal Due	04/29/2016
4	Proposal approved	05/02/2016
5	Sign Contract	05/06/2016
6	Design Completion	05/20/2016
8	System Installation Starts	06/06/2016
9	Project Inspected by AHJ	06/20/2016
10	Project Commissioned	06/21/2016

**Facility Electrical System:**

Both sites reviewed receive single-phase/3-wire 120/240v utility electrical service. This service voltage is compatible with the Made in WA Solectria inverters, outputting residential voltages. The Kitchen site has an existing meter likely suitable of receiving the entire backfeed from the PV system with minimal upgrades. The Reservoir site has an existing drop for servicing the City’s equipment but it is a small dual secondary feed off the transformer and would need upgrading to accommodate the solar interconnection. The installing contractor will be responsible for designing the appropriate interconnection to meet National Electric Code standards.

**Facility Internet Network**

There is no existing internet service at either location suitable for monitoring the production of the system. Options include providing a new data service or cellular metering for the PV system. Costs for cellular metering can range from \$1000-\$3000 for 5 years.



**Roof Condition:**

The Kitchen roof is a Snap-Lok type standing seam metal roof which has good longevity and easy integration of solar without needing penetrations. The S-5! Clamp provides secure mechanical attachment while maintaining the integrity of the metal roof surface.

**Roof Structure**

Roof structure was not observed. A roof mounted PV system generally does not weigh more than 4psf and the structure is likely capable of handling this added weight.



Image 1. Electrical Meter and Roof membrane looking west



Image 2. Electrical Meter at Reservoir Site



Image 3. Sample roof layout



Image 4. Sample ground mount layout



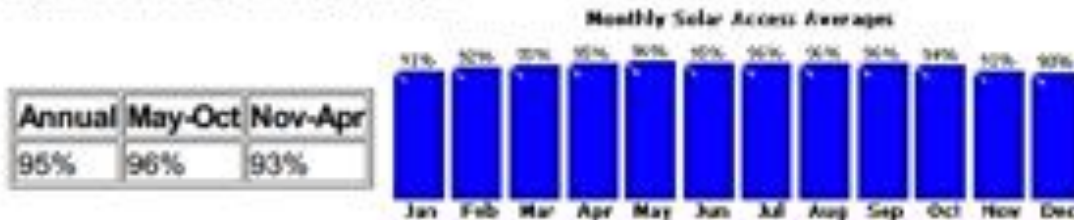
### Shading Analysis

BEF has modeled the existing building roof using the Solmetric Suneye 210 to calculate shading. The park kitchen has little shading, but being an east-west facing roof does have slightly less exposure to the sun. The total solar resource fraction at that location is 78%.

Name	Park Kitchen
Creation Date	4/1/2016 22:33
Note	(none)
Location	47.0°N, 122.9°W Mag Dec: 15.9°E Time Zone: GMT-08:00

### Solar access averages of 2 skylines in this session

Skylines Averaged: Sky01, Sky02



TSRF averages of 2 skylines in this session: 78%

By taking skylines at the edge of the proposed array at the reservoir site, the worst case shading scenario was modeled. Although the adjacent trees and the tank to the south will obstruct solar access during December and January, the average Total Solar Resource Fraction across the roof will be 83%. As December and January are the lowest producing months of the year this is not a concern for the annual production of the system.

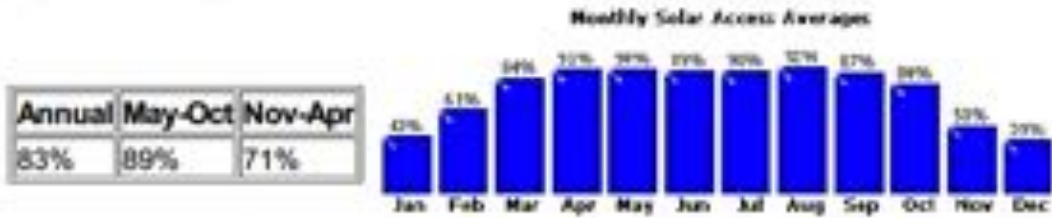




<b>Name</b>	Reservoir
<b>Creation Date</b>	4/1/2016 22:16
<b>Note</b>	(none)
<b>Location</b>	47.0°N, 122.9°W Mag Dec: 15.9°E Time Zone: GMT-08:00

## Solar access averages of 3 skylines in this session

Skylines Averaged: Sky01, Sky02, Sky03



TSRF averages of 3 skylines in this session: 83%

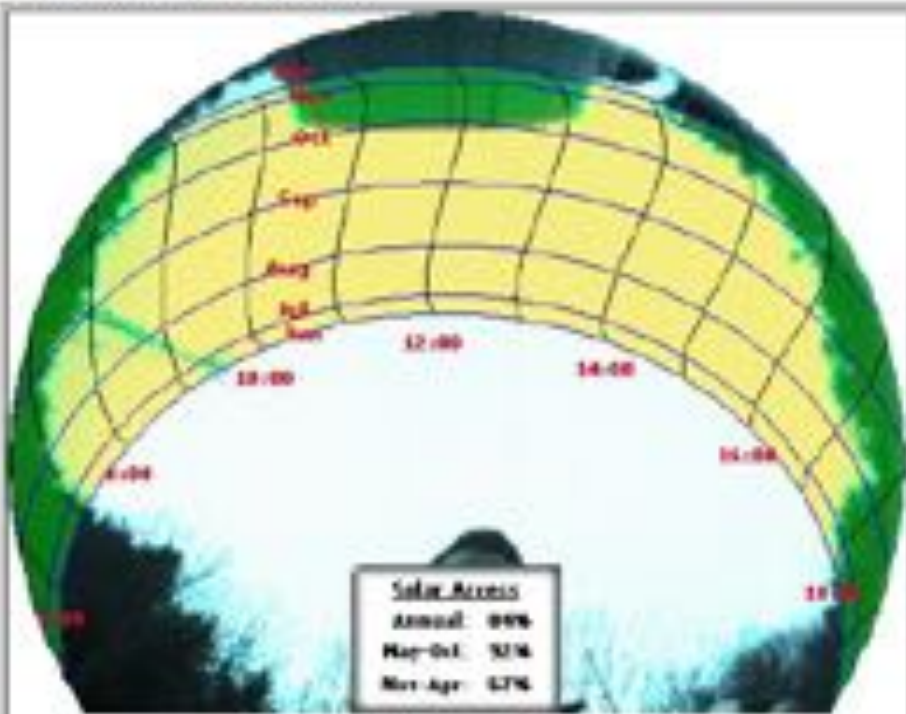


### Sky03 – 4/1/2016 22:22 – (no skyline note)

**Panel Orientation:** Tilt=30° – Azimuth=180° – **Skyline Heading=179°**

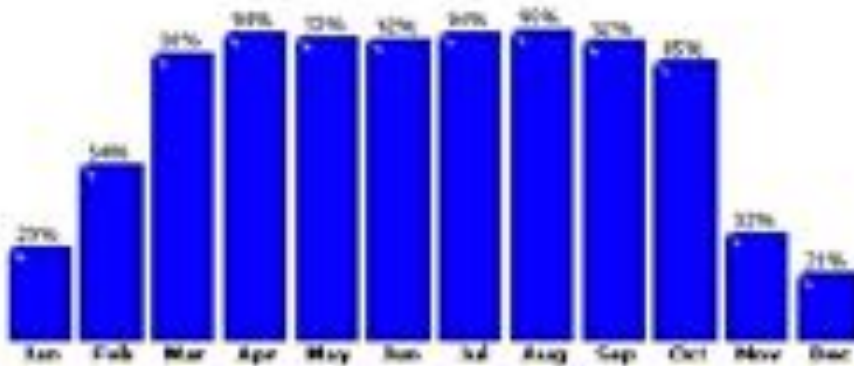
**Solar Access:** Annual: 84% – Summer (May-Oct): 92% – Winter (Nov-Apr): 67%

**TSRF: 84% – TOF: 99%**



Data by Solmetric SunEye™ – [www.solmetric.com](http://www.solmetric.com)

Monthly solar access (Tilt=30°, Azim=180°)



Data by Solmetric SunEye™ – [www.solmetric.com](http://www.solmetric.com)



## **PV System Design**

Design considerations:

- Cost effectiveness
- Quality, Made in Washington materials
- Roof condition and remaining life

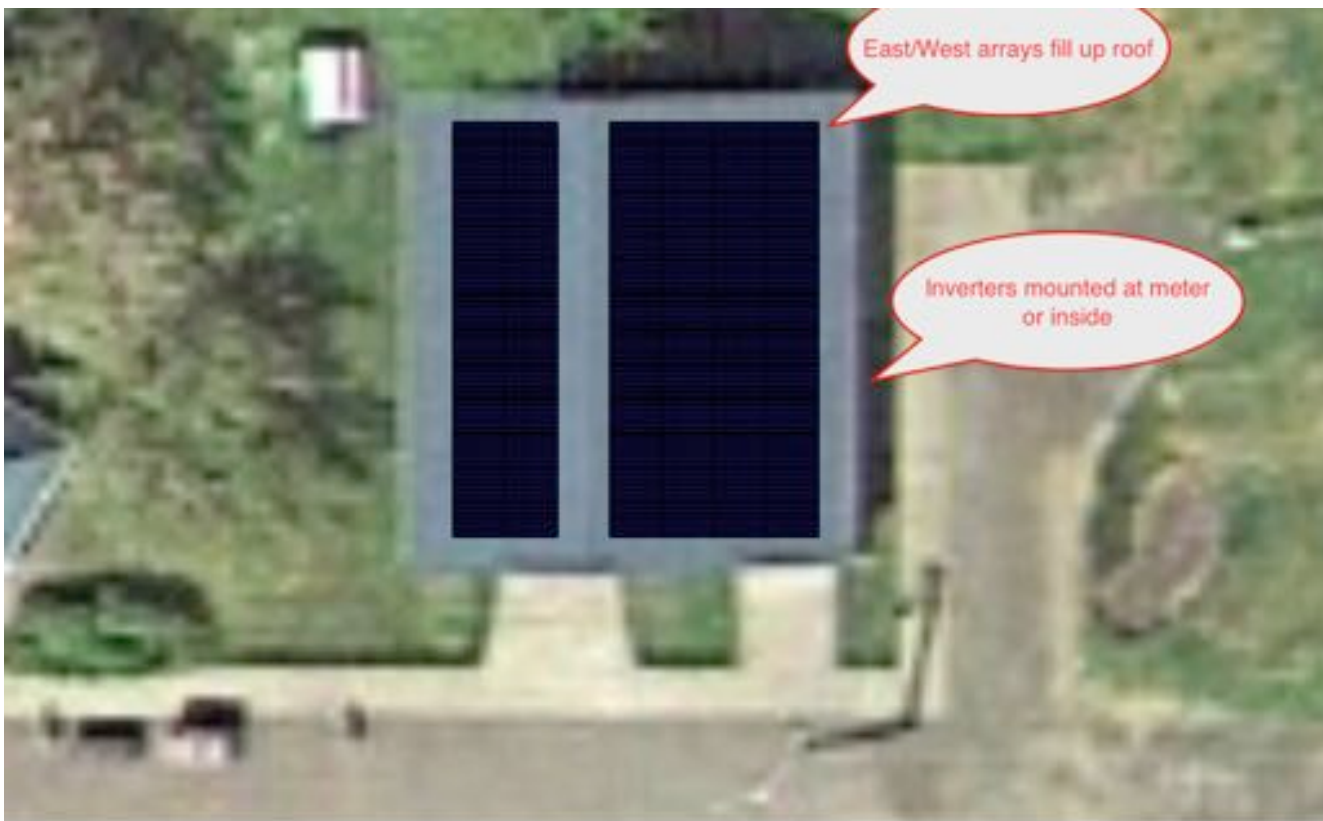


Image 5. Proposed Equipment Locations






**Solar Modules**

(72) Itek 280 HE (Made in Washington), “blemished or B-grade modules” should be considered as they have cosmetic deficiencies such as scratched frames, mis-aligned cells, but carry the same production warranty as A-grade Itek product.

**Inverter**



(2) Solectria 6500 PVI  
 (1) Solectria 5200 PVI  
 (Made in Washington)

Inverter Selection		Electrical Service Specification
<b>PVI 5000S</b> 	Inverter $V_{dc} \text{ max [V]}$ 600  $V_{dc} \text{ start [Voc]}$ 235  $V_{dc} \text{ min [V]}$ 200  Max DC-AC ratio 1.30	 Split / Single Phase  AC Voltage 240 $V_{ac}$
<p><sup>1*</sup> Estimated AC output power</p> <p><sup>2*</sup> 1% DC wire loss included <input type="checkbox"/></p>		
<b>String Sizing Solutions</b>		

$P_{STC}[W_{DC}]$	$P_{PTC}[W_{DC}]$	<sup>1*</sup> $P_{AC}[W_{AC}]$	Tot Mods	Strings	Mods / String	<sup>2*</sup> VMP Hot	VOC Cold	DC-AC ratio	Suggested inverters 
4950	4400	4218	18	2	10	227	387	1.01	(1) PVI 5000S 



Project Specifications		Module Specification	
Module Manufacturer: Itek Energy Module Model: IT 275 HE Design Temperature: -7° C Low Temp 30° C High Temp Mounting Method: 10° on flat roof		STC [W] 275 Imp [A] 8.5 Vmp(25°C) 32.1 Vmp Temp coeff. [V/°C] 0.152 Warmest Day Vmp [V] 25.13	PTC [W] 244.4 Isc [A] 9.2 Voc(25°C) 39 Voc Temp coeff. [V/°C] 0.1248 Coldest Day VOC [V] 42.99
Inverter Selection		Electrical Service Specification	
<b>PVI 6500</b>  Inverter V <sub>dc</sub> max [V] 600 V <sub>dc</sub> start [Voc] 255 V <sub>dc</sub> min [V] 230 Max DC-AC ratio 1.30		<input type="radio"/> Split / Single Phase <input checked="" type="radio"/> Three Phase AC Voltage 240 V <sub>ac</sub>	
<p><sup>1*</sup> Estimated AC output power</p> <p><sup>2*</sup> 1% DC wire loss included <input type="checkbox"/></p>			
<b>String Sizing Solutions</b>			

P <sub>STC</sub> [W <sub>DC</sub> ]	P <sub>PTC</sub> [W <sub>DC</sub> ]	<sup>1*</sup> P <sub>AC</sub> [W <sub>AC</sub> ]	Tot Mods	Strings	Mods / String	<sup>2*</sup> VMP Hot	VOC Cold	DC-AC ratio	Suggested inverters 
7150	6355	6074	26	2	13	327	559	1.10	(1) PVI 6500 



### **Conclusion:**

**BEF recommends a roof mounted system given the available City locations. A roof mount has known system costs and exposure, where the reservoir location has unknown and potentially costly factors such as electrical upgrades, underground obstructions, grading, data, and shading. The recommended design utilizes 72 Itek 280W modules and 3 Itek (Solectria) PVI inverters to produce a total system size of 20.1kW DC nameplate, inverter limited to 18.4 kW AC export.**

### **Estimated Annual Energy Production**

BEF used NREL's PV Watts modeling software to generate estimates of annual energy production from PV systems. The PV Watts model for City of McCleary Kitchen takes into consideration annual insolation, array shading, line losses, as well as other factors. Our model shows that the PV system as designed will generate **17,810 kWh net AC output annually the first year decreasing by .5% each year after.** The PV Watts reports can be view in Appendix A.

### **Alternate PV Design (Ground Mount):**

The proposition for a ground mounted project was also evaluated. The benefits of a ground mount are optimal solar orientation flexibility in siting, and ease of access and maintenance. The drawbacks can include higher capital costs, subsurface complications, permitting, and additional costs associated with a remote location, such as the need for new electrical and data infrastructure.



