Meetings are held at the
Ilwaco Community Building Meeting Room
158 First Ave North in Ilwaco, WA

CITY OF ILWACO
CITY COUNCIL MEETING
Monday, April 11, 2016

6:00 p.m. REGULAR COUNCIL MEETING

AGENDA

A. Call to order

B. Flag Salute

C. Roll Call

D. Approval of Agenda

E. Consent Agenda

All matters, which are listed within the consent section of the agenda, have been distributed or made available for review to each member of the council prior to the meeting. Items listed are considered routine and will be enacted with one motion unless a council member specifically requests it to be removed from the Consent Agenda to be considered separately. The staff recommends the approval of the following items:

1. Approval of Minutes (TAB 1)
   a. March 28, 2016 Regular Meeting

2. Claims & Vouchers (TAB 2)

a.	Checks: 38782 to 38789 + electronic payments	$37,761.48
b.	Checks: 38790 to 38834	$58,170.76
	GRAND TOTAL:	$95,932.24

F. Reports

1. Staff Reports (TAB 3)
   a. Police Chief Report
2. Council Reports
3. Mayor's Report

G. Comments of Citizens and Guests Present

At this time, the mayor will call for any comments from the public on any subject not on the agenda. Please limit your comments to five (5) minutes. The City Council does not take any action or make any decisions during public comment. To request an item be added to a future agenda, please contact the city clerk for the council rules of procedure for agenda items.

City of Ilwaco is an equal opportunity provider and employer.

H. Public Hearing – Short Term Vacation Rentals

I. Business

J. Discussion

1. **Short Term Vacation Rentals** (TAB 9) – *City Planner*
2. **Hazard Mitigation Plan Adoption** (TAB 10) – *Cassinelli*
3. **Knowles Contract for Fire Protection** (TAB 11) – *Cassinelli*
4. ~~**Interlocal Agreement for Building Inspector Services** (TAB 12) – *Cassinelli*~~
5. **Application to RCO for City Park Renovation Phase 2** (TAB 13) – *Parks & Rec*

K. Correspondence and Written Reports

L. Future Discussion/Agendas

1. Charter Franchise Agreement Renewal - *Cassinelli*
2. Proposal and Contract for Professional Engineering Services, Sahalee Water and Sewer Improvements - *Cassinelli*
3. PACCOM Memorandum of Understanding for Receipt and Expenditures of Funds from Proposition #1– *Cassinelli*
4. Update to Critical Areas Ordinance - *Cassinelli*
5. Comprehensive Plan Map Amendment – *Cassinelli*
6. Neighborhood Preservation Ordinance – *Cassinelli*
7. Ordinance Amending Title 8 – Health and Safety – *Cassinelli*

M. Adjournment

N. Upcoming Meetings

COUNCIL/COMMISSION	PURPOSE	DAY	DATE	TIME	LOCATION
City Council	Regular Meeting	Monday	04/11/16 04/15/16	6:00 p.m.	Community Building
City Council	Public Hearing – Short Term Vacation Rentals	Monday	04/11/16	6:00 p.m.	Community Building
Planning Commission	Regular Meeting	Tuesday	05/03/16	6:00 p.m.	Community Building
Parks & Rec. Commission	Regular Meeting	Tuesday	04/12/16	6:00 p.m.	Fire Hall
Port/City Meeting	Regular Meeting	Tuesday	05/10/16	5:00 p.m.	Port Meeting Rm

City of Ilwaco is an equal opportunity provider and employer.

CITY OF ILWACO
CITY COUNCIL MEETING
Monday, March 28, 2016

A. Call to Order

1. Mayor Cassinelli called the meeting to order at 6:00 p.m.

B. Flag Salute

1. The Pledge of Allegiance was recited.

C. Roll Call

1. Present: Councilmembers Jensen, Karnofski, Marshall, Chambreau, Forner and Mayor Cassinelli.

D. Approval of Agenda

1. **ACTION: Motion to approve the agenda as presented. (Karnofski/Forner) 5 Ayes 0 Nays 0 Abstain.**

E. Approval of Consent Agenda

1. Including Checks 38750 to 38751 + Electronic totaling $17,633.31, Checks: 38752, 38781 totaling $153,329.88 for a grand total of $170,963.19.
   ACTION: Motion to approve the consent agenda with amendment to Item B, Checks 38752 to 38781 totaling 513,329.88 for a Grant Total of $530,963.19 shall read Item B, Checks 38752 to 38781 totaling 153,329.88 for a Grand Total of $170,963.19. (Jensen/Forner) 5 Ayes 0 Nays 0 Abstain.

F. Reports

1. **Staff Reports**
   i. **Police Chief**
   No department report.
   ii. **City Clerk Report**
   The 24th Annual Black Lake Fishing Derby will be held April 30th and we are up to 65 kids registered which is about half of last year's total. The City Park Renovation fund on Go Fund Me received another $250 contribution. The 2015 Annual Water Quality Report is complete and will be sent out with the April billing.
   iii. **Parks and Recreation Commission**
   The RFQ for Architect/Engineering Services for the City Park Renovation has been advertised. Parks Chair Nick Haldeman hosted an education tour of Black Lake which was attended by 8 guests. Peninsula Poverty Response (PPR) will be

attending the upcoming Parks and Rec Meeting on April 12th to discuss the future of the Ilwaco Triathlon.

2. **Council Reports**
   i. Councilmember Karnofski, along with Police Chief Wright and HIS student Eddie Hillard presented information on the Wellspring Community Network. A copy of the power point is available at City Hall. The Youth Action Klub (YAK) presented it's Logic Model and Action Plan for underage drug use and prevention.
   ii. Councilmember Forner attended the Community Fishing Association (CFA) meeting presented by the Port of Ilwaco.

3. **Mayor's Report**
   i. Mayor Cassinelli attended the CFA meeting presented by the Port of Ilwaco. He also attended the PCOG-EDC meeting and secured WA-CERT assistance with loan repayment for the Ilwaco Community Building and the Ilwaco Fire Hall beginning in 2022.

G. Comments of Citizens and Guests Present

1. None

H. Business

1. **Purchase of New City Hall Server – Software and Hardware**
   Cost for the new server would be budgeted from all funds; 35% from general, 25% from water, 25% from waste water, and 15% from storm water.
   ACTION: I move to approve the mayor to accept the quote from iFocus to purchase a new server for city hall. (Forner/Karnofski) 5 Ayes 0 Nays 0 Abstain.
2. **Service Agreement with Archaeological Services LLC**
   Cost is less than budgeted for, so this is a savings in the overall cost of the project. Discussion regarding the Small Works Roster, and responsibilities of the city and the contractor if cultural artifacts are detected.
   ACTION: I move to approve the mayor to enter into an agreement with Archaeological Services LLC for a cultural resources survey for the Transform City Park project. (Chambreau/Karnofski) 5 Ayes 0 Nays 0 Abstain.
3. **Interlocal Agreement for Ilwaco City Park Renovation Project**
   A grammar correction was noted under Item 3, second line, second word "the" can be stricken from the agreement.
   ACTION: I move to authorize the mayor to execute the "Interlocal Agreement for Ilwaco City Park Revocation Project" between the City of Ilwaco and the Port of Ilwaco. (Karnofski/Jensen) 5 Ayes 0 Nays 0 Abstain.

I. Discussion

1. **Ilwaco Cemetery Assistance**
   In order for the Mutual Aid Agreement to be exercised, Pacific County will need to request emergency assistance for the slide at the Ilwaco Cemetery. It has been

determined that at this time, the Ilwaco Cemetery Board has not asked for assistance from Pacific County and until assistance is requested there is no action for the City of Ilwaco to take. It seems that this Mutual Aid Agreement would be the proper instrument to use if the situation arises. Citizen Gail Moore asked if the city was doing anything about the neighboring property to the cemetery and the continuing dirt movement onto that property. The land owner would need to contact Pacific County and request assistance since they are within the county jurisdiction.
ACTION: None taken.

2. **Purchase of New City Hall Server – Software and Hardware**
   Mayor Cassinelli recapped the list of what the server is used by City Hall for. Also, the timeline for recent failures, cost to City Hall in lost time and data, and the potential for an imminent failure of the entire system. The computer warranty with HP will expire this year and cannot be renewed. Both hard drives to the existing server have already been replaced and continue to show signs of failure.
   ACTION: Move to business at this meeting. (Forner/Chambreau) 5 Ayes 0 Nays 0 Abstain.
3. **Service Agreement with Archaeological Services LLC**
   A cultural resources survey is required prior to beginning work on the City Park Renovation project.
   ACTION: Move to business at this meeting. (Chambreau/Forner) 5 Ayes 0 Nays 0 Abstain.
4. **Interlocal Agreement for Ilwaco City Park Renovation Project**
   The Port of Ilwaco requests the City to enter into an interlocal agreement for monetary and staff contributions to the city park project. In exchange for the $25,000 contribution, the Port requests a plaque on the picnic facility denoting their involvement.
   ACTION: Move to business at this meeting. (Karnofski/Forner) 5 Ayes 0 Nays 0 Abstain.

J. Future Discussion/Agendas

1. Contract for Building Inspector Services - *Cassinelli*
2. Proposal and Contract for Professional Engineering Services, Sahalee Water and Sewer Improvements - *Cassinelli*
3. PACCOM Memorandum of Understanding for Receipt and Expenditures of Funds from Proposition #1– *Cassinelli*
4. Annual WTP and WWTP Internal Audits – *Chambreau*
5. Short Term Vacation Rentals – *City Planner*
6. Update to Critical Areas Ordinance - *Cassinelli*
7. Comprehensive Plan Amendment – *Cassinelli*
8. Neighborhood Preservation Ordinance – *Cassinelli*
9. Ordinance Amending Title 8 – Health and Safety – *Cassinelli*

K. Motion to adjourn the meeting (Jensen) Mayor Cassinelli adjourned the meeting at 6:56 p.m.

Mike Cassinelli, Mayor

Holly Beller, City Clerk

Register

Number	Name	Fiscal Description	Amount
38782	Fero, Jimmie W	2016 - April - First Meeting	$1,311.94
38783	Williams, Thomas R	2016 - April - First Meeting	$978.24
38784	AWC - Life Insurance	2016 - April - First Meeting	$18.40
38785	AWC Employee Benefit Trust	2016 - April - First Meeting	$5,224.92
38786	Dept of Labor & Industry	2016 - April - First Meeting	$3,460.57
38787	Dept of Retirement - Def Comp	2016 - April - First Meeting	$155.00
38788	Dept of Retirement Systems	2016 - April - First Meeting	$6,344.62
38789	Employment Security Dept.	2016 - April - First Meeting	$1,464.70
Alderman, Johnny	ACH Pay - 1846	2016 - April - First Meeting	$1,886.21
Beller, Holly Celeste	ACH Pay - 1831	2016 - April - First Meeting	$1,398.28
Benson, Austin	ACH Pay - 1832	2016 - April - First Meeting	$1,225.21
Cassinelli, Michael	ACH Pay - 1833	2016 - April - First Meeting	$423.70
Chambreau, Jon H.	ACH Pay - 1834	2016 - April - First Meeting	$181.96
Forner, Gary	ACH Pay - 1836	2016 - April - First Meeting	$399.60
Gray, Richard Roy	ACH Pay - 1837	2016 - April - First Meeting	$1,516.80
Jensen, David	ACH Pay - 1838	2016 - April - First Meeting	$181.96
Marshall, Fred	ACH Pay - 1839	2016 - April - First Meeting	$181.96
Mc Kee, David A	ACH Pay - 1840	2016 - April - First Meeting	$1,873.38
Mulinix, Vinessa	ACH Pay - 1841	2016 - April - First Meeting	$180.76
Richardson, Troy	ACH Pay - 1842	2016 - April - First Meeting	$1,565.33
Smith, Ariel	ACH Pay - 1843	2016 - April - First Meeting	$1,273.56
Staples, Terri P	ACH Pay - 1844	2016 - April - First Meeting	$484.86
EFT 04-05-2016	Discovery Benefits	2016 - April - First Meeting	$750.00
EFT 04-05-2016	U.S. Treasury Department	2016 - April - First Meeting	$5,279.52
			$37,761.48

Treasurer

38782 through 38789 and electronic payments totalling $37,761.48 are approved this 14th day of April, 2016.

Council member

Council member

Council member

Register

Fiscal: 2016
Deposit Period: 2016 - April
Check Period: 2016 - April - First Meeting

Number	Name	Print Date		Amount
Bank of the Pacific	**8023281**			
Check				
38790	IFOCUS Consulting Inc.	4/11/2016		$5,711.74
38791	A Sparkling Castle	4/11/2016		$455.00
38792	A-1 Redi Mix	4/11/2016		$75.53
38793	Brimar Identification and Safety	4/11/2016		$119.70
38794	BSK Associates	4/11/2016		$401.75
38795	Cartomation, Inc.	4/11/2016		$466.00
38796	Chinook Observer	4/11/2016		$199.49
38797	City of Ilwaco	4/11/2016		$2,276.66
38798	City of Long Beach	4/11/2016		$18,568.33
38799	Cole-Parmer	4/11/2016		$45.88
38800	Dennis CO	4/11/2016		$168.42
38801	Englund Marine Supply Inc	4/11/2016		$127.29
38802	Fastenal Company	4/11/2016		$633.72
38803	Goulter Diamond Bar Ranch	4/11/2016		$1,300.00
38804	Hach Company	4/11/2016		$613.70
38805	HD Fowler Company	4/11/2016		$3,229.10
38806	Heather Reynolds, Attorney	4/11/2016		$1,854.00
38807	IFOCUS Consulting Inc.	4/11/2016		$230.31
38808	John Deere Financial	4/11/2016		$1,082.23
38809	Kris Kaino	4/11/2016		$412.00
38810	Kubwater Resources Inc.	4/11/2016		$2,749.89
38811	L N Curtis & Sons	4/11/2016		$108.78
38812	Lazerquick	4/11/2016		$65.00
38813	LEAF	4/11/2016		$130.00
38814	Master Meter	4/11/2016		$48.04
38815	MRSC Rosters	4/11/2016		$120.00
38816	Nancy McAllister	4/11/2016		$412.00
38817	Naselle Rock & Asphalt	4/11/2016		$49.19
38818	Oman & Son	4/11/2016		$408.22
38819	One Call Concepts, Inc.	4/11/2016		$33.46
38820	Pacific CO Sheriff Office	4/11/2016		$8,860.71
38821	Peninsula Sanitation Service, Inc.	4/11/2016		$459.97
38822	Platt	4/11/2016		$56.23
38823	PUD No 2 of Pacific County	4/11/2016		$76.44
38824	Ryan Herco Flow Solutions	4/11/2016		$785.69
38825	Safetysign.com	4/11/2016		$132.70
38826	Sid's IGA	4/11/2016		$44.89
38827	Sunset Auto Parts Inc.	4/11/2016		$45.06
38828	Troy Richardson	4/11/2016		$389.25
38829	USA Blue Book	4/11/2016		$63.16
38830	Verizon Wireless	4/11/2016		$92.77
38831	Vision Municipal Solutions, Llc	4/11/2016		$519.52
38832	Wadsworth Electric	4/11/2016		$3,438.67
38833	Wilcox & Flegel Oil Co.	4/11/2016		$698.27
38834	William R. Penoyar, Attorney at Law	4/11/2016		$412.00
			Total Check	**$58,170.76**
			Total 8023281	**$58,170.76**

Grand Total	**$58,170.76**

I, the undersigned, do hereby certify under penalty of perjury that the materials have been furnished, the services rendered or the labor performed as described herein, that any advance payment is due and payable pursuant to a contract or is available as an option for full or partial fulfillment of a contractual obligation, and that the claim is a just, due and unpaid obligation against the City of Ilwaco, and that I am authorized to authenticate and certify said claims.

Treasurer

38790 through 38834 totalling $58,170.76 are approved this 11th day of April, 2016.

Council member

Council member

Council member

Voucher Directory

Vendor	Number	Reference	Account Number	Description	Amount
A Sparkling Castle					
	38791		**2016 - April - First Meeting**		
		Invoice - 3/28/2016 11:18:36 AM			
			001-000-000-514-20-31-00	Office & Operating Supplies	$80.00
			001-000-000-522-10-31-01	Training/Attendance	$40.00
			001-000-000-572-50-41-00	Custodian Library	$335.00
		Total Invoice - 3/28/2016 11:18:36 AM			**$455.00**
	Total 38791				**$455.00**
Total A Sparkling Castle					**$455.00**
A-1 Redi Mix					
	38792		**2016 - April - First Meeting**		
		Invoice - 3/30/2016 9:26:18 AM			
			15850		
			401-000-000-534-00-31-00	Operation & Maintenance	$75.53
		Total Invoice - 3/30/2016 9:26:18 AM			**$75.53**
	Total 38792				**$75.53**
Total A-1 Redi Mix					**$75.53**
Brimar Identification and Safety Products					
	38793		**2016 - April - First Meeting**		
		Invoice - 3/30/2016 1:10:24 PM			
			546250		
			101-000-000-543-30-30-00	Office And Operating	$29.91
			401-000-000-534-00-31-00	Operation & Maintenance	$29.93
			408-000-000-531-38-31-01	Operations & Maintenance	$29.93
			409-000-000-535-00-31-01	Operations And Maintenance	$29.93
		Total Invoice - 3/30/2016 1:10:24 PM			**$119.70**
	Total 38793				**$119.70**
Total Brimar Identification and Safety Products					**$119.70**
BSK Associates					
	38794		**2016 - April - First Meeting**		
		Invoice - 3/29/2016 4:45:19 PM			
			V600861		
			401-000-000-534-00-31-06	Office & Customer Service	$401.75
		Total Invoice - 3/29/2016 4:45:19 PM			**$401.75**
	Total 38794				**$401.75**
Total BSK Associates					**$401.75**
Cartomation, Inc.					
	38795		**2016 - April - First Meeting**		
		Invoice - 3/28/2016 11:18:10 AM			
			001-000-000-557-20-41-00	Ilwaco Web Page	$50.00
			GIS map storage		
			409-000-000-535-00-41-02	Professional Services -	$416.00
			GIS wastewater mapping services contract		
		Total Invoice - 3/28/2016 11:18:10 AM			**$466.00**
	Total 38795				**$466.00**
Total Cartomation, Inc.					**$466.00**
Chinook Observer					
	38796		**2016 - April - First Meeting**		
		Invoice - 3/28/2016 11:07:13 AM			
			SP1953		
			001-000-000-511-30-44-00	Official Publications	$25.53
		Total Invoice - 3/28/2016 11:07:13 AM			**$25.53**
		Invoice - 4/4/2016 10:02:18 AM			
			SP1966		
			001-000-000-511-30-44-00	Official Publications	$93.61
		Total Invoice - 4/4/2016 10:02:18 AM			**$93.61**
		Invoice - 4/4/2016 10:02:48 AM			
			SP1965		
			001-000-000-511-30-44-00	Official Publications	$80.35
		Total Invoice - 4/4/2016 10:02:48 AM			**$80.35**
	Total 38796				**$199.49**

Total Chinook Observer				**$199.49**
City of Ilwaco				
38797		**2016 - April - First Meeting**		
	Invoice - 3/29/2016 4:52:27 PM			
		001-000-000-511-60-47-02	City Sewer - Museum	$41.85
		001-000-000-514-20-47-02	Water - City Hall	$53.95
		001-000-000-514-20-47-03	Sewer - City Hall	$80.66
		001-000-000-514-20-47-04	Storm Drainage	$25.11
		001-000-000-522-50-47-01	Water	$183.27
		001-000-000-522-50-47-02	Sewer	$239.68
		001-000-000-522-50-47-03	Storm Drainage	$70.48
		001-000-000-572-50-47-01	City Water	$183.73
		001-000-000-572-50-47-02	City Sewer	$240.60
		001-000-000-572-50-47-03	Storm Drainage	$10.99
		001-000-000-576-80-47-01	Water-Parks, Sprinklers,Blk	$192.68
		001-000-000-576-80-47-02	Sewer-Parks, Black Lake	$59.19
		001-000-000-576-80-47-03	Storm Drainage	$21.98
		409-000-000-535-00-47-02	Water	$401.78
		409-000-000-535-00-47-03	Sewer	$437.73
		409-000-000-535-00-47-05	Storm Drainage	$32.98
	Total Invoice - 3/29/2016 4:52:27 PM			**$2,276.66**
Total 38797				**$2,276.66**
Total City of Ilwaco				**$2,276.66**
City of Long Beach				
38798		**2016 - April - First Meeting**		
	Invoice - 3/28/2016 11:17:02 AM			
		001-000-000-521-10-50-00	Law Enforcement Contract	$18,568.33
	Total Invoice - 3/28/2016 11:17:02 AM			**$18,568.33**
Total 38798				**$18,568.33**
Total City of Long Beach				**$18,568.33**
Cole-Parmer				
38799		**2016 - April - First Meeting**		
	Invoice - 4/4/2016 4:33:58 PM			
	9558136			
		401-000-000-594-34-62-03	Plant Improvements	$45.88
	Total Invoice - 4/4/2016 4:33:58 PM			**$45.88**
Total 38799				**$45.88**
Total Cole-Parmer				**$45.88**
Dennis CO				
38800		**2016 - April - First Meeting**		
	Invoice - 4/5/2016 1:52:38 PM			
	March			
		001-000-000-522-10-31-00	Office & Operating Supplies	$18.41
		001-000-000-594-14-62-00	Governmental Facility	$61.44
		101-000-000-543-30-30-00	Office And Operating	$25.59
		401-000-000-534-00-31-00	Operation & Maintenance	$5.83
		409-000-000-535-00-31-01	Operations And Maintenance	$57.15
	Total Invoice - 4/5/2016 1:52:38 PM			**$168.42**
Total 38800				**$168.42**
Total Dennis CO				**$168.42**
Englund Marine Supply Inc				
38801		**2016 - April - First Meeting**		
	Invoice - 4/4/2016 11:44:11 AM			
	March			
		001-000-000-522-10-31-00	Office & Operating Supplies	$25.46
		001-000-000-576-80-48-00	Repairs & Maintenance	$25.46
		101-000-000-543-30-30-00	Office And Operating	$25.46
		401-000-000-534-00-31-00	Operation & Maintenance	$25.46
		409-000-000-535-00-31-01	Operations And Maintenance	$25.45
	Total Invoice - 4/4/2016 11:44:11 AM			**$127.29**
Total 38801				**$127.29**
Total Englund Marine Supply Inc				**$127.29**
Fastenal Company				
38802		**2016 - April - First Meeting**		
	Invoice - 4/4/2016 4:34:23 PM			
	ORAST40668			
		401-000-000-594-34-64-01	Equipment	$225.74
	Total Invoice - 4/4/2016 4:34:23 PM			**$225.74**
	Invoice - 4/6/2016 11:16:25 AM			
	ORAST40579			
		409-000-000-535-00-31-01	Operations And Maintenance	$407.98
	Total Invoice - 4/6/2016 11:16:25 AM			**$407.98**
Total 38802				**$633.72**

Total Fastenal Company				**$633.72**
Goulter Diamond Bar Ranch				
38803		**2016 - April - First Meeting**		
	Invoice - 3/28/2016 11:17:56 AM			
		409-000-000-535-00-45-00	Spray Sludge Disposal Site	$1,300.00
		sludge site		
	Total Invoice - 3/28/2016 11:17:56 AM			**$1,300.00**
Total 38803				**$1,300.00**
Total Goulter Diamond Bar Ranch				**$1,300.00**
Hach Company				
38804		**2016 - April - First Meeting**		
	Invoice - 4/4/2016 4:35:45 PM			
	9861132			
		401-000-000-534-00-35-01	Small Tools & Equipment -	$362.41
	Total Invoice - 4/4/2016 4:35:45 PM			**$362.41**
	Invoice - 4/5/2016 10:01:35 AM			
	9865250			
		401-000-000-534-00-31-00	Operation & Maintenance	$251.29
	Total Invoice - 4/5/2016 10:01:35 AM			**$251.29**
Total 38804				**$613.70**
Total Hach Company				**$613.70**
HD Fowler Company				
38805		**2016 - April - First Meeting**		
	Invoice - 3/28/2016 11:07:41 AM			
	I416158			
		401-000-000-534-00-31-00	Operation & Maintenance	$180.92
	Total Invoice - 3/28/2016 11:07:41 AM			**$180.92**
	Invoice - 3/30/2016 1:02:10 PM			
	I4164094			
		401-000-000-594-34-64-01	Equipment	$3,048.18
	Total Invoice - 3/30/2016 1:02:10 PM			**$3,048.18**
Total 38805				**$3,229.10**
Total HD Fowler Company				**$3,229.10**
Heather Reynolds, Attorney				
38806		**2016 - April - First Meeting**		
	Invoice - 4/4/2016 11:28:43 AM			
	March			
		001-000-000-515-30-41-00	Legal Services	$1,854.00
	Total Invoice - 4/4/2016 11:28:43 AM			**$1,854.00**
Total 38806				**$1,854.00**
Total Heather Reynolds, Attorney				**$1,854.00**
IFOCUS Consulting Inc.				
38790		**2016 - April - First Meeting**		
	Invoice - 3/30/2016 9:16:42 AM			
	Sever Hardware			
		001-000-000-514-20-41-00	Professional Services	$1,999.11
		401-000-000-534-00-41-04	Professional Services -	$1,427.94
		408-000-000-531-38-31-01	Operations & Maintenance	$856.75
		409-000-000-535-00-41-02	Professional Services -	$1,427.94
	Total Invoice - 3/30/2016 9:16:42 AM			**$5,711.74**
Total 38790				**$5,711.74**
38807		**2016 - April - First Meeting**		
	Invoice - 4/6/2016 11:29:13 AM			
	9759			
		001-000-000-514-20-41-00	Professional Services	$76.77
		401-000-000-534-00-41-04	Professional Services -	$76.77
		409-000-000-535-00-41-02	Professional Services -	$76.77
	Total Invoice - 4/6/2016 11:29:13 AM			**$230.31**
Total 38807				**$230.31**
Total IFOCUS Consulting Inc.				**$5,942.05**
John Deere Financial				
38808		**2016 - April - First Meeting**		
	Invoice - 3/28/2016 11:18:45 AM			
		001-000-000-591-48-71-01	John Deer Mower 8157-96 -	$82.23
		001-000-000-592-48-83-00	John Deer Mower 8157-96 -	$1,000.00
	Total Invoice - 3/28/2016 11:18:45 AM			**$1,082.23**
Total 38808				**$1,082.23**
Total John Deere Financial				**$1,082.23**
Kris Kaino				
38809		**2016 - April - First Meeting**		
	Invoice - 3/28/2016 11:17:48 AM			
		001-000-000-512-50-40-03	Municipal Court Services	$412.00
	Total Invoice - 3/28/2016 11:17:48 AM			**$412.00**

Total 38809			**$412.00**
Total Kris Kaino			**$412.00**
Kubwater Resources Inc.			
38810	**2016 - April - First Meeting**		
	Invoice - 4/6/2016 11:18:53 AM		
	05573		
	409-000-000-535-00-31-02	Chemicals	$2,749.89
	Total Invoice - 4/6/2016 11:18:53 AM		**$2,749.89**
Total 38810			**$2,749.89**
Total Kubwater Resources Inc.			**$2,749.89**
L N Curtis & Sons			
38811	**2016 - April - First Meeting**		
	Invoice - 3/29/2016 4:43:05 PM		
	2153669-01		
	001-000-000-522-10-31-00	Office & Operating Supplies	$108.78
	Total Invoice - 3/29/2016 4:43:05 PM		**$108.78**
Total 38811			**$108.78**
Total L N Curtis & Sons			**$108.78**
Lazerquick			
38812	**2016 - April - First Meeting**		
	Invoice - 4/4/2016 10:01:12 AM		
	23394		
	001-000-000-576-80-31-00	Office & Operating Supplies	$21.67
	101-000-000-543-30-30-00	Office And Operating	$21.67
	408-000-000-531-38-31-01	Operations & Maintenance	$21.66
	Total Invoice - 4/4/2016 10:01:12 AM		**$65.00**
Total 38812			**$65.00**
Total Lazerquick			**$65.00**
LEAF			
38813	**2016 - April - First Meeting**		
	Invoice - 4/4/2016 10:02:07 AM		
	001-000-000-514-20-31-00	Office & Operating Supplies	$22.10
	001-000-000-522-10-31-00	Office & Operating Supplies	$20.80
	101-000-000-543-30-30-00	Office And Operating	$22.10
	401-000-000-534-00-31-00	Operation & Maintenance	$22.10
	408-000-000-531-38-31-01	Operations & Maintenance	$20.80
	409-000-000-535-00-31-01	Operations And Maintenance	$22.10
	Total Invoice - 4/4/2016 10:02:07 AM		**$130.00**
Total 38813			**$130.00**
Total LEAF			**$130.00**
Master Meter			
38814	**2016 - April - First Meeting**		
	Invoice - 3/30/2016 9:43:15 AM		
	149003		
	401-000-000-534-00-31-00	Operation & Maintenance	$48.04
	Total Invoice - 3/30/2016 9:43:15 AM		**$48.04**
Total 38814			**$48.04**
Total Master Meter			**$48.04**
MRSC Rosters			
38815	**2016 - April - First Meeting**		
	Invoice - 4/4/2016 10:03:10 AM		
	MRSC dues 2016		
	001-000-000-514-20-49-00	Miscellaneous	$120.00
	Total Invoice - 4/4/2016 10:03:10 AM		**$120.00**
Total 38815			**$120.00**
Total MRSC Rosters			**$120.00**
Nancy McAllister			
38816	**2016 - April - First Meeting**		
	Invoice - 3/28/2016 11:17:43 AM		
	001-000-000-512-50-40-03	Municipal Court Services	$412.00
	Court services		
	Total Invoice - 3/28/2016 11:17:43 AM		**$412.00**
Total 38816			**$412.00**
Total Nancy McAllister			**$412.00**
Naselle Rock & Asphalt			
38817	**2016 - April - First Meeting**		
	Invoice - 4/5/2016 8:23:44 AM		
	26499		
	101-000-000-542-70-31-00	Roadside Operating	$49.19
	Total Invoice - 4/5/2016 8:23:44 AM		**$49.19**
Total 38817			**$49.19**
Total Naselle Rock & Asphalt			**$49.19**
Oman & Son			

38818	2016 - April - First Meeting		
	Invoice - 4/4/2016 11:42:24 AM		
	March		
	001-000-000-576-80-31-00	Office & Operating Supplies	$35.94
	001-000-000-594-14-62-00	Governmental Facility	$349.58
	101-000-000-543-30-30-00	Office And Operating	$6.42
	401-000-000-534-00-31-00	Operation & Maintenance	$9.86
	409-000-000-535-00-31-01	Operations And Maintenance	$6.42
	Total Invoice - 4/4/2016 11:42:24 AM		$408.22
Total 38818			$408.22
Total Oman & Son			$408.22
One Call Concepts, Inc.			
38819	2016 - April - First Meeting		
	Invoice - 4/4/2016 10:04:42 AM		
	101-000-000-543-30-30-00	Office And Operating	$11.15
	401-000-000-534-00-31-00	Operation & Maintenance	$11.16
	409-000-000-535-00-31-01	Operations And Maintenance	$11.15
	Total Invoice - 4/4/2016 10:04:42 AM		$33.46
Total 38819			$33.46
Total One Call Concepts, Inc.			$33.46
Pacific CO Sheriff Office			
38820	2016 - April - First Meeting		
	Invoice - 3/31/2016 10:18:35 AM		
	QTR 2		
	001-000-000-525-60-51-00	Disaster Preparedness	$1,650.00
	Total Invoice - 3/31/2016 10:18:35 AM		$1,650.00
	Invoice - 4/4/2016 11:29:04 AM		
	QTR 2		
	001-000-000-528-60-51-00	Dispatch Services	$7,210.71
	Total Invoice - 4/4/2016 11:29:04 AM		$7,210.71
Total 38820			$8,860.71
Total Pacific CO Sheriff Office			$8,860.71
Peninsula Sanitation Service, Inc.			
38821	2016 - April - First Meeting		
	Invoice - 4/4/2016 11:34:34 AM		
	March		
	001-000-000-514-20-47-01	Garbage Bills	$285.22
	409-000-000-535-00-47-04	Garbage Services	$174.75
	Total Invoice - 4/4/2016 11:34:34 AM		$459.97
Total 38821			$459.97
Total Peninsula Sanitation Service, Inc.			$459.97
Platt			
38822	2016 - April - First Meeting		
	Invoice - 3/31/2016 1:07:21 PM		
	I911440		
	001-000-000-594-14-62-00	Governmental Facility	$56.23
	Total Invoice - 3/31/2016 1:07:21 PM		$56.23
Total 38822			$56.23
Total Platt			$56.23
PUD No 2 of Pacific County			
38823	2016 - April - First Meeting		
	Invoice - 3/31/2016 10:17:47 AM		
	12133		
	001-000-000-576-80-47-00	Electricity	$76.44
	Total Invoice - 3/31/2016 10:17:47 AM		$76.44
Total 38823			$76.44
Total PUD No 2 of Pacific County			$76.44
Ryan Herco Flow Solutions			
38824	2016 - April - First Meeting		
	Invoice - 3/29/2016 4:43:34 PM		
	8361461		
	401-000-000-594-34-62-03	Plant Improvements	$81.81
	Total Invoice - 3/29/2016 4:43:34 PM		$81.81
	Invoice - 3/29/2016 4:43:58 PM		
	8361460		
	401-000-000-594-34-62-03	Plant Improvements	$27.17
	Total Invoice - 3/29/2016 4:43:58 PM		$27.17
	Invoice - 3/29/2016 4:44:17 PM		
	8361459		
	401-000-000-594-34-62-03	Plant Improvements	$43.25
	Total Invoice - 3/29/2016 4:44:17 PM		$43.25
	Invoice - 3/29/2016 4:44:36 PM		
	8361462		

	401-000-000-594-34-62-03	Plant Improvements	$43.92
Total Invoice - 3/29/2016 4:44:36 PM			**$43.92**
Invoice - 3/29/2016 4:44:55 PM			
6362382			
	401-000-000-594-34-62-03	Plant Improvements	$63.28
Total Invoice - 3/29/2016 4:44:55 PM			**$63.28**
Invoice - 3/29/2016 4:46:12 PM			
8358270			
	401-000-000-594-34-62-03	Plant Improvements	$5.18
Total Invoice - 3/29/2016 4:46:12 PM			**$5.18**
Invoice - 3/29/2016 4:46:45 PM			
8358288			
	401-000-000-594-34-62-03	Plant Improvements	$266.49
Total Invoice - 3/29/2016 4:46:45 PM			**$266.49**
Invoice - 3/29/2016 4:47:01 PM			
8358269			
	401-000-000-594-34-62-03	Plant Improvements	$30.73
Total Invoice - 3/29/2016 4:47:01 PM			**$30.73**
Invoice - 3/29/2016 4:47:15 PM			
8358268			
	401-000-000-594-34-62-03	Plant Improvements	$15.88
Total Invoice - 3/29/2016 4:47:15 PM			**$15.88**
Invoice - 4/4/2016 4:30:43 PM			
8362382			
	401-000-000-594-34-62-03	Plant Improvements	$46.00
Total Invoice - 4/4/2016 4:30:43 PM			**$46.00**
Invoice - 4/4/2016 4:31:37 PM			
8362386			
	401-000-000-594-34-62-03	Plant Improvements	$46.73
Total Invoice - 4/4/2016 4:31:37 PM			**$46.73**
Invoice - 4/4/2016 4:31:54 PM			
8363114			
	401-000-000-594-34-62-03	Plant Improvements	$57.42
Total Invoice - 4/4/2016 4:31:54 PM			**$57.42**
Invoice - 4/4/2016 4:32:13 PM			
8363115			
	401-000-000-594-34-62-03	Plant Improvements	$35.43
Total Invoice - 4/4/2016 4:32:13 PM			**$35.43**
Invoice - 4/4/2016 4:32:30 PM			
8361463			
	401-000-000-594-34-62-03	Plant Improvements	$22.40
Total Invoice - 4/4/2016 4:32:30 PM			**$22.40**
Total 38824			**$785.69**
Total Ryan Herco Flow Solutions			**$785.69**
Safetysign.com			
38825	**2016 - April - First Meeting**		
Invoice - 3/28/2016 11:11:57 AM			
545926			
	101-000-000-543-30-30-00	Office And Operating	$7.55
	401-000-000-534-00-31-00	Operation & Maintenance	$7.55
	408-000-000-531-38-31-01	Operations & Maintenance	$7.55
	409-000-000-535-00-31-01	Operations And Maintenance	$7.54
Total Invoice - 3/28/2016 11:11:57 AM			**$30.19**
Invoice - 4/5/2016 2:09:27 PM			
SS478279463			
	101-000-000-543-30-30-00	Office And Operating	$25.63
	401-000-000-534-00-31-06	Office & Customer Service	$25.63
	408-000-000-531-38-31-01	Operations & Maintenance	$25.63
	409-000-000-535-00-31-08	Office Supplies & Customer	$25.62
Total Invoice - 4/5/2016 2:09:27 PM			**$102.51**
Total 38825			**$132.70**
Total Safetysign.com			**$132.70**
Sid's IGA			
38826	**2016 - April - First Meeting**		
Invoice - 4/4/2016 11:47:23 AM			
Water			
	409-000-000-535-00-31-01	Operations And Maintenance	$44.89
Total Invoice - 4/4/2016 11:47:23 AM			**$44.89**
Total 38826			**$44.89**
Total Sid's IGA			**$44.89**
Sunset Auto Parts Inc.			
38827	**2016 - April - First Meeting**		
Invoice - 4/4/2016 11:45:33 AM			

	March		
	001-000-000-576-80-31-00	Office & Operating Supplies	$32.68
	101-000-000-542-70-31-00	Roadside Operating	$12.38
Total Invoice - 4/4/2016 11:45:33 AM			**$45.06**
Total 38827			**$45.06**
Total Sunset Auto Parts Inc.			**$45.06**
Troy Richardson			
38828	**2016 - April - First Meeting**		
Invoice - 4/4/2016 10:03:58 AM			
	water class		
	401-000-000-534-00-43-00	Travel/Meals/Lodging	$389.25
Total Invoice - 4/4/2016 10:03:58 AM			**$389.25**
Total 38828			**$389.25**
Total Troy Richardson			**$389.25**
USA Blue Book			
38829	**2016 - April - First Meeting**		
Invoice - 3/30/2016 9:43:59 AM			
	904083		
	101-000-000-543-30-30-00	Office And Operating	$15.79
	401-000-000-534-00-31-00	Operation & Maintenance	$15.79
	408-000-000-531-38-31-01	Operations & Maintenance	$15.79
	409-000-000-535-00-31-01	Operations And Maintenance	$15.79
Total Invoice - 3/30/2016 9:43:59 AM			**$63.16**
Total 38829			**$63.16**
Total USA Blue Book			**$63.16**
Verizon Wireless			
38830	**2016 - April - First Meeting**		
Invoice - 3/28/2016 11:08:34 AM			
	9762422959		
	401-000-000-534-00-42-00	Communications	$92.77
Total Invoice - 3/28/2016 11:08:34 AM			**$92.77**
Total 38830			**$92.77**
Total Verizon Wireless			**$92.77**
Vision Municipal Solutions, Llc			
38831	**2016 - April - First Meeting**		
Invoice - 4/4/2016 3:11:03 PM			
	3518		
	401-000-000-534-00-31-06	Office & Customer Service	$209.76
	408-000-000-531-38-31-01	Operations & Maintenance	$100.00
	409-000-000-535-00-31-08	Office Supplies & Customer	$209.76
Total Invoice - 4/4/2016 3:11:03 PM			**$519.52**
Total 38831			**$519.52**
Total Vision Municipal Solutions, Llc			**$519.52**
Wadsworth Electric			
38832	**2016 - April - First Meeting**		
Invoice - 3/28/2016 11:08:12 AM			
	400932		
	409-000-000-535-00-41-01	Professional Services -	$67.55
Total Invoice - 3/28/2016 11:08:12 AM			**$67.55**
Invoice - 3/31/2016 8:43:26 AM			
	401586		
	401-000-000-534-00-41-03	Professional Services -	$1,162.07
Total Invoice - 3/31/2016 8:43:26 AM			**$1,162.07**
Invoice - 3/31/2016 8:43:43 AM			
	401636		
	401-000-000-534-00-41-03	Professional Services -	$2,209.05
Total Invoice - 3/31/2016 8:43:43 AM			**$2,209.05**
Total 38832			**$3,438.67**
Total Wadsworth Electric			**$3,438.67**
Wilcox & Flegel Oil Co.			
38833	**2016 - April - First Meeting**		
Invoice - 4/6/2016 11:27:05 AM			
	001-000-000-576-80-31-00	Office & Operating Supplies	$135.04
	101-000-000-543-30-30-01	Gasoline & Oil Products	$135.04
	401-000-000-534-00-32-00	Gasoline	$160.92
	408-000-000-531-38-32-00	Gas/Oil Products	$135.04
	409-000-000-535-00-32-00	Gas/oil Products	$132.23
Total Invoice - 4/6/2016 11:27:05 AM			**$698.27**
Total 38833			**$698.27**
Total Wilcox & Flegel Oil Co.			**$698.27**
William R. Penoyar, Attorney at Law			
38834	**2016 - April - First Meeting**		
Invoice - 3/28/2016 11:17:35 AM			

	001-000-000-512-50-40-03	Municipal Court Services	$412.00
	Total Invoice - 3/28/2016 11:17:35 AM		**$412.00**
Total 38834			**$412.00**
Total William R. Penoyar, Attorney at Law			**$412.00**
Grand Total	**Vendor Count**	**44**	**$58,170.76**

Long Beach Police

P.O. Box 795
Long Beach, WA 98631

lbpdchief@centurytel.net

Phone 360-642-2911
Fax 360-642-5273

04-01-16

To: Mayor Cassinelli and Ilwaco City Council

From: Chief Flint R. Wright

Ref.: Monthly Report for March 2016

During the month of March the Long Beach Police Department handled the following cases and calls:

Long Beach	**Ilwaco**
622 Total Incidents	**448** Total Incidents
Aid Call Assists: 8	Aid Call Assists: 1
Alarms: 9	Alarms: 5
Animal Complaints: 1	Animal Complaints: 1
Assaults: 6	Assaults: 4
Assists: 100	Assists: 56
(Includes 13 Law Enforcement Agency Assists Outside City Boundaries)	
Burglaries: 1	Burglaries: 0
Disturbance: 15	Disturbance: 7
Drug Inv.: 7	Drug Inv.: 1
Fire Call Assists: 6	Fire Call Assists: 0
Follow Up: 109	Follow Up: 62
Found/Lost Property: 5	Found/Lost Property: 2
Harassment: 11	Harassment: 2
Malicious Mischief: 5	Malicious Mischief: 1
MIP – Alcohol: 0	MIP – Alcohol: 0
MIP – Tobacco: 0	MIP – Tobacco: 0
Missing/Found Persons: 1	Missing/Found Persons: 0
Prowler: 0	Prowler: 0
Runaway: 0	Runaway: 0
Security Checks: 173	Security Checks: 257
Suspicious: 26	Suspicious: 9
Thefts: 10	Thefts: 2
Traffic Accidents: 5	Traffic Accidents: 1
Traffic Complaints: 22	Traffic Complaints: 9
Traffic Tickets: 22	Traffic Tickets: 4
Traffic Warnings: 42	Traffic Warnings: 16
Trespass: 13	Trespass: 3
Warrant Contacts: 10	Warrant Contacts: 1
Welfare Checks: 15	Welfare Checks: 4

On March 1st I attended a law enforcement planning meeting to discuss the upcoming July 4th celebrations. All I can say at this point is law enforcements intention is to stop the camping on the beach through education, outreach to visitors and low key enforcement. How that all looks waits to be seen.

On the 24th Officer Jeff Cutting attended training. The training dealt with risk management issues. Some of the topics covered included the cause of tragedies in any profession, the five concurrent themes for success and operational risk management.

I gave a presentation to two different groups of students at our local Head Start. I talked about what a police officer does and about "stranger danger" awareness. I also showed them my patrol vehicle. This was done March 25th.

The department had firearms range training on the 29th. We trained with our patrol rifles and shotguns.

Loretta attended training on the 31st. The class was put on by the Washington State Patrol and was titled "Terminal Agency Coordinator" training. The training is required every two years and deals with the use of our departments "Access" terminal computer which is used for drivers checks, warrant checks and other state records checks.

Attached is an email that I received from Prosecutor Mark McClain on Officer Rodney Nawn and the letter of commendation that I awarded to Officer Nawn. Officer Nawn is a credit to the cities of Long Beach and Ilwaco and I am proud to have him in my department.

Flint R. Wright

Flint R. Wright
Chief of Police

Flint Wright

From: Flint Wright
Sent: Monday, March 28, 2016 10:18 AM
To: Casey Meling; David Tobin; Jeff Cutting; Jerry Phillips; Holli Kemmer; Del Murry; David Glasson; Loretta Ostgaard; Michael Parker; Natalie Hanson; Rodney Nawn; Steven Linhart; Tim Mortenson
Subject: FW: Superior Court March 25, 2016

I wanted all of you to see this from the prosecutor. Rodney did an outstanding job on this and I really appreciate it. When you see Rodney take the time to tell him "job well done". A bad guy is where he belongs because of his initiative and hard work.

Chief Wright

From: Mark McClain [mailto:mmcclain@co.pacific.wa.us]
Sent: Friday, March 25, 2016 7:20 PM
To: Flint Wright <fwright@longbeachwa.gov>
Subject: FW: Superior Court March 25, 2016

I don't know if they put these things in the paper down there, but I wanted you to know that I appreciated the work from your guys on this case. 5 years in a nice length of time.

From: Mark McClain
Sent: Friday, March 25, 2016 7:18 PM
Subject: Superior Court March 25, 2016

Michael D. Warner, 36, of Long Beach was sentenced to 60 months in prison for possession of methamphetamine with intent to deliver. On March 6, 2016 Officer Rodney Nawn of the Long Beach Police Department observed Warner, who Nawn knew to have a felony warrant, run from a vehicle and hide next to the balcony by a Shoreview Drive apartment. Nawn was able to take Warner into custody and located a methamphetamine pipe and four baggies of methamphetamine along with a baggie of suspect heroin. Nawn also located two cell phones. "Because of Officer Nawn's diligent work in obtaining a warrant and locating information which indicated Mr. Warner was a drug dealer, we were able to charge Mr. Warner with intent to deliver the methamphetamine rather than simple possession," said Mark McClain, Pacific County Prosecutor. This meant that rather than facing just over a year in jail on a class B felony, Warner faced a class B felony and a much longer prison sentence. "The only way we were able to truly protect our community from this drug dealer, was because Officer Nawn's work in obtaining a search warrant and really finding the evidence, and then us not being afraid to hold Warner to this higher offense," added McClain. After release from prison, Warner will be on continued supervision with the Department of Correction for a year and he will be required to complete drug treatment.

Long Beach Police

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Long Beach, WA 98631

lbpdchief@centurytel.net

Phone 360-642-2911
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Memo

03-28-16

To: Officer Rodney J. Nawn

From: Chief Flint R. Wright

Ref.: Letter of Commendation

Officer Nawn I wanted to formally commend you for your actions with regards to the arrest of Michael Warner. It was because of your hard work and dedication to service that Mr. Warner is in prison where he belongs. You showed that you are more than willing to go the extra mile to make an arrest and a solid case and because of that a drug dealer is off our streets.

Please accept this formal commendation for a job well done. You are a credit to your uniform and badge and to the Long Beach Police Department.

Flint R. Wright

Flint R. Wright
Chief of Police

CITY OF ILWACO
CITY COUNCIL AGENDA ITEM BRIEFING

A. Meeting Dates: Council Workshop: Public Hearing: 04/11/16
Council Discussion Item: 02/22/16 Council Business Item: 04/11/16

B. Issue/Topic: **Short Term Vacation Rentals**

C. Sponsor(s):
1. Cassinelli 2.

D. Background (overview of why issue is before council):
1. Citizens of Ilwaco have come forward to Planning Commission and City Council to request an amendment to the Municipal Code relating to short term vacation rentals, and specifically which zones they are an outright allowed use in.

E. Discussion (specific details relevant to the issue, pros/cons, alternatives and any other decision-making details):
1. City Planner, Sam Rubin has completed a Staff Report Summary with the discussion points for this agenda item.

F. Impacts:
1. Fiscal:
2. Legal: This ordinance has been reviewed by Heather Reynolds.
3. Personnel:
4. Service/Delivery:

G. Planning Commission: ☒ Recommended ☐ N/A ☐ Public Hearing on

H. Staff Comments: Edits or comments on the ordinance are encouraged. These changes will require a 60 day notice to Dept. of Commerce and SEPA review.

I. Time Constraints/Due Dates:

Proposed Motion: **I move to enact Ordinance XXX relating to Vacation Rentals and amending Chapter 15 of the Ilwaco Municipal Code.**

CITY OF ILWACO

120 First Avenue North
PO Box 548 • Ilwaco, WA 98624
Phone: 360.642.3145
Fax: 360.642.3155
info@ilwaco-wa.gov
www.ilwaco-wa.gov

SUMMARY

Issue: Revisions and additions to Title 15 Ilwaco Municipal Code (IMC) creating operating standards for vacation rentals in Ilwaco. The proposed code adds a new section under Title 15 IMC, adds the zoning districts where vacation rentals are allowed to the Land Use Table, and adds operating standards for vacation rentals.

Environmental Review: The proposed ordinance is a non-project action as defined in WAC 197-11-774 and requires, at minimum, a SEPA checklist and threshold determination. No SEPA checklist has been completed to date since final language of the proposed plan has not been created.

60-Day Review: As a development regulation, the ordinance is subject to a state review and comment period. Per RCW 36.70A.106, the ordinance must be submitted to the state Department of Commerce at least 60 days prior to its adoption. It should be in as close to final form as possible, as any substantive amendments after state review may require resubmittal.

Planning Commission Review: The Ilwaco Planning Commission recommended on February 2, 2016, that the draft ordinance be adopted by the City Council.

Comprehensive Plan Consistency: The ordinance is consistent with 2015 Ilwaco Comprehensive Plan. The plan emphasizes creating and encouraging a year-round economy that additionally addresses seasonal tourism. Vacation rentals are specifically addressed in the land-use element as an option to include in the expansion of housing options within the city. Policy 2.6 under Housing Diversity (page 13) specifically states that the City will continue to encourage the development of housing for seasonal residents that includes single-family homes, condominium, and apartments. Many of these housing types may be used for short-term vacation rentals.

The comprehensive plan also assumes that there will likely be a growing part-time or seasonal population in Ilwaco, and that some of the seasonal visitors may become full-time residents.

Recommendation: The City Planner recommends that the public hearing be conducted to receive public comment. (See Future Steps section below.)

INTRODUCTION AND BACKGROUND

With the creation of websites such as Airbnb or VRBO, a new lodging option for tourists has seen rapid growth. For many visitors along the Washington Coast, including Ilwaco, short-term transient rentals or vacation rentals are a good way to find an affordable overnight location. Vacation rentals can be an affordable way for visitors to explore a new area and for homeowners

to supplement their housing costs. However, these types of rentals may also be considered a nuisance to some neighbors or function as businesses that are evading local regulatory obligations. As such, they can also serve to draw down local lodging tax revenue and result in less funding to invest in local tourism efforts.

Neighborhood impacts are an important element to consider when discussing the merits of vacation rentals. Ideally, vacation renters would be well behaved and not create any discontent in the area where they are located. Complaints or negative impacts associated with vacation rentals can either be site specific or on a neighborhood or larger scale (think spring break in South Beach, Fla.). One tool cities have in addressing discrete issues is developing standards for how vacation rentals are operated or what units they can be located in. Additionally, cities can provide broader land-use decisions or regulations such as prohibiting vacation rentals in some zones to help address the larger-scale issues that could result from multiple vacation rentals in a small area.

Additional elements that are key to this discussion are safety and enforcement. Safety, in regard to vacation rentals, means the safety or quality of the dwelling unit and the overall goal of public safety. Having a vacation rental in a dilapidated building that does not meet building codes can be a potential hazard or lawsuit. Determining which units are appropriate for vacation rentals is not only an important decision regarding land use but an important aspect of public safety. The reality of any new ordinance in small towns is the idea of code enforcement. Creating an ordinance that is extremely detailed and requires substantial effort from applicants can function as a barrier in cities whose code enforcement is primarily complaint driven. Finding a balance between regulating uses and facilitating a fast and easy process for citizens is an effective strategy in addressing vacation rentals.

In Ilwaco, roughly 14.10 percent of the available housing units (83 units) is estimated by the US Census Bureau to be vacant for seasonal or recreational use.

Housing Units 2014	Ilwaco, Washington	% of Total
Total Housing Units	587	100.00%
Owner Occupied	228	38.80%
Renter Occupied	211	35.90%
Vacant For Seasonal or Recreational Use	**83**	**14.10%**
1-Unit (Attached or Detached)	311	53.00%
2 - 9 Units	48	8.20%
10 - 19 Units	0	0.00%
20 or more Units	31	5.30%
Built prior to 1940	211	35.90%

Source: U.S. Census Bureau, American Community Survey, latest 5-Year Estimates

Currently, the IMC does not include any specific any provisions or standards for the term Vacation Rental. The closest element in the code is a Short Term Dwelling Unit, which is only defined in Chapter 15.29 IMC. IMC 15.29.045 sets standards for Short Term Rental of Dwelling Units and defines Short-Term Rentals as "the use of a dwelling unit, for remuneration, for a period of less than thirty (30) days, counting portions of days as full days." Additionally, this section outlines standards for parking requirements, occupancy, trash collection, and business licensure. The R-3 Resort District is the only zone in the city where short-term rental of dwelling units is an allowed use. Properties located outside of the R-3 Resort District must submit an application for a conditional use permit as outlined in IMC 15.44.010.B, which allows any use not indicated in the allowed land use table (15.44.020) to apply for a conditional use permit (15.48).

On February 2, 2016, the Planning Commission voted to recommend the proposed language setting standards for vacation rentals. On March 1, 2016, the Planning Commission additionally recommended updating the definition of Vacation Rental in the draft ordinance.

There are several steps before the proposed ordinance can be adopted. The proposed language will need to be finalized. Once that is complete the SEPA process and 60-day state notice can begin.

OVERVIEW OF PROPOSED ORDINANCE

The proposed ordinance has several elements, including the repeal of existing code and addition of a new section under Title 15 IMC, which are detailed below.

Section 1:

Section 1 of the proposed ordinance addresses the definitions currently found in the IMC. This section adds three definitions including Itinerant Lodging, Long-Term Lodging and Vacation Rental. These definitions provide a framework for understanding the different types of lodging that are addressed in the proposed ordinance.

"Lodging, Itinerant" means a hotel, motel or other facility engaged in the rental or provision of lodging for periods of thirty (30) days or less. Also refers to an actual facility for rent, including, but not limited to, bed and breakfast rooms, condominium hotel units, hotel rooms, motel rooms, RV spaces, camping spaces, timeshare units, and vacation rentals. See also definitions of Bed and Breakfast, Guest Cottage (as applied to paying guests), Hotel or Motel, and Hostel. Contrast to "Long-Term Lodging" as defined herein.

The definition of itinerant lodging attempts to cover multiple types of lodging that may be rented for periods of 30 days or less. The opposite of itinerant lodging is referred to as Long-Term Lodging.

"Lodging, Long-Term" means a facility engaged in the rental or provision of lodging facilities for periods of thirty-one (31) days or more. Also refers to the actual facility for rent. Contrast to "Itinerant Lodging" as defined herein.

Long-Term Lodging refers to units or facilities that exceed 30-day rental periods.

"Vacation Rental" means the use of a dwelling unit or portion thereof as itinerant lodging. See also definition of "Itinerant Lodging."

The definition of Vacation Rental in Section 1 of the proposed ordinance covers the unit or part of the unit that is being rented for periods of 30 days or less.

Section 2:

Section 2. Section 2 of Ordinance 791 (2011), codified as Section 15.29.045 of the Ilwaco Municipal Code, is hereby repealed.

Section 2 of the proposed ordinance would repeal IMC 15.29.045, which details standards for 'Short-Term Rental of Dwelling Units" in the R-3 Resort District zone. With the removal of this section, all vacation rentals would be covered under proposed Chapter 15.41 IMC outlined in Section 3 of the proposed ordinance.

Section 3:

Section 3 of the proposed ordinance would create a new chapter in the IMC entitled Vacation Rentals. This section establishes regulations for the siting and operation of vacation rentals in all zoning districts.

Section 3. A new Chapter 15.41 of the Ilwaco Municipal Code is hereby created, entitled Vacation Rentals

Vacation Rentals.

15.41.010 Purpose.
The purpose of this subsection is to establish regulations for the siting and operation of vacation rentals in all zoning districts.

15.41.020 General Standards.

A. Vacation rentals are allowed as a primary permitted use within the following zoning districts: R-3, R-4, R-5, C-1, C-2, and M-1. Preexisting conditional use permits for vacation rentals in these zones shall considered to be superseded by and shall henceforth be governed by these regulations.

Planner's comment: IMC 15.41.020 lays out general standards for where vacation rentals would be allowed. This language does not allow vacation rentals in the R-1 or R-2 zoning districts. Councilmember Chambreau submitted comments about this (attached). There are many examples of cities or counties that do not allow specific uses within some zoning designations; for example, Long Beach does not allow vacation rentals in its R1 Single Family Residential zone. The IMC is unique in that any use that is not expressly allowed in the land-use table (IMC 15.44.020) can be allowed via conditional use permit (IMC 15.44.010(B)).

This section also includes language that would render any existing conditional use permits for vacation rentals within the R-3, R-4, R-5, C-1, C-2, and M-1 zoning district subject to the new policies outlined in this section. An applicant who was granted a conditional use permit in any of these zones would now be considered to have an allowed use and would be governed by the new vacation rental regulations.

B. Vacation rentals are expressly prohibited within the R-1 and R-2 zoning districts and are not subject to allowance via conditional use permit in these zones as otherwise authorized under Section 15.44.010.B. Preexisting conditional use permits for vacation rentals in these zones shall be considered to be nonconforming uses governed by Section 15.54.010 and shall be bound to the operating conditions set forth by the conditional use permit. If a vacation rental operating under a preexisting conditional use permit is no longer compliant with the permit conditions, it will no longer be deemed nonconforming and must be discontinued.

Planner's comment: Subsection B elaborates further on the prohibition of vacation rentals in the R-1 and R-2 zoning district and states that it would not be allowed with a conditional use permit either. Any conditional use permit that is currently in the R-1 or R-2 zoning district would be considered a nonconforming use and subject to IMC 15.41.010, which states that if any nonconforming use ceases for any reason for a period of one year or more, any subsequent use must be in conformance with the current land-use regulations. The updated regulations would prohibit vacation rentals. However, if the nonconforming use structure is partially or completely destroyed, the structure may be rebuilt as long as it is within 18 months (IMC 15.54.010). After 18 months, any subsequently built structures must be in conformance with the current regulations.

C. Vacation rentals located within the C-1 and C-2 zoning districts shall not be located on the ground floor of a structure.

Planner's comment: The rationale for not locating vacation rentals on the ground floor of structures located in the C-1 and C-2 zoning district is to align with intent that:

A) The core commercial district is intended to maintain the existing compact commercial core and promote pedestrian use AND…
B) The intent of the C-2 district is to provide for less dense commercial development than that in the C-1 district.

D. One (1) off-street parking space shall be provided for each bedroom in the dwelling unit, but in no event shall fewer than two (2) spaces be provided. This standard does not apply within the C-1 zoning district.

Planner's comment: The parking standards do not apply within the C-1 zoning district. Parking requirements for the C-1 zoning district are outlined in Chapter 15.46 IMC. IMC 15.46.060 states that due to the commercial core's pedestrian-oriented nature, no off-street parking is required in this district, except that one parking space per unit is required for residential development.

E. The vacation rental unit shall meet all applicable requirements of the zoning district in which it is sited, including but not limited to setbacks; maximum height; lot coverage standards; and requirements for signs, landscaping, and nonpermanent equipment.

15.41.030 Conditions.
A. A maximum of two (2) persons over the age of two (2) is allowed per bedroom, plus an additional two (2) persons per unit, to a maximum of twelve (12) persons per unit.

B. A City business license is required per Chapter 5.04 , and all Transient Occupancy Tax (Chapter 3.24), Sales and Use Tax (Chapter 3.16), and Business and Occupation Tax (Chapter 3.18) provisions apply.

C. Weekly solid waste collection shall be provided during all months that the dwelling unit is used for short-term rental occupancy. Weekly/monthly solid waste collection shall not be considered "yellow bag" or as-needed service, but ongoing weekly/monthly solid waste service even when the unit might be unoccupied.

D. Where a provision of this section conflicts with a provision of a lawful and recorded restrictive covenant, the more restrictive provision shall apply.

E. An informational sign must be posted conspicuously inside the vacation rental, together with a copy of the property owner's business license, to provide information on the maximum occupancy; location of off-street parking; contact information for the property owner or local representative; evacuation routes; and the renter's responsibility not to trespass on private property, not to litter, and not to create a noise disturbance. The owner must maintain an operating "land line" telephone for emergency notifications, along with a battery-powered and operable National Oceanic and Atmospheric Administration Weather Alert radio. The owner of

the vacation rental must also provide 24-hour contact information directly to the owners of any property located within 100 feet of the vacation rental.

Planner's comment: This section provides standards for vacation rentals so that lodgers have relevant information regarding potential disasters. In 2010, the City of Ilwaco completed NOAA's National Weather Service Storm Ready © and TsunamiReady ™ programs in order to better equip the city to handle severe weather and tsunamis. The city's location makes it susceptible to potentially severe weather and risk of rising water. Having vacation rentals include maps for evacuation routes and NOAA weather alert radios is an important tool in making safety resources accessible to visitors to the city.

FUTURE STEPS

1. Finalize language for proposed vacation rental ordinance
2. Develop Findings of Fact and Conclusions of Law related to final proposed ordinance
3. Submit 60-day Notice of Intent to Adopt to the state Department of Commerce
4. Complete SEPA checklist and issue threshold determination

ATTACHMENTS:

1. Draft ordinance for vacation rentals
2. Councilmember Chambreau's comments
3. Public comments received

Sam Rubin
Ilwaco City Planner

CITY OF ILWACO
ORDINANCE NO. XXX

AN ORDINANCE OF THE CITY OF ILWACO, WASHINGTON, RELATING TO VACATION RENTALS AND AMENDING CHAPTER 15 OF THE ILWACO MUNICIPAL CODE

WHEREAS, taxes from vacation rentals of homes can be used to promote travel and tourism and to support the local tourism industry; and

WHEREAS, the City Council and Planning Commission wish to allow Ilwaco homeowners to provide short-term rental units, while at the same time, to protect public interest, and to align with existing zoning districts; and

WHEREAS, state agency 60-day review required by RCW 36.70A.106 was initiated on XXXX, about which no comments were received; and

WHEREAS, a determination of non-significance was issued under the State Environmental Policy Act on XXXXXXXXXXXX, about which no comments were received; and

WHEREAS, the Ilwaco City Council conducted a public hearing on the proposed code amendments on XXXXXXXXXXXXXX, and duly considered all comments made at or received in writing timely to that hearing;

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ILWACO, WASHINGTON, DO ORDAIN AS FOLLOWS:

Section 1. Section 15.04.020 of the Ilwaco Municipal Code is amended to read as follows:

15.04.020 Definitions.

As used in this title:

"Access road" means a public street providing vehicular access to the boundary of a parcel of real property being proposed for development.

"Accessory use or accessory building" means a subordinate use or building (one-story detached), customarily incidental to, and located upon the same lot occupied by, the principal use or building (e.g., a storage shed, garage, gazebo, greenhouse, etc.).

"Administrative appeal" means an appeal to the city council of a decision made by the city planner.

"Adult family home" means the regular family abode of a person or persons who are providing personal care, room and board, under a license issued pursuant to RCW 70.128.060, to more than one but not more than four adults who are not related by blood or marriage to the person or persons providing the services; except that a maximum of six adults may be permitted if the Washington State Department of Social and Health Services determines that the home and the provider are capable of meeting standards and qualifications provided for by law (RCW 70.128.010).

"Agriculture" means the use of land for agricultural purposes, including farming, dairying, pasturage, horticulture, floriculture, viticulture, apiaries, and animal and poultry husbandry, and the necessary accessory uses for storing produce; provided, however, that the operation of any such accessory use shall be incidental to that of normal agricultural activities; and provided further, that such uses shall not include the commercial feeding of garbage or refuse to swine or other animals.

"Alley" means a public thoroughfare or way that provides only a secondary means of access to abutting property.

"Allowed use" means any authorized use allowed alone or in conjunction with another use in a specified district and subject to the limitations of the regulations of such use district.

"Amateur radio antennae" means a structure that is erected for the purpose of transmitting and receiving noncommercial radio signals.

"Apartment house (multifamily dwelling)" means any building or portion thereof which is designed, built, rented, leased, let or hired out to be occupied, or which is occupied, as the home or residence of three or more families living independently of each other and doing their own cooking in such building, and shall include flats and apartments.

"Applicant" means a person or persons submitting an application to the city of Ilwaco for any type of permit or approval covered in this title.

"Automobile repair" includes fixing, incidental body or fender work, changing of automobile fluids, painting, upholstering, engine tune-up, adjusting lights or brakes, or supplying and installing replacement parts of or for passenger vehicles and trucks.

"Automobile service station or gasoline filling station" means a building or lot having pumps and storage tanks where fuels, oils or accessories for motor vehicles are dispensed, sold or offered for sale at retail only, repair service is incidental and no storage or parking space is offered for rent.

"Automobile wrecking" means the dismantling or disassembling of motor vehicles or mobile homes, or the storage, sale or dumping of dismantled, partially dismantled, obsolete or wrecked motor vehicles or their parts. Three or more dismantled, obsolete, or inoperable motor vehicles on one lot or parcel of land shall constitute a wrecking yard.

"Auxiliary dwelling unit" means an additional dwelling unit, including separate kitchen, sleeping, and bathroom facilities, separate from the owner occupied primary residential dwelling unit, on a single-family lot, not to exceed four hundred (400) square feet.

"Basement" means that portion of a building between floor and ceiling, which is partly below and partly above grade, but so located that the vertical distance from grade to the floor below is more than the vertical distance from grade to ceiling.

"Bed and breakfast" means a residential type building, or portion of the building, other than a hotel or motel, where for compensation lodging and a morning meal is provided for patrons, not including members of the owner, occupant or tenant occupant family.

"Billboard" means a sign, including both the supporting structural framework and attached billboard faces, used principally for advertising a business activity, use, product or service unrelated to the primary use of the property on which the billboard is located; excluding off-premises directional signs or temporary real estate signs.

"Binding site plan" is a to-scale drawing which identifies and shows the areas and locations of all streets, roads, improvements, utilities, open spaces, and any other matters specified by local regulations; contains inscriptions or attachments setting forth such appropriate limitations and conditions for the use of land; and contains provisions making any development be in conformity with the site plan; processed pursuant to this code and which has been approved by city council.

"Block" means a group of lots, tracts or parcels within well-defined and fixed boundaries.

"Boarding or lodging home" means a dwelling or part thereof, other than a motel or hotel, where lodging, with or without meals, is provided, for compensation, for not more than three persons.

"Buffer strip" means an area of land or a structure used or created for the purpose of insulating, separating or screening a structure or land use from other land uses or structures, in such a manner as to reduce or mitigate any adverse impacts of one or the other.

"Building" means any structure having a roof, but excluding all forms of vehicles (e.g., a recreational vehicle (RV)), even if it is immobilized. Yard requirements (i.e., set-backs) apply to all buildings.

"Building code" means the Uniform Building Code promulgated by the International Conference of Building Officials.

"Building height" means the vertical distance measured from the average elevation of existing grade to the highest point of the roof surface of a flat roof, to the top of a mansard roof, or to the mean height level between the eaves and the ridge for a pitched roof. Average elevation of existing grade will be measured at the vertical projection of the enclosed building space. Pitched roofs are considered to be those with a 5"/12" pitch or greater.

"Building Inspector" means the building inspector for the city of Ilwaco, Washington.

"Building permit" means the permit required by the city for new construction and additions.

"Canopy" means a roof-like projection.

"Chemical processes" means a manufacturing process that uses dangerous or potentially dangerous chemicals.

"City" means the city of Ilwaco, Washington.

"City attorney" means the city attorney of the city of Ilwaco, Washington.

"City council" means the city council of the city of Ilwaco, Washington.

"City engineer" means the person appointed by the mayor and confirmed by the city council to review engineering aspects of land subdivision and development plans, or his or her designee.

"City planner" means the mayor, or his or her designee with approval of the council, of the city of Ilwaco, Washington.

"Closed record appeal" means an administrative appeal on the record to the city council, following an open record hearing on a project permit application when the appeal is on the record with no or limited

new evidence or information allowed to be submitted and only appeal argument allowed (RCW 36.70B.020(1)).

"Club" means an incorporated or unincorporated association of persons organized for a social, educational, literary, or charitable purpose.

"Collector arterial," unless otherwise defined by the city's transportation plan, means a public street whose function is to collect traffic from neighborhoods and local streets and which connects to another public street of equal or greater classification. A "collector arterial" also may provide direct access to adjacent properties.

"Combining district" means district regulations superimposed on an underlying zoning district which impose additional regulations for specific uses, and which are valid for a stipulated time period. Uses permitted by the underlying zone may also be developed.

"Commercial unit" means any building or facility used for any purpose other than dwelling, except industrial.

"Common open space" means a parcel of land or an area of water or a combination of land and water within the site designated for a planned unit development, and designed and intended primarily for the use or enjoyment of the residents of such development.

"Community arts center" means a structure that is used for the purpose of displaying and/or selling art, conducting educational programs, and providing a means for art related meetings.

"Completion security" means a bond or other acceptable surety deposited by an applicant with the city to ensure completion within one year of improvements required to obtain a permit or approval.

"Comprehensive plan" means the most recent edition of the city of Ilwaco comprehensive plan adopted by the city council in accordance with RCW Chapter 35.63 or RCW Title 35A.

"Comprehensive water plan" means the most recent edition of the city of Ilwaco comprehensive water plan.

"Conditional uses" means certain uses which are otherwise not allowed in a use district but are permitted in specific circumstances subject to a conditional use permit granted by the city council. Conditional uses require a special degree of control to make such uses consistent with and compatible to other existing or permissible uses in the same zone or zones.

"Condominium" means a multi-family structure in which each of the tenants hold full title to their unit, and joint ownership in the common grounds.

"Consolidated permit processing" means the integrated and consolidated review and decision on two or more project permits relating to a proposed project action, including a single application review and approval process covering all project permits requested by an applicant for all or part of a project. If an applicant elects consolidated permit processing, the determination of completeness, notice of application, and notice of final decision must include all project permits being reviewed through the consolidated permit review process.

"Convalescent home or nursing home" means an establishment providing nursing, dietary, and other personal services to convalescents, invalids, or aged persons.

"Convenience store" means a retail grocery business of less than one thousand (1,000) square feet that primarily caters to residents of the same neighborhood.

"County assessor" means the assessor of Pacific County, Washington.

"County auditor" means the auditor of Pacific County, Washington.

"County road" means a road maintained for public travel by Pacific County.

Creeks, Minor. "Minor creeks" means all creeks other than major creeks and generally conforming to the following criteria: a course or route as formed by nature, or as altered by human activity, and generally consisting of a channel with a bed, banks or sides substantially throughout its length along which surface waters, with some regularity, naturally and normally flow or drain from high to lower lands.

Creeks, Rivers, Major. The following are "major creeks/rivers" identified by the city:

1. Columbia River;

2. Wallicut River.

"Crop and tree farming" means the use of land for horticultural purposes.

"Cul-de-sac" means a dead-end street of limited length having a primary function of serving adjoining land, and constructed with a turnaround at its end.

"Dangerous wastes" means those wastes designated in WAC 173-303-070 through 173-303-103 as dangerous wastes. This may include any discarded, useless, unwanted or abandoned substances, including but not limited to certain pesticides, or any residues or containers of such substances which are disposed of in such quantity or concentration as to pose a substantial present or potential hazard to human health, wildlife or the environment because such wastes or constituents or combinations of such wastes:

1. Have short-lived toxic properties that may cause death, injury or illness or have mutagenic, teratogenic or carcinogenic properties; or

2. Are corrosive, explosive or flammable, or may generate pressure through decomposition or other means.

A moderate risk waste is not dangerous waste.

"Decision" means a final determination by the decision-making body on applications for permits or approvals or on appeals.

"Decision-making body" means the body with final approval authority for any given application.

"Dedication" means the deliberate appropriation of land by an owner for any general and public uses, reserving to himself no other rights than such as are compatible with the full exercise and enjoyment of the public uses to which the property has been devoted. The intention to dedicate will be evidenced by the owner by the presentment for filing of a final plat or short plat showing the dedication; and, the acceptance by the public will be evidenced by the approval of such plat for filing by the city council.

"Dedication plat" means plat which indicates property to be dedicated for public right-of-way or land for public use.

"Density" means the permissible number of dwelling units that may be developed on a specific amount of land area measured in number of dwelling units per gross acre.

"Designated zone facility" means any hazardous waste facility that requires an interim or final status permit under rules adopted under RCW Chapter 70.105 and WAC Chapter 173-303, and that is not a preempted facility as defined in RCW 70.105.010 or in WAC Chapter 173-303. A hazardous waste treatment or storage facility is a designated zone facility.

"Determination of completeness" means the determination made by the city planner as to whether a project permit application is complete or incomplete (RCW 36.70B.070).

"Developer" means a person who is responsible for any undertaking that requires a permit or approval from the city of Ilwaco.

"Development or development activity" means any human-made change to improved or unimproved real estate, including but not limited to:

1. Construction, clearing, grading, filling, excavating, paving, dredging, mining, drilling, or otherwise significantly disturbing the soil of a site;

2. Building, installing, enlarging, replacing or substantially restoring a structure, impervious surface, or water management system;

3. Subdividing land into two or more parcels;

4. Construction of a permanent sign unless expressly exempted by this title;

5. Alteration of a historic property for which authorization is required by this title; or

6. Changing the use of a site so that the need for parking is increased.

"Development permit" or development approval means any written authorization from the city which authorizes the commencement of a development activity.

"Development plan" means a plan drawn to scale, indicating the proposed use, the actual dimensions and shape of the property to be built upon, the exact sizes and locations on the property of buildings already existing, if any, and the location on the property of the proposed building or alteration, yards, setbacks, landscaping, off street parking, ingress and egress and signs.

"Development standards" means regulations including but not limited to setbacks, landscaping, screening, height, site coverage, signs, building layout, drainage, parking and site design and related features of land use.

"Discontinuance" means the abandonment or nonuse of a building, structure, sign or lot for a period of six months.

"District" means a portion of the incorporated area of the city within which certain regulations and requirements apply under the provisions of this title.

"Dock-high loading areas" means truck maneuvering areas and loading or unloading areas associated with loading doors that are located above the finish grade.

"Drainage ditch" means a manmade channel with a bed, bank or sides which discharges waters into a major or minor creek, lake, pond or wetland.

"Dripline" means a circle drawn at the soil line directly under the outermost branches of a tree.

"Duplex" means a building used or intended to be used as a home of two families living independently of each other having two separate kitchen facilities and bathroom facilities (i.e., two separate dwelling units).

Dwelling, Multiple-Family. "Multiple-family dwelling" means a residential building designed for or occupied by three or more families, with the number of families in residence not exceeding the number of dwelling units provided.

Dwelling, Single-Family. "Single-family dwelling" means a detached residential dwelling unit, other than a mobilehome, designed for and occupied by one family only.

Dwelling, Two-Family. "Two-family dwelling" means a detached residential building containing two dwelling units, designed for occupancy by not more than two families.

"Dwelling unit" means a building or portion of a building designed for occupancy by one family for residential purposes and having kitchen facilities.

"Easement" means a nonownership interest in land; a grant by a property owner to specific persons or to the public for a specific purpose or purposes such as ingress, egress and for utilities.

"Emergency repair" means work necessary to prevent destruction or dilapidation to real property or its structures immediately threatened or damaged by fire, flood, earthquake, or other disaster.

"Equivalent dwelling unit (EDU)" means any residential or nonresidential use which has been found to place a demand on the city's sewerage system or water system approximately equal to the demand thereon by a single-family dwelling.

"Erosion hazard areas" means and includes areas that because of natural characteristics, including vegetative cover, soil texture, slope, gradient and rainfall patterns, or man-made changes to such characteristics, are vulnerable to erosion.

"Essential public facilities" means public facilities and privately-owned or operated facilities serving a public purpose that are typically difficult to site. They include:

1. Type One. Multi-county facilities on the State Office of Financial Management (OFM) list of future projects. These are major facilities serving or potentially affecting more than one county. These facilities include, but are not limited to, regional transportation facilities, such as regional airports, state correction facilities, and state education facilities.

2. Type Two. These are local or inter-local facilities serving or potentially affecting residents or property in more than one jurisdiction. They could include, but are not limited to, county jails, county landfills, community colleges, sewage treatment facilities, communication towers and inpatient facilities (e.g., substance abuse facilities, mental health facilities, and group homes). (Note: Facilities that would not have impacts beyond the jurisdiction in which they are proposed to be located would be Type Three facilities.)

3. Type Three. These are facilities serving or potentially affecting only the jurisdiction in which they are proposed to be located.

"Extremely hazardous waste" means those wastes designated in WAC 173-303-070 through 173-303-103 as extremely hazardous wastes. This may include any dangerous waste which:

1. Will persist in a hazardous form for several years or more at a disposal site and which in its persistent form:

   a. Presents a significant environmental hazard and may be concentrated by living organisms through a food chain or may affect the genetic makeup of man or wildlife, and

   b. Is highly toxic to man or wildlife;

2. Is disposed of at a hazardous waste disposal site in such quantities as would present an extreme hazard to man or the environment.

"Family" means one or more related persons living together or not more than six unrelated persons living together in a single dwelling unit.

"Family day care provider" means a residential facility where supervision is provided for periods less than twenty-four (24) hours for twelve (12) or fewer children from the age of birth to eleven (11) years of age, exclusive of members of the occupant's family. Such facility must be operated in accordance with state requirements.

"Fee schedule" means the most current list, adopted by resolution of the city council, of the fees required for submitting applications to the city under this title and other city laws.

Fence, One Hundred Percent Sight-Obscuring. "One hundred (100) percent sight-obscuring fence" means a fence constructed of solid wood, metal or other appropriate material which totally conceals the subject use from adjoining uses at six feet above the base of the fence line, at twenty (20) feet from the subject property line.

Fence, Sight-Obscuring. "Sight-obscuring fence" means, at minimum, a chain link fence with woven slats in every row or available space of the fence.

"Flag lot" means a tract or lot of land of uniform dimensions in which the portion fronting on a street is less than the required minimum width for construction of a building or structure on that lot but leads from the access point to a lot with proper dimensions for building.

"Front of house" means that part of the house that faces the street, road, or public access way.

"Front yard" means an open, unoccupied space extending across the full width or depth of the lot, between the building and the property line adjacent to the street. On corner lots, both yards abutting streets are considered front yards.

Frontage, Building or Occupancy. "Building or occupancy frontage" means the length of that portion of a building or ground floor occupancy which abuts a street, publicly used parking area or mall appurtenant to such building or occupancy, expressed in lineal feet and fractions thereof.

Garage or Carport, Private. "Private garage or carport" means a building, or a portion of a building, principally for vehicular equipment such as automobiles, boats, etc., not more than one thousand (1,000) square feet in area, in which only motor vehicles used by the tenants of the buildings on the premises are stored or kept.

"General sewer plan" means the most recent edition of the General Sewer Plan of the city of Ilwaco.

"Grade" means a ground elevation established for the purpose of regulating the height of the structure. The building grade is the level of the ground adjacent to the walls of the building if the finished grade is level. If the ground is not entirely level, the grade is determined by averaging the elevation of the ground for each face of the building.

"Grading permit" means the permit required under Chapter 70 of the Uniform Building Code.

"Grocery store" means a retail business of one thousand (1,000) square feet or more that sells primarily food.

"Gross floor area" means the area included within the surrounding exterior walls of a building expressed in square feet and fractions thereof. The floor area of a building not provided with surrounding exterior walls shall be the usable area under the horizontal projections of the roof or floor above.

"Ground cover" means low-growing vegetative materials with a mound or spreading manner of growth that provides solid cover within two years after planting. Examples include sod or seed lawn, ivy, junipers, cotoneaster, etc.

Group Home.

1. Class I Group Home. "Class I group home" means publicly or privately operated residential facilities such as state-licensed foster homes and group homes for children; group homes for individuals who are developmentally, physically or mentally disable; group homes or halfway houses for recovering alcoholics and former drug addicts; and other groups not considered within Class II or III group homes.

    a. Group Home, Class I-A. A Class I-A group home shall have a maximum of seven residents including resident staff.

    b. Group Home, Class I-B. A Class I-B group home shall have a maximum of ten (10) residents including resident staff.

    c. Group Home, Class I-C. The number of residents for a Class I-C group home will be based upon the density of the underlying zoning district.

2. Class II Group Home. "Class II group home" means publicly or privately operated residential facilities for juveniles under the jurisdiction of the criminal justice system. These homes include state-licensed group care homes or halfway homes for juveniles which provide residence in lieu of

sentencing or incarceration, and halfway houses providing residence to juveniles needing correction or for juveniles selected to participate in state-operated work release and prerelease programs. The planning director shall have the discretion to classify a group home proposing to serve juveniles convicted of the offenses listed under Class III group home in this section as a group home Class III, and any such home shall be sited according to the regulations contained within the Group III classification.

a. Group Home, Class II-A. A Class II-A group home shall have a maximum of eight residents including resident staff.

b. Group Home, Class II-B. A Class II-B group home shall have a maximum of twelve (12) residents including resident staff.

c. Group Home, Class II-C. A Class II-C group home shall have a maximum of eighteen (18) residents including resident staff.

3. Class III Group Home. "Class III group home" means privately or publicly operated residential facilities for adults under the jurisdiction of the criminal justice system who have entered a pre- or post-charging diversion program, or been selected to participate in state-operated work/training release or other similar programs. Such groups also involve individuals who have been convicted of a violent crime against a person or a crime against property with a sexual motivation and convicted or charged as a sexual or assaultive violent predator.

"Guest cottage" means an accessory, detached dwelling without any kitchen facilities designed for and used to house transient visitors or nonpaying guests of the occupants of the main building.

"Halfway house" means a dwelling unit that houses formerly incarcerated or institutionalized persons that have been released to transition back into society.

"Half-width street" means any public or private street right-of-way or easement which is less than the full required width specified in this chapter, and which is established so that the additional half-width right-of-way or easement may be provided at a later date to complete a full-width roadway.

"Hazardous substance" means any liquid, solid, gas or sludge, including any material, substance, product, commodity or waste, regardless of quantity, that exhibits any of the characteristics or criteria of hazardous waste as described in rules adopted under RCW Chapter 70.105 or in WAC 173-303-090, 173-303-100, 173-303-101, 173-303-102 or 173-303-103.

"Hazardous substance facility buffer zone" means a setback area between the hazardous substance land use facility boundary and the nearest point of the hazardous substance land use property line, necessary to provide added protection to adjacent land uses or resources of beneficial use. All hazardous waste treatment and storage facilities must maintain at least a fifty (50) foot buffer zone.

"Hazardous substance land use" means any use which is permitted under this title and which includes a designated zone facility or the processing or handling of a hazardous substance.

"Hazardous substance land use facility" means the projected line enclosing the area of all structures and lands on which hazardous substance land use activities occur, have occurred in the past or will occur in the future. This does not include the application of products for agricultural purposes.

Hazardous Substance, Processing or Handling of. "Processing or handling of a hazardous substance" means the compounding, treatment, manufacture, synthesis, use or storage of hazardous substances in excess of the following amounts in bulk quantities: five thousand (5,000) pounds of solid hazardous substances, five hundred (500) gallons of liquid hazardous substances, and six hundred fifty (650) cubic feet of gaseous hazardous substances.

"Hazardous waste" means any dangerous and extremely hazardous waste, including substances composed of radioactive and hazardous components. A moderate risk waste is not a hazardous waste.

"Hazardous waste facility" means the contiguous land and structures, other appurtenances and improvements on the land used for recycling, storing, treating, incinerating or disposing of hazardous waste.

"Hazardous waste storage facility" means any designated zone facility which holds hazardous waste for a temporary period not to exceed five years; this does not include accumulation of hazardous waste by the generator on the site of generation, as long as the generator complies with the applicable requirements of WAC 173-303-200 and 173-303-201.

"Hazardous waste treatment facility" means any designated zone facility which processes hazardous waste by physical, chemical or biological means to make such waste nonhazardous or less hazardous, safer for transport, amenable for energy or material resource recovery, amenable for storage, or reduced in volume.

Hazardous Waste Treatment or Storage Facility, Off-Site. "Off-site hazardous waste treatment or storage facility" means any hazardous waste treatment or storage facility which treats or stores wastes that are generated off the site.

Hazardous Waste Treatment or Storage Facility, On-Site. "On-site hazardous waste treatment or storage facility" means any hazardous waste treatment or storage facility which treats or stores only those wastes that are generated on the site.

"Highest shade-producing point" means the point of a structure which casts the longest shadow at noon on December 21st.

"Home occupation" means an occupation carried on entirely within a residence by the occupants, which does not include storage or sale of stock in trade.

"Homeowners' association" means an incorporated, nonprofit organization operating under recorded land agreements through which (1) each lot owner is automatically a member; and (2) each lot is automatically subject to a charge for a proportionate share of the common property; and (3) a charge, if unpaid, becomes a lien against the property.

"Hostel" means a low cost hotel catering to the traveling public, consisting of large common sleeping rooms.

"Hotel or motel" means a building in which there are guest rooms where lodging with or without meals is provided for compensation, and where provision may or may not be made for cooking in any individual room or suite and in which building may be included one apartment for use of the resident manager. Not included in this definition are institutions housing persons under legal restraint or requiring medical attention or care.

"Impervious surface" means that hard surface area which either prevents or retards the entry of water into the soil mantle as it entered under natural conditions preexistent to development, or that hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from that present under natural conditions preexistent to development. Common impervious surfaces include but are not limited to rooftops, concrete or asphalt paving, paved walkways, patios, driveways, parking lots or storage areas, and oiled, macadam or other surfaces which similarly impede the natural infiltration of surface water.

"Improvements" means altering or modifying land and/or structures which results in added value to the property.

"Industrial user" means a nonresidential user of the public sewer which discharges a waste that is distinct from sanitary sewage, resulting in an industrial waste.

"Industrial waste" means any liquid, solid or gaseous material or combination thereof resulting from any process of industry, manufacturing, commercial, food processing, business, agriculture, trade or research, including, but not limited to, development, recovering or processing of natural resources and:

1. Has a concentration of biochemical oxygen demand (BOD) and suspended solids (SS) in excess of two hundred (200) milligrams per liter per average workday; or

2. Has a discharge containing cadmium, chromium, copper, lead, zinc, silver or similar toxic substances; or

3. Is found by the city, State Department of Ecology or United States Environmental Protection Agency to have a significant impact on the wastewater treatment system; or

4. Has a discharge flow of ten thousand (10,000) gallons or more per average workday.

"Interior court" means a space, open and unobstructed to the sky, located at or above grade level on a lot and bounded on three or more sides by walls of a building.

"JARPA" means the joint aquatic resource permits application, which must be completed whenever work is proposed in or near water.

"Judicial appeal" means an appeal to the Pacific County Superior Court of a decision made by the city council.

"Junkyard" means a place where waste, discarded or salvaged materials are bought, sold, exchanged, stored, baled, cleaned, packed, disassembled or handled, including auto and motor vehicle wrecking yards, house wrecking yards, used lumber yards and yards for use of salvaged house wrecking and structural steel materials and equipment.

"Kennel" means any fenced lot and/or structure on which four or more dogs or cats over six months of age are kept for breeding, sale, training, boarding or sporting purposes, or are cared for or kept for any purpose other than as a pet.

"Lake" means a natural or artificial body of water of two or more acres or where the deepest part of the basin at low water exceed two meters (six and six-tenths feet). Artificial bodies of water with a recirculation system approved by the public works director are not included in this definition.

"Landscaping" means vegetative cover including shrubs, trees, flowers, seeded lawn or sod, ivy and other similar plant material.

"Landslide hazard areas" means and includes areas potentially subject to landslides based upon the following combination of geologic, topographic and hydrologic factors:

1. Areas of historic failure;

2. Areas with all three of the following characteristics:

    a. Slopes of twenty-five (25) percent gradient or greater,

    b. Hillsides intersecting geologic contacts with a relatively permeable sediment overlaying a relatively impermeable sediment or bedrock, and

    c. Springs or groundwater;

3. Slopes that are parallel or subparallel to planes or weak in subsurface materials;

4. Privately owned areas with slopes that have gradients greater than eighty (80) percent subject to rock fall during seismic shaking;

5. Areas potentially unstable as a result of rapid stream incision, stream bank erosion and undercutting by wave action;

6. Areas located in a canyon or an active alluvial fan presently or potentially subject to one percent or greater chance of inundation by debris flows or catastrophic flooding;

7. Areas with slope gradients of forty (40) percent or greater not composed of consolidated rock. These will be of at least ten (10) feet of vertical relief.

"Local access" means a street whose primary function is to provide direct access to adjoining properties and which serves a limited area only, usually a neighborhood.

"Lodging, Itinerant" means a hotel, motel or other facility engaged in the rental or provision of lodging for periods of thirty (30) days or less. Also refers to an actual facility for rent, including, but not limited to, bed and breakfast rooms, condominium hotel units, hotel rooms, motel rooms, RV spaces, camping spaces, timeshare units, and vacation rentals. All itinerant lodging is subject to the City's transient occupancy tax, as required by Chapter 3.34. See also definitions of Bed and Breakfast, Guest Cottage (as applied to paying guests), Hotel or Motel, and Hostel. Contrast to "Long-Term Lodging" as defined herein.

"Lodging, Long-Term" means a facility engaged in the rental or provision of lodging facilities for periods of thirty-one (31) days or more. Also refers to the actual facility for rent. Contrast to "Itinerant Lodging" as defined herein.

"Loop" means a street of limited length forming a loop, having a beginning and ending on the same street, having no other intersecting street, and having as its primary function the provision of direct access to adjoining properties.

"Lot" means a fractional part of divided lands having fixed boundaries, being of sufficient area and dimension to meet minimum zoning requirements for width and area and having frontage upon a street or alley. The term includes tracts and parcels.

"Lot area" means the total land space or area contained within the boundary lines of any lot, tract, or parcel of land, and may be expressed in square feet or acres.

Lot, Corner. "Corner lot" means a lot abutting upon two or more streets at their intersection, or upon two parts of the same street, such streets or parts of the same street forming an interior angle of less than one hundred thirty-five (135) degrees within the lot lines.

"Lot frontage" means the front of a lot shall be that portion nearest the street. The user of a corner lot has the option of determining which part of the lot fronting on a street shall become the lot frontage, but the entrance shall be in the front.

"Lot lines" means the property lines bounding the lot.

Lot Measurements.

1. Depth of a lot shall be considered to be the distance between the foremost points of the side lot lines in front and the rearmost points of the side lot lines in the rear.

2. Width of a lot shall be considered to be the distance between the side lines connecting front and rear lot lines; provided, however, that width between side lot lines at their foremost points (where they intersect with the street line) shall not be less than eighty (80) percent of the required lot width, except in the case of lots on the turning circle of cul-de-sacs, where the eighty (80) percent requirement shall not apply.

"Lot of record" means a lot which is part of a subdivision recorded in the office of the county assessor, or a lot or parcel described by metes and bounds, the description of which has been so recorded.

Lot, Riverfront. "Riverfront lot" means any lot or land parcel which is adjacent to a riverfront road or a riverfront park.

Lot, Through. "Through lot" means a lot that has both ends fronting on a street. Either end may be considered the front.

"Lot width" means the distance between side lot lines measured at the regulatory/required front building line.

"Maintenance security" means a bond or other acceptable surety deposited by an applicant with the city to:

1. Cover the cost of replacing or repairing any or all required site improvements; and

2. To warrant against defects in labor and material, and against any damage or defects caused by construction activity on the site, for a period of two years from acceptance of improvements by the city.

"Major arterial" means, unless otherwise defined by the city's transportation plan, a street connecting two or more cities or communities, connecting two highways of equal or greater capacity, or serving as the primary access to a large land area. A major arterial may also serve a large traffic generator (e.g., an industrial area) and perform a secondary function of providing local access.

"Major nonconforming building or structure" means any nonconforming building or structure located on a parcel which at any point borders or is in a residential district and which is not in compliance with the minimum development standards of the district in which it is located.

"Manufactured home" means a single-family dwelling built after June 15, 1976, in accordance with the Department of Housing and Urban Development (HUD) Manufactured Home Construction and Safety Standards Act, which is a national, preemptive building ordinance.

"Manufactured home standards" means the manufactured home construction and safety standards as promulgated by the United States Department of Housing and Urban Development (HUD).

"Minor nonconforming building or structure" means any nonconforming building or structure which is not a major nonconforming structure and which is not in compliance with the minimum development standards of the district in which it is located.

"Mixed use building or structure" means a building that contains two or more separate and distinct uses permitted in the zoning district where such building is located.

"Mobilehome" means a factory-built dwelling built before June 15, 1976, to standards other than the HUD ordinance, and acceptable under applicable state ordinances in effect at the time of construction or introduction of the home into the state. Mobilehomes have not been built since introduction of the HUD Manufactured Home Construction and Safety Standards Act.

"Mobilehome park" means a parcel (or contiguous parcels) of land divided into two or more mobile or manufactured home lots for rent or sale.

"Moderate risk waste" means those wastes defined in WAC 173-303-040 as moderate risk wastes. This may include any waste that exhibits any of the properties of hazardous waste but is exempt from regulation under RCW Chapter 70.105 solely because the waste is generated in quantities below the threshold for regulation, and any household waste which is generated from the disposal of substances identified by the department of ecology as hazardous household substances.

"Modification" is a grant of relief from the strict requirements of this title which permits construction in a manner that would otherwise be prohibited by this title; a minimal relaxation or modification of the strict terms of this title as applied to specific property when, because of particular physical surroundings, shape or topographical condition of the property, compliance would result in practical difficulty; or a grant of relief from the strict requirements of this title due to a proposed project not being able to meet specifically identified comprehensive plan policies and objectives.

"Motel, hotel, motor hotel, and bed and breakfast" means a building or group of buildings comprising sleeping or living units for the accommodation of guests for compensation.

"Multifamily residence" means a building or portion of a building used or intended to be used as a home of three or more families living independently of each other and having separate kitchen facilities for each family.

"MUTCD" means the Manual of Uniform Traffic Control Devices for streets and highways as adopted by the Washington State Department of Transportation, current edition.

"Natural or native areas" means all or portions of a parcel of land undisturbed by development and maintained in a manner which preserves the indigenous plant materials.

"Neighborhood access" means a street whose primary function is to provide direct access to adjoining properties but which also provides for traffic circulation within and through a neighborhood.

"Neighboring property owners" means the people who own land adjacent to the subject lot, both inside and outside of city limits.

"Net acreage" means the buildable area after the area of street rights-of-way and easements has been subtracted.

"Noncommercial gardens" are gardens that are planted and cultivated for the production of fruits and vegetables. Noncommercial gardens also mean gardens that are planted with shrubs, trees, plants and grasses, and maintained for aesthetic purposes where no fee or charge is made for the public to enter the premises.

"Nonconforming building or nonconforming use or nonconforming lot" means a building, use, or lot lawfully existing on the date this title becomes effective, which does not conform with the regulations of the zoning district in which it is located.

"Nonconforming sign" means any sign which is not in full compliance with the regulations of the Ilwaco Municipal Code as amended.

"Nonconformity" means any land use, structure, lot of record or sign legally established prior to the effective date of this title or subsequent amendment to it which would not be permitted by or is not in full compliance with the regulations of this title.

"North-south lot dimension" means the average distance between lines from the corners of the northern lot line south to a line drawn east-west and intersecting the southernmost point of the lot.

"Nursery school or day care center" means a building or structure in which an agency, person or persons regularly provide care for a group of children for periods of less than twenty-four (24) hours a day. Nursery school or day care centers include family day care homes, out-of-home child mini-day-care centers and child day care centers regulated by the Washington State Department of Social and Health Services.

Nursing Home. See "Convalescent home."

"Occupancy" means the purpose for which a building is used or intended to be used. The term shall also include the building or room housing such use. Change of occupancy is not intended to include change of tenants or proprietors.

"Official map" means maps showing the designation, location and boundaries of the various districts which have been adopted and made a part of this title.

"Open green area" means landscaped areas and areas of natural or native vegetation.

"Open record hearing" means a hearing that creates the city's record through testimony and submission of evidence and information, under procedures prescribed by the city by ordinance or resolution. An open record hearing may be held prior to a local government's decision on a project permit to be known as an "open record predecision hearing." An open record hearing may be held on an appeal, to be known as an "open record appeal hearing," if no open record predecision hearing has been held on the project permit (RCW 36.70B.020(3)).

"Ordinary high-water mark," on the streams, marshes and swamps, means that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation as that condition exists on the effective date of this title, or as it may naturally change thereafter; provided that in any area where the ordinary high-water mark cannot be found the ordinary high-water mark shall be the line of mean high water.

"Outside storage" means all or part of a lot which is used for the keeping of materials or products in an open, uncovered yard or in an unwalled building. Such materials shall not be for general public consumption or viewing. Such materials shall include tractors, backhoes, heavy equipment, construction materials and other similar items which detract from the appearance of the zone in which they are located.

"Overlay zone" means a set of zoning regulations which is applied to the map and subsequently imposed in addition to regulations of the underlying district. Developments within the overlay zone must conform to the requirements of both zones.

"Owner of property" means the fee simple owner of record as exists on Pacific County assessor records.

"Pacific County road standards" means the latest edition of the Pacific County road standards.

"Parking space" means an off-street space used to park a motor vehicle and having access to a public street or alley.

Parking, Temporary. "Temporary parking" means parking facilities specifically designed to accommodate vehicles and intended for public use for a period of not more than five days. Temporary parking shall not be in lieu of specified off-street parking as required in Chapter 15.46 pertaining to off-street parking and loading requirements.

"Pavement width" means paved area on shoulder type roads or paved surface between curb, thickened edge or gutter flow line; on all other roads as depicted on drawings contained in the Pacific County road standards.

"Performance standards" means regulations for the control of dangerous or objectionable elements.

"Permit-issuing authority" means the person or body that has the authority, according to this title, to issue the permit or approval in question.

"Person" includes firms, corporations, associations and agents of persons.

"Planned unit development" means a development built under those provisions of this title which permit departures from the conventional siting, setback and density requirements of other sections of this title in the interest of achieving superior site development, creating open space and encouraging imaginative design by permitting design flexibility.

"Planning commission" means the planning commission of the city of Ilwaco, Washington.

"Planning director" means a person designated by the mayor of the city to carry out all duties related to planning.

"Plat" means a map or representation of a subdivision, showing the division of a tract or parcel of land into lots, blocks, streets and alleys or other divisions and dedications.

Plat, Final. "Final plat" means the final drawing of the subdivision and dedication prepared for filing for record with the county auditor and containing all elements and requirements set forth in this title.

Plat, Preliminary. "Preliminary plat" means a neat and approximate drawing of a proposed subdivision showing the general layout of streets and alleys, lots, blocks, and other elements of a subdivision consistent with the requirements of this chapter. The preliminary plat is the basis for the approval or disapproval of the general layout of a subdivision.

Plat, Short. "Short plat" means the map or representation of a short subdivision.

"Pond" means an area permanently inundated by water in less than two acres in area as measured at the ordinary high water mark.

"Port master plan" means the plan developed by the port of Ilwaco that outlines future uses of port of Ilwaco property.

"Preempted facility" means any hazardous waste facility defined as a preempted facility in RCW 70.105.010 or in WAC Chapter 173-303. This may include any facility that includes as a significant part of its activities any of the following hazardous waste operations: (1) landfill; (2) incineration; (3) land treatment; (4) surface impoundment to be closed as a landfill; or (5) waste pile to be closed as a landfill.

"Principal use" means the primary use of land or a building, as distinguished from an accessory use.

"Private access tract" means a privately owned and maintained tract providing vehicular access to four or fewer residential or commercial properties.

"Private street" means a privately owned and maintained access provided for by a tract, easement, or other legal means, typically serving three or more potential dwelling units.

"Project permit or project permit application" means any land use or environmental permit or license required from the city for a project action, including, but not limited to building permits, subdivisions, binding site plans, conditional uses, shoreline substantial development permits, site plan review, permits or approvals required by critical area ordinances, and site-specific rezones authorized by a comprehensive plan (RCW 36.70B.020(4)); provided, that in no case of division or combination shall any residual lot or parcel be created which does not meet the requirements of this title.

"Public street" means a publicly owned facility providing access, including the roadway and all other improvements, inside the right-of-way.

"Ravine" means an area constituting a "young valley" which contains a major or minor creek. It includes the bottom land of the ravine and the ravine sidewalls to a point where the slopes are less than fifteen (15) percent.

"RCW" means the Revised Code of Washington.

"Rear yard" means an open unoccupied space extending across the full width or depth of the lot, between the building and the rear line of the lot.

Recreational Vehicle.

1. Recreational vehicles means motorized vehicles that include a cabin for living accommodations and are commonly used for recreational travel and touring. Vehicles included in this category come in several forms: travel trailers, tent trailers and camping trailers, all of which must be towed by a car or pickup truck; and truck campers, motor homes and camper vans, all of which have the motor within the body of the vehicle.

2. Recreational vehicles may also include any motorized or nonmotorized vehicle, boat, boat trailer or other vehicle to be used for recreational purposes.

"Recreational vehicle storage" means a piece of land or a structure dedicated to the storage of recreational vehicles.

"Reservation" means a method of holding land for future public use by dedicating public areas on a subdivision plat.

"Restricted use" means that the use is not allowed in a particular zoning district.

"Resubdivision" means the further division of a lot or lots within a subdivision previously approved and recorded.

"Revegetation" means the planting of vegetation to cover any land areas which have been disturbed during construction. This vegetation shall be maintained to ensue its survival and shall be consistent with planting requirements of the city landscape regulations.

"Rezone" means a change in zoning classification of an area from one use district to another.

"Right-of-way" means land, property or property interest (e.g., and easement), usually in a strip, acquired for or devoted to transportation purposes.

"Road" means a facility providing public or private access including the roadway and all other improvements inside the right-of-way. "Road" and "Street" will be considered interchangeable terms for the purpose of this title.

"Roadside" means the portion of an easement or right-of-way lying on either side of the roadway, including curbs, sidewalks and ditches.

"Roadside stand" means a temporary structure designed or used for the display or sale of agricultural products primarily produced on the premises upon which such a stand is located.

"Roadway" means pavement width plus any nonpaved shoulders.

"RV park" means a piece of land used for or dedicated to accommodating or housing recreational vehicles.

"Secondary arterial" means a public street connecting two or more roads of equal or greater classification, or connecting two or more communities. A secondary arterial may serve as an alternate route to higher classified road or a traffic generation of medium importance, and serves an additional function of land service.

"Seismic hazard areas" means and includes areas subject to severe risk of damage as a result of earthquake-induced ground shaking, slope failure, settlement, soil liquefaction or surface faulting.

"Service uses or activities" means a business which sells the knowledge or work of its people rather than a tangible product.

Setback, Average. "Average setback" means the mean or average depth of yard (setback) measured from the property line to the building. The average setback is computed along the full length of the property line, utilizing a designated property depth.

Shop, Thrift. "Thrift shop" means a business where items that were donated to charity are sold.

"Shopping center" means a retail shopping area designed as a unit, which utilizes a common parking area.

"Shoreline master program" means the most recent edition of the city of Ilwaco shoreline master program.

"Short subdivision" means a map of a short subdivision, together with written certificates, dedications where appropriate and data. Short plats are those that can be administratively approved in an expedited fashion by the planning director.

"Sidewalk" means a hard surfaced pedestrian access area adjacent to or within the right-of-way of a public road.

"Side yard" means an open, unoccupied space extending across the full width or depth of the lot, between the building and the side line of the lot.

"Sign" means any face of a structure or device for visual communication that is used to bring the subject to the attention of the public.

Sign, Abandoned. "Abandoned sign" means any sign which has been deserted and its effective use terminated, and which no longer fulfills the purpose for which it was constructed.

Sign, Advertising. "Advertising sign" means a sign which directs attention to a business, commodity or service or entertainment sold or offered elsewhere than on the premises and only incidentally on the premises.

"Sign area" means the entire area within a single continuous perimeter enclosing the extreme limits of a sign, but excluding any structural elements not forming an integral part of the display.

Sign, Business. "Business sign" means a sign which directs attention to a business, commodity, service or entertainment conducted, sold or offered on the premises.

Sign, Canopy. "Canopy sign" means a sign attached to the underside of a canopy.

Sign, Construction. "Construction sign" means a temporary sign placed in advance of occupancy of a building or structure indicating the name of the building or structure, the architects, the contractors and other information regarding the building or structure.

Sign, Directional or Informational. "Directional or informational sign" means a sign designated to guide or direct pedestrians or vehicles.

Sign, Flashing. "Flashing sign" means:

1. A lighted sign whose lights or part of whose lights go on and off intermittently;

2. An illuminated sign with action or motion, or light or color changes.

Sign, Freestanding. "Freestanding sign" means a sign standing directly upon the ground or having one or more supports standing directly upon the ground, and being detached from any building or structure.

Sign, Gate or Entrance. "Gate or entrance sign" means a sign attached or adjacent to an entranceway of a residential site or subdivision, which identifies the site or subdivision.

"Sign height" means the distance from ground level to the highest point on the sign structure.

Sign, Identification. "Identification sign" means a sign used only for the purpose of identifying the occupancy of a building, structure or property.

Sign, Illuminated. "Illuminated sign" means a sign designed to give forth any artificial light or reflect such light from an artificial source.

Sign, Indirectly Illuminated. "Indirectly illuminated sign" means an illuminated nonflashing sign whose illumination is derived entirely from an external artificial source and which is so arranged that no direct rays of light are projected from such artificial source into residences or the street.

Sign, Institutional. "Institutional sign" means a sign used only for the purpose of identifying an institution.

Sign, Off-Premises. "Off-premises sign" means a sign not located on or supported by a structure not located on the same premises as the business, product, service or activity being identified or advertised by such sign or an advertising sign.

Sign, On-Premises. "On-premises sign" means a sign identifying a business, product, service or activity conducted or sold on the same premises as that on which the sign is located.

Sign, Painted. "Painted sign" means a sign which is painted on any office, wall, window, fence or structure of any kind.

Sign, Political. "Political sign" means a sign advertising a candidate for political office or a measure scheduled for election.

Sign, Portable. "Portable sign" means a sign which is not permanently affixed to the ground or to a building or structure and which may be easily moved.

Sign, Projecting. "Projecting sign" means a sign affixed to the exterior wall of a building or structure with the exposed faces perpendicular to the plane of such wall.

Sign, Roof. "Roof sign" means a sign attached to a building which projects above the structure of the building. This definition refers to the architectural unity of a building or structure.

Sign, Rotating. "Rotating sign" means a sign containing moving parts.

Sign, Subdivision. "Subdivision sign" means a sign erected and maintained within the boundaries of a recorded subdivision and indicating the name of the subdivision, the name of the contractor or subdivider and the name of the owner or agent, and giving information regarding directions, price or terms.

Sign, Temporary. "Temporary sign" means a sign intended to advertise community or civic projects, real estate for sale or lease or other special events on a temporary basis.

Sign, Wall. "Wall sign" means a sign affixed to the exterior wall of a building or structure with the exposed face of the sign on a plane parallel to the plane of such wall.

Sign, Window. "Window sign" means a sign painted on, affixed to or placed in an exterior window with the exposed face of the sign on a plane parallel to the plane of such window.

"Single-family district" means a zoning district with any of the following designations: single-family residential R-1 and R-1S.

"Single-family dwelling" means a building designed or used for residential purposes by not more than one family and containing one dwelling unit only, including mobilehomes when not located in a mobilehome park and including condominium units subject to fee simple ownership, and excluding multiple-family dwellings, apartments and motels.

"Site coverage" means that portion of a lot covered by buildings or structures.

"Site plan" means a drawing of a proposed project drawn to scale.

"Site plan review" means the process which is intended to provide for the examination of site and building development proposals in any of the following circumstances: new construction in a commercially or industrially-zoned area; or expansion or remodel of any building or other structure in commercially or industrially-zoned areas by more than twenty (20) percent of its existing floor area, or overall size in cases where floor area is not applicable.

"Slope line" means the line perpendicular to the contour lines crossing the property. The precise bearing or heading of the slope line shall be determined by the planning director.

"Solid waste incinerator" means the processing of solid wastes by means of pyrolysis, refuse-derived fuel or mass incineration within an enclosed structure. These processes may include the recovery of energy resources from such waste or the conversion of the energy in such wastes to more useful forms or combinations thereof. This definition refers to citywide or regional-scale operations and does not include solid waste incineration which is accessory to an individual principal use.

"Special permit" means a permit issued for uses permitted in a district provided such use meets the standards as required for such use.

"Special provisions" means road construction requirements peculiar to a specific project and which are not otherwise thoroughly or satisfactorily detailed and set forth in the standard specifications.

"Special trees" means trees significant due to their size, age, species and variety, or historical importance.

"Stacking space" means the space specifically designated as a waiting area for vehicles whose occupants will be patronizing a drive-in business. Such space is considered to be located directly alongside a drive-in window, facility or entrance used by patrons and in lanes leading up to and away from the business establishment.

"Standard specifications" means those specifications adopted for street construction by the city.

"Story" means that portion of a building included between the upper surface of any floor and the upper surface of the floor next above, except that the topmost story shall be that portion of a building included between the upper surface of the topmost floor and the ceiling or roof above. If the finished floor level directly above a basement, cellar or unused underfloor space is more than six feet above grade for more than fifty (50) percent of the total perimeter or is more than twelve (12) feet above grade at any point, such basement, cellar or unused underfloor space shall be considered as a story.

"Street" means a public thoroughfare which affords the principal means of access to abutting properties.

"Structure" means a human-made object of any kind, which is built or constructed, or any piece of work built up or composed of parts joined together in some definite manner and affixed to the earth.

"Subdivider" means a person, including a corporate person, who undertakes to create a subdivision.

"Subdivision" means the division or redivision of land into five or more lots, tracts, parcels, sites or divisions for the purpose of sale, lease or transfer of ownership, except as provided under "short subdivision."

Subdivision, Short. "Short subdivision" means the division or redivision of land into four or fewer lots, tracts, parcels, sites or divisions for the purpose of sale, lease or transfer of ownership.

"Survey discrepancy" means a boundary hiatus, an overlapping boundary, or a physical appurtenance which indicates encroachment, lines of possession or conflict of title.

"Temporary building" means a building or a structure that is proposed to be built or constructed and utilized for a period not to exceed three years from the date of issuance of occupancy permit by the city. The city council may extend the permit for a temporary building for another three years after conducting a public hearing on the proposal.

"Temporary retail sales" means a retail trade or service with a business license lasting thirty (30) days or less.

"Townhouse" means an attached one or two-family dwelling having no side yard and sharing a common wall with adjacent dwelling units.

Trade, Retail. "Retail trade" means the sale or rental of goods and merchandise for final use or consumption.

"Transitional housing" means a facility operated publicly or privately to provide housing for individuals or families who are otherwise homeless and have no other immediate living options available to them. Transitional housing shall not exceed an eighteen (18) month period per individual or family.

"Tree" means any living woody plant characterized by one main stem or trunk and many branches, and having a diameter of two inches or more measured at three feet above ground level.

"Undeveloped land" means a parcel of land which does not have an inhabitable building or where the inhabited buildings occupy no more than three percent of the total parcel area.

"Urban growth area" means that area designated by the city's comprehensive plan as the city's urban growth area.

"Use" means an activity for which land or premises or a building thereon is designed, arranged or intended, or for which it is occupied or maintained, let or leased.

Use, Change of. "Change of use" shall be determined to have occurred when it is found that the general character of the operation has been modified. This determination shall include review of but not be limited to: (1) hours of operation; (2) materials processed or sold; (3) required parking; (4) traffic generation; (5) impact on public utilities; (6) clientele; and (7) general appearance and location.

"Use district" means an area or district specifically designated so as to group similar and compatible uses together.

Use, Temporary. "Temporary use" means any activity or structure permitted under the provisions of Sections 15.26.080, 15.27.090, 15.28.080, 15.29.090, 15.30.080 and 15.31.070 which is intended to exist or operate for a limited period of time and which does not comply with the development standards and requirements set out in this title as specified for the zoning district in which it is located.

"Vacation Rental" means the use of a dwelling unit or portion thereof as itinerant lodging. See also definition of "Itinerant Lodging."

"Variance" means a waiver of one or more specific physical (rather than use) standards (such as bulk, yard or site coverage) due to the existence of a special condition or hardship that is peculiar to the land, structure or building involved, not created by the property owner. A variance cannot result in a property owner receiving a special privilege.

Vegetation, Shading. "Shading vegetation" means vegetation planted on the south side of a major creek that generally provides shade from mid-morning to mid-afternoon. Examples of shading vegetation are specified in Chapter 15.47pertaining to landscaping.

"Vegetative aid" means bark mulch, gravel and other nonvegetative materials which promote vegetative growth by retaining moisture or preventing weeds. These materials are not a substitute for vegetative cover.

"Veterinary clinic" means any premises to which animals are brought, or where they are temporarily kept, solely for the purpose of diagnosis or treatment of any illness or injury, which does not have outdoor runs.

"Veterinary hospital" means any premises to which animals are brought, or where they are temporarily kept, solely for the purpose of diagnosis or treatment of any illness or injury, which may have outdoor runs.

"View" means an unrestricted angle of vision.

"WAC" means Washington Administrative Code.

"Walkway" means a pedestrian access which is within the building side envelope, total building complex or between lots, but not adjacent to or within the right-of-way of a public street.

"Yard" means the land unoccupied or unobstructed, from the ground upward, except for such encroachments as may be permitted by this title, surrounding a building site.

Yard, Front. "Front yard" means an open space, other that a court, on the same lot with the building, between the front line of the building (exclusive of steps) and the front property line, including the full width of the lot to its side line.

Yard, Rear. "Rear yard" means an open space on the same lot with the building between the rear line of the building (exclusive of steps, porches and accessory buildings) and the rear line of the lot, including the full width of the lot to its side lines.

Yard, side. "Side yard" means an open space on the same lot with the building between the side wall line of the lot and extending from front yard to rear yard. No portion of a structure shall project into any side yard, except cornices, canopies, eaves or other architectural features, which may project two feet, zero inches.

"Zone" means the land area designated in the zoning code and on the zoning map for a specific type of development.

"Zoning" means the regulation of the use of private lands or the manner of construction related thereto in the interest of achieving a comprehensive plan of development. Such regulation shall also govern those public and quasi-public land use and buildings which provide for proprietary type services for the community's benefit as contrasted with governmental activities. Governmental activities are encouraged to cooperate under these regulations to secure harmonious city development.

"Zoning lot" means a tract of land occupied or to be occupied by a principal building and its accessory facilities, together with such open spaces and yards as are required under the provisions of this title, having not less than the minimum area required by this title for a zoning purpose in the district in which such land is situated, and having its principal frontage on a public street of standard width and improvement. A zoning lot need not necessarily coincide with the record lot, which refers to land

designated as a separate and distinct parcel on a legally recorded subdivision plat or in a legally recorded deed filed in the records of the county.

"Zoning permit" means a certificate, issued prior to a building permit, stating that the proposed use is in accordance with the requirements and standards of this title.

Section 2. Section 2 of Ordinance 791 (2011), codified as Section 15.29.045 of the Ilwaco Municipal Code, is hereby repealed.

Section 3. A new Chapter 15.41 of the Ilwaco Municipal Code is hereby created, entitled Vacation Rentals

Vacation Rentals.

15.41.010 Purpose.
The purpose of this subsection is to establish regulations for the siting and operation of vacation rentals in all zoning districts.

15.41.020 General Standards.
A. Vacation rentals are allowed as a primary permitted use within the following zoning districts: R-3, R-4, R-5, C-1, C-2, and M-1. Preexisting conditional use permits for vacation rentals in these zones shall considered to be superseded by and shall henceforth be governed by these regulations.

B. Vacation rentals are expressly prohibited within the R-1 and R-2 zoning districts and are not subject to allowance via conditional use permit in these zones as otherwise authorized under Section 15.44.010.B. Preexisting conditional use permits for vacation rentals in these zones shall be considered to be nonconforming uses governed by Section 15.54.010 and shall be bound to the operating conditions set forth by the conditional use permit. If a vacation rental operating under a preexisting conditional use permit is no longer compliant with the permit conditions, it will no longer be deemed nonconforming and must be discontinued.

C. Vacation rentals located within the C-1 and C-2 zoning districts shall not be located on the ground floor of a structure.

D. One (1) off-street parking space shall be provided for each bedroom in the dwelling unit, but in no event shall fewer than two (2) spaces be provided. This standard does not apply within the C-1 zoning district.

E. The vacation rental unit shall meet all applicable requirements of the zoning district in which it is sited, including but not limited to setbacks; maximum height; lot coverage

standards; and requirements for signs, landscaping, and nonpermanent equipment.

15.41.030 Conditions.

A. A maximum of two (2) persons over the age of two (2) is allowed per bedroom, plus an additional two (2) persons per unit, to a maximum of twelve (12) persons per unit.

B. A City business license is required per Chapter 5.04 , and all Transient Occupancy Tax (Chapter 3.24), Sales and Use Tax (Chapter 3.16), and Business and Occupation Tax (Chapter 3.18) provisions apply.

C. Weekly solid waste collection shall be provided during all months that the dwelling unit is used for short-term rental occupancy. Weekly/monthly solid waste collection shall not be considered "yellow bag" or as-needed service, but ongoing weekly/monthly solid waste service even when the unit might be unoccupied.

D. Where a provision of this section conflicts with a provision of a lawful and recorded restrictive covenant, the more restrictive provision shall apply.

E. An informational sign must be posted conspicuously inside the vacation rental, together with a copy of the property owner's business license, to provide information on the maximum occupancy; location of off-street parking; contact information for the property owner or local representative; evacuation routes; and the renter's responsibility not to trespass on private property, not to litter, and not to create a noise disturbance. The owner must maintain an operating "land line" telephone for emergency notifications, along with a battery-powered and operable National Oceanic and Atmospheric Administration Weather Alert radio. The owner of the vacation rental must also provide 24-hour contact information directly to the owners of any property located within 100 feet of the vacation rental.

Section 4. Section 15.44.020 Land Use Table is amended as follows.

Land Use	R-1	R-1S	R-2	R-3	R-4	R-5	C-1	C-2	M-1	P
Amusement										
Bowling alley				A	A			A		
Firing range (indoor)				A	A			A		
Game, card rooms, video games				A	A	A		A		
Gyms, exercise facilities, spas, health clubs				A	A	A		A		
Golf course				A	A					

Land Use	R-1	R-1S	R-2	R-3	R-4	R-5	C-1	C-2	M-1	P
Community Services										
Bus stop shelter	A	A	A	A	A	A	A	A	A	A
Churches, temples, synagogues			A	A	A	A		A		
Community arts center				A				A		
Community center, meeting hall, fraternal organization, clubs, youth clubs				A		A		A		
Conference/meeting facilities				A	A	A		A		

Convalescent or nursing home								A		
Hospital				A				A		
Preschool facilities								A		
Fire stations	A	A	A	A	A	A	A	A	A	
Library, Public								A		
Museum, Nonprofit				A			A	A		
Museum, For-profit				A	A			A		
Art galleries				A	A	A	A	A		
Parks	A	A	A	A	A	A	A	A	A	A
Police stations (without detention facilities)							A	A		
Police stations (with detention facilities)								A		
Schools, Public	A	A	A	A	A	A		A		
Vocational school								A		
Public swimming pools				A		A		A		A
Theaters and auditoriums				A	A	A		A		
Exhibit halls				A	A	A		A		
Mortuary, without crematorium								A		

Land Use	**R-1**	**R-1S**	**R-2**	**R-3**	**R-4**	**R-5**	**C-1**	**C-2**	**M-1**	**P**
Manufacturing										
Automobile wrecking										
Sawmilling									A	
Log/chip storage									A	
Food/seafood processing								A	A	
Boat building/repair								A	A	
Canoe and kayak building								A	A	
Furniture manufacture								A	A	

Prefabricated housing								A	A	
Cabinetry shop								A	A	
Welding, sheet metal and machine shops								A	A	
Other light manufacturing on a case-by-case basis									A	

Land Use	**R-1**	**R-1S**	**R-2**	**R-3**	**R-4**	**R-5**	**C-1**	**C-2**	**M-1**	**P**
Parking										
Commercial (pay for use) parking lots						A	A	A	A	
Public garage							A	A	A	
Public parking lots				A		A	A	A	A	

Land Use	**R-1**	**R-1S**	**R-2**	**R-3**	**R-4**	**R-5**	**C-1**	**C-2**	**M-1**	**P**
Residential										
Accessory structures (e.g., garage)	A	A	A	A	A			A		
Adult family home	A	A	A	A	A			A		
Assisted living facility				A						
Condominium			A	A	A			A		
Duplexes			A	A	A			A		
Family daycare provider	A	A	A	A	A			A		
Group home	A	A	A	A	A					
Home occupations	A	A	A	A	A		A	A		
Keeping of chickens for noncommercial, personal use	A	A	A							
Multifamily residences/apartments			A	A	A			A		

Residences above groundfloor commercial				A	A		A	A		
Residential on groundfloor in commercial building				A	A			A		
Single-family residence	A	A	A	A	A			A		
Townhouse			A	A	A			A		
Used manufactured home		A								
Manufactured home	AE	AE	AE		AE					
~~Short-term rental of dwelling units~~	-	-	-	~~A~~	-	-	-	-	-	-
Vacation Rentals				A	A	A	A	A	A	
Planned unit and cluster developments				A						

Land Use	R-1	R-1S	R-2	R-3	R-4	R-5	C-1	C-2	M-1	P
Retail Trade and Services										
Adult entertainment business									A	
Animal clinic/hospital								A		
Antique shop				A			A	A	A	
Appliance stores							A	A		
Auto maintenance/ repair shops								A	A	
Auto paint/body shop								A	A	
Auto parts and accessories							A	A		
Auto sales, new or used								A		
Bakery, retail				A			A	A		
Bakery, wholesale with retail							A	A		

Bakery, wholesale only								A	A	
Bar, tavern, micro-brewery with retail				A			A	A		
Beauty parlor/barber shop/personal service				A	A	A	A	A		
Bed and breakfast establishment								A		
Boat accessories							A	A	A	
Books, stationary, office supplies				A			A	A		
Building materials (if housed), hardware store							A	A	A	
Camera and photography supply store, photo studio				A	A		A	A		
Campground					A	A				
Canoe and kayak rentals, service, and supplies				A	A		A	A	A	
Car wash								A	A	
Clothing store				A	A		A	A		
Computer, electronic store							A	A		
Convenience store				A	A		A	A	A	
Delicatessen, specialty food store				A	A		A	A	A	
Department store (in excess of 15,000 square feet)							A	A		
Drive-in restaurant								A		
Drive-in windows appurtenant to allowed use								A		

Dry-cleaning processing								A	A	
Employment agency							A	A		
Fabric store							A	A		
Farm supplies							A	A	A	
Farmers' Market							A	A		
Financial institution							A	A		
Florist				A	A		A	A		
Furniture manufacturing with retail outlet							A	A	A	
Furniture store							A	A		
Grocery store, small (1,001 —5,000 square feet)				A			A	A		
Grocery store, large (over 5,000 square feet)							A	A		
Heating/plumbing equipment (if housed inside building)							A	A	A	
Hotel/motel/hostel				A	A		A	A		
Insurance agency							A	A		
Jewelry, watch sales/repair				A	A		A	A		
Laundromat and/or										
dry-cleaning drop-off only				A	A	A	A	A	A	
Liquor store							A	A		
Locksmith							A	A		
Lumberyards (fenced)								A	A	
Medical/dental offices							A	A		
Medical/dental clinics							A	A		
Mini-storage					A	A		A	A	
Novelty/gift shops				A	A	A	A	A		

Offices, business or professional				A			A	A		
Paint, glass, wallpaper sales and decorating							A	A		
Park store						A				
Pawn shop								A		
Pet store							A	A		
Pharmacy							A	A		
Printing establishment/copy center (service only)							A	A		
Printing establishments and newspaper printing							A	A	A	
Recycling drop-off station— public										
(enclosed containers only)				A	A	A		A	A	
Rental — truck, auto								A		
Repairs — small appliances, business machines							A	A	A	
Repairs — upholstery, furniture							A	A	A	
Restaurants, cafes, and similar establishments (with or without bar)				A	A	A	A	A		
Retail shops for custom work without chemical processes							A	A	A	
Retail shops for custom work with chemical processes									A	
RV park				A		A				

Seafood market				A			A	A	A	
Second hand shop							A	A	A	
Service station								A	A	
Shoe repair or shoe shine				A	A		A	A		
Sports equipment—										
sales and rentals				A	A	A	A	A		
Storage (rental for personal/commercial use) above first floor								A	A	
Studios (artists/ craftspeople)				A	A		A	A	A	
Tailors							A	A		
Telephone exchanges								A		
Telegraph offices							A	A		
Thrift shops								A		
Tire repair shops (with enclosed storage area)								A	A	
Toy, hobby/crafts/art supplies and variety shops				A			A	A		
Vacation Rentals				A	A	A	A	A	A	
Vendor carts for food, drink or special occasion retail sales				A		A	A	A	A	
Video rentals				A		A	A	A		

Land Use	R-1	R-1S	R-2	R-3	R-4	R-5	C-1	C-2	M-1	P
Transportation										
Bus passenger terminals, without storage or maintenance facilities								A	A	

Taxi terminals, dispatch centers (without maintenance facilities)								A		
School bus garage, not adjacent to school								A		
School bus garage, adjacent to school	A							A		

Land Use	R-1	R-1S	R-2	R-3	R-4	R-5	C-1	C-2	M-1	P
Utilities										
Utility service substations (must be landscaped and screened from any adjacent residential use)					A	A		A	A	
Public road/utility shops								A	A	

Land Use	R-1	R-1S	R-2	R-3	R-4	R-5	C-1	C-2	M-1	P
Wholesale Trade and Storage										
Warehouses for storage						A		A	A	
Wholesale distribution center (housed within buildings)								A	A	

Land Use	R-1	R-1S	R-2	R-3	R-4	R-5	C-1	C-2	M-1	P
Essential Public Facilities										
Type One										
Regional transportation facility (e.g., airports)									A	
State correctional facilities									A	

State or regional educational facility								A		
Type Two										
County jails								A		
Regional solid waste handling facilities									A	
Community colleges								A	A	
Sewage treatment facilities							A	A		
Communication towers and antennas								A		

Section 5. Severability. If any section, subsection, paragraph, sentence, clause, or phrase of this ordinance is declared unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining parts of this ordinance

Section 6. Referendum and Effective Date. This Ordinance, being an exercise of a power specifically delegated to the city legislative body, is not subject to referendum, and shall take effect and is in full force five (5) days after its passage, approval and publication of an approved summary of the title as provided by law.

PASSED BY THE CITY COUNCIL OF THE CITY OF ILWACO, AND SIGNED IN AUTHENTIFICATION OF ITS PASSAGE THIS _____ DAY OF _____, 2016.

_____
Mike Cassinelli, Mayor

ATTEST:

_____
Holly Beller, Deputy City Clerk

VOTE	Jensen	Karnofski	Marshall	Chambreau	Forner	Cassinelli
Ayes						
Nays						
Abstentions						
Absent						

PUBLISHED: Month date, Year

EFFECTIVE: Month date, Year

To: Sam Rubin
Cc: Holly Beller

March 16, 2016

From: Rich Marshall

Subject: Vacation Rental Ordinance, Definitions & Permitted Use Table

Sam,

Thanks for the constructive conversation this past Friday and your openness to consider the various topics we covered. I will recap those topics here, and hope that we can continue the conversation as needed in the coming weeks….before the ordinance is finalized for the Council's consideration.

15.41.030 Conditions.

As Drafted:
"A. A maximum of two (2) persons over the age of two (2) is allowed per bedroom, plus an additional two (2) persons per unit, to a maximum of twelve (12) persons per unit."

15.41.030 A. Suggested Wording:
A. The occupancy of vacation rental units shall be managed so as not to encourage too many occupants in a given rental unit. Many homes may utilize architectural features which include bunk rooms, dormitory rooms, and sleeping lofts. The occupancy shall be 'managed' to a maximum of two people per double, queen or king bed, plus one occupant per single or bunk bed, plus two persons per unit, to a maximum 15 persons per unit. Persons age two and under shall not be included in the maximum occupancy calculation. Vacation Rental owners may restrict the maximum occupancy of their unit(s) to any lower maximum they see fit.

As Drafted:
"C. Weekly solid waste collection shall be provided during all months that the dwelling unit is used for short-term rental occupancy. Weekly/monthly solid waste collection shall not be considered "yellow bag" or as-needed service, but ongoing weekly/monthly solid waste service even when the unit might be unoccupied."

15.41.030 C. Suggested Wording:
C. Weekly solid waste collection shall be provided during all months that the vacation rental unit is used for short-term rental occupancy. Weekly solid waste collection shall not be "yellow bag" or as-needed service. Vacation Rental units built as units within a clustered rental development or operating within a 'Homeowner's Association' may utilize shared solid waste collection facilities which serve multiple units.

As Drafted:
"E. An informational sign must be posted conspicuously inside the vacation rental, together with a copy of the property owner's business license, to provide information on the maximum occupancy; location of off-street parking; contact information for the property owner or local representative; evacuation routes; and the renter's responsibility not to trespass on private property, not to litter, and not to create a noise disturbance. The owner must maintain an operating "land line" telephone for emergency notifications, along with a battery-powered and operable National Oceanic and Atmospheric Administration Weather Alert radio. The owner of the vacation rental must also provide 24-hour contact information directly to the owners of any property located within 100 feet of the vacation rental."

15.41.030 E. Suggested Wording:

E. An informational sign must be posted conspicuously inside the vacation rental, together with a copy of the property owner's business license, provide information on the maximum occupancy; location of off-street parking; contact information for the property owner or available representative; the renter's responsibility not to trespass on private property, not to litter, and not to create a noise disturbance. The owner or local representative of a vacation rental must also provide 24-hour contact information directly to the owners of any property located within 100 feet of the vacation rental; unless such vacation rental unit(s) is located within a clustered development or which operate within a Homeowner's Association.

Owners (or local representatives) of Vacation Rental units located within a Tsunami Zone must maintain within the rental unit (1) an operating "land line" telephone for emergency notifications, along with (2) a battery-powered and operable National Oceanic and Atmospheric Administration Weather Alert radio; and (3) maps of evacuation routes appropriate for the rental unit.

Definitions – Chapter 15.04.020

Sam, I find unclear the intended differences between 'vacation rentals', 'Lodging Itinerant', and 'Itinerant Lodging'. I think it would be better to eliminate 'Lodging Itinerant' and just stick with 'Itinerant Lodging'. I would ask that you add 'Timeshares', 'Auxiliary Dwelling Units' and 'Hostels' to the types of facilities listed within the 'Itinerant Lodging' definition. As we discussed, we'd very much appreciate either Auxiliary Dwelling Units be re-defined to include carriage houses or the upper level of garages as being approved as Vacation Rentals…and thus included in the list of Itinerant Lodging facilities; or alternatively add a new definition for 'Auxiliary Dwelling Unit – Carriage Houses' but still include this within the Itinerant Lodging definition. The maximum square footage of a carriage house unit (upper floor above a garage) might be 500 square feet if above a two car garage, or 750 square feet if above a three car garage.

If a 'use' is listed within the Land Use Table 15.44.020, it seems to me for clarity sake that most (but certainly not all) of those terms be listed in the Definitions Chapter 15.04.020. Conversely, if a use is listed within the Definitions Chapter, it should likely be listed in the Land Use Table. For instance, 'Timeshare' is already listed in the definition of Itinerant Lodging but does not show in the Land Use Table. For Clarity, we request that 'Timeshare' be included in Definitions 15.04.020 and included in the Land Use Table 15.44.020 for the R3 zone.

CITY OF ILWACO
PLANNING COMMISSION MEETING

Tuesday, February 2, 2016

A. Call to Order

1. Chair Malin called the meeting to order at 6:04 p.m.

B. Roll Call

1. Present: Commission Chair Nansen Malin, Commissioner Jackie Sheldon, Commissioner Nancy McAllister. Commissioner K Harrison. Absent Commissioner Cheri Diehl
2. Staff: Holly Beller, City Clerk

C. Approval of Agenda

ACTION: Motion to approve the agenda. (McAllister/Sheldon) 4 Ayes 0 Nays 0 Abstain

D. Approval of Minutes

ACTION: Motion to approve the Regular Meeting minutes of January 12, 2016. (Sheldon/McAllister) 4 Ayes 0 Nays 0 Abstain.

E. Reports

1. Commission Chair Malin reported that Bruce Peterson had contacted her regarding the vacation rental ordinance changes and encouraged a swift action by the commission.
2. The City Clerk reported on new business applications, new construction, and Fisherman's Park.

F. Comments of Citizens and Guests Present

H. Discussion

1. **Short Term Vacation Rentals**

Sam Rubin provided the commission with the proposed language for the changes to the Short Term Vacation Rental Ordinance. The commission discussed which zoning districts should allow the use outright, which districts should only be allowed as a Conditional Use Permit, and which districts should not allow short term rentals under any circumstance. The discussion referred back to meetings from the last two years in which citizens voiced concerns over short term rentals and the effect in can have in changing the character of a neighborhood. **The commission recommends that short term rentals be allowed as an outright use in the districts of R-3, R-4, R-5, C-1, C-2, and M-1. The commission recommends that short term rentals shall not be allowed under any circumstances in the districts of R-1 and R-2. Short term rentals shall not be allowed under a conditional use permit, although existing short term rentals permitted by a conditional use permit shall be considered grandfathered.**

The commission discussed conditions of occupancy for short term rentals. **The commission recommends that the maximum occupancy for a short term rental dwelling shall be two persons per bedroom and two additional persons (e.g. a two-**

bedroom dwelling is permitted a maximum occupancy of six persons). For the purpose of establishing occupancy, a person is defined as an individual at least two years of age. The maximum occupancy may be further limited by off-street parking requirements. Occupancy of a dwelling shall not exceed twelve persons. The commission desires that the Fire Chief be the responsible official to define "bedroom" for the purpose of determining occupancy. Additionally, Item E shall be amended to read "National Oceanic and Atmospheric Administration Weather **Alert** radio". Short term rentals must complete an application for the rental use. Only an owner of the property may submit the application for approval by the city, prior to being issued a business license.

ACTION: I move to recommend the proposed language to city council with the corrections and additions contained herein. (McAllister/Sheldon) 4 Ayes 0 Nays 0 Abstain.

H. Adjournment

ACTION: Motion to adjourn the meeting (McAllister). Chair Malin adjourned the meeting at 7:24 p.m.

_____

Nansen Malin, Chair

_____

Holly Beller, City Clerk

CITY OF ILWACO
PLANNING COMMISSION MEETING

Tuesday, March 1, 2016

A. Call to Order

1. Chair Malin called the meeting to order at 6:03 p.m.

B. Roll Call

1. Present: Commission Chair Nansen Malin, Commissioner Jackie Sheldon, Commissioner Nancy McAllister. Commissioner K Harrison, Commissioner Cheri Diehl.
2. Staff: Holly Beller, City Clerk
3. Guests: Councilmember Jon Chambreau, Bruce Peterson, Beth Hash

C. Approval of Agenda

ACTION: Motion to approve the agenda. (Diehl/McAllister) 5 Ayes 0 Nays 0 Abstain

D. Approval of Minutes

ACTION: Motion to approve the Regular Meeting minutes of February 2, 2016. (McAllister/Diehl) 5 Ayes 0 Nays 0 Abstain.

E. Reports

1. Commission Chair Malin attended the City Council meeting to report on the recommendation to council of the Short Term Vacation Rental Ordinance. Comments received from Councilmember Marshall regarding the actions of the Planning Commission were "frustrating" and "unneccesary".

F. Comments of Citizens and Guests Present

1. Councilmember Chambreau thanked the Planning Commission for their efforts over the last several years.

H. Discussion

1. **Short Term Vacation Rentals**

   City Attorney, Heather Reynolds recommended a clarification to the definition of "Vacation Rental".

   ACTION: I move to recommend the proposed ordinance language "use of a dwelling unit or portion thereof" to city council. (McAllister/Sheldon) 5 Ayes 0 Nays 0 Abstain.

   Councilmember Chambreau opined that two distinct actions have been brought forth within the Short Term Vacation Rental Ordinance that being 1) the addition of short term vacation rentals as an allowed use, and 2) removing the ability of a private property owner in R1 and R2 the ability to apply for a CUP. It may be prudent for PC to look at separating these two actions and focus on one or the other to recommend to council.

   ACTION: None taken.

2. **CUP Application for North Star Rental**

Bruce Peterson submitted the application and fee for a short term vacation rental Conditional Use Permit for his second story apartment located in the C1 district.
ACTION: I move to recommend to City Council the approval of the Short Term Vacation Rental Conditional Use Permit for North Star Rental located at 112 First Ave S, Ilwaco. (Diehl/Sheldon) 5 Ayes 0 Nays 0 Abstain

3. **Recreational Vehicle Use**
   Commissioner Diehl presented the discussion item. An example of the proposed Neighborhood Preservation Ordinance will be reviewed at the next meeting. It was suggested that work on this may extend over the summer and recommended to City Council in the fall so that the commission may consider the use and impacts over fishing season.
   ACTION: None taken.
4. **Commission Terms and Appointments**
   K Harrison would like to stay on the commission for another 6 year term, giving her new expiration in January of 2022. Commission Chair Nansen Malin is stepping back from PC for health reasons. Ilwaco Citizen Beth Hash attended the meeting and has sent a letter of interest to Mayor Cassinelli for the open seat.

H. Adjournment

ACTION: Motion to adjourn the meeting (Diehl). Chair Malin adjourned the meeting at 7:12 p.m.

_____
Nansen Malin, Chair

_____
Holly Beller, Deputy City Clerk

CITY OF ILWACO
CITY COUNCIL AGENDA ITEM BRIEFING

A. Meeting Dates: Council Workshop: Public Hearing:
Council Discussion Item: 04/11/16 Council Business Item:

B. Issue/Topic: **Hazard Mitigation Plan Adoption**

C. Sponsor(s):
1. Cassinelli 2.

D. Background (overview of why issue is before council):
1. The 2016 Pacific County Hazard Mitigation Plan update has been "Approved Pending Adoption" by FEMA. The updated plan must now by adopted by all of the participating jurisdictions.

E. Discussion (specific details relevant to the issue, pros/cons, alternatives and any other decision-making details)
1. The plan cannot be edited at this point and must be adopted as approved by FEMA.
2. City Council and City Staff have had several opportunities to comment on aspects of the plan via email requests from Pacific County Emergency Management Agency.
3. Communities are not eligibel for mitigation project grants until the plan is formally approved by FEMA.

F. Impacts:
1. Fiscal:
2. Legal:
3. Personnel:
4. Service/Delivery:

G. Planning Commission: ☐ Recommended ☒ N/A ☐ Public Hearing on

H. Staff Comments:
1.

I. Time Constraints/Due Dates: All resolutions must be returned no later than April 29, 2016.

J. Proposed Motion: **I move to adopt Resolution 2016-XX Pacific County Hazard Mitigation Plan dated February 2016.**

CITY OF ILWACO
RESOLUTION NO. 2016-XX

A RESOLUTION OF THE CITY OF ILWACO, WASHINGTON, ADOPTING THE FINALIZED PACIFIC COUNTY HAZARD MITIGATION PLAN; PROVIDING AN EFFECTIVE DATE; AND FOR OTHER PURPOSES.

WHEREAS, the participating jurisdictions of Pacific County have worked together to develop a strategy known as the Pacific County Hazard Mitigation Plan to improve disaster resistance in the planning area; and

WHEREAS, the Federal Disaster Mitigation Act of 2000 (DMA2000) pursuant 44 CFR Part 201 and the Federal Emergency Management Agency (FEMA) require communities to adopt an approved hazard mitigation plan in order to be eligible to receive pre-disaster and post disaster federal funding for mitigation purposes; and

WHEREAS, the participating jurisdiction has participated in the hazard mitigation plan by the formation of a Mitigation Planning Committee (MPC); and

WHEREAS, the MPC recommends the formal adoption of the Pacific County Hazard Mitigation Plan by the passing of this resolution.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF ILWACO, WASHINGTON, DOES RESOLVE AS FOLLOWS:

Section 1.
The participating stakeholder hereby approves and adopts the hazard mitigation plan in its entirety with projects as adopted by the MPC; and agree to be governed by the Hazard Mitigation Plan attached hereto and incorporated.

Section 2.
The participating stakeholder authorizes the appropriate participating officials to pursue funding opportunities for implementation of proposals designated therein; and will upon receipt of such funding or other necessary resources, seek to implement the actions contained in the hazard mitigation plan.

Section 3.
The participating jurisdiction will continue to cooperate and participate in the hazard mitigation planning process, holding regular meetings, including reporting of progress as required by FEMA, the Washington Military Department Emergency Management Division and the MPC.

Section 4.
Effective Date. This resolution, being an exercise of power specifically delegated to the city legislative body, is not subject to referendum and shall take effect five (5) days after passage by the City Council.

PASSED BY THE CITY COUNCIL OF THE CITY OF ILWACO, AND SIGNED IN AUTHENTIFICATION OF ITS PASSAGE THIS ___ DAY OF _____, 2016.

_____
Mike Cassinelli, Mayor

ATTEST:

_____
Holly Beller, City Clerk

VOTE	Jensen	Karnofski	Marshall	Chambreau	Forner	Cassinelli
Ayes						
Nays						
Abstentions						
Absent						

EFFECTIVE:

PACIFIC COUNTY SHERIFF'S OFFICE
Sheriff Scott L. Johnson
300 Memorial Drive, P.O. Box 27, South Bend, WA 98586 | Phone 360.875.9395 | Fax 360.875.9393

MEMORANDUM

To: All Hazard Mitigation Plan Stakeholders

From: Scott McDougall, Deputy Director
Pacific County Emergency Management Agency

Date: March 28, 2016

Re: Hazard Mitigation Plan Adoption

The 2016 Pacific County Hazard Mitigation Plan update has been "Approved Pending Adoption" by the Federal Emergency Management Agency (FEMA). The updated plan must now be adopted by all of the participating jurisdictions. The plan cannot be edited at this point and must be adopted as approved by FEMA. (Click the link to see the plan: https://www.dropbox.com/s/kjq14iovud99lm5/Pacific%20County%20Hazard%20Mitigation%20Plan.pdf?dl=0)

The plan must be adopted prior to any of the participating entities receiving Robert T. Stafford Disaster Relief and Emergency Assistance Act's hazard mitigation grants and Flood Mitigation Assistance projects as funding becomes available. Several agencies that participated in the mitigation planning effort have expressed interest in recent announcements of funding and are considering submitting a Letter of Intent. We have coordinated that with Washington State EMD and Letters of Intent that may have already been submitted remain valid pending adoption by resolution of the 2016 Pacific County Hazard Mitigation Plan. It is important that all agencies follow through with adoption by resolution in order to be eligible for this and future funding.

I have attached sample resolution forms for each jurisdiction to this email. The forms contain the language FEMA requires for adoption but each agency may otherwise edit to fit the needs of your jurisdiction. As soon as the resolution has been adopted please forward an original completed resolution to me for inclusion in the final plan. All resolutions must be returned no later than April 29, 2016.

Please feel free to contact me at (360) 875 or 642-9338, or at smcdougall@co.pacific.wa.us with any questions.

U.S. Department of Homeland Security
Region X
130 228th Street, SW
Bothell, WA 98021-9796

FEMA

March 14, 2016

Mr. Tim Cook
State Hazard Mitigation Strategist
Washington State Emergency Management Division
Building 20, MS TA-20
Camp Murray, Washington 98430-5122

Dear Mr. Cook:

As requested, the U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) has completed a pre-adoption review of the ***Pacific County Hazard Mitigation Plan***. The plan successfully contains the required criteria, excluding the adoption, for hazard mitigation plans, as outlined in 44 CFR Part 201. This letter serves as Region 10's commitment to approve the plan upon receiving documentation of its adoption by the Community.

The plan will not be formally approved by FEMA until it is adopted. The communities are not eligible for mitigation project grants until the plan is formally approved by FEMA.

Please contact our Regional Mitigation Planning Manager, Brett Holt, at (425) 487-4553 with any questions.

Sincerely,

Tamra Biasco
Chief, Risk Analysis Branch
Mitigation Division

BH:bb

BOLDplanning
Your Partner in Preparedness

Pacific County
Hazard Mitigation Plan
February, 2016

PCEMA

PACIFIC COUNTY

PCEMA

EMERGENCY MANAGEMENT AGENCY

Encompassing the Following Jurisdictions and Stakeholders:

Pacific County

City of Ilwaco
City of Long Beach
City of Raymond
City of South Bend

Naselle/Grays River Valley School District
Ocean Beach School District
South Bend School District
Willapa Valley School District

Naselle Water Company
North Beach Water District
Surfside Homeowners' Association
Willapa Valley Water District

Ocean Beach Hospital
Willapa Harbor Hospital

Pacific County Fire Protection District #1
Pacific County Fire Protection District #2
Pacific County Fire Protection District #4
Pacific County Fire Protection District #5
Pacific County Fire Protection District #6

Pacific Transit

Port of Chinook
Port of Ilwaco
Port of Peninsula
Port of Willapa Harbor

Public Utility District #2

Prepared By:

BOLD planning

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Executive Summary

Plan Purpose
The original purpose of the Pacific County Hazard Mitigation Plan is to provide guidance to substantially and permanently reduce Pacific County and its communities' vulnerability to natural and technological hazards. The 2015 Pacific County Hazard Mitigation Plan revision is twofold in its purpose. This plan revision encompasses the continuation and updating of its original mission as well as the incorporation of new GIS technologies, improved risk assessment methodologies, and additional best practices.

The plan is intended to promote sound public policy designed to protect citizens, critical facilities, infrastructure, private property, and the natural environment. This will be achieved by increasing public awareness and education, documenting resources for risk reduction and loss-prevention, and identifying and prioritizing activities and strategies guiding the community towards the development of a safer, more sustainable community.

Plan Organization
The Pacific County plan is developed and organized within the rules and regulations established under the 44 CFR 201.6. This plan contains sections detailing the planning process, Pacific County's communities and the planning area, a hazard vulnerability and risk assessment, capabilities assessment, and a mitigation strategy designed for the purpose of guiding Pacific County and its participating jurisdictions to become more disaster-resilient communities.

Plan Financing
The Pacific County Mitigation Plan has been financed by Pacific County and a FEMA Pre-Disaster Mitigation Program Grant administered through the State of Washington. The federal grant provided 75% of the total plan's cost while Pacific County matched the remaining 25% with local funding.

Plan Participation
The Pacific County Hazard Mitigation Plan was developed as the result of an ongoing collaborative effort between the full range of stakeholders in the planning area, local authorities, school districts, municipal jurisdictions, and the State of Washington.

Concerns, capabilities, interests and historical data were gathered through interviews with stakeholders from within the community, along with a number of electronic datasets, and ongoing planning committee work sessions. The public were granted opportunities to provide their input, influence, share knowledge, and be active participants in the plan's development. This was accomplished through a number of public outreach campaigns. Any comments, questions, and discussions resulting from these activities were given consideration in the development of this plan.

Each participating stakeholder was expected to attend work group meetings, submit required data, assist in the development of mitigation strategies and initiatives, participate in a public review process, and submit an approved adoption resolution.

The Pacific County Mitigation Planning Committee (MPC) was created during the development of Pacific County's last FEMA approved mitigation plan. Throughout the last five years, it guided, assisted, and implemented the mitigation strategies and maintenance requirements prescribed in the last plan. This committee and plan development was guided and assisted by consultants from BOLDplanning Inc. through the update process.

The Mitigation Planning Committee was comprised of representatives from the following jurisdictions and agencies:

1.) Pacific County
2.) City of Ilwaco
3.) City of Long Beach
4.) City of Raymond
5.) City of South Bend
6.) Naselle/Grays River School District
7.) Ocean Beach School District
8.) South Bend School District
9.) Willapa Valley School District
10.) Naselle Water Company
11.) North Beach Water District
12.) Willapa Valley Water District
13.) Surfside Homeowners' Association
14.) Ocean Beach Hospital
15.) Willapa Harbor Hospital
16.) Pacific County Fire Protection District #1
17.) Pacific County Fire Protection District #2
18.) Pacific County Fire Protection District #4
19.) Pacific County Fire Protection District #5
20.) Pacific County Fire Protection District #6
21.) Pacific Transit
22.) Port of Chinook
23.) Port of Ilwaco
24.) Port of Peninsula
25.) Port of Willapa Harbor
26.) Public Utility District #2

Hazards Identified

The state-wide analysis completed by the State of Washington's Emergency Management Division and criteria provided by FEMA identified nine natural and seven technological hazards for consideration. Through the planning process it was determined by historical record analysis, local concerns and interests, and forward thinking by the MPC that the community would best be served by addressing seven natural hazards, one technological hazard, and the removal of two previously included hazards.

The following hazards were found to be the most prevalent and dangerous to the planning area and its communities:

- Coastal Erosion
- Earthquakes
- Floods
- Hazardous Materials
- Landslides
- Severe Storms
- Tsunamis
- Winter Storms

Based on various state agencies' analysis, local input, historical analysis, and GIS analysis in this plan, the following natural hazards are no longer considered a significant or reasonable threat or risk to Pacific County and its participating stakeholders:

- Dam Failure
- Wildland Fires

Plan Goals & Objectives

This plan defines and establishes goals and objectives that are directly relevant to meeting the purpose of the plan. The following is a list of the three major goals and subsequent objectives identified and adopted by the participants of this plan. The specific adoption of these goals and subsequent objectives by individual participating agencies is also found in their respective sections.

1. **Protect Life, Property & the Environment**
   a) Ensure code compliance
   b) Protect electrical infrastructure, transportation, communications, and water
   c) Improve structural and environmental resiliency to disasters

2. **Increase Public Awareness**
   a) Educate the public
   b) Expand use of existing information channels
   c) Target high risk populations

3. **Encourage Partnership and Enhance Planning Activities**
   a) Increase partnerships in developing business resiliency
   b) Develop activities to support public education
   c) Increase engagement of private sector in planning efforts

The MPC established this set of goals and objectives as guidelines for this plan's participants. These goals and objectives have been cross-referenced with the planning area's capabilities and priorities to yield a set of strategies in the form of activities and projects for implementation over the next five year cycle. These activities include potential funding sources, lead departments and agencies, timelines, monitoring and evaluation indicators, and prioritization ranking.

Plan Implementation – Adoption

Pursuant to the authority of Government Code Section 36805, the Pacific County Board of County Commissioners has the legislative capacity to adopt policies, ordinances and amendments. Pursuant to their respective governing statutes and regulations, the governing bodies of participating agencies and jurisdictions have the authority to adopt the Pacific County Hazard Mitigation Plan. Dates that the plan was adopted by Pacific County and the respective participating jurisdictions are listed in Appendix H – Adoption Resolutions.

Plan Implementation – Monitoring, Evaluation, Update, and Revision

The Pacific County Mitigation Plan can be incorporated by reference into the respective comprehensive plans, development plans and other tools of Pacific County and the Cities of Ilwaco, Long Beach, Raymond and South Bend. It can also be used to provide information and to serve as a basis for zoning and other regulatory tools to

help guide the continued physical development of the Pacific County and the participating jurisdictions. The Pacific County Mitigation Plan shall be formally updated every five years. A detailed description of the processes is found in Section 3 of this plan.

Continued Public Involvement

The Pacific County Mitigation Planning Committee is dedicated to the continued involvement of the public during any periodic review and the 5 year update as required by FEMA. Pacific County has established strategies herein which will provide opportunity for continued public involvement. These strategies include a copy of the adopted plan to be placed at community locations, such as libraries, and on the Pacific County Emergency Management Agency website along with a phone number for the public to direct questions or comments regarding the plan to designated Emergency Management personnel.

Conclusion

Pacific County and its participating agencies are fully aware that this plan is a living document that will grow along with the jurisdiction through the MPC, and the efforts made by the community. Additionally, they will continue to make a concentrated effort to not only focus on the mitigation efforts within the county but will strive to be inclusive of their neighboring jurisdictions, stakeholders and community-based organizations.

Introduction to Mitigation

The Emergency Management Cycle & Mitigation
Understanding this cycle is the first step in effectively planning and operating in relation to all disaster related activities. The emergency management cycle is an open-ended and ongoing process. The four phases in the process are mitigation, preparedness, response, and recovery. Each phase of the cycle can last years or moments in length while different paths can exist simultaneously.

Mitigation planning is the process of determining how to reduce or eliminate the loss of life and property damage resulting from natural and human-caused hazards.

It is carried out as any sustained action to reduce or eliminate long-term risk to life and property from a hazard event. Mitigation encourages long-term reduction of hazard vulnerability. As is the goal of emergency management, the goal of mitigation is to save lives and reduce property damage.

The Disaster Mitigation Act of 2000 (DMA 2000)
In the past, federal legislation has provided funding for disaster relief, recovery, and some hazard mitigation planning. The Disaster Mitigation Act of 2000 became law on October 30, 2000, and amends the Robert T. Stafford Disaster Relief and Emergency Assistance Act (the "Stafford Act") (Public Law 93-288, as amended). Regulations for this activity can be found in Title 44 of the Code of Federal Regulations Part 206, Subpart M.

This legislation reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur. This act establishes a pre-disaster hazard mitigation program and new requirements for the national post-disaster Hazard Mitigation Grant Program.

Section 322 of the act specifically addresses mitigation planning at the state and local levels. It identifies new requirements that allow HMGP funds to be used for mitigation planning activities, and increases the amount of HMGP funds available to states that have developed a comprehensive, enhanced mitigation plan prior to a disaster. States and communities must have an approved mitigation plan in place prior to receiving post-disaster HMGP funds. Local and tribal mitigation plans must demonstrate that their proposed mitigation measures are based on a sound planning process that accounts for the risk to and the capabilities of the individual communities.

DMA 2000 is intended to facilitate cooperation between state and local authorities, prompting them to work together. It encourages and rewards local and state pre-disaster planning and promotes sustainability as a strategy for disaster resistance. This enhanced planning network will better enable local and state governments to articulate accurate needs for mitigation, resulting in faster allocation of funding and more effective risk reduction projects. To implement the new DMA 2000 requirements, FEMA prepared an interim final rule, published in the Federal Register on February 26, 2002, at 44 CFR Parts 201 and 206, which establishes planning and funding criteria for states and local communities.

On October 31, 2007, FEMA subsequently published an Interim Rule in the Federal Register, which ensures the Flood Mitigation Assistance (FMA) program planning requirements are consistent with the mitigation planning regulations as cited in the Code of Federal Regulations (CFR) at Title 44, Chapter 1, Part 201 (44 CFR Part 201).

This interim rule established that local communities must comply with mitigation planning requirements to be eligible to apply for FEMA mitigation project grant funding, including FMA and FEMA's Severe Repetitive Loss Program. Meeting the requirements of the regulations cited above ensures participating jurisdictions in the planning area will be eligible to receive disaster assistance, including hazard mitigation grants available through the Robert T. Stafford Disaster Relief and Emergency Assistance Act, P.L. 93-288, as amended.

The Pacific County Emergency Management Agency (PCEMA) has the responsibility to coordinate all local activities relating to hazard evaluation and mitigation, and to prepare and submit to FEMA a local hazard mitigation plan, following the criteria established in 44 CFR 201.6 and Section 322 of the Disaster Mitigation Act of 2000 (Public Law 106-390).

Current & Past Mitigation Activities

Planning is the key to making mitigation a proactive process, and pre-disaster planning is an essential element in building an effective mitigation program. Mitigation plans emphasize actions taken before a disaster happens to reduce or prevent future damages. Preparing a plan to reduce the impact of a disaster before it occurs can provide a community with a number of benefits. The following are examples of what PCEMA does and supports on a daily basis to increase the resiliency of the planning area:

- Enact and enforce building codes, zoning ordinances, and other measures to enhance their legal capability in an effort to protect life and property.
- Make the public aware of hazards that present risks to people and property and measures they can take to reduce their risk and possible losses.
- Comply with federal and other regulations that are designed to reduce disaster costs as well as preserve and protect natural, historical, and cultural resources.

Because every community exists in a distinct natural, economic and social environment, the local hazard mitigation plan must reflect the unique needs, conditions and concerns of Pacific County and its communities, agencies and organizations. Mitigation plans are designed to correspond with community goals in order to provide a plan which best suits the overall needs of that community. The plan must consider the local geography, demography, community size, economy, land uses, current community goals, and the hazards by which it is defined. Pacific County's efforts must reflect the needs of the entire community, in order to safeguard all population groups within the community, all sectors, and take into consideration what vision the community has for the future.

Mitigation plans can cover numerous hazards. By conducting an assessment of community vulnerability and capability to deal with various hazards, communities can prioritize needs and develop potential solutions to current and potential problems. This evaluation provides a comprehensive strategy to contend with hazard preparation, response and recovery. Pacific County's plan must fit into the work being done currently by the community and fit into the culture of those who will undertake the strategies to make it successful.

By properly mitigating and increasing resiliency, communities save on response and recovery operations by not having to allocate emergency resources and rescues operations after a disaster. Additionally, properly mitigating decreases post disaster costs by reducing the cost and number of repairs to buildings and infrastructure.

Many disaster assistance agencies and programs, including FEMA, require pre-disaster mitigation plans as a condition for both mitigation funding and for disaster relief funding. Such plans must include a thorough evaluation of potential hazards and community readiness for potential disasters. Programs that require such a plan include the Hazard Mitigation Grant Program (HMGP), which is authorized by Section 404 of the Stafford Act and the Flood Mitigation Assistance Program (FMA) both of which are overseen by FEMA and managed by the state.

This plan reflects the requirements of the FEMA and Washington EMD regulations. It will also attempt to proactively support these initial and future mitigation planning efforts by looking beyond FEMA and Washington EMD funding, developing relationships with funding sources from private sector and other partnerships, and searching for alternative government resource support.

Section 1 – The Planning Process

1.1 – Plan Introduction

In the fall of 2014, under the leadership of the PCEMA, a number of public agencies in the county agreed to commit to the development of a county-wide multi-hazard mitigation plan update (hereinafter referred to as the Pacific County Hazard Mitigation Plan (HMP)) and associated planning effort.

The Pacific County Government and PCEMA took the lead in beginning the process to update their HMP. Taking advantage of funding opportunities authorized by DMA2000, Pacific County developed and distributed a Request for Proposals (RFP) to update their County-wide Multi-Hazard Mitigation Plan in November of 2014. After a selection process, Pacific County entered into a contract with BCLDplanning Inc. to begin the mitigation plan update process.

In February of 2015, the PCEMA formally invited cities, special purpose districts, fire districts, schools, water districts and other public agencies in Pacific County to take part in the mitigation plan update process.

The Pacific County Hazard Mitigation Plan consists of nine government jurisdictions and seventeen stakeholder organizations; the county, four cities, four school districts, four water districts, two hospitals, the county's transit authority, five fire districts, four ports, and a public utility district. Each organization actively participated in the plan update process from its inception. Each organization provided at least one representative on the MPC.

MPC members attended meetings, solicited input from their communities, and ensured that any and all pertinent information was reflected in the plan update.

If a committee member was not able to attend a meeting, they were notified via telephone and email of the agenda. Any documentation presented at the meeting was supplied to the committee member for review. A detailed description of each participant's contributions by phase is provided in Section 1.2.2 – Participation while a complete list of the MPC is provided in Section 1.3 – Stakeholders.

1.2 – Plan Development

1.2.1 – Plan Drafting Stage

Pacific County's revision process began in September of 2014, when the PCEMA was awarded a PDM grant through the WA EMD. Pacific County was awarded the grant to begin the process of updating their previously approved hazard mitigation plan. Following the funding commitments, Pacific County hired BOLDplanning to facilitate the plan's development.

Seven planning events were held throughout the planning process. Plan development kicked-off off on 18 February 2015. Three meetings were held over the next few days, two open community meetings and one stakeholder meeting. The open community meetings were advertised for over two weeks in advance and were held in tandem with other PCEMA presentations, including a tsunami preparedness presentation given by the WA EMD. The stakeholder meeting was comprised of PCEMA, BOLDplanning, and a majority of the principle plan stakeholders. All participating jurisdictions actively participated in the planning process through soliciting input and participation in meetings. The final planning meetings were held on October 8th, 9th, and 10th of 2015. Planning events also included conference phone calls with municipal and agency officials who could not attend scheduled meetings.

Throughout the process the public was given opportunities to review HMP drafts, ask questions, and provide input on hazards. They were invited to provide feedback on mitigation project prioritization, hazard identification, and hazard ranking. Details and documentation of the public's participation can be found in Appendix C – Public Participation.

Planning Process Summary

1.) Each participating jurisdiction appointed a jurisdictional representative along with other stakeholders, PCEMA, and the BOLDplanning Mitigation Department.

2.) The PCEMA engaged BOLDplanning to provide staff support in facilitating the planning process and preparing the plan.

3.) Meetings were held with committee members to understand and agree on planning processes and steps required, including organizing resources, assessing hazards, developing a mitigation plan, implementing the plan and monitoring progress.

1.2.2 – Major Mitigation Planning Meetings

The Pacific County MPC held various public meetings to discuss the mitigation plan update process as well as gain public support and input for the plan. The following is a brief synopsis of those meetings. Proof of meetings, sign in sheets, and public notification documentation can be found in Appendix C – Public Participation.

Public Information Meeting
18 February 2015
A public announcement ran for two weeks the PCEMA Preparedness Post, the PCEMA website, and the PCEMA blog. The public was invited to voice any concerns, ask questions, and provide input. The meeting was on-site in Pacific County with Marilyn Nikolas from BOLDplanning available in person to answer any technical questions. Documentation for this meeting is located in Appendix C – Public Participation.

Public Information Meeting
19 February 2015
A public announcement ran for two weeks in the PCEMA Preparedness Post, local newspaper, the PCEMA website, and the PCEMA blog. The public was invited to voice any concerns, ask questions, and provide input. The meeting was on-site in Pacific County with Marilyn Nikolas and Anthony Gertz from BOLDplanning available in person to answer any technical questions. Documentation for this meeting is located in Appendix C – Public Participation.

Stakeholder Kick-Off Meeting
20 February 2015
Each stakeholder organization from the last plan was invited to attend the kick-off meeting. They were personally invited by the PCEMA. This meeting was closed to the public. It was held on-site by Marilyn Nikolas and Anthony Gertz from BOLDplanning at the Naselle Timberland Library. The meeting consisted of an introduction to the company, hazard mitigation, and an overview of the planning process. Participation and expectations were discussed and any questions or concerns were addressed. Documentation for this meeting is located in Appendix C – Public Participation.

Plan Development Update & Review Meeting
9 April 2015
Marilyn Nikolas, Project Coordinator from BOLDplanning, met with PCEMA and stakeholders on-site to review the 1st completed project milestone. They conducted project planning and strategic planning goals for the next phase of plan development.

Plan Draft Review Meeting
8 October 2015
The PCEMA held an Emergency Management Council meeting in which this plan's draft was showcased to the council. Marilyn Nikolas and Tony Gertz from BOLDplanning were available on-site to deliver a presentation of the plan draft, answer questions, and solicit input from the council.

Plan Draft Review Meeting
9 October 2015
The PCEMA and BOLDplanning held a plan draft review meeting with this plan's stakeholder. Marilyn Nikolas and Tony Gertz from BOLDplanning were available on-site to deliver a presentation of the plan draft, answer questions, and solicit input from the council. This meeting granted the plan's stakeholders the opportunity to review the plan draft prior to submission for review.

Pacific County Preparedness Fair
10 October 2015
PCEMA held a public preparedness fair with demonstrations and games designed to educate the community on how to prepare for and survive a disaster. This plan was showcased at the event, inviting the public to review, make suggestions, and comment on the plan. A representative from BOLDplanning was present on-site to help showcase the plan and answer any questions.

Hazard Mitigation Plan Adoption Signing
To Be Determined
The Pacific County Hazard Mitigation Plan adoption letters will be disseminated and signed by the participating jurisdictions. The signing of these resolutions codifies the adoption of the HMP by the participating stakeholders.

1.3 – Stakeholder Participation

The Pacific County MPC is made up of individuals working together for the development and ongoing maintenance of this plan. The participants are grouped into three categories.

Municipalities and School Districts
This group consists of appointed representatives from municipal governments and school districts within the planning area.

Other Stakeholders
This group consists of representatives from the local community, regulatory authorities, emergency services, commercial interests, and other relevant organizations.

The Public
FEMA requires this planning effort to be open to constant input from interested citizens in compliance with the Sunshine Laws. In Washington, public meetings must comply with the Washington Open Meetings Law, unless established by statutory exemption. Therefore, any individual citizens who wish to be involved in this effort to mitigate future disasters are encouraged to attend MPC meetings and to solicit relevant comments to be included in the draft sections of the written plan.

Members of the MPC took part in periodic planning meetings, public meetings and events and individual meetings with BOLCplanning and PCEMA staff. Their specific involvement included activities such as collection and development of planning information, providing input into the planning process, reviewing draft editions of the plan and providing written documentation demonstrating their commitment to mitigation and intent to adopt the final approved plan.

Each participating organization was expected to attend a majority of the regular committee meetings, submit required data as requested, participate in the development of general information for the plan as well as their own individual planning information, mitigation strategies and initiatives, participate in a public review process, and submit the plan for formal adoption through their respective governing body. Information was kept on attendance, input and providing requested documentation.

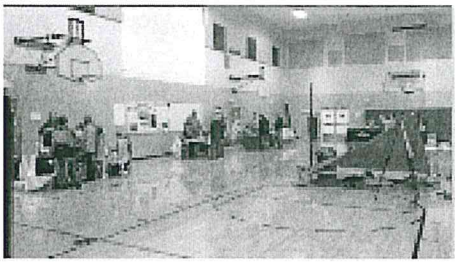
The following table details the MPC members who participated in the hazard mitigation planning process. This list contains all relevant local and state agencies involved in hazard mitigation activities, agencies that have the authority to regulate development, and any appropriate neighboring communities.

PCEMA

Table 1 – MPC Members and Partners			
Name	**Organization**	**Position**	**Collaboration/Invitation**
Principal Plan Developers			
Tony Certo	HCI Planning	Mitigation Planner	Project Manager and mitigation specialist
Marilyn Nicolas	HCI Planning	Project Coordinator	Organized planning schedule, meetings, and development process
Local Governments			
Stephanie Fritz	Pacific County EMA	County Judge	Represented jurisdiction and provided input
Scott	Pacific County EMA	Director	Represented jurisdiction and provided input
Shelly Mitge	Pacific County Public Works	GIS Analyst	Provided additional support and input
Kathy Sosor	Pacific County		Provided additional support and input, participated in the plan review
Leith Taylor-Eldred	Pacific County	Community Development Director	Provided additional support and input, participated in the plan review
Mike Cusanelli	City of Tweed	Mayor	Represented jurisdiction and provided input
David Classon	City of Long Beach	City Administrator	Represented jurisdiction and provided input
Jason Dunchiner	City of Raymond	Mayor	Represented jurisdiction and provided input
Dennis Hook	City of South Bend	Dept. of Public Works	Represented jurisdiction and provided input
School Districts			
Lisa Nelson	Naselle/Grays River School District	Superintendent	Represented jurisdiction and provided input
Sandie Graff	Ocean Beach School District	Transportation Director	Represented jurisdiction and provided input
Jon Tremblaire	South Bend School District	Superintendent	Represented jurisdiction and provided input
Bob Frase	Willapa Valley School District	Superintendent	Represented jurisdiction and provided input
State Agencies			
Tim Walsh	WA DNR	Chief Hazards Geologist	Provided technical assistance for tsunami modeling
Brynne Walker	WA EMD	Hazard Mitigation Programs Manager	Provided WA EMD oversight and technical assistance
Academia, Neighboring Communities, and Other Organizations			
Jacob Brundage	Fire District #1		Stakeholder representative
Dale Hughes	Fire District #2	Commissioner	Stakeholder representative
Carol J. Haven	Fire District #4	Administrative Staff	Stakeholder representative
Gene Kocot	Fire District #5		Stakeholder representative
Jake Lagergen	Fire District #6	Fire Chief	Stakeholder representative
Carol J. Haven	Naselle Water	Administrative Staff	Stakeholder representative
William Neal	North Beach Water	General Manager	Stakeholder representative
Charity L. Harris	Ocean Beach Hospital	Disaster Preparedness Coordinator	Stakeholder representative
Richard Evans	Pacific County Transit		Stakeholder representative
Ashley Davis	Port of Chinook	Manager	Stakeholder representative
Guy Glenn	Port of Tweed	Manager	Stakeholder representative

Name	Organization	Position	Collaboration/Invitation
Mary DeLong	Port of Peninsula	Manager	Stakeholder representative
Rebecca Chaffee	Port of Willapa Harbor	Manager	Stakeholder representative
Doug Miller	Public Utility District #2	General Manager	Stakeholder representative
Laura Frazier	Surfside Homeowners Association	Manager	Stakeholder representative
Gary Spear	Willapa Harbor Hospital	Facilities Director	Stakeholder representative
Shawn Aust	Willapa Valley Grown	Assistant Superintendent	Stakeholder representative

1.4 – Community Involvement



The Pacific County MPC provided the opportunity for neighboring communities, agencies, businesses, academia, nonprofits, and other interested parties to be involved in the planning process. The public was notified of open meetings via the PCEMA Preparedness Post, a local newspaper (The Daily Post), PCEMA's Facebook page, PCEMA's website, and PCEMA's preparedness blog.

Additionally, participating jurisdictions were notified of MPC meetings via e-mail and telephone. Emergency managers from neighboring counties were personally invited to attend the public draft review meeting.

At the first two public information meetings, BOLDplanning presented and outlined the mitigation plan update process to the public. During the first stakeholder meeting, BOLDplanning presented and outlined the mitigation plan update process and discussed stakeholder participation and expectations. Community profile and risk assessment questionnaires were handed out as the first step in the plan update's data collection process. In all three meetings, the public and other stakeholders were encouraged to ask questions and provide their input. During latter public review meetings, concerned citizens and other parties were invited to review the most current draft, provide any input of feedback, and ask any relevant questions of the Pacific County MPC and BOLDplanning.

Relevant federal, state, local, and tribal governments, private, non-profit, regional organizations, and agencies with the authority to regulate development were invited to provide input and technical expertise through the public notices. They were contacted directly when their expertise was deemed necessary to the success of the plan. The entities who volunteered to participate are listed below.

Table 2 – Partner Involvement by Entity

Entity Classification	Entity	Entity Input
Federal Agencies	NOAA	Provided weather data and historical records. Co-Authored tsunami modeling.
	NWS	Provided weather data and historical records.
	USGS	Provided historical seismic data and coastal erosions studies.
State Agencies	WA DNR	Provided seismic studies.
	WA EMD	Provided state oversight and technical assistance.
Local Governments	Participating Fire Districts	Plan principles.
	Participating Municipalities	Plan principles.
	Participating Public Utility District	Plan principle.
	Participating Water Districts	Plan principles.
	PCEMA	Coordinating agency and plan authority.
Private Organizations	BOLDplanning	Primary plan developers.
	Participating Hospitals	Plan principles.
	Participating Ports	Plan principles.
Academia	Participating School Districts	Plan principles.
	University of Washington, Seattle	Co-Authored tsunami model.

Section 2 – Local Procedures & Resources

2.1 – Available Resources

2.1.1 – Documentation Resources

The MPC conducted a comprehensive review of Pacific County and the participating jurisdictions to determine the availability of existing emergency management and preparedness information.

Pacific County Hazard Mitigation Plan
Pacific County is currently covered by a FEMA approved local hazard mitigation plan. The current plan has been reviewed and is incorporated throughout this plan per FEMA requirements.

National Assessment of Shoreline Change: Historical Shoreline Change Along the Pacific Northwest
This study, published in 2012, served as the primary reference source for this plan's assessment of coastal erosion. This is the most up to date and in depth study directly referencing the planning area. It provided specific average and mean shoreline change data for Pacific County and its at-risk areas.

Pacific County and City Municipal Codes
Each participating city's municipal codes contain provisions relevant to hazard mitigation and this document. More information on these can be found in Section 5 of this plan.

Project Safe Haven: Tsunami Vertical Evacuation on the Washington Coast
This study was produced under the National Tsunami Hazard Mitigation Program by a team from the University of Washington, College of Build Environments and the Washington Emergency Management Division collaborating with the City of Long Beach, PCEMA, and the Shoalwater Bay Tribe. This document provides mitigation strategies, addressing the tsunami threat and assesses 25 tsunami shelter locations throughout the planning area.

Tsunami Inundation Modeling of Ocean Shores and Long Beach, Washington due to a Cascadia Subduction Zone Earthquake
This study was conducted by NOAA's Center for Tsunami Research and the Joint Institute for the Study of Ocean and Atmosphere at the University of Washington, Seattle. The draft document, dated March 2014 (currently pending publication) offers updated tsunami modeling and insight into the planning area's tsunami vulnerability and risk.

2.1.2 – Fiscal Resources

The MPC conducted an assessment of their available funding options. The following is a list of federal, state, and local funding sources either available, or relevant to the Pacific County HMP.

Biennial Municipal Stormwater Grants of Regional or Statewide Significance
The State of Washington Department of Ecology offers a series of stormwater project grants for increasing stormwater management systems capacities.

Coordinated Prevention Grants (CPG)
CPG protects human health and the environment by reducing human exposure to toxins, reducing waste, ensuring management of solid and household hazardous waste, and promoting energy and resource conservation. CPG provides funding assistance to local governments for planning and implementing programs in their local solid and hazardous waste management plans.

Hazardous Materials Emergency Preparedness Grant (HMEP)
HMEP provides funding for planning and training activities focusing on HAZMAT related transportation safety.

Integrated Planning Grants
These grants provide funding to local governments to conduct assessments of brownfield properties and develop integrated project plans for their cleanup and adaptive reuse.

Flood Mitigation Assistance Program (FMA)
The FMA program is designed to aid in the buyout of repetitive loss and severe repetitive loss properties as well as assist in the funding of flood mitigation projects and activities.

Floodplain Management Grants
The State of Washington Department of Ecology administers a floodplain management grant program that supports planning, mapping, and projects to reduce loss of life and property from riverine flooding.

Hazard Mitigation Grant Program (HMGP)
The HMGP is managed by FEMA and administered by WA EMD. Pacific County does not have any HMGP funds available for mitigation planning.

Local Revenues & Budgets
Recognizing the importance of hazard mitigation planning, Pacific County and its participating jurisdictions have self-funded the 25% match required by the FEMA HMGP grant.

Pre Disaster Mitigation Grant Program (PDM)
PDM is managed by FEMA and is a nationally competitive grant program. The development of this plan has been funded by a PDM grant at a 75% match.

Public Participation Grants (PPG)
PPG provides funding to citizen groups and not-for-profit public interest organizations. PPG can be used for the investigation and cleanup of contaminated sites.

Shorelands and Environmental Assistance (SEA)
The Shoreline Management Act establishes a cooperative program between local and state governments for the management of fresh and saltwater shorelines.

2.1.3 – Technical Resources

The Pacific County MPC employed a variety of technical resources in its plan development. These technical resources were instrumental in completing an accurate vulnerability and risk assessment.

BOLDplanning
With over 11 years of experience in hazard mitigation planning, BOLDplanning's Mitigation Department was the principle plan writer.

ESRI ArcGIS v10
Each map developed for this plan, and the HAZUS models, were developed using ESRI's ArcGIS v10.

FEMA Digital Flood Insurance Rate Maps (DFIRM) – Map Data Center
FEMA's National Flood Hazard Layer (NFHL) data was instrumental in mapping floodplain locations and estimating potential flood impacts and loss estimates.

National Oceanic and Atmospheric Administration (NOAA) National Climatic Data Center (NCDC)
Weather data and historical events were primary provided by NOAA's NCDC.

Pacific County Department of Public Works
The Pacific County Department of Public Works provided shoreline change data for the North Cove area.

United States Geologic Survey (USGS)
The USGS provides GIS and technical information relating to the seismic risk of the planning area.

Washington Department of Natural Resources
The State of Washington's Department of Natural Resources provided tsunami models to the PCEMA and BOLDplanning of the planning area. These models were crucial in assessing the planning area's tsunami risk.

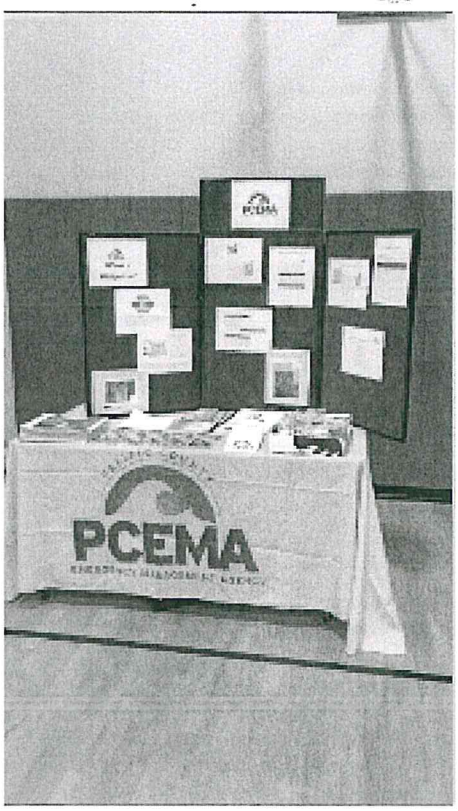
2.2 – Continued Public Involvement

Pacific County is dedicated to involving the public in the continual shaping of its hazard mitigation plan and development of its mitigation projects and activities.

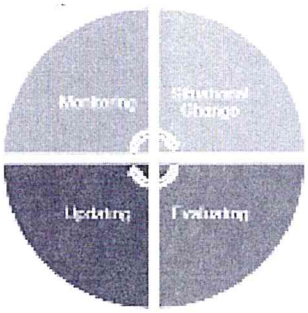
The Pacific County MPC will continue to keep the public informed about its hazard mitigation projects and activities through its EMA's website. Additionally, it will provide a "comments/suggestions" option for the public to submit their input through their website.

The public will also be invited to participate in annual MPC meetings to review and discuss the HMP events of the past year.

Copies of the Pacific County Hazard Mitigation Plan will be available on their website and distributed to each participating jurisdiction.



2.3 – Plan Maintenance Process

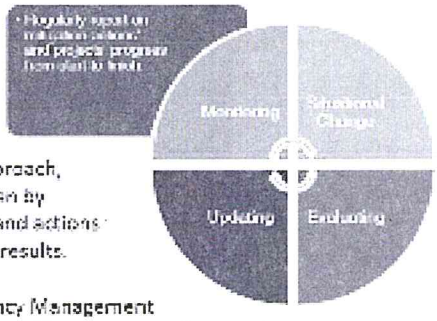


The Pacific County MPC has developed a method to ensure monitoring, evaluation, and updating of its HMP. Upon adoption of the Pacific County HMP, its Emergency Management Council will form a subcommittee on mitigation projects comprised of Pacific County's EMA Chief Deputy and jurisdictional representatives from the MPC. The chair of the subcommittee will be determined by a vote in the subcommittee. Additional members may be added based on necessity. The sub-committee will submit an annual report to the Emergency Management Council.

Please see the Pacific County HMP Quarterly Report form at the end of this section.

PCEMA may request a non-scheduled report on the monitoring, evaluation, or updating of any portion of the HMP due to irregular progress on mitigation actions and or projects, in the aftermath of a hazard event, or for any reason deemed appropriate.

2.3.1 – Plan Monitoring



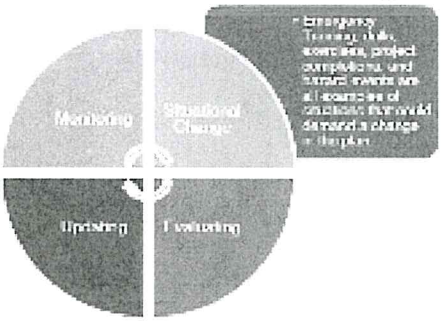
Plan monitoring can be defined as the ongoing process by which stakeholders obtain regular feedback on the progress being made towards achieving their goals and objectives. In the more limited approach, monitoring may focus on tracking projects and the use of the agency's resources. In the broader approach, monitoring also involves tracking strategies and actions being taken by partners and non-partners, and figuring out what new strategies and actions need to be taken to ensure progress towards the most important results.

A monitoring report will be written and submitted to the Emergency Management Council annually and after the annual MPC meeting or when triggered by a situation change. The monitoring report will answer the following questions:

- Is the mitigation project under, over, or on budget?
- Is the mitigation project behind, ahead of, or on schedule?
- Are there any changes in Pacific County's capabilities which impact the HMP?
- Are there any changes in Pacific County's hazard risk?
- Has the mitigation action been initiated or its initiation planned?
- If applicable, has participation in a mitigation action's collaboration been regular?
- If any, what plan updates occurred, why they occurred, and what is their impact?

The plan maintenance process is cyclical and maintenance items can operate simultaneously within the process.

2.3.2 – Plan Evaluating

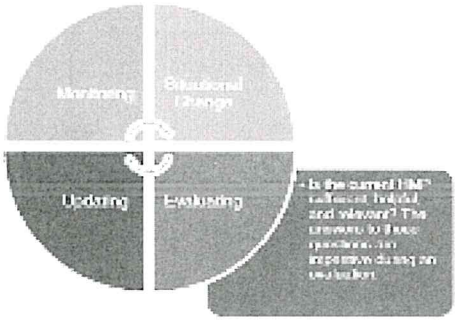


A plan evaluation is a rigorous and independent assessment of either completed or ongoing activities to determine the extent to which they are achieving stated objectives and contributing to decision making.

An evaluation report will be written and submitted to the Emergency Management Council when the situation dictates. The following situations are typical examples of when an evaluation will be necessary

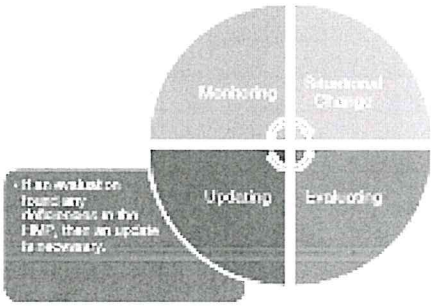
- Post hazard event
- Post training exercise
- Post tabletop or drill exercise
- Significant change or completion of a mitigation project
- Significant change or completion of a mitigation action

An evaluation report will ask the following questions in response to the previously listed events:



- Do the mitigation objectives and goals continue to address the current hazards?
- Are there new or previously unforeseen hazards?
- Are current resources appropriate for implementing a mitigation project?
- Was the outcome of a mitigation action/project expected?
- Are there implementation problems?
- Are there coordination problems?

2.3.3 – Plan Updating



Typically, a HMP update is initiated upon the completion of a plan evaluation and even then, only when the evaluation determines an update is appropriate. Additionally, when new hazard data becomes available it will be added to the HMP. New data will be confirmed or denied at annual MPC meeting.

For whatever reason, a HMP update can be written anytime it is deemed necessary by the PCEMA.

Pacific County will begin their update process three years from this plan's adoption according to FEMA DMA2000 guidelines on local mitigation plan updates under the direction of the Chief Deputy of PCEMA.

PCEMA

Pacific County Local Emergency Planning Committee
Pacific County Hazard Mitigation Plan
Annual Report

Hazard Mitigation Plan Sub Committee Chair:
*Meeting Date:*_____
Plan Approval Date:
Plan Expiration Date:

Have there been any disasters or training events since the last report? If so, list them below:

Disaster Number/Training Event	Hazard Type(s)	Was the hazard expected or unforeseen?	Is a plan update required?
Example: DR-2000	*Volcanic Eruption*	*Unforeseen*	*Yes*
Example: Annual Training	*Flash Flooding*	*Expected*	*No*

Mitigation Projects:

Mitigation Project	Participating Jurisdictions	Proposed/Schedules/In Progress/Completed	Behind/Ahead/On-Schedule	Estimated Completion Date
Example: Tornado Safe Room	*Tenace*	*In Progress*	*On-Schedule*	*1/2/2025*

Miscellaneous Notes:

Section 3 – Community Profile

3.1 – Demographics

The U.S. Census Bureau estimates as of 2014, Pacific County has a total of 20,561 people residing within its boundaries, 6,632 of which reside in cities and towns. According to the most up to date, released Census Bureau projections, none of the participating jurisdictions have significant population growth (over 5%). Conversely, all of the participating jurisdictions except Long Beach have declining populations. Since none of the participating jurisdictions are experiencing significant growth, they also are not going to be experiencing an increase in hazard vulnerability due to demographic changes. Further, as it relates to demographics, the participating jurisdictions with declining populations are considered to have a decreased vulnerability to hazards.

The table below details the participating jurisdictions' demographic information. Jurisdictions with significant growth are highlighted in red while jurisdictions with significant declining growth are highlighted in orange.

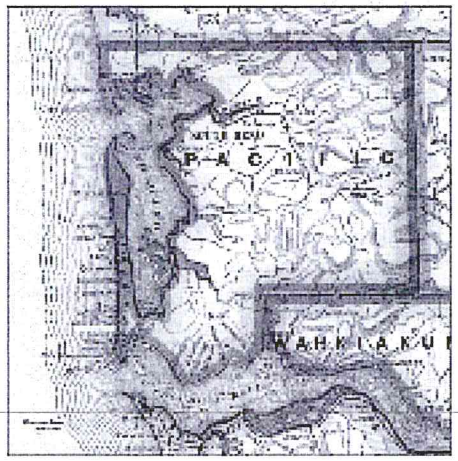
Table 3 – Community Demographics

Jurisdiction	Size (Sq. Mi.)	Population			% Population Change		
		2000	2010	2014	2000 - 2010	2010 - 2014	2000 - 2014
Pacific County (inclusive)*	903.00	23,587	20,920	20,561	-11.31%	-1.72%	-12.63%
Pacific County (exclusive)	893.96	18,657	14,078	13,929	-15.08%	-1.06%	-16.86%
Ilwaco	2.10	950	938	905	-1.47%	-3.31%	-4.74%
Long Beach	1.35	1,988	1,937	1,946	8.50%	-3.00%	4.31%
Raymond	4.06	2,875	2,682	2,797	-6.13%	-8.30%	-6.82%
South Bend	1.83	1,807	1,637	1,594	-9.41%	-2.63%	-11.79%

School District	Students	Staff	Total
Naselle/Grays River SD	908	80	988
Ocean Beach SD	1010	138	1148
South Bend SD	635	90	725
Willapa Valley SD	375	80	455

*The data on Jurisdiction is from the U.S. Census Bureau.

3.2 – Stakeholder Profiles



This section provides a general summary of this plan's participating jurisdictions, stakeholders, and their respective hazard history. It is designed to give a depiction of the social, economic, and geographic factors that later contribute to the hazard risk assessment and mitigation strategy.

3.2.1 – Pacific County

Pacific County was established in 1851 under the Oregon Territory. It boasts a robust tourism economy, 25% of the American oyster harvest, and an impressivaly low crime rate.

Pacific County contains beautiful, lush, and green mountainous coastline examplifying the Pacific Northwest. It includes sandy beaches and rockwalls along its coast and the Columbia River to its south. Inland, it is primarily mountainous with numerous streams and rivers in its valleys where the majority of it population resides.

Pacific County, Washington receives an average of 93.72 inches of rain per year. The US yearly average is 38.67. Snowfall is typically 1.39 inches while the US average is 28.27 inches. The number of days with any measurable precipitation is 134.40.

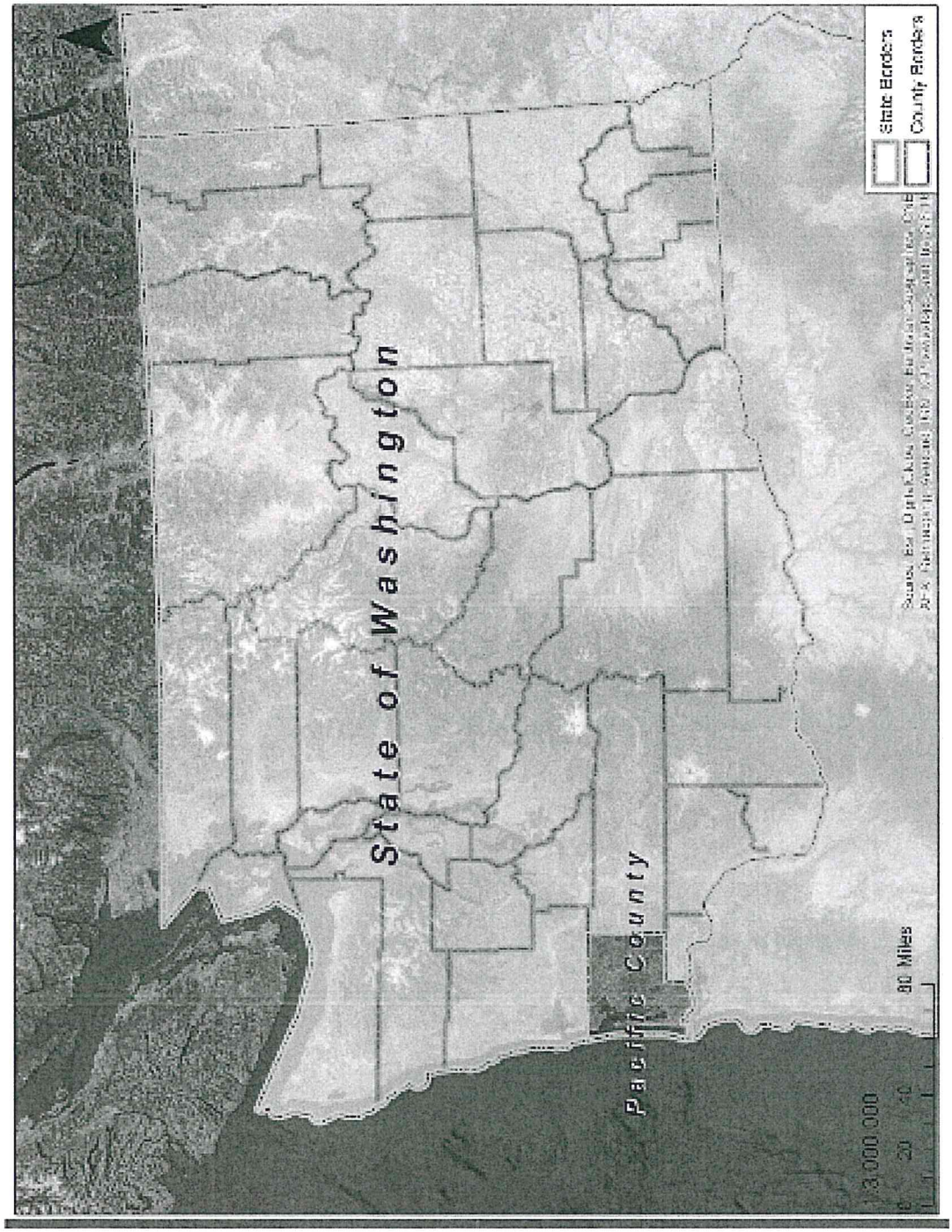
On average, there are 126 sunny days per year in Pacific County. The average summer high is 70.0 degrees and the average January low is 35.1. The comfort index, which is based on humidity during the hot months is a 23 out of 100, where a higher value represents more comfort. The US average comfort index is 58.

Table 4 – Historic Damage, Pacific County

Date	Type	Damage
02/2001	Nisqually Earthquake	$2,321
03/2007	Winter Storms, Winds	$10,754
12/2007	Severe Storms, Flooding	$959,671
01/2009	Winter Storms, Flooding	$101,140
03/2009	Winter storms, Record Snow	$44,973

Point of Contact:
Kathy Spoor, County Administrative Officer
PO Box 6
South Bend, WA 98586

Map 1 – State of Washington



Map 2 – Profile, Pacific County

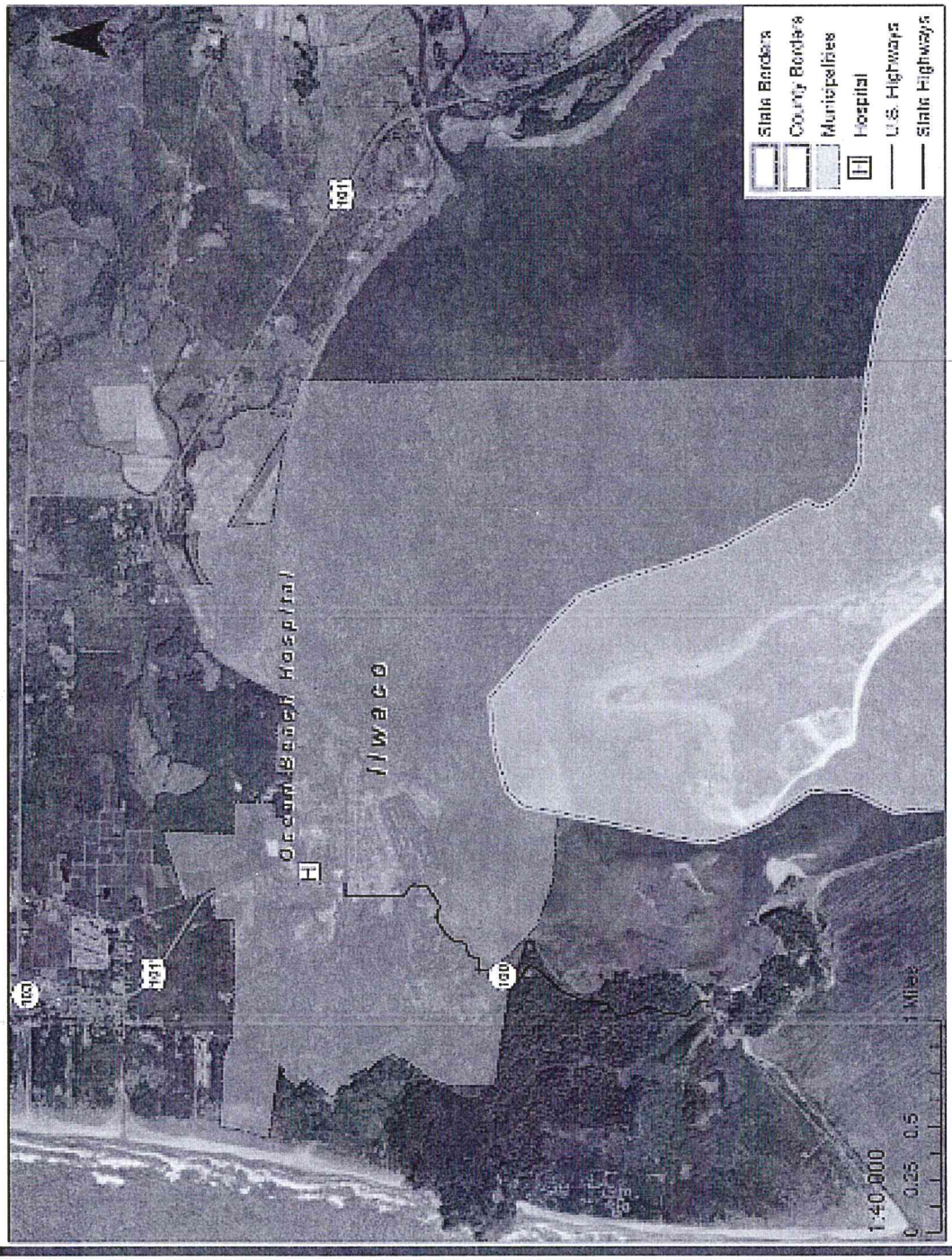
9.2.2 – City of Ilwaco

The City of Ilwaco was incorporated in the year 1890, one year after Washington received its statehood. It is located on the Columbia River and Pacific Ocean, at the last count, has nearly 1000 people within its 5 square mile area. The City is governed by a Mayor/ Council form of government, with 5 Council Members who are elected at large, and a Mayor. Water, sewer, and storm water services are provided by the city. Police services are shared with the City of Long Beach under an interlocal agreement. The Ilwaco Fire Department is a volunteer department with a part-time Fire Chief, Fire Administrator, and numerous volunteers. The City of Ilwaco also has the Port of Ilwaco within the city limits. The City of Ilwaco also holds the Ocean Beach Hospital and Medical Clinic, Ilwaco High School, and Ilwaco Middle School within city limits. Sanitation Services for the community are provided by Peninsula Sanitation which has its business office located at the Port of Ilwaco. Public transportation in Pacific County is provided by Pacific Transit and electrical power to the County is provided by PUD #2 of Pacific County.

The City of Ilwaco's public facilities have not had any significant damage from hazard events.

Point of Contact:
Michael Cassinelli, Mayor
Ilwaco City Hall
120 1st Avenue N
Ilwaco, WA 98624
(360) 642-3145

Map 3 – Profile, Ilwaco



3.2.3 – City of Long Beach

The City of Long Beach was established as a seashore resort by Henry Harrison Tinker in 1880. The city was incorporated in 1922 and serves 1,425 citizens in Pacific County, along with thousands of visitors each year. The city operates on a $4 million annual budget with 35 full and part-time employees providing an array of services including police, fire, parks, recreational and cultural services, land use management and development regulation, street maintenance and construction, water and wastewater services and storm drainage management. The city participates in a range of intergovernmental organizations in order to effectively carry out its responsibilities.

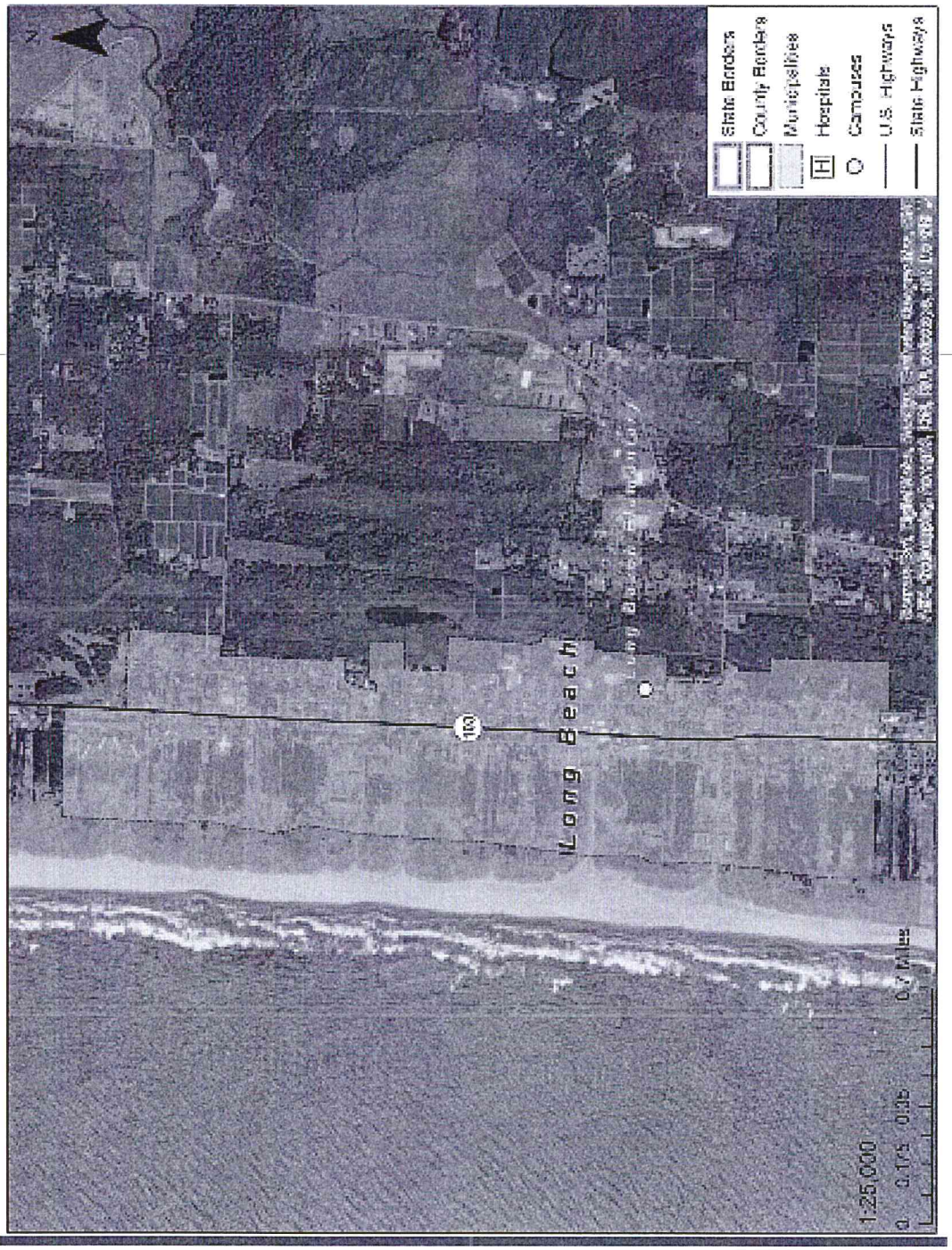
Of notable demographic characteristics of Long Beach, it is the third largest of the four incorporated cities in Pacific County. Although its population is declining, it has an emergent population of retirees; it has a greater proportion of older people than the rest of the state; it has a greater proportion of multi-family units compared to the rest of the county, and approximately one third of the housing units are second homes and vacation homes. The largest employers in Long Beach are government and the leisure and hospitality industries.

Table 5 – Historic Damage, City of Long Beach

Date	Type	Damage
05/2006	Winter Storms	$441,068
12/2007	Severe Storms and Flooding	$31,248

Point of Contact:
David Glasson
Long Beach City Hall
115 Bolstad Avenue
Long Beach, WA 98631
(360) 642-4421

Map 4 – Profile, Long Beach



3.2.4 – City of Raymond

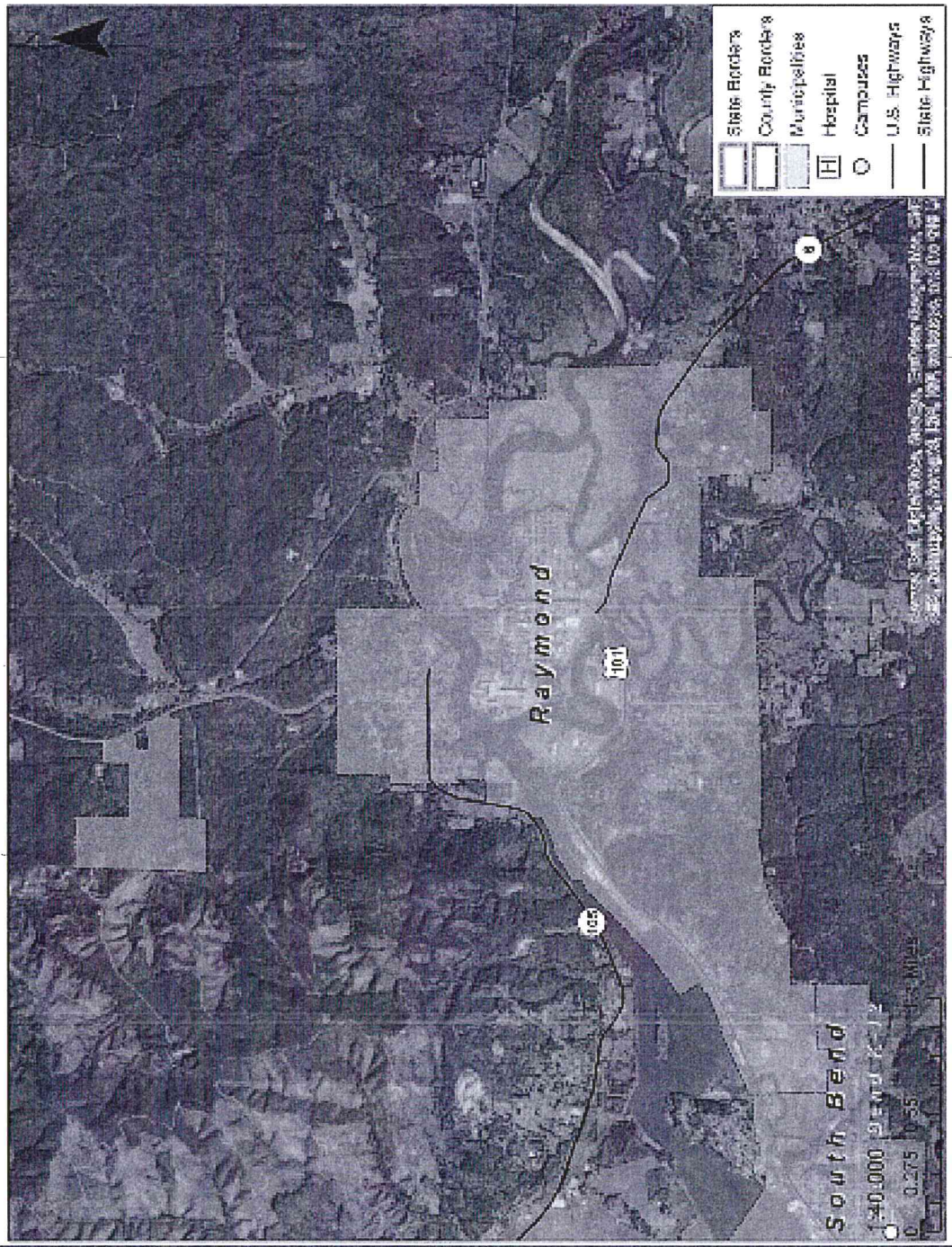
The City of Raymond was incorporated in August of 1907. It is located on the Willapa River and, at the last count, has 2,982 people within its 4.62 square mile area. The city is governed by a strong Mayor/ Council form of government, with 7 council members who are elected at large, and a Mayor. Water, garbage collection, and sewer services are provided by the city as well as police service. The Raymond Fire Department has an 11 member staff as well as numerous volunteers, and provides fire service to the city as well as ambulatory service to the northern half of Pacific County. Public transportation in Pacific County is provided by Pacific Transit and electrical power to the county is provided by PUD #2.

Table 6 – Historic Damage, City of Raymond

Date	Type	Damage
02/2001	Nisqually Earthquake	$44,785
05/2006	Winter Storms	$28,634
12/2007	Severe Storms and Flooding	$53,400

Point of Contact:
Jason Dunsmoor, Mayor
Raymond City Hall
330 2nd Street
Raymond, WA 98577
(360) 942-4100

Map 5 – Profile, Raymond



3.2.5 – City of South Bend

South Bend, as its name implies, is located on a bend (the left bank) of the Willapa River. The city got its start in 1889 as a sawmill town built over Willapa River marshlands. As the town grew and became an area trading center, it tried to make the area more hospitable to settlement by planking roads and building on pilings, than by filling in marshes with dredging spoils. Today much of the 2.012 square-mile city rests on unconsolidated fill material. The central downtown and industrial areas are elevated on fill to ten feet above sea level, 1.8 feet lower than the 100-year flood elevation. Areas of the city to the east are higher by nature, but still characterized by a high water table. The silt-like soils throughout the lowlands of the city often present developers with stability problems. These same soils may be prone to liquefaction in a seismic event. Southern portions of the city slope upwards to approximately 300 feet. Steeper slopes occasionally experience isolated slide activity.

The city's historical development has focused on the left, or south, bank of the river. Most of the industrial and commercial land uses in the city are located in a crescent that follows the river and major transportation modes (rail and highway). Industrial growth is expected to continue on through 2017 in the northwest quadrant of the city. Residential areas are located primarily upland of the river.

Notable demographic characteristics of South Bend include that it is the second largest of the four incorporated cities in Pacific County; the population over the past 10 years has steadily decreased from 1,807 to 1,594; and it has a greater proportion of older people than the rest of the state; it has a greater proportion of multi-family units compared to the rest of the county, and approximately one third of the housing units are second homes and vacation homes.

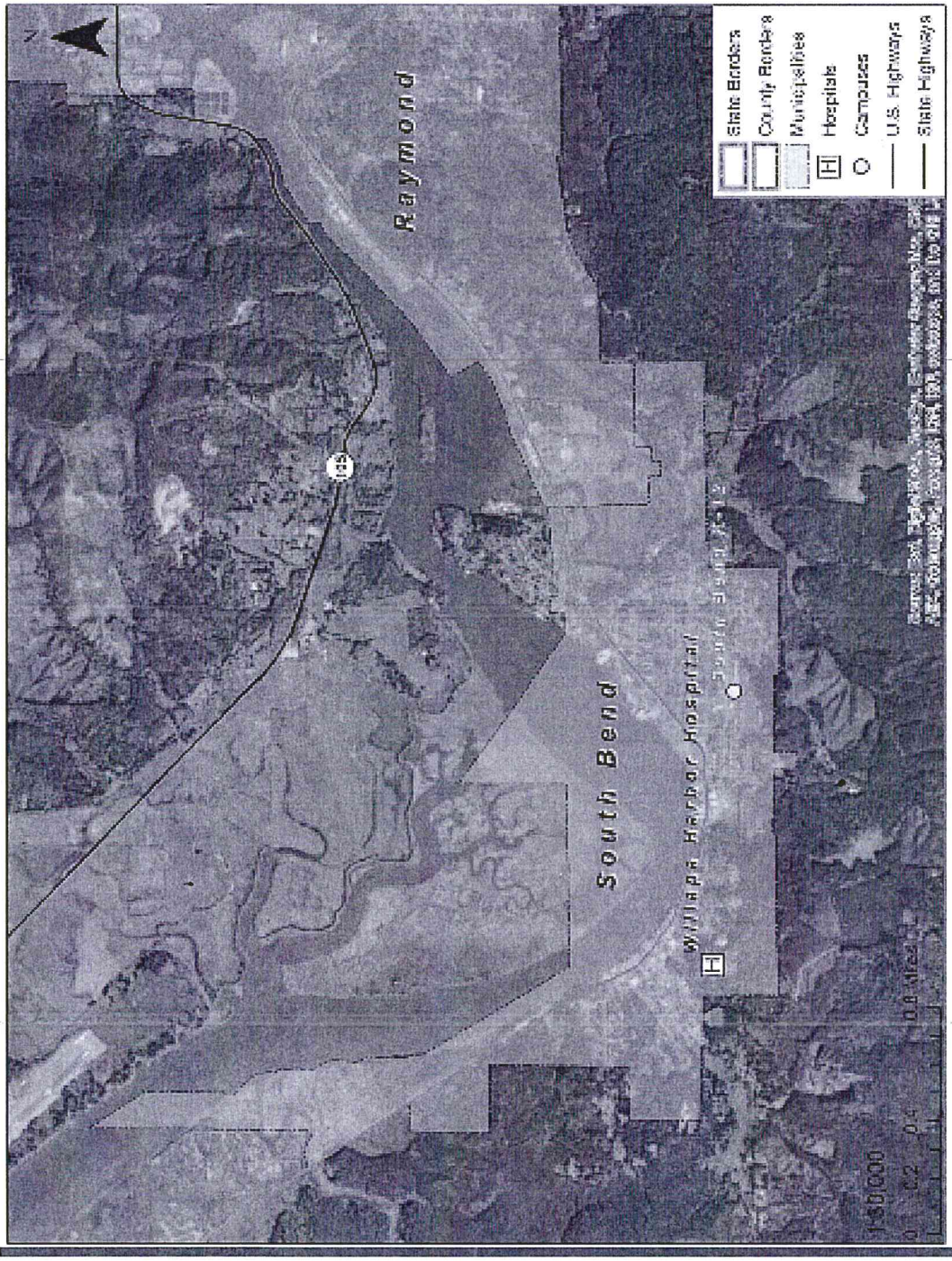
There are currently 780 housing units in the city, mostly single-family, and the housing stock tends to be older than for the state as a whole. Many of the residential units were built prior to the adoption of building codes for seismic and other hazard-resistant construction.

Table 7 – Historic Damage, City of South Bend

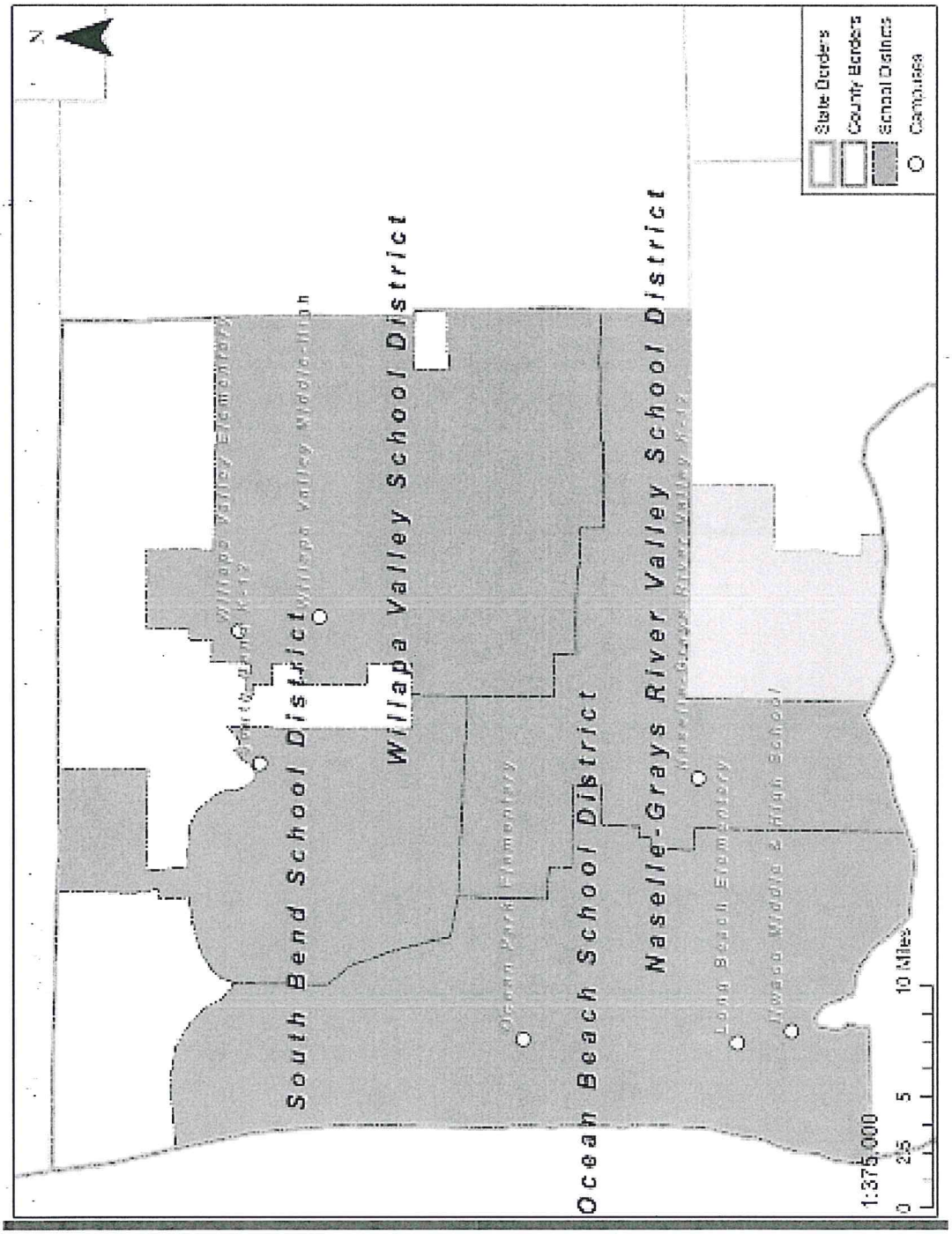
Date	Type	Damage
02/2001	Nisqually Earthquake	$11,626
05/2006	Winter Storms	$581,194
12/2006	Severe Storms and Flooding	$12,503
02/2007	Winter Storms	$171,338
12/2007	Severe Storms and Flooding	$346,066
01/2009	Winter Storms and Flooding	$127,241
03/2009	Winter Storms	$1,818

Point of Contact:
Julie Struck
South Bend City Hall
PO Drawer 9
South Bend WA 98586
(360) 875-5571

Map 6 – Profile, South Bend



Map 7 – Profile, School Districts



3.2.6 – Naselle/Grays River Valley School District

The Naselle-Grays River Valley School District has an enrollment of 300 students in K-12. Additionally, the school has 9 students enrolled in a full day Early Childhood Education Learning Program (ECEAP), in the public school every Tuesday and Thursday.

The Naselle School District encompasses a range of 38 miles from Nemah to Grays River, Washington. Ninety percent of the students are bused to school, while the remaining 10% drive themselves, or are driven by parents.

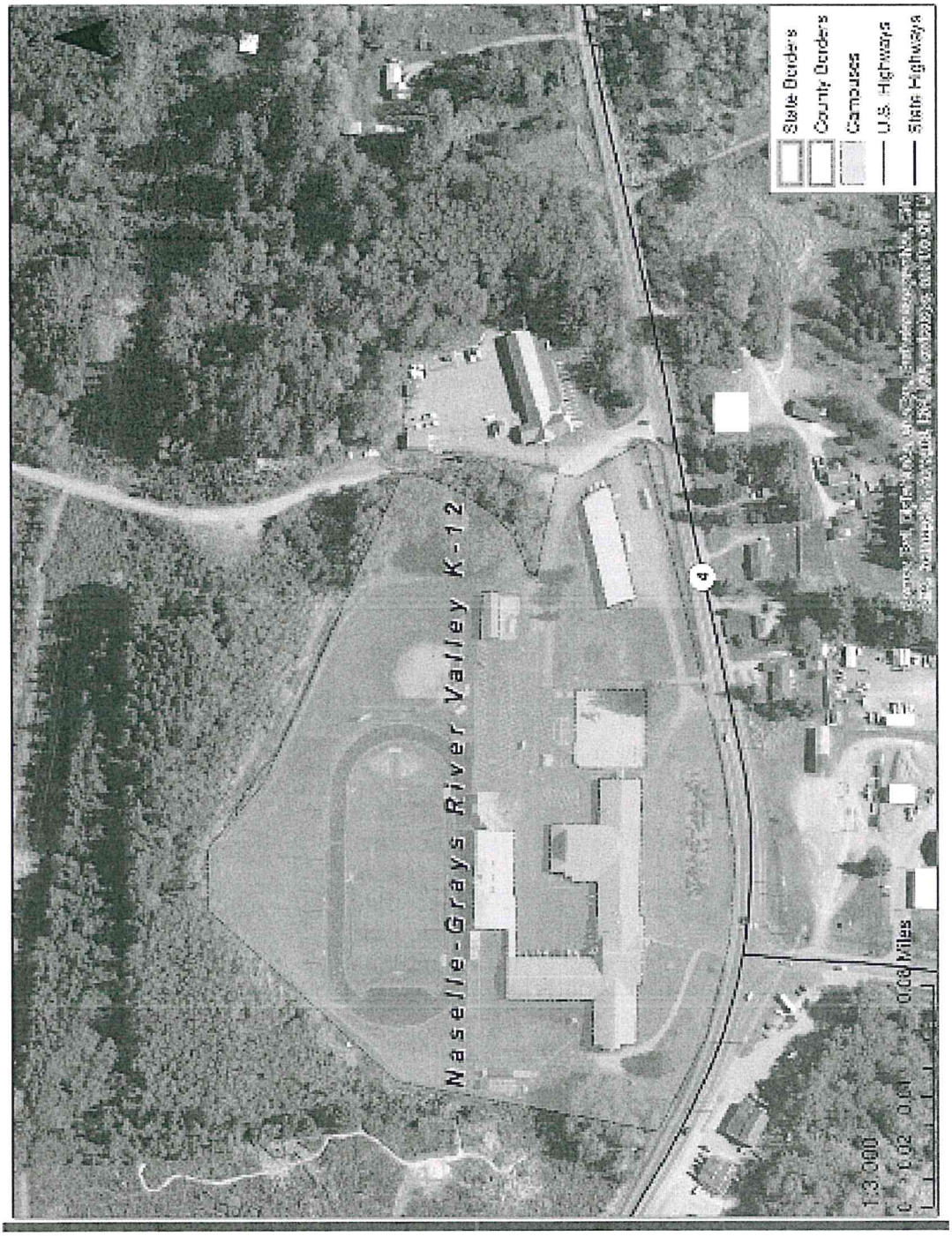
Naselle, Washington is located in the southwest corner of the state in Pacific County. Naselle is approximately 20 miles east of Long Beach, which is the western border of the state. It is 18 miles east of the mouth of the Columbia River and 15 miles Driver from Astoria, Oregon. Naselle is a rural community with a population of about 1000, and is located 100 miles from the nearest metropolitan area (Portland, Oregon). Small businesses provide services within the community such as a post office, grocery store, restaurant, gas stations, auto repair shop, beauty salon, video store, florist, and bank. The residents of Naselle will frequently travel to Astoria, Oregon, for most services. The community is served by the Naselle Water Company, Pacific County PUD #2, and Western Wahkiakum Phone Company.

Table 8 – Historic Damage, Naselle/Grays River Valley School District

Date	Type	Damage
12/2007	Severe Storms	$100,000

Point of Contact:
Lisa, Nelson, Superintendent
793 State Route 4
Naselle, WA 98638
(360) 484-7121 ext. 3

Map 8 – Profile, Naselle/Grays River Valley School District – K-12



3.2.7 – Ocean Beach School District

The Ocean Beach School District consists of a series of small interrelated communities situated along the Long Beach Peninsula just north of the mouth of the Columbia River. The district is comprised of five school buildings: two elementary (K-4), one middle school (5-8), one high school (9-12), and an early childhood center. The district has an overall enrollment of about 1010 students and employs 56 teachers and 82 support staff. The district currently has 23 buses with a replacement value of $1,520,546. The high school, stadium, and the middle school at Hilltop are designated shelters by the American Red Cross.

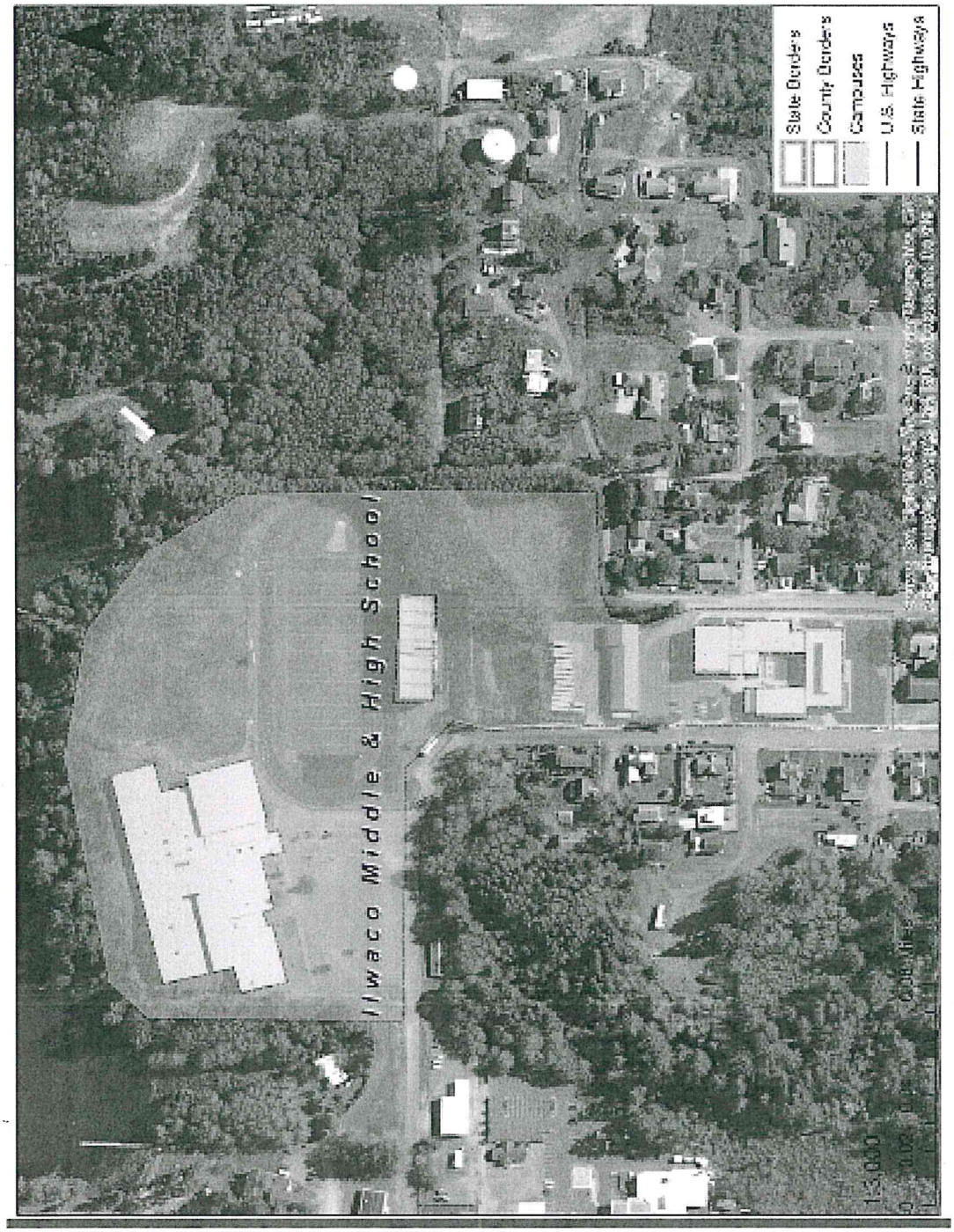
Electric service is provided by Pacific County PUD #2; water is provided by the Surfside Homeowners' Association, North Beach Water, City of Long Beach, and the City of Ilwaco. Ocean Park Elementary is on a septic system, with the City of Long Beach and City of Ilwaco providing sewer service for the facilities within their jurisdiction. Telephone service is provided by CenturyLink; fiber connections by NeahNet, Pacific PUD #2, and DT Micro. Pacific County Fire District #1, Long Beach Fire Department, and the Ilwaco Fire Department provide fire protection while and law enforcement is covered by Pacific County Sheriff's Office and the Long Beach Police Department.

The district has not had any significant damage from hazard events.

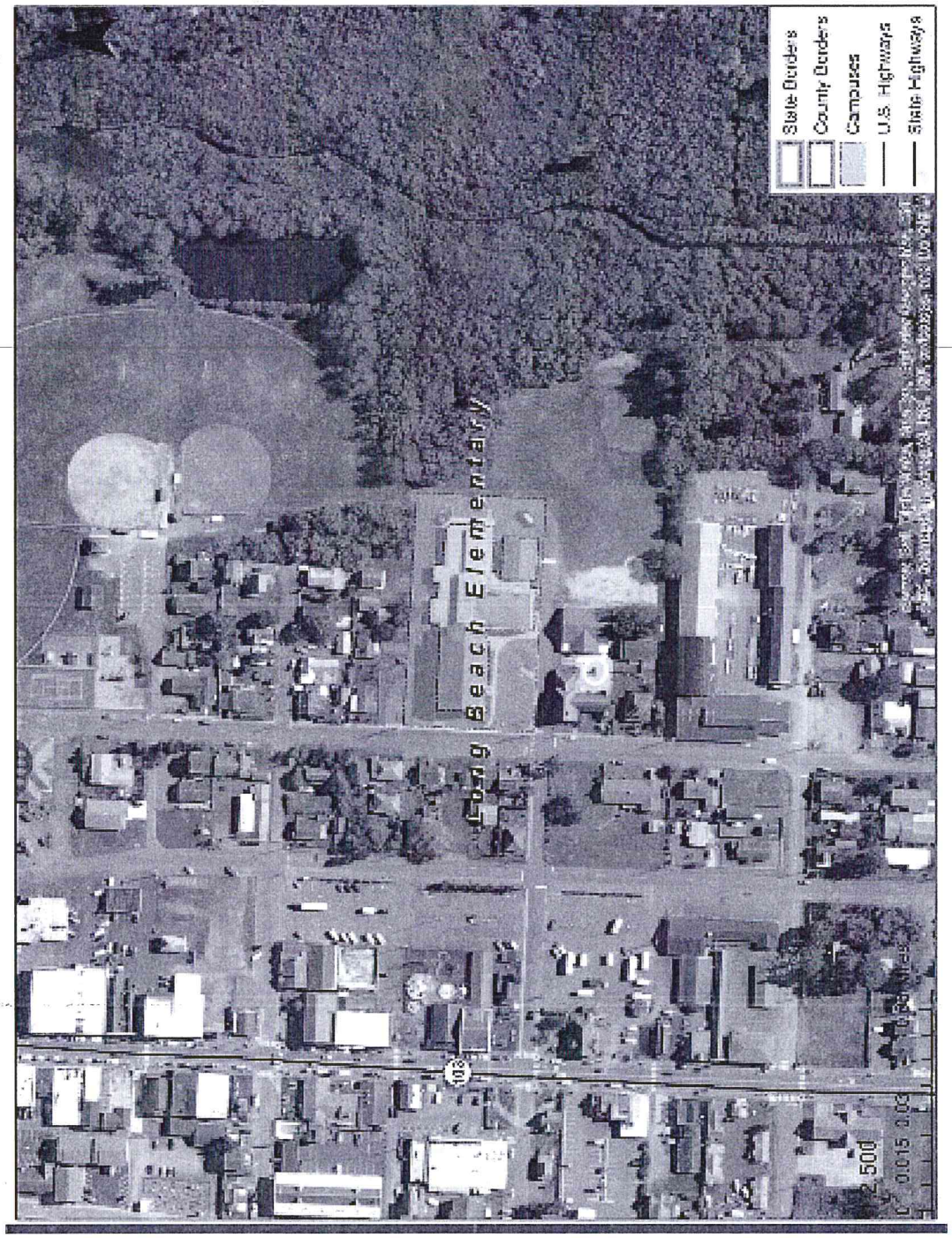
Point of Contact:
Sandie Graff, Transportation Director
500 Washington Ave. South
Long Beach, WA 98631

PCEMA

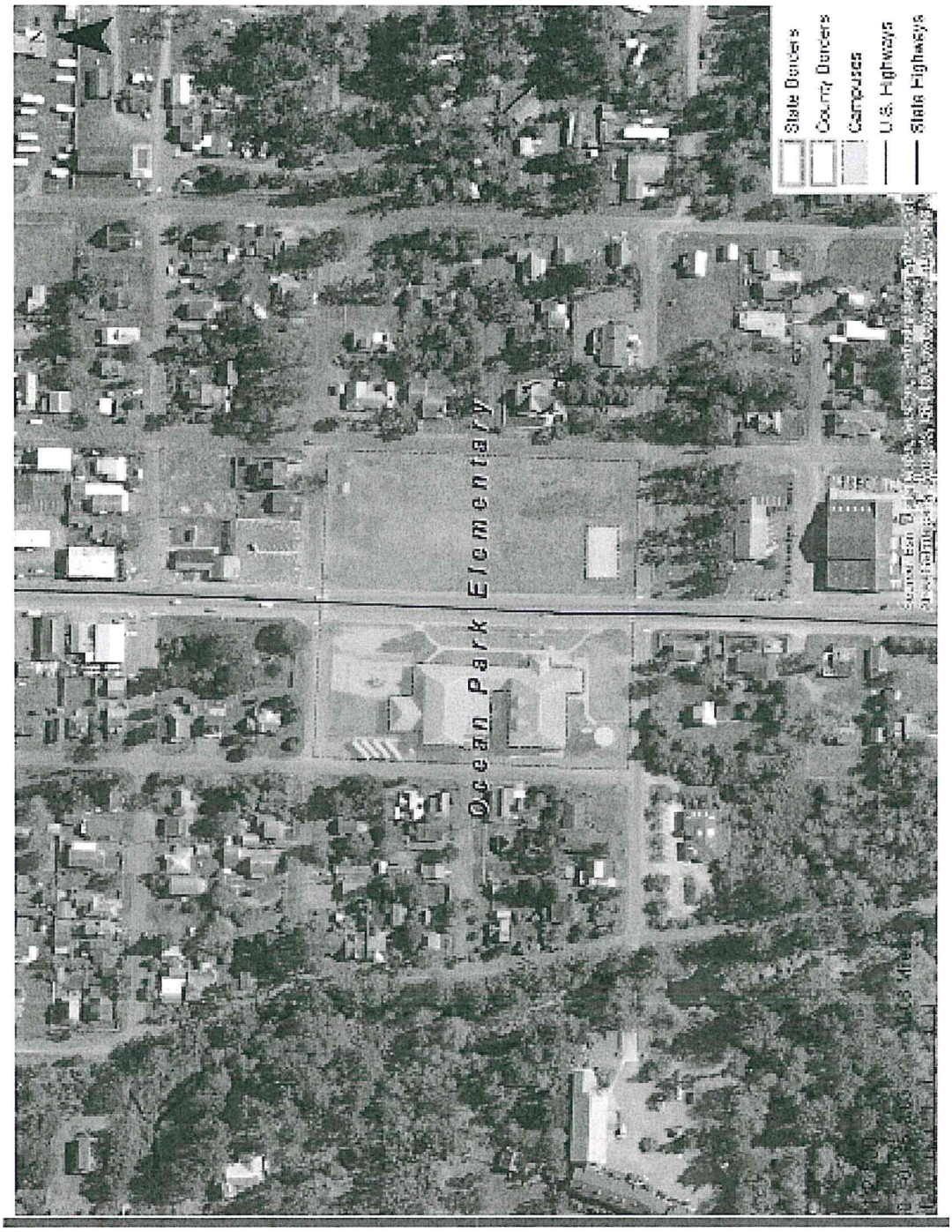
Map 9 – Profile, Ocean Beach School District – Ilwaco Middle & High School



Map 10 – Profile, Ocean Beach School District – Long Beach Elementary



Map 11 – Profile, Ocean Beach School District – Ocean Park Elementary



3.2.8 – South Bend School District

The South Bend School District campus is comprised of three main school buildings: Chauncey Davis Elementary, South Bend Jr. Sr. High School, and the South Bend Early Learning Center. The District has an overall enrollment of 545 K-12 and 90 preschool students It employees 99 staff members.

South Bend, Washington is in the southwest corner of the state in Pacific County. It is located along the Willapa River and 2 ½ miles east of Willapa Bay. South Bend is a rural community with a population of approximately 1,900. Residents frequently travel approximately 35 miles to Aberdeen, Washington for services. The community is served by City of South Bend Water, Sewer, and Garbage; Pacific County PUD #2; and CenturyLink Phone Service. Law enforcement is provided by the South Bend Police Department and Pacific County Sheriff's Office. Fire protection is provided by the South Bend Fire Department and EMS is provided by the Raymond Fire Department Ambulance Service.

Table 9 – Historic Damage, South Bend School District

Date	Type	Damage
02/2001	Nisqually Earthquake	$501,909
02/2007	Winter Storms	$250,000
12/2007	Severe Storms	$700,000
01/2009	Winter Storms	$2,800
12/2009	Winter Storms	$18,000
01/2015	Flooding	$400,000

Point of Contact:
Jon Tienhaara, Superintendent
PO Box 437
South Bend, Wa 98586
(360) 875-6041

PCEMA

Map 12 – Profile, South Bend School District – South Bend K-12

3.2.9 – Willapa Valley School District

The Willapa Valley School District consists of several small communities situated along a 20 mile Valley East of the Willapa Harbor. The district is comprised of two separate campus areas with one 6-12 middle-high school building in Menlo, and one PK-5 elementary building in Old Willapa. The district also owns a non-occupied elementary building in Lebam. The district has an overall enrollment of about 375 students and employs 25 teachers and 35 support staff and administrators. The District has 15 buses and 5 motor pool vehicles with a current replacement value of $1,445,249.

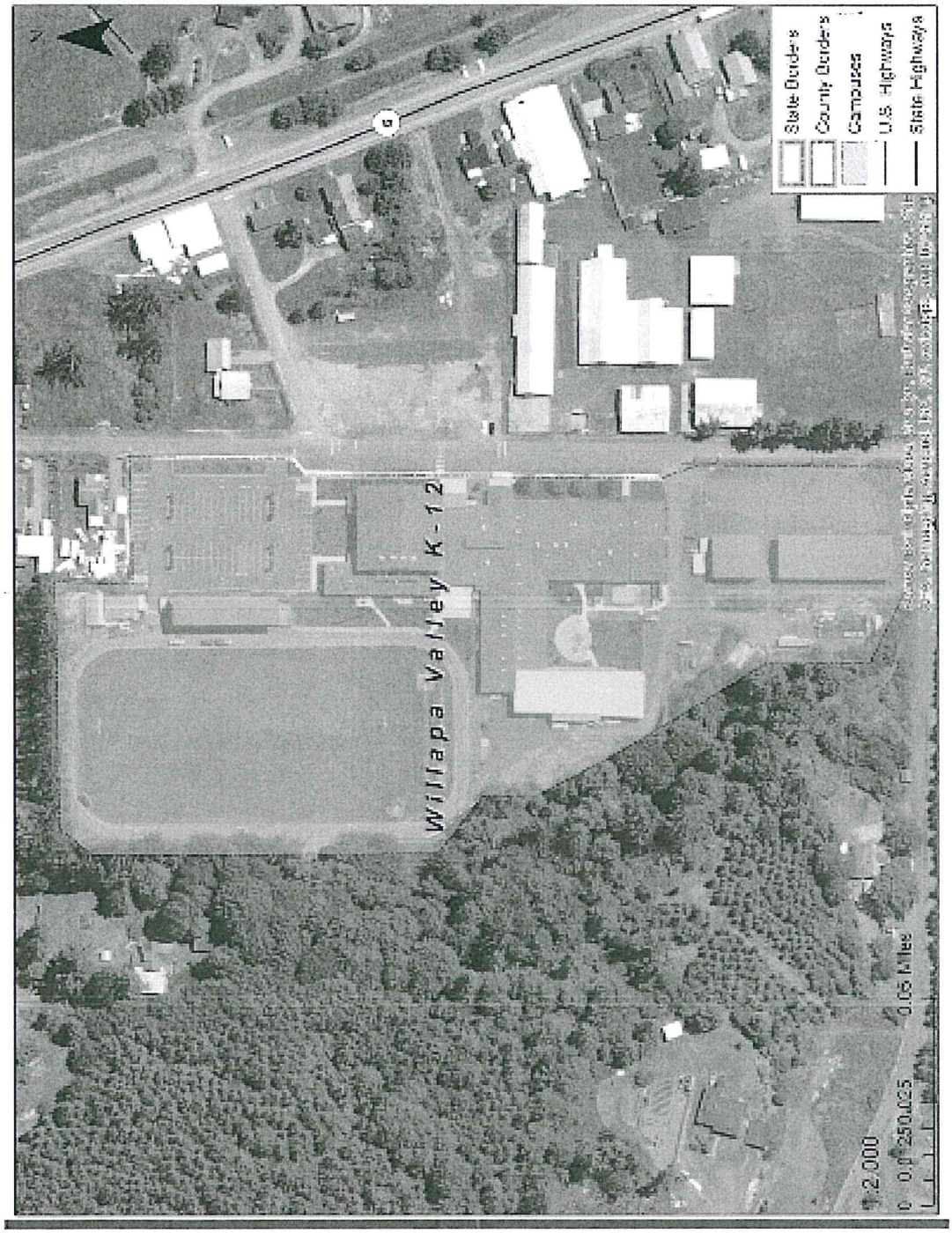
Electric service is provided by Pacific County PUD #2; water is provided by the Willapa Valley Water District; each site has its own septic system; telephone service is provided by CenturyLink; fiber connection by Pacific County PUD #2; Pacific County Fire District #3, Menlo Fire Dept. and Lebam Fire Department provide fire protection; and law enforcement is covered by Pacific County Sheriff's Office.

The district has not had any significant damage from hazard events.

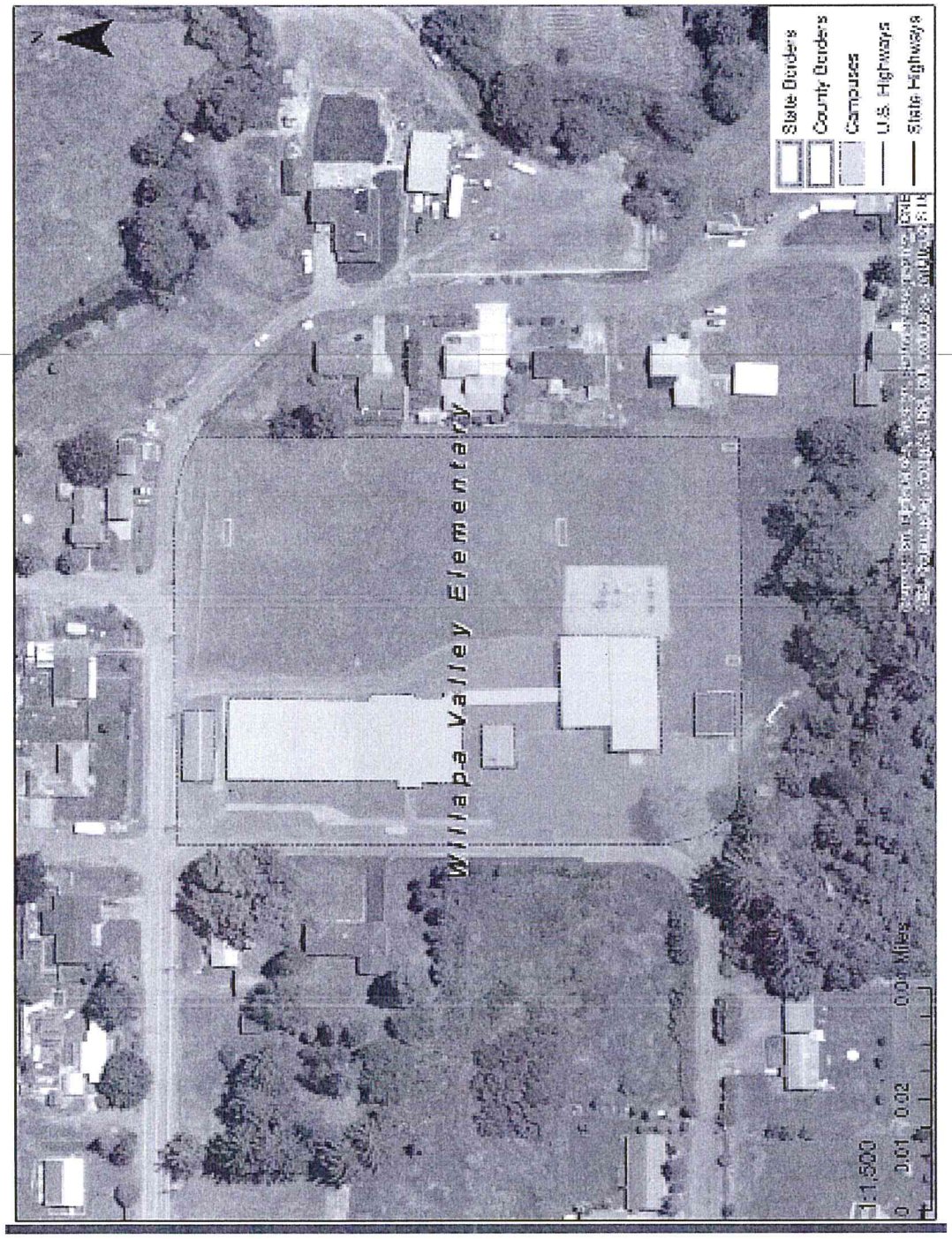
Point of Contact:
Rob Friese, Superintendent
PO Box 128
Menlo, WA
(360) 942-5555

PCEMA

Map 13 – Profile, Willapa Valley School District – Willapa Valley Middle-High



Map 14 – Profile, Willapa Valley School District – Willapa Elementary



3.2.10 – Naselle Water Company

Naselle Water Company supplies water to the small rural community of Naselle, the Naselle-Grays River School District and the DSHS Naselle Youth Facility. The district serves approximately 500 residences, the Naselle School District of aproximately 312 students, and the Naselle Youth Camp which houses 85 inmates plus around 100 support staff and families that live on-site.

The Naselle community is supported mostly by the logging industry, fishing and state jobs. There is no other big industry in the area. The district has aproximately 25 miles of water line, which are mostly over 40 years old. Many of the areas serviced are in floodplains and some are in slide areas that the county has been unable to correct. The district is economically challenged without an industry to draw from and help with improvements. During the last major storm (Dec. 2007), the 1920's office building was damaged and has now been deemed un-innabitaale.

The district's plant site is located above the Naselle Rock and Asphalt Company on Crusher Lane. The access to the main plant and intakes are narrow roads with several small bridge crossings over the two creeks. It is a heavily wooded area which was completely impossable due to downed trees after the last storm.

Table 10 – Historic Damage, Naselle Water Company

Date	Type	Damage
12/2007	Severe Storms	$1,977
01/2009	Landslides, Winter Storm	$52,223
03/2009	Winter Storm	$1,610

Point of Contact:
Carol J. Haven
3 Aspelo Lane
Naselle, WA 98638
(360) 484-3815

3.2.11 – North Beach Water District

The North Beach Water District (NBWD) provides water for drinking and fire suppression to about 2,700 service connections serving a seasonal population that can be as large as 10,000 people in the summertime to the communities of Ocean Park, Nahcotta, and Klipsan Beach. NBWD has eight employees and an annual operating budget of $1.75 million.

The NBWD has an elected three-member Board of Commissioners and eight professional employees dedicated to supplying clean healthy water to the community.

Table 11 – Historic Damage, North Beach Water District

Date	Type	Damage
12/2007	Severe Storms	$25,705

Point of Contact:
William Neal, General Manager
25802 Vernon Avenue - Suite C, PMB 618
Ocean Park, WA 98640
(360) 665-4144

3.2.12 – Surfside Homeowners' Association

The Surfside Water Distribution System serves the Surfside Homeowners' Association, which consists of approximately 1800 homes, most of which are a second home or a vacation home. It is primarily a vacation destination development with an average of 550 residents year round. It is located in what is considered a wildland/urban interface area. It is a not for profit organization and is a Group A water System under Washington State Regulations. Revenues are generated on a cost per lot. The association was formed in 1969, but the current system is eight years old. It is one overall system, which means if there is a break, the entire system goes down.

Water comes from six (6) deep wells of over 200 ft. in depth. There are four (4) reservoirs with approximately 630,000 gallons of capacity. The association has one emergency generator and a 200 gallon fuel tank. However, only two wells can be run at one time currently on emergency power.

Severe storms and flooding are the most frequent risks due to back flow issues. Back flow protection on individual hookups is not required at this time, with the exception of a small number of existing commercial users within the Surfside boundary. There are occasional problems with the major drainage outfalls adjacent to the ocean, which can become blocked with sand in severe high tides or storms. These outfalls are in the tsunami hazard area and parts of the system could be at risk in the event of a grass or brush fire on the dunes, which border Surfside Estates along the entire western boundary. Earthquakes and severe winter storms may cause damage to the water distribution system, affecting the livelihood of the high density residential community.

The association has not had any significant damage from hazard events.

Point of Contact:
Laura Frazier
31402 H Street
Long Beach, WA 98640
(360) 665-4171

3.2.13 – Willapa Valley Water District

The Willapa Valley Water District is a public water system that provides water service to customers near the western end of the Willapa River Valley. The water system is publicly owned and is governed by an elected Board of Commissioners. The district is managed by a Superintendent who reports to the Board of Commissioners.

The district serves a service area of approximately 11 square miles and has over 44 miles of main and service lines. It serves a total of 735 service connections. The district has an estimated full-time residential population of 2,000, an estimated temporary and transient population of 12,000 during during the Pacific County Fair that is held in Menlo in August, and an estimated regular non-residential population of up to 200 people per month.

The Willapa Valley Water District was started as the Willapa Valley Water Company, which was incorporated on May 22, 1933. The corporation was organized as a private non-profit, and as such, ineligible to receive state aid, so the Willapa Valley Water District was formed on February 28, 1934.

The initial system consisted of a wood diversion dam on Stringer Creek approximately 8 miles east of Raymond and distribution system comprised mostly of wooden water mains. No treatment was provided beyond sedimentation. In 1966 the wooden pipe was replaced with either asbestos cement or PVC pipe. The original water treatment plant was constructed in 1968 and a new diversion dam and inlet structure was constructed in 1971. The district has three steel reservoirs, a 200,000-gallon tank constructed in 1968, a 300,000-gallon tank built in 1973, and a 330,000-gallon tank built in 1994.

The district owns and operates a surface water treatment plant (WTP) to treat water from Stringer Creek. The WTP was last upgraded in 2000-2001. The current treatment facility is capable of nominally processing 750 gallons per minute. The plant is designed for automated operation with monitoring and chemical feed equipment that allow the plant to adjust coagulant dose to changing water conditions. The plant also includes chlorine residual monitoring in the finished water line as well as pH and turbidity monitoring equipment.

The Willapa Valley Water District has an emergency intertie with the City of Raymond. The Willapa Valley Water District entered into an Interlocal Agreement for Waterline Intertie with the City of Raymond on June 7, 1977. It was agreed that the purpose of this would be to provide for a water line tie between the two entities, to extend a 6-inch water main from Harvard Street to Crossing Street, and to equally share the cost of construction and all material, pipe, valves, reducer, meter, and bedding.

The district has not had any significant damage from hazard events.

Point of Contact:
Shawn Aust
4117 Willapa Road
Raymond, WA 98577
(360) 942-3357

3.2.14 – Ocean Beach Hospital

Ocean Beach Hospital is a critical access hospital with 25 licensed beds. There are two Operating Rooms and eight Emergency Rooms. There are also two clinics. One is located across from the hospital and one 30 miles away in Naselle. The hospital has 145 employees and a large provider staff. The largest population in the region is retired, although there is a large tourist season from spring till fall. The hospital has a governing board. Ocean Beach Hospital is a public hospital district. It is located on one of the major roads leading into the area and bordered by residential housing with two schools and two churches within a block. The hospital has air transport to outlying hospitals in the northwest. The facility is approximately 44,000 square feet in size. The clinic on-site is approximately 6,000 square feet. The clinic in Naselle is approximately 1,200 square feet. The hospital has two vehicles for travel, a 2005 pickup and 1992 van. It is on a peninsula next to the Pacific Ocean and the Columbia River.

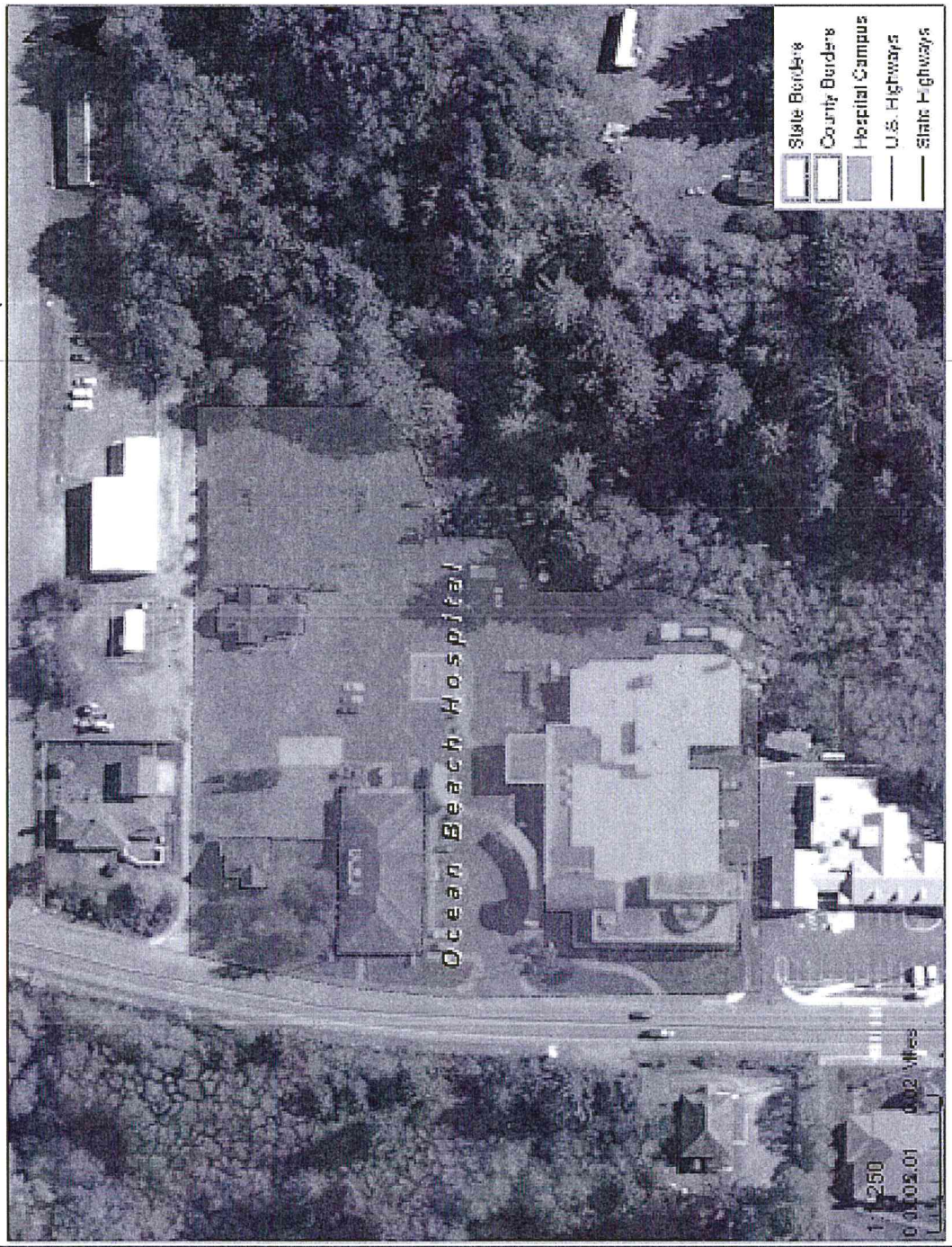
The hospital is located in the very southwest corner of Washington State. The town of Ilwaco is a small fishing village with the port of Ilwaco, numerous small businesses within walking distance of the hospital. The United States Coast Guard has a station within 2 miles of town. The hospital is serviced by the Ilwaco water/sewer. Electric power is supplied by PUD. Telephone service is provided by Century Tel. This is a very peaceful part of Washington State. The area is affected by all of the different weather patterns coming off of the Pacific Ocean. Weather in this part of the world can change very quickly. It is a wonderful place to live and still affordable.

Table 12 – Historic Damage, Ocean Beach Hospital

Date	Type	Damage
12/2007	Severe storms	$19,867

Point of Contact:
Charity Harris
174 N 1st Ave
Ilwaco, WA 98624
(360) 642-3181

Map 15 – Profile, Ocean Beach Hospital



3.2.15 – Willapa Harbor Hospital

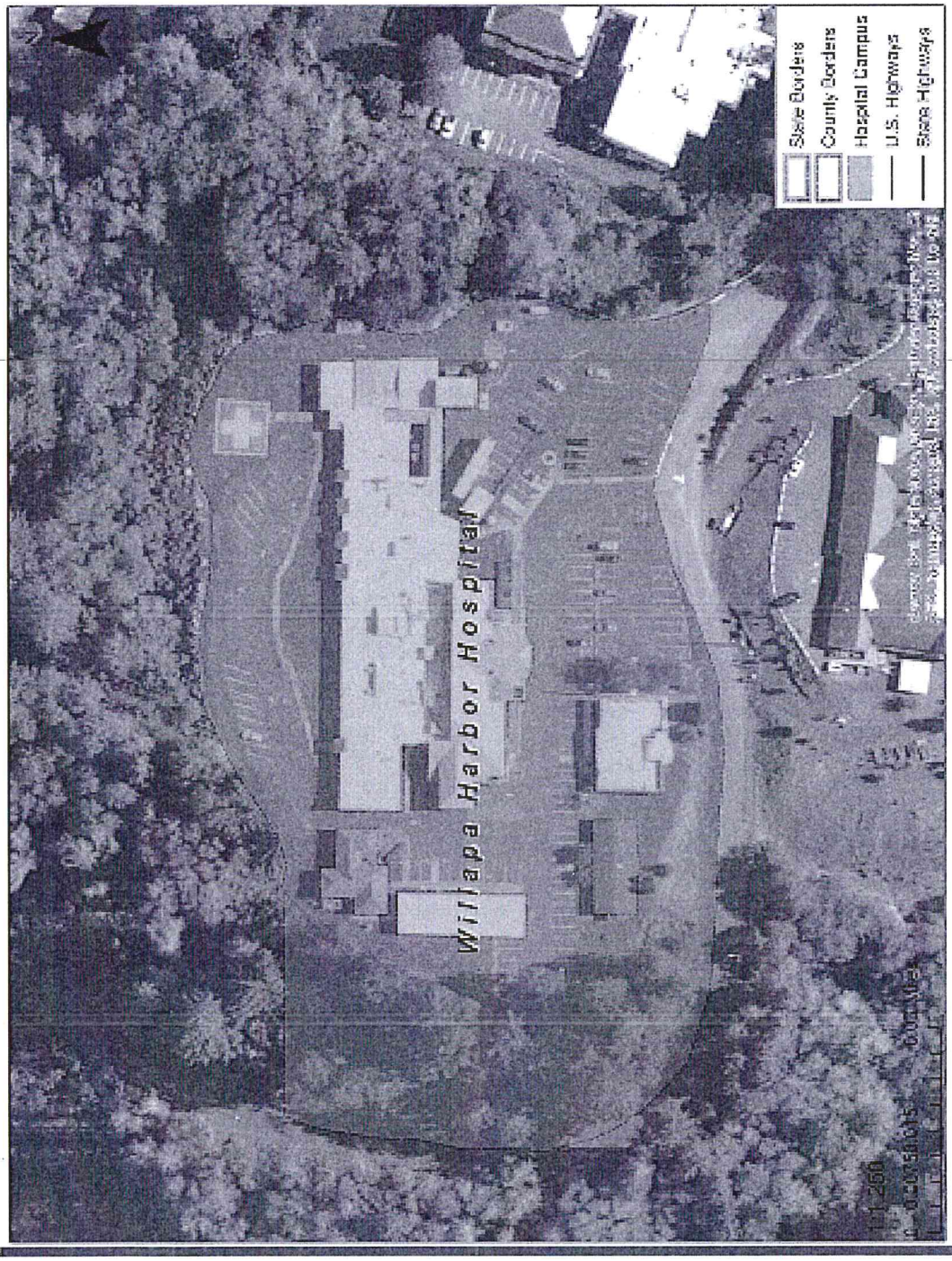
Willapa Harbor Hospital is a critical access hospital with 26 licensed beds. There is one operating room, five Emergency Rooms and two clinics. One clinic is located across from the hospital and one clinic is in the hospital. The hospital has 141 employees and four providers. The largest population in the region is retired. The hospital has a governing board made up of 5 commissioners. Willapa Harbor Hospital is a Public Hospital District. It is located off Highway 101 and bordered by residential housing and an assisted living facility. The hospital has air transport to outlying hospitals in the northwest. The facility is approximately 32,000 square feet in size. The clinic on site is approximately 1,000 square feet. The clinic across from the hospital is approximately 2,400 square feet. The hospital has two vehicles for travel, a 2007 pickup and 2006 van. The hospital is on a hill overlooking the Willapa River.

The hospital is in the town of South Bend, also known as the "Oyster Capital of the World," and located in North Pacific County on the Willapa River. We have three local school districts located in North Pacific County, and the community strongly supports our hospital and the local schools. The hospital is serviced by the City of South Bend water/sewer. Electric power is supplied by PUD. Telephone service is provided by Century Tel. This is a beautiful location in Washington State. Our area is affected by different weather patterns throughout the year coming off of the Pacific Ocean and the weather can change quickly. It is a beautiful, quiet place to live but still affordable.

The hospital has not had any significant damage from hazard events.

Point of Contact:
Gary Sasor, Facilities Director
815 Alder Street
South Bend, WA 98586
(360) 875-5526

Map 16 – Profile, Willapa Harbor Hospital



Map 17 – Profile, Pacific County Fire Protection Districts

3.2.16 – Pacific County Fire Protection District #1

Pacific County Fire Protection District #1 covers approximately 28 square miles. It has 25 paid firefighters and 40 volunteer firefighters. It responds to 1,700 to 1,800 calls for service per year. The demographics of the area include primarily retirees, and the fire station provides an important social network for the community. Fire Station #1 is a main community hub, and meeting place and the main shelter and destination when a community emergency or disaster occurs. The district is prepared to provide shelter, water, oxygen, propane and other emergency items when needed. The district is dispatched by the Sheriffs communications, but due to the location and a lack of a redundant system, there can be communications problems. It can be spotty at times. It has a Memorandum of Understanding with the Washington State Department of Fish and Wildlife for fuel management. There is a very complex situation with land ownership making fuel management a challenge.

Table 13 – Historic Damage, Pacific County Fire District #1

Date	Type	Damage
12/2006	Severe Storms	$6,000
12/2007	Severe Storms	$11,707

Point of Contact:
Jacob Brundage
26110 Ridge Avenue
Ocean Park, WA 98640

3.2.17 – Pacific County Fire Protection District #2

Pacific County Fire District #2 serves approximately 900 people. District #2 responders will go outside the area when called for accidents, structure fires and backup for DNR on forest fires. District #2 also has a contract with Historic Fort Columbia for fire protection.

There is one station where the district houses the fire trucks and firefighting equipment located centrally in town. The station is 4800sf. The cost to replace the present inventory is about $1,130,600. The district is an all-volunteer department. The district is unincorporated. Our community is served by a water district and town has 35 Fire hydrants.

The district has not had any significant damage from hazard events.

Point of Contact:
Dale Hughes, Fire Chief
748 Highway 101
Chinook, WA 98614

3.2.18 – Pacific County Fire Protection District #4

Pacific County Fire Protection District # 4 is located in Naselle, Washington in a community of approximately 1,000 people. The district provides fire coverage within a 30 mile radius along State Hwy 4, State Hwy 401, State Hwy 101 North and State Hwy 101 South. Within the community is the Naselle-Grays River School District with approximately 315 students and the Naselle Youth Camp Correctional Facility which houses approximately 125 inmates and approximately 50 personnel and their families.

The biggest concern is communication and the ability to reach out for our community's needs. There are several Rivers and Streams – Salmon Creek and the Naselle River which cause considerable flooding at times. Communication during the December 2007 was nil due to the lack of power, and phone lines and cell towers that were down. The district is in the process of establishing Ham radio communication at the district Station. Several members of the Department have become Ham Radio operators so that once the equipment is up and running they will be operational. Additional generators would be a huge asset to the department, as there are numerous elderly in the area who are dependant upon oxygen.

Table 14 – Historic Damage, Pacific County Fire District #4

Date	Type	Damage
12/2007	Severe Storms	$40,750
01/2009	Winter Storms	$4,000

Point of Contact:
Carol J. Haven
6 County Shed
Naselle, WA 98638
(360) 484 3498

3.2.19 – Pacific County Fire Protection District #5

Pacific County Fire Protection District #5 serves approximately 900 people in a ten square mile area. District 5 responders will go outside the area when called for accidents, fires, mutual aid and when Department of Natural Resources asks for backup for forest fires in other areas. The District also contracts with the Shoalwater Bay Tribe plus their Casino and the Port of Willapa Harbor for fire protection. There are three stations where the district houses fire trucks and excess fire equipment. The main station is located in North Cove, the second is in Tokeland and the third one is on Larkin road, also in the North Cove area.

PCFD #5 is a volunteer department with only the fire chief receiving some compensation. Total cost to replace the present inventory would be about $1,480,000. The district's service area is totally unincorporated. Law enforcement is provided by the Pacific Co. Sheriff's office. The majority of homes are served by their own wells and septic systems. The area resides on mostly sand and peat, which is a major concern for a major earthquake or tsunami due to probable liquefaction.

District goals are to educate the residents on what to do in a major weather emergency and where to go to get help or shelter, who to call and what services can be obtained. The district is planning on researching the possibility to relocate the North Cove station to higher, safer ground.

The district has not had any significant damage from hazard events.

Point of Contact:
Gene Kuest, Fire Chief
2753 Tokeland Road
Tokeland, WA 98590

3.2.20 – Pacific County Fire Protection District #6

Pacific County Fire Protection District #6 serves approximately 400 people in a ten square area. District 6 responders will go outside the area when called for accidents, fires, mutual aid and when Department of Natural Resources asks for backup for forest fires. The District also contracts with the city of Raymond for aid calls with three responders currently. There is one fire station where the District houses fire trucks and excess firefighting equipment. The station is located on Harrison Street.

PCFD #6 is a volunteer department with only the aid responders and commissioners receiving some compensation. Total cost to replace the present inventory would be about $1,500,000. The District's service area is totally unincorporated. Telephone service is provided by Centurylink and Pacific Co. PUD provides electric service. Law enforcement is provided by the Pacific Co. Sheriff's office. The majority of homes are served by Bay Center water which Pacific Co. PUD maintains and most have septic systems. The area resides on mostly sand and clay, which is a major concern for a major earthquake or tsunami due to probable liquefaction.

District goals are to educate the residents on what to do in a major weather emergency and where to go to get help or shelter, who to call and what services can be obtained.

The district has not had any significant damages from storms or other events in the past.

Point of Contact:
Gene Kuest, Fire Chief
2753 Tokeland Road
Tokeland, WA 98590

3.2.21 – Pacific Transit

The Pacific Transit began providing services in January 1980. Since its inception, the service has continually developed throughout Pacific County to include the expansion of regular routes and the establishment of Dial-a-Ride service, which provides transportation to ADA-Certified individuals. Dial-a-Ride service also includes transportation for individuals in the rural areas of Pacific County who are not on regular bus routes. Pacific Transit also provides intercity service to Aberdeen, WA in Grays Harbor County and to Astoria, OR. The Pacific Transit System has 24 employees, including drivers, maintenance personnel and management. It derives its funding from a Public Transportation Benefit Area (PTBA) with additional funding coming from sales tax in Pacific County and from federal and state grants.

The biggest threat is a major tsunami. There is not much that could be done structurally, so planning is being done for moving personnel and equipment to safe areas if there is a threat to Transit System operations from any hazard. There are plans in place and priorities are set if there is a tsunami warning. Plans are being developed for a no notice event. It is a very reliable system that has provided over 35 years of uninterruptae transportation services to the citizens of Pacific County. To date Pacific Transit has traveled over 11 million miles and provided over 5 million passenger trips.

Table 15 – Historic Damage, Pacific Transit

Date	Type	Damage
12/2007	Severe Storms	$61,000

Point of Contact:
Richard Evans
216 North 2nd Street
Raymond, WA 98577
(360) 875-5413

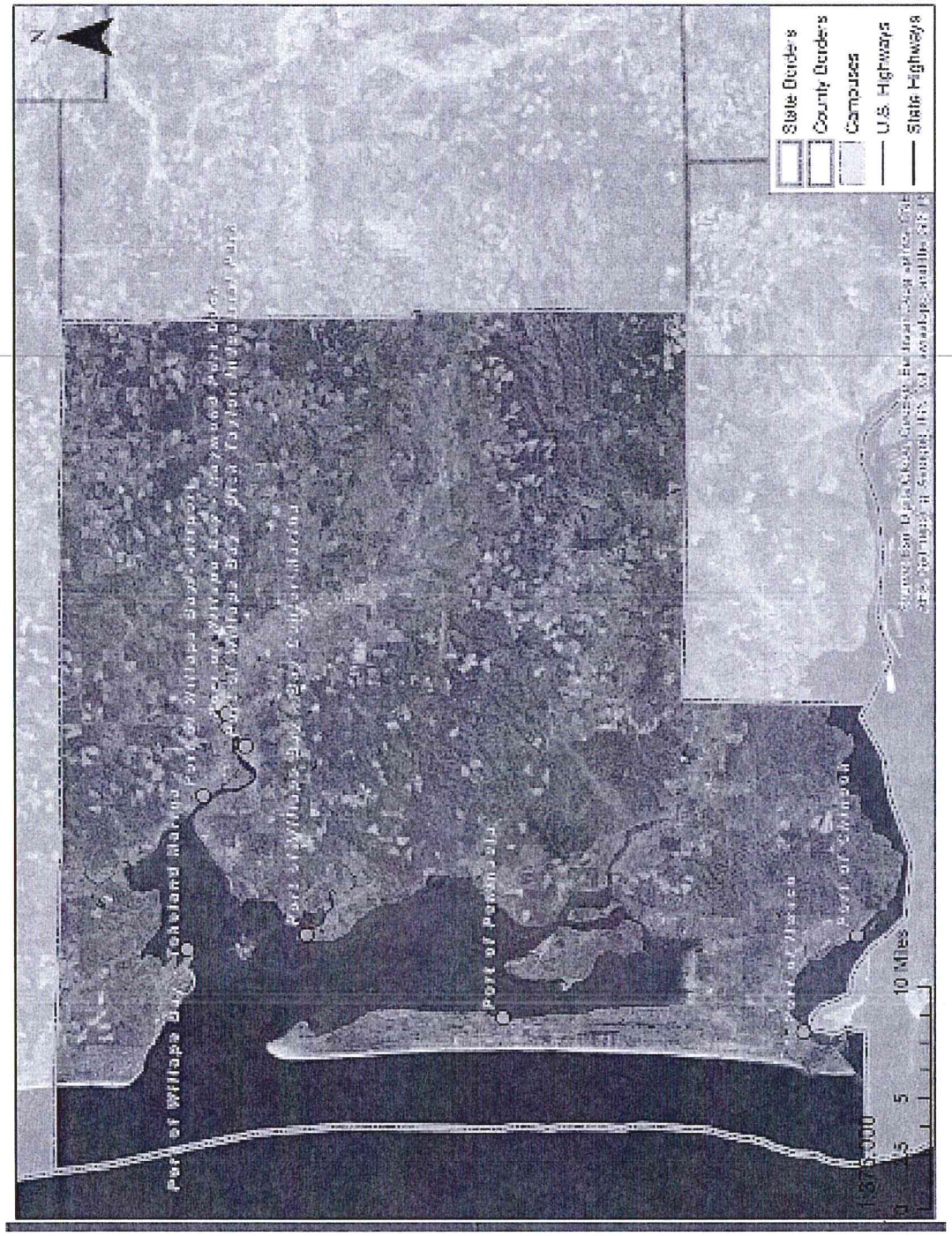
3.2.22 – Port of Chinook

On February 5, 1951, the Pacific County Board of Commissioners passed a resolution establishing the Port of Chinook. The port, located just upriver on the Columbia from Ilwaco, was formed to serve commercial and recreational fishing boats. The Port operates a 250 slip marina, boat hoist, a boat ramp, and has approximately 5 leased properties, which include a cannery, bait shop, and coffee shop. Water is provided by the Chinook Water District. Electrical service is provided by Pacific County PUD#2, and phone service provided by Centurylink.

The port has not had any significant damages from storms or other events in the past.

Point of Contact:
John Damasa
743 Water Street
Chinook, WA 98614
(360) 777-8797

Map 18 – Profile, Ports



3.2.23 – Port of Ilwaco

The Port of Ilwaco was formed by a vote of the people in 1928. It is governed by three elected Commissioners who serve six-year terms. It is one of four public ports located in Pacific County, WA. The Port District includes Ilwaco, Seaview, Nasalle and a strip along the east side of the Long Beach Peninsula. The Port operates an 800 slip fishing marina, a self-service boat yard, a 40-ton boat haul-out, a smaller boat hoist, a boat ramp and has approximately 25 leased properties which are home to restaurants, galleries, fishing charters, gift shops, marine supply, a sanitation company, a bank, a community college campus, a cannery and a large fish processor. The Port of Ilwaco boatyard services commercial vessels and pleasure craft up to 50 tons. The Port also operates a general aviation airport.

Water, sewer, public works and fire protection are provided by the City of Ilwaco. Electrical service is provided by Pacific County PUD #2 and phone service is provided by CenturyLink. Internet service is provided by Charter. Police protection is provided by the City of Long Beach, under contract with the City of Ilwaco and the Port District is served by the Ocean Beach and Naselle/Grays River School Districts.

Table 16 – Historic Damage, Port of Ilwaco

Date	Type	Damage
12/2007	Severe Storms	$111,353

Point of Contact:
Guy Glenn Jr., Manager
PO Box 307
Ilwaco, WA 98624
(360) 642-3143

3.2.24 – Port of Peninsula

The Port of Peninsula was formed in 1928. It is governed by three elected Commissioners who serve six-year terms. It is one of four public ports located in Pacific County, Washington. The Port District includes Long Beach, Ocean Park, Klipsan Beach, Surfside, and other areas of unincorporated Pacific County. The Port operates an 80 slip commercial and recreational marina, an 8 ton boat haul-out, product hoists, a fuel dock, a pump out station, a boat ramp, an Interpretive Center, and has upland and tideland leases.

Water is provided by North Beach Water. Electrical and Internet service is provided by Pacific County PUD No. 2 and phone service is provided by CenturyLink. Police protection is provided by Pacific County and the Port District is served by the Ocean Beach School District and Ocean Beach Hospital.

The port has not had any significant damages from storms or other events in the past.

Point of Contact:
Mary DeLong, Manager
3311 275th Street
Ocean Park, WA 98640
(360) 665-4547

3.2.25 – Port of Willapa Harbor

The Port of Willapa Harbor was formed by the vote of the people of North Pacific County on May 31, 1928. The construction of the Port Dock between the cities of Raymond and South Bend soon followed with the dedication ceremony on October 8, 1930 (which also marked the official opening of the Raymond-Aberdeen highway). The primary function of the Port was to provide docking facilities and service for shipping logs and lumber in Raymond, and to support commercial fishing and oystering in Tokeland and Bay Center. In the intervening years the Port has expanded to include the Willapa Harbor Airport, the Dick Taylor Industrial Park and the Stan Hatfield South Fork Industrial Park. The Port currently has 21 industrial and commercial tenants, and provides moorage to 85 boats.

The Raymond Port Dock is located on the Willapa River on US 101. Port facilities at this location include an historic 25,000 square foot, 'high' dock, which services an array of commercial vessels. In addition there are 800 feet of floating docks which are available for moorage. The port dock area has nine industrial buildings which are leased to commercial/industrial tenants. The Port also has an industrial wastewater treatment plant. The Port facilities on the south bank of the Willapa River occupy 27 acres.

The Port acquired a 30 acre former sawmill site and is currently working on a mixed-use redevelopment of the property located within the Stan Hatfield South Fork Industrial Park. The triangular shaped park is located just north of US 101 in Raymond and is accessed from Wilson Street. This location is also bounded to the east by the South Fork and to the northwest by the Willapa Rivers. The Port leases a dry kiln and planer facilities to a local sawmill. The former mill machine shop has been completely renovated and now accommodates a recreational marijuana producer, a beauty boutique, and a saw shop.

The Dick Taylor Industrial Park is located on a 30-acre parcel fronting US 101 in Raymond. Approximately 10 acres has have developed for light industrial use. The park is also connected to the industrial wastewater pretreatment plant located at the main Port dock via a pumping station and force main. There are currently four industrial buildings and a retail store on the site. The port also owns the former Dennis Company warehouse located directly across SR 101 from the industrial park.

The Tokeland marina is located in the unincorporated community of Tokeland at the north of Willapa Bay. Tokeland is primarily a residential community with a population of 417. Tokeland is also the site of the Shoalwater Bay Indian Reservation, which is home to approximately 70 tribal members. The tribe owns and operates a small casino and health clinic. The Tokeland marina offers both recreational and commercial moorage. The Port facilities are on 40 acres and include two seafood servicing buildings, a light industrial building leased to Ambrosia Technologies, a public fishing pier, a high dock, and RV Park and boat ramp. A fish processing plant is located blocks away from the main Port dock. Port dock facilities provide local fishing and aquaculture industries access between land and water.

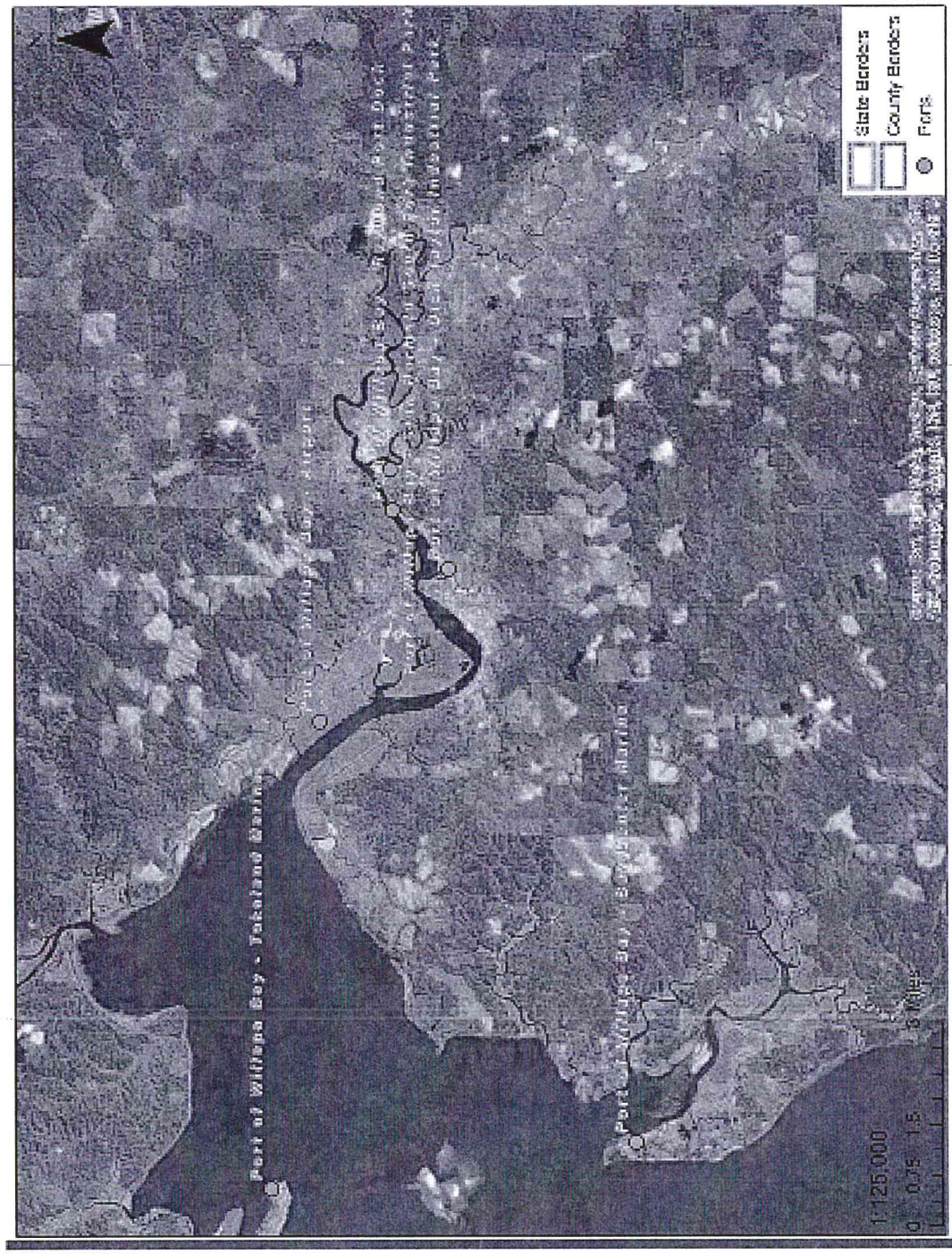
Bay Center is an unincorporated community located approximately 16 miles south of South Bend. Bounded by the Palix River and Willapa Bay, Bay Center is the geometric center of Willapa Bay and home to several commercial oyster-growing operations. In this community, commercial fishing and aquaculture dominates the marina. The Port facilities accommodate a thriving shell fish and crabbing industry. The current population of Bay Center is 317. A growing residential community will present a number of opportunities for the Port and the community in the coming years. The Port owns no upland property in Bay Center.

The airport was built in 1946 and is located on SR105 five miles west of Raymond. It features an asphalt paved, 3000'-long, 52'-wide general aviation service runway on an East-West orientation with rotating beacon and radio-activated runway lights. Privately owned hanger space is available, along with tie-downs for five aircraft, self-service fuel, and a pilot ready room with phone and rest room.

Table 17 – Historic Damage, Port of Willapa Harbor		
Date	Type	Damage
05/2006	Winter Storms	$291,599
12/2007	Severe Storms	$704,000
01/2009	Winter Storms	$612,062

Point of Contact:
Rebecca Chaffee, Manager
1725 Ocean Avenue
Raymond, WA 98577
(360) 942-3422

Map 19 – Profile, Port of Willapa Harbor



3.2.26 – Public Utility District #2

The District is a municipal corporation incorporated in 1940 to serve the citizens of Pacific County, Washington. A three-member board of locally elected commissioners, independent of county government, governs the District. The District manages and operates an Electric Distribution System and three Water Distribution Systems. Public Utility District #2 of Pacific County provides reliable electric service to the District's 17,100 customers. The District also provides water service to another 301 customers in the communities of Bay Center, Lebam and Wilson Point.

A General Manager, appointed by the Board, administers the District's day to day operations. The District employs 58 employees and operates on a $27.6 million annual electrical operating budget. The District offers programs to help customers use energy more efficiently and to support policies that promote resource conservation.

Wholesale power is supplied to the District through purchased power contracts with the Bonneville Power Administration (BPA). Weather and economic conditions are the primary influences on electricity sales. Generally, extreme temperatures increase sales to residential customers who use electricity for cooling and heating, and moderate temperatures decrease sales. 2014 retail electricity sales decreased by less than 1% over 2013 which was essentially the same as in 2012. 2010-2012 retail electricity sales when compared to the previous respective year showed decreases that ranged from 3.68%-4.16%. Customer growth has been minimal over the past five years with 75 total accounts added to the Districts base of 17,027 at the end of 2009.

The District provides electrical service to most but not all of Pacific County. Currently, the District does not provide service to the unincorporated areas of Tokeland, North Cove and Grayland, in the northwest corner of the County. The Grays Harbor County PUD provides electrical service to these areas. The District has planned for years to re-acquire these areas and during 2014, continual progress was made toward this goal with work scheduled for completion in 2016. The District is a wholesale provider of Fiber Optic Services with 93 customers using excess fiber through retail service providers.

Table 18 – Historic Damage, Public Utility District #2

Date	Type	Damage
11/2009	Severe Storms	$262,222
12/2010	Severe Storms	$12,500
01/2013	Severe Storms	$10,000
01/2015	Flooding	$60,000
	Total =	$344,722

Point of Contact:
Doug Miller, General Manager
405 Duryea Street
Raymond, WA 98577
(360) 942-2411

3.3 – Land Use & Development Trends

Pacific County saw rapid growth between 1900 and 1910 and steadily grew from there until around 2000. Since 2000 the county as a whole has started to see a decline in population of 12.83%. Long Beach has grown at a total rate of 9.50% since 2000, but has decreased by 5.30% since the development of the last plan in 2010. It is the exception within the planning area.

The Pacific County Planning Department and the Washington Office of Financial Management have verified that growth is sluggish, but due to a slight upswing in the housing market there are signs of speculative growth in future markets.

The slowly declining population of Pacific County has the benefit of not increasing or creating new hazard vulnerabilities and risks. Presuming these development trends continue, or growth stabilizes, Pacific County and its participating jurisdictions will be able to focus on tackling current vulnerabilities and risks by evaluating the value of increasing and enforcing zoning, building codes, NFIP and other flood standards. A hazard specific analysis, as it pertains to land use and development trends, is covered under each hazard in Section 4 – Hazard Risk Assessment.

For hazards that affect the entire planning area, increased population growth increases a jurisdiction's overall vulnerability, while decreased population growth decreases it. It is difficult to quantify the exact change in vulnerability in either direction, but can be depicted as generally directly proportional to the population change itself. For more information on hazards effects the entire planning area, see Section 4 – Hazard Risk Assessment.

For hazards which have easily measured extents, changes in vulnerability are more difficult to calculate. Over the past 5 years, dramatic improvements in available geographic data and improvements in risk assessment methodology make this plan update's risk assessment far superior to the previous plan. However, the downside of utilizing improved methodologies and data is that they are incapable of being directly compared to the previous plan's methods and data. For instance, the previous plan does not geographically and accurately depict the locations of the Wildland Urban Interface (WUI) or the WUI intermix. Without knowing where they existed in 2010, the current improved methodology does not allow for a comparison of vulnerability.

A hazard specific analysis, as it pertains to land use and development trends, is covered under each hazard in Section 4 – Hazard Risk Assessment.

Section 4 – Hazard Risk Assessment

The goal of mitigation is to reduce the future impacts of hazards, including property damage, disruption to local and regional economies, and the amount of public and private funds spent to assist recovery. To be implemented correctly and efficiently, mitigation decision-making needs to be based on an accurate risk assessment.

This section builds the foundation for an ongoing review and analysis of the hazards and vulnerabilities facing the planning area. Data used in Pacific County's previous HMP has been updated and the analysis has been expanded to include more improved methodologies. Additionally, local knowledge and expertise was incorporated into the risk assessment.

The profiling of Pacific County hazards and risks will provide the foundation for a long-term, sustainable planning process and will serve the county and participating agencies at that time considering the county's disaster experience, currently available financial resources and potential sources of funding in the future. Community involvement played, and will continue to play, an important part in the hazard vulnerability process, especially in pursuing the analysis of structural vulnerabilities, land use and economic development. Another factor in this analysis was the consensus drawn from the participants during the planning process.

A history of declared disasters helps capture an overview of the hazards facing Pacific County and its participating jurisdictions. Since 1953, Pacific County and its participating jurisdictions have suffered from 15 declared disasters. A list of the declared disasters occurring in Pacific County and its participating jurisdictions since 1954 is presented in the table below. Smaller disasters are more frequent and are not reflected in the table.

Table 19 – Disaster Declarations

Designation	Date	Incident Type
DR-1878	12/12/2008	Winter Storm
DR-1817	1/6/2009	Flooding, Landslides, Mudslides, Winter storms
DR-1734	12/1/2007	Flooding, Landslides, Mudslides, Severe Storms
DR-1682	12/14/2006	Landslides, Mudslides, Winter Storms
DR-1641	1/27/2006	Flooding, Landslides, Mudslides, Severe Storms, Tidal Surge
EM-3227	8/29/2005	Hurricane Katrina Evacuation**
DR-1361	2/28/2001	Earthquake
DR-1177	2/18/1997	Flooding, Landslides, Mudslides, Severe Storms
DR-1159	12/26/1996	Flooding, Winter Storms
DR-1079	11/7/1995	High Winds, Flooding, Severe Storms
DR-888	11/9/1990	Flooding, Severe Storms
DR-623	5/21/1980	Volcanic Eruption**
DR-546	12/10/1977	Flooding, Mudslides, Severe Storms
DR-322	2/1/1972	Flooding, Severe Storms
DR-185	12/24/1964	Flooding

*Year disasters from 1953
**These disasters did not impact or damage the life or property within the county, but are declared due to overwhelming response and recovery operations

4.1 – Identifying Hazards

The first step in developing a hazard assessment is identifying the hazards with reasonable potential to strike Pacific County or its participating jurisdictions. Identification allows appropriate and well planned action to mitigate the extent and impact of a hazard event as well as facilitating emergency response and recovery operations. Not all disaster contingencies can be planned for, however, by using an all-hazards approach to planning. The mitigation process yields increased preparedness for unforeseen hazard events.

The table below lists the hazards profiled in the State of Washington Hazard Mitigation Plan and Pacific County's previously approved HMP. Based on the research described above, seven of these hazards pose a risk to at least one of the participating jurisdictions. These are: coastal erosion, earthquakes, floods, landslides, severe storms, and tsunamis.

Details for each hazard and their potential impact on Pacific County are located in Section 4.3. The following tables compare the identified and profiled hazards as they relate to their previous plan and to the state's plan. Any hazards which affect the State of Washington or were profiled in the previous plan, but do not affect any of Pacific County's jurisdictions are listed as 'excluded.' An analysis of why a hazard has been excluded can be found in Section 4.6 – Excluded Hazards.

Table 20 – State of Washington & Prior Plan Identified Hazards

Hazards in State or Previous HMP	Previous Inclusions	Status	Justification
Avalanches	State	Excluded	Planning area not at risk
Coastal Erosion	None	Included	Growing risk
Dam Failure	Local & State	Excluded	No at risk dams
Droughts	State	Excluded	Planning area not at risk
Earthquakes	Local & State	Included	USGS risk assessments
Floods	Local & State	Included	Prior hazard history
Hazardous Materials	Local	Included	Prior hazard history
Landslides	Local & State	Included	State risk assessments
Severe Storms	Local & State	Included	Prior hazard history
Tsunami	Local & State	Included	State risk assessments
Volcano	State	Excluded	Planning area not at risk
Wildfire	Local & State	Excluded	Planning area not at risk
Winter Storms	Local	Included	Prior hazard History

4.2 – Methodology

4.3.1 – Description - Describes the hazards that can affect the planning area.

4.3.2 – Location & Extent - Contains information on location; the geographic areas in the planning area that are affected by the hazard, and extent; the strength or magnitude of the hazard, for each hazard.

4.3.3 – Previous Occurrences - Contains a history of previous hazard events for each of the identified hazards.

Methodology: Most of the historical hazard data used in the risk assessment originates from NOAA. In most instances the hazard affects a large geographic area and thus the hazard data is reported at the county level. *This is the best available data for these hazards.* The calculations for Previous Occurrences and the Probability of Future Events is based on county level data.

4.3.3A – Probability of Future Events - Contains the likelihood of the hazard occurring. If quantitative calculations are performed, a discrete numerical probability is given that corresponds to the table below. In the event the nature of the hazard (dam failure for instance) does not allow such a calculation or there is not enough information to make a calculation, a qualitative probability will be given. This assessment is based from local knowledge and expertise.

Table 21 – Probability Categories

Category	Range (Per Year)
Rare	Less than 1%
Occasional	1% - 25%
Likely	25% - 50%
Highly Likely	50% - 100%

4.3.4 – Vulnerability & Impact - Describes the potential impacts of the hazard for each participating jurisdiction and provides an overall summary of each jurisdiction's vulnerability to the hazard through structures, systems, populations, and community assets that are susceptible to damage and loss from the hazard.

4.3.4A – Infrastructure & Critical Facilities- When appropriate, this section details the infrastructure and facilities pertinent to the hazard.

4.3.4B – Land Use & Development Trends - Provides a general description of land use and development trends within the community.

4.3.4C – Unique, or Varied Risk - Assesses each jurisdiction's risk where it varies from the risks facing the entire planning area.

4.3.4D – Repetitive Loss Structures - Describes the types of facilities and estimates the number of repetitive loss properties exposed to the hazard.

County and Municipal Governments
Pacific County and the participating municipal governments are assessed on a geographic basis. Their vulnerabilities are assessed according to their structures, populations, and systems.

School Districts
The participating school districts are assessed by campus on a geographic basis. Their vulnerabilities are assessed according to their structures and populations.

Water Companies and Water Districts
The participating water companies and water districts are assessed on a geographic basis. Their structural vulnerability is assessed according to which local government their property is located within. As an integral system to the planning area, their vulnerability is also assessed as a system.

Ocean Beach Hospital & Willapa Harbor Hospital
The Ocean Beach Hospital is assessed on a geographic basis. It is considered a critical facility and its vulnerability is assessed under infrastructure and critical facilities.

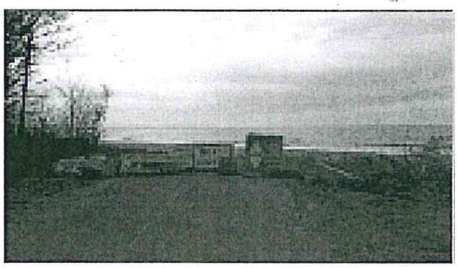
Fire Districts
The participating fire districts are assessed on a geographic basis. Their structural vulnerability is assessed as infrastructure and critical facilities. As an integral system to the planning area, their vulnerability is also assessed as a system.

Ports
The participating ports are assessed on a geographic basis. Their structural vulnerability is assessed according to which local government their property is located within. As an integral system to the planning area, their vulnerability is also assessed as a system.

Public Utility District #2
Public Utility District #2 is assessed on a geographic basis. Their structural vulnerability is assessed according to which local government their property is located within. As an integral system to the planning area, their vulnerability is also assessed as a system.

4.3CE – Coastal Erosion

4.3.1 – Description



Coastal Erosion is a chronic problem along almost every shoreline in the United States. On average, American shorelines lose anywhere from 10 to 30 feet of coast per year. It is estimated that by 2100 over 3,000 square miles of land will be lost. The economic and negative environmental externalities are incalculable.

Coastal erosion is defined as the removal of coastal sediment and rock by a number of complex environmental factors. Typically this occurs over a period of decades to centuries and is as much a function of natural occurrence as it is human interference.

Natural Factors

Chemical Corrosion: A high pH level ocean or sea will slowly wear away at costal rocks and sediment further compounding other natural factors.

High Speed Winds: High speed winds will cause abrasive forces against sediment and rock slowly weathering them away.

Major Natural Disasters: Hurricanes, coastal floods, tsunamis, and severe inland flooding which drains out to sea can remove significant amounts of beach and coastal sediment in a short period of time.

Sediment Accumulation: River deltas transport sediment out to sea over time increasing or recharging nearby beaches and coasts' supply of sediment. This rate of recharge is known as progradation.

Shoreline Vegetation: Certain types of vegetation reduce the ability of water and air to erode rock and sediment.

Wave & Tidal Currents: Weathering caused by water will slowly reduce a coastline's sand and sediment by force of abrasion.

Human Factors

Dams: The construction of dams upstream of river deltas significantly hinders the river's natural ability to transport sand and sediment to nearby beaches and coasts thereby reducing its progradation rate.

Jetties: The construction of jetties for tourism, maritime navigation, or local erosion control alters the tidal and current patterns of an area, increasing the vulnerability of erosion farther down the shoreline.

Motorized Maritime Vessels: The use of motorized maritime vessels produce a wake creating increased wave activity.

Reduction In Shoreline Vegetation: Development of shorelines can reduce the amount and density of its vegetation, increasing its vulnerability to water and air.

4.3.2 – Location & Extent

For hundreds of years, the Columbia River's delta has fed sand and sediment to coasts of Pacific County negating any significant erosion. Since settlement, multiple jetties have been built along the Columbia River for the purposes of maintaining a navigable waterway. These jetties significantly disrupt the tidal and wave systems around the river's delta and increase the erosive capacity on the planning area. Additionally, the Columbia River has a significant number of dams restricting sediment flow to the river's delta and hindering the progradation rate of Pacific County's coast.

Pacific County lies on the north bank of the Columbia River and to the east of the Pacific Ocean. The county's western coastline is comprised of sediment and sandy beaches, notably the Long Beach Peninsula and the North Cove area (Washaway Beach), across the Willapa Bay from the Long Beach Peninsula, and around Bay Center within Willapa Bay. The North Cove area (Washaway Beach) and Bay Center experience constant yearly erosion of its coast. The Long Beach Peninsula experiences long term progradation, but varies highly from year to year with some years seeing shoreline growth and others experiencing a significant decrease in its shoreline.

Since 1926, the average rate of shoreline change on the Long Beach Peninsula has been measured at positive 2.7 meters per year with a range of negative 18.7 meters per year to positive 25.2 meters per year. The North Cove area (Washaway Beach) has been eroding at an average rate of negative 1.9 meters per year with a highly variable rate of between negative 28.8 to a positive 6.6 meters per year. The Bay Center erosion area of Willapa Bay is slowly eroding, but is not measured by the USGS or the State of Washington.

Please see the maps on the following pages for a geographic depiction of the identified erosion areas.

Data Deficiency: *The Pacific County Department of Public Works has been collecting shoreline change GIS data since 1999, but no local or state agency has been collecting this type of data for the Long Beach Peninsula or the Bay Center erosion areas.*

4.3.3 – Previous Occurrences

The rate of coastal erosion has, overall increased, significantly as more jetties have been built in the Columbia River and more dams were constructed upstream.

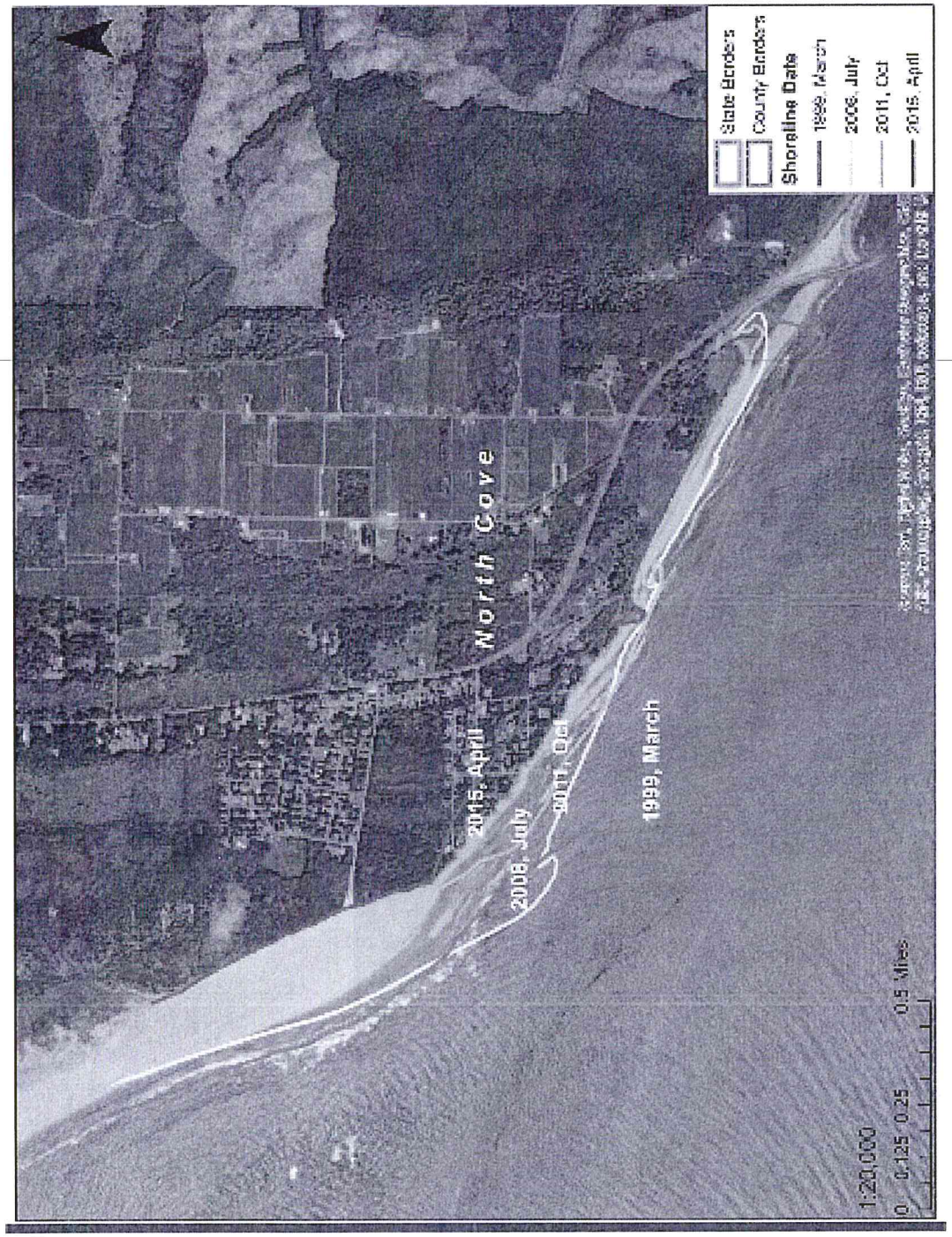
Shoreline measurement began in 1926 in Pacific County. The Long Beach Peninsula's shoreline has been increasing over the long-term with periods of erosion scattered throughout the years while the North Cover Area has been decreasing over long-term. The Bay Center area's shoreline has been steadily decreasing, but at a very slow rate.

4.3.3A – Probability of Future Events

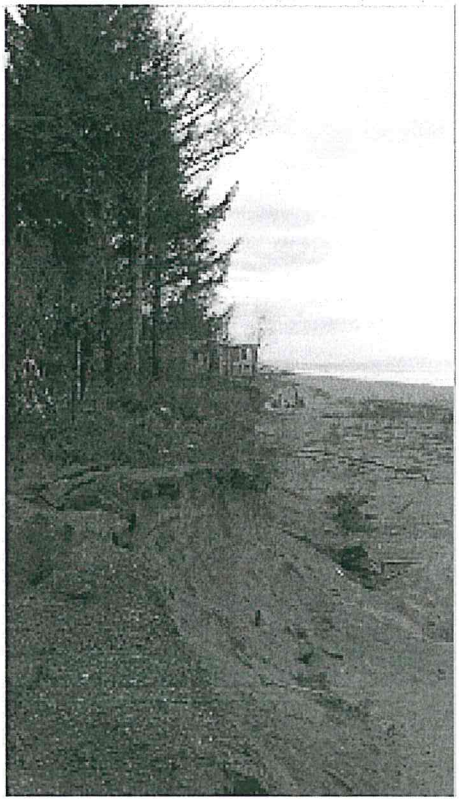
Pacific County and its coastal areas will continue to be affected by erosion and is labeled as "highly likely."

Map 20 – Identified Coastal Erosion Areas

Map 21 – Coastal Erosion, North Cove Area (Washaway Beach)



4.3.4 – Assessing Vulnerability & Impacts



Coastal Erosion Impacts

The USGS has measured the long-term erosion rate of the Long Beach Peninsula at a positive 2.7 meters per year. Although its beach area is steadily growing, it does experience erosion during certain years. The Bay Center area is eroding, but the exact degradation numbers are unknown. The North Cove area (Washaway Beach) has experienced the worst coastal erosion in the area at a rate of negative 1.8 meters per year. Shoreline loss has been recorded up to 30 meters per year in the North Cove area (Washaway Beach).

Vulnerability of Facilities

Pacific County and its jurisdiction's structural vulnerability to coastal erosion is based strictly on location. The three identified areas are located near the North Cove area (encompassing the unincorporated towns of North Cove, Dexter, and Tokeland that exist within the county), and the Long Beach Peninsula (encompassing the City of Long Beach and the unincorporated towns of Ocean Park and Seaview that exist within the county), and the unincorporated Town of Bay Center.

Houses and other structures within these identified areas are at risk for being completely lost to the Pacific Ocean. When erosion has eroded the shoreline to the structure, it will be swept away and considered a total loss.

Historically, 181 structures have been lost to coastal erosion in the North Cove Area (Washaway Beach), 0 structures have been lost on the Long Beach Peninsula. Zero structures have been lost around Bay Center, but a few have been relocated under state programs to prevent them from being lost to coastal erosion.

Vulnerability of Population

Due to the slow working nature of erosion, it is not reasonable that the planning area's populations would be vulnerable to death or injury from coastal erosion.

Historically, there are no recorded incidents of death or injury from coastal erosion in Pacific County or any of its participating jurisdictions.

Vulnerability of Systems

Pacific County's shorelines are some of its most precious resources drawing tourists and permanent residents alike. If its shoreline continues to erode at its current rate, Pacific County could be left with a significantly decreased population and decreased tourism. This loss in commercial income and public taxes will have a significant effect on its economy and ability to maintain a hazard resilient community.

Fire Districts

The participating fire districts are currently not vulnerable to coastal erosion with the exception of one of FD #3's stations near the North Cove area. The station is years away from being affected and thus its

capabilities should not be affected until then, but awareness of this risk is necessary as eventually it will need to be relocated.

Ports
The ports of Chinook, Ilwaco, Peninsula, and Willapa Harbor are currently not at risk to coastal erosion.

Public Utility District
Public Utility District #2 serves the entire planning area. PUD #2 does not generate any power of its own, but provides and maintains the energy grid necessary to delivery electricity to the planning area. PUD #2 is not at a significant or measured risk to coastal erosion. Indeed, small portions of its grid would be washed away along with structures at risk, but this is not representative of the total grid. It does not have primary electrical transportation lines or stations within the identified at risk zones.

Transportation & Pacific Transit
At present time, major roadways and Pacific Transit's bus routes are not at risk from coastal erosion. If the problem remains unabated, it is possible that major roadway infrastructure along the North Cove area (Westhaven Beach) will be labeled at risk, but this eventually will not occur for decades.

Water Companies and Districts
The participating water companies and districts are not significantly vulnerable to coastal erosion. Although part of their infrastructure may reside along with a shoreline containing development, their facilities and the vast majority of their infrastructure are outside the identified coastal erosion zones.

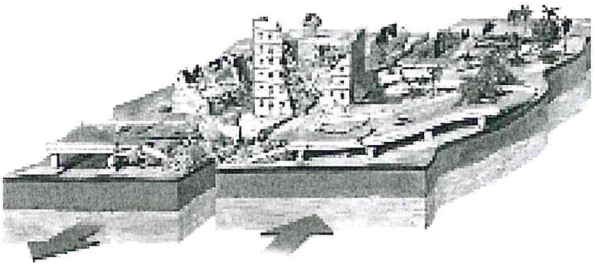
4.3.4A – Infrastructure & Critical Facilities
Fire District #5 has a station near the North Cove area that will eventually be required to relocate. It is not in immediate danger, but awareness must be maintained so it can eventually be moved. Depicted in Map2 in Section 3, State Route 105 runs along the coast and just north of North Cove. If State Route 105 becomes unusable or fully transected by coastal erosion, the only means of providing transit dependent services to that portion of the county will be via 65-75 mile detour into the adjacent county. Additionally, if erosion around Bay Center increases, it will likely threaten a number of municipal water, sewage, and electrical utility lines in the area, as well as, any number of municipal roads.

4.3.4B – Land Use & Development Trends
Pacific County and it participating jurisdictions have declining growth as detailed in Section 3.1.1 – Land Use & Development Trends. In the context of coastal erosion, a declining population will not increase a jurisdiction's hazard vulnerability in of itself. The City of Long Beach is growing, but not at a rate high enough to claim that its development is increasing its vulnerability and risk.

4.3.4C – Unique & Varied Risk
The planning area only has the three identified areas vulnerable and at risk to coastal erosion, the Long Beach Peninsula, the North Cove area, and around Bay Center. These areas are within the county at large and the City of Long Beach. Currently, no other areas are experiencing heightened or worsening erosion than would be expected.

4.3EQ – Earthquakes

4.3.1 – Description



An earthquake is the result of a sudden release of energy in the Earth's crust that creates seismic waves. In the most general sense, the word earthquake is used to describe any event that generates seismic waves. Earthquakes are typically caused by the rupturing of geological faults. Occasionally, they are also caused by other events such as volcanic activity, landslides, mine blasts, tsunamis, and nuclear tests. Tsunamis are covered later in this risk assessment under Section 4.3TS. An earthquake's point of initial rupture is called its focus or hypocenter. The epicenter is the point at ground level directly above the hypocenter.

At the Earth's surface, earthquakes manifest themselves by shaking and sometimes displacement of the ground. When the epicenter of a large earthquake is located offshore, the seabed may be displaced sufficiently to cause a tsunami. Earthquakes can also trigger landslides, and occasionally volcanic activity. The shallower an earthquake, the more damage to structures it causes, all else being equal.

Oceanic earthquakes have the ability to cause damage to property and threaten life in much the same as an earthquake with an epicenter below a continent. As previously mentioned, an oceanic earthquake has the potential to create a tsunami, compounding the negative effects and emergency operations after an event.

An earthquake's affect can be compounded by the soil type underlying a community's buildings and infrastructure. If the soil is not composed of bedrock and consists of clays, silts, and other types of sand, the pressure generated by an earthquake can force brittle soil and water up towards the surface. These upward forced materials will then destabilize buildings and infrastructure, causing damage anywhere from cracks in roadways to the full displacement and destruction of a building. Smaller upward forced materials can destabilize slopes and building foundations further compounding the potential damage to a community.

4.3.2 – Location & Extent

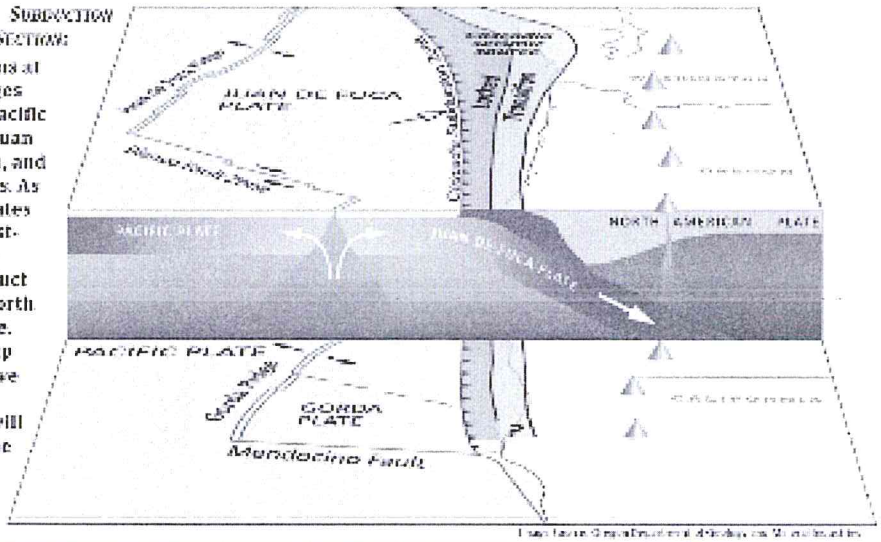
The State of Washington and Pacific County lie east of the Cascadia subduction zone where the North American Plate collides with a number of smaller plates, the Juan De Fuca plate being the largest.

Earthquakes from the Cascadia subduction zone can strike suddenly and without warning, occur at any time of the year, and at any time of the day. There is not definitive way of predicting an earthquake. The duration of shaking can last anywhere from a second to a period of minutes.

There are numerous characteristics measured when observing earthquake activity, however: its force, depth, peak ground acceleration, and the distance to the epicenter are the most influential factors in determining damage. Two scales are used when referring to earthquake activity; estimating the total force of the earthquake, the Richter Scale, and the observed damage from an earthquake, the Modified Mercalli Intensity Scale. Please see the figures on the following pages for both scales and their estimated matching equivalent index.

Earthquakes of magnitude 5.0 or greater are considered potentially threatening to Pacific County and its jurisdictions, as this is the point at which structures can become unusable due to structural and foundation damage. Any earthquake felt at this magnitude or greater would likely be cause for cessation of operations until sight inspections can take place.

The entire planning area is at risk from the Cascadia subduction zone. Map 22 depicts the USGS's potential peak ground acceleration values in the event of a catastrophic earthquake. The northern portion of the planning area is in a USGS designated 20-25% peak ground acceleration value while most of the planning area is designated as likely to experience 15-20% peak ground acceleration. These values translate, via the tables on the following page, to a Richter Scale around 5.5 and a Mercalli Scale value of VII: General Alarm, Walls and Plaster Crack.



The Cascadia Subduction Zone in Cross-Section: New crust forms at spreading ridges between the Pacific Plate and the Juan de Fuca, Gorda, and Explorer plates. As these three plates are pushed eastward, they are forced to subduct beneath the North American Plate. Strain builds up where they have become stuck (locked) and will be released one day in a great earthquake.

Table 22 – Modified Mercalli Scale Vs. Richter Scale

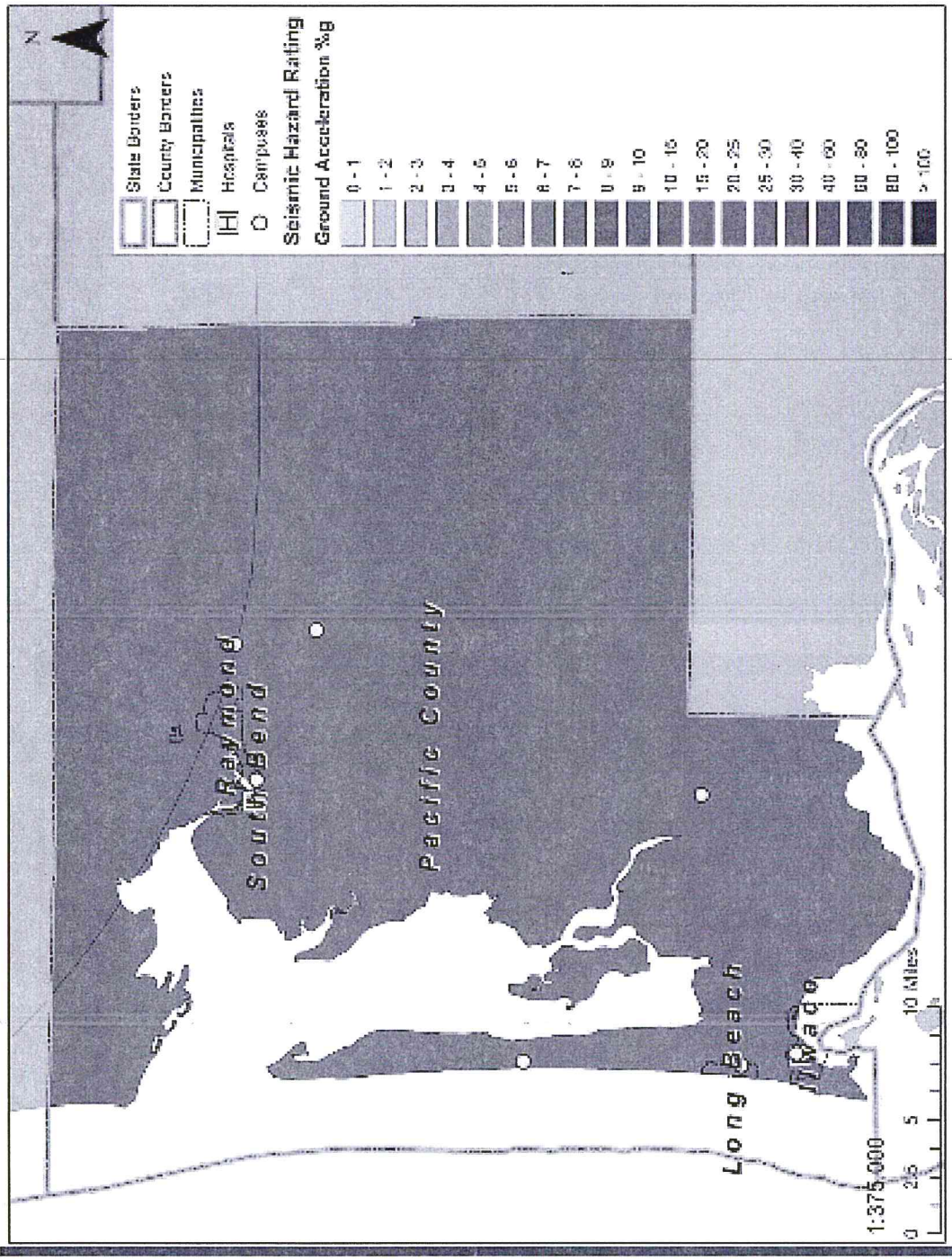
Category	Effects	Richter Scale (approximate)
I. Instrumental	Not felt	1-2
II. Just perceptible	Felt by only a few people, especially on upper floors of tall buildings	3
III. Slight	Felt by people lying down, seated on a hard surface, or in the upper stories of tall buildings	3.5
IV. Perceptible	Felt indoors by many, by few outside; dishes and windows rattle	4
V. Rather strong	Generally felt by everyone; sleeping people may be awakened	4.5
VI. Strong	Trees sway, chandeliers swing, bells ring, some damage from falling objects	5
VII. Very strong	General alarm; walls and plaster crack	5.5
VIII. Destructive	Felt in moving vehicles; chimneys collapse; poorly constructed buildings seriously damaged	6
IX. Ruinous	Some houses collapse; pipes break	6.5
X. Disastrous	Obvious ground cracks; railroad tracks bent; some landslides on steep hillsides	7
XI. Very disastrous	Few buildings survive; bridges damaged or destroyed; all services interrupted (electrical, water, sewage, railroad); severe landslides	7.5
XII. Catastrophic	Total destruction; objects thrown into the air; river courses and topography altered	8

Table 23 – % Peak Ground Acceleration Vs. Mercalli & Richter Scales

Mercalli Scale Intensity	Richter Scale (Approximate)	Minimum %g	Maximum %g
I	1 - 2	0.00%	0.17%
II - III	3 - 3.5	0.17%	1.40%
IV	4	1.40%	3.90%
V	4.5	3.90%	9.20%
VI	5	9.20%	18.00%
VII	5.5	18.00%	34.00%
VIII	6	34.00%	65.00%
IX	6.5	65.00%	124.00%
X +	7 +	124.00%	-

*This table is from the USGS

Map 22 – Seismic Hazard Ratings, Pacific County



4.3.3 – Previous Occurrences

Pacific County and its participating jurisdictions have experienced two minor earthquakes with epicenters inside their borders. These were a magnitude 3.1 and a magnitude 3.3 earthquake in September of 1981 and March of 2012 respectively. Map 23 on the following page depicts earthquakes recorded and documented by the USGS within a 200 mile buffer of Pacific County.

These earthquakes were not cause for alarm. They were felt, but did not incur any damage or loss of life. Additionally, there is no record in the past century of loss of life or significant property damage from an earthquake in Pacific County. More threatening earthquakes are likely to have epicenters far away from Pacific County, but be of such a high magnitude that they affect the planning area.

Nisqually Earthquake – 28 February 2001

Commonly referred to as the "Ash Wednesday Quake," the Nisqually Earthquake occurred on February 28, 2001. It measured 6.8 on the Richter Scale with its epicenter under Anderson Island just northeast of Olympia, Washington. This is a distance of roughly 65 miles from the center of Pacific County. Its effects were felt halfway into central Oregon and as far north as Vancouver and were reported to last a total of 45 seconds.

Although around 400 people were injured in Olympia and the total property damage and economic loss has been reported at $2,000,000, Pacific County was lucky enough to feel minor shaking and not sustain any injury or damage.

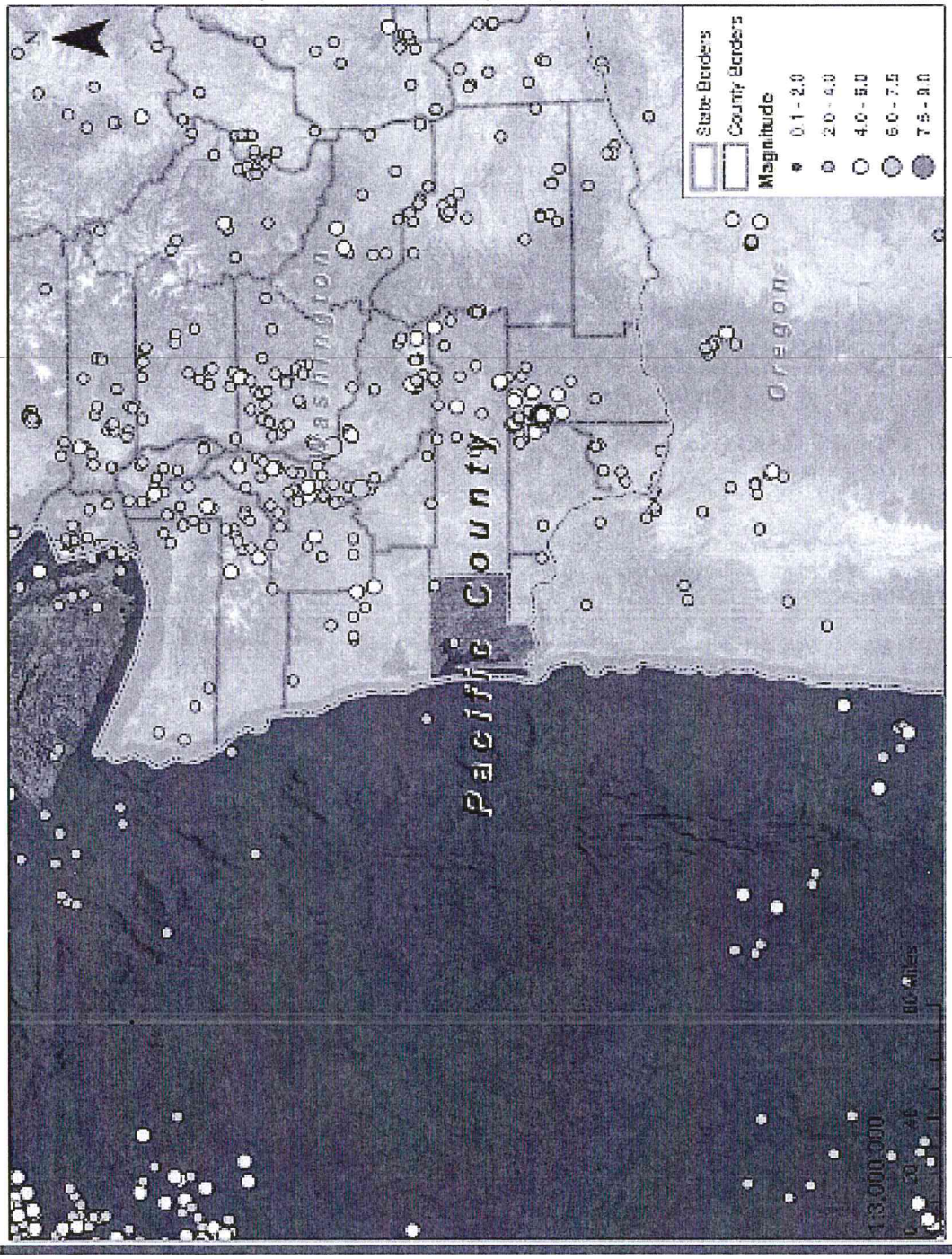
Map 24 depicts the USGS's official "shakemap" of the incident. From this map, one can see the recorded peak ground acceleration experienced by Pacific County and its participating jurisdictions was between 8.2 and 18, under the USGS's predicted potential peak ground acceleration 15-25.

There have been other large earthquakes in the State of Washington, such as the Seattle-Tacoma 6.5 magnitude earthquake in 1965, and an Olympia 7.1 magnitude earthquake originating around the same location as the Nisqually earthquake. However, the results and impacts where similar to those of the Nisqually earthquake.

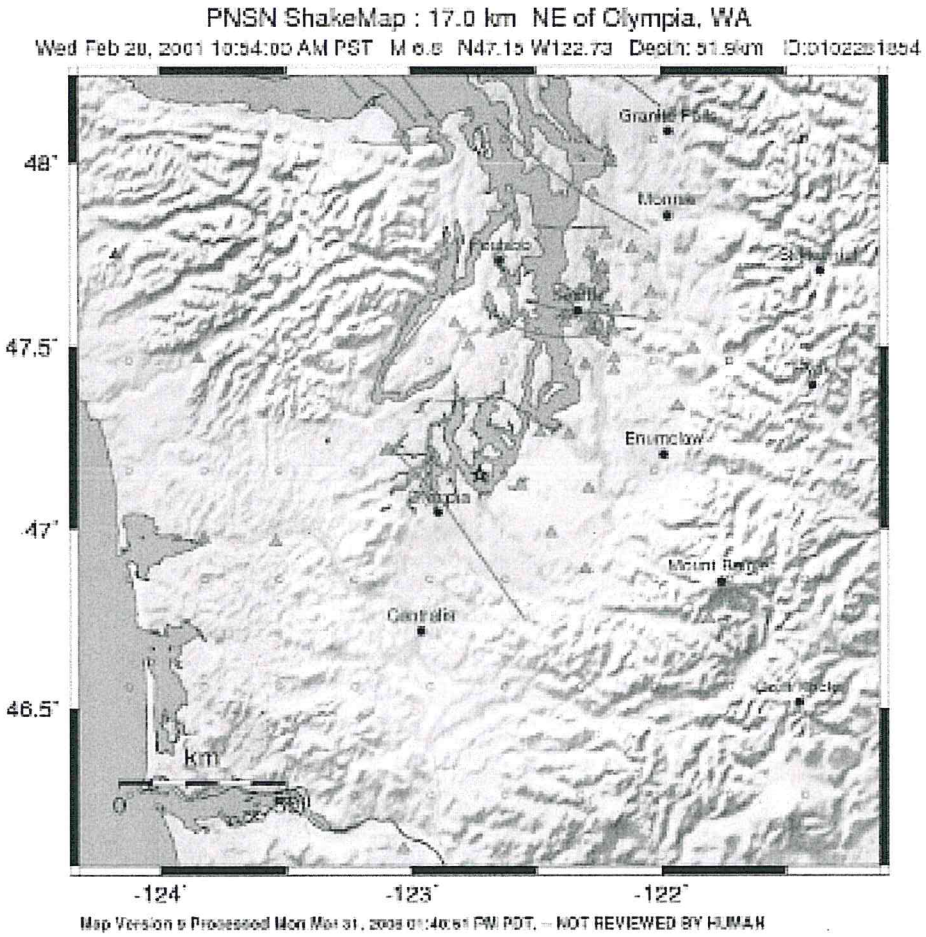
4.3.3A – Probability of Future Events

Although minor earthquake activity occurs on a daily basis in the State of Washington, damaging earthquakes are infrequent. The estimated probability of occurrence for an earthquake similar to the magnitude 6.5 Seattle-Tacoma event that occurred in 1965 is approximately once every 25 years. The probability of occurrence of an earthquake similar to the magnitude 7.1 Olympia earthquake that occurred in 1949 is once every 110 years. Since 1970 there have been four earthquakes in Western Washington of greater than 4.0 Magnitude.
The approximate occurrence rate for a magnitude 9 earthquake in the Cascadia Subduction Zone is once every 350 to 500 years. Considering the recurrence interval and history of earthquakes felt in Pacific County, the probability of occurrance of a damaging earthquake is "rare."

Map 23 – Historical Earthquakes, 200 Mile Radius



Map 24 – USGS Shakemap, Nesqually Earthquake



PERCEIVED SHAKING	Not felt	Weak	Light	Moderate	Strong	Very strong	Severe	Violent	Extreme
POTENTIAL DAMAGE	none	none	none	Very light	Light	Moderate	Moderate/heavy	Heavy	Very heavy
PEAK ACC.(%g)	<.17	.17-1.4	1.4-3.9	3.9-9.2	9.2-18	18-34	34-65	65-124	>124
PEAK VEL.(cm/s)	<0.1	0.1-1.1	1.1-3.4	3.4-8.1	8.1-16	16-31	31-60	60-116	>116
INSTRUMENTAL INTENSITY	I	II-III	IV	V	VI	VII	VIII	IX	X+

4.3.4 – Assessing Vulnerability & Impacts

Earthquake Impacts

An earthquake with an epicenter near Seattle-Tacoma or Olympia will likely impact Pacific County and its participating jurisdictions as it has in the past, very minimally. However, a catastrophic quake from the Cascadia Subduction Zone could have extremely adverse impacts.

A high magnitude earthquake in the Cascadia Subduction Zone would likely create a tsunami. This is covered in 4.3.5 – Tsunami. The Cascadia Region Earthquake Workgroup published a comprehensive assessment labeled: Cascadia Subduction Zone Earthquakes: A Magnitude 9.0 Earthquake Scenario, updated in 2013. The assessment asserts the Cascadia Subduction Zone will rupture in a series of earthquakes between 8.0 and 8.5 on the Richter Scale over a period of years. Further, the study asserts the series of earthquakes will be similar in character to that of the 2009, 9.0 magnitude earthquake that occurred off the eastern coast of Japan. Fortunately, it claims the devastation to the Pacific Northwest will not be as great as it was in Japan. Their economic impact is estimated at roughly $48,000,000 in the State of Washington, out of a total $70,000,000 compared to $309,000,000 from Japan.

Vulnerability of Facilities

Pacific County and its jurisdictions' structural vulnerability to earthquakes vary based on the construction quality, construction material, soil and foundation, and earthquake resilience of each structure. The State of Washington has been incredibly pro-active in updating, increasing, and enforcing its seismic resilient building codes. However, a high magnitude earthquake will still damage or destroy structures.

The planning area's most vulnerable structures are those which are older, have not been subject to new and improved building codes, are built over unstable soil, and those susceptible to secondary hazards such as landslides or tsunamis. The vast majority of the planning area's inhabited areas are over lands that are susceptible to liquefaction. Map 25 at the end of this section depicts the soil locations where the planning area is most susceptible to liquefaction.

Historically, the planning area has sustained $60,141 in property damage from the Nisqually earthquake, but has no other recorded damage from earthquakes.

Data Deficiency

Structural resistance to earthquakes is a significant factor in determining earthquake vulnerability. It is likely there are structural differences in Pacific County and its jurisdictions' buildings which change their vulnerability ratings. A catalog of seismic resiliency for old and pre-building code established buildings does not exist. Specific information on earthquake structural resistance is unavailable for Pacific County and its jurisdictions' structures.

Vulnerability of Population

Pacific County and the vulnerability of its jurisdictions' population to earthquakes is largely dependent on its vulnerability to facilities. An earthquake will shake objects off a wall or shake off parts of a structure which has the potential to hurt the population. Additionally, there is the risk of a facility partially or fully collapsing which would injure or kill the inhabitants. The population total of Pacific County and its jurisdictions is 20,561. Any number of these residents are vulnerable in relation to the structures in which they live, work, and visit.

Historically, there are no recorded incidents of death or injury from earthquakes in Pacific County nor any of its participating jurisdictions.

Vulnerability of Systems

If an earthquake damages any part of Pacific County or its jurisdictions, it is highly likely the entire planning area will be similarly damaged due to the geographic scale of earthquakes. A high magnitude event would likely cripple the planning area, destroying buildings and infrastructure, starting fires, incurring widespread loss of power and basic services, and hampering local emergency management and response services from coordinating or providing the necessary assistance.

If a high magnitude earthquake originates from the Cascadia Subduction Zone it is likely the entire region will be dramatically affected and emergency services from local, regional, state, and the federal government will be spread thin among the region. A high magnitude earthquake will not only yield these direct and immediate effects, but will likely hurt Pacific County and its jurisdictions' economy and scar its population for years.

Fire Districts

The fire districts' services are an integral part to the planning areas emergency operations before, during, and after an event. The participating fire districts are vulnerable to earthquakes. An earthquake that damages the fire districts' capabilities will have dramatic negative effects on the planning area's ability to respond to and recover from the earthquake.

Ports

The ports of Chinook, Ilwaco, Peninsula, and Willapa Harbor are significantly vulnerable to earthquakes. Although the resiliency of its structures are not known as previously declared in a data deficiency, any destruction of critical equipment, docks, or mooring facilities could shut down the port for weeks to months. Additionally, depending on what was damaged or destroyed, debris could fall into the water making the facility unnavigable. The communities of Pacific County rely on these ports for commercial and economic stability and prosperity making them of extreme value in terms of mitigation and recovery.

Public Utility District #2

Public Utility District #2 serves the entire planning area. PUD #2 does not generate any power of its own, but provides and maintains the energy grid necessary to deliver electricity to the planning area. PUD #2's infrastructure is at significant risk to strong earthquakes. Power lines and delivery substations above ground can be damaged in the same way as any above ground structure. Power lines that are buried can become dislodged, disjoined, or broken due to shifts in the earth and soil. This poses a serious problem for response and recovery operations following a sizable earthquake.

Transportation & Pacific Transit
The roadways and bus routes of Pacific County are highly vulnerable to earthquakes. The complexity and multitude of valleys in which its roadways are constructed make it especially vulnerable to closures from landslides caused by earthquakes. This is covered in more detail in Section 4.3L5 - Landslides. Additionally, movement from the earth can displace roadways, making any quick and easy repairs impossible. Damaged structures or other falling debris can block these roadways, further delaying any return to normal service of a roadway. Long term closures and restrictions from an earthquake have the potential to damage the local economy, hamper commerce, and limit the delivery of basic services.

Water Companies and Districts
The participating water companies and districts are significantly vulnerable to earthquakes. Some portions of the planning area use clay pipes to deliver water, which would be completely destroyed in significant earthquake, leaving hundreds to thousands without running water for months if not years. Additionally, water storage tanks, pump stations, and water supply ponds could be destroyed outright destroyed, or fractured, rendering them inoperable.

4.3.4A – Infrastructure & Critical Facilities
In large part, Pacific County and its participating jurisdictions' critical facilities face the same risk to earthquakes as does their parent jurisdiction. The Ocean Beach Hospital, the Willapa Harbor Hospital, and the participating fire district's structures are in a 15-20% peak ground acceleration area and its liquefaction susceptibility is ranked as "moderate to high." For more detail on this risk please see "Vulnerability of Facilities." A list of infrastructure and critical facilities can be found in Appendix D.

Of specific concern for the county are the Pacific County Courthouse, due to its age and standards when it was constructed, and their public safety buildings in terms of their necessity to provide services in the event of a disaster. Given the mountainous topology throughout the county, all bridges are of prime concern as the collapse or loss of usability of any of them would severely hamper public services, commerce, and immediate response capabilities.

Ilwaco's city hall and maintenance shop are older buildings and therefore considered at risk to a significant earthquake. Ilwaco also hosts the Columbia Pacific Heritage Museum, which is considered a cultural landmark for the area. Their water treatment plan, a 500,000 gallon water tank, and a 500,000 gallon reservoir are critical to the daily operations of the city, their loss or damage to, would take a significant amount of time to rebuild or repair.

Long Beach's fire station and 1,000,000 gallon water tank are also in seismic and liquefaction zones that put them at extreme risk. Raymond is also in a high liquefaction zone placing their fire station, police station, and all three water tanks in zones where a significant earthquake would render them unusable. South Bend is slightly better off with four water pipes and the City Pier in liquefaction zones.

4.3.4B – Land Use & Development Trends
Pacific County and it participating jurisdictions have declining growth as detailed in Section 3.1.1 – Land Use & Development Trends. None of the participating jurisdictions have seen significant growth and thus there is no increase in their risk to earthquakes caused by new land use measures or development. Any buildings or infrastructure built in the future will have the same risk as other buildings or infrastructure built within or outside of the designated seismic zones.

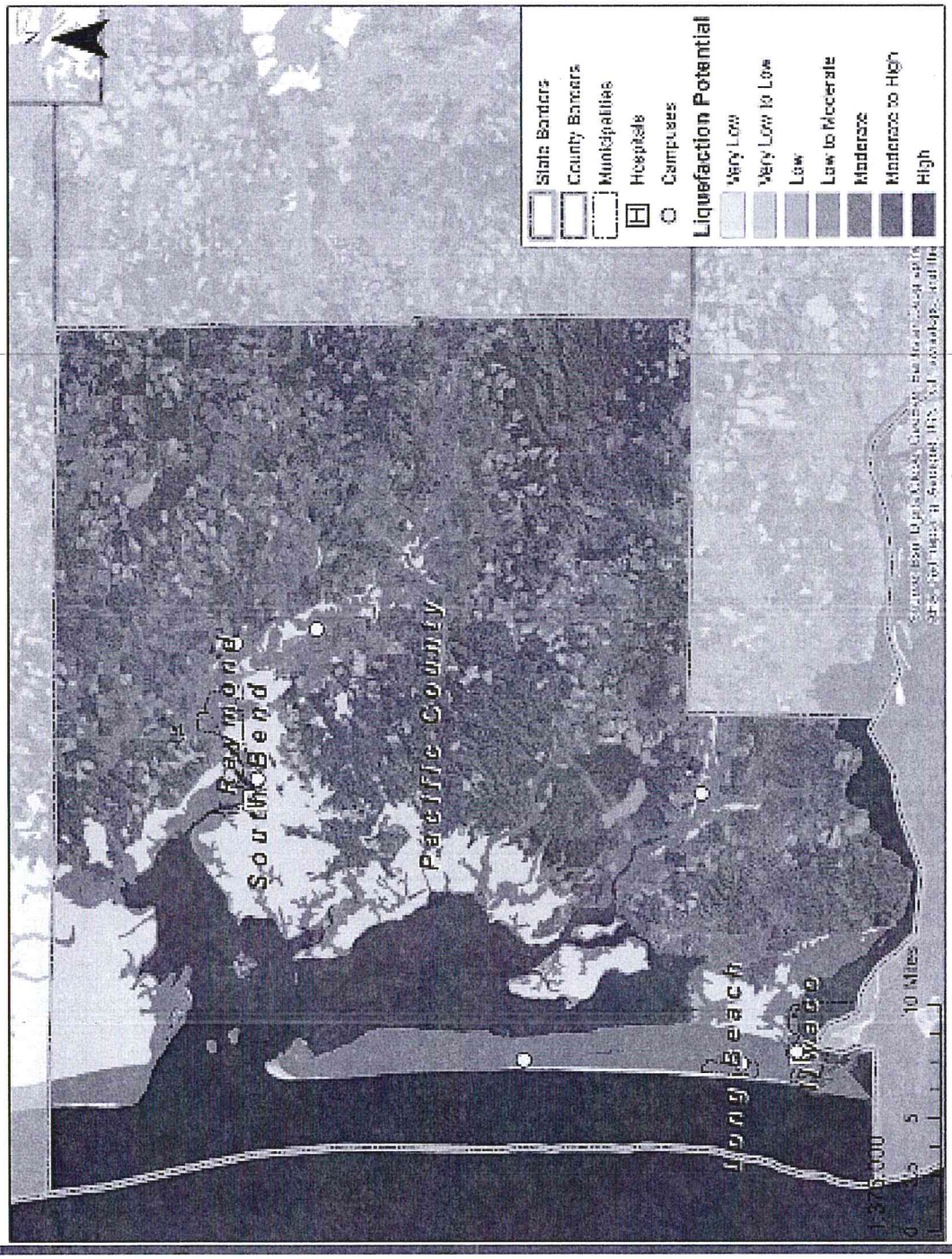
4.3.4C – Unique & Varied Risk

Based on the models and seismic analysis in this section, Pacific County and its participating jurisdictions largely exist in 15-20% peak ground acceleration areas with 20-25% in the northern portion of the county. Every participating jurisdiction is susceptible to liquefaction potential as previously described and summarized in the table below.

Table 24 – Unique & Varied Risk, Earthquakes

Stakeholder	Liquefaction	Peak Ground Acceleration
Pacific County	"Very Low to Low" & "Moderate to High" Zones	15 - 20% and 20 - 25%
Raymond	"Very Low to Low" & "Moderate to High" Zones	15 – 20%
Long Beach	"Very Low to Low" & "Moderate to High" Zones	15 – 20%
Raymond	"Very Low to Low" & "Moderate to High" Zones	15 - 20% and 20 - 25%
South Bend	"Very Low to Low" & "Moderate to High" Zones	15 – 20%
Naselle/Grays River SD	"Very Low to Low" Zone	15 – 20%
Ocean Beach SD	"Moderate to High" Zone	15 – 20%
South Bend SD	"Moderate to High" Zone	15 – 20%
Willapa Valley SD	"Moderate to High" Zone	15 – 20%
Naselle Water Company	"Moderate to High" Zone	15 – 20%
North Beach WD	"Moderate to High" Zone	15 – 20%
Surfside Homeowners' Association	"Moderate to High" Zone	15 – 20%
Willapa Valley WD	"Moderate to High" Zone	15 – 20%
Ocean Beach Hospital	"Moderate to High" Zone	15 – 20%
Willapa Harbor Hospital	"Very Low to Low" & "Moderate to High" Zones	15 – 20%
Fire District #1	"Moderate to High" Zone	15 – 20%
Fire District #2	"Moderate to High" Zone	15 – 20%
Fire District #3	"Moderate to High" Zone	15 – 20%
Fire District #5	"Moderate to High" Zone	15 – 20%
Fire District #6	"Very Low to Low" & "Moderate to High" Zones	15 – 20%
Pacific Transit	"Moderate to High" Zone	15 – 20%
Port of Chinook	"Moderate to High" Zone	15 – 20%
Port of Ilwaco	"Moderate to High" Zone	15 – 20%
Port of Peninsula	"Moderate to High" Zone	15 – 20%
Port of Willapa Harbor	"Very Low to Low" Zone	15 – 20%
PUD #2	"Very Low to Low" & "Moderate to High" Zones	15 – 20%

Map 25 – Liquefaction Potential, Pacific County



4.3F – Flooding

4.3.1 – Description

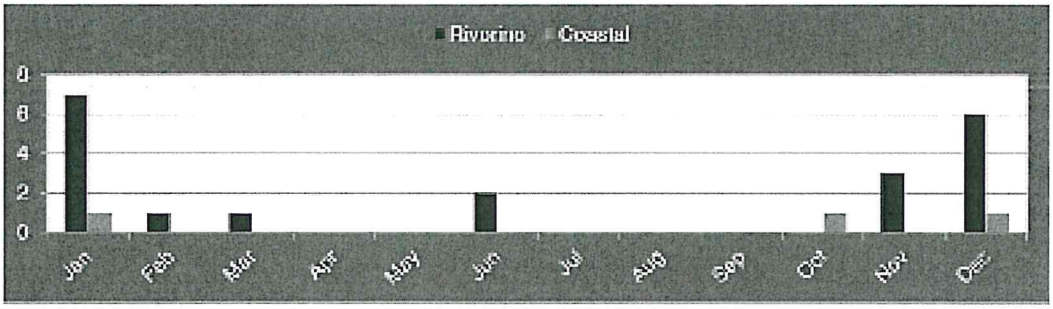
According to the Federal Emergency Management Agency, flooding accounts for about 40% of the Presidential declared disasters in the United States. Approximately 33% of the federally declared emergencies or disasters in Washington State since 1956 have involved flooding.

Photo courtesy of the Willapa Harbor Herald

Flooding is the most prevalent and costly disaster in the United States. Flooding occurs when water, due to dam failures, rain, coastal swells, or melting snows, exceeds the absorptive capacity of the soil and the flow capacity of rivers, streams or coastal areas. At this point, the water concentration hyper extends the capacity of the floodway and the water enters the floodplain. Floods are most common in seasons of rain and thunderstorms. Floods can be associated with other natural phenomenon such as rainstorms, thunderstorms, hurricanes, coastal swells, earthquakes, tsunamis and rapidly melting snow.

The rivers and valleys of Pacific County are short and the rivers flow quickly. Intense rainfall and accompanying thunderstorms result in water flowing rapidly from higher elevations into valleys, collecting in and sometimes overtopping the low lying streams. Various types of floods can happen suddenly in the form of a flash flood. Riverine floods also happen quickly, accumulating and dissipating in a period of 24 hours. Flooding can occur anytime throughout the year, but is typically associated with the winter season. The chart below illustrates season differences between coastal and riverine flood impacts per month.

Chart 1 – Coastal & Riverine Floods by Month, Pacific County (1996 – 2015)



*Title data set from the NOAA NCDC Storm Events Database.

4.3.2 – Location & Extent

A variety of factors affect the severity of coastal, flash, and riverine flooding within the planning area. These include topography, weather characteristics, development, and geology. Intense flooding will create havoc in any jurisdictions affected. The predicative magnitude of coastal, flash, and riverine floods varies greatly.

Coastal Flooding
Coastal floodplains have been identified by FEMA all along the western part of the county that lies on the Pacific Ocean. Pacific County regularly experiences coastal swelling, which occasionally is classified as a coastal flood. Historically recorded coastal storms in the planning area have reached between 3 and 5 feet above the tide. This level of sea rise has and will cause the closure of major roads and highways along Long Beach, Raymond, and the western portions of Pacific County.

Flash Flooding
Flash flooding is unpredictable and can occur anywhere throughout the entire planning area. Pacific County and its participating jurisdictions do not have any centralized or identified re-occurring locations that are more likely to experience flash flooding than other areas, based on previous events and historical documentation.

Historically, Pacific County and its participating jurisdictions have not been significantly impacted by flash flooding. Please see Section 4.3.3 for more information on the lack of historical impacts. However, flash flooding is unpredictable and could still pose a risk to Pacific County.

Riverine Flooding
Riverine flooding throughout the county varies and is identified via FEMA's FIRM maps and designated flood zone classifications detailed below. The greatest amount of riverine flooding the county and its participating jurisdictions has seen is around 26.65 feet. The primary sources of riverine flooding are from the Willapa and Naselle Rivers. The Willapa has set the record of 26.65 feet while the Naselle River has a historical maximum 23.04 feet.

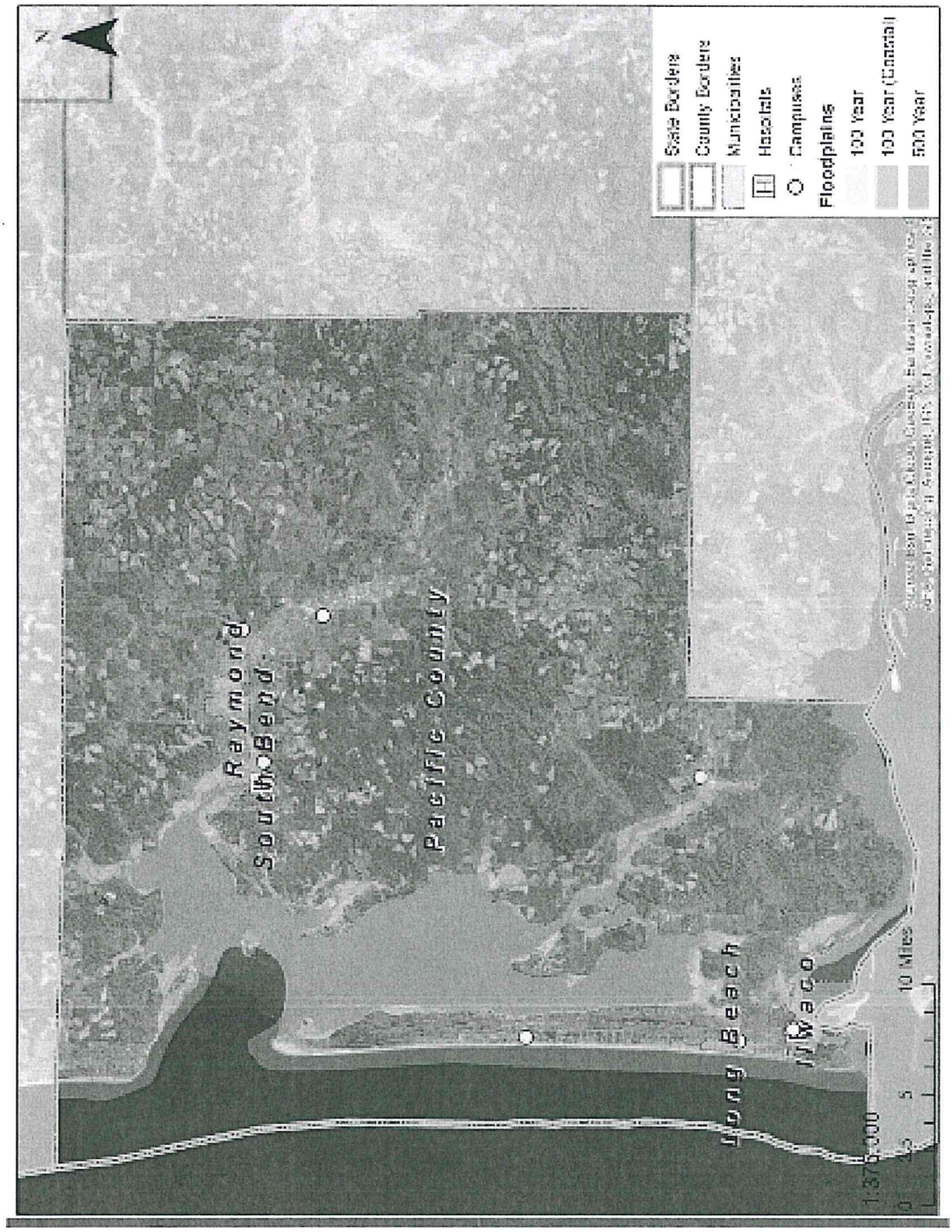
The county at large, Ilwaco, Raymond, South Bend, and all three participating ports have 100 year floodplains within its borders while the county, Long Beach, the North Beach WD, and the Surfside Homeowners' Association are exposed to 100 year coastal flooding. FEMA's FIRM maps have been provided to identify special flood hazard areas. These are depicted in the maps on the following pages.

Table 25 – Flood Zone Classifications

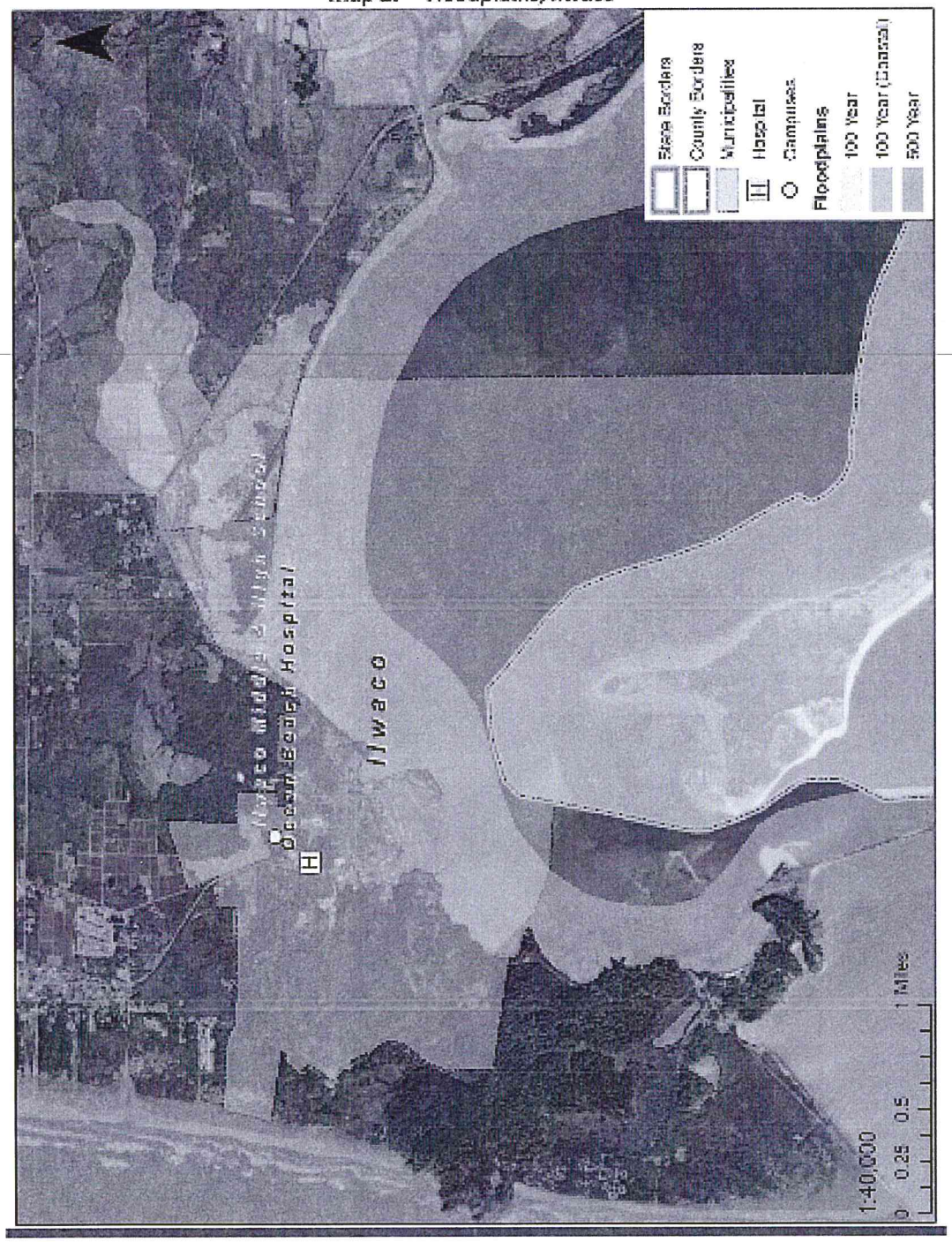
Zone Class	Description
A	An area inundated by 1% annual chance flooding, for which no base flood elevations have been determined. (100 Year Floodplain)
AE	An area inundated by 1% annual chance flooding, for which BFEs have been determined. (100 Year Floodplain)
B	Areas of 500 year flood; areas of 100 year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood. An area inundated by 0.2% annual chance flooding.
V	Coastal areas with a 1% or greater chance of flooding and an additional hazard associated with storm waves. These areas have a 25% chance of flooding over the life of a 30 year mortgage.

For the following FIRM Panels the A and AE zones have been combined as they are both considered 100 year floodplains.

Map 26 – Floodplains, Pacific County

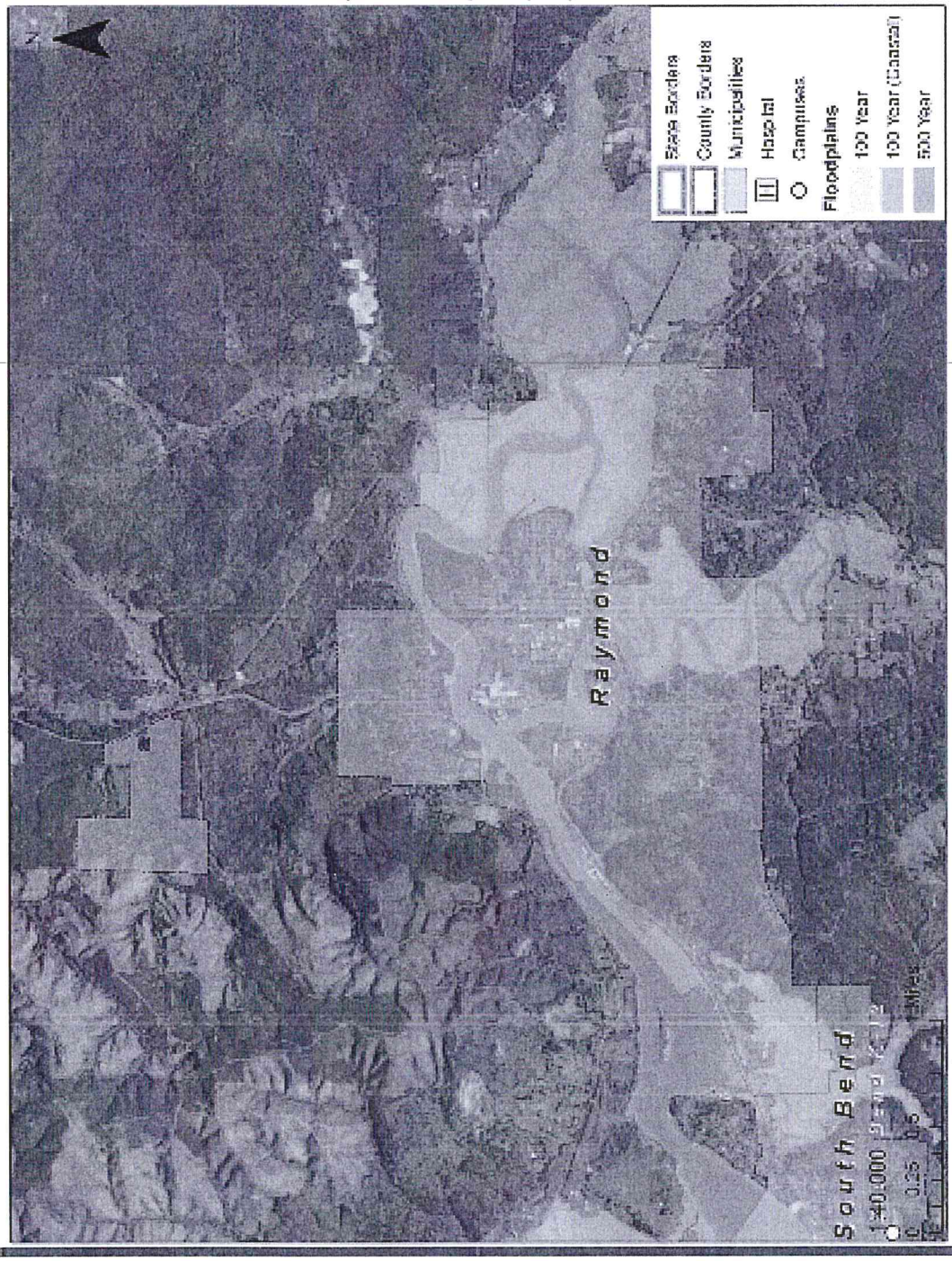


Map 27 – Floodplains, Ilwaco

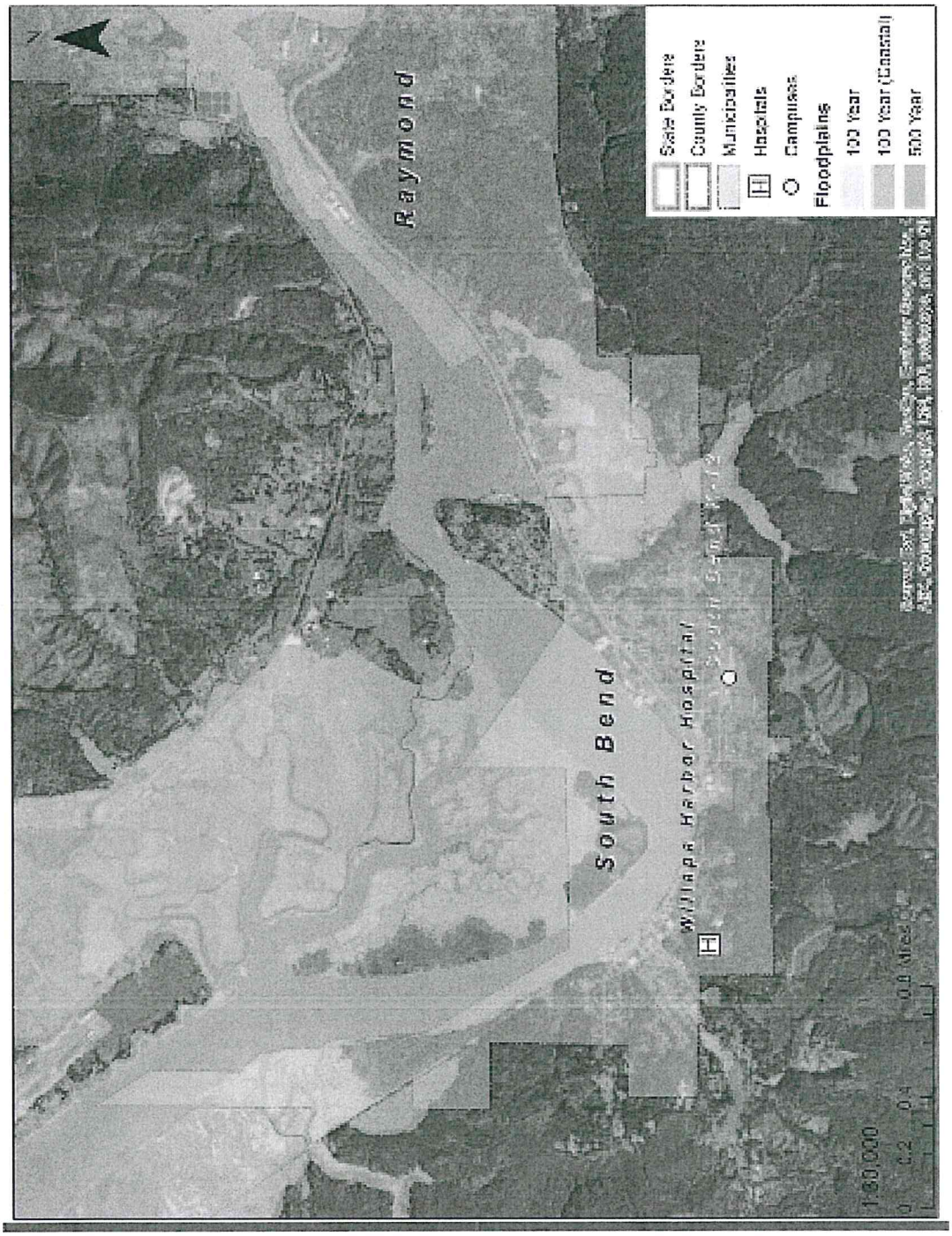


Map 28 – Floodplains, Long Beach

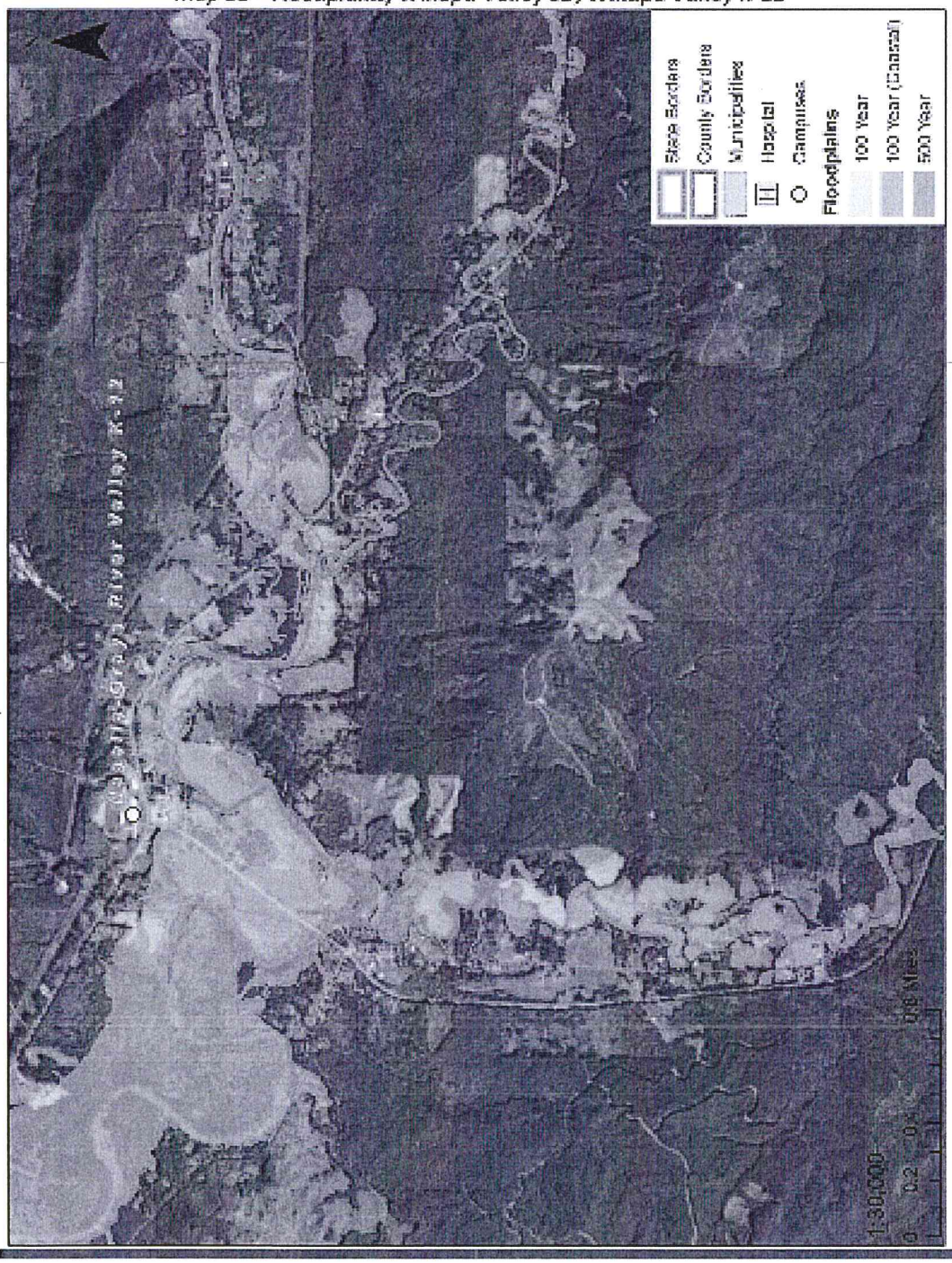
Map 29 – Floodplains, Raymond



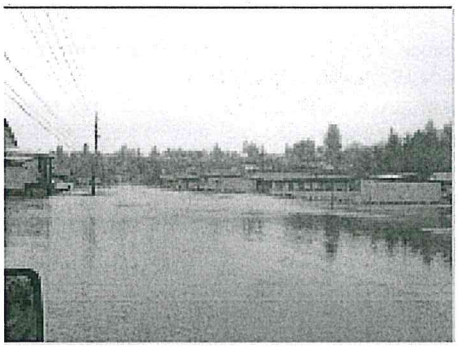
Map 30 – Floodplains, South Bend



Map 31 – Floodplains, Willapa Valley SD, Willapa Valley K-12



4.3.3 – Previous Occurrences



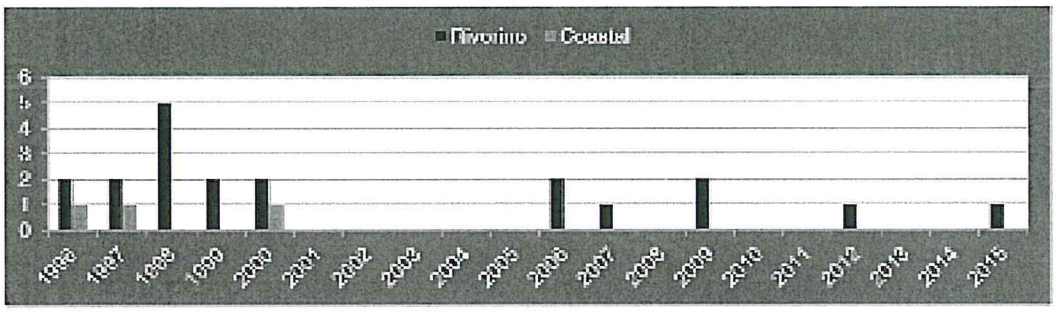
Since 1996, NOAA has recorded 20 riverine flood impacts in Pacific County and its participating jurisdictions. Pacific County and its participating jurisdictions have recorded 0 fatalities and 0 injuries relating to riverine flooding. These events have cost Pacific County and its participating jurisdictions $10,511,000 in property damage.

Since 2006, NOAA has recorded 8 coastal flood impacts in NWS region including the lands of Pacific County and its participating jurisdictions. Pacific County and its participating jurisdictions have recorded 0 fatalities and 0 injuries relating to coastal flooding. These events have cost the NWS region including the lands of Pacific County and its participating jurisdictions $5,150,000 in property damage.

NOAA and the NWS have not recorded any significant, damaging, or life threatening flash floods within Pacific County or its participating jurisdictions.

Please see the chart below for coastal and riverine flooding events per year.

Chart 2 – Coastal & Riverine Floods per Year, Pacific County (1996 – 2015)



*The data are from the NOAA NCDC Storm event Database.

4.3.3A – Probability of Future Events

The definition of each flood zone's classification is used for the purpose of calculating the yearly probability of a riverine flood. Jurisdictions with property in a 100 year floodplain can expect a 1% annual chance of flooding within the designated areas. Jurisdictions with property in a 500 year floodplain can expect a 0.2% annual chance of flooding within the designated areas. Therefore, the likelihood of a coastal and riverine flood occurring in exposed jurisdictions is "occasional."

Table 26 – Probability, Coastal & Riverine Floods

Jurisdiction	Floodplain Exposure		
	100 Year (1% Annual)	100 Year (1% Annual, Coastal)	500 Year (0.2% Annual)
Pacific County	X	X	-
Ilwaco	X	-	-
Long Beach	-	X	-
Raymond	X	-	-
South Bend	X	-	-
Naselle/Grays River SD	-	-	-
Ocean Beach SD	-	-	-
South Bend SD	X**	-	-
Willapa Valley SD	-	-	-
Naselle Water Company	-	-	-
North Beach WD	-	X	-
Surfside Homeowners' Association	-	X	-
Willapa Valley WD	-	-	-
Ocean Beach Hospital	-	-	-
Willapa Harbor Hospital	-	-	-
Fire District #1	-	-	-
Fire District #2	-	-	-
Fire District #4	-	-	-
Fire District #5	-	-	-
Fire District #6	-	-	-
Pacific Transit	-	-	-
Port of Chinook	X	-	-
Port of Ilwaco	X	-	-
Port of Peninsula	X	-	-
Port of Willapa Harbor	X	-	-
PUD #2	-	-	-

*The data are from FEMA's NFH.

**FEMA's NFH does not identify the South Bend SD as existing within an established floodplain however, the South Bend SD has been affected by significantly damaging riverine flooding.

Pacific County and its participating jurisdictions have not experienced significant flash flooding events, but are still considered at risk from this hazard. The likelihood of this occurring is considered "rare."

4.3.4 – Assessing Vulnerability & Impacts

Flood Impacts

Based on Map 26, and the future probability in Section 4.3.3.A, Pacific County, Raymond, and South Bend can expect .01 riverine floods per year and Long Beach can expect .01 costal floods per year. The probability of flash flooding is equal through each participating jurisdiction.

The following table is provided as a best available estimate of what a typical coastal and riverine flood in the region may cause in terms of damage, injuries, and death.

Table 27 – Historical Impacts, Floods

Hazard	Coastal Floods	Riverine Floods
Count of Events	3	20
Impacts Per Year	0.33	1.00
Average Magnitude	-	-
Magnitude Range		
Average Cost	$1,716,667 **	$525,550
Magnitude of Cost	$0 - 3,000,000**	$0 - 10,000,000
Total Recorded Cost	$5,150,000 **	$10,511,000
Average Fatalities	0	0
Total Fatalities	0	0
Average Injuries	0	0
Total Injuries	0	0

*The data are from the NCDC Storm Events Database.

**The recorded property damage is based on NWS regions and includes costs incurred outside the planning area of this HMP.

Vulnerability of Facilities

Flooding can cause minimal or complete damage to any of these types of facilities, taking them offline for days to years depending on the resources available after an event. Pacific County and its participating jurisdictions have in the past incurred damage from flooding, but have ensured these properties were not rebuilt within floodplains. As seen in the previous set of floodplain maps, neither Ilwaco, Raymond, South Bend, or the county have any remaining structures built in identified special flood hazard areas.

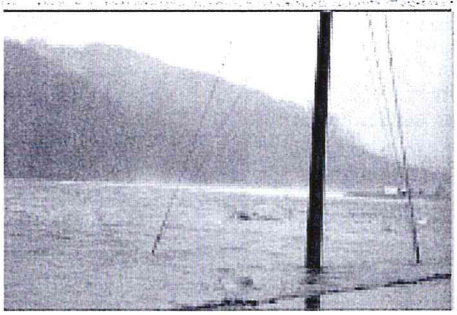
The average riverine flood event in Pacific County and its participating jurisdictions costs $525,000, while the existing range of a single incident can range from $0 to $10,000,000. Since there are no prior recorded flash floods, there are not any calculated historical impacts. The average coastal flood event in the region, and therefore possibly Pacific County and its participating jurisdictions, costs $1,716,667, while the existing range of a single incident can range from $0 to $5,000,000.

Vulnerability of Population

If evacuation is not heeded, or flood waters rise quickly enough, Pacific County and it participating jurisdictions' population can drown or become trapped on roadways or in valleys. Depending on the conditions, this will expose them to elements and deprive them of basic needs and services.

Long term care facilities housing vulnerable populations can take longer to evacuate. Additionally, the potential presence of mold after a flood requires extra care to be taken before their population can re-inhabit a facility.

Pacific County and its participating jurisdictions do not have any recorded fatalities or injuries from coastal, riverine, or flash flood events.



Vulnerability of Systems

Critical facilities and infrastructure can be rendered unusable or permanently destroyed, having a significant impact on a jurisdiction's ability to conduct its day-to-day or current flood event operations. Significant damage to residential and or commercial structures can irrevocably damage a community and its economy, creating refugees and economic hardship. If a chemical facility is significantly impacted, it is possible the chemicals stored at the facilities can wash away with the flood waters and have detrimental effects on the local environment.

Fire Districts

The fire districts' services are an integral part of the planning area's emergency operations before, during, and after an event. The participating fire districts are vulnerable to flash flooding only. The random nature of flash flooding is unlikely to damage an entire fire district in a way that would significantly reduce its overall capabilities.

Ports

The ports of Chinook, Ilwaco, Peninsula, and Willapa Harbor are significantly vulnerable to riverine flooding. In the event flood waters rise, the ports' docks, machinery, heavy equipment, and vessels could be significantly damaged. The communities of Pacific County rely on these ports for commercial and economic stability and prosperity making them of extreme value in terms of mitigation and recovery.

Public Utility District

Public Utility District #2 serves the entire planning area. PUD #2 does not generate any power of its own, but provides and maintains the energy grid necessary to delivery electricity to the planning area. PUD #2's energy grid is at minimal direct risk to flooding.

Transportation & Pacific Transit

The roadways and bus routes of Pacific County are highly vulnerable to riverine flooding. The complexity and multitude of valleys in which its roadways are constructed make it especially vulnerable to closures from flooding. Any major roadway closures can cut off communities from basic services. Additionally, long term closures from flooding have the potential to damage the local economy and hamper commerce for years.

Water Companies and Districts

The participating water companies and districts are slightly vulnerable to coastal, flash, and riverine flooding. Excess rain has the potential to cause an overflow of storage ponds causing contamination of their current stock. However, their main facilities are not vulnerable due to their location.

4.3.4A – Critical Facilities & Infrastructure

Neither the Ocean Beach Hospital nor the Willapa Harbor Hospital, are located in identified special flood hazard areas. However, Raymond's fire and police stations and the Pacific County Annex building are within identified riverine floodplains. The South Bend School District campus in the past had an incident that was partially flash flooding and partially drainage related (no exact cause has been determined). It remains a location that will be watched for further flood related incidents. Major and minor roadways throughout the planning area are

routinely flooded and remain major concerns for the delivery of public and emergency services, including: US Highway 101, State Route 6 and 401, Willapa Road, Heckard Road, Camp One Road, Monahan Landing Road, Robertson Road, Lebam Road, Parpala Road, and South Valley Road. A list of infrastructure and critical facilities can be found in Appendix D.

4.3.4B – Land Use & Development Trends

Pacific County and participating jurisdictions have declining growth, as detailed in Section 3.1.1 – Land Use & Development Trends. None of the participating jurisdictions have seen significant growth and thus there is no increase in their risk to flooding caused by new land use measures or development. Any buildings or infrastructure built in the future will have the same risk as other buildings or infrastructure built within or outside of the designated floodplains.

4.3.4C – Unique & Varied Risk

Due to the nature of flash flooding, each jurisdiction in the planning area has an equal risk to a flash flood impact. The variable risks to coastal and riverine flooding are detailed in the table below.

Table 28 – Unique & Varied Risk, Coastal & Riverine Floods

Jurisdiction	Risk Characteristics
Pacific County	Parts of the jurisdiction are located in 100 year riverine and 100 year coastal floodplains.
Raymond	Parts of the jurisdiction are located in 100 year riverine floodplains.
Long Beach	Parts of the jurisdiction are located in 100 year riverine and 100 year coastal floodplains.
Raymond	Parts of the jurisdiction are located in 100 year riverine floodplains.
South Bend	Parts of the jurisdiction are located in 100 year riverine floodplains
[illegible]	No risk to coastal or riverine flooding.
[illegible]	No risk to coastal or riverine flooding.
South Bend SD	No risk to coastal or riverine flooding.
Willapa Valley SD	No risk to coastal or riverine flooding.
North Water Company	No risk to coastal or riverine flooding.
North Beach WD	Parts of the association are located in 100 year coastal floodplains.
Sunside Homeowners Association	Parts of the association are located in 100 year coastal floodplains.
Willapa Valley WD	No risk to coastal or riverine flooding.
Ocean Beach Hospital	No risk to coastal or riverine flooding.
Willapa Harbor Hospital	No risk to coastal or riverine flooding.
Fire District #1	No risk to coastal or riverine flooding.
Fire District #2	No risk to coastal or riverine flooding.
Fire District #3	No risk to coastal or riverine flooding.
Fire District #5	No risk to coastal or riverine flooding.
Fire District #6	No risk to coastal or riverine flooding.
Pacific Transit	No risk to coastal or riverine flooding.
Port of Ilwaco	Parts of the jurisdiction are located in 100 year riverine floodplains
Port of Ilwaco	Parts of the jurisdiction are located in 100 year riverine floodplains.
Port of Peninsula	Parts of the jurisdiction are located in 100 year riverine floodplains
Port of Willapa Harbor	Parts of the jurisdiction are located in 100 year riverine floodplains.
PUD #2	No risk to coastal or riverine flooding.

4.3.4E – Repetitive Loss Structures

The planning area currently does not have any repetitive loss or severe repetitive loss properties.

4.3HZMT – Hazardous Materials

4.3.1 – Description

Hazardous materials are any substances that pose a risk to health, life, or property when released or improperly handled. Generally, the term refers to materials with hazardous chemical or physical properties, though sometimes biological agents can fall under this category. The hazardous properties can be combustible, flammable, toxic, poisonous, corrosive/severely acidic, reactive, radioactive, or noxious. Though EPA, WA DOT, and OSHA categorize these in different ways, a basic distinction among hazardous substances is their persistence in the environment and respective levels of health risk that these pose. A release of a hazardous material can be caused by a spill, leak, explosion, pipeline break, transportation accident, or human action. If the material has escaped its container into the outside environment, a potentially hazardous situation exists.

Hazardous materials are so widely used, transported, and stored, often in large quantities so a spill or other event could happen nearly anywhere in the state. Because of the ubiquity of hazardous materials, risk mitigation requires cooperation among state agencies, the EPA, OSHA, WA DOT, and many private and public corporations.

4.3.2 – Classification

By EPA classification, hazardous substances are generally materials that "if released into the environment, tend to persist for long periods and pose long-term health hazards for living organisms. Hazardous materials present acute health hazards that, when released, are immediately dangerous to the lives of humans and animals and cause serious damage to the environment." The major categories of chemical/material hazards are classified according to their predominant effects–corrosive, flammable, toxic, irritant, or explosive being the essential classes. These properties may overlap, and commonly do with chemicals used in industry, agriculture, and energy. While over 500,000 substances are considered HAZMATs, a few thousand products account for common hazards. Many of the costlier hazardous substance incidents in the United States are petrochemical in makeup, but event reports indicate that substantive numbers of accidents involving all major chemical classes occur regularly. Deadly explosions at chemical plants occur with some regularity in Tennessee. When facilities have hazardous materials in quantities at or above the threshold planning quantity, they must submit "Tier II" information to appropriate federal and state agencies to facilitate emergency planning."

The basic types of hazardous materials may be categorized according to more than 6 different systems; but the categories of U.S. Emergency Planning and Community Right-to-Know Act (42 U.S.C. 11002) will be used here.

Extremely Hazardous Substances
These materials have acutely toxic chemical or physical properties and may cause irreversible damage or death to people, or harm the environment if released or used outside their intended use. Common examples include ammonia, chlorine gas, sulfuric acid, formaldehyde, hydrocyanic acid, nitrogen dioxide, phenol, phosphorus trichloride, and polyvinyl acetate. Radioactive materials are extremely hazardous.

Hazardous Substances
These are any materials posing a threat to human health and/or the environment, or any substance designated by the EPA to be reported if a designated quantity of the substance is spilled into waterways.

aquifers, or water supplies; or is otherwise released into the environment. Many common fuels and most petrochemicals fall under this list.

Additionally, some materials require registration if present in chemical facilities above the threshold quantity. These hazardous chemicals require a Material Safety Data Sheet under the Occupational Safety and Health Administration Hazard Communication Standard. These chemicals might cause fires and explosions or adverse health effects such as cancer, burns, or dermatitis, but they are not necessarily dangerous or volatile in all quantities. Toxic chemicals cause disease with long term exposure or chronic illness above a certain threshold exposure. This includes carcinogenicity.

Hazardous materials incidents can occur at the factories, laboratories, refineries, and storage facilities where such chemicals are present. But incidents can also happen during transportation, loading and unloading, and pipeline transport. Contributing or causal factors include human error; natural hazards such as earthquakes, tornadoes, floods, and lightning strikes; automobile and railroad accidents; power outages; electrical fires; computer malfunctions or server breakdowns. The scope of damage to persons, property, and economy is vast, though impact can often be contained with quick response by trained teams. The quantity, chemical, and physical properties of the material involved in an incident determine the scope of threat, but weather during and after the incident, location, proximity to human and wildlife populations, to rivers and lakes, and to major ecological vulnerabilities must be considered in assessing the scope of the threat posed.

Hazardous materials may also be released as a secondary result of a natural disaster like a flood or an earthquake. Buildings or vehicles can release their hazardous material contents when they are structurally compromised or involved in traffic accidents. Pipelines can be exposed or ruptured from collapsed embankments, road washouts, bridge collapses, and fractures in roadways.

Prevention and mitigation of a hazardous materials incident comprises analysis with different measures of the threats that exist in specific categories per region or locality. These sometimes overlap, but must be considered separately when possible to determine the best allocation of resources and response strategies should a HAZMAT event occur. The basic planning categories of hazard, vulnerability, and risk apply to hazardous materials preparation. In this context, the hazard category includes the nature of the chemicals present and the locations where an incident is likely; the vulnerability describes what damage might occur, the range of the impact, and what types of incidents are possible in a given community or region; and the risk analysis assesses the probability of damage or injury that would occur in the community if a hazardous material were released, and the actual damage or injury that might occur in light of the vulnerability analysis.

4.3.3 – Local & Regional Resources

WA EMD, WA Ecology, and the WA State Patrol share coordination and responsibility for local response and training. However, first responders, hospitals, and the CDC maintain supplies, strategic stockpiles and assets that are in many cases deployed during a HAZMAT event. These agencies' input in mitigation planning are not only germane but essential to effective strategies that utilize all available resources.

Pre-emergency / Notification

Once a HAZMAT incident is suspected, state, municipal and regional authorities are notified, as well as any necessary supporting agencies. Pre-emergency, the state may allocate a first response responsibility to a dedicated team or set up several such teams. If a spill, accident, or fire occurs, the firefighters or other first responders will alert the HAZMAT Emergency Response Teams. If a suspected incident occurs (someone smells gas or reports strange substances in a street, a building, etc.), a preliminary HAZMAT emergency response team evacuates the site and conducts an inspection.

Notification via local responders, the 911 call operator, or other mediums should be directed to WA EMD, which then can decide to activate the Emergency Response Team; then notification goes to the National Response Center, OSHA, WA Ecology, WA State Police, WA DOT or the CDC, if indicated. Typically, after the initial 911 call, local first responders (fire or police), will arrive on the scene and evaluate the incident.

Emergency Response Teams

Emergency Response Teams are assembled for each region of the state by population. Each team requires an on-site commander who should be chosen in coordination with WA EMD and relevant state agency officials. Typically this person is an official with experience of environmental and chemical dangers. The commander should activate an emergency response plan, gather the team, designate the initial perimeter for entrance, evacuation, and the like. If the team is of the first responders, they should also decide the evacuation range. If the fire department personnel are first responders, the emergency response teams must coordinate with them. The commander of the response team is responsible for the placement of the staging area for equipment, personnel, and medical resources, if needed. He or she should also assign the remaining staff and determine the relationship of the team to other responders.

The team should also include members with a minimum of 160 hours of specialized training per EPA guidelines. Technicians familiar with decontamination and cleanup should be included in all team planning, drills, and notification schemes.

When a Regional Hazardous Materials ERT arrives on the scene, their job is to provide technical resources to the incident commander, whether this person is a local, federal, or the state-appointed HAZMAT team commander. The local first responder retains incident command in small, containable situations. If the incident is large enough to require a unified command, the team leader becomes a part of that structure. The regional teams are responsible for mitigating and containing the incident. Once the situation is stable, the Department of Environmental Quality is responsible for working with the responsible party to assure that cleanup of the incident is completed appropriately. A full team may not respond in every instance. The system provides for a tiered response ranging from technical advice over the phone to on-site reconnaissance, than to a full team response. Specialized considerations should include stress management, supplemental air purification systems and other respiratory support, and sufficient personnel to allow for three daily shifts in the case of large incidents.

4.3.4 – Locations

Communities where hazardous materials are fabricated, processed, and stored (as well as those designated for hazardous waste storage or disposal) have higher risk, as do localities near or on transportation corridors that carry these materials at elevated risk. Areas with known methamphetamine labs or a disproportionately high (for the state) number of drug raids in the past should be considered at significant risk. Both the DEA and ATF maintain comprehensive records (now accessible for public review) of the homes and locations of known and closed methamphetamine labs either flagged for mitigation, demolition or other remediation strategies.

For highly developed areas or priority environmental resources located near a high risk facility, mitigation strategies must be regularly reviewed. These include facilities with permitted air releases, hazardous waste sites, radioactive materials storage or disposals, facilities permitted to release toxic materials, and facilities permitted to discharge chemicals into surface waters. For transportation corridors, both localities along highways and major systems are at elevated risk.

The EPA recommends surveillance, assessment, and registration of the following classes of location:

- Chemical plants
- Refineries
- Industrial facilities
- Petroleum and LPG tank farms
- Storage facilities/warehouses
- Trucking terminals
- Drinking water plants
- Wastewater treatment plants
- Refrigeration plants
- Industrial/agricultural, swimming pool supplies, home supply stores
- Railroad yards
- Hospital, educational, and government facilities
- Waste disposal and treatment facilities
- Waterfront facilities, particularly commercial marine terminals
- Vessels stored in ports along the Mississippi and Cumberland Rivers
- Airports
- Nuclear facilities
- Major transportation corridors and transfer points
- Suspected and known methamphetamine lab sites

4.3.5 – Impact & Consequence

Health and Safety of Persons in the Affected Area at the Time of the Incident (Injury/Death)
HAZMAT incidents vary widely in their effects on exposure. Most of the common chemicals can quickly cause death or permanent injury in high concentrations with relatively little exposure time, but some toxins cause injury only with repeated exposures, or are carcinogenic. Emphysema or other chronic lung diseases can result from toxic gas inhalation. Caustics, acids, and some other compounds cause immediate burns. Clothing, vehicles, and personal effects can be contaminated by most hazardous materials, often regardless of their chemical state (gas or liquid). Even properly-contained limited impact HAZMAT incidents can swiftly harm those in the affected area before first responders arrive, and leave chemical residues that persist for months or years. A few injuries and deaths occurring at a large chemical plant or oil refinery fire can lead to many casualties from smoke exposure or residential area contamination if the incident is inadequately contained. Winds, flooding, ground elevation, and accessible terrain might increase exposure. Fires and explosions may cause structural damage. Nuclear power plant incidents put anyone nearby at elevated risk of radiation poisoning or long-term contamination.

Obviously health and safety of people present at a HAZMAT incident will vary by more than the chemical type: proximity to other volatile or flammable substances, warning time and evacuation protocols, the duration and location of the accident (relative to population centers and to their food and water supplies), and the presence or absence of secondary incidents such as fires and explosions. Transportation-related HAZMAT events can lead to fatalities and injuries caused by the combination of the chemical effects with automobile and road damage, and possible pile-ups. Rail car incidents can occur anywhere; but if an event happens while a train passes through a populated area, mortality and morbidity risk increases significantly. The risk of a rail incident injuring significant numbers of people, based on historical incidence tables, is lower than that of a fixed-location HAZMAT event.

Health and Safety of Personnel Responding to the Incident
All HAZMAT incidents potentially endanger personnel responding to the scene. If unprepared or encountering a large-scale disaster, personnel risk death and serious injury from the hazardous materials themselves or from secondary events like chemical fires. Immediate safety risks may come from toxic chemicals, burns, heat or smoke-related injuries, skin, visual, or respiratory injuries, among other common problems caused by chemical exposure. Without proper physical protection, respiratory support, and decontamination, the risk is high. Additionally, exposure to carcinogens may endanger personnel over time by increasing the risk of developing certain cancers.

First responders face many of the same hazards as persons in the area at the time of the accident. This is especially problematic before an incident's chemical has been identified.

4.3LS – Landslides

4.3.1 – Description

Landslides are the downward and outward movement of slopes. Landslides include a wide range of ground movement, such as rock falls, deep failure of slopes, and shallow debris flows. Although gravity acting on and over steepened slopes is the primary reason for a landslide, landslides are often prompted by the occurrence of other disasters. Other contributing factors include the following: erosion; steep slopes; rain and snow; and earthquakes.

Slope material often becomes saturated with water and may develop a debris or mudflow. If the ground is saturated, the water weakens the soil and rock by reducing cohesion and friction between particles. Cohesion (which is the tendency of soil particles to "stick" to each other) and friction affect the strength of the material in the slope and contribute to a slope's ability to resist down slope movement. Saturation also increases the weight of the slope materials and, like the addition of material on the upper portion of a slope, increases the gravitational force on the slope. Undercutting of a slope reduces the slope's resistance to the force of gravity by removing much-needed support at the base of the slope. Alternating cycles of freeze and thaw can result in a slow, virtually imperceptible loosening of rock, thereby weakening the rock and making it susceptible to slope failure. The resulting slurry of rock and mud can pick up trees, houses, and cars, and block bridges and tributaries, causing flooding along its path. Additionally, removal of vegetation can leave a slope much more susceptible to superficial landslides because of the loss of the stabilizing root systems.

4.3.2 – Location & Extent

Landslides have the potential to destroy structures and infrastructure or block transportation in mountainous valleys. Although the overall risk is limited, its potential varies throughout Pacific County, with sporadic risk zones identified by the State of Washington's Department of Natural Resources. Additionally, landslides have been reported along Highway 101 in the southern portion of the county, but this area is not marked by the State of Washington's Department of Natural Resources. None of the participating jurisdictions in the plan are at risk with the exception of the county at large. The identified risk zones are not a danger to Pacific County's densely populated areas. Please see the maps on the following pages for the State of Washington's identified risk zones and the location of Highway 101 as it runs through the county.

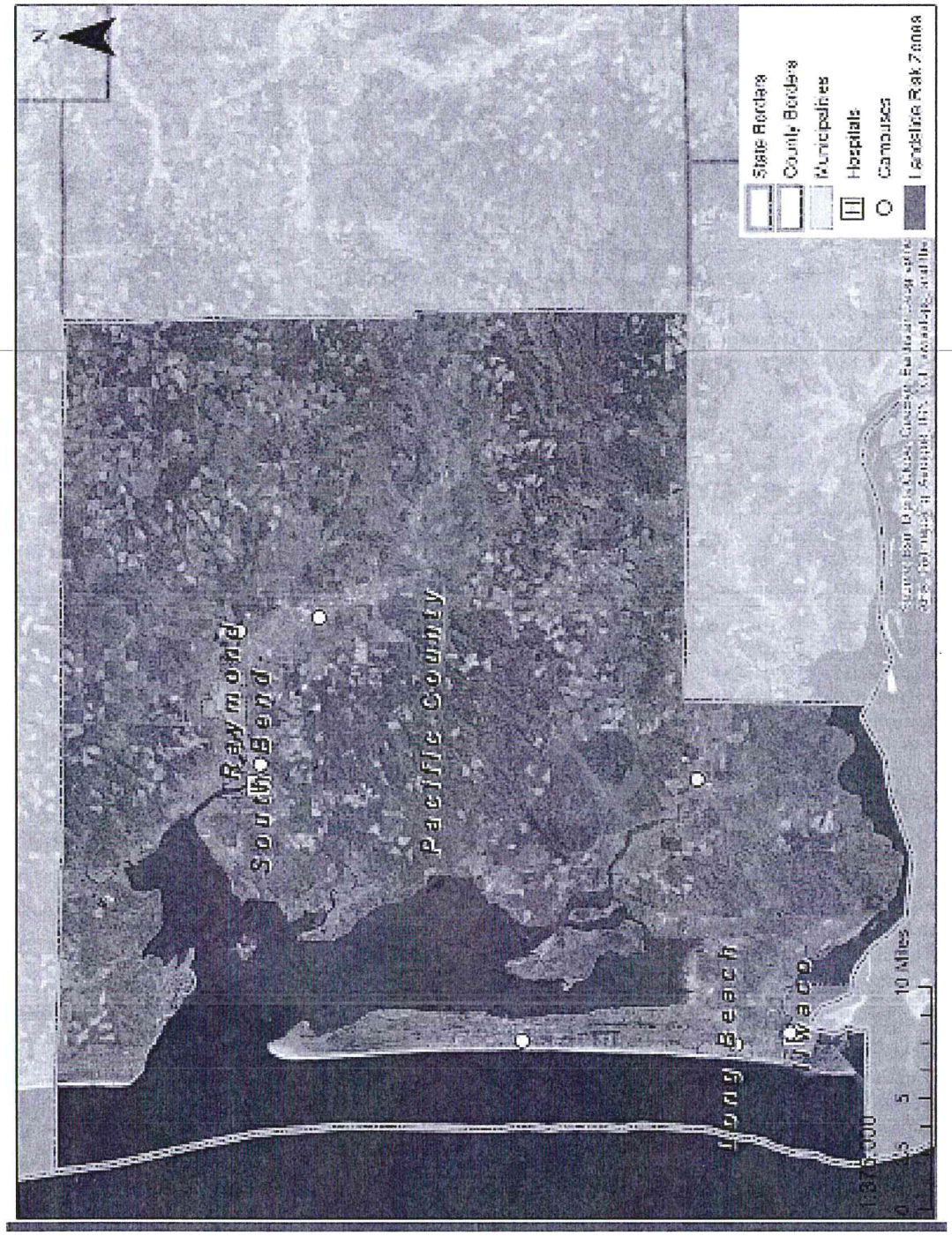
4.3.3 – Previous Occurrences

Landslides can occur without the presence of another hazard event, but often occur as a secondary hazard. Incidents of heavy rain, melting snow, earthquakes, and land subsidence are their primary cause. Hence, their future occurrences are highly dependent on the likelihood of the mentioned hazards. Pacific County does not have a history of significant or threatening landslides, yet is has experienced minor landslides that have blocked roadways and damaged smaller sections of roadways.

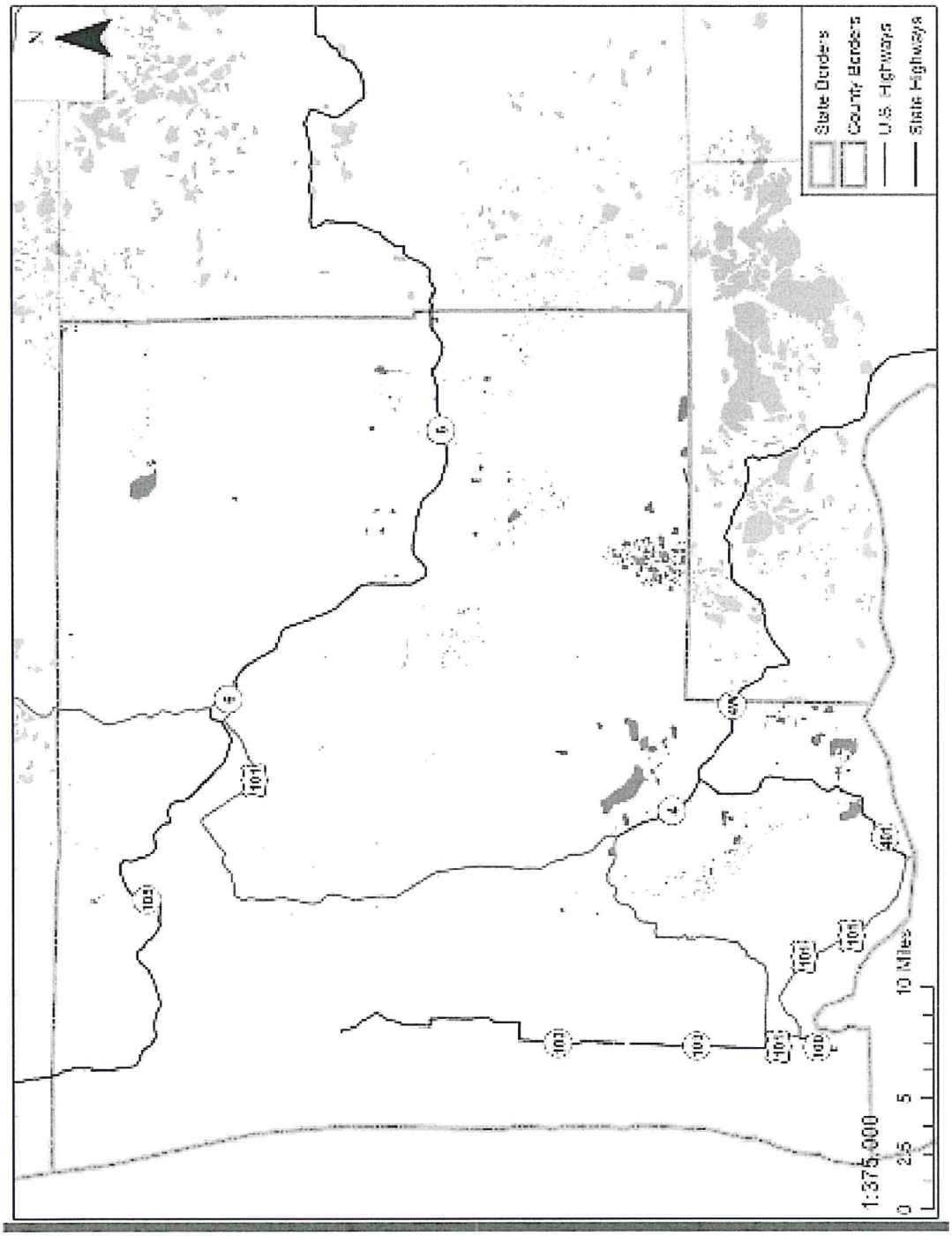
4.3.3A – Probability of Future Events

Pacific County and its participating jurisdictions do not have any documented cases of significantly damaging landslides. It has experienced minor landslides bordering on what would be considered a "nuisance hazard." Given the identified hazard areas, there is still a future risk of a significantly damaging and life threatening landslide, and thus its probability of future occurrence is classified as "rare."

Map 32 – Landslide Risk Zones, Pacific County



Map 33 – Landslide Risk Zones & Roadways, Pacific County



4.3.4 – Assessing Vulnerability & Impacts

Landslide Impacts

Pacific County and its participating jurisdictions do not have a history of significantly damaging landslides and thus it is not possible to calculate a value for expected future events beyond the State of Washington's Department of Natural Resources identification of risk zones. This makes a prediction of any accuracy impossible for significantly damaging landslides. However, given the occurrences (although rare) of roadway blocking landslides, Pacific County can be sure that in the future more roadways will be blocked by landslides with the potential to slightly damage or disturb commuter traffic through the county. The map at the end of this section cross-references the identified risk zones with Pacific County's major transportation infrastructure.

Vulnerability of Facilities

Landslides can have minimal or devastating impacts on facilities. The degree of vulnerability depends on the specifics of the landslide itself. Pacific County and its participating jurisdictions do not have any developed areas or structures located next to the identified risk zones.

Vulnerability of Population

Landslides pose a minimal risk to Pacific County and its participating jurisdictions' population. None of its municipalities are located along the identified hazard risk zones. That being said, it is possible for a landslide to impact traveling motorists on its roadways. Depending on the topography and circumstances of the landslide, this could simply immobilize a vehicle, cover it in debris, or cause serious to mortal bodily harm to the vehicles' inhabitants.

Pacific County and its participating jurisdictions do not have any recorded deaths or injuries from landslide events.

Vulnerability of Systems

Pacific County and its participating jurisdictions' systems are minimally vulnerable to landslides. A landslide has the potential to temporarily block a major highway or transportation network for weeks at a time. Additionally, if the landslide occurs in tandem with another hazard, such a severe storm event, the blocking of a major route will have compounded effects on response and recovery operations. Emergency personnel may have to use far, out of the way routes, delaying necessary aid to Pacific County and its participating jurisdictions.

Fire Districts

The participating fire districts are not vulnerable to landslides.

Ports

The ports of Chinook, Ilwaco, Peninsula, and Willapa Harbor are not vulnerable to landslides.

Public Utility District

Public Utility District #2 serves the entire planning area. PUD #2 does not generate any power of its own, but provides and maintains the energy grid necessary to delivery electricity to the planning area. PUD

PE's energy grid is at extremely minimal direct risk to landslides. Since landslides are largely isolated in their geographic scope, the only likely scenario is a landslide tangentially damaging or destroying one to a few electrical poles.

Transportation & Pacific Transit

Part of Pacific County's transportation network is vulnerable to landslides. Map 33, previously depicted in this section, overlays major roadways in the planning area with the identified risk zones. State Highways 4 and 401 run alongside some of the identified risk zones. Additionally (although risk zones are alongside not marked) Highway 101 has experienced landslides and is therefore vulnerable. Landslides are rare in the area, but it is possible that a series of landslides could occur at both major roadways and, cutting off Washington's access to the south western portion of the county. Access to Oregon would remain open, but if the landslides are a result of a major earthquake, response and recovery operations could be significantly deterred.

Water Companies and Districts

The participating water companies and districts are not vulnerable to landslides.

4.3.4A – Infrastructure & Critical Facilities

None of Pacific County's major critical facilities are at risk from landslides. A list of infrastructure and critical facilities can be found in Appendix D. However, as noted above, landslides pose a significant risk to the transportation infrastructure of the planning area. PCEMA is primarily concerned with landslides blocking and damaging US Highway 100 and 101 along with State Routes 105, 6, 4, and 401. A number of smaller county roads, including but not limited to Parpala Road, Bighill Road, and Upper Naselle Road, are also potential at risk infrastructure.

4.3.4B – Land Use & Development Trends

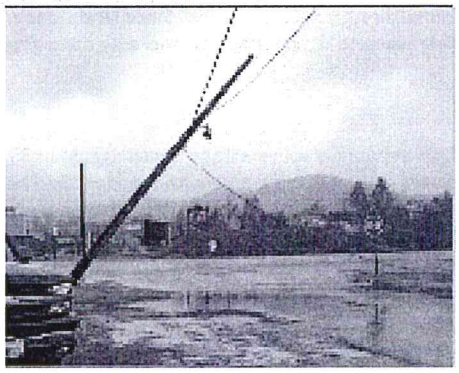
Pacific County and it participating jurisdictions have declining growth as detailed in Section 5.1.1 – Land Use & Development Trends. None of the participating jurisdictions have seen significant growth and thus there is no increase in their risk for landslides caused by new land use measures or development. Any buildings or infrastructure built in the future will have the same risk as other buildings or infrastructure built within or outside of the designated landslide areas.

4.3.4C – Unique & Varied Risk

None of the participating jurisdictions are at risk for landslides with the exception of the county at large.

4.3SS – Severe Storms

4.3.1 – Description



Severe storms comprise the hazardous and damaging weather effects often found in violent storm fronts. They can occur together or separately; they are common and usually not hazardous, but on occasion they can pose a threat to life and property. This plan defines Severe Storms as a combination of the following severe weather effects as defined by NOAA and the NWS:

Hail: Showery precipitation in the form of irregular pellets or balls of ice more than 5 mm in diameter, falling from a cumulonimbus cloud.

High Winds: Sustained wind speeds of 40 miles per hour or greater lasting for 1 hour or longer, or winds of 58 miles per hour or greater for any duration (often referred to as straight line winds to differentiate from rotating or tornado-associated wind).

Extreme Winds: A classification for winds which exceed 115 miles per hour not associated with tornadoes or hurricanes.

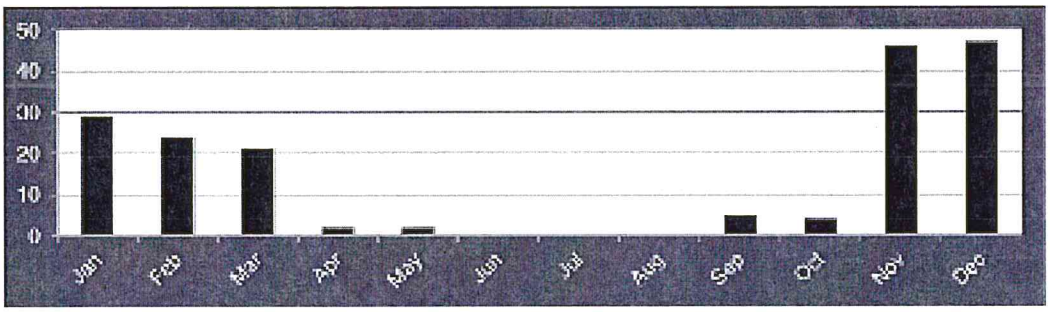
Lightning: A visible electrical discharge produced by a thunderstorm. The discharge may occur within or between clouds, between the cloud and air, between a cloud and the ground, or between the ground and a cloud.

Thunderstorm Winds: The same classification as high or strong winds, but accompanying a thunderstorm. They are also referred to as a straight line winds to differentiate from rotating or tornado-associated wind.

For consistency with the NWS and NOAA, extreme, high and strong winds are shown as separate from thunderstorm winds when raw, collected data is displayed. However, for their impacts and probability, they are combined and referred to simply as "wind" events.

Severe Storms have been so consistent throughout modern history that much of the vulnerability is mitigated. However, this section is not concerned with everyday wind, lightning in the sky, or mild precipitation. This section is concerned with storms when they behave such that they pose a threat to property and life.

Chart 3 – Severe Storms by Month, Pacific County (1996 – 2014)



*The data are from the NOAA NCDC Storm Event Database

4.3.2 – Location & Extent

Photo courtesy of Kevin Miller Photography

Severe storms occur throughout the year in Pacific County and its participating jurisdictions. Thunderstorms, high, and strong winds can affect any size area from a county, region, or isolated pockets of a city or a neighborhood. In contrast, lightning will strike a single point. It is not often that multiple strikes will hit and damage persons and property in one severe storm event. Hail will occur in small pockets of an accompanying storm. Pacific County and its participating jurisdictions have a history of damaging winds accompanying storms, but have not seen significant hail or lightning impacts.

Storms, severe or not, are often predicted within a day or multiple days in advance. The severity of a storm is not as easily predicted, and when it is, the window of notification is up to few hours to under an hour. When a storm is imminent, it is unknown whether or not hail, lightning, or damaging winds will occur until after an incident has been reported.

Strong, high, and thunderstorm winds are classified as winds which occur between 40 and 70 miles per hour (lasting for 1 hour or greater) or of 58 miles per hour (for any duration). The Beaufort Scale (shown on below), displays the ranges of wind speed and correlates them with their typical effects. At a level 7 and 8, citizens should remain indoors, and anywhere above a level 8 will cause damage to structures. Damage to any amount of structures can cause serious disruption to Pacific County and its participating jurisdictions. The scope of damage can range from one residential house up to widespread destruction of homes and reinforced buildings throughout the county.

Typically severe storms in Pacific County have wind speed between 40 and 50 miles per hour, but often during severe storms, winds are recorded at 53 mph north of Long Beach up the peninsula, 74 mph in Long Beach, 62 mph in South Bend, and 75 mph in Ilwaco. There are even historical records of brief gusts reaching up to 140-150 mph.

Beaufort Scale

Beaufort number	Wind Speed (mph)	Seamen's term		Effects on Land
0	Under 1	Calm		Calm, smoke rises vertically.
1	1-3	Light Air		Smoke drift indicates wind direction; vanes do not move.
2	4-7	Light Breeze		Wind felt on face; leaves rustle; vanes begin to move.
3	8-12	Gentle Breeze		Leaves, small twigs in constant motion; light flags extended.
4	13-18	Moderate Breeze		Dust, leaves and loose paper driven up; small branches move.
5	19-24	Fresh Breeze		Small trees begin to sway.
6	25-31	Strong Breeze		Large branches of trees in motion; whistling heard in wires.
7	32-38	Moderate Gale		Whole trees in motion; resistance felt in walking against the wind.
8	39-46	Fresh Gale		Twigs and small branches broken off trees.
9	47-54	Strong Gale		Slight structural damage occurs; slate blown from roofs.
10	55-63	Whole Gale		Seldom experienced on land; trees broken; structural damage occurs.
11	64-72	Storm		Very rarely experienced on land; usually with widespread damage.
12	73 or higher	Hurricane Force		Violence and destruction.

4.3.3 – Previous Occurrences

Pacific County and its participating jurisdictions have recorded 0 fatalities and 0 injuries due to severe storms.

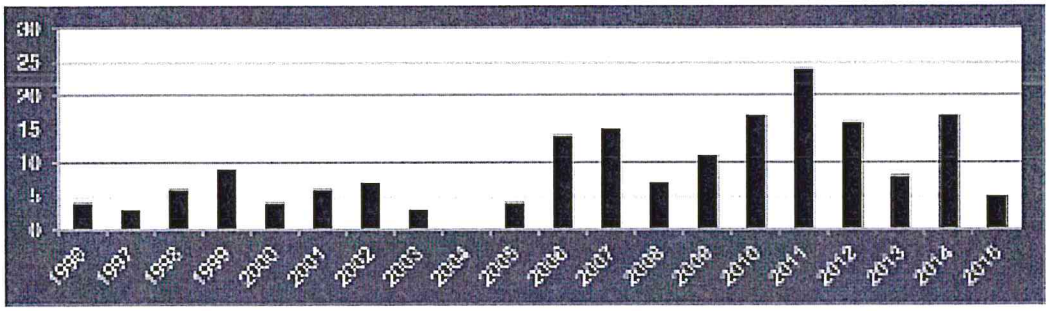
Since 1996, NOAA has recorded 180 severe storm wind events in Pacific County and its participating jurisdictions. These events have caused $10,466,503 in recorded property damage.

There are no recorded incidents of hail or lightning causing property damage, injury, or fatalities in the planning area.

For a complete list of NOAA recorded severe storm events, please reference Appendix E.

Photo courtesy of the Willapa Harbor Herald

Chart 4 – Severe Storms, Pacific County (1996 – 2014)



*The data are from the NOAA NCDC Storm Event Database.

4.3.3A – Probability of Future Events

Pacific County and its participating jurisdictions can each expect a severe storm event with a 921.05% chance per year, or 9.2105 events per year. The qualitative chance of a severe storm impacting the planning area is "highly likely."

Table 29 – Probability, Severe Storms	
Event Year	**Event Count**
1996	4
1997	3
1998	6
1999	3
2000	4
2001	6
2002	7
2003	3
2004	0
2005	4
2006	14
2007	13
2008	7
2009	11
2010	17
2011	24
2012	18
2013	8
2014	17
Total Recorded Events =	175
Total Years =	19
Yearly Probability =	**921.05%**

*Per data from the NOAA Storm Event Database.

4.3.4 – Assessing Vulnerability & Impacts

Wind Impacts

Pacific County and its participating jurisdictions have recorded 175 wind events since 1995 through 2014. The range of magnitude for these events was between 35 miles per hour and 77 miles per hour with an average of 55.10 miles per hour. Based on the Beaufort Scale on page 122 and future probability in Table 29, Pacific County and its participating jurisdictions can expect 9.47 wind events per year, ranging from Beaufort Scale 7 – "Fresh Gale" to Beaufort Scale 12 – "Hurricane Force."

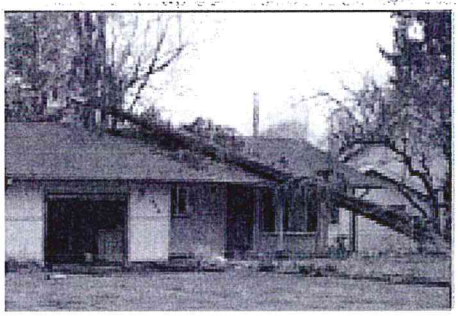


Photo courtesy of Kevin Miller Photography

Table 30 – Historical Impacts, Severe Storms

Count of Events	175
Impacts Per Year	9.21
Average Magnitude (Miles Per Hour)	55.10
Magnitude Range (Miles Per Hour)	35 - 77
Average Cost	$58,147
Magnitude of Cost	$0 - $10,140,000
Total Recorded Cost	$10,466,500
Average Fatalities	0
Total Fatalities	0
Average Injuries	0
Total Injuries	0

Data drawn from the NOAA Storm Events Database.

Vulnerability of Facilities

Structural vulnerability to severe storms is the same throughout Pacific County and its participating jurisdictions. Hail can be costly by damaging rooftops, outdoor equipment, and windows. Lightning can strike anything with the potential to significantly damage electrical infrastructure or ignite a fire. Wind events create flying debris which can damage infrastructure and buildings. Strong enough wind can cause structure damage to older, less well-constructed buildings even toppling or leveling them.

The average wind event in Pacific County and its participating jurisdictions costs $58,147, while the existing range of a single incident has been from $0 to $10,140,000.

Vulnerability of Population

Pacific County and its participating jurisdictions' vulnerability to severe storms is the same throughout the planning area. In the absence of proper shelter, hail can cause serious injury to an unprotected person. As long as Pacific County and its participating jurisdictions' citizens stay indoors and away from windows, they will be protected against hail injury and death. Similarly, they can avoid being struck by lightning by staying indoors. Although lightning may strike a structure sheltering people, it is extremely unlikely that the strike itself will directly injure or kill a sheltered person. As long as a structure is able to maintain its integrity during high speed winds, it will protect people from wind injury or death. However, old or poorly constructed facilities are not good shelter as previously mentioned flying debris can break windows or cause structural damage. Either of these instances have the potential to seriously injure or kill anyone taking shelter in older, less well-constructed building. The most likely scenario in the planning area is that a tree or other large debris is blown over onto a vehicle, house, or directly on an unsheltered person.

Photo courtesy of Kevin Miller Photography

Historically, there have been 0 fatalities and 0 injuries recorded from severe storms in the planning area.

Vulnerability of Systems
Pacific County and its participating jurisdictions' assets and systems' vulnerability to severe storms is the same throughout the planning area.

Hail damage is typically superficial and does not hamper a community's assets, systems, or activities. Lightning strikes can destroy or damage a community asset, but since their strikes are typically isolated and rarely hit anything, it is unlikely to significantly impact a larger system. Wind events can destroy and damage multiple structures and points of infrastructure. They have the potential to significantly impact a community's power and communications grid compounding the affects of other hazards.

Fire Districts
The fire districts' services are an integral part of the planning areas emergency operations before, during, and after an event. The participating fire districts are vulnerable to severe storms. A severe storm is unlikely to damage an entire fire district in a way that would significantly reduce its overall capabilities.

Ports
The ports of Chinook, Ilwaco, Peninsula, and Willapa Harbor have limited vulnerability to severe storms. High blowing winds are likely to temporarily shut down operations, but without any facility damage, they are unlikely to have any lasting effects. In the event structural damage is incurred, commerce will slow down, but it is unlikely that the port would close for a period of days or weeks. Historically, severe storms have not had a significant impact on these ports.

Public Utility District
Public Utility District #2 serves the entire planning area. PUD #2 does not generate any power of its own, but provides and maintains the energy grid necessary to delivery electricity to the planning area. PUD #2's infrastructure is at risk from the high winds that accompany a severe storm. These winds can knock down electrical poles and wires directly or cause trees and other debris to knock them down denying power to Pacific County and its participating jurisdictions' residents.

Transportation & Pacific Transit
The roadways and bus routes of Pacific County are not significantly or directly vulnerable to severe storms. Although high winds accompanying a severe storm will present an immediate danger to traveling motorists, they do not have the power to inhibit the infrastructure's functionality in the long term. They have, however, had an impact in the medium-term. The only scenario in which the transportation infrastructure is hindered is in the event of a tree or other vegetation debris blocking a roadway. Historically, this type of event has caused road closure for 3 days.

Water Companies and Districts
The participating water companies and districts are vulnerable to severe storms. High winds have the potential to damage their main facilities, office buildings, pump stations, and contaminate storage ponds with debris.

4.3.4A – Critical Facilities & Infrastructure

All infrastructure and critical facilities are equally at risk, including the Ocean Beach Hospital and Willapa Harbor Hospital, since severe storms indiscriminately affect the entire planning area. A complete list of infrastructure and critical facilities can be found in Appendix D.

4.3.4B – Land Use & Development Trends

Pacific County and participating jurisdictions have declining growth, as detailed in Section 3.1.1 – Land Use & Development Trends. None of the participating jurisdictions have seen significant growth, and thus there is no increase in their risk to severe storms caused by new land use measures or development. Any buildings or infrastructure built in the future will have the same risk as other buildings or infrastructure built within or outside the planning area.

4.3.4C – Unique & Varied Risk

Severe storms have the ability to affect a portion of or the entire planning area, but historically they have affected the coastal areas of Long Beach, Ilwaco, Tokeland, North Cove, and the western coast of the county greater than the inland areas.

4.3TS – Tsunamis

4.3.1 – Description

Tsunami is a Japanese word for a sea wave of local or distant origin that results from large-scale seafloor displacements usually associated with large earthquakes. This displacement of earth moves columns of water above the rupture point and the result is a series of waves that travel outwards in all directions from the place where the uplift occurred.

Tsunami waves have extremely long wavelengths containing a greater volume of water than damaging waves from a coastal storm. In this way, they behave less like a wave and more like an autonomous influx of water. Tsunamis can travel great distances across the entirety of the Pacific Ocean at speeds of 500 miles per hour. In the deep ocean, they can pass underneath ships without hinting of their existence. Once they approach shallower depths the excessive volume of water begins to elevate and the tsunami slows down.

A tsunami can move inland for just feet or miles, depending on the strength of the tsunami and the land's topography. A tsunami can take up to an hour to reach its peak while moving inland and can also be accompanied by smaller tsunami, waves which begin to build up once they move inland. If a tsunami hits at high tide, it will move farther inland and elevate higher, as the converse is also true for low tide. Additionally, if the originating earthquake causes a greater drop in land elevation than is modeled, a tsunami could have more devastating effects that were previously discussed or modeled.

4.3.2 – Location & Extent

A high magnitude earthquake originating in the Cascadia Subduction Zone will produce a tsunami. Additionally, there is the possibility that an earthquake near Alaska (or even Japan) will form a tsunami that impacts the planning area. A tsunami created near Alaska or Japan would give hours of warning time for evacuation and preparation while a tsunami created by the Cascadia Subduction Zone could give anywhere between 20 and 30 minutes and as long as 4 hours. Subsequent event-related tsunamis can continue to arrive for hours. The Cascadia Region Earthquake Group predicts that a Cascadia event could produce a tsunami as high as 30 to 40 feet, while a study conducted at the University of Washington predicts the first wave will have a height of 22 feet.

The State of Washington's Department of Natural Resources has modeled two likely tsunami scenarios which are depicted in the maps on the following pages. These depict a scenario modeled in 2007, Scenario 1A, and a new study from 2015 labeled L1. The newer study uses updated topographical data and digital elevation maps accurate to 1/3 arc seconds. As expected, the areas closest to the coast and those near the mouths of rivers are highly exposed, while the jurisdictions inland are not exposed.

> *NOTE: The 2015 study has yet to be peer reviewed and approved for distribution. Being the case, it is referenced and demonstrated here, but the vulnerability assessment has been conducted using the approved study from 2007.*

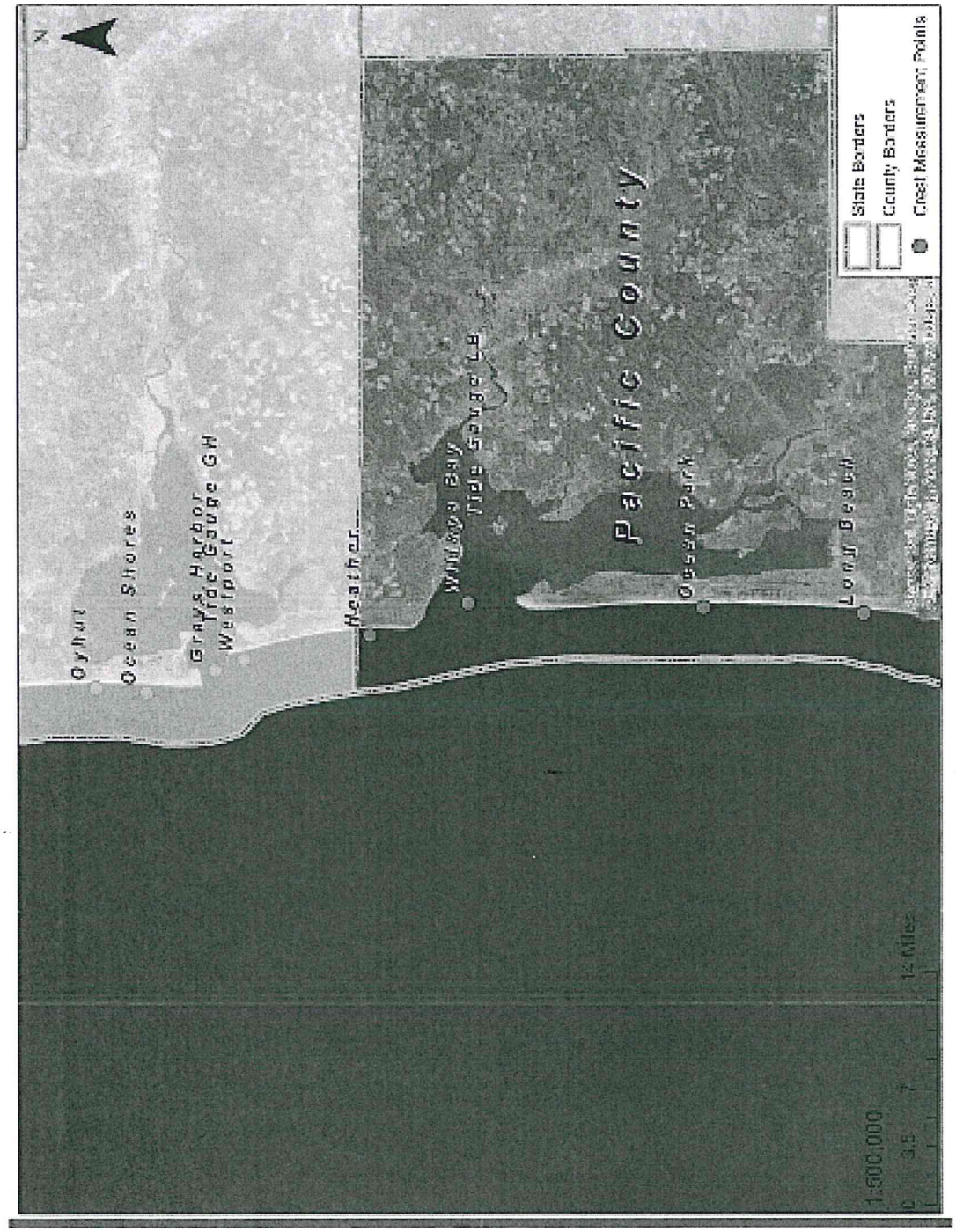
Additionally, these models estimate the peak crest height of each tsunami at certain points along the coast. The peak crest points are shown in a map on the following page. Please see the table below for the estimated tsunami crest height at each location.

Table 31 - Tsunami Crest Height

Location	Longitude	Latitude	Depth L1 (Feet)	Depth 1A (Feet)
Oyhut	235.82	47.017122	31.17	28.22
Ocean Shores	235.815	46.973594	36.09	33.46
Grays Harbor	235.844908	46.915	53.15	50.52
Westport	235.86	46.889775	34.45	31.92
Tide Gauge GH	235.805233	46.904205	16.40	13.12
Heather	235.893	46.780955	29.20	26.90
Willapa Bay	235.935547	46.695602	43.64	41.01
Ocean Park	235.934	46.491719	30.84	29.53
Long Beach	235.93	46.352283	31.50	30.51
Tide Gauge IB	235.033432	46.70676	21.98	18.04

*The data are from the State of Washington's Department of Natural Resources

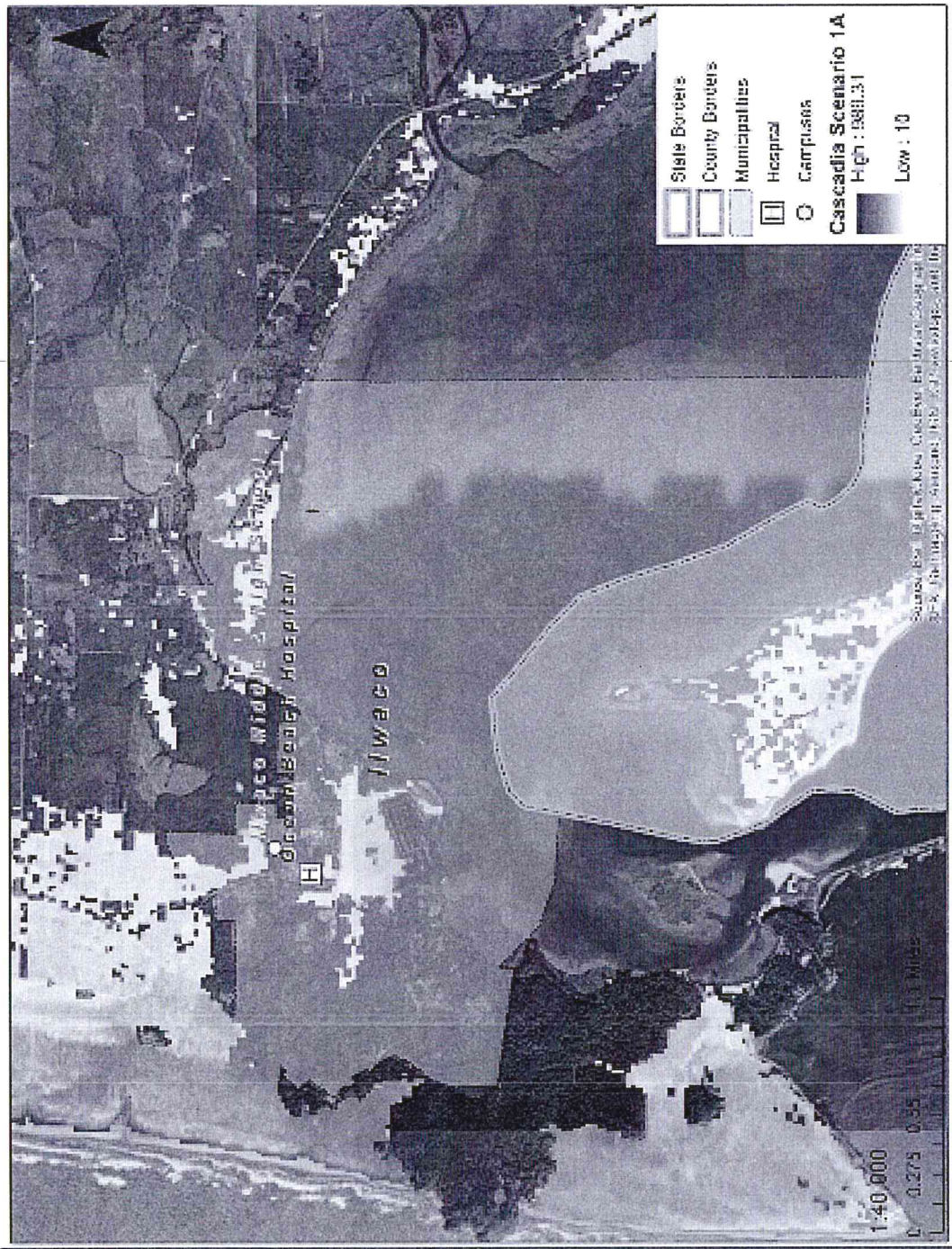
Map 34 – Tsunami Crest Height Measurement Locations



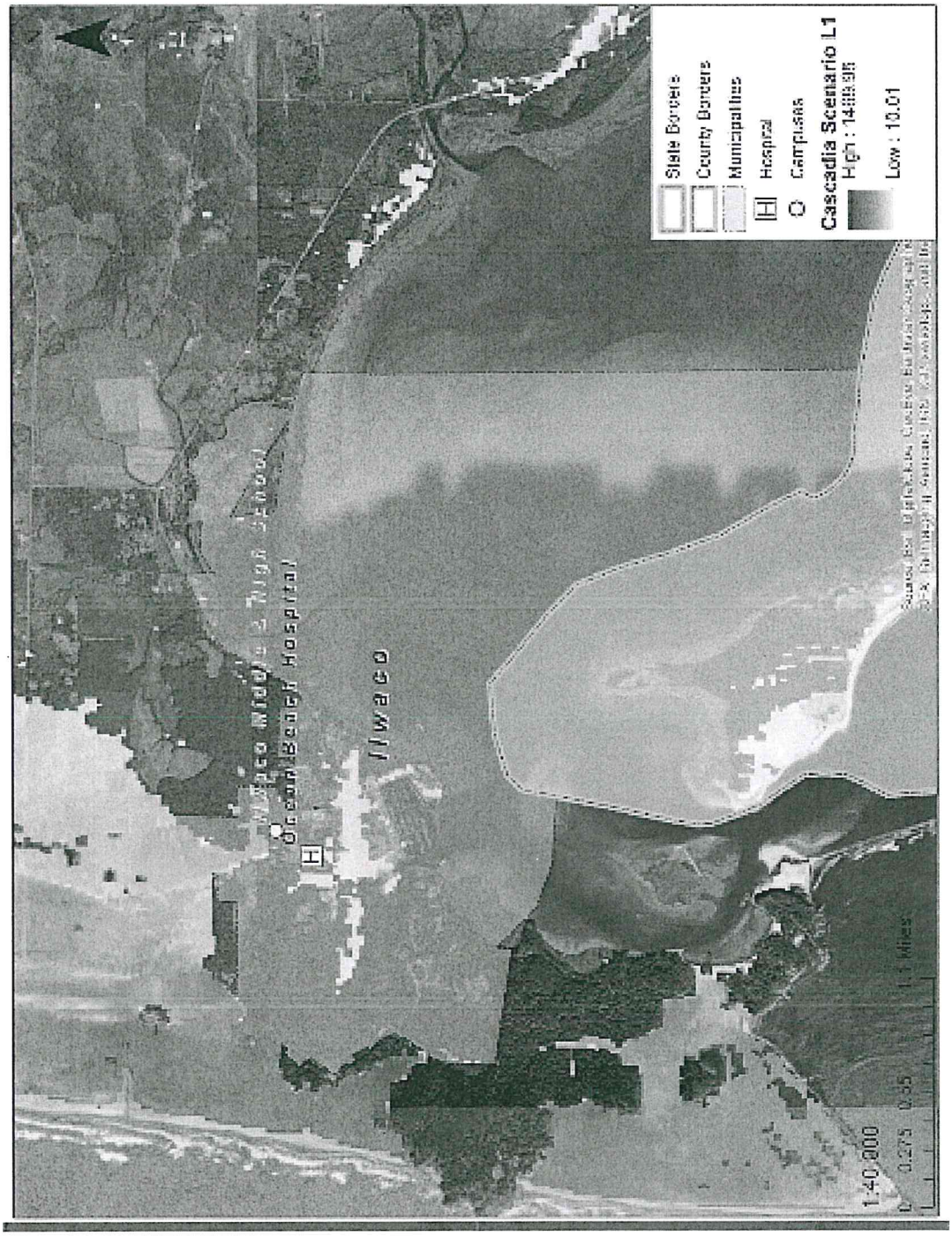
Map 35 – Tsunami Model 1A, Pacific County

Map 36 – Tsunami Model L1, Pacific County

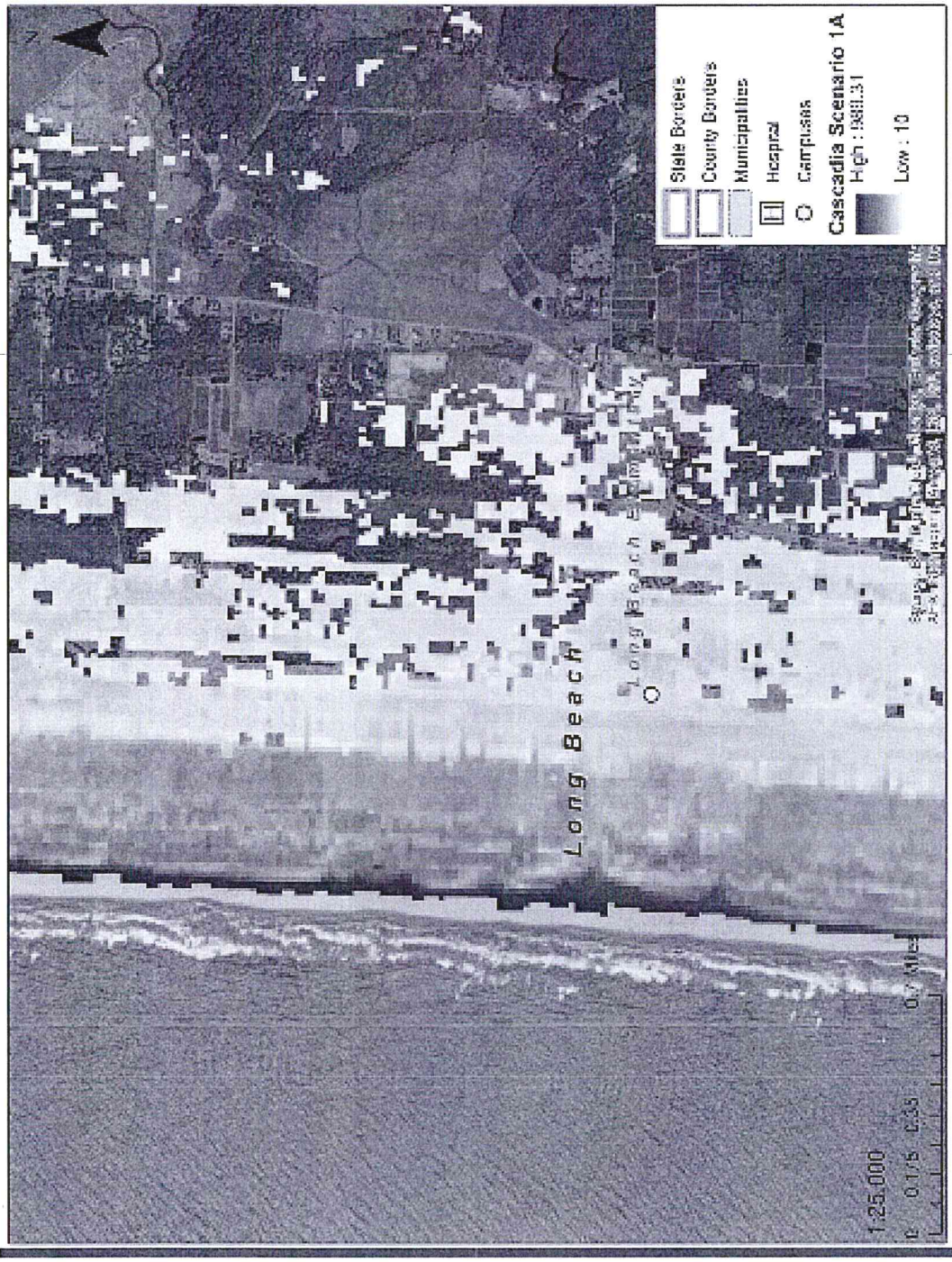
Map 37 – Tsunami Model 1A, Ilwaco



Map 38 – Tsunami Model L1, Ilwaco



Map 39 – Tsunami Model 1A, Long Beach



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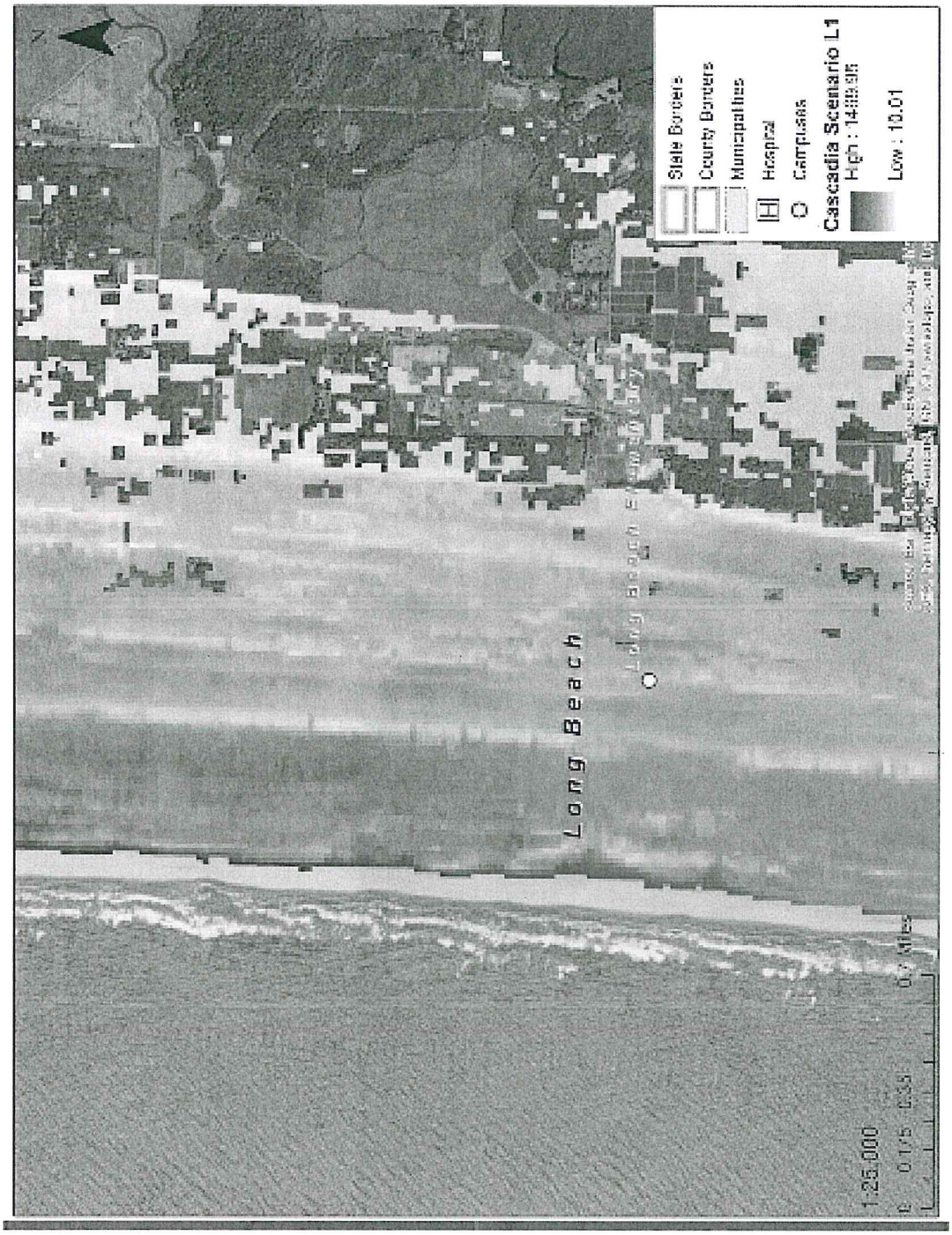
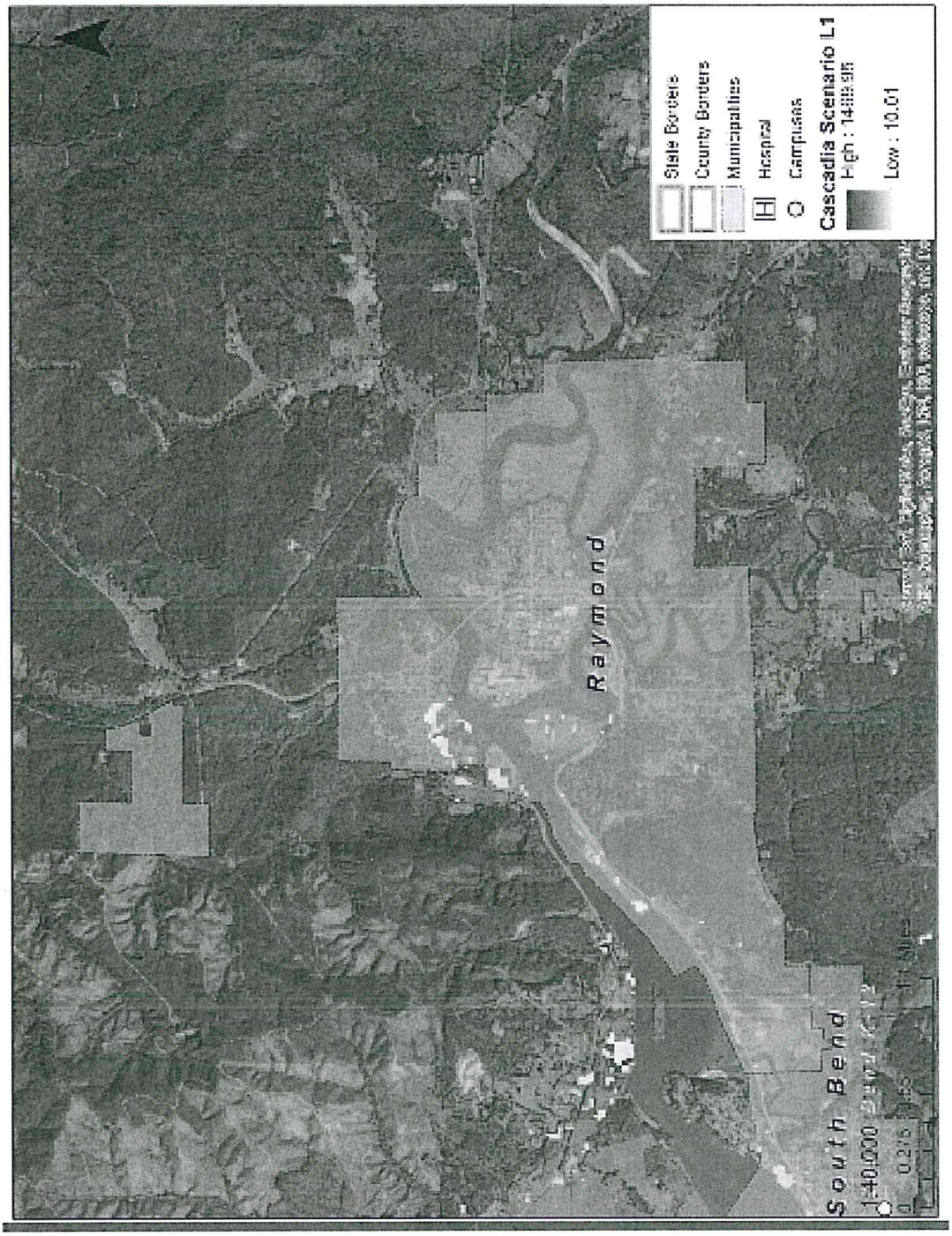
Map 40 – Tsunami Model L1, Long Beach

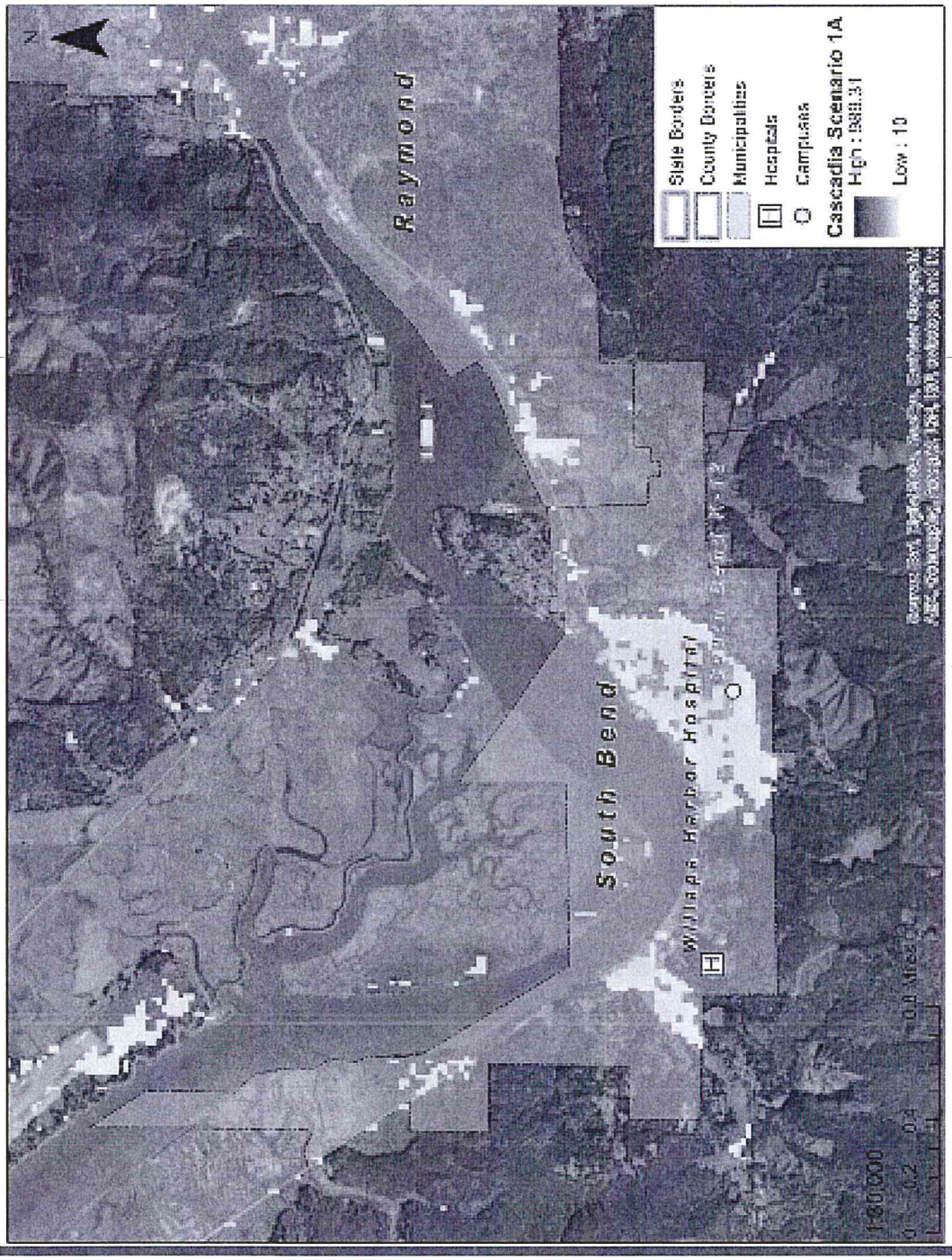


Map 41 – Tsunami Model 1A, Raymond

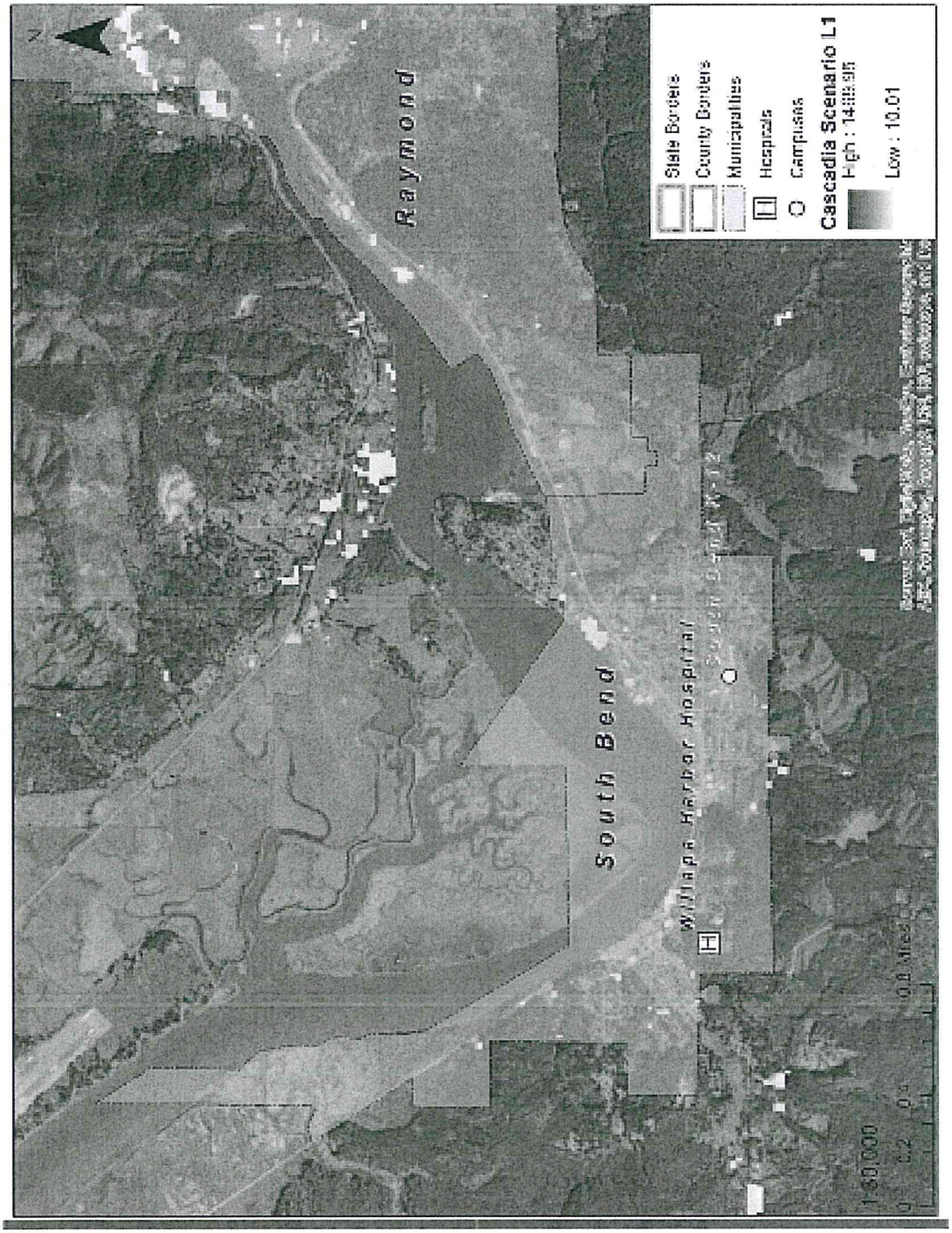
Map 42 – Tsunami Model L1, Raymond



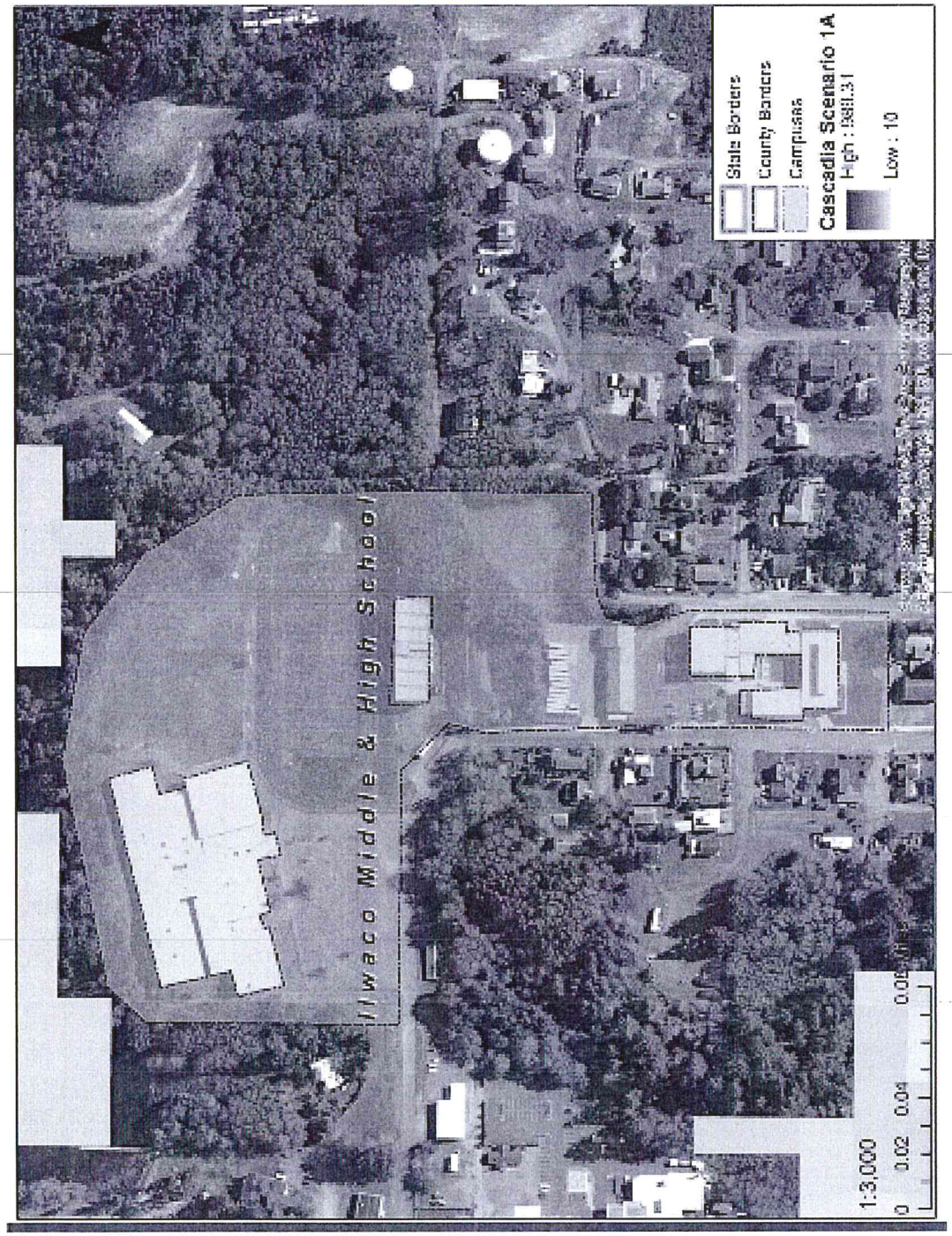
Map 43 – Tsunami Model 1A, South Bend



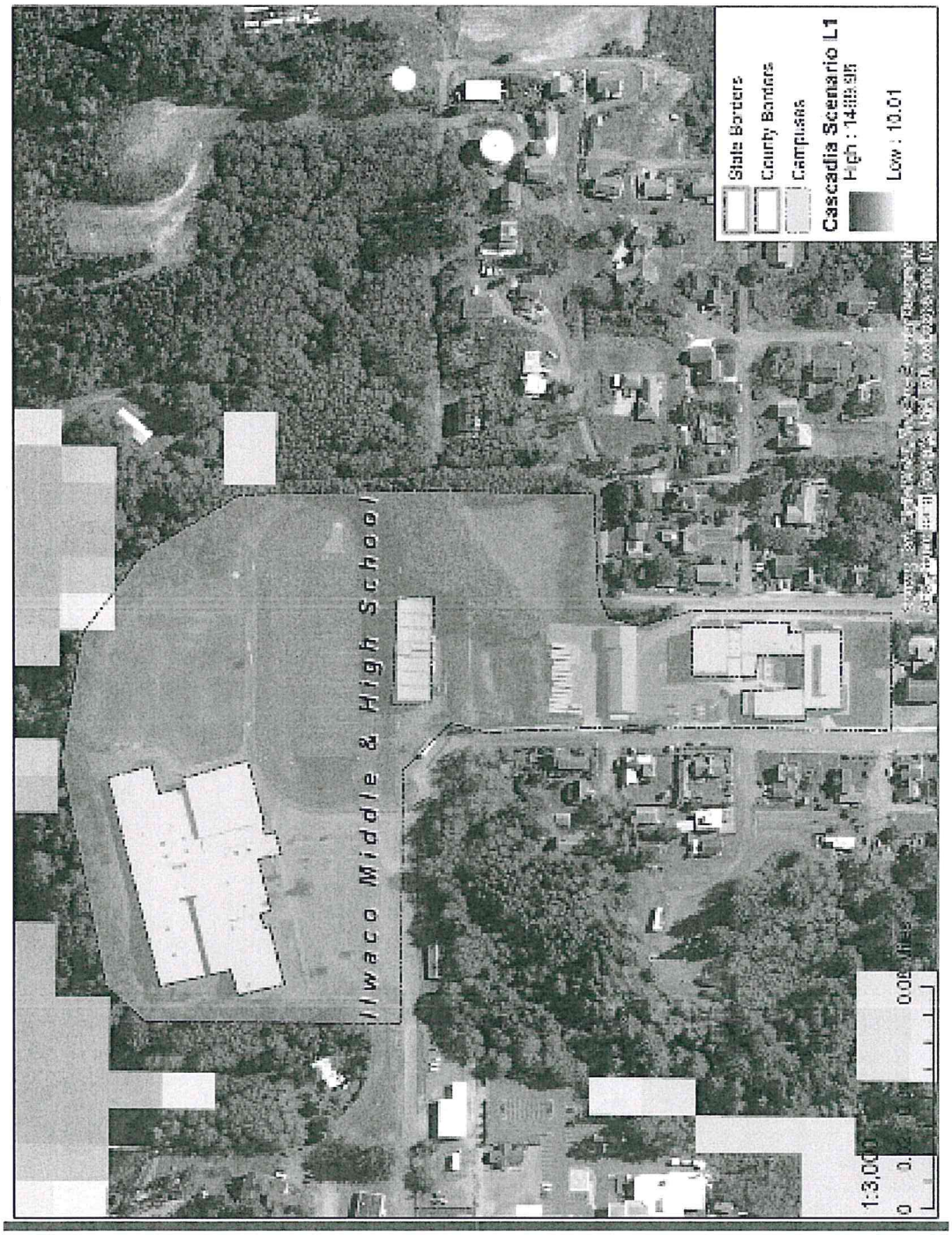
Map 44 – Tsunami Model L1, South Bend



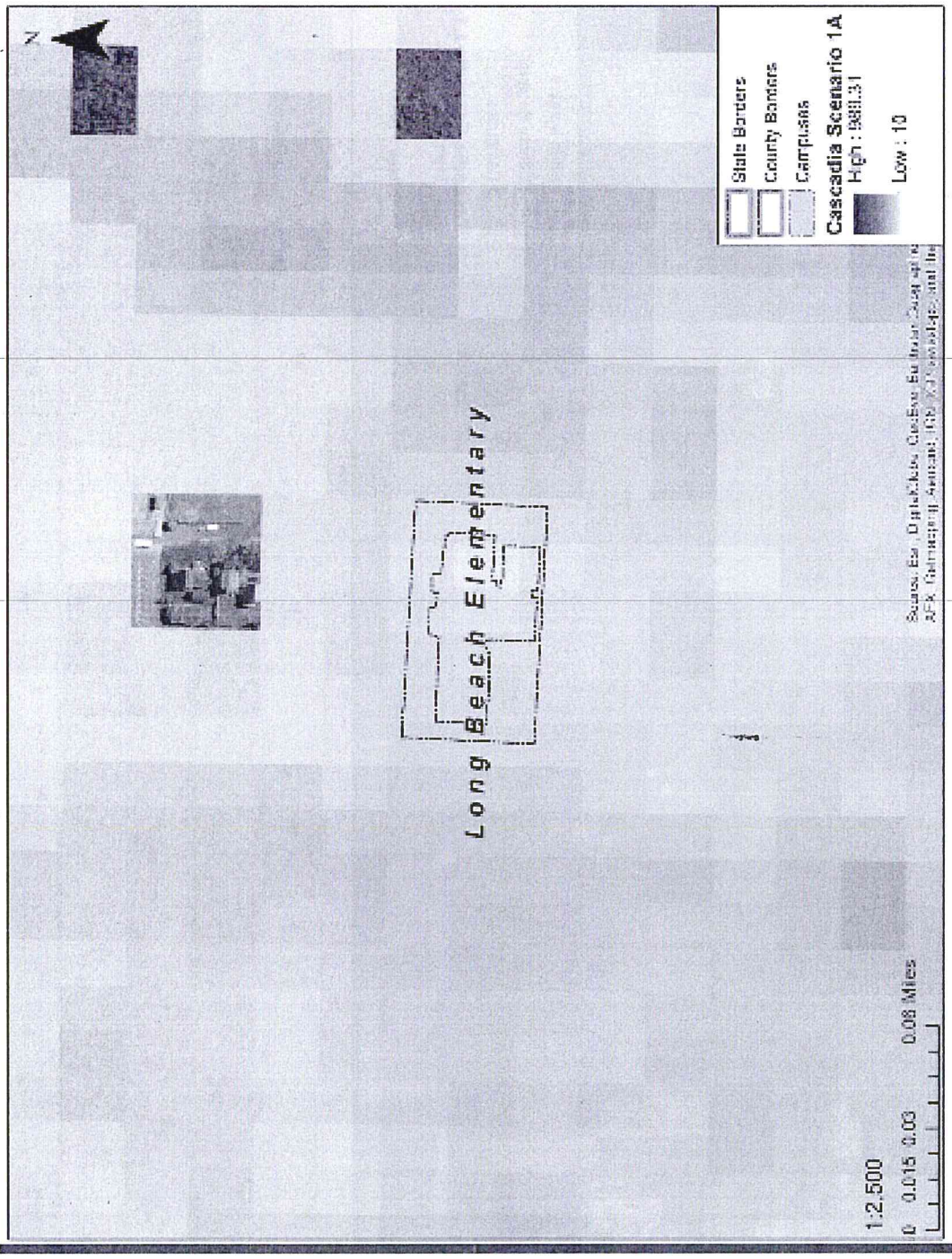
Map 45 – Tsunami Model 1A, Ocean Beach SD, Ilwaco Middle & High School



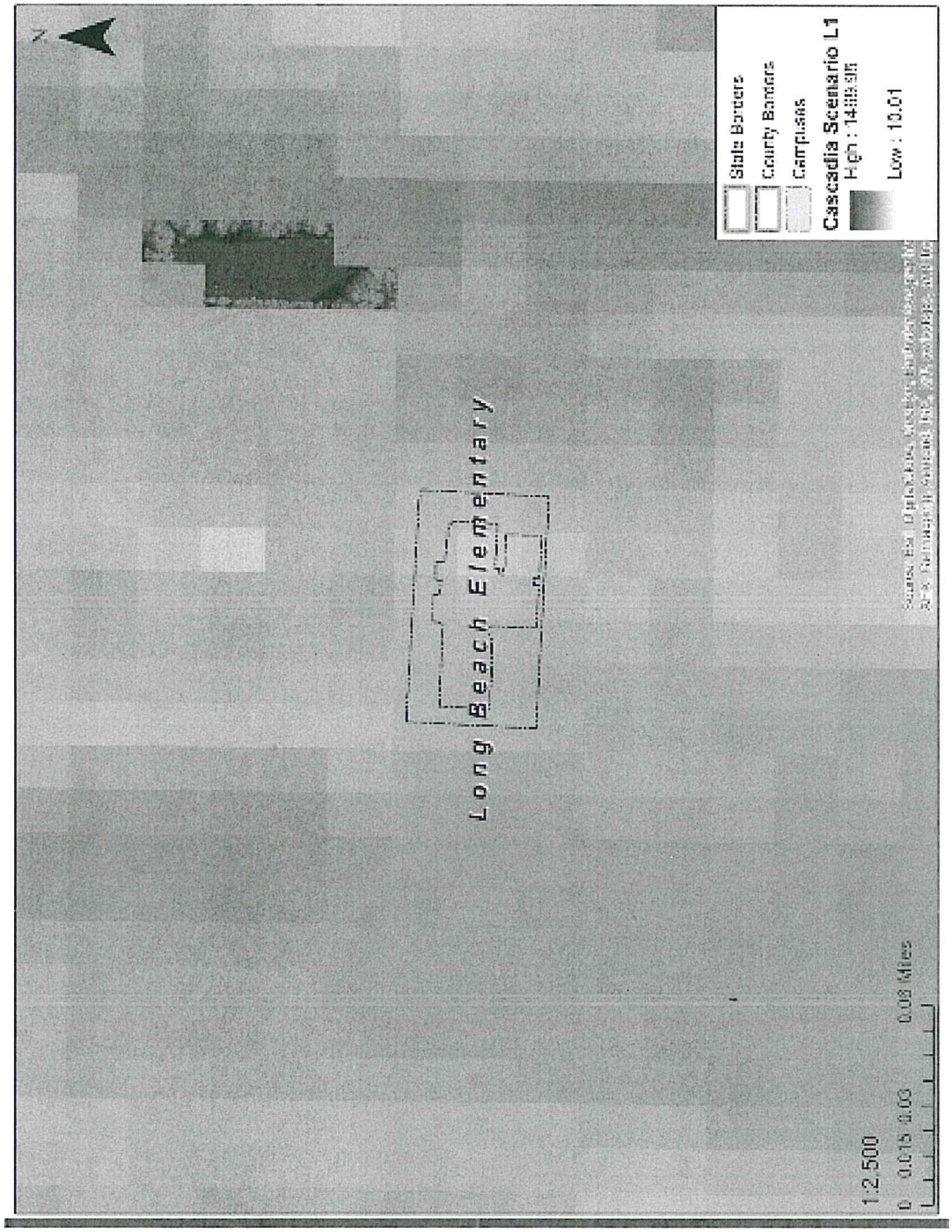
Map 46 – Tsunami Model L1, Ocean Beach SD, Ilwaco Middle & High School



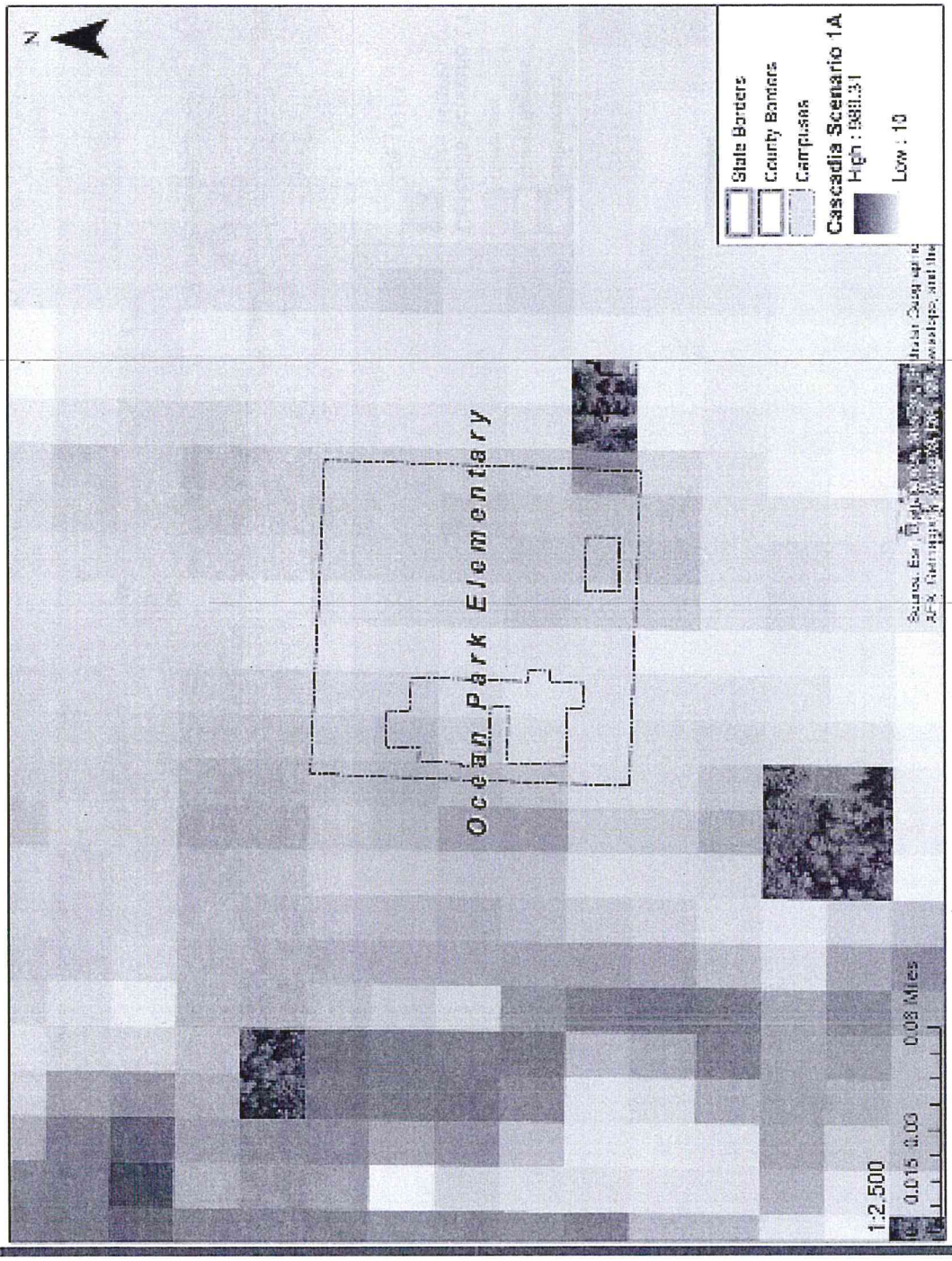
Map 47 – Tsunami Model 1A, Ocean Beach 5D, Long Beach Elementary



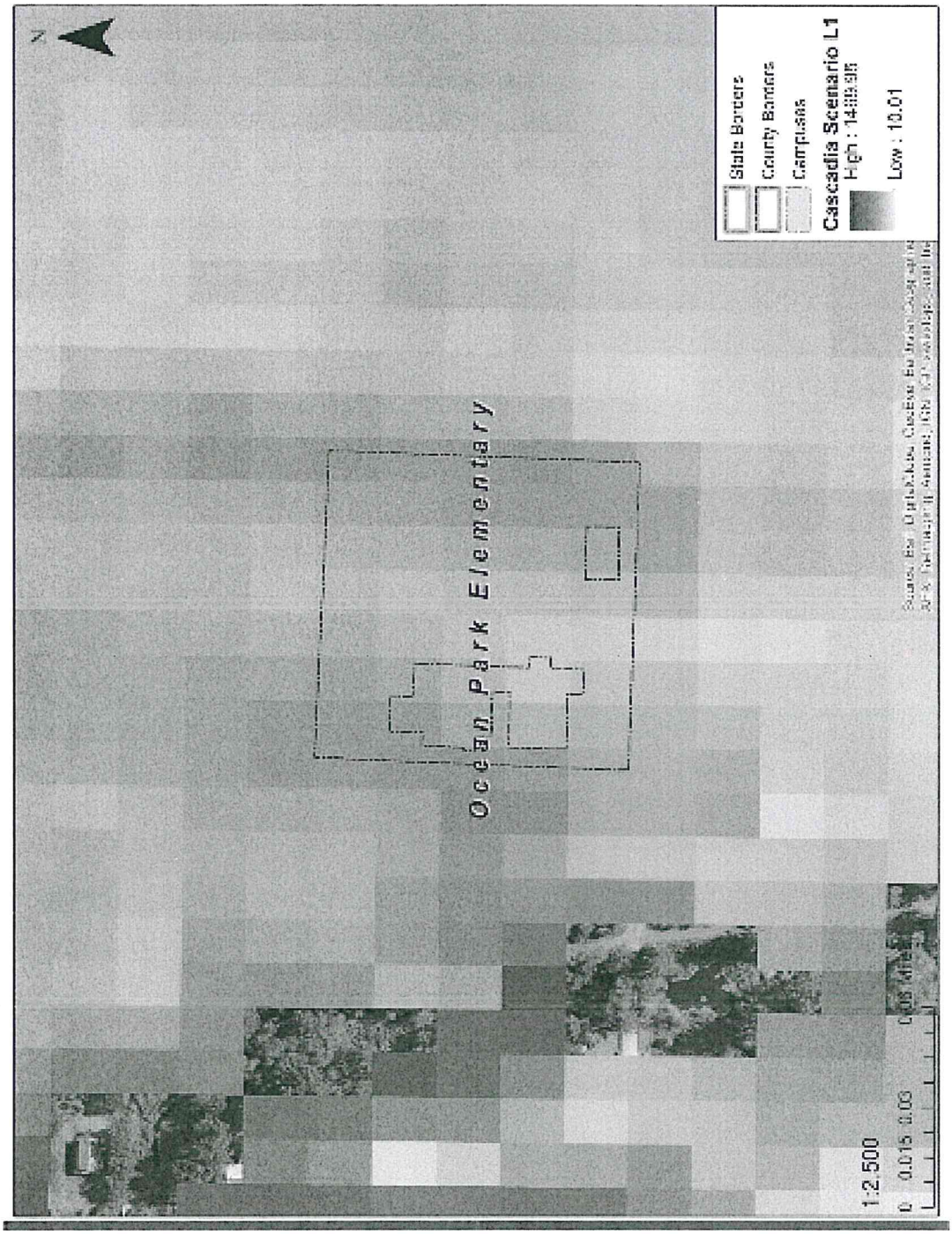
Map 48 – Tsunami Model L1, Ocean Beach SD, Long Beach Elementary



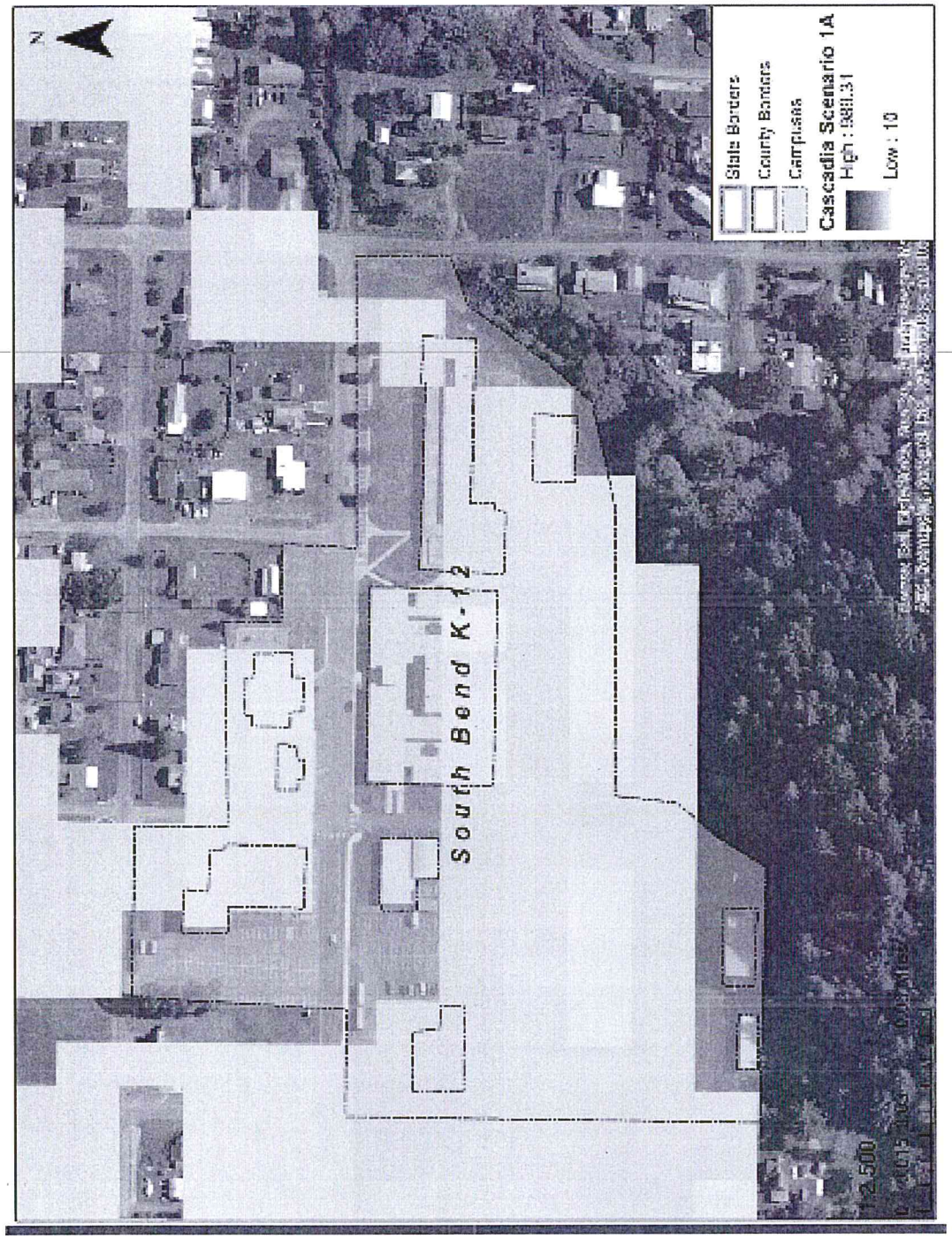
Map 49 – Tsunami Model 1A, Ocean Beach SD, Ocean Park Elementary



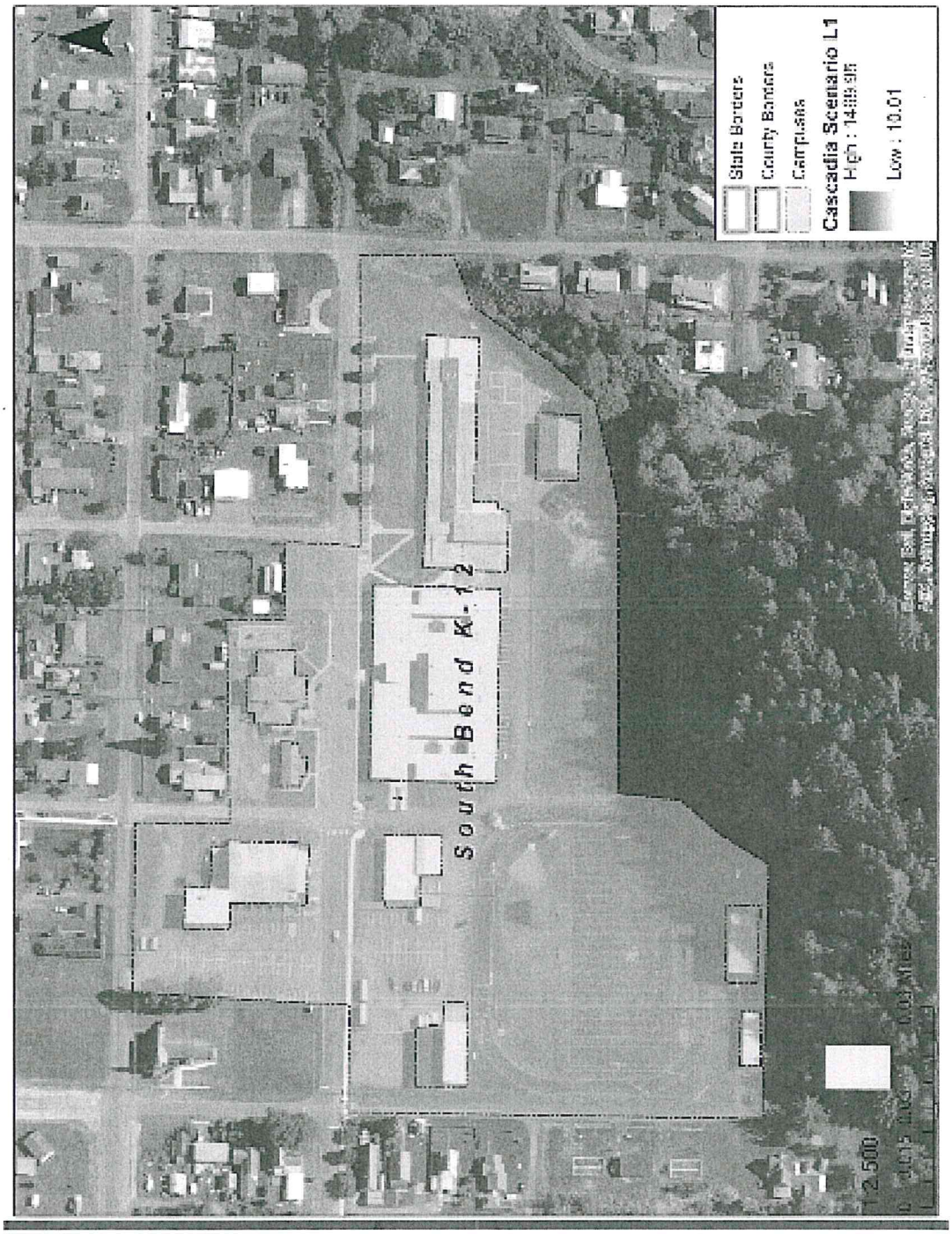
Map 50 – Tsunami Model L1, Ocean Beach SD, Ocean Park Elementary



Map 51 – Tsunami Model 1A, South Bend SD, South Bend K-12



Map 52 – Tsunami Model L1, South Bend SD, South Bend K-12



4.3.3 – Previous Occurrences

The Cascadia Subduction Zone is believed to have had a catastrophic, high magnitude earthquake around 1700 AD. As the area did not have modern developments at the time, its historic impacts are unknown, although it is known that the tsunami reached inland to the Willapa Bay area. In terms of tsunamis created by earthquakes across the Pacific Ocean, over 500 have been created since 1900, but none have had significant impacts on Pacific County or its participating jurisdictions.

4.3.3A – Probability of Future Events

Seismologists believe an event like this, necessary to create a tsunami, has a return interval of 300 to 500 years. Therefore, a catastrophic tsunami originating from the Cascadia Subduction Zone has between a .33% and .2% of occurring in any given year. This roughly translates to a tsunami affecting the planning area's coast about once every 450 years.

Tsunamis originating from faults across the Pacific Ocean are more likely to occur, but are incredibly more difficult to predict quantitatively. Tsunamis cause by earthquakes in the Cascadia Subduction Zone and across the Pacific Ocean are both categorized as "rare" events.

4.3.4 – Assessing Vulnerability & Impact

Tsunami Impacts

Pacific County has not experienced a tsunami, but there is strong evidence to suggest that it will, in time, experience a tsunami originating from a Cascadia Subduction Zone earthquake. In the event of such an earthquake and resulting tsunami, the impacts will be devastating to the coastal and river inland areas. A serious devastating tsunami can create a peak wave height of 49.68 feet at the entrance to Willapa Bay, 31.50 feet at Ocean Park, and 30.84 feet at long beach. Pacific County and its participating jurisdictions can expect this to occur between .33% and .2% per year.

Vulnerability of Facilities

Structural vulnerability to tsunamis will vary based on their location, that being how far inland they are, what is their elevation, their cardinal orientation, and foundation strength. A strong enough flowing tsunami could completely wash away a structure, damage or rip apart portions of the structure, or cause flooding and significant damage to a structure's interior and making it unsafe to inhabit until costly cleanup operations are finished. Additionally, debris, including flowing vehicles, can become caught by structures and sustain damage.

Pacific County and its participating jurisdictions have not had any property damage from tsunamis.

Vulnerability of Population

Populations living and working within the identified inundation zones are vulnerable to injury and death by a tsunami. Tsunamis move with incredible force, washing away buildings and vehicles without issue. It will have no problem forcefully carrying the weight of an individual. The water is likely to be filled with debris that can injure or hurt an individual as well as cause bodily harm by trapping them and forcing them against structures.

It is estimated that coastal communities of Pacific County will have a total of 30 minutes to evacuate or reach a safe elevation; however, since this is after an earthquake and five minutes should be subtracted from that number to take into account shock and reorientation following the initiating earthquake. Additionally, evacuation planning should take into account that roadways will likely be damaged or blocked by landslides, damaged infrastructure and buildings, or trees and power lines.

Pacific County and its participating jurisdictions do not have any recorded deaths or injuries from tsunamis.

Vulnerability of Systems

Systems that are exposed to the identified inundation areas are extremely vulnerable. It is likely that a major tsunami will severely impair or destroy most of what is in its path. This will also be true for any systems in its path or any systems that rely on infrastructure or facilities.

- *Fire Districts*
  The fire districts' services are an integral part of the planning area's emergency operations before, during, and after an event. Fire District #4 is not vulnerable to tsunamis. Fire Districts #1, #2, and #5 are significantly vulnerable to tsunamis. A tsunami is likely to do significant damage to these fire districts and all but eliminate their ability to respond to and assist in the recovery from a tsunami.

- *Ports*
  The ports of Chinook, Ilwaco, Peninsula, and Willapa Harbor are all within the identified inundation areas. A tsunami has the potential to completely destroy these ports. If a tsunami does not destroy these ports' facilities, it will likely damage their docking and mooring capabilities along with much of their equipment. A tsunami will give under 30 minutes of warning, which is not enough time to evacuate

any expensive equipment. This will render the ports non-operational for weeks, months, and even years to come.

Public Utility District #2
Public Utility District #2 serves the entire planning area. PUD #2 does not generate any power of its own, but provides and maintains the energy grid necessary to deliver electricity to the planning area. In the event of a Cascadia Subduction Zone earthquake and resulting tsunami, it is estimated that any and all electrical grid infrastructure in the inundation areas should be assumed inoperable for weeks to months.

Transportation & Pacific Transit
Roadways in the identified inundation areas are very vulnerable to tsunamis. It is safe to assume that they would already be damaged from the preceding earthquake, and when the tsunami hits, it will likely wash away much of the remaining infrastructure, creating hazardously damaging debris in the tsunami's flow. In the event of a Cascadia Subduction Zone earthquake and resulting tsunami, it is estimated that any and all roadways in the inundation areas should be assumed to be impassable by standard vehicles.

4.3.4A – Critical Facilities & Infrastructure
Infrastructure and critical facilities located in the identified inundation zones are significantly vulnerable to tsunamis, including the Ocean Beach Hospital and the Willapa Harbor Hospital. A complete list of infrastructure and critical facilities can be found in Appendix D.

4.3.4B – Land Use & Development Trends
Pacific County and it participating jurisdictions have declining growth as detailed in Section 3.1.1 – Land Use & Development Trends. None of the participating jurisdictions have seen significant growth, and thus there is no overall net increase in their risk to tsunamis caused by land use or development. Any buildings or infrastructure built in the future will have the same risk as other buildings or infrastructure built within or outside of the planning area.

4.3.4C – Unique & Varied Risk

A tsunami will not impact the entire planning area; instead, it has roughly discrete identified risk areas. The table below outlines the differences in predicted risk in the planning area.

Table 32 – Unique & Varied Risk, Tsunamis	
Jurisdiction	**Tsunami Inundation Risk**
Pacific County	Identified coastal areas
Ilwaco	Large portions of developed areas
Long Beach	Near complete inundation and impact
Raymond	Minor impact in identified areas
South Bend	Major impact in identified area
Naselle/Grays River SD	No Risk to Tsunamis
Ocean Beach SD	Complete inundation
South Bend SD	Major impact in identified area
Willapa Valley SD	No Risk to Tsunamis
Naselle Water Company	No Risk to Tsunamis
North Beach WD	Near complete inundation and impact
Surfside Homeowners' Association	Near complete inundation and impact
Willapa Valley WD	No Risk to Tsunamis
Ocean Beach Hospital	Minor impact in identified areas
Willapa Harbor Hospital	No Risk to Tsunamis
Fire District #1	Near complete inundation and impact
Fire District #3	Minor impact in identified areas
Fire District #4	No Risk to Tsunamis
Fire District #5	Minor impact in identified areas
Fire District #6	No Risk to Tsunamis
Pacific Transit	Minor impact in identified areas
Port of Chinook	Complete inundation
Port of Ilwaco	Complete inundation
Port of Peninsula	Minor impact in identified areas
Port of Willapa Harbor	Complete inundation
PUD #2	Minor impact in identified areas

4.3WS – Winter Storms

4.3.1 – Description

A winter storm encompasses multiple affects caused by winter weather. Included are strong winds, ice storms, heavy or prolonged snow, sleet, and extreme temperatures. Winter storms can be increasingly hazardous in areas and regions that only see winter storms intermittently.

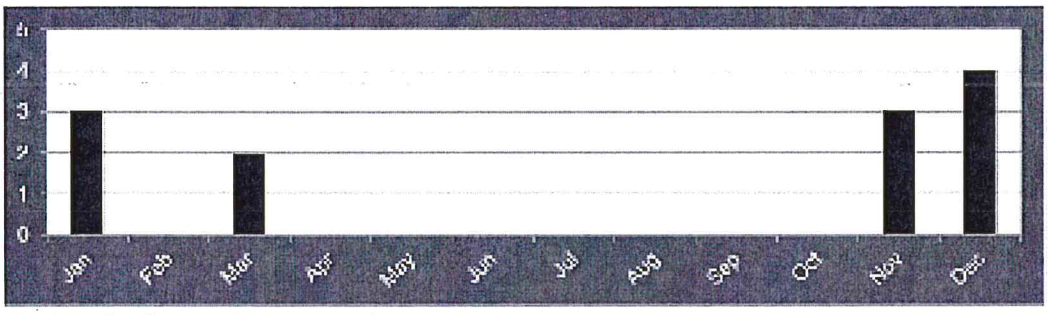
This plan defines winter storms as a combination of the following winter weather effects as defined by NOAA and the NWS:

Ice Storm: An ice storm occurs when freezing rain accumulates on surfaces creating hazardous travel conditions and excess weight on surfaces not designed or capable of bearing the weight. Significant accumulations of ice pull down trees and utility lines resulting in loss of power and communication. These accumulations of ice make walking and driving extremely dangerous. Significant ice accumulations are usually accumulations of ¼" or greater.

Heavy Snow: This generally means snowfall accumulating to a depth of 4" or more in 12 hours or less; or snowfall accumulating to 6" or more in 24 hours or less. In forecasts, snowfall amounts are expressed as a range of values, e.g., "8 to 12 inches." However, in heavy snow situations where there is considerable uncertainty concerning the range of values, more appropriate phrases are used, such as "...up to 12 inches..." or alternatively "...8 inches or more."

Winter Storm: Hazardous winter weather in the form of heavy snow, freezing rain, or heavy sleet. It may also include extremely low temperatures and increased wind.

Chart 5 – Winter Storms by Month, Pacific County (2001 – 2014)



*The data are from the NOAA NCDC Storm Event Database.

4.3.2 – Location & Extent

Winter storms typically form with warning and are often anticipated. Like other large storm fronts, the severity of a storm is not as easily predicted, and when it is, the window of notification is up to few hours to under an hour. Although meteorologists estimate the amount of snowfall a winter storm will drop, it is not known exactly how many feet of snow will fall, whether or not it will form an ice storm, or how powerful the winds will be until the storm is already affecting a community.

Winter storms can range from moderate snow over a few hours to blizzard conditions with high winds, freezing rain or sleet, heavy snowfall with blinding wind-driven snow and extremely cold temperatures that last several days.

Winter storms in Pacific County and its participating jurisdictions often affect areas higher in altitude or in valleys located below these areas. When winter storms move through the planning area, snow accumulates high in the mountains with lesser amounts accumulating in Raymond, South Bend, and the peninsula area of Ocean Park, north of Long Beach.

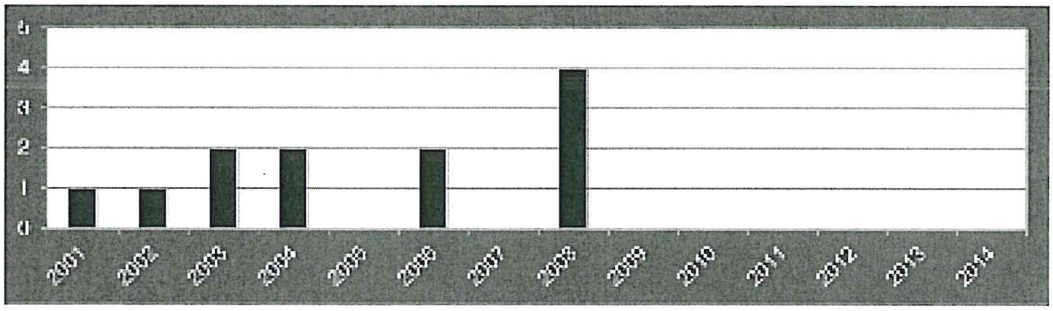
Historically, Raymond and South Bend have seen between 5 to 10 inches of accumulated snow and Ocean Park has seen 4 inches. Winter storms have also knocked out power to 500 residents in the planning area. Measurements are not as accurate high up in the hills, but observers note the Willapa Hills typically see 2 to 4 feet of accumulation.

4.3.3 – Previous Occurrences

Since 2001, NOAA has recorded 12 winter storms in Pacific County and its participating jurisdictions. Pacific County and its participating jurisdictions have recorded $858,000 in property damage, no fatalities, and no injuries from winter storms.

For a complete list of NOAA recorded winter storm events, please reference Appendix E.

Chart 6 – Winter Storms per Year, Pacific County (2001 – 2014)



*The data are from the NOAA NCDC Storm Events Database.

4.3.3A – Probability of Future Events

Pacific County and its participating jurisdictions can expect a winter storm with an 85.71% probability per year, or 0.8571 events per year. Therefore, the likelihood of a winter storm occurring in the planning area is "highly likely."

Table 33 – Probability, Winter Storms	
Event Year	**Event Count**
2001	1
2002	1
2003	2
2004	2
2005	0
2006	2
2007	0
2008	1
2009	0
2010	0
2011	0
2012	0
2013	0
2014	0
Total Recorded Events =	12
Total Years =	14
Yearly Probability =	**85.71%**

The data is from the NOAA Storm Event Database.

4.3.4 – Assessing Vulnerability & Impact

Winter Storm Impacts

Pacific County and its participating jurisdictions have recorded 12 winter storm events since 2001, of which the range of magnitude can be any combination of winter storms, but will always be considered severe. Based on the future probability in Table 33, Pacific County and its participating jurisdictions can expect 0.6571 winter storm events per year which could impact in the form of heavy accumulated snow, accumulated ice, extreme and prolonged cold temperatures, or any combination of the three.

Table 34 – Historical Impacts, Winter Storms	
Count of Events	12
Impacts Per Year	0.08
Average Magnitude (Enhance Fujita Scale)	-
Magnitude Range (Enhance Fujita Scale)	-
Average Cost	$71,583.33
Magnitude of Cost	$0 - 691,000
Total Recorded Cost	$859,000
Average Fatalities	0
Total Fatalities	0
Average Injuries	0
Total Injuries	0

*The data are from the NOAA NCDC Storm Event Database.

Vulnerability of Facilities

Structural vulnerability to winter storms is the same throughout Pacific County and its participating jurisdictions. Heavy snow accumulation can cause roofing to collapse on old or poorly constructed facilities. Ice storms will coat a facility's exterior, but is unlikely to cause anything more than superficial damage. Prolonged, extremely cold temperatures can cause significant damage to poorly insulated or heated facilities. The cold temperatures can cause a facility's water pipes and plumbing systems to freeze. As the water in these systems turns to ice it expands and eventually will cause pipes to burst.

The average winter storm in Pacific County and its participating jurisdictions costs $71,583, while the existing range of a single incident has been from $0 to $691,000.

Vulnerability of Population

Pacific County and its participating jurisdictions' population are equally vulnerable throughout the planning area. Pacific County and its participating jurisdictions' citizens are at risk from prolonged, cold temperatures if they fail to be sheltered in an adequately heated structure or are unable to reach shelter. Some structures are dependant on electricity for their heating, making them vulnerable if a winter storm causes power outages. Additionally, if a winter storm restricts travel, people may become immobile on roadways and be at the mercy of their vehicle's gas supply. Exposure from winter storms in any of these cases can lead to frostbite and hypothermia. Both of these conditions, if untreated, can lead to death.

Historically, there have been 0 recorded fatalities or injuries relating to winter storms across region wide fronts in Pacific County and its participating jurisdictions.

Vulnerability of Systems

Pacific County and its participating jurisdictions' assets and systems' vulnerability to winter storms is the same throughout the planning area. Winter storms create havoc on roads impacting travel from decreased speeds and traffic jams to an ice storm or blowing snow drifts, making any travel impossible or extremely dangerous. Additionally, ice storms and snow accumulation can directly bring down power lines or bring down vegetation onto power lines. From these scenarios, Pacific County and its participating jurisdictions can suffer power outages; making it difficult to heat structures and exposing its citizens to prolonged cold temperatures.

Fire Districts

The fire districts' services are an integral part of the planning area's emergency operations before, during, and after an event. The participating fire districts are only slightly vulnerable to winter storms. A winter storm is unlikely to damage an entire fire district in a way that would significantly reduce its overall capabilities.

Ports

The ports of Chinook, Ilwaco, Peninsula, and Willapa Harbor have limited vulnerability to winter storms. A winter storm has the potential to temporarily slow or shut down commercial operations. If a storm knocks out power, operations could be delayed further. Historically, none of these events have been of significant impact to the ports.

Public Utility District #2

Public Utility District #2 serves the entire planning area. PUD #2 does not generate any power of its own, but provides and maintains the energy grid necessary to deliver electricity to the planning area. As previously mentioned, a winter storm had knocked out power to 500 of the planning area's residents. PUD #2 is vulnerable to future winter storms, but unless they impact at a larger scale, PUD #2 is not considered highly vulnerable.

Transportation & Pacific Transit

The roadways and bus routes of Pacific County are temporarily vulnerable to winter storms. A winter storm can temporarily restrict roadway transportation between the planning area's communities, hindering response and recovery operations. Additionally, closed roadways can leave motorists trapped and exposed to the elements.

Water Companies and Districts

The participating water companies and districts are vulnerable to winter storms. Excessively long periods of cold weather can cause pipes to burst or freeze. Additionally, they can cause damage to pump stations and other equipment necessary to providing services.

4.3.4A – Critical Facilities & Infrastructure

All infrastructure and critical facilities are at risk, since winter storms can indiscriminately affect the entire planning area. However, Raymond and the Ocean Beach area (the county north of Long Beach), are at a greater historical risk. A list of infrastructure and critical facilities can be found in Appendix D.

4.3.4B – Land Use & Development Trends

Pacific County and its participating jurisdictions have declining growth as detailed in Section 3.1.1 – Land Use & Development Trends. None of the participating jurisdictions have seen significant growth, and thus there is no increase in their risk to winter storms caused by new land use measures or development. Any buildings or infrastructure built in the future will have the same risk as other buildings or infrastructure built within or outside of the planning area.

4.3.4C – Unique & Varied Risk

Winter storms have the ability to affect a portion of or the entire planning area, but historically they have affected the coastal areas (Long Beach, Ilwaco, Raymond, South Bend and western Pacific County) much greater than the rest of the planning area as the higher density of population are located along the coast.

4.4 – Excluded Hazards

Avalanches
Avalanches do not occur within the planning area. The Washington State Enhanced Hazard Mitigation Plan does not include Pacific County within an identified avalanche hazard area.

Dam Failure
Pacific County's prior HMP profiled the planning area's dams. The prior HMP and the USACE verify that there are no dams of reasonable risk within the planning area.

Droughts
Due to the extremely wet and humid climatic conditions that exist year round in Pacific County, the planning area does not suffer from droughts.

Volcanoes
The Washington State Enhanced Hazard Mitigation Plan includes sophisticated analyses of Washington's volcanoes. These analyses do not include Pacific County within the identified hazard risk areas.

Wildfires
An assessment by PCEMA and supporting relevant stakeholders has determined the risk of wildfires occurring within the planning area is extremely low. Although heavily vegetated, Pacific County's climate is extremely wet and damp throughout the year. This climatic condition makes it nearly impossible for fires to start naturally and makes it even more difficult for them spread.

4.5 – Land Use and Development Trends

A summary assessment for land use, development trends, and growth as they apply to changes in a jurisdiction's vulnerability and risk, can be broken down into two categories. The first being hazards such as winter storms or tornadoes, which indiscriminately affect the entire planning area. The second being hazards which have identified hazard areas, such as riverine floods.

For the first category, an increase in growth and development will increase a jurisdiction's vulnerability and risk. For the second category, an increase in growth and development will only increase a jurisdiction's vulnerability and risk if the growth and development exists in the identified hazard areas.

The list below further details how growth and development affects vulnerability and risk. The table below lists these effects for Pacific County and its participating jurisdictions.

Area-Wide Hazards:
Area-wide hazards indiscriminately impact the entire planning. Since it is beyond scientific measurement as to where where an area-wide hazard such as a winter storm will impact, and likely it will impact everywhere, it is reasonable to assume that any significant growth and development will increase vulnerability and risk. Additionally, a hazard such as a tornado will impact a specific path, but we are unable to predict where exactly it will begin. Thus, having any increase in growth or development increases the chance that a tornado will strike a developed segment of a jurisdiction.

For this plan, this is relevant for earthquakes, flash flooding, hazardous materials, severe storms, and winter storms.

Hazards with Identified Hazard Areas:
If a jurisdiction grows or develops into an established coastal or riverine floodplain, landslide hazard area, that jurisdiction's vulnerability and risk increase by an amount equal to the development or growth that now exists in that identified hazard area.

For this plan, this is relevant for coastal erosion, coastal flooding, landslides, riverine flooding and tsunamis.

The following table summarizes how recent land use and development trends affect each municipality's vulnerability and risk to each hazard.

Table 35 – Land Use & Development Trends, Hazard Summary

Jurisdiction	Direction	Hazard						
		Coastal Erosion	Earthquakes	Flash Flood	Landslide	Riverine Flood	Severe Storms	Tsunami
Pacific County	N/A	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease
Ilwaco	N/A	Decrease	Decrease	Decrease	N/A	Decrease	Decrease	Decrease
Long Beach	N/A	No Change	No Change	No Change	N/A	No Change	No Change	No Change
Raymond	N/A	Decrease	Decrease	Decrease	N/A	Decrease	Decrease	Decrease
South Bend	N/A	Decrease	Decrease	Decrease	N/A	Decrease	Decrease	Decrease

4.6 – Risk Summary

The table below outlines each participating jurisdiction's general risk to this plan's profiled hazards. The rankings are based on a composite evaluation of this plan's risk assessment, namely, a hazard's probability of occurring in the future, the vulnerability of a jurisdiction to a particular hazard, and the intensity of past hazard impacts. The final rankings are based on a joint evaluation between the participating stakeholders of this plan.

Table 36 – Hazard Risk Summary

Jurisdiction or Stakeholder	Hazard									
	Coastal Erosion	Coastal Flood	Earthquake	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms
Pacific County	High	Medium	Medium	Low	Low	Low	Medium	High	High	Low
Ilwaco	No Risk	No Risk	Medium	N/A	Low	No Risk	Medium	High	High	Low
Long Beach	Low	Medium	Medium	Low	Low	No Risk	Low	High	High	Low
Raymond	No Risk	No Risk	Medium	N/A	Low	No Risk	Medium	High	Medium	Low
South Bend	No Risk	No Risk	Medium	Low	Low	No Risk	Medium	High	Medium	Low
Naselle-Grays River SD	No Risk	No Risk	Medium	N/A	Low	No Risk	No Risk	High	No Risk	Low
Ocean Beach SD	Low	No Risk	Medium	N/A	Low	No Risk	No Risk	High	High	Low
South Bend SD	No Risk	No Risk	Medium	Low	Low	No Risk	No Risk	High	High	Low
Willapa Valley SD	No Risk	No Risk	Medium	N/A	Low	No Risk	No Risk	High	No Risk	Low
North Water District	No Risk	No Risk	Medium	Low	Low	No Risk	No Risk	High	No Risk	Low
Naselle Grays WD	No Risk	No Risk	Medium	N/A	Low	No Risk	No Risk	High	High	Low
Surfside Homeowners' Association	Low	Medium	Medium	N/A	Low	No Risk	Medium	High	High	Low
Willapa Valley WD	No Risk	No Risk	Medium	N/A	Low	No Risk	No Risk	High	No Risk	Low
Ocean Beach Hospital	No Risk	No Risk	Medium	Low	Low	No Risk	No Risk	High	Medium	Low
Willapa Harbor Hospital	No Risk	No Risk	Medium	Low	Low	No Risk	No Risk	High	No Risk	Low
Fire District #1	No Risk	No Risk	Medium	N/A	Low	No Risk	No Risk	High	High	Low
Fire District #2	No Risk	No Risk	Medium	Low	Low	No Risk	No Risk	High	Medium	Low
Fire District #3	No Risk	No Risk	Medium	Low	Low	No Risk	No Risk	High	No Risk	Low
Fire District #6	High	No Risk	Medium	N/A	Low	No Risk	No Risk	High	Medium	Low
Fire District #7	No Risk	No Risk	Medium	Low	Low	No Risk	No Risk	High	No Risk	Low
Pacific Transit	No Risk	No Risk	Medium	N/A	Low	No Risk	No Risk	High	Medium	Low
Port of Ilwaco	No Risk	No Risk	Medium	Low	Low	No Risk	Medium	High	High	Low
Port of Nemah	No Risk	No Risk	Medium	N/A	Low	No Risk	Medium	High	High	Low
Port of Peninsula	No Risk	No Risk	Medium	Low	Low	No Risk	Medium	High	Low	Low
Port of Willapa Harbor	No Risk	No Risk	Medium	N/A	Low	No Risk	Medium	High	High	Low
PUD #2	No Risk	No Risk	Medium	N/A	Low	No Risk	No Risk	High	Medium	Low

*There are notes on the approach and accuracy of the participating jurisdictions and do not represent specific Mitigation hazard zones within a chosen jurisdiction.

Section 5 – Mitigation Strategy

5.1 – Mitigation Capabilities

Each type of stakeholder provides a set of capabilities, in some cases broad and in some cases narrow, by which they can increase the planning area's resiliency.

County and Municipal Governments
The broadest form of mitigation capabilities come from the county and city governments. Their inherent legal authority allows them to institute the greatest regulatory and developmental changes.

School Districts
The participating school districts have broad authority over their campuses and although budgets may be tight, they are more far reaching than some of the smaller organizations. Additionally, the necessity to protect the planning area's children grants them greater influence and political capital to institute change.

Water Districts
The participating water company and water districts do not have far reaching authority or resources that extend beyond their property. However, their services are critical to the planning area. They will primarily use their resources to protect their property and ensure the continuity of their services in the face hazard events.

> *Surfside Homeowners' Association*
> In addition to its status as a water district, the Surfside Homeowners' Association can institute regulatory changes. Additionally, as a citizen-homeowner group, the association has the capability of yielding political influence in favor of mitigation activities and projects.

Ocean Beach Hospital & Willapa Harbor Hospital
The participating hospitals do not have authority beyond their property. However, the hospitals are integral to the community in day-to-day operations, as well as during and after an event. Their capabilities will primarily be used to protect their property and ensure the maintenance of their operations.

Fire Districts
The participating fire districts in this plan have personnel resources and capabilities that can be used in the planning and implementation of mitigation activities and projects. When collaborating with other stakeholders and municipal governments, these personnel resources can also provide subject matter expertise. Additionally, their services to the community are necessary and must be protected by mitigation measures.

Ports
The ports do not have reaching authority beyond their property. The participating ports are integral to the planning area's economy. Additionally, their maritime capacity can be used post disaster for the delivery of emergency and relief supplies, whether or not the incident is local or regional. Therefore, the ports must use their internal resources to protect infrastructure.

Public Utility District #2
Like the participating water company and water districts, Public Utility District #2 does not have far reaching authority or resources that extend beyond their property. However, their services are critical to the planning area. They will primarily use their resources to protect their property and ensure the continuity of their services in the face hazard events.

Institutional Capability
Pacific County as a whole community that is capable of implementing the strategies identified herein. In addition, they are capable of promoting the mitigation process and educating the public about the hazards prevalent to their area, as well as mitigation process necessary to mitigate those hazards.

In an emergency, the county and cities' response is an extraordinary extension of responsibility and action, coupled with normal day-to-day activity. Normal governmental duties will be maintained, with emergency operations carried out by those agencies assigned specific emergency functions under the Pacific County Comprehensive Emergency Management Plan.

> *StormReady and TsunamiReady Communities*
> The NWS StormReady program helps communities with the communication and safety skills needed to save lives and property. StormReady communities are better prepared to save lives from the onslaught of severe weather through advanced planning, education, and awareness. This label is granted to communities that meet a measured level of weather preparedness and staffing capabilities. Pacific County, Raymond, and South Bend are StormReady communities while Ilwaco and Long Beach are TsunamiReady communities.

Political Capability
During the process of the development of this plan, opposition to mitigation measures was not evident in Pacific County or in the participating stakeholders. In fact, the county has taken a proactive approach to mitigation through its flood management ordinances and land use planning. The primary limiting factor is funding, which is made more difficult by the current situation in the local, state, and national economy.

The county, cities, and their partnerships with the participating agencies are well-organized and responsive to community needs. Leadership is informed and remains up-to-date on the hazards that threaten the area. Citizens who did participate in the public meetings and presentations showed an interest in doing things to promote a safer county. Therefore, the county and cities (the governing board, staff, and citizen population) appear willing to promote the economic efficiency and social utility of the mitigation measures contained in this Plan, if appropriate funding can be identified.

Technical Capability
The participating stakeholders have the basic technology needed to mitigate and respond to natural disasters. They are equipped with telephone and fax lines and a functional Emergency Operations Center in case of disaster. Many key persons are equipped with cellular phones, which can act as a backup to land lines in case service is lost. The County is connected to the Internet, which is a valuable source of information on approaching hazards and mitigation measures. The County sponsors a website (http://www.co.pacific.wa.us) where there is a

link to the Pacific County Emergency Management Agency. The County Public Works Department provides GIS mapping for the County and can provide GIS capabilities.

Fiscal Capability
Pacific County, its cities, and stakeholders in this mitigation plan are not unique in the issues felt by small governments to retain the staff and resources necessary to accomplish the strategies necessary to mitigate the hazards in their area. However, they are aware of potential diverse funding sources available to communities for assisting in the fiscal needs required to implement local hazard mitigation plans, including both government and private programs.

While federal and state programs carry out the bulk of disaster relief programs that provide funds for mitigation, local governments are able to search for alternative funding sources to supplement the local hazard mitigation budget. The participants in the mitigation planning process are aware that before effective mitigation strategies can be applied, stable funding sources and effective incentives must be established on a per project basis to encourage participation by the private and public sectors.

5.1.1 – Authorities

General Authority
Washington State law provides the legal authority for local governments to implement regulatory measures. The basis for much of this authority is the local government power designed to protect public health, safety and welfare. This authority enables local government to enact and enforce ordinances, and to define and abate nuisances. Hazard mitigation is a form of protecting public health, safety, and welfare, and falls under the general regulatory powers of local government. This also extends to building codes and inspections, land use, acquisition, and floodway regulation.

Building Codes and Inspections
Building codes and inspections provide local governments with the means to maintain County structures that are resilient to natural hazards. Pacific County has adopted the Uniform Construction and Fire Codes in 2001. These codes prescribe minimum standards for building construction, which ensures that new buildings and structures are built to standards that are seismically sound, fire resistant and developed within flood-proofing measures. These codes also require appropriate hazard code updating and compliance when certain thresholds are met for remodel and renovation of existing buildings. These codes also authorize local governments to carry out building inspections to ensure local structures adhere to the minimum state building standards.

Pacific County officials have the primary role of enforcement of the Uniform Building Code structural regulations. Fire Departments also take part in the inspection process for fire and general public safety inspections. They enforce the appropriate codes both at the plan approval stage and the site inspection stage. Pacific County is committed to the high standards of building provided through the respective codes, and requires that the same codes and the same enforcement procedures apply during routine permitting procedures as well as following a disaster.

Land Use Planning
Through land use regulatory powers granted by the state, local governments can control the location, density, type and timing of land use and development in the community. Provisions of the land use plans are implemented through regulatory tools that include zoning and subdivision ordinances, and taxation. The Pacific County Mitigation Plan will support appropriate land use planning.

Shoreline Master Program (SMP)
The Shoreline Master Program is a State of Washington sponsored set of land use policies and regulations designed to manage shoreline development. This program protects natural resources for future generations, provides for public access to water and shores, and plans for water-dependent uses. Pacific County's SMP was written and adopted in 1959. It is currently under review for modification and revision.

Zoning
Within its land use planning authority, a local government is authorized to divide the planning area into zones. For each type of zone (as defined in a written code and by zoning maps) the local government may classify, designate, regulate, and restrict the use of buildings (land and structures) to permit the most compatible use of land within the county consistent with the needs of residential, commercial and industrial developments, and the promotion of the public health, safety, welfare and general prosperity of the County and its residents.

Taxation
Taxation can be a powerful mitigation tool by providing local governments with a way to guide development. Tax abatements may be used to encourage landowners and developers to integrate mitigation measures into the process of building new developments and retrofitting existing properties in the floodplain. These tools can be especially effective in encouraging the mitigation of existing structures.

Floodplain Ordinances
Floodplain management is the operation of a community program of measures for reducing flood damage. These measures take a variety of forms; and generally include zoning, subdivision, or building requirements, and special-purpose floodplain ordinances. Pacific County passed a Flood Damage Prevention Ordinance in July of 2008. The purpose of this ordinance is to promote public health, safety and general welfare, and to minimize public and private losses due to flood conditions in specific areas. The Flood Damage Prevention Ordinance is successful at regulating the floodway and minimizing the losses due to flood conditions, and is tied to other building and development codes used by Pacific County.

The Director of the Pacific County Department of Community Development is the administrator of the floodway provisions, and has the authority to implement and enforce the provisions by granting or denying development permits that encroach upon lands designated as flood hazard areas.

5.1.2 – Regulations

The following regulations are current plans, codes, ordinances, and resolutions relevant to hazard mitigation and the participating jurisdictions and stakeholders.

Pacific County
In Pacific County's county code Sections 15 and 16 have a series of codes managing and restricting development in established and identified floodplains, coastal flood zones, geologic hazard areas and adopted building codes. It has been updated since the development of Pacific County's last HMP, but has not been formally adopted. Please reference the full code at: http://www.co.pacific.wa.us/pdf%20files/pacificofullcode0413.pdf

15.04 BUILDING CODES
The purpose of this chapter is to provide minimum standards to safeguard the health, safety and public welfare by regulating and controlling the design, construction, quality of materials, use, occupancy, location, placement, repair and maintenance of all buildings, structures, mobile homes, and manufactured homes within Pacific County and of certain equipment specifically regulated herein. This chapter also seeks to protect the public welfare from hazards of fire and explosion arising from the

storage, handling, and use of hazardous substances, materials and devices, and from conditions hazardous to life or property in the use or occupancy of buildings or premises. Enactment and enforcement of this chapter is intended to only protect the general public welfare and not specific persons or property. Nothing in this chapter nor the uniform codes adopted by reference herein shall be construed to impose and legal duty, directly or indirectly, upon Pacific County or its officials and employees to protect individual persons or property in individual circumstances. [Ord. 151 1(B), 2001]

15.08 FLOOD DAMAGE PREVENTION

The Legislature of the State of Washington has delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. [Ord. 167 1(A), 2012]

A. The flood hazard areas of Pacific County are subject to periodic inundation which could potentially result in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.

B. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protects from flood damage also contribute to the flood loss. [Ord. 167 1(B), 2012]

15.08.300 Coastal High Hazard Areas (V Zones)

Coastal high hazard areas, which are designated as Zones VI – 30, VE and/or V on the community's FIRM, are special flood hazard areas as established in PCC 15.08.070. These areas have special flood hazards associated with high velocity waters from surges and, therefore, in addition to meeting all other applicable provisions in this chapter, the following provisions shall also apply:

16.60 GEOLOGICALLY HAZARDOUS AREAS

The purpose of this chapter is to minimize hazards to the public from development activities on or adjacent to areas of geological hazard. Geologically hazardous areas include the following: erosion hazard areas, landslides hazard areas, seismic hazard areas, and mine hazard areas. [Ord. 147 10(A), 1997]

City of Ilwaco

The City of Long Ilwaco's municipal code, Title 14 and 15 have a series of codes managing and restricting development in established and identified floodplains, management of its shorelines, and adopted building codes. It has not been updated since the development of Pacific County's last HMP. Please reference the full municipal code for more details at: www.codepublishing.com/WA/ilwaco/

14.14 Washington State Building Ordinances Adopted

The model codes listed below, as approved and adopted by the State Building Code Council (SBCC), together with any amendments or additions, are adopted by this reference. These codes apply to all new construction, remodeling or repairs. Copies of the codes are on file in the offices of the city clerk-treasurer and the building inspector.

A. Uniform Building Code (UBC) and Standards;
B. Uniform Plumbing Code (UPC) and Standards;
C. Uniform Mechanical Code (UMC) and Standards;

D. Uniform Swimming Pool, Spa and Hot Tub Code;
E. Uniform Code for the Abatement of Dangerous Buildings;
F. Washington State Barrier Free Regulations;
G. Washington State Energy Code;
H. Washington State Ventilation and Indoor Air Quality Code;
I. Washington State Historic Building Code;
J. Uniform Building Code Appendix Chapter 70 (Grading);
K. Uniform Building Code Appendix Chapter 33 (Excavation and Grading);
L. Uniform Building Code Appendix Chapter 16, Division 1 (Life Safety Requirements for Existing Buildings Other Than High Rise Buildings). (Ord. 832 § 1 [part], 2014; Ord. 627 [part], 1999). Formerly 15.04.010)

15.14 Shoreline Master Plan

A. The Pacific County Shoreline Master Plan, as it is now written or will later be amended, is adopted by reference by the city and is available for review at Ilwaco City Hall.

B. The Shoreline Master Plan outlines the policies and regulations that apply to all uses and activities that may occur along Ilwaco's shorelines and establishes procedures for obtaining development permits in shoreline areas. (Ord. 627 [part], 1999)

15.16 Development In Flood Areas

A. Purpose. It is the purpose of this chapter to promote the public health, safety and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

1. Protect human life and health
2. Maximize benefit from expenditure of public money.
3. Minimize the need for rescue and relief efforts associated with flooding
4. Avoid or minimize prolonged business interruptions
5. Avoid or minimize damage to public facilities and infrastructure located in areas of special flood hazard.
6. Help maintain a stable tax base by providing for sound use and development of areas of special flood hazard so as to avoid or minimize future flood damage.
7. Ensure potential buyers are notified that property is in an area of special flood hazard.
8. Ensure those who occupy areas of special flood hazard assume responsibility for their actions

B. Methods of Reducing Flood Losses. In order to accomplish its purposes, this chapter includes methods and provisions for:

1. Restricting or prohibiting uses that are dangerous to health, safety and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities
2. Requiring that uses vulnerable to floods, including facilities that serve such uses, be protected against flood damage at the time of initial construction
3. Controlling the alteration of natural floodplains, stream channels and natural protective barriers, which help accommodate or channel floodwaters
4. Controlling filling, grading, dredging and other development, which may increase flood damage
5. Preventing or regulating construction of flood barriers that could divert floodwaters from their natural course or may increase flood hazards in other areas. (Ord. 794 § 1 [part], 2012)

City of Long Beach

The City of Long Beach's municipal code, Title 13 Chapters 2 and 4, have a series of codes managing and restricting development in established and identified floodplains, coastal floodplains, management of its shorelines, and adopted building codes. It has not been updated since the development of Pacific County's last HMP. Please reference the full municipal code for more details at:
www.starlingcodifiers.com/codebook/index.php?book_id=501

10-2-1: BUILDING CODES ADOPTED

The model codes listed below, as approved and adopted by the state building code council except as noted, together with any amendments or additions, are hereby adopted by this reference. These codes must apply to all new construction, remodeling, or repairs. Copies of the codes are on file for inspection in the office of the building department of the city.

A. International building code 2009;
B. International mechanical code 2009;
C. International residential code 2009;
D. For multifamily residential structures of five (5) or more dwelling units, automatic fire sprinkling systems are required;
E. Uniform housing code 1997;
F. International plumbing code 2009;
G. Uniform swimming pool, spa, and hot tub code 2006;
H. Uniform code for the abatement of dangerous buildings 1997;
I. International property maintenance code 2009, adopted by the city independently of the Washington state building code council;
J. Washington state barrier free regulations;
K. Washington state electrical code;
L. Washington state energy code 2009;
M. Washington state historic building code; and
N. Washington state ventilation and indoor air quality code. (Ord. 839, 4-13-2010)

10-4-1: AUTHORIZATION, PURPOSE AND OBJECTIVES

A. Statutory Authorization: The legislature of the state of Washington has delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry.

B. Findings Of Fact:

1. The flood hazard areas of Long Beach are subject to periodic inundation which may result in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all which have the potential to adversely affect the public health, safety, and general welfare.
2. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazard which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from flood damage also contribute to the flood loss.

C. Statement Of Purpose: It is the purpose of this chapter to promote the public health, safety, and general welfare, and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

10-4-12: COASTAL HIGH HAZARD AREAS

Located within areas of special flood hazard established in section 10-4-4 of this chapter are coastal high hazard areas, designated as zones V1-30, VE and/or V. These areas have special flood hazards associated with high velocity waters from surges and, therefore, in addition to meeting all provisions in this chapter, the following provisions shall also apply:

City of Raymond – Raymond Municipal Code

The City of Raymond's municipal code, Title 15, has a series of codes managing and restricting development in established and identified floodplains as well as adopted building codes. It has not been updated since the

development of Pacific County's last HMP. Please reference the full municipal code for more details at: www.codepublishing.com/WA/raymond/

15.16 – Development in Flood Areas

The legislature of the state has in Chapter 35.70 RCW delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety and general welfare of its citizenry. Therefore, the city council of the city does ordain as set out in this chapter. [Ord. 1638 § 5, 2001; Ord. 1446, 1987. Formerly 16.20.010.]

15.16.020 Findings of Fact.

A. The flood hazard areas of the city are subject to periodic inundation which results in loss of life and property, health and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.

B. These flood losses are impacted by the cumulative affect of obstructions in areas of special flood hazards which increase flood heights and velocities, and when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated or otherwise protected from flood damage also contribute to the flood loss. [Ord. 1638 § 5, 2001; Ord. 1446, 1987. Formerly 16.20.020.]

15.84 - Building and Construction (Building Codes)

There is adopted and by this reference made a part of this chapter as though fully set forth herein, at length, those certain codes, known as the:

A. International Building Code, 2008 Edition, as amended by Chapter 51-50 WAC, including the Appendix Chapters B, F and J.
B. International Residential Code, 2009 Edition, as amended by Chapter 51-51 WAC, including Appendix Chapters H, I and K.
C. Uniform Plumbing Code, 2009 Edition, as amended by Chapters 51-56 and 51-57 WAC; provided, that any provisions of such code affecting fuel gas piping are not adopted.
D. International Mechanical Code, 2009 Edition, as amended by Chapter 51-52 WAC.
E. International Fuel Gas Code, 2009 Edition, except that the standards for liquefied petroleum gas installations shall be NFPA 58 (Storage and Handling of Liquefied Petroleum Gases) and ANSI Z223.1/NFPA 54 (National Fuel Gas Code).
F. International Code Council Performance Code for Buildings and Facilities, 2009 Edition, published by the International Code Council.
G. International Property Maintenance Code, 2009 Edition, published by the International Code Council.
H. International Existing Building Code, 2009 Edition, published by the International Code Council.
I. Washington State Historic Building Code, Chapter 51-19 WAC.
J. Washington State Energy Code, Chapter 51-11 WAC.
K. Washington State Ventilation and Indoor Air Quality Code, Chapter 51-13 WAC.

These codes are adopted as the building code and standards of the city of Raymond; provided, that those sections of the International Building Code set forth in RMC 15.84.010, and those sections of the International Residential Code set forth in RMC 15.84.010 are amended to read as set forth in subsections. [Ord. 1691 § 1, 2006; Ord. 1591, 1998]

City of South Bend - South Bend Municipal Code

The City of South Bend's municipal code, Titles 14, 15, and 16 have a series of codes managing and restricting development in established and identified floodplains, allowing the management and restriction of shoreline development, and declaring the adoption of the state's codes. It has not been updated since the development of Pacific County's last HMP. Please reference the full municipal code for more details at: www.codepublishing.com/WA/southbend/

14.10 – Flood Damage Prevention

The Legislature of the State of Washington has delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. (Ord. 1167 § 1.1, 1991).

14.10.020 Findings

A. The flood hazard areas of South Bend are subject to periodic inundation which results in loss of life and property, health, and safety hazards, disruption of commerce and governmental services, extraordinary public expenditures for flood protection and relief, and impairment of the tax base, all of which adversely affect the public health, safety, and general welfare.

B. These flood losses are caused by the cumulative effect of obstructions in areas of special flood hazards which increase flood heights and velocities, and, when inadequately anchored, damage uses in other areas. Uses that are inadequately floodproofed, elevated, or otherwise protected from damage also contribute to the flood loss. (Ord. 1167 § 1.2, 1991).

15.84 – Buildings and Construction – Washington State Building Ordinances Adopted

The model codes listed below, as approved and adopted by the State Building Code Council (SBCC), together with any amendments or additions, are hereby adopted by this reference. These codes apply to all new construction, remodeling, or repairs. Copies of the codes are on file in the offices of the city clerk-treasurer and the building inspector. (See the full municipal code for a list of the specific adopted codes)

16.50 – Shoreline Management Combining District (SM)

The purpose of this district is to manage and protect the shorelines of the state in a manner which promotes the welfare of the people of South Bend and of the state generally and which also carries out the intent, policy and specific sections of the Shoreline Management Act of 1971 (Chapter 90.58 RCW) and of the state regulations promulgated under said act and, after adoption, of the South Bend master program for the management and protection of the shorelines. (Ord. 932 § 22.01, 1974).

5.2 – National Flood Insurance Program & Community Rating System Participation

All six of the participating municipal governments participate in the NFIP. The table below contains a list of each community and their NFIP Status. School districts are not municipal entities and thus do not classify as possible participants of the NFIP program. None of the participating municipalities participate in the CRS program.

The Pacific County Planning Department oversees all NFIP related activities within the county. They employ a NFIP Coordinator/floodplain administrator to ensure base flood elevation certificates are completed for new construction in the planning area. This helps ensure any development in a floodplain is accompanied by a Flood Hazard Development Certificate. In order to acquire a development certificate, a licensed surveyor must assess the land and the applicant must undergo an application and review process. The NFIP Coordinator/floodplain administrator also works to further develop protective measures that exceed NFIP compliance.

Table 37 – NFIP Participating Communities

FEMA Community Status Book Report, Washington – Communities Participating in the National Flood Program (8/1/2015)

Jurisdiction	CID	Initial FHBM Identified	Initial Firm Identified	Current Effective Map Date	Sanction Date
Pacific County	530126	10/25/74	01/05/78	05/18/15	01/05/78
Ilwaco	530127	05/24/74	02/01/79	05/18/15	02/01/79
Long Beach	530128	05/24/74	08/01/79	05/18/15	08/01/79
Raymond	530129	05/31/74	07/16/79	05/18/15	07/16/79
South Bend	530130	06/28/74	11/15/79	05/18/15	11/15/79

*The data are from FEMA.

5.3 – Mitigation Goals & Objectives

Goals for Pacific County and its participating jurisdictions were established based upon results from the local and state risk assessments, Pacific County Mitigation Planning Committee meetings, and input from non-planning team local jurisdiction and state officials. These goals represent Pacific County and its participating jurisdictions' long-term vision for the continued reduction of hazard risks and the enhancement of mitigation capabilities.

Goal 1: Reduce the risk from natural hazard events utilizing community cooperation and an all hazards approach.

Goal 2: Pursue additional complete and accurate data in support of mitigation planning, disaster preparedness, disaster response, and disaster recovery operations.

Goal 3: Integrate the hazard mitigation plan's findings into the planning and decision making processes for all current and future emergency management and preparedness related activities.

Goal 4: Minimize the risk to property from coastal erosion.

Goal 5: Minimize the risk to life and property from earthquakes.

Goal 6: Minimize the risk to life and property from floods.

Goal 7: Minimize the risk to life from hazardous materials.

Goal 8: Minimize the risk to life and property from landslides.

Goal 9: Minimize the risk to life and property from severe storms.

Goal 10: Minimize the risk to life and property from tsunamis.

Goal 11: Minimize the risk to life and property from winter storms.

5.4 – Mitigation Activities & Projects

The Pacific County MPC identified a comprehensive range of 33 possible and unique mitigation projects and 2 actions. The selected set carefully takes an all-hazards approach to mitigation while simultaneously addressing each of the individual eight profiled hazards.

The projects and actions were selected based upon their potential to reduce the risk to life and property with an emphasis on new and existing infrastructure, ease of implementation, community and agency support, consistency with local jurisdictions' plans and capabilities, available funding, vulnerability, and total risk. For further information on evaluation criteria, please see Section 5.5. The full list of mitigation projects, their descriptions, and prioritization per jurisdiction and stakeholder can be found in Appendix G.

For the status of mitigation projects since the development of Pacific County's previous hazard mitigation plan, please see Section 5.4.2.

The table on the following page summarizes the hazards addressed by each mitigation project and activity, and the corresponding participating jurisdictions suggested to undertake the project or activity.

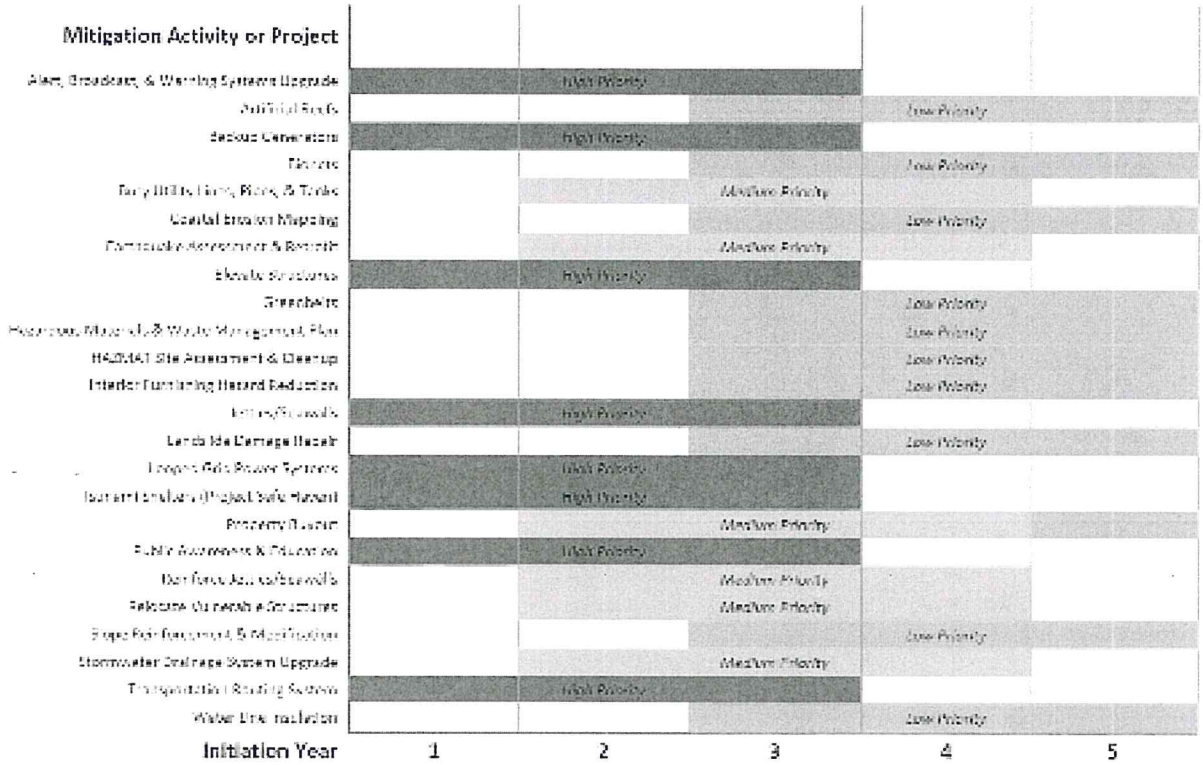
NOTE: Some projects and actions mitigate risk and vulnerability to multiple hazards. Some of these projects and actions list participating jurisdictions that are only at risk from one or a few of the mitigated hazards. For instance, the project: "Transportation Routing Notification Systems" mitigates against multiple hazards, including coastal flooding. All participating jurisdictions are interested in this project, but some will not be using it to mitigate coastal flooding. Instead they will be using the project to mitigate against floods, severe storms, and winter storms.

Table 38 – Mitigation Activities & Projects Summary		
Mitigation Project or Activity	**Hazards Addressed**	**Jurisdictions and Stakeholders**
Alert, Broadcast, & Warning Systems Upgrade	Earthquakes, Floods (Coastal, Flash, Riverine), Hazardous Materials, Landslides, Severe Storms, Tsunamis, Winter Storms	Pacific County, Ilwaco, Long Beach, Raymond, South Bend, All SDs, Surfside Homeowners' Association, Both Hospitals, All FDs, Pacific Transit, All Ports, PUD #2
Artificial Reefs	Coastal Erosion	Pacific County, Long Beach, Surfside Homeowners' Association
Backup Generators	Earthquakes, Floods (Coastal, Flash, Riverine), Hazardous Materials, Landslides, Severe Storms, Tsunamis, Winter Storms	All jurisdictions and stakeholders
Berms	Landslides	Pacific County, Pacific Transit
Bury Utility Lines, Pipes, & Tanks	Severe Storms, Winter Storms	All jurisdictions and stakeholders
Coastal Erosion Mapping	Coastal Erosion	Pacific County, Long Beach, Surfside Homeowners' Association
Earthquake Assessment & Retrofit	Earthquakes	All jurisdictions and stakeholders
Elevate Structures	Floods (Coastal, Riverine), Tsunamis	Pacific County, Ilwaco, Long Beach, Raymond, South Bend, Ocean Beach SD, South Bend SD, Surfside Homeowners' Association, All Ports
Greenbelts	Coastal Erosion	Pacific County, Long Beach, Surfside Homeowners' Association
Hazardous Materials and Waste Management Plan	Hazardous Materials	Pacific County, Ilwaco, Long Beach, Raymond, South Bend, All FDs, Pacific Transit
HAZMAT Site Assessment & Cleanup	Hazardous Materials	Pacific County, Ilwaco, Long Beach, Raymond, South Bend, All FDs
Insulation & Energy Efficiency Upgrade	Winter Storms	All jurisdictions and stakeholders
Interior Furnishing Hazard Reduction	Earthquakes	All jurisdictions and stakeholders
Jetties/Seawalls	Coastal Erosion, Floods (Coastal, Riverine)	Pacific County, Long Beach, Surfside Homeowners' Association, All Ports
Landslide Damage Repair	Landslides	Pacific County, Pacific Transit
Loopoo Grid Power Systems	Earthquakes, Floods (Coastal, Flash, Riverine), Hazardous Materials, Landslides, Severe Storms, Tsunamis, Winter Storms	Pacific County, Ilwaco, Long Beach, Raymond, South Bend, Surfside Homeowners' Association, PUD #2
Tsunami Shelters (Project Safe Haven)	Floods (Coastal),Tsunamis	Pacific County, Ilwaco, Long Beach, Raymond, South Bend, Ocean Beach SD, South Bend SD, Surfside Homeowners' Association, Port of Ilwaco, Port of Peninsula
Property Buyout	Coastal Erosion, Floods (Coastal, Riverine)	Pacific County, Ilwaco, Long Beach, Raymond, South Bend
Public Awareness & Education	Coastal Erosion, Earthquakes, Floods (Coastal, Flash, Riverine), Hazardous Materials, Landslides, Severe Storms, Tsunamis, Winter Storms	All jurisdictions and stakeholders

Mitigation Project or Activity	Hazards Addressed	Jurisdictions and Stakeholders
Reinforce Levies/Seawalls	Coastal Erosion, Floods (Coastal, Riverine)	Pacific County, Pacific Transit, All Ports
Relocate Vulnerable Structures	Coastal erosion, Floods (Coastal)	Pacific County, Long Beach, Surfside Homeowners' Association, Fire District #5
Slope Reinforcement & Modification	Landslides	Pacific County, Pacific Transit
Stormwater Drainage System Upgrade	Floods (Coastal, Flash, Riverine)	Pacific County, Ilwaco, Long Beach, Raymond, South Bend
Transportation Routing System	Earthquakes, Floods (Coastal, Flash, Riverine), Hazardous Materials, Landslides, Severe Storms, Tsunamis, Winter Storms	Pacific County, Ilwaco, Long Beach, Raymond, South Bend, Pacific Transit
Water Line Insulation	Winter Storms	All jurisdictions and stakeholders

5.4.1 – Mitigation Activities and Projects Timeline

The graph below is a suggested timeline for Pacific County and its participating stakeholders' implementation of their mitigation projects and activities. The graph's suggestions are based on implementing higher priority projects and activities earlier than lower priority projects and activities. If a project or activity's priority varies for any participating jurisdictions, the jurisdiction is listed below the project name and in italics. This timeline will vary from participating jurisdictions as their individual priorities change. Please see Section 5.5.2 and Appendix G for per jurisdiction mitigation project prioritization.



5.4.2 – Mitigation Activities and Projects Updates

The following details the mitigation projects and actions suggested in their previous FEMA approved hazard mitigation plan. In the event an activity was not implemented, the cause or reason is included in the status column. Some previously listed mitigation activities are no longer considered mitigation and are tagged with "Not Mitigation."

Table 39 – Mitigation Project Updates

Project	Jurisdiction	Lead Department	Status	Emphasis
Bury Above Ground Power Lines	Naselle/Grays River SD, South Bend SD	SD Administration	Not Completed	New & Existing
Bury Propane Tanks	Naselle/Grays River SD, South Bend SD	SD Administration	Not Completed	New & Existing
Chinook Connection (Brooklyn to State Route 101)	Pacific County	Pacific County Public Works	Not Completed	New & Existing
Clear Trees and Debris	Naselle Water Company	Company Staff	Completed	Existing
Conduct Flood Alleviation Work	South Bend SD	SD Administration	Not Completed	Existing
Conduct Structural Analysis of Water Tanks	South Bend	Municipal Staff	Completed	New & Existing
Construct a Looped Grid Power System	South Bend	Municipal Staff	Not Completed	New & Existing
Develop a Continuity of Operations Plan	South Bend SD	SD Administration	Not Completed	New & Existing
Develop more Fuel Storage	North Beach Water District	District Staff	Not Completed	New & Existing
Educate the Public on All Hazards Mitigation	Pacific County, FD 4, FD 5, Long Beach, North Beach Water District, Ocean Beach Hospital, Pacific County Transit, Port of Ilwaco, Port of Willapa Harbor, Raymond, South Bend	PCEMA	Completed	New & Existing
Elevate and Protect Highway 101	South Bend	Municipal Staff	Completed	New & Existing
Elevate Water Pump Station	South Bend	Municipal Staff	Completed	New & Existing
Encourage the Purchasing of Flood Insurance	Long Beach, Raymond	PCEMA	Not Completed	Existing
Enforce NFIP Policies and Regulations	Pacific County, Long Beach, Raymond, South Bend	PCEMA	Completed	Existing
Gather and Improve GIS Capabilities	Pacific County	PCEMA	Not Completed	New & Existing
Improve District Alert and Warning System	Pacific County Transit	Transit Staff	Not Completed	New & Existing
Improve Site Drainage	Port of Willapa Harbor	Port Staff	Not Completed	New & Existing
Improve Tsunami Evacuation Route (6th to 58th)	Pacific County	Pacific County Public Works	Not Completed	Existing
Install Automated Control for Monroe Pump Station	South Bend	Municipal Staff	Completed	New & Existing
Install Backup Generators	FD 4, FD 5, Long Beach, Naselle/Grays River SD, Naselle Water District, Ocean Beach SD, South Bend, South Bend SD	Municipal Staff	Not Completed	New & Existing
Install Pump Station (Monroe and US 101)	South Bend	Municipal Staff	Completed	New & Existing
Install Security Fence Around Water Reservoir	South Bend	Municipal Staff	Completed	New & Existing
Install Seismic Non-Structural Improvements to Public Buildings	Pacific County, FD 5, Long Beach, Pacific County Transit, Ocean Beach Hospital, Raymond, South Bend	PCEMA, Municipal Public Works	Completed	New & Existing
Install Tidegate Pipe (Camp Line Road)	Pacific County	Pacific County Public Works	Not Completed	New & Existing
Install Tidegate Pipe (Moonshoe Landing Road)	Pacific County	Pacific County Public Works	Not Completed	New

Project	Jurisdiction	Lead Department	Status	Emphasis
Install Tidegate Pipe (Willapa Road)	Pacific County	Pacific County Public Works	Not Completed	Existing
Install Backwater Valve	Pacific County, City of Raymond, South Bend	PCEMA, Municipal Staff	Completed	New & Existing
Landslide Repair (Parcels Road)	Pacific County	Pacific County Public Works	Not Completed	New & Existing
Landslide Repair (Smith Creek Road)	Pacific County	Pacific County Public Works	Not Completed	New & Existing
Landslide Repair (Upper Naselle Road)	Pacific County	Pacific County Public Works	Not Completed	New & Existing
Maintain Electric Backup Power and Public Equipment	Raymond	Municipal Staff	Not Completed	New & Existing
Maintain Taylor Park and Airport Levee and Tidegate Systems	Port of Willapa Harbor	Port Staff	Not Completed	New & Existing
Plant Vent, Pump, and Vegetation on Shoreline	Port of Willapa Harbor	Port Staff	Not Completed	New & Existing
Protect Water Transmission and Distribution Line	South Bend	Municipal Staff	Completed	New & Existing
Retrofit Walls, Floor, and Structure to Meet Current Earthquake Code	Naselle/Grays River SD	SD Administration	Not Completed	Existing
Retrofit Station to Meet Current Earthquake Code	Ocean Beach SD	SD Administration	Not Completed	Existing
Retrofit City Hall and Fire Station	South Bend	Municipal Staff	Completed	New
Reinforce Sewer I (Clinton Park Road)	Pacific County	Pacific County Public Works	Not Completed	New & Existing
Reinforce Sewer I (Sandgreen Road)	Pacific County	Pacific County Public Works	Not Completed	New
Reinforce Sewer I (Tokeland Road)	Pacific County	Pacific County Public Works	Not Completed	New & Existing
Relocate Office out of Hazard Area	Naselle Water Company	Company Staff	Not Completed	Existing
Repair Fire and Sidewalk	Port of Willapa Harbor	Port Staff	Not Completed	Existing
Repair and Upgrade Docks	Port of Ilwaco, Port of Willapa Harbor	Port Staff	Not Completed	New & Existing
Replace Sewer Line	South Bend	Municipal Staff	Completed	New & Existing
Replace Water Storage Reservoir	South Bend	Municipal Staff	Completed	New & Existing
Replace Wood Pilings with Steel Pilings	Port of Ilwaco	Port Staff	Not Completed	Existing
Retrofit Facilities and Water Tanks	North Beach Water District	District Staff	Not Completed	New & Existing
Install Low Roof on South Dock Mill Building and	Port of Willapa Harbor	Port Staff	Completed	Existing
Riprap Reinforce (Tide Center Road)	Pacific County	Pacific County Public Works	Not Completed	New & Existing
Strengthen Jetty	Port of Ilwaco	Port Staff	Not Completed	New & Existing
Structural Seismic Retrofit	South Bend SD	SD Administration	Not Completed	Existing
Support County-Wide Measures to Protect Power and Communications	Pacific County, Long Beach, Ocean Beach Hospital, Raymond, South Bend	PCEMA, Municipal Public Works	Completed	New & Existing
Upgrade Communication System	PCEMA, PCSD, Pacific County Transit, South Bend SD	PCEMA Administration, Transit Team, SD Administration	Completed	New & Existing
Upgrade Roofing to be more Wind Resistant	Naselle/Grays River SD	SD Administration	Not Completed	Existing
Upgrade SD Fire Alarm and Public Address	Port of Willapa Harbor	Port Staff	Completed	New & Existing
Upgrade Tsunami Tools	Port of Willapa Harbor	Port Staff	Not Completed	Existing
Work with FEMA to Upgrade FIRM	Pacific County, Long Beach, Raymond, South Bend	PCEMA, Municipal Public Works	Completed	New & Existing

5.5 – Evaluations

Pacific County and its participating jurisdictions' mitigation priorities have not changed since the development of its last plan. Their primary hazards risks, and thus priorities, remain flooding, severe storms, and tsunamis with the addition of coastal erosion.

A composite evaluation matrix was used to prioritize Pacific County and its participating jurisdictions' mitigation projects and activities. The evaluation was conducted for each mitigation project and activity for each jurisdiction. The composite evaluation matrix is comprised of the three factors detailed below.

The first factor is the STAPLE+E evaluation which is best for measuring feasibility and ease of implementation. The tables in Section 5.5.1 provide the STAPLE+E evaluation criteria and the evaluation itself.

The second factor is the effectiveness of the mitigation project. How well does it mitigate the impact of a particular hazard? This is determined by its ability to protect citizens, property, and systems. For instance, installing wires to pin down trees and other objects will reduce their ability to become uprooted or take flight during hazards of high wind, but are not as effective at reducing impacts from tornadoes or strong winds as are properly constructed and reinforced buildings. This factor is rated as: Low = 0.5, Medium = 1, and High = 1.5.

The third factor is a hazard risk based evaluation. It draws on the hazard risk summary found in Section 4.4 of this plan. Each risk rating is assigned a value based on the assessment (None = 0, Low = 5, Medium = 10, and High = 15). A summary of these results are displayed in Section 5.5.2 while the full, per jurisdiction per hazard tables are located in Appendix G.

$$(HRT) = (HR_1 + HR_2 + HR_n)$$

The total evaluation score is based on the hazard risk total multiplied by the effectiveness factor and added to the STAPLE+E score.

> ***Hazard Risk Total (HRT):*** The sum of values (low through high) of each hazard the project is designed to mitigate.
> ***Mitigation Project Effectiveness (MPE):*** A multiplier based on the project's effectiveness to mitigate against a chosen hazard.
> ***STAPLE+E Evaluation:*** A raw score comprised of positive and negative feasibility.

$$(Priority) = (STAPLE+E) + (MPE * HRT)$$

Upon completing the evaluations, a composite score is calculated and prioritized based on the total score (Low = 0 – 25, Medium = 26 – 50, High = > 50).

5.5.1 – STAPLE+E

Table 40 – STAPLE+E Criteria	
Evaluation Category	**Sources of Information**
Social	Mitigation actions are acceptable to the community if they do not adversely affect a particular segment of the population, do not cause relocation of lower income people, and are compatible with the communities social and cultural values.
Technical	Mitigation actions are technically most effective if they provide long term reduction of losses and have minimal secondary adverse impacts.
Administrative	Mitigation actions are easier to implement if the jurisdiction has the necessary staffing and funding.
Political	Mitigation actions can truly be successful if all stakeholders have been offered an opportunity to participate in the planning process, and if there is public support for the action.
Legal	It is critical that the jurisdiction or implementing agency have the legal authority to implement and enforce a mitigation action.
Economic	Budget constraints can significantly deter the implementation of mitigation actions. Hence, it is important to evaluate whether an action is cost-effective (as determined by a cost benefit review) and possible to fund.
Environmental	Sustainable mitigation actions that do not have an adverse effect on the environment, that comply with Federal, State, and local environmental regulations, and that are consistent with the community's environmental goals, have mitigation benefits while being environmentally sound.

Table 41 – STAPLE+E Rankings

X – N/A Even Impact	+ – Positive Influence											– Negative Influence												
STAPLE+E Criteria	Social		Technical			Administrative			Political			Legal			Economic				Environmental					
Considerations	Community Acceptance	Effective Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribute to Economic Goals	Outside Funding Required	Effective Land/Water	Effective Emergency Services	Effective HAZMAT/Waste Shed	Consistent with Community Goals	Consistent with Federal Laws	Total Impact
Work, Breakout, & Warning Systems Upgrade	+	+	+	+	+	–	-	+	X	X	X	–	+	+	+	-	+	-	X	X	X	–	+	14
Artificial Reefs	+	+	+	+	+	+		+	X	X	X	+	+	+	+		+		X	X	X	+	+	14
Backup Generators	+	+	+	-	+	–	-	+	X	X	X	–	+	+	–	-	+	-	X	X	X	–	+	13
Bluffs	+	+	+	+	+	+		+	X	X	X	+	+	+	+		+		X	X	X	+	+	14
Bury Utility Lines, Pipes, & Tanks	+	+	+	+	+	–	-	+	X	X	X	–	+	+	–	-	+	-	X	X	X	–	+	14
Coastal Erosion Mapping	+	+	+		+				+	+	+	+	+	+	+		+		X	X	X	+	+	14
Earthquake Assessment & Retrofit	+	+	+	+	+	–	-	-	X	X	X	–	+	+	–	-	+	-	X	X	X	–	+	13
Elevate Structures	+	+	+	+	+	–	-	+	X	X	X	–	+	+	–	-	+	-	X	X	X	–	+	12
Greenbelts	+	+	+		+	+	+	+	X	X	X	+	+	+	+		+		X	X	X	+	+	15
Hazardous Materials & Waste Management Plan	+	+	+	-	+	–	-	+	X	X	X	–	+	+	–	–	+	+	X	X	X	–	+	14
HAZMAT Site Assessment & Cleanup	+	+	+	+	+				X	X	X	+	+	+	+		+		X	X	X	+	+	12
Interior Furnishing Hazard Reduction	+	+	+	+	+	–	-	+	X	X	X	–	+	+	–	-	+	-	X	X	X	–	+	14
Jetties/Seawalls	+		+	+		+		+	X	X	X	+	+		+		+		X	X	X	+	+	11
Landslide Damage Repair	+	+	+	+	+	–	-	+	X	X	X	–	+	+	–	-	+	-	X	X	X	–	+	14
Looped Grid Power Systems	+	+	+	+	+	–	-	-	X	X	X	–	+	+	+	-	+	-	X	X	X	–	+	12
Tsunami Shelters (Project Safe Haven)	+	+	+	+	+	–	-	+	X	X	X	+	+	+	+	-	+	-	X	X	X	+	+	14
Prevents Buyout	+	+	+	+	+	–	-	+	X	X	X	–	+	+	–	-	+	-	X	X	X	–	+	14
Public Awareness & Education	+	+	+	+	+				X	X	X	+	+	+	+		+		X	X	X	+	+	12
Relocate Jetties/Seawalls	+	+	+	+	+	–	-	+	X	X	X	–	+	+	–	-	+	-	–	X	X	–	+	15
Relocate Vulnerable Structures	+	+	+	+	+	+		+	X	X	X	+	+	+	+		+		X	X	X	+	+	14
Slope Reinforcement & Modification	+	+	+	+	+	–	-	+	X	X	X	–	+	+	–	-	+	-	X	X	X	–	+	14

X = N/A - Even Impact	+ = Positive Influence											- = Negative Influence												
STAPLE+E Criteria	Social		Technical			Administrative			Political			Legal			Economic				Environmental					
Considerations	Community Acceptance	Effect on Segment of Population	Technical Feasibility	Long-term Solution	Secondary Impacts	Staffing	Funding Allocated	Maintenance/Operations	Political Support	Local Champion	Public Support	State Authority	Existing Local Authority	Potential Legal Challenge	Benefit of Action	Cost of Action	Contribution to Economic Goals	Outside Funding Required	Effect on Land/Water	Effect on Endangered Species	Effect on HAZMAT/Waters Shed	Consistent with Community Goals	Consistent with Federal Laws	Total Impact
Stormwater Drainage System Upgrade	+	+	+	+	+	-	-	+	X	X	X	+	+	+	+	-	+	-	X	X	X	-	+	14
Transportation Routing System	+	+	+	+	+	-	-	-	X	X	X	+	+	+	+	-	+	-	X	X	X	-	+	12
Water Line Installation	+	+	+	+	+	-	-	+	X	X	X	+	+	+	+	-	+	-	X	X	X	-	+	14

5.5.2 – Mitigation Activity & Project Prioritization Summary

For the full prioritization matrices, please see Appendix G – Mitigation Project Prioritization.

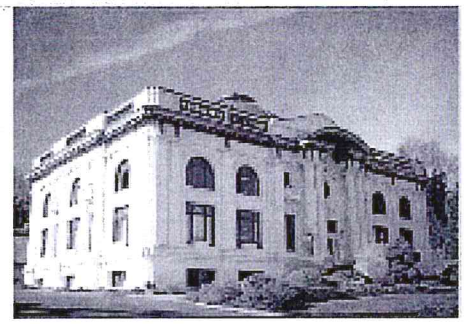
Table 42 – Mitigation Prioritization Summary, Part 1

Mitigation Activity or Project	Stakeholder												
	Pacific County	Ilwaco	Long Beach	Raymond	South Bend	Naselle/Grays River SD	Ocean Beach SD	South Bend SD	Willapa Valley SD	Pacific Water Company	North Beach WD	Willapa Valley WD	Surfside Homeowner Association
Alert, Broadcast, & Warning Systems Upgrade	High	High	High	High	High	Medium	High	High	Medium	N/A	N/A	N/A	N/A
Artificial Reefs	Low	N/A	Low	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Low
Backup Generators	High	High	High	High	High	Medium	High	High	Medium	Medium	High	Medium	High
Berms	Low	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Buried Utility Lines, Pipes, & Tanks	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Coastal Erosion Mapping	Low	N/A	Low	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Low
Community Assessment & Retrofit	Medium	Medium	Medium	Low	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Diversion Structures	High	High	High	Medium	Medium	N/A	Medium	Medium	Low	N/A	Medium	N/A	High
Greenbelts	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Hazardous Materials Solid Waste Management Plan	Low	Low	Low	Low	Low	N/A	N/A	N/A	N/A	N/A	Low	N/A	N/A
HAZWHOPER Site Assessment & Cleanup	Low	Low	Low	Low	Low	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Insulation & Energy Efficiency Upgrade	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	N/A	Low	Low
Interior Non-Bearing Hazard Reduction	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Jetties/Groins	High	Medium	Medium	Medium	Medium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	High
Landslide Damage Repair	Low	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Looped Gas Power Systems	High	High	High	High	High	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Pump Stations (Project Safe Haven)	High	Medium	High	Medium	Medium	N/A	Medium	Medium	N/A	N/A	Medium	N/A	High
Property Buyout	Medium	Low	Low	Low	Low	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Public Awareness & Education	High	High	High	High	High	Medium	High	High	Medium	Medium	High	Medium	High
Relocation/Elevation/Seismic	Medium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Relocate Vulnerable Structures	Medium	N/A	Medium	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Medium
Slope Reinforcement & Mitigation	Low	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stormwater Drainage System Upgrade	Medium	Medium	Medium	Medium	Low	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Transportation Routing System	High	High	High	High	High	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Water Line Insulation	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low

Table 43 – Mitigation Prioritization Summary, Part 2

Mitigation Activity or Project	Stakeholder												
	Ocean Beach Hospital	Willapa Harbor Hospital	Fire District #1	Fire District #2	Fire District #4	Fire District #5	Fire District #8	Pacific Transit	Port of Chinook	Port of Ilwaco	Port of Peninsula	Port of Willapa Harbor	PUD #2
Alert, Broadcast, & Warning Systems Upgrade	High	Medium	High	High	High	High	High	N/A	High	High	High	High	N/A
Artificial Reefs	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Backup Generators	High	Medium	High	High	High	High	High	High	High	High	High	High	High
Bleachers	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bury Utility Lines, Piper, & Tanks	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Coastal Erosion Mapping	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Earthquake Assessment & Retrofit	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium	Medium
Elevate Structures	Medium	N/A	Medium	Medium	N/A	Medium	N/A	Medium	High	High	Medium	High	Medium
Greenbelts	Low	Low	N/A	N/A	N/A	Low	N/A	Low	Low	Low	N/A	Low	Low
Hazardous Materials and Waste Management Plan	N/A	N/A	Low	Low	Low	Low	Low	Low	N/A	N/A	N/A	N/A	Low
HAZMAT Site Assessment & Cleanup	N/A	N/A	Low	Low	Low	Low	Low	N/A	N/A	N/A	N/A	N/A	Low
Insulation & Energy Efficiency Upgrade	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Interior Furnishing Hazard Reduction	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low
Jetties/Seawalls	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Medium	Medium	Medium	Medium	N/A
Landslide Damage Repair	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Looped Grid Power Systems	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	High
Tsunami Shelters (Project Site Haven)	Medium	N/A	Medium	Medium	N/A	Medium	N/A	Medium	Medium	Medium	Low	Medium	Medium
Property Buyout	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Public Awareness & Education	High	Medium	High	High	Medium	High	Medium	High	High	High	High	High	High
Reinforce Jetties/Seawalls	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Low	Low	Low	Low	N/A
Relocate Vulnerable Structures	N/A	N/A	N/A	N/A	N/A	Medium	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Slope Reinforcement & Modification	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Stormwater Drainage System Upgrade	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Transportation Routing System	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Water Line Insulation	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low

5.6 – Planning Integration



Mitigation doesn't end at plan approval. Plan approval is only the beginning. The successful implantation of any number mitigation activities and projects requires the coordination and collaboration of a number of local agency, departments, and organizations. Each group has varying decision-making processes and authorities governing their actions. This plan, once approved, must be integrated into their decision-making processes as a tool for improving their respective resiliencies.

This plan is not only useful for implamanting mitigation activities and projects, but is also critical in making development plans and capital improvement projects. The risk assessment in this plan can prevent unmanaged and dangerous development into identified hazard areas or other portions of the planning area that decrease a community's overall resiliency.

Democratic Governments and Boards

These organizations rely on agenda proposals, deliberation and discussion, and voting to solidify their decision-making. This type of decision-making makes up the majority of Pacific County's participating jurisdictions and stakeholders.

This plan should be integrated into agenda proposal's designs and cross-referenced during deliberation and discussion of the proposed activity. By using this plan's risk assessment, development and capital improvement projects can be appropriately implamanted taking into consideration a community's resiliency.

The following jurisdictions and stakeholders use this process:

- *Pacific County (County Commissioners)*
- *City of Ilwaco (City Council)*
- *City of Long Beach (City Council)*
- *City of Raymond (City Council)*
- *City of South Bend (City Council)*
- *Naselle/Grays River Valley School District (School Board)*
- *Ocean Beach School District (School Board)*
- *South Bend School District (School Board)*
- *Willapa Valley School District (School Board)*
- *North Beach Water District (Board of Commissioners)*
- *Willapa Valley Water District (Board of Commissioners)*
- *Surfside Homeowners' Association (Homeowners Board)*
- *Ocean Beach Hospital (Board of Commissioners)*
- *Willapa Harbor Hospital (Board of Commissioners)*
- *Pacific Transit (Board of Commissioners)*
- *Port of Chinook (Port Commissioners)*
- *Port of Ilwaco (Port Commissioners)*
- *Port of Peninsula (Port Commissioners)*
- *Port of Willapa Harbor (Port Commissioners)*
- *Public Utility District #2 (Board of Commissioners)*

Special Tax Districts

Five of Pacific County's fire districts (1, 2, 4, 5, and 6) are stakeholder participants of this plan. These are considered special tax districts which are their own organizational entity, yet they must collaborate and work closely with local government to maintain operational functionality. During times of district expansion, building code enforcement and inspections, and other emergency management-related activities and projects; these Fire districts should use this plan's risk assessment and mitigation strategies as a planning reference document. By incorporating this document's findings, the Fire districts can better collaborate with local government and make better hazard-informed decisions as they relate to their operations.

Privately Held Companies

The Naselle Water Company (formerly the Naselle Water District) is a privately held organization that provides water utility services. It must work closely with municipal governments and obey zoning ordinances and other laws that regulate its services. It does not have to directly abide by other democratic decisions to implement activities, but just as special tax districts do, it must work closely with local organizations to guide its development and improvements.

When collaborating with local governments and designing agendas, the Naselle Water Company should use this plan's risk assessment and mitigation strategy as a starting point for mitigation considerations or other directly related activities and projects.

Appendix A – Reference Documents

Cascadia Subduction Zone Earthquakes: A Magnitude 9.0 Earthquake Scenario
Cascadia Region Earthquake Workgroup/FEMA/NEHRP, 2013

FEDERAL METEOROLOGICAL HANDBOOK No. 1, Surface Weather Observations and Reports
U.S. Department of Commerce / NOAA, 2005

Guidelines and Specifications for Flood Hazard Mapping Partners
FEMA, 2002

Local Mitigation Plan Review Guide
FEMA, 2011

Local Mitigation Planning Handbook
FEMA, 2013

Mitigation Ideas A Resource for Reducing Risk to Natural Hazards
FEMA, 2013

Multi-hazard Loss Estimation Methodology – Flood Model – Hazus-MH – User Manual
FEMA, 2012

Multi-hazard Loss Estimation Methodology – Flood Model – Hazus-MH – Technical Manual
FEMA, 2012

MULTI-HAZARD MITIGATION PLANNING GUIDANCE UNDER THE DISASTER MITIGATION ACT OF 2000
FEMA, 2008

National Assessment of Shoreline Change: Historical Shoreline Change Along the Pacific Northwest Coast
USGS, 2012-1007

Understanding Your Risks: Identifying Hazards and Estimating Losses (FEMA 386-2)
FEMA, 2001

Winter Storms The Deceptive Killers: A Preparedness Guide
U.S. Department of Commerce / FEMA / NOAA / NWS / American Red Cross, 2008

Appendix B – Data Sources

Quantitative Data Sources

FEMA
NOAA
NCDC
U.S. Census Bureau
USGS

Geographic Data Sources

BOLDplanning Inc.
ESRI
FEMA
HAZUS (2.2)
FEMA NFHL
NOAA
NWS Storm Prediction Center
Pacific County Public Works Department
U.S. Census Bureau
USGS
Washington State Department of Natural Resources – Geologic Hazards Group

Appendix C – Public Participation

Pacific County Emergency Management Agency
February 5 at 2:01pm Edited

http://pcema.blogspot.com/
Join us for an opportunity to share your mitigation ideas and help us plan!

Pacific County Emergency Management Agency

PCEMA.BLOGSPOT.COM | BY SCOTT MCDOUGALL

Like Comment Share 1

PCEMA

PCEMA to Hold Hazard Mitigation Plan Meetings in Conjunction with Tsunami Forums

South Bend, Washington – The Pacific County Emergency Management Agency has been awarded a federal mitigation planning grant, applied for with the intent of updating the Pacific County Hazard Mitigation Plan, first published in 2010.

BOLDplanning, a consulting firm contracted to guide the process, will lead public meetings to kick off the update of Pacific County's Hazard Mitigation Plan. BOLDplanning manages the hazard mitigation planning process by providing on-site process facilitation, stakeholder outreach, data collection and analysis, plan writing, and strategy development. The mitigation plan addresses Pacific County's natural hazards, vulnerabilities and complies with state and federal regulations. The meetings will be held on February 18th in Long Beach at the South County Administration Building, Meeting Room A, located at 7013 Sandridge Road at 2:00 p.m. The second meeting will be held at 2:00 p.m. on February 19th, at the Willapa Harbor Chamber of Commerce Community Center, 916 W. First Street in South Bend.

These meetings are planned with public input in mind and will be held in conjunction with Tsunami Information Forums designed for the business community. Following these kick-off meetings, meetings will be held with stakeholders from the previous Pacific County Hazard Mitigation Plan, as well as new stakeholders identified to partner with the county for plan development and implementation. Any questions may be directed to Chief Deputy Stephanie Fritts, sfritts@co.pacific.wa.us or (360) 642/875-9340.

Posted by Scott McDougall at 11:53 AM No comments:

+1 Recommend this on Google

Local Jurisdictions Invited to Participate in HMP Funding Opportunities

PCEMA is beginning the update process for the Pacific County Hazard Mitigation Plan (HMP) and seeks input from other local agencies and jurisdictions. The purpose of the HMP is to provide guidance for actions to permanently reduce local vulnerabilities to natural and technological hazards.

Additionally, the HMP provides Pacific County and participating agencies and jurisdictions with a Mitigation Plan that meets state and federal requirements for mitigation and disaster relief funding.

Interested agencies and jurisdictions are invited to join the Mitigation Planning Committee (MPC). MPC members will assist in the development of mitigation strategies and can work to develop their own strategies based on their jurisdiction's specific risks and priorities.

During the last update in 2010, the following agencies and jurisdictions participated: Pacific County, the cities of Raymond, South Bend, and Long Beach, the Ocean Beach, Naselle-Grays River, and South Bend school districts, the ports of Ilwaco and Willapa Harbor, Pacific County Fire Districts #1, #4, and #7, the North Beach, Naselle, and Willapa Valley water districts, the PUD #2, Pacific Transit, Ocean Beach Hospital, and the Surfside Homeowners Association.

After the last update, several participating agencies received state and federal funding for hazard mitigation projects. In Long Beach, planned construction of a vertical evacuation berm has been partially funded by an HMP grant.

To get involved, please contact Scott McDougall, PCEMA Deputy Director, at (360) 642-875-9338 or by email at smcdougall@co.pacific.wa.us.

PCEMA Staffer Sent to Assist in Grays Harbor

On January 23rd the Homeland Security Region 3 Incident Management Team was called to Grays Harbor County to assist with recovery efforts in the wake of the January 9th storm and flood. The cities of Aberdeen and Hoquiam were heavily impacted.

Events that create a demand for management services beyond what a local jurisdiction can provide are fairly uncommon, but when those events occur the Incident Management Team is ready to help if they are requested. In Aberdeen the team consolidated information, coordinated volunteers and donations, and helped to direct crews and supplies to areas where they were most needed.

As a new member of the team, PCEMA Deputy Director Scott McDougall worked with firefighters, police officers, dispatchers, and other emergency managers from Lewis, Thurston, Mason, and Grays Harbor Counties. "It was an intense learning experience for me, one that will improve my skills managing events at the local level as well," McDougall said. According to McDougall, the Incident Management Team "is really an extension of an old concept, the idea of neighbors helping neighbors."

Upcoming Forums for HMP Input & Tsunami Awareness for Business

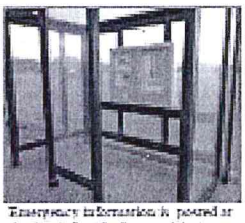
PCEMA has been awarded a federal mitigation planning grant to update the Pacific County Hazard Mitigation Plan (HMP). BOLDplanning, a consulting firm contracted to guide the process, will lead public meetings to kick off the update. The mitigation plan addresses Pacific County's natural hazards, vulnerabilities and complies with state and federal regulations.

The first meeting will be held on February 18th in Long Beach at the South County Administration Building, Meeting Room A, located at 7013 Sandridge Road at 2:00 p.m. The second meeting will be held at 2:00 p.m. on February 19th, at the Willapa Harbor Chamber of Commerce Community Center, 915 W. First Street in South Bend.

These meetings are planned with public input in mind and will be held in conjunction with Tsunami Information Forums designed for the business community. Following these kick-off meetings, meetings will be held with stakeholders from the previous Pacific County Hazard Mitigation Plan, as well as new stakeholders identified to partner with the county for plan development and implementation.

Bulletin Boards Display Emergency Information

Before, during, and after an emergency, residents can access PCEMA press releases at several fire stations and other public locations across the county. Amateur radio volunteers have enabled these sites with "packet radio" capabilities, which means that the site can send or receive digital data (such as text) via radio. Radio is often the last line of communication in a major event such as the historic storm that hit Pacific County in 2007.



Emergency information is posted at the South Pacific County Administration Facility in Long Beach, which is one of many bulletin board sites across the county.

PCEMA press releases can be sent from either the South Bend or Long Beach Emergency Operations Center (EOC) directly to emergency response stations across the county. Personnel at the stations are able to print the press releases and post them for the public.

PCEMA press releases can be accessed at the following locations: the Ilwaco, Chinook, South Bend, and Raymond fire stations, the Pacific County Courthouse, the South Pacific County Administration Facility, the Surfside Homeowners Association Office, and the Peninsula Senior Center.

PCEMA

Community Sign-In Sheet	02/18/15; South County Admin Facility	
Name	Phone	E-mail
[illegible]	online	online
[illegible]	360 642-2104	[illegible]
John Williams	360 665-6595	[illegible]
Amy Fecke	503 941 1357	amyfecke@gmail.com
[illegible]	360-642-3013	[illegible]
Nicoles Ames	[illegible]	[illegible]
[illegible]	360 875 2400	[illegible]
Jerry Bruner	360 ~~855~~ 7357	jerry.bruner@oceanbeachschools.org
Scott McDougall	360-875-9338	smcdougall@co.pacific.wa.us
Stephanie Fritts	360-875-9340	sfritts@co.pacific.wa.us

PCEMA

Community Sign-In Sheet 02/19/15; Chamber

Name	Phone	E-mail
Courtney Hagins	on file	on file
Will Hanks	on file	on file
Alex Kienker	875-8321	home.parkhart@gmail.com
Anthony Gotz	612 598-4427	tony@bolidyplanning.com
Scott McDougall	(360) 875-9338	smcdougall@co.pacific.wa.us
Paul Philpot	360.875.9372	director@pacifictech.org
[illegible]	360-875-9346	sheriff@co.pacific.wa.us

PCEMA

HMP Stakeholder Sign In Sheet 02/20/15 Naselle Timberland Library		
Name	Phone	E-mail/Agency
Sandie Gulf	360 [illegible] -20[illegible]	on file
Jon Trenhaus	360-875-6041	jtrenhaus@southbandschools.org
Gary Wilson	360-875-6041	gwilson@southbandschools.org
[illegible]	360-[illegible]-7121	ftrenhaus@naselleschools.org
Rob Evans	360 642 5918	director@[illegible].org
Stephanie Fritts	360 875 9340	sfritts@co.pacific.wa.us
LISA NELSON	360 484-7621	lnelson@naselleschools.org
[illegible]	360-703-1539	[illegible]
[illegible]	360-875-5571	[illegible]@southbend-wa.gov
Anthony Gartz	612-598-4429	[illegible]
Marilyn Nikolas	503-333-4911	marilyn.nikolas@gmail.com
Scott McDougall	360 875 9338	smcdougall@co.pacific.wa.us

PCEMA

Pacific County Emergency Management Council Meeting
April 9, 2015 – 9:00 AM to 10:30 AM
Pacific County Annex, Commissioners' Meeting Room
1216 W Robert Bush Drive, South Bend

	Name	Organization
1.	Andrea Unger	ECY
2.	MARY ATHERTON	PACIFIC COUNTY CERT
3.	Marilyn Nikolas	Bold planning
4.	Bob Clyde	ARES/RACES
5.	JOHN BURKE	RED CROSS
6.	WILLIE BENCE	RED CROSS
7.	SCOTT JOHNSON	PACIFIC CO. SHERIFF
8.	MIKE CASSINELLI	City of Ilwaco
9.	Julie Stinch	City of So. Bend
10.	Stephanie Fetts	PCEMA
11.	Scott McDougall	PCEMA
12.	Steve Fogg	Pacific County
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PCEMA

PACIFIC COUNTY SHERIFF'S OFFICE

Sheriff Scott L. Johnson

300 Memorial Drive, P.O. Box 27, South Bend, WA 98586 | Phone 360.875.5355 | Fax 360.875.5351

October 1, 2015

Name
Entity
Address
City, State, Zip

Dear *Name*,

The Pacific County Emergency Management Agency is currently in the process of updating its hazard mitigation plan. Participation in hazard mitigation planning is a requirement of the Federal Emergency Management Agency (FEMA) in order to be considered as a stakeholder in a hazard mitigation plan. FEMA provides grant opportunities to offset hazard mitigation activities at 75% of their total cost that are offered to plan stakeholders. Washington's local jurisdictions are eligible for this funding only with a FEMA approved, hazard mitigation plan. Without an approved plan, local governments will not be eligible for many FEMA grant programs.

Pacific County has contracted BOI Planning to assist in updating the hazard mitigation plan and facilitate local coordination. BOI Planning has developed multiple local and state hazard mitigation plans in multiple states and FEMA regions.

Your entity was extended an invitation to participate in this process in February, and that invitation was extended again in March. To date we have received no indication that your entity wishes to participate in the plan. The Pacific County Emergency Management Agency is now reaching out in one final effort to ensure that all potential stakeholders have an opportunity to be a part of the plan.

If your entity would like to participate in the planning process, please contact Chief Deputy Stephanie Fritts, (360)875-9340 or sfritts@co.pacific.wa.us or Deputy Director Scott McDougall, (360)875-9338 or smcdougall@co.pacific.wa.us.

In order to participate in the plan the Pacific County Emergency Management must have all of your information no later than 4:00 p.m. October 9, 2015. We have enclosed the necessary forms to be completed for your participation in the plan.

Thank you for your consideration,

Scott McDougall, Deputy Director
Pacific County Emergency Management Agency

PCEMA

Wednesday, September 23, 2015 Most Comfort Schedule

The Daily World.COM

Hoquiam School District... Zilyette centenced, will...

Posted September 23, 2015 - 3:00am

Pacific County Emergency Management to host Preparedness Fair

The Daily World

The Pacific County Emergency Management Agency will host a Preparedness Fair on Saturday, Oct. 10, from 11 a.m. to 3 p.m. in the Ocean Park Elementary School Gym.

Exhibits, demonstrations and games designed to educate the community on how to prepare for, and survive, a disaster will be present at the event.

The Pacific County Emergency Management Agency will also be hosting a public meeting to share and discuss the draft update of the Pacific County Hazard Mitigation Plan. The meeting will be an opportunity to see, and comment on, the proposed updates to the plan and will take place at 1 p.m. at the Ocean Park Elementary School Library.

Contact Pacific County Emergency Management Agency Deputy Director Scott McDougall by email at smcdougall@co.pacific.wa.us or calling (360) 642-9333 or (360) 875-9338.

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Rules for posting comments

PCEMA

Pacific County Emergency Management Agency Council
October 8, 2015
~~May 27th, 2015~~ – 11:00 AM to 12:00 Noon
Pacific County Annex – BoCC Meeting Room
1216 W. Robert Bush Drive, South Bend

	Name	Organization
1.	Stephanie Fritts	PCEMA
2.	Jessica Rowlett	PCEMA
3.	Scott McDougall	PCEMA
4.	Marilyn Nikolas	Bold
5.	Julie Strucke	City of SB
6.	Frank Wolfe	Pac Co
7.	Howard Auble	RACES
8.	John Burke	Red CROSS
9.	Anthony Gertz	BoLD planning
10.	Barbara Hannah	bj.hannah@
11.	Paul Dolan	paul@ broadenhorizons.org
12.	MARY ATHERTON	CERT
13.	Mike Cassinelli	City Of Ilwaco
14.	Steve Kopper	PC
15.	Lisa Ayers	PC
16.	Jason Ohnsman	City Raymond
17.	SCOTT JOHNSON	SHERIFF
18.		
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PCEMA

DATE 10.9.15

OUTGOING CALLS

NAME HMP Stakeholders

TIME	NAME	MESSAGE	CALL COMPLETED
	Stephanie Fritz	PCEMA	
	Gary Wilson	SB	
	Jim Tenhagen	SB	
	[illegible]	[illegible]	
	Doug Miller	Pus #2	
	Gene Kuest	PCFD#5	
	Wes Brown	Willapa Valley Water District	
	Robert DeWitt	Ocean Beach Hospital	
	[illegible]	BoDplanning Inc	
	Marilyn Nikolas	Bold Planning	

PRINTED IN USA

PCEMA

Pacific County Emergency Management Mitigation Planning
October 10, 2015 Preparedness Fair Presention

	Name	Email
1.	Anthony Gentz	tony@boldplanning.com
2.	Stephanie Fritts	~~[illegible]~~ sfritts@co.pacific.wa.us
3.	Jim Sayce	jimsayce@centurytel.net
4.	Debra Barrett	debbiebarrett@msn.com
5.	[illegible]	[illegible]
6.	Carmita Wall	~~[illegible]~~
7.	[illegible] Wall	
8.	Jackie Sheldon	Jaxsmites@gmail.com
9.	Kristen McAthison	Kristenmathisonayahoo.com
10.	Jim & Della Wilson	della_wilson2000@yahoo.com
11.	Kelsey Hopstad	kelseyhopstad@gmail.com
12.	Scott McDougall	scudougall@co.pacific.wa.us
13.	Michelle Jennings	tekkpriness@aol.com
14.	Debbie Moggin	debbiemoggin@yahoo.com
15.	Frank Wills	[illegible]
16.	Natasha Crater	natashacrater@gmail.com
17.	Morris Benson	morrisbenson@comcast.net
18.	Scott Johnson	sjohnson@co.pacific.wa.us
19.		
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Appendix D – Facilities & Infrastructure

Table 44 – Facilities, Pacific County	
Structure/Equipment	**Value**
Annex (1216 W. Robert Bush Dr., South Bend, WA)	$2,293,800
Bridge Boroved No. 963005	$900,000
Bridge Bullard No. 961902	$2,700,000
Bridge Cady No. 698003	$1,250,000
Bridge Camp One No. 961901	$4,000,000
Bridge County Line No. 964001	$2,000,000
Bridge Elk Creek No. 961001	$750,000
Bridge Fall River No. 964002	$1,600,000
Bridge Firdale No. 698004	$850,000
Bridge Gamage No. 942901	$1,500,000
Bridge Heckard No. 695501	$500,000
Bridge Mill Creek No. 698005	$700,000
Bridge Mill Creek No. 698005	$500,000
Bridge Mill Creek No. 698001	$900,000
Bridge Moose No. 698002	$1,500,000
Bridge Niawiakum No. 419401	$750,000
Bridge Raimie Ck No. 964004	$1,500,000
Bridge Smith Creek No. 604401	$1,500,000
Bridge Willapa No. 961003	$2,500,000
Bridge Woodard No. 961002	$2,300,000
Bridge Bay Center No. 412701	$3,000,000
Bridge North River No 964003	$1,000,000
Bridge Soule No. 604402	$1,400,000
Bruceport Park (7803 State Route 101, South Bend, WA)	$196,627
Bush Pioneer Park (1 Park St. E., Bay Center, WA)	$723,257
Camp Moorehead Park (27600 Sandridge Rd., Nabootta, WA)	$778,584
Chinook Park (14 Chinook Park Rd., Chinook, WA)	$54,472
County Services Building (318 N. 2d St., Long Beach, WA)	$1,189,400
Courthouse (300 Memorial Dr., South Bend, WA)	$16,926,200
DCD South County Operations Center (318 2nd St., Long Beach, WA)	$227,400
Generator Building (300 Memorial Dr., South Bend, WA)	$84,055
LBMF Equipment & HHW Facility (318 N. 2nd St., Long Beach, WA)	$357,000
LBMF Fuel Storage & Generator Building (318 N. 2nd St., Long Beach, WA)	$62,829
LBMF Public Services Building	$1,189,400
Long Beach Maintenance Facility (318 N. 2nd St., Long Beach, WA)	$17,145
Naselle Maintenance Facility (6 Co Shop Rd, Naselle, WA)	$5,755
NMF Storage & Equipment Shed	$34,278
North Cove Shop (3752 Larkin Rd., Grayland, WA)	$68,647
Public Safety Building (300 Memorial Dr., South Bend, WA)	$8,443,800
Raymond Repair Shop (108 2d St., Raymond, WA)	$1,431,700
Road Oil Tank (318 N. 2d St., Long Beach, WA)	$72,255
Senior Services Center (319 Duryea St., Raymond, WA)	$855,000

Structure/Equipment	Value
Senior Services Center - Pace Building (244 1st St., Raymond, WA)	$546,882
South County Administration Facility (2013 Sandridge Road, Long Beach, WA)	$5,356,000
Telecom - Church Road Site	$87,606
Telcom - Holy Cross Facility (491 Hammond LN, Raymond, WA)	$457,806
Telcom - Ilwaco Facility	$71,700
Telcom - RO Mountain Facility (10 Forks Cr. LN, Naselle, WA)	$725,350
Telcom - Long Beach Facility (318 N. 2d St., Long Beach, WA)	$284,979
Telcom - Megler Hill Facility (80 Houghton LN, Chinook, WA)	$754,500
Telcom - Naselle Ridge Facility (611 Radar Ridge LN, Naselle, WA)	$118,126
Telcom - North Cove Facility	$206,828
Telcom - PUD Raymond Facility	$74,218
Telcom - Raymond Facility (108 2d St., Raymond, WA)	$54,550
Vegetation Management Facility (410 Quincy St., South Bend, WA)	$78,978
Total =	$77,424,123

Table 45 – Facilities, Ilwaco

Structure/Equipment	Value
Auto Shop	$795,756
Black Lake Fishing Pier	$0
Black Lake Intertie	$88,200
Baker Bay Lift Station #1	$70,000
Baker Bay Lift Station #2	$70,000
Black Lake Old Shop Shelter	$65,719
Black Lake Park Restrooms	$28,573
Black Lake Picnic Shelter	$24,000
City Hall/Shop	$608,333
City Park Restrooms/Shelter	$130,000
Community Building	$2,906,610
Fire Museum	$51,500
Fire Station	$2,940,070
Heritage Museum	$2,625,000
Maintenance Shop	$719,422
Stood House	$167,775
WTP Lab Bldg., Filter Bay	$7,056,362
WTP Ind Crk., 159,000 Gal	$321,490
Reservoir (Steel) 480,000 Gal	$763,848
MSW Water Pump House	$100,000
Spring St Pump Station	$117,800
Spring St Pump Station –AB	$10,150
Lakeview WTP Pump Station	$88,000
Stringtown WTP Booster	$123,776
WWTP 1,010,000 Gal	$6,329,016
Sandlee Lift Station	$70,000
Lift Station – Cape D	$70,000
Lift Station – Seaview	$70,000

Structure/Equipment	Value
Water Tank 300,000 Gal	$795,675
Reservoir (Tank) 130,000 gal	$417,150
Reservoir 500,000 gal	$803,400
Total =	$29,427,635

Table 46 – Facilities, Long Beach	
Structure/Equipment	Value
1 Million Gallon Tank	$1,061,208
A Class Aerator Tank	$116,096
City Hall	$649,490
Concrete Reservoir Water Tank	$541,217
Electric Pumphouse – Mackix Creek	$2,906
Fire Station	$811,624
Fire Station Annex	$205,000
Frame Office Lab storage	$99,501
Generator Bldg. Wwtp	$74,284
Main Impoundment Pumphouse	$17,428
Main Lift Sewer Pump	$57,910
Micro Filtration Water Plan	$4,500,000
Police Station & Restroom	$162,355
Pump Station-Storm Water	$54,121
Pump Station Storm Water	$48,709
Pump Station Water Pressure	$48,709
Restroom	$108,245
Sewer Lift Station #1	$17,428
Sewer Lift Station #2	$17,428
Sewer Lift Station #3	$17,428
Sewer Lift Station #4	$17,428
Sewer Lift Station #5	$71,643
Stormwater Pump Station	$133,188
Warehouse & Garage	$103,090
Total =	$9,085,496

Table 47 – Facilities, Raymond	
Structure/Equipment	Value
Aeration Basins #1 and #2	$1,980,000
Aerobic Digesters #1 and #2	$855,000
Dock Ramp	$441,057
City Hall	$492,008
Control Building	$919,000
Engineers Office	$118,417
Equipment Building	$2,858,000
Equipment Shed	$135,856
Equipment Shed, Park Office	$228,187

Structure/Equipment	Value
Equipment Storage Building	$116,100
Fire/Police Building	$1,739,708
Generator Building	$93,586
Headwork Structure	$160,000
Headworks Blower and Electrical Building	$910,000
Leachate/Vector Dump/Storm Pump	$274,000
Library	$1,339,373
Light Standards (379)	$1,198,961
Museum (Seaport Addition)	$1,376,335
Museum	$1,449,299
Park Shed	$22,794
Pier/Dock Downtown Waterfront	$325,706
Plant/Heating Coos	$125,277
Pipe Building	$56,214
Polymer Storage Building	$45,900
Public Works Office	$658,972
Public Works Shop	$181,982
Restrooms	$103,889
Restrooms, Willard Landing	$417,490
Secondary Facilities 41 and 42	$1,480,000
Shop Building	$192,150
Solids Handling Building	$2,081,000
Storage Building	$88,612
Storage Building	$140,768
Storage Shed	$57,473
Swimming Pool	$650,000
Theatre, Community Center	$1,115,979
Visitor Info Center	$161,666
UV Effluent Flowmeter	$420,000
Water Tank 3,000,000 gal	$1,252,717
WPT 1,500,000 gal w/pump station	$8,618,585
WTP 7,000,000 Gal	$3,681,671
Total =	**$38,582,951**

Table 48 – Facilities, South Bend

Structure/Equipment	Value
101 Restrooms	$47,000
8" Raw Water Pipe	$200,000
8" Raw Water Pipe (Light Creek to SR 105)	$123,000
8" Raw Water Pipe (Martin Creek to SR 105)	$56,000
8" Raw Water Pipe SR 105 to Plant	$40,200
Boat Launch & Docks	$191,571
Central Avenue Tunnel 84"	$2,500,000
City Garage	$375,000
City Hall	$707,500

Structure/Equipment	Value
City Pier	$681,345
East End Fire Hall	$400,478
Library	$503,546
Light Creek Dam	$4,000,000
Main Reservoir	$1,000,000
Main Reservoir	$1,500,000
Martin Creek Dam	$4,000,000
Park Bldg	$110,000
Park Residence	$76,000
Pump St. # 1	$262,500
Pump St. # 2	$262,500
Pump St. # 3	$1,000,000
Pump St. # 4	$262,500
Rixon Rd Tank	$200,000
Rixon Rd Tank	$300,000
Robert Bush Park Statue	$105,000
Sewer Treatment Plant	$80,000
Storage Garage	$300,000
Water Treatment Plant	$6,000,000
West End Fire Hall	$1,147,564
Total =	$26,470,921

Table 49 – Facilities, Naselle/Grays River School District

Structure/Equipment	Value
Bus and Maintenance	$311,798
Elementary/MS/High School	$8,882,049
Misc/Shop Building	$975,408
Total =	$10,169,255

Table 50 – Facilities, Ocean Beach SD

Structure/Equipment	Value
Ilwaco HS	$14,149,798
Ilwaco HS Gym/Locker Rooms	$1,909,160
Ilwaco HS Stadium	$4,104,299
Ilwaco MS (Hilltop)	$8,665,551
Kelly Gym	$534,890
Long Beach Elementary	$7,053,972
OOSD Administrative Office	$775,322
OBSD Maintenance	$249,840
OOSD Transportation	$191,441
Ocean Beach Early Childhood Center	$699,415
Ocean Park Elementary	$6,529,551
Total =	$45,662,691

Table 51 – Facilities, South Bend School District	
Structure/Equipment	**Value**
Early Learning Center	$1,513,500
District Administrative Building	$360,951
Main Elementary	$433,600
Modular Building	$125,200
South Bend Elementary	$7,613,418
Play Shed	$481,571
High School (Office, Science, Library, Classrooms, Gym)	$10,786,074
High School Gym and Music Building	$3,864,380
Shops and Small Engines	$1,612,709
Bus Garage and Maintenance Building	$1,191,622
Grandstand	$758,837
Football Locker Room	$446,809
Concession Stand	$163,200
Total =	$253,509,915

Table 52 – Facilities, Willapa Valley School District	
Structure/Equipment	**Value**
Lebam Elementary	$700,000
Lebam Gym	$304,562
Menlo Middle/High School	$13,088,700
Menlo Stadium	$845,886
Menlo Transportation	$697,000
Willapa Elementary	$3,278,406
Willapa Gym	$1,067,900
Willapa Modular	$230,000
Total =	$0

Table 53 – Facilities, Naselle Water Company	
Structure/Equipment	**Value**
Office	$170,000
Storage Tank #1	$67,000
Storage Tank #2	$284,000
Water Treatment Plan	$4,525,000
Total =	$5,046,000

Table 54 – Facilities, North Beach Water District	
Structure/Equipment	**Value**
Booster Station (2820 272nd St.)	$750,000
Booster Station (25600 7 St.)	$950,000
Generator (2105 272nd St.)	$50,000

Structure/Equipment	Value
Office & Facilities Building	$1,000,000
North Wellfield Reservoir #1	$700,000
North Wellfield Reservoir #2	$200,000
North Wellfield Reservoir #3	$200,000
North Wellfield Treatment Plan	$700,000
North Wellfield Well #1	$95,000
North Wellfield Well #3	$95,000
North Wellfield Well #4	$95,000
North Wellfield Well #5	$95,000
North Wellfield Well #6	$95,000
North Wellfield Well #7	$95,000
North Wellfield Well #8	$95,000
Shop (2108 27rd St.)	$280,000
South Wellfield Reservoir #1	$275,000
Water Pipes	$36,000,000
Wiegardt Well #1	$95,000
Wiegardt Well #2	$95,000
Wiegardt Well #3	$95,000
Total =	$41,635,000

Table 55 – Facilities, Surfside Homeowners' Association

Structure/Equipment	Value
1996 Ford Service Truck	$26,000
1996 Freightliner Dump Truck	$26,000
2004 Chevy Truck	$37,000
2009 Compact Excavator	$120,000
Bridgeside Pump House	$44,150
Cabana 15, 16 and 17	$53,000
Cove Parkline	$52,000
Compactor Building	$72,000
Cummins Generator	$85,000
Deep Wells Control Generator	$98,000
Dry Box Building	$45,000
Fire Hydrants 38 ea	$182,000
I-I Wells Building	$45,000
Manifold Building	$150,000
North Tidegate System	$95,000
Oceanside Pump House	$141,150
Oysterville Pump House	$39,000
Pedestrian Bridges 6 ea	$700,000
Portable Generator	$1,500
Shallow Wells 3 ea	$75,000
South Tidegate System	$95,000
Surfside Business Office	$365,000
System Infrastructure	$10,000,000

Structure/Equipment	Value
Treatment/Filter Bldg	$246,600
Warehouse Building	$255,000
Water Office Building	$957,100
Water Reservoirs (4 each)	$1,120,000
Total =	$14,726,600

Table 56 – Facilities, Willapa Valley Water District

Structure/Equipment	Value
Booster Pump Station #1	$35,000
Booster Pump Station #2	$35,000
Booster Pump Station #3	$25,000
Diversion Dam	$50,971
Office	$304,778
Reservoir 200,000 Gallons	$440,994
Reservoir 300,000 Gallons	$573,420
Reservoir 220,000 Gallons	$573,420
Storage shed	$39,227
Water Treatment Plant	$1,550,000
Total =	$3,541,760

Table 57 – Facilities, Ocean Beach Hospital

Structure/Equipment	Value
OBH Rural Medical Clinic/Ilwaco	$1,599,460
OBH Rural Medical Clinic/Naselle	$22,220
Ocean Beach Hospital	$48,468,109
Total =	$50,089,793

Table 58 – Facilities, Willapa Harbor Hospital

Structure/Equipment	Value
Administration Building	$400,000
Business Office	$400,000
Pacific Family Health Center	$400,000
Willapa Family Medicine	$400,000
Willapa Harbor Hospital	$23,000,000
Total =	$24,600,000

Table 59 – Facilities, Fire Protection District #1	
Structure/Equipment	**Value**
Fire Station Ocean Park #1	$4,000,000
Fire Station Ocean Park #2	$325,000
Fire Station Ocean Park #3	$350,000
Fire Station Ocean Park #4	$225,000
Fire Station Ocean Park #5	$400,000
Fire Station Seaview #1	$1,350,000
Fire Station Seaview #2	$225,000
Fire Station Seaview #3	$1,000,000
Fire Station Long Beach #1	$400,000
Fire Station Long Beach #2	$400,000
Total =	$8,675,000

Table 60 – Facilities, Fire Protection District #2	
Structure/Equipment	**Value**
2010 Generator 16KW	$26,564
Cascade Unit	$5,711
Chain Saw and Hand Tools	$5,783
LMS Equipment	$6,863
Fire Hall	$201,295
Freightliner Pumper – Pierce	$245,452
Generator #2221	$2,392
Generator #2777	$2,991
Hoses 1200 Feet	$17,945
Hoses 2400 Feet	$29,909
Mobile Equipment	$11,964
MSA Air Packs and Bottles	$28,909
Pierce Contender	$336,878
SCBA – 12 Units	$34,268
Rescue Vehicle – Ford	$87,325
Turn Out Gear – 25 Sets	$85,656
Total =	$1,130,170

Table 61 – Facilities, Fire Protection District #4	
Structure/Equipment	**Value**
Main Fire Hall	$278,717
Vehicle Building w/ Apartment	$1,262,663
Salmon Creek Building	$35,581
Total =	$1,576,961

Table 62 – Facilities, Fire Protection District #5	
Structure/Equipment	**Value**
1964 GMC Truck	$400,000
1991 Pumper Truck	$400,000
1993 Pumper Truck	$400,000
Larkin Building	$57,790
Main fire station	$209,196
Tokeland Building	$128,248
Total =	**$1,695,234**

Table 63 – Facilities, Fire Protection District #6	
Structure/Equipment	**Value**
1964 Pumper Truck	$21,000
1972 Pumper Truck	$156,000
1975 Pumper Truck	$260,000
1991 Pumper Truck	$262,000
Main Fire Station	$350,000
Total =	**$1,048,000**

Table 64 – Facilities, Pacific Transit	
Structure/Equipment	**Value**
Administration Building	$528,000
Maintenance Building - Seaview	$1,818,000
Maintenance Building - Raymond	$399,000
Office Building - Raymond	$255,000
1x - 29 Foot Bus	$150,000
9x - 30 Foot Bus	$1,040,000
6x - DAR Van	$420,000
1x - Pick Up Truck	$30,000
1x - Administrative Car	$25,000
Total =	**$6,665,000**

Table 65 – Facilities, Port of Chinook	
Structure/Equipment	**Value**
Backhoe	$100,000
Boat Hoist	$60,000
Dredge	$120,000
Flatbed Truck	$5,500
Docks	$2,500,000
Fuel Shed	$35,000
Pilings	$1,000,000

Structure/Equipment	Value
Port Office	$325,000
Public Restrooms	$150,000
Work Boat	$20,500
Work Shop	$30,000
Total =	$4,246,000

Table 66 – Facilities, Port of Ilwaco	
Structure/Equipment	Value
Boatyard Building	$700,000
Dredge	$425,000
Excavator	$120,000
Floats	$8,500,000
Metal Building	$150,000
Pavilion	$350,000
Rubber Wheeled	$150,000
Pilings	$2,000,000
Port Office	$425,000
Shop	$1,125,000
Travelift	$125,000
Total =	$13,945,125

Table 67 – Facilities, Port of Peninsula	
Dock Office	$55,000
Floats and Pilings	$4,421,000
Forklift	$10,000
Fuel Tank	$135,000
Ice Plant	$300,000
Interpretive Center	$100,000
Public Restroom and Shower	$52,000
Service Pier and Fuel Dock	$4,000,000
Shop Office	$116,285
Wiegand Wharfage Dock	$1,103,000
Total =	$10,292,990

Table 68 – Facilities, Port of Willapa Harbor	
Structure/Equipment	**Value**
Airport Fuel Station (7000 gallons)	$41,285
Airport Pilot Ready Room	$32,027
Airport Residence & Garage	$205,163
Airport Runway, Taxiway, lights, etc.	$1,000,000
Building #1 & #1A	$837,157
Building #1B	$2,450,806
Building #2	$1,808,486
Building #3	$650,000
Building #4	$507,358
Building #5 & #5A	$362,400
Building #6	$521,354
Building #7 (Port Shop)	$740,866
Building #7A (Covered Area)	$413,100
Bulkhead/Seawall	$500,000
Docks/Berths	$1,595,712
Double Hangar Building	$907,997
Float A**	$113,979
Float B' & Float 'C'**	$302,345
Float B' & Float 'D' Tie-up Floats'	$773,551
Floats/Moorage Slips	$630,265
Fossil Building	$130,500
Hangar Building #2	$64,810
Kedek Building	$152,951
Machine Shop	$1,481,766
Pier for Building #2 & #4	$6,838,766
Port Office	$97,066
Public Fishing Pier	$113,979
Pump House	$63,291
Rotta Building	$448,947
Sewage Treatment Tanks & Lines	$165,927
South Fork Dock	$740,866
South Fork Mill Cooling Shed	$1,007,200
South Fork Mill Dry Kilns	$2,355,500
South Fork Mill Office	$403,064
South Fork Mill Planer Shed	$1,050,060
South Fork Mill Sorting Shed	$2,718,200
Taylor Park Bldg. #1	$1,028,970
Taylor Park Bldg. #2	$1,731,303
Taylor Park Bldg. #3	$207,999
Taylor Park Bldg. #4 (Dennis Bldg)	$1,087,717
Wastewater Office/Lab	$46,700
Wastewater Treatment Plant	$400,000
Total	**$36,609,624**

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Table 69 – Facilities, PUD #2	
Structure/Equipment	**Value**
Fiber Cabinet & Electronics - Bay Center/Palis Rd	$39,500
Fiber Cabinet & Electronics - Chinook North	$75,000
Fiber Cabinet & Electronics - Chinook South	$92,000
Fiber Cabinet & Electronics - Down Town Ilwaco	$30,000
Fiber Cabinet & Electronics - Down Town Long Beach	$220,000
Fiber Cabinet & Electronics - Down Town Long Beach 2	$110,000
Fiber Cabinet & Electronics - Down Town Ocean Park	$51,000
Fiber Cabinet & Electronics - Garden Tracts	$93,000
Fiber Cabinet & Electronics - Henkle	$148,000
Fiber Cabinet & Electronics - Island	$97,000
Fiber Cabinet & Electronics - Lebam	$75,000
Fiber Cabinet & Electronics - Menlo	$95,000
Fiber Cabinet & Electronics - Naselle East	$83,000
Fiber Cabinet & Electronics - Naselle South	$99,000
Fiber Cabinet & Electronics - Ocean Park 187	$51,000
Fiber Cabinet & Electronics - Ocean Park 205	$45,000
Fiber Cabinet & Electronics - Ocean Park 227	$45,000
Fiber Cabinet & Electronics - Ocean Park 245	$45,000
Fiber Cabinet & Electronics - Ocean Park Substation	$54,000
Fiber Cabinet & Electronics - Old Willapa	$17,500
Fiber Cabinet & Electronics - Riverview	$105,000
Fiber Cabinet & Electronics - SB Central	$57,000
Fiber Cabinet & Electronics - SB East	$100,000
Fiber Cabinet & Electronics - SB Library	$63,000
Fiber Cabinet & Electronics - SB Waterfront	$102,000
Fiber Distribution System	$8,148,000
Tower Site with Radio Equipment - Aberdeen	$65,000
Tower Site with Radio Equipment - Cosi	$142,250
Tower Site with Radio Equipment - Holy Cross	$194,000
Tower Site with Radio Equipment - Ilwaco	$2,500
Tower Site with Radio Equipment - KO Peak	$131,000
Tower Site with Radio Equipment - Long Beach	$63,500
Tower Site with Radio Equipment - Meglar	$125,000
Tower Site with Radio Equipment - Naselle	$90,500
Tower Site with Radio Equipment - North Cove	$7,200
Tower Site with Radio Equipment - Raymond	$133,800
Tower Site with Radio Equipment - Tokeland	$11,500
Updated Distribution Facilities	$59,000,000
Updated Transmission Facilities	$4,800,000
Wilson Point Water Company	$250,000
Total =	**$75,156,259**

Table 70 – Coastal Flood Records, Pacific County, Washington

3 Coastal Flood Event(s) were reported in Pacific County, Washington between 01/29/2006 and 12/31/2014

Mag: Magnitude (No Indices) Dth: Deaths Inj: Injuries
PrD: Property Damage (US Dollars) CrD: Crop Damage (US Dollars)

Location	Date	Mag	Dth	Inj	PrD	CrD
W. Pacific (Zone)	1/29/2006		0	0	$0	$0
South Coast (Zone)	12/3/2007		0	0	$5,000,000	$0
South Coast (Zone)	10/27/2010	-	0	0	$150,000	$0
		Totals:	0	0	$5,150,000	$0

*The data are from the NOAA NCDC Storm Events Database.

Table 71 – Riverine Flood Records, Pacific County, Washington

20 Riverine Flood Event(s) were reported in Pacific County, Washington between 12/26/1996 and 01/05/2014

Mag: Magnitude (No Indices) Dth: Deaths Inj: Injuries
PrD: Property Damage (US Dollars) CrD: Crop Damage (US Dollars)

Location	Date	Mag	Dth	Inj	PrD	CrD
South Coast (Zone)	12/26/1996	-	0	0	$0.00	$0
Southwest Interior (Zone)	12/26/1996	-	0	0	$0.00	$0
Southwest Interior (Zone)	1/11/1997	-	0	0	$0.00	$0
South Coast (Zone)	1/3/2007	-	0	0	$0.00	$0
W Pacific (Zone)	11/25/1998		0	0	$0.00	$0
Southwest Interior (Zone)	11/26/1998	-	0	0	$0.00	$0
W Pacific (Zone)	12/7/1999		0	0	$0.00	$0
W Pacific (Zone)	12/31/2006	-	0	0	$0.00	$0
[illegible]	12/31/2006	-	0	0	$500,000.00	$0
W Pacific (Zone)	2/10/1999	-	0	0	$10,000.00	$0
W Pacific (Zone)	8/2/1999		0	0	$1,000.00	$0
South Coast (Zone)	2/11/2000	-	0	0	$0.00	$0
Southwest Interior (Zone)	2/11/2000		0	0	$0.00	$0
Willapa	1/10/2006	-	0	0	$0.00	$0
Willapa	1/20/2006	-	0	0	$0.00	$0
Willapa	12/3/2007	-	0	0	$10,000,000.00	$0
Naselle	1/7/2011	-	0	0	$0.00	$0
Willapa	1/7/2014		0	0	$0.00	$0
Raymond	11/15/2013	-	0	0	$0.00	$0
Naselle	1/5/2014		0	0	$0.00	$0
		Totals:	0	0	$10,511,000	$0

*The data are from the NOAA NCDC Storm events Database.

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Table 72 – Severe Storm Records, Pacific County, Washington

180 Severe Storm Event(s) were reported in Pacific County, Washington between 11/30/1996 and 02/07/2015

Mag: Magnitude (Knots/Hour) Dth: Deaths Inj: Injuries
PrD: Property Damage (US Dollars) CrD: Crop Damage (US Dollars)

Location	Date	Mag	Dth	Inj	PrD	CrD
South Coast (Zone)	11/30/1996	50	0	0	$0.00	$0.00
South Coast (Zone)	12/4/1996	70	0	0	$0.00	$0.00
South Coast (Zone)	12/29/1996	70	0	0	$0.00	$0.00
South Coast (Zone)	12/30/1996	55	0	0	$0.00	$0.00
South Coast (Zone)	1/31/1997	55	0	0	$0.00	$0.00
South Coast (Zone)	2/16/1997	57	0	0	$0.00	$0.00
W Pacific (Zone)	2/20/1997		0	0	$10,000.00	$0.00
W Pacific (Zone)	12/7/1998	65	0	0	$0.00	$0.00
W Pacific (Zone)	12/8/1998	55	0	0	$0.00	$0.00
W Pacific (Zone)	12/9/1998	58	0	0	$0.00	$0.00
W Pacific (Zone)	12/12/1998	57	0	0	$0.00	$0.00
W Pacific (Zone)	12/25/1998	45	0	0	$0.00	$0.00
W Pacific (Zone)	12/27/1998	45	0	0	$0.00	$0.00
W Pacific (Zone)	1/15/1999	60	0	0	$0.00	$0.00
W Pacific (Zone)	1/17/1999	55	0	0	$0.00	$0.00
W Pacific (Zone)	1/23/1999	70	0	0	$0.00	$0.00
W Pacific (Zone)	2/1/1999	55	0	0	$0.00	$0.00
W Pacific (Zone)	2/5/1999	70	0	0	$0.00	$0.00
W Pacific (Zone)	2/18/1999	59	0	0	$0.00	$0.00
W Pacific (Zone)	2/23/1999	56	0	0	$0.00	$0.00
W Pacific (Zone)	2/27/1999	70	0	0	$1,500.00	$0.00
E Pacific/W Lowlands/Washington (Zone)	2/27/1999	61	0	0	$0.00	$0.00
South Coast (Zone)	2/16/2000	55	0	0	$0.00	$0.00
E Pacific/W Lowlands/Washington (Zone)	2/16/2000	66	0	0	$0.00	$0.00
South Coast (Zone)	12/16/2010	57	0	0	$0.00	$0.00
Southwest Inner W (Zone)	12/16/2010	77	0	0	$0.00	$0.00
W Pacific (Zone)	2/9/2001	55	0	0	$0.00	$0.00
W Pacific (Zone)	11/27/2001	52	0	0	$0.00	$0.00
W Pacific (Zone)	11/30/2001	64	0	0	$0.00	$0.00
W Pacific (Zone)	12/1/2001	64	0	0	$0.00	$0.00
W Pacific (Zone)	12/12/2001	48	0	0	$0.00	$0.00
W Pacific (Zone)	12/15/2001	70	0	0	$0.00	$0.00
South Coast (Zone)	11/12/2002	52	0	0	$0.00	$0.00
W Pacific (Zone)	11/15/2002	56	0	0	$0.00	$0.00
W Pacific (Zone)	12/11/2002	52	0	0	$0.00	$0.00
W Pacific (Zone)	12/15/2002	52	0	0	$0.00	$0.00
W Pacific (Zone)	12/27/2002	53	0	0	$0.00	$0.00
South Coast (Zone)	12/26/2003	57	0	0	$0.00	$0.00
Southwest Inner W (Zone)	12/26/2003	57	0	0	$0.00	$0.00
W Pacific (Zone)	1/1/2005	61	0	0	$0.00	$0.00
W Pacific (Zone)	11/16/2005	50	0	0	$0.00	$0.00
South Coast (Zone)	12/15/2005	60	0	0	$0.00	$0.00
W Pacific (Zone)	2/10/2006	60	0	0	$0.00	$0.00
W Pacific (Zone)	11/9/2006	53	0	0	$0.00	$0.00
W Pacific (Zone)	11/9/2006	53	0	0	$0.00	$0.00
South Coast (Zone)	12/24/2006	59	0	0	$0.00	$0.00
W Pacific (Zone)	1/1/2008	51	0	0	$0.00	$0.00
South Coast (Zone)	2/7/2008	60	0	0	$100,000.00	$0.00

Location	Date	Mag	Dth	Inj	PrD	CrD
South Coast (Zone)	3/7/2006	51	0	0	$75,000.00	$0.00
South Coast (Zone)	11/10/2006	50	0	0	$0.00	$0.00
Southwest Inverior (Zone)	11/10/2006	52	0	0	$0.00	$0.00
Southwest Inverior (Zone)	11/10/2006	53	0	0	$0.00	$0.00
South Coast (Zone)	11/15/2006	52	0	0	$0.00	$0.00
South Coast (Zone)	11/17/2006	54	0	0	$0.00	$0.00
South Coast (Zone)	11/17/2006	50	0	0	$0.00	$0.00
Southwest Inverior (Zone)	11/17/2006	49	0	0	$0.00	$0.00
Southwest Inverior (Zone)	11/19/2006	57	0	0	$0.00	$0.00
South Coast (Zone)	12/12/2006	63	0	0	$0.00	$0.00
South Coast (Zone)	12/17/2006	52	0	0	$0.00	$0.00
Southwest Inverior (Zone)	12/24/2006	60	0	0	$0.00	$0.00
Southwest Inverior (Zone)	10/18/2007	61	0	0	$0.00	$0.00
South Coast (Zone)	11/12/2007	60	0	0	$0.00	$0.00
South Coast (Zone)	11/12/2007	67	0	0	$0.00	$0.00
South Coast (Zone)	11/12/2007	61	0	0	$0.00	$0.00
Southwest Inverior (Zone)	11/12/2007	60	0	0	$0.00	$0.00
South Coast (Zone)	12/2/2007	54	0	0	$0.00	$0.00
South Coast (Zone)	12/2/2007	53	0	0	$0.00	$0.00
South Coast (Zone)	12/3/2007	52	0	0	$0.00	$0.00
South Coast (Zone)	12/7/2007	63	0	0	$0.00	$0.00
South Coast (Zone)	12/7/2007	40	0	0	$10,140,000.00	$0.00
South Coast (Zone)	12/7/2007	50	0	0	$0.00	$0.00
South Coast (Zone)	12/7/2007	69	0	0	$0.00	$0.00
South Coast (Zone)	12/8/2007	65	0	0	$0.00	$0.00
Southwest Inverior (Zone)	12/8/2007	68	0	0	$140,000.00	$0.00
Southwest Inverior (Zone)	12/30/2007	60	0	0	$0.00	$0.00
South Coast (Zone)	1/6/2008	42	0	0	$0.00	$0.00
Southwest Inverior (Zone)	1/4/2008	55	0	0	$0.00	$0.00
South Coast (Zone)	1/4/2008	56	0	0	$0.00	$0.00
South Coast (Zone)	1/20/2008	56	0	0	$0.00	$0.00
South Coast (Zone)	1/26/2008	50	0	0	$0.00	$0.00
South Coast (Zone)	12/12/2008	61	0	0	$0.00	$0.00
South Coast (Zone)	12/26/2008	54	0	0	$0.00	$0.00
South Coast (Zone)	1/4/2009	56	0	0	$0.00	$0.00
South Coast (Zone)	1/7/2009	50	0	0	$0.00	$0.00
South Coast (Zone)	7/7/2009	53	0	0	$0.00	$0.00
South Coast (Zone)	9/4/2009	62	0	0	$0.00	$0.00
South Coast (Zone)	11/5/2009	55	0	0	$0.00	$0.00
South Coast (Zone)	11/9/2009	55	0	0	$0.00	$0.00
South Coast (Zone)	11/10/2009	56	0	0	$0.00	$0.00
Southwest Inverior (Zone)	11/10/2009	61	0	0	$0.00	$0.00
South Coast (Zone)	11/10/2009	59	0	0	$0.00	$0.00
Southwest Inverior (Zone)	11/22/2009	72	0	0	$0.00	$0.00
South Coast (Zone)	11/22/2009	50	0	0	$0.00	$0.00
South Coast (Zone)	1/11/2010	50	0	0	$0.00	$0.00
South Coast (Zone)	1/26/2010	62	0	0	$0.00	$0.00
South Coast (Zone)	1/27/2010	63	0	0	$0.00	$0.00
South Coast (Zone)	3/1/2010	50	0	0	$0.00	$0.00
South Coast (Zone)	7/1/2010	56	0	0	$0.00	$0.00
South Coast (Zone)	7/24/2010	67	0	0	$0.00	$0.00
South Coast (Zone)	4/2/2020	64	0	0	$0.00	$0.00
Southwest Inverior (Zone)	4/2/2020	63	0	0	$0.00	$0.00
South Coast (Zone)	5/19/2010	62	0	0	$0.00	$0.00
South Coast (Zone)	10/31/2010	54	0	0	$0.00	$0.00
South Coast (Zone)	11/7/2010	51	0	0	$0.00	$0.00

Location	Date	Mag	Dth	Inj	PrD	CrD
South Coast (Zone)	1/15/2010	62	0	0	$0.00	$0.00
South Coast (Zone)	1/17/2010	63	0	0	$0.00	$0.00
South Coast (Zone)	1/11/2010	50	0	0	$0.00	$0.00
South Coast (Zone)	1/12/2010	56	0	0	$0.00	$0.00
South Coast (Zone)	1/28/2010	67	0	0	$0.00	$0.00
South Coast (Zone)	4/3/2010	67	0	0	$0.00	$0.00
Southwest Inverior (Zone)	4/3/2010	65	0	0	$0.00	$0.00
South Coast (Zone)	5/20/2010	62	0	0	$0.00	$0.00
South Coast (Zone)	10/23/2010	59	0	0	$0.00	$0.00
South Coast (Zone)	11/7/2010	61	0	0	$0.00	$0.00
South Coast (Zone)	11/17/2010	50	0	0	$0.00	$0.00
South Coast (Zone)	11/22/2010	53	0	0	$0.00	$0.00
South Coast (Zone)	11/30/2010	59	0	0	$0.00	$0.00
South Coast (Zone)	12/31/2010	57	0	0	$0.00	$0.00
Long Beach	12/13/2010	55	0	0	$0.00	$0.00
South Coast (Zone)	12/17/2010	61	0	0	$0.00	$0.00
South Coast (Zone)	1/13/2011	50	0	0	$0.00	$0.00
South Coast (Zone)	1/14/2011	59	0	0	$0.00	$0.00
South Coast (Zone)	1/18/2011	53	0	0	$0.00	$0.00
Southwest Inverior (Zone)	1/18/2011	55	0	0	$0.00	$0.00
South Coast (Zone)	2/14/2011	55	0	0	$0.00	$0.00
Southwest Inverior (Zone)	2/14/2011	52	0	0	$0.00	$0.00
South Coast (Zone)	2/27/2011	54	0	0	$0.00	$0.00
South Coast (Zone)	3/2/2011	63	0	0	$0.00	$0.00
South Coast (Zone)	3/5/2011	50	0	0	$0.00	$0.00
South Coast (Zone)	3/20/2011	45	0	0	$0.00	$0.00
South Coast (Zone)	3/28/2011	62	0	0	$0.00	$0.00
South Coast (Zone)	3/29/2011	44	0	0	$0.00	$0.00
South Coast (Zone)	3/26/2011	56	0	0	$0.00	$0.00
South Coast (Zone)	11/10/2011	56	0	0	$0.00	$0.00
South Coast (Zone)	11/11/2011	53	0	0	$0.00	$0.00
South Coast (Zone)	11/11/2011	57	0	0	$0.00	$0.00
South Coast (Zone)	11/22/2011	65	0	0	$0.00	$0.00
South Coast (Zone)	11/24/2011	59	0	0	$0.00	$0.00
Southwest Inverior (Zone)	11/24/2011	67	0	0	$0.00	$0.00
South Coast (Zone)	11/27/2011	55	0	0	$0.00	$0.00
South Coast (Zone)	12/25/2011	59	0	0	$0.00	$0.00
South Coast (Zone)	12/27/2011	50	0	0	$0.00	$0.00
Southwest Inverior (Zone)	12/27/2011	66	0	0	$0.00	$0.00
South Coast (Zone)	12/28/2011	57	0	0	$0.00	$0.00
South Coast (Zone)	1/2/2012	68	0	0	$0.00	$0.00
South Coast (Zone)	1/4/2012	55	0	0	$0.00	$0.00
South Coast (Zone)	1/20/2012	53	0	0	$0.00	$0.00
Southwest Inverior (Zone)	1/20/2012	56	0	0	$0.00	$0.00
South Coast (Zone)	1/22/2012	60	0	0	$0.00	$0.00
South Coast (Zone)	1/11/2012	65	0	0	$0.00	$0.00
South Coast (Zone)	1/14/2012	58	0	0	$0.00	$0.00
South Coast (Zone)	1/15/2012	63	0	0	$0.00	$0.00
South Coast (Zone)	1/28/2012	70	0	0	$0.00	$0.00
South Coast (Zone)	11/11/2012	57	0	0	$0.00	$0.00
South Coast (Zone)	11/18/2012	69	0	0	$0.00	$0.00
Southwest Inverior (Zone)	11/19/2012	67	0	0	$0.00	$0.00
South Coast (Zone)	12/4/2012	60	0	0	$0.00	$0.00
South Coast (Zone)	12/16/2012	73	0	0	$0.00	$0.00
Southwest Inverior (Zone)	12/16/2012	63	0	0	$0.00	$0.00
South Coast (Zone)	12/19/2012	53	0	0	$0.00	$0.00

Location	Date	Mag	Dth	Inj	PrD	CrD
South Coast (Zone)	3/19/2013	52	0	0	$0.00	$0.00
Southwest Interior (Zone)	3/20/2013	73	0	0	$0.00	$0.00
South Coast (Zone)	3/20/2013	50	0	0	$0.00	$0.00
Southwest Interior (Zone)	3/20/2013	70	0	0	$0.00	$0.00
South Coast (Zone)	3/20/2013	51	0	0	$0.00	$0.00
South Coast (Zone)	11/7/2013	50	0	0	$0.00	$0.00
Southwest Interior (Zone)	11/7/2013	50	0	0	$0.00	$0.00
South Coast (Zone)	11/18/2013	50	0	0	$0.00	$0.00
South Coast (Zone)	1/10/2014	69	0	0	$0.00	$0.00
Southwest Interior (Zone)	1/11/2014	56	0	0	$0.00	$0.00
South Coast (Zone)	1/11/2014	57	0	0	$0.00	$0.00
Southwest Interior (Zone)	1/12/2014	56	0	0	$0.00	$0.00
Southwest Interior (Zone)	1/15/2014	75	0	0	$0.00	$0.00
South Coast (Zone)	1/15/2014	61	0	0	$0.00	$0.00
South Coast (Zone)	1/16/2014	62	0	0	$0.00	$0.00
Southwest Interior (Zone)	1/16/2014	74	0	0	$0.00	$0.00
South Coast (Zone)	1/18/2014	50	0	0	$0.00	$0.00
Southwest Interior (Zone)	1/18/2014	51	0	0	$0.00	$0.00
South Coast (Zone)	3/8/2014	63	0	0	$0.00	$0.00
Southwest Interior (Zone)	3/8/2014	57	0	0	$0.00	$0.00
South Coast (Zone)	3/8/2014	55	0	0	$0.00	$0.00
South Coast (Zone)	10/29/2014	65	0	0	$0.00	$0.00
Southwest Interior (Zone)	10/29/2014	54	0	0	$0.00	$0.00
Southwest Interior (Zone)	11/11/2014	54	0	0	$0.00	$0.00
South Coast (Zone)	11/11/2014	57	0	0	$0.00	$0.00
South Coast (Zone)	1/17/2015	58	0	0	$0.00	$0.00
Southwest Interior (Zone)	1/18/2015	59	0	0	$0.00	$0.00
South Coast (Zone)	2/5/2015	54	0	0	$0.00	$0.00
South Coast (Zone)	2/6/2015	56	0	0	$0.00	$0.00
South Coast (Zone)	2/7/2015	56	0	0	$0.00	$0.00
		Totals:	0	0	$10,466,500	$0.00

*The data are from the NOAA NCDC Storm Events Database.

Table 73 – Winter Storm Records, Pacific County, Washington

12 Winter Storm Event(s) were reported in Pacific County, Washington between 11/13/2001 and 12/31/2014

Mag: Magnitude (No Indices) Dth: Deaths Inj: Injuries
PrD: Property Damage (US Dollars) CrD: Crop Damage (US Dollars)

Location	Date	Mag	Dth	Inj	PrD	CrD
South Coast (Zone)	11/13/2001	-	0	0	$0	$0
W Pacific (Zone)	1/8/2003	-	0	0	$0	$0
W Pacific (Zone)	11/17/2003		0	0	$0	$0
E Pacific/W Lewis/W Wahkiakum (Zone)	11/17/2006	-	0	0	$0	$0
Southwest Interior (Zone)	1/8/2014		0	0	$0	$0
South Coast (Zone)	1/8/2014		0	0	$0	$0
Southwest Interior (Zone)	3/8/2014		0	0	$0	$0
South Coast (Zone)	3/8/2014	-	0	0	$0	$0
Southwest Interior (Zone)	12/12/2014		0	0	$0	$0
Southwest Interior (Zone)	12/30/2014		0	0	$691,000	$0
South Coast (Zone)	12/30/2014	-	0	0	$179,000	$0
Southwest Interior (Zone)	12/31/2014	-	0	0	$0	$0
		Totals:	0	0	$859,000	$0

*The data are from the NOAA NCDC Storm Events Database.

Appendix F – Mitigation Projects

#1 – Alert, Broadcast, & Warning Systems Upgrade

Description	The jurisdictions will continue to improve their alert, broadcast, and warning systems to give information and instructions in the face of an impending hazard impact to prevent injury and property damage. These systems will allow citizens to better protect themselves in the event of an impending or potential a impending hazard. Additionally, hazard or weather specific information can be delivered to assist in achieving the previously stated goal.		
Hazard/s Addressed	Earthquakes, Floods (Coastal, Flash, Riverine), Hazardous Materials, Landslides, Severe Storms, Tsunamis, Winter Storms		
Status	On-going & Proposed	**Infrastructure Emphasis**	New & Existing
Funding Source/s	HMGP, FDM, Local Budgets	**Cost Estimate**	$50,000 - $200,000
Lead Department/s	PCEMA, Fire Districts, Municipal Governments, Port Authorities, School Boards, Transit Authority, Utility Boards	**Effectiveness**	Medium
Jurisdictional Priority (Lead Department)			
Pacific County	High (PCEMA)	Ocean Beach Hospital	High
Ilwaco	High (PCEMA)	Willapa Harbor Hospital	Medium
Long Beach	High (PCEMA)	Fire District #1	High
Raymond	High (PCEMA)	Fire District #2	High
South Bend	High (PCEMA)	Fire District #3	High
Naselle/Grays River SD	Medium	Fire District #5	High
Ocean Beach SD	High	Fire District #6	High
South Bend SD	High	Pacific Transit	N/A
Willapa Valley SD	Medium	Port of Chinook	High
Naselle Water Company	N/A	Port of Ilwaco	High
North Beach Water District	N/A	Port of Peninsula	High
Surfside Homeowners' Assn.	N/A	Port of Willapa Harbor	High
Willapa Valley Water District	N/A	Public Utility District #2	N/A

#2 – Artificial Reefs

Description	Artificial reefs constructed in strategic locations will curtail coastal erosion by decreasing the amount of tidal and wave forces on a shoreline.		
Hazard/s Addressed	Coastal Erosion		
Status	On-going & Proposed	**Infrastructure Emphasis**	New & Existing
Funding Source/s	HMGP, FDM, Local Budgets, SEA	**Cost Estimate**	$50,000 - $250,000
Lead Department/s	PCEMA, Municipal Governments	**Effectiveness**	Low
Jurisdictional Priority (Lead Department)			
Pacific County	Low (Public Works)	Ocean Beach Hospital	N/A
Ilwaco	N/A	Willapa Harbor Hospital	N/A
Long Beach	Low (Public Works)	Fire District #1	N/A
Raymond	N/A	Fire District #2	N/A
South Bend	N/A	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	N/A
Ocean Beach SD	N/A	Fire District #6	N/A
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Ilwaco	N/A
North Beach Water District	N/A	Port of Peninsula	N/A
Surfside Homeowners' Assn.	Low	Port of Willapa Harbor	N/A
Willapa Valley Water District	N/A	Public Utility District #2	N/A

PCEMA

#3 – Backup Generators

Description	Backup generators provide critical facilities electricity in the event a community's electrical transmission grid is either damaged by earthquakes, severe storms, tornadoes, or will be shut off or overloaded by excessive use during an extreme heat or a winter storm.		
Hazard/s Addressed	Earthquakes, Floods (Coastal, Flash, Riverine), Hazardous Materials, Landslides, Severe Storms, Tsunamis, Winter Storms		
Status	Ongoing & Proposed	**Infrastructure Employed**	Existing
Funding Source/s	HMGP, FEMA, Local Budgets	**Cost Estimate**	$25,000 - $50,000
Lead Department/s	PCEMA, Fire Districts, Municipal Governments, Port Authorities, School Boards, Water/Irrigation Utility Boards	**Effectiveness**	Medium

Jurisdictional Priority (Lead Department)			
Pacific County	High (Public Works)	Ocean Beach Hospital	High
Ilwaco	High (Public Works)	Willapa Harbor Hospital	Medium
Long Beach	High (Public Works)	Fire District #1	High
Raymond	High (Public Works)	Fire District #2	High
South Bend	High (Public Works)	Fire District #4	High
Naselle/Grays River SD	Medium	Fire District #5	High
Ocean Beach SD	High	Fire District #6	High
South Bend SD	High	Pacific Transit	High
Willapa Valley SD	Medium	Port of Chinook	High
Naselle Water Company	Medium	Port of Ilwaco	High
North Beach Water District	High	Port of Raymond	High
Willapa Valley Water District	Medium	Port of Willapa Harbor	High
Surfside Homeowners' Assn.	High	Public Utility District #2	High

#4 – Bionets

Description	Bionets are a biologic medium that prevent the erosion of chemically treated hazards. The containment of contaminants on the exposed ground surface reduces the impact of heavy rain and rust.		
Hazard/s Addressed	Landfills		
Status	Proposed	**Infrastructure Employed**	Existing
Funding Source/s	HMGP, FEMA, Local Budgets	**Cost Estimate**	$10,000 - $25,000
Lead Department/s	PCEMA, Municipal Governments	**Effectiveness**	High

Jurisdictional Priority (Lead Department)			
Pacific County	Low (Public Works)	Ocean Beach Hospital	N/A
Ilwaco	N/A	Willapa Harbor Hospital	N/A
Long Beach	N/A	Fire District #1	N/A
Raymond	N/A	Fire District #2	N/A
South Bend	N/A	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	N/A
Ocean Beach SD	N/A	Fire District #6	N/A
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Ilwaco	N/A
North Beach Water District	N/A	Port of Raymond	N/A
Willapa Valley Water District	N/A	Port of Willapa Harbor	N/A
Surfside Homeowners' Assn.	N/A	Public Utility District #2	N/A

#5 – Bury Utility Lines, Pipes, & Tanks

Description	Transferring existing utilities lines, pipes, and chemical storage tanks from above ground to below ground will significantly reduce the amount of property damage incurred from wind, ice, and snow related events.		
Hazard/s Addressed	Severe Storms, Winter Storms		
Status	Ongoing & Proposed	**Infrastructure Emphasis**	Existing
Funding Source/s	HMGP, FEMA, Local Budgets	**Cost Estimate**	$10,000 - $50,000
Lead Department/s	PCEMA, Fire Districts, Municipal Governments, Port Authorities, School Boards, Irrig. Authorities, Utility Boards	**Effectiveness**	Medium
Jurisdictional Priority (Lead Department)			
Pacific County	Medium (Public Works)	Ocean Beach Hospital	Medium
Ilwaco	Medium (Public Works)	Willapa Harbor Hospital	Medium
Long Beach	Medium (Public Works)	Fire District #1	Medium
Raymond	Medium (Public Works)	Fire District #2	Medium
South Bend	Medium (Public Works)	Fire District #4	Medium
Naselle/Grays River SD	Medium	Fire District #5	Medium
Ocean Beach SD	Medium	Fire District #6	Medium
South Bend SD	Medium	Pacific Transit	Medium
Willapa Valley SD	Medium	Port of Chinook	Medium
Naselle Water Company	Medium	Port of Ilwaco	Medium
North Beach Water District	Medium	Port of Peninsula	Medium
Willapa Valley Water District	Medium	Port of Willapa Harbor	Medium
Surfside Homeowners' Assn.	Medium	Public Utility District #2	Medium

#6 – Coastal Erosion Mapping

Description	The shoreline changes in the Long Beach Peninsula and the Bay Center area Willapa Bay must be mapped to accurately assess the full extent of their coastal erosion.		
Hazard/s Addressed	Coastal Erosion		
Status	Proposed	**Infrastructure Emphasis**	New & Existing
Funding Source/s	Local Budgets	**Cost Estimate**	$5,000 - $10,000
Lead Department/s	Municipal Public Works	**Effectiveness**	Low
Jurisdictional Priority (Lead Department)			
Pacific County	Low (Public Works)	Ocean Beach Hospital	N/A
Ilwaco	N/A	Willapa Harbor Hospital	N/A
Long Beach	Low (Public Works)	Fire District #1	N/A
Raymond	N/A	Fire District #2	N/A
South Bend	N/A	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	N/A
Ocean Beach SD	N/A	Fire District #6	N/A
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Ilwaco	N/A
North Beach Water District	N/A	Port of Peninsula	N/A
Willapa Valley Water District	N/A	Port of Willapa Harbor	N/A
Surfside Homeowners' Assn.	Low	Public Utility District #2	N/A

#7 – Earthquake Assessment & Retrofit

Description	An earthquake vulnerability assessment will detail a jurisdiction's high risk facilities, infrastructure, and make retrofit recommendations. Using the assessment, a jurisdiction can retrofit their facilities and infrastructure there by reducing their structural vulnerabilities to seismic events.		
Hazard/s Addressed	Earthquakes		
Status	Proposed	**Infrastructure Emphasis**	Existing
Funding Source/s	HMGP, PDM, Local Budgets	**Cost Estimate**	$25,000 - $250,000
Lead Department/s	PCEMA, Fire Districts, Municipal Governments, Port Authorities, School Boards, Transit Authority, Utility Boards	**Effectiveness**	High
Jurisdictional Priority (Lead Department)			
Pacific County	Medium (Public Works)	Ocean Beach Hospital	Medium
Tacoma	Medium (Public Works)	Willapa Harbor Hospital	Medium
Long Beach	Medium (Public Works)	Fire District #1	Medium
Raymond	Medium (Public Works)	Fire District #2	Medium
South Bend	Medium (Public Works)	Fire District #4	Medium
Naselle/Grays River SD	Medium	Fire District #5	Medium
Ocean Beach SD	Medium	Fire District #6	Medium
South Bend SD	Medium	Pacific Transit	Medium
Willapa Valley SD	Medium	Port of Chinook	Medium
Naselle Water Company	Medium	Port of Ilwaco	Medium
North Beach Water District	Medium	Port of Peninsula	Medium
Willapa Valley Water District	Medium	Port of Willapa Harbor	Medium
Surfside Homeowners' Assn.	Medium	Public Utility District #2	Medium

#8 – Elevate Structures

Description	Structures located within identified flood and tsunami zones can be elevated above base flood elevation or predicted tsunami inundation levels.		
Hazard/s Addressed	Floods (Coastal, Riverine), Tsunamis		
Status	Proposed	**Infrastructure Emphasis**	New
Funding Source/s	Floodplain Management Grants, HMGP, PDM, Local Budgets, Stormwater Grants	**Cost Estimate**	$50,000 - $100,000
Lead Department/s	PCEMA, Municipal Governments, Port Authorities, School Boards	**Effectiveness**	High
Jurisdictional Priority (Lead Department)			
Pacific County	High (Public Works)	Ocean Beach Hospital	Medium
Tacoma	High (Public Works)	Willapa Harbor Hospital	N/A
Long Beach	High (Public Works)	Fire District #1	Medium
Raymond	Medium (Public Works)	Fire District #2	Medium
South Bend	Medium (Public Works)	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	Medium
Ocean Beach SD	Medium	Fire District #6	N/A
South Bend SD	Medium	Pacific Transit	Medium
Willapa Valley SD	N/A	Port of Chinook	High
Naselle Water Company	N/A	Port of Ilwaco	High
North Beach Water District	Medium	Port of Peninsula	Medium
Willapa Valley Water District	N/A	Port of Willapa Harbor	High
Surfside Homeowners' Assn.	High	Public Utility District #2	N/A

#9 – Greenbelts

Description	Strips or layers of native vegetation along shorelines act as a buffer between development and water. They help reduce solids chemicals in the water reducing erosion as well as providing a stable root structure that also serves to slow down erosive forces.		
Hazard/s Addressed	Coastal Erosion		
Status	Proposed	**Infrastructure Emphasis**	Existing
Funding Source/s	HMGP, FEMA, Local Budgets, SCA	**Cost Estimate**	$25,000 - $75,000
Lead Department/s	PCEMA, Municipal Governments	**Effectiveness**	Low
Jurisdictional Priority (Lead Department)			
Pacific County	Low (Public Works)	Ocean Beach Hospital	N/A
Tavaco	N/A	Willapa Harbor Hospital	N/A
Long Beach	Low (Public Works)	Fire District #1	N/A
Raymond	N/A	Fire District #2	N/A
South Bend	N/A	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	N/A
Ocean Beach SD	N/A	Fire District #6	N/A
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Tavaco	N/A
North Beach Water District	N/A	Port of Peninsula	N/A
Willapa Valley Water District	N/A	Port of Willapa Harbor	N/A
Surfside Homeowners' Assn.	Low	Public Utility District #2	N/A

#10 – Hazardous Materials and Waste Management Plan

Description	Developing hazardous materials and waste management plan catalogs and documents hazardous materials locations, response procedures, and cleanup activities.		
Hazard/s Addressed	Hazardous Materials		
Status	Proposed	**Infrastructure Emphasis**	New & Existing
Funding Source/s	CPG, HMEP, Local Budgets	**Cost Estimate**	$10,000 - $30,000
Lead Department/s	PCEMA, Fire Districts	**Effectiveness**	Medium
Jurisdictional Priority (Lead Department)			
Pacific County	Low (PCEMA-Fire Districts)	Ocean Beach Hospital	N/A
Tavaco	Low (PCEMA-Fire Districts)	Willapa Harbor Hospital	N/A
Long Beach	Low (PCEMA-Fire Districts)	Fire District #1	Low
Raymond	Low (PCEMA-Fire Districts)	Fire District #2	Low
South Bend	Low (PCEMA-Fire Districts)	Fire District #4	Low
Naselle/Grays River SD	N/A	Fire District #5	Low
Ocean Beach SD	N/A	Fire District #6	Low
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Tavaco	N/A
North Beach Water District	N/A	Port of Peninsula	N/A
Willapa Valley Water District	N/A	Port of Willapa Harbor	N/A
Surfside Homeowners' Assn.	N/A	Public Utility District #2	N/A

#11 – HAZMAT Site Assessment & Cleanup

Description	Hazardous materials site assessment allows for the prioritization of these locations leading to the eventual cleanup of brownfield locations and other hazardous sites.		
Hazard/s Addressed	Hazardous Materials		
Status	Proposed	**Infrastructure Emphasis**	New & Existing
Funding Source/s	CPG, HMEP, Local Budgets, FPG	**Cost Estimate**	$25,000 - $100,000
Lead Department/s	PCEMA, Fire Districts	**Effectiveness**	High
Jurisdictional Priority (Lead Department)			
Pacific County	Low (PCEMA-Fire Districts)	Ocean Beach Hospital	N/A
Ilwaco	Low (PCEMA-Fire Districts)	Willapa Harbor Hospital	N/A
Long Beach	Low (PCEMA-Fire Districts)	Fire District #1	Low
Raymond	Low (PCEMA-Fire Districts)	Fire District #2	Low
South Bend	Low (PCEMA-Fire Districts)	Fire District #4	Low
Naselle/Grays River SD	N/A	Fire District #5	Low
Ocean Beach SD	N/A	Fire District #6	Low
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Ilwaco	N/A
North Beach Water District	N/A	Port of Peninsula	N/A
Willapa Valley Water District	N/A	Port of Willapa Harbor	N/A
Surfside Homeowners' Assn.	N/A	Public Utility District #2	N/A

#12 – Insulation & Energy Efficiency Upgrade

Description	Upgrading a facility's windows, windows, frames, roofing, and insulation will allow it to better maintain a desired warm or cool temperature during prolonged extreme heat or winter storms. Additionally, it decreases the energy load necessary to do so, decreasing the burden on the local energy grid.		
Hazard/s Addressed	Winter Storms		
Status	Proposed	**Infrastructure Emphasis**	Existing
Funding Source/s	HMGP, FDM, Local Budgets	**Cost Estimate**	$10,000 - $50,000
Lead Department/s	PCEMA, Fire Districts, Municipal Governments, Port Authorities, School Boards, Transit Authority, Utility Boards	**Effectiveness**	Medium
Jurisdictional Priority (Lead Department)			
Pacific County	Low (Public Works)	Ocean Beach Hospital	Low
Ilwaco	Low (Public Works)	Willapa Harbor Hospital	Low
Long Beach	Low (Public Works)	Fire District #1	Low
Raymond	Low (Public Works)	Fire District #2	Low
South Bend	Low (Public Works)	Fire District #4	Low
Naselle/Grays River SD	Medium	Fire District #5	Low
Ocean Beach SD	Low	Fire District #6	Low
South Bend SD	Low	Pacific Transit	Low
Willapa Valley SD	Low	Port of Chinook	Low
Naselle Water Company	Low	Port of Ilwaco	Low
North Beach Water District	Low	Port of Peninsula	Low
Willapa Valley Water District	Low	Port of Willapa Harbor	Low
Surfside Homeowners' Assn.	Low	Public Utility District #2	Low

PCEMA

#13 – Interior Furnishing Hazard Reduction

Description	Retrofitting, removing, or modifying movable furnishing or equipment to prevent shifting, becoming unstable, or falling loose into people and/or objects during earthquakes.		
Hazard/s Addressed	Earthquakes		
Status	On-Going & Proposed	**Infrastructure Emphasis**	New & Existing
Funding Source/s	HMGP, FEMA, Local Budgets	**Cost Estimate**	$25,000 - $100,000
Lead Department/s	PCEMA, Fire Districts, Municipal Governments, Port Authorities, School Districts, Transit Authority, Utility Districts	**Effectiveness**	Medium

Jurisdictional Priority (Lead Department)			
Pacific County	Low (Public Works)	Ocean Beach Hospital	Low
Ilwaco	Low (Public Works)	Willapa Harbor Hospital	Low
Long Beach	Low (Public Works)	Fire District 11	Low
Raymond	Low (Public Works)	Fire District 13	Low
South Bend	Low (Public Works)	Fire District #1	Low
Naselle/Grays River SD	Low	Fire District #5	Low
Ocean Beach SD	Low	Fire District #7	Low
South Bend SD	Low	Pacific Transit	Low
Willapa Valley SD	Low	Port of Chinook	Low
Naselle Water Company	Low	Port of Ilwaco	Low
North Beach Water District	Low	Port of Peninsula	Low
Willapa Valley Water District	Low	Port of Willapa Harbor	Low
Surfside Homeowners' Assn.	Low	Public Utility District #2	Low

#14 – Jetties/Seawalls

Description	The careful planned construction of jetties and seawalls can dramatically reduce the vulnerability of coastal areas and prevent coastal and riverine flooding. Special care and planning must be considered and not increase the effects of coastal erosion on adjacent lands.		
Hazard/s Addressed	Coastal Erosion, Flooding (Coastal, Riverine)		
Status	Proposed	**Infrastructure Emphasis**	New & Existing
Funding Source/s	HMGP, FEMA, Local Budgets, NFP	**Cost Estimate**	$100,000 - $500,000
Lead Department/s	PCEMA, Municipal Governments, Port Authorities	**Effectiveness**	High

Jurisdictional Priority (Lead Department)			
Pacific County	High (Public Works)	Ocean Beach Hospital	N/A
Ilwaco	Medium (Public Works)	Willapa Harbor Hospital	N/A
Long Beach	Medium (Public Works)	Fire District 11	N/A
Raymond	Medium (Public Works)	Fire District 13	N/A
South Bend	Medium (Public Works)	Fire District #1	N/A
Naselle/Grays River SD	N/A	Fire District #5	N/A
Ocean Beach SD	N/A	Fire District #7	N/A
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	Medium
Naselle Water Company	N/A	Port of Ilwaco	Medium
North Beach Water District	N/A	Port of Peninsula	Medium
Willapa Valley Water District	N/A	Port of Willapa Harbor	Medium
Surfside Homeowners' Assn.	High	Public Utility District #2	N/A

#15 – Landslide Damage Repair

Description	The planning area has a number of locations that have been damaged by past landslides that require external funding for expected repair. These locations are important the economic and transportation systems of the planning area. Identified Project Locations: • Parvola Road • Upper Natelle Road • Smith Creek Road.		
Hazard/s Addressed	Landslides		
Status	On-going & Proposed	**Infrastructure Emphasis**	Existing
Funding Source/s	FMA	**Cost Estimate**	$200,000
Lead Department/s	PCEMA, Municipal Governments, Transit Authority	**Effectiveness**	Medium
Jurisdictional Priority (Lead Department)			
Pacific County	Low (Public Works)	Ocