

## Scott Boettcher

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**From:** Brian Shay <BShay@cityofhoquiam.com>  
**Sent:** Thursday, August 4, 2016 12:51 PM  
**To:** scottb@sbgh-partners.com  
**Cc:** Brian Shay  
**Subject:** City of Hoquiam Grant Application-Chehalis Basin Flood Relief  
**Attachments:** Chehalis Basin River Flood Authority Grant.Raymer Street Pump Station and Storn System Improvements.Aug 2016.docx.pdf

Hello Scott,  
Please find the our project application. Thanks.  
-Brian

Brian Shay  
City Administrator  
City of Hoquiam  
360-538-3983  
[bshay@cityofhoquiam.com](mailto:bshay@cityofhoquiam.com)

*City Mission Statement: The City of Hoquiam is committed to improving the quality of life for our citizens by diversifying the industrial base, increasing business, housing and recreation opportunities, while providing safe neighborhoods for all.*



## 2017-19 Local Projects Recruitment Form

### Chehalis Basin Flood Relief

**A. What are local flood relief projects?** -- In general, local projects are those projects that provide predominantly localized and quantifiable benefit, are capable of being completed within the funding cycle, are supported by the jurisdiction within which the project is proposed, and are vetted and advanced through a public entity like a City, County, Conservation District, Agency, etc. Furthermore, local projects are envisioned as helping with flooding, not adverse to fish or habitat and (where possible) providers of multiple, quantifiable benefits.

**B. What kinds of local flood relief projects are likely to be logical funding candidates for 2017-19?**

- Projects that complete an effort previously funded/started.
- Projects that advance improved emergency response.
- Projects that advance improved public infrastructure protection.
- Projects that advance improvements in local or community flood hazard reduction, including local flood proofing projects (e.g., elevations, buy-outs, foundation venting/opening, etc.).
- Projects that advance Conservation District initiated flood hazard reduction (e.g., farm pads, evacuation routes, bank erosion/bank stabilization, etc.)
- Projects that demonstrate innovation (e.g., thinking beyond traditional bank stabilization techniques in favor of natural system designs), partnerships, cost-sharing/leveraging resources, multiple benefits, and proactive vetting with agencies and tribes.
- Projects typically not in excess of \$3M for the stage/phase being funded.

**C. Are there projects that would not be good candidates?**

- Projects that seek to utilize State Capitol Budget dollars for uses not typically allowed (e.g., maintenance and repair work, cost-sharing under select circumstances, etc.).
- Projects likely to increase potential for flood damage upstream or downstream.
- Projects with unmitigable adverse environmental impacts or significant uncertainty regarding potential environmental impacts.
- Projects not sponsored by a public entity.

#### Instructions:

- Please submit local flood relief project requests (via this form) to Scott Boettcher ([scottb@sbgh-partners.com](mailto:scottb@sbgh-partners.com)) no later than 5:00 p.m., Friday, August 12, 2016.
- Please submit one request form for each project proposed, even those past projects previously or partially funded.
- Note: Parts III and IV below [marked by "(\*\*)"] will be scored as part of the Flood Authority Projects Committee's review and evaluation. Part I and II will not be scored.



Part I General	
1. <b>Date:</b>	August 4, 2016
2. <b>Project Name:</b>	City of Hoquiam – Ramer Street Pump Station
3. <b>Project Location</b> -- Please identify the location of the project as precisely as possible, including providing decimal degree latitude/longitude coordinates.	Raymer Street at Intersection with Polk in Hoquiam, WA.  Latitude:46.988564° Longitude:-123.88331°
4. <b>Project Contact</b> -- Please identify who will be responsible for overseeing and managing the project (i.e., name, email, telephone number, etc.).	Brian Shay, City Administrator 360-538-3983 <a href="mailto:bshay@cityofhoquiam.com">bshay@cityofhoquiam.com</a>
5. <b>Lead Organization</b> -- Please identify the lead organization, agency, entity, etc. responsible for this project. Please identify key partners responsible for assisting in the delivery or implementation of the project.	City of Hoquiam is the lead agency that will manage the project. An engineering consultant will be hired to complete the design and permit applications.

Part II Description, Timing and Cost	
6. <b>Project Description</b> -- Please describe the project, what is intended to be accomplished, the benefits to be accrued, and to whom.	A new stormwater pumping station will be constructed to discharge flood waters to the Raymer Street Outfall. Existing undersized storm pipelines in the Raymer Flood Basin will be replaced in accordance with the recommendations in the City's Comprehensive Surface Water Management Plan. This project will correct flooding that has plagued north Hoquiam residents and businesses for decades due to tidal influence from the Hoquiam River.
7. <b>Project Timeline</b> -- Please describe the overall timeline for completion of the project as well any interim stages or phases.	Design and Permitting will be complete within 12 months of funding, followed by construction expected to be complete within 120 days. The project should be up and running by October 2018.
8. <b>Project Cost and Funding</b> -- What is the cost of this project? What are the on-going maintenance and operation requirements and costs? Is it clear who will be responsible for covering on-going maintenance and operation costs?	The project is estimated at \$1,300,000. Annual maintenance expenses are expected at \$20,000 per year which will be absorbed by the City of Hoquiam storm water utility department.



<p>9. <b>Other Funding</b> -- Please explain the extent to which other funding sources or funding partners are available.</p>	<p>The City of Hoquiam will cover any cost overruns if funding is secured.</p>
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<p style="text-align: center;"><b>Part III (**)</b> <b>Completion and Doability by June 30, 2019</b></p>	
<p>10. <b>Project Completion</b> -- Does the funding requested complete (or substantially complete) a project that has already been started? If so, please explain.</p>	<p>The funding will complete the project.</p>
<p>11. <b>Project Doable</b> -- Can this project or the stage/phase for which funding is sought be completed by June 30, 2019? Please describe any circumstances with potential to impact the project's doability or timeline (e.g., permitting or regulatory unknowns, lack of availability of other cost-share funding resources, etc.). Please describe any advance coordination or vetting with agencies, tribes, other entities, etc. and the outcomes of that effort.</p>	<p>Nothing is expected to delay the project which will be complete by the end of 2018.</p>
<p>12. <b>Project Impacts</b> -- Please identify how any project impacts will be mitigated, funded and if that mitigation will be accomplished by June 30, 2019?</p>	<p>There are no project impacts or mitigation necessary.</p>

<p style="text-align: center;"><b>Part IV (**)</b> <b>Benefits Stated and Quantified</b></p>	
<p>13. <b>Emergency Response Benefits</b> -- Please describe (and quantify) how this project enhances emergency response in a flood emergency (e.g., does it keep critical access roads and transportation facilities open and functional, does it enable easy movement of cattle, equipment and farm chemicals out of harm's way, etc.).</p>	<p>This project will address chronic flooding with standing waters on the roadways of north Hoquiam which are often a foot deep due to tidal influence from the Hoquiam River. With a new pump station, the roadways will be kept clear for emergency response.</p>
<p>14. <b>Essential Infrastructure Protection Benefits</b> -- Please describe (and quantify) how this project protects essential infrastructure and the risks or</p>	<p>Lincoln Elementary School which serves grade school children from K-3<sup>rd</sup> Grade will see benefits from this project as they are impacted by the flooding on an annual</p>

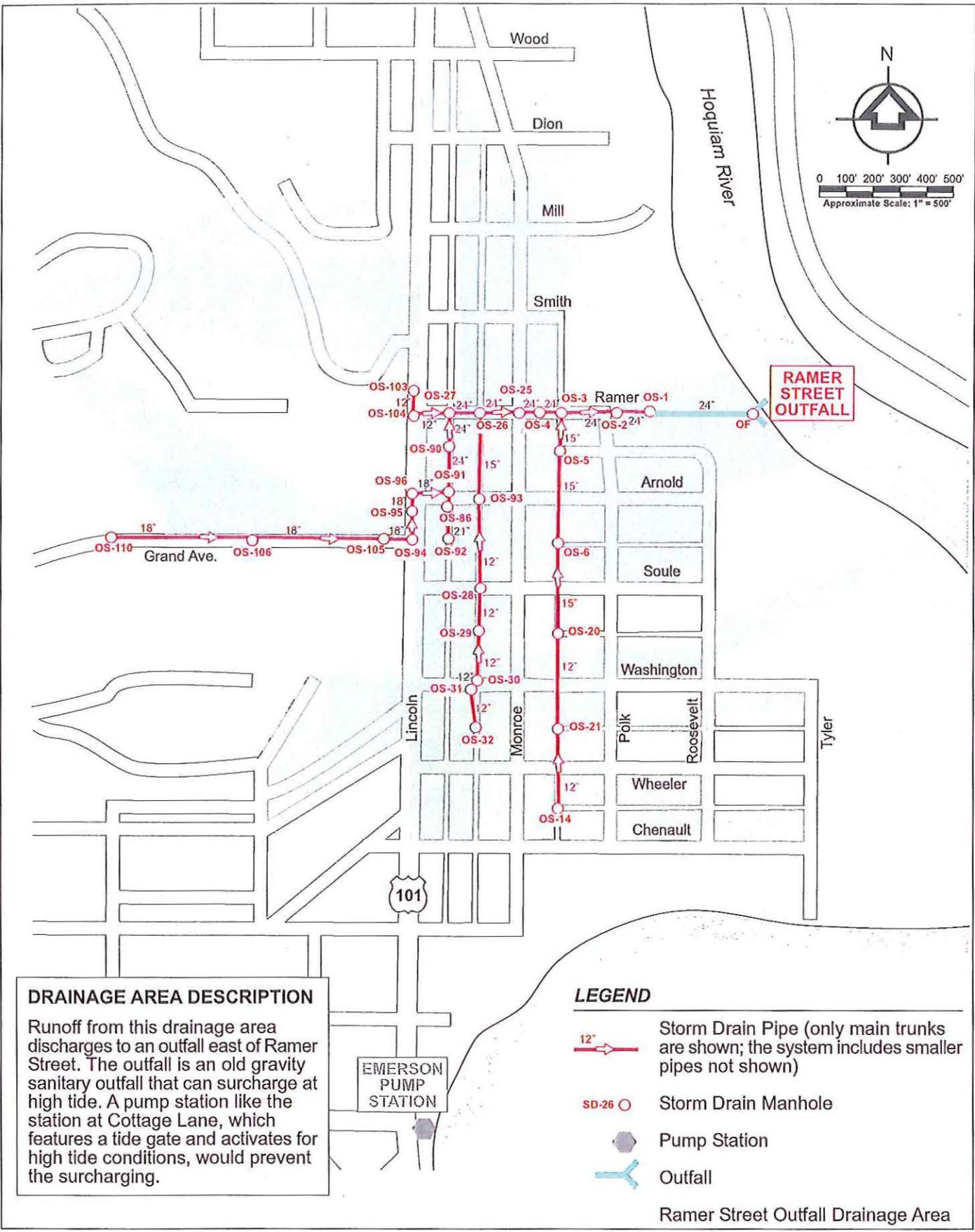


<p>consequences of not acting this funding cycle.</p>	<p>basis.</p>
<p>15. <b>Public Health, Safety and Welfare Benefits</b> -- Please describe (and quantify) how this project protects public health, safety and welfare.</p>	<p>200 plus homes and properties over several blocks sustain flood waters into their homes or property on an annual basis due to tidal influence of the Hoquiam River and the lack of a storm pump station in this area.</p>
<p>16. <b>Residential, Commercial and/or Agricultural Protection Benefits</b> -- Please describe (and quantify) how this project protects residential, commercial and/or agricultural interests and communities and the benefits of acting (or consequences of not acting) this funding cycle. Consider factors like number of structures at risk, number of people at risk, historic frequency of flood damage, magnitude of benefit to be gained for the cost, etc.).</p>	<p>Approximately 200 homes are located in this flood basin, in addition to Lincoln Elementary School, the Coastal Harvest Food Bank Distribution Center, Immanuel Baptist Church, Hoquiam Boat Yard and other businesses. The flooding happens annually putting a significant number of people and structures at risk.</p>
<p>17. <b>Other Project Impacts</b> -- Please explain how this project impacts or is potentially impacted by another project.</p>	<p>The City of Hoquiam and Aberdeen are partnering on Timberworks, a Flood Resiliency Project for our two cities. The Raymer Pump Station Project compliments the flood reduction projects that will be completed through Timberworks.</p>
<p>18. <b>Anything Else</b> -- Please feel free to offer any additional information (e.g., photos, maps, video, drawings, etc.) that would help to better understand the scope, timing and benefits of this project.</p>	<p>The Raymer Street Pump Station Project and Raymer Flood Basin System improvements were identified as a top priority of the City of Hoquiam back in 2000 when the City completed a Comprehensive Surface Water Management Plan. Due to a lack of funding, the project was never completed. Attached, is the information from the project as identified in the plan. The project budget has been adjusted as it has been 16 years since the original budget was prepared.</p>



### Appendix A

<b>Process/Schedule</b> (current as of 7-22-2017)	
July 21, 2016 (FA In-Person Mtg.)	<ul style="list-style-type: none"> <li>• Post and distribute <b>local projects recruitment</b> request on 7/22/2016 following Flood Authority review/discussion at their 7/21/2016 meeting.</li> <li>• Allow three weeks for project proposals/submittals (i.e., due no later than 5:00 p.m., Friday, August 12, 2016).</li> </ul>
August 18, 2016 (FA Conf. Call Mtg.)	<ul style="list-style-type: none"> <li>• Receive proposals/submittals.</li> <li>• <b>Update Flood Authority</b> at their 8/18/2016 meeting on number received, type of projects received, distribution, etc.</li> </ul>
September 15, 2016 (FA In-Person Mtg.)	<ul style="list-style-type: none"> <li>• <b>Update Flood Authority</b> at their 9/15/2016 meeting on status of Projects Committee's effort to review, rank, discuss with Tribes, discuss with agencies, preliminarily sort and rank, etc.</li> </ul>
October 20, 2016 (FA In-Person Mtg.)	<ul style="list-style-type: none"> <li>• Review/discuss <b>DRAFT ranked and prioritized list</b> with Flood Authority at their 10/20/2016 meeting.</li> </ul>
November 17, 2016 (FA Conf. Call Mtg.)	<ul style="list-style-type: none"> <li>• Seek Flood Authority approval of <b>FINAL ranked and prioritized list</b> at their 11/17/2016 Flood Authority meeting.</li> </ul>



**DRAINAGE AREA DESCRIPTION**

Runoff from this drainage area discharges to an outfall east of Ramer Street. The outfall is an old gravity sanitary outfall that can surcharge at high tide. A pump station like the station at Cottage Lane, which features a tide gate and activates for high tide conditions, would prevent the surcharging.

EMERSON PUMP STATION

**LEGEND**

-  12" Storm Drain Pipe (only main trunks are shown; the system includes smaller pipes not shown)
-  SD-26 Storm Drain Manhole
-  Pump Station
-  Outfall

Ramer Street Outfall Drainage Area

2740080/Ramer.fh8

TABLE 4-3.  
8TH STREET OUTFALL DRAINAGE AREA  
PIPE IMPROVEMENTS FOR THE 10-YEAR STORM

Conduit Number	Upstream Manhole	Downstream Manhole	Pipe Length (feet)	Pipe Diameter (feet)		Estimated Upgrade Cost
				Existing	Upgraded	
10	SD-17	OF	120	1.5	3	\$21,600
20	SD-50	SD-17	265	1.5	3	\$47,700
30	SD-19	SD-50	250	1.5	3	\$45,000
60	SD-21	SD-19	380	1.25	3	\$68,400
70	SD-23	SD-21	260	1.25	2	\$31,200
80	SD-24	SD-23	130	1.25	1.5	\$11,700
Total						\$226,000

### K Street Pump Station Basin

The K Street basin main trunk line requires extensive pipe upsizing, as shown in Table 4-4. The upgrades for pipes on K Street from the pump station to 4th Street double the pipe diameters, with the exception of conduit 120, which was increased from 2.5 to 4 feet. These changes eliminate the modeled flooding in all of the manholes on K Street. Lesser upgrades fail to eliminate flooding. Increasing the diameter of conduit 170 from 1 foot to 2 feet eliminates modeled flooding in manhole OS-24. Complete elimination of modeled flooding in the uppermost junctions of the basin requires pipe increases through OS-41, the system's most upstream manhole. As in the 8th Street Outfall basin, junction inverts were lowered to achieve positive slope in all conduits. Inverts of junctions OS-70 and OS-76 were lowered to 0.38 and 1.18 feet, respectively.

### Ramer Street Outfall Basin

Most of the flooding problems modeled in the Ramer Street Outfall basin for the 10-year storm occurred in the two pipelines running north-south in the alleys between Polk and Monroe and Monroe and Lincoln. This modeled flooding results from insufficient pipe sizing in both these tributary lines and the main Ramer Street trunk line. As seen in Table 4-5, pipe upsizing is necessary in both areas.

Increasing the Ramer Street main trunk line from the outfall to OS-27 as shown in the table eliminates flooding in the downstream junctions OS-6, OS-28 and OS-90. The tributary line between Monroe and Lincoln Streets experiences the greatest modeled flooding in the basin. Significant increases in pipe sizes throughout the entire line are necessary to curtail the problem. This line also has a negative slope in conduit 180; the invert elevation of OS-29 was dropped to 1.64 feet to correct this. Significant pipe size increases are also necessary in the tributary between Monroe and Polk Streets, but not for all pipes.

TABLE 4-4.  
K STREET PUMP STATION DRAINAGE AREA  
PIPE IMPROVEMENTS FOR THE 10-YEAR STORM

Conduit Number	Upstream Manhole	Downstream Manhole	Pipe Length (feet)	Pipe Diameter (feet)		Estimated Upgrade Cost
				Existing	Upgraded	
10	OS-2	OS-1	75	3	6	\$27,000
20	OS-3	OS-2	125	3	6	\$45,000
30	OS-4	OS-3	410	3	6	\$147,600
40	OS-5	OS-4	360	3	6	\$129,600
50	OS-14	OS-5	255	3	5	\$76,500
60	OS-16	OS-14	265	3	5	\$79,500
70	OS-26	OS-16	205	3	5	\$61,500
80	OS-75	OS-26	195	3	5	\$58,500
90	OS-70	OS-75	290	3	5	\$87,000
100	OS-76	OS-70	370	2.5	5	\$111,000
110	OS-81	OS-76	390	2.5	5	\$117,000
120	OS-83	OS-81	380	2.5	4	\$91,200
170	OS-44	OS-83	390	1	2	\$46,800
180	OS-31	OS-44	250	1	2	\$30,000
190	OS-4A	OS-31	380	1	2	\$45,600
200	OS-24	OS-4A	65	1	2	\$7,800
210	OS-25	OS-24	305	1	1.5	\$27,450
220	OS-38	OS-25	305	1	1.5	\$27,450
230	OS-41	OS-38	30	1	1.25	\$2,250
Total						\$1,219,000

TABLE 4-5.  
RAMER STREET OUTFALL DRAINAGE AREA  
PIPE IMPROVEMENTS FOR THE 10-YEAR STORM

Conduit Number	Upstream Manhole	Downstream Manhole	Pipe Length (feet)	Pipe Diameter (feet)		Estimated Upgrade Cost
				Existing	Upgraded	
10	OS-1	OF	360	2	4	\$86,400
20	OS-2	OS-1	70	2	4	\$16,800
30	OS-3	OS-2	180	2	4	\$43,200
40	OS-5	OS-3	170	1.25	3	\$30,600
50	OS-6	OS-5	330	1.25	2.5	\$49,500
60	OS-20	OS-6	340	1.25	2.5	\$51,000
90	OS-4	OS-3	20	2	3.5	\$4,200
100	OS-25	OS-4	150	2	3.5	\$31,500
110	OS-26	OS-25	135	2	3.5	\$28,350
120	OS-27	OS-26	135	2	3	\$24,300
130	OS-104	OS-27	170	1	2.25	\$22,950
140	OS-103	OS-104	150	1	1.5	\$13,500
150	OS-93	OS-26	330	1.25	3.5	\$69,300
160	OS-28	OS-93	290	1	2.5	\$43,500
170	OS-29	OS-28	180	1	2	\$21,600
180	OS-30	OS-29	180	1	2	\$21,600
190	OS-31	OS-30	20	1	2	\$2,400
200	OS-32	OS-31	170	1	2	\$20,400
Total						\$581,000

TABLE 4-10.  
CITY OF HOQUIAM  
COST ESTIMATES  
STORMWATER PUMP STATIONS

Pump Station Name	Design Flow Basis, gpm	Unit Cost (\$/gpm)	Constr. Cost Estimate, \$	Constr. Conting. 20%	Allied Costs 30%	Total Project Cost
10th Street Station	6,000	\$64	\$384,000	\$77,000	\$138,000	\$599,000
K Street Station	14,000	\$57	\$798,000	\$160,000	\$287,000	\$1,245,000
Ramer Street	3,500	\$65	\$228,000	\$46,000	\$82,000	\$356,000
Emerson	87,500	\$20	\$1,750,000	\$350,000	\$630,000	\$2,730,000
Queen Street	17,500	\$54	\$945,000	\$189,000	\$340,000	\$1,474,000
Bay Avenue	163,000	\$20	\$3,260,000	\$652,000	\$1,174,000	\$5,086,000

#### K Street, 8th Street, and 10th Street Improvements

The 8th Street Outfall has no backflow preventer to keep Hoquiam River water from flowing back through the levee during high tides and winds, flooding portions of the City. This problem can be addressed by rerouting flow from the 8th Street Outfall to the 10th Street Pump Station and eliminating the 8th Street Outfall (see Figure 4-1).

The connection would require approximately 800 feet of 36-inch pipe (\$144,000), and the 2,000-gpm pump in the 10th Street Pump Station should be upgraded to a 6,000-gpm capacity (\$600,000). This would require the construction of a new station adjacent to the existing station. The section of 8th Street Outfall system upstream of K Street would be diverted to the K Street Basin at the corner of 8th Street and K Street (\$10,000), and the K Street Pump Station would be upgraded to 14,000 gpm (\$1,245,000). This would allow the continued redevelopment of this area. It may be possible to move the two 3,500 gpm pumps from the K Street station to the 10th Street station and reduce the total cost. The estimated cost for these improvements is \$2,000,000. The cost includes upgrading the outfall culvert to increase its capacity to handle the additional flow.

#### New Ramer Street Pump Station

The Ramer Street Outfall also has no tide gate to keep Hoquiam River floodwater out. This deficiency can be addressed by building a new pump station to discharge the flows to the river. With the pipe improvements identified for this basin, flows to the Ramer Street Outfall would be 80 cfs for the 10-year storm and 100 cfs for the 100-year storm. A new 3,500 gpm pump station is proposed to help convey stormwater to the Hoquiam River during a high tide. A new pump station connecting to the existing outfall would be constructed. The estimated cost for a new station is \$360,000.