Appendix A:

**Roof Mount PV Watts (east and west):**

PVWatts Calculator

**RESULTS**

**11,659 kWh per Year \***

*System output may range from 11,206 to 12,200kWh per year near this location.*

Month	Solar Radiation ( kWh / m <sup>2</sup> / day )	AC Energy ( kWh )	Energy Value ( \$ )
January	0.99	332	24
February	1.96	603	43
March	2.64	909	65
April	3.95	1,290	93
May	4.46	1,498	108
June	5.06	1,590	114
July	5.08	1,623	117
August	4.03	1,293	93
September	3.75	1,175	85
October	2.07	690	50
November	1.12	360	26
December	0.88	297	21
<b>Annual</b>	<b>3.00</b>	<b>11,660</b>	<b>\$ 839</b>

**Location and Station Identification**

Requested Location	mcleary WA
Weather Data Source	SolarAnywhere® from Clean Power (47.05, -123.25) 0.8 mi
Latitude	47.05° N
Longitude	123.25° W

**PV System Specifications (Residential)**

DC System Size	13.4 kW
Module Type	Standard
Array Type	Fixed (open rack)
Array Tilt	26°
Array Azimuth	90°
System Losses	16%
Inverter Efficiency	97.5%
DC to AC Size Ratio	1.1



PVWatts Calculator

**RESULTS**

**6,151 kWh per Year \***

*System output may range from 5,912 to 6,436kWh per year near this location.*

Month	Solar Radiation ( kWh / m <sup>2</sup> / day )	AC Energy ( kWh )	Energy Value ( \$ )
January	1.06	177	13
February	1.99	304	22
March	2.66	456	33
April	4.16	678	49
May	4.50	754	54
June	5.33	837	60
July	5.59	895	64
August	4.58	735	53
September	3.97	618	45
October	2.17	360	26
November	1.17	188	14
December	0.90	150	11
<b>Annual</b>	<b>3.17</b>	<b>6,152</b>	<b>\$ 444</b>

**Location and Station Identification**

Requested Location	mcleary WA
Weather Data Source	SolarAnywhere® from Clean Power (47.05, -123.25) 0.8 mi
Latitude	47.05° N
Longitude	123.25° W

**PV System Specifications (Residential)**

DC System Size	6.7 kW
Module Type	Standard
Array Type	Fixed (open rack)
Array Tilt	26°
Array Azimuth	270°
System Losses	16%
Inverter Efficiency	97.5%
DC to AC Size Ratio	1.1





## Ground Mount PV Watts:

PVWatts Calculator

### RESULTS

# 20,712 kWh per Year \*

*System output may range from 19,906 to 21,673kWh per year near this location.*

Month	Solar Radiation ( kWh / m <sup>2</sup> / day )	AC Energy ( kWh )	Energy Value ( \$ )
January	1.68	831	60
February	3.01	1,334	96
March	3.27	1,594	115
April	4.69	2,169	156
May	4.77	2,272	164
June	5.40	2,410	174
July	5.76	2,612	188
August	4.90	2,231	161
September	5.03	2,233	161
October	3.01	1,436	103
November	1.77	826	59
December	1.53	764	55
<b>Annual</b>	<b>3.74</b>	<b>20,712</b>	<b>\$ 1,492</b>

### Location and Station Identification

Requested Location	mcleary WA
Weather Data Source	SolarAnywhere® from Clean Power (47.05, -123.25) 0.8 mi
Latitude	47.05° N
Longitude	123.25° W

### PV System Specifications (Residential)

DC System Size	20.4 kW
Module Type	Standard
Array Type	Fixed (open rack)
Array Tilt	30°
Array Azimuth	180°
System Losses	21.16%
Inverter Efficiency	97.5%
DC to AC Size Ratio	1.1



## Washington Public Agency Contract Small Works and Consultant Rosters

This contract (the "Contract") is made by and between Municipal Research and Services Center of Washington ("MRSC"), a not-for-profit corporation, and the Washington local government (the "Public Agency"),  
City of McCleary

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1. Purpose. The purpose of this Contract is to provide the Public Agency with membership in MRSC Rosters.
2. Scope of Services. MRSC shall host the entire Public Agency's individual Small Public Works Roster ("Small Works Roster") and individual Consultant Roster ("Consultant Roster"), (collectively "Rosters"). MRSC shall advertise at least annually for the Small Works Roster and Consultant Roster in accordance with statutory requirements on behalf of the Public Agency. MRSC will assist small public works and consultant business (collectively, "businesses") with roster registration throughout the year, receive applications, review applicant eligibility for compliance with basic statutory eligibility requirements, and maintain business applications in an online database.
3. Effective Date and Term. This Contract shall be effective in the year in which it is signed on either May 1 if signed prior to May 1 or December 1 if signed prior to December 1, for a period of one year.
4. Access to MRSC Rosters by Public Agency Prior to Legal Notice. As of the Contract effective date, the Public Agency may access the MRSC Rosters database at [www.mrscresters.org](http://www.mrscresters.org) by entering its account login information, as will be provided by MRSC. The Public Agency may search for and view business applications as of the effective date of the Contract, but it may not contact businesses about roster projects until after the legal notice is posted.
5. Notification of Transition to MRSC Rosters. As of the contract effective date, the Public Agency may begin notifying interested businesses that they may register with the Public Agency at any time in the MRSC Rosters, but that the Public Agency will not begin using the hosted rosters until after the legal notice is posted.
6. Roster Legal Notice. MRSC shall post the statutorily-required roster legal notice on behalf of the Public Agency in a newspaper of general circulation relative to the location of the Public Agency. The notice will occur the first Monday of January or June, or during the week of the first Monday of January or June for weekly newspapers.
7. Use of MRSC Rosters by Public Agency. As of the date of the applicable legal notice in January or June, all departments of the Public Agency will discontinue use of any previously-maintained rosters and begin using the MRSC Rosters exclusively when choosing to follow a roster contracting process, in accordance with the following statutory requirements:
  - (a) Small Works Roster. The Public Agency will use the Small Works Roster to select businesses for public work projects in accordance with RCW 39.04.155, as now or hereafter amended. The Public Agency shall be responsible for its own and the selected businesses' compliance with all other laws and regulations governing public works contracting, including retainage and bonds, prevailing wages, and any other applicable requirements.
  - (b) Consultant Roster. The Public Agency will use the Consultant Roster to select businesses for consultant projects in accordance with the laws and ordinances applicable to the Public Agency, including Chapter 39.80 RCW when contracting for architectural and engineering services. The Public Agency shall be responsible for its own and the selected businesses' compliance with all laws and regulations governing the purchase of services.

8. Compensation of Businesses. The Public Agency shall be responsible for payments to any business that it selects as a result of its use of MRSC Rosters. The Public Agency shall make all such payments directly to the businesses selected by the Public Agency.

9. Annual Membership Fee. The Public Agency will pay MRSC an annual membership fee based on the five-year average of the Public Agency's total capital expenditures. Payment of the annual membership fee is due within thirty (30) days of the Contract effective date.

Based on the following Membership Fee Scale, the Public Agency will pay an annual membership fee of \$\_\_\_\_\_.

<b>Total Capital Expenditures</b>	<b>Annual Membership Fee</b>
Less than 5 million	\$120
5 to 10 million	\$240
10 to 15 million	\$360
15 to 25 million	\$480
25 to 50 million	\$600
More than 50 million	\$900

10. Relationship of Parties. MRSC will perform the services under this Contract as an independent contractor and not as an agent, employee, or servant of the Public Agency. Nothing in this Contract shall be construed to render the parties partners or joint venturers.

11. Limitation of MRSC Liability. MRSC shall not be, directly or impliedly, a party to any contract with small works, consulting, or vendor businesses which the Public Agency may enter into as a result of the Public Agency's use of the MRSC Rosters. MRSC does not accept responsibility or liability for the performance of any business used by the Public Agency as a result of its use of the MRSC Rosters.

12. Hold Harmless and Indemnification. Each party shall defend, indemnify, and hold the other party harmless from any and all claims, injuries, damages, losses, or suits, including attorney fees, to the extent arising from any negligent act or omission of that party's officers, employees, volunteers, and agents in connection with the performance of this Contract.

13. Termination. This Contract may be terminated, with or without cause, by written notice of either party to the other. Termination shall be effective thirty (30) days after written notice. Termination of the contract by the Public Agency does not entitle the Public Agency to a refund of the membership fee prorated as to the time remaining in the contract term following termination.

14. Renewal. This Contract may be renewed annually by completing the online renewal process that includes confirming that the Public Agency will continue abiding by the terms outlined in this Contract and making payment within thirty (30) days from the effective date of either May 1 or December 1.

15. Non-assignment. MRSC shall contract with Upwards Technologies for the hosting of the Public Agency rosters in the online database. MRSC shall not otherwise subcontract or assign any of the rights, duties, or obligations imposed upon it by this Contract without the prior express written consent of the Public Agency.

16. Governing Law and Venue. This Contract shall be governed by the laws of the State of Washington.

18. Severability. Should any clause, phrase, sentence or paragraph of this Contract be declared invalid or void, the remaining provisions of this Contract shall remain in full force and effect.

19. Complete Agreement. This Contract constitutes the entire understanding of the parties. Any written or verbal agreements that are not set forth herein or incorporated herein by reference are expressly excluded.

20. Public Agency Information. For purposes of Contract administration, the Public Agency provides the following information:

Official Public Agency Name: City of McCleary

Common Public Agency Name (if different): \_\_\_\_\_

Mailing Address: 100 S. 3rd St  
McCleary, WA 98557

County: Grays Harbor

Type of Public Agency: City

Website: www.cityofmccleary.com

Primary Contact:

Name: Todd Baun  
Title: Director of Public Works  
Email: toddb@cityofmccleary.com  
Telephone: 360-495-3667  
Facsimile: 360-495-3097

Additional Contact:

Name: Paul Morrison  
Title: Public Works Assistant  
Email: paulm@cityofmccleary.com  
Telephone: 360-495-3667  
Facsimile: 360-495-3097

21. Signatures. By signing this Contract, the Public Agency signatory below certifies that he/she has the authority to enter into this Contract on behalf of the entire Public Agency.

**PUBLIC AGENCY**

**MRSC**

\_\_\_\_\_  
[Signature]

\_\_\_\_\_  
[Signature]

**Mayor**

\_\_\_\_\_  
MRSC Rosters Manager

\_\_\_\_\_  
[Title]

\_\_\_\_\_  
[Title]

\_\_\_\_\_  
[Date]

\_\_\_\_\_  
[Date]

## EMERGENCY MANAGEMENT RESPONSIBILITIES OF ELECTED OFFICIALS

Emergencies and disasters occur in local communities. The local government is primarily responsible for preparing for disasters and helping residents recover. A key factor is to be prepared before a situation occurs. Chapter 38.52 RCW covers most of the requirements for executive heads of political subdivisions, which are identified as mayors, city councils, and boards of commissioners. A political subdivision is a county, city or town, for this chapter.

Executive support is crucial to emergency management. Outlined here are a few of the key responsibilities to ensure you are minimizing the liability of your community. There are state and federal laws; however, the local laws and regulations pertain, also.

For every disaster, there usually is a policy or regulation that results.

### Chapter 38.52 RCW

- directs each political subdivision to establish or be a member of a joint local organization for emergency management
  - submit its plan and program to the state director to ensure consistency and coordination with the state emergency management plan and program. Plans must specify the use of incident command system for multi-agency/ multi-jurisdiction operations. Emergency Management Council serves as arbitrator on disagreements regarding the plan or program between the state and local jurisdiction or cost sharing among joint organizations and funds placed into a special emergency management fund.
  - local organization for emergency management (or joint organization) shall have a director appointed by the executive head(s) and direct responsibility for the organization, administration, and operation, subject to the direction and control of the executive officer or officers.
  - The local or joint local organization will perform emergency management functions within the territorial limits of the political subdivision or outside those limits as required by the provisions of chapter 38.52 RCW. When a disaster occurs, each political subdivision has the power to enter into contracts and incur obligations to combat the disaster. Except for mandatory constitutional requirements, the normal restraints for budget law limitations, competitive bidding and publication of notices, public work provisions, contracting, incurring obligations, temporary employment, rental of equipment, purchasing of supplies and materials, levying of taxes and appropriation of public fund expenditures may be waived.

## Elected Officials Disaster Forum

The state, upon the request of the local government officials will prepare a state of emergency proclamation for the Governor. State and federal assistance is supplemental to those of the local government.

Following the proclamation of the Governor, if the situation continues to worsen, the state may, in consultation with regional Federal Emergency Management Agency officials, determine that preliminary damage assessment is necessary. This step is in preparation for determining the severity and magnitude of the damages to indicate that capacity for the local and state governments has been exceeded and a request by the Governor to the President is appropriate.

## ROLES OF ELECTED AND APPOINTED OFFICIALS

What official and unofficial responsibilities have been designated to you and others?

Management of a disaster includes keeping citizens and responders warned and informed, have basic public services quickly restored and have the individual's needs met. Executive support and participation are essential to ensure that key officials and staff are trained on plans and their roles--besides the first responders. At the same time that your community may be involved in response, you need to look at short- and long-term recovery to return the community to minimum operating standards and to previous conditions with mitigation measures to improve future protection.

Before an emergency occurs, consider the following:

- What are the legal authority(ies) [local, state and federal] to establish an emergency management program?
- Has the comprehensive emergency management plan and program been reviewed to be consistent with the state plan and program? Does it include the use of incident command system for multi-agency/multi-jurisdiction operations? Has the plan(s) been developed with all stakeholders; reviewed and tested so everyone knows their role or backup role?
- Has a current assessment of hazards and risks been performed in and surrounding the community?
- What are the boundaries covered by your emergency management organization?
- Who is legally in charge of or designated for emergency management policy actions or decisions in your community? These include activating the Emergency Response Plan and the Emergency Operations Center; making a decision to evacuate or shelter in place; assessment of and decision when a situation has surpassed the local capability to respond and request assistance through mutual aid or to the state. Is the position appointed?
- Has funding been established to support the emergency management program and the EOC?
- Who is in the line of succession and delegated by ordinance or resolution, especially in an emergency for continuity of government?
- Who can develop and sign a proclamation or declaration of emergency, an ordinance or resolution? Is there a quorum required for emergency decisions or signatures?
- Who can authorize emergency expenditures or contracts?
- What systems are in place for alert and warning? Who do these systems reach and who is responsible?
- What systems are in place to ensure accurate information and status internally and for the community? Who serves as public information lead and how will multiple organizations or jurisdictions share information and releases?
- What coordination has taken place and with whom to ensure that everyone knows each other's roles?

## Elected Officials Disaster Forum

- Has an emergency response and recovery component been established in every department and agency—ensuring planning and training together?
- Have emergency management and hazard mitigation issues been incorporated into all programs to reduce risk of major loss of life and economic destruction through better preparedness and mitigation activities, such as predisaster activities: appropriate land use, construction codes (to include snow load, wind and fire resistance, and fire defensible space requirements) and updated floodplain or liquefaction mapping for public safety, housing, economic development, highway and public infrastructure decisions (including repairs or abandonment) for all state and local projects.
- What training is available or needed, how often should there be participation and should it be mandatory? What training and education is available for the community members to be prepared?
- What mutual aid agreements—formal and informal—are there for helping other communities while ensuring help is available in the local area. These may include those used for daily emergencies, such as fires and traffic accidents—these agreements may be built upon for larger scale disasters. Do these identify resources and follow the legal requirements?
- What other partnerships have been formed (with private industry, nonprofit or volunteer organizations, including search and rescue)?
- How will other elected officials (state and federal) be included in the emergency—before, during and after?
- Who is left to continue normal government functions?

### How can your community create opportunities to benefit from past decisions?

- Map hazards through GIS or other methods to help identify transportation evacuation routes, stability or liquefaction concerns.
- Assess local preparedness, training, policies and procedures—highlight strengths and weaknesses.
- Establish incentives for encouraging business owners and homeowners to retrofit buildings with hazard resistant features.
- Consider a disaster trust fund to be used for preparedness, mitigation, response and recovery projects to provide the nonfederal share of disaster costs during presidential declared disasters and use for financing predisaster mitigation activities.
- Ensure that nonstructural mitigation is performed, such as securing computers and filing cabinets—these are cost and time saving measures that assist government and business towards fast recovery.
- Be insured. Ensure that required programs, like the National Flood Insurance Program and the Community Rating System, are in place to be eligible for future federal programs. Have buildings, medical and other insurance in place.
- Where have you located the alternate EOC?
- Have designed shelters and public awareness of them.



## Elected Officials Disaster Forum

- Be prepared to assist with Local, State and Federal Assessment Teams when a disaster or emergency occurs.
- Prepare a local hazard mitigation plan and identify priority projects.
- Participate in the Hazard Mitigation Survey Team (all hazards) or the Interagency Hazard Mitigation Team (floods) and the Hazard Mitigation Strategies (local and state)

By taking these and other steps to identify and solve issues and hazards, the liability can be mitigated or prevented.

“Elected public officials must give the same attention and priority to their flood problems as they give to their police and fire problems. In the history of Rapid City, perhaps 35 people have died in fires and another 35 have been killed during the commission of crimes. But in just two hours, 238 died in a [June 1972] flood.” – Don Barnett, former Mayor of Rapid City, South Dakota

May 3, 2001

## LIABILITY CHECKLIST

### *WHAT TO ASK YOUR ATTORNEY*

1. What statutes or ordinances govern my options?
2. What type of immunity, if any, do I have?
3. What policies or insurance will cover my defense?
4. What is my liability when dealing with conflicting jurisdictions or chains of command?
5. Are there any limitations to the liability that may incur?
6. To what types of liability am I exposed?
  - Negligence
  - Intentional torts
  - Civil rights actions
  - Strict liability
7. What is the Standard of Care for my community? How can I help to better define this?

### *WHAT TO TELL YOUR ATTORNEY*

1. Explain the scope of your employment.
2. Explain the responses you are expected to make.
3. Explain the level of training you have.
4. Explain the types of equipment you use.
5. List the areas where you feel that liability may arise.

*Excerpt, Liability Issues in Emergency Management, Emergency Management Institute*

## LIABILITY REDUCTION STRATEGIES

1. Inventory hazards and map natural hazards areas.  
Publish such information in the public facilities plan, land use plan, and community regulations
2. Prevent private actions that will increase hazards or hazards losses.  
The control of private actions can be accomplished through upgraded zoning subdivision control, building codes or other special codes, and careful examination of permit applications.
3. Require disclaimers of public liability when private uses are permitted in a hazard area.
4. Submit all policy-related decisions to the local governing body for debate and approval so they become discretionary, planning, or legislative rather than "ministerial" acts.
5. Develop a hazard preparedness plan to deal with problems when (or if) these occur.
  - a. Example: Tsunami evacuation plan
  - b. This may help support the reasonableness of community action.
6. Comply with state and federal statutory requirements and community regulations in planning, regulation, acquisition, and other activities.
7. Ensure that all hazard mitigation measures, including permit approvals and denials, are based upon adequate data.
8. Provide equitable administration of and enforcement of hazard regulations to avoid due process and taking challenges.
9. Encourage private landowners in hazard areas to carry insurance.
  - a. Example: Flood insurance and earthquake insurance
  - b. A landowner compensated by insurance after a loss is less likely to sue the municipality.
10. Upgrade hazard preparedness, response, mitigation, and recovery plans and measures as improvements occur in data, preparedness, mitigation, response, and recovery technologies, and preparedness, mitigation, response, and recovery strategies.

*Excerpt, Liability Issues in Emergency Management, Emergency Management Institute*

## ELECTED AND APPOINTED OFFICIALS CHECKLIST

### Background Information

Notified by

Time

Type of emergency

### Location

What areas are affected

What is affected (roads, other)

Communications available (do all departments use compatible systems)

### Incident

Type

Magnitude

Best/worst case (issues, time for opening a road)

### Damage

Injuries/deaths

Area (size, boundaries)

Property damage

Other impacts

### Resources

Incident command status

Internal/external resources committed

Internal/external resources required

EOC status and location

Other authorities notified?

### Immediate action

Begin Personal Log (date, time, who spoke with and topic, highlight those that need resolution)

Establish contact with local emergency management office

Direct staff to assess and report on problems, resources, shortfalls, policy needs and options

Chair assessment meeting

Issue emergency declarations, as needed

Set reporting procedures

Remind staff to keep complete logs of actions and financial records

Begin liaison with other officials

## Elected Officials Disaster Forum

### Public information

- Check plans to inform public and manage media
- Designate a single, lead PIO
- Evaluate media capabilities
- Establish media center
- Channel all releases first through CEO in EOC
- Establish news media update and access policies

### Personal

- Tell family destination and how to contact
- Take medications, toiletries, and clothes
- Take list of peers to contact for advice
- Remember that your role is policymaking, not operational
- Take personal tape recorder
- Other things to remember: (specific for individual, community)

### Legal

- Contact legal advisors
- Review legal responsibilities and authorities:
  - Emergency declarations
  - Chain of succession
  - Intergovernmental aid
  - Social controls (curfew)
  - Price controls
  - Other restrictions
- Monitor equity of service based on needs and risks
- Maintain balance between public welfare and citizen's rights
- Have status of contracts reviewed

### Political

- Recognize accountability
- Check provisions for public officials
- Space at EOC
- Periodic updates
- Staff updates on politically sensitive issues, such as life and property losses, service interruptions
- Establish and evaluate policy decisions throughout the incident
- Confer with other selected officials when problems arise
- Use elected officials to request assistance from public and private organizations

*Excerpt from The IEMS National Advisory Committee "Chief Executive Officer's Checklist," The CEO's Disaster Survival Kit, Federal Emergency Management Agency and the U.S. Fire Administration, 1988.*

# GRAYS HARBOR COUNTY IMPORTANT PHONE NUMBERS

911 NON-EMERGENCY	(360) 533-8765
ANIMAL CONTROL	(360) 533-8765
ARMY CORPS OF ENGINEERS	(206) 764-3406
COUNTY CORONER	(360) 532-2322
COUNTY COMMISSIONER OFFICE	(360) 249-3731
COUNTY HEALTH DEPARTMENT	(360) 532-8631
CRISIS CLINIC / HOTLINE	(360) 532-4357
GRAYS HARBOR EMS	(360) 532-2067
NATIONAL WEATHER SERVICE/SEATTLE	(206) 526-6168
PUD HOTLINE	(360) 537-3721
RED CROSS	(360) 507-0021
SHERIFF BUSINESS	(360) 249-3711
STATE PATROL	(800) 283-7808
WASHINGTON STATE DOT	(253) 548-2420
WA STATE EMD DUTY OFFICER	(800) 258-5990

## COMMUNITY EMERGENCY RESPONSE TEAM (CERT)

[www.fema.gov/community-emergency-response-teams](http://www.fema.gov/community-emergency-response-teams)

## ENVIRONMENTAL HEALTH

Phone (360) 249-4222

Cell (360) 580-8246

Fax (360) 249-3203

[www.co.grays-harbor.wa.us/info/pub\\_svcs/envhealth.html](http://www.co.grays-harbor.wa.us/info/pub_svcs/envhealth.html)

Email: [ehd@co.grays-harbor.wa.us](mailto:ehd@co.grays-harbor.wa.us)

## FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA)

Federal Regional Center – Region X

Phone (425) 487-4600

[www.fema.gov](http://www.fema.gov)

## GRAYS HARBOR COUNTY

### FIRE MARSHALL

Phone (360) 249-4222

Fax (360) 249-3203

## GRAYS HARBOR COUNTY EMERGENCY MANAGEMENT

Phone (360) 249-3911 x1575

Cell (360) 580-2281

Fax (360) 249-3805

Email: [ghcdem@co.grays-harbor.wa.us](mailto:ghcdem@co.grays-harbor.wa.us)

Website: [www.co.grays-harbor.wa.us/info/DEM](http://www.co.grays-harbor.wa.us/info/DEM)

Twitter: <https://twitter.com/ghcdem>

Facebook: <https://www.facebook.com/pages/Grays-Harbor-County-Emergency-Management/426601594068767>

## GRAYS HARBOR COUNTY EMERGENCY NOTIFICATION SYSTEM

<http://www.co.grays-harbor.wa.us/info/DEM/EMailTWS.asp>

## NATIONAL TSUNAMI HAZARD MITIGATION PROGRAM

<http://nthmp.tsunami.gov>

## NATIONAL TSUNAMI WARNING CENTER

<http://wcatwc.arh.noaa.gov>

## NOAA WEATHER RADIO ALL HAZARDS

[www.nws.noaa.gov/nwr/](http://www.nws.noaa.gov/nwr/)

## ONLINE ACCESS TO DISASTER INFORMATION AND RESOURCES (FEMA)

[www.DisasterAssistance.gov](http://www.DisasterAssistance.gov)

## ONLINE DISASTER RESOURCES INFORMATION IN WASHINGTON STATE

<http://access.wa.gov>

## PLANNING AND BUILDING

Phone (360) 249-4222

Fax (360) 249-3203



Robert Ezelle (0419)  
 Director  
 512-7001

Peter Antislun (0045)  
 Assistant Director  
 512-7032

Christine Dai (0405)  
 AAS  
 512-7004

Hobbs Swain (0415)  
 AAS  
 512-7009

Chris Duff (0408)  
 ITN Manager  
 512-7012

Michelle Smith (0424)  
 Cyber Security Manager  
 512-7021

Michelle Smith (0424)  
 Cyber Security Manager  
 512-7021

Wanda Trosser (0400)  
 AAS  
 512-7043

Laura Nelson (0413)  
 AAS  
 512-7023

Anna Marie Otes (0423)  
 AAS  
 512-7012

Michelle Smith (0424)  
 Cyber Security Manager  
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Andy Lintweaver (0464)  
 Program Manager  
 512-7038

Kim Maak (0484)  
 SS  
 512-7014

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Blue = Vacant  
 Red = Non Perm or Temp



# What are the Functions of Emergency Management?

The 13 emergency management functions are:

- **Laws and Authorities** - the legal authorities for the development, implementation, and maintenance of an emergency management program
- **Hazard Identification and Risk Assessment** - the identification of the hazards with the greatest potential to affect lives and property and an assessment of the likelihood, vulnerability, and magnitude of incidents that could result from exposure to hazard
- **Hazard Management** - a systematic management approach to eliminate hazards or reduce the effects of hazards through mitigation
- **Resource Management** - the availability of critical human and physical resources required in disaster management
- **Planning** - the collection, analysis and use of information, and the development, promulgation and maintenance of a comprehensive emergency management plan, action plan, mitigation plan, and administrative plan
- **Direction, Control and Coordination** - the capability to monitor for emergencies and disasters; quickly and accurately assess their magnitude and direct, control and coordinate response and recovery
- **Communications and Warning** - the ability to alert and warn response organizations and the general public of pending and spontaneous disaster events
- **Operations and procedures** - the implementation of policies, plans and procedures in exercises and disaster events
- **Logistics and Facilities** - essential facilities and services that support response and recovery operations
- **Training** - assessments, development and implementation of a training/education program for public officials, emergency response personnel, and mitigation personnel
- **Exercises** - the evaluation of plans and capabilities based on a program of tests and exercises
- **Public Education and Information** - the provision of public education and information to protect lives and minimize property loss
- **Finance and Administration** - financial and administrative procedures in place before, during and after disaster events.



## GRAYS HARBOR COUNTY NOTIFICATION SYSTEM

**Is this a change to previously submitted information?**

**YES            NO**

### CONTACT INFORMATION FORM

PLEASE PRINT LEGIBLY

Name: \_\_\_\_\_

Full Address: \_\_\_\_\_

\_\_\_\_\_

Cell # \_\_\_\_\_

Home Phone # \_\_\_\_\_

E-Mail: \_\_\_\_\_

Do you live near or are affected by? Please circle

Coast      Chehalis      Satsop      Wynoochee      Wishkah      Humptulips

E-mail to: [GHCDEM@co.grays-harbor.wa.us](mailto:GHCDEM@co.grays-harbor.wa.us)

Fax to: (360) 249-3805

Mail: Grays Harbor Emergency Management  
310 W. Spruce St.  
Montesano, WA 98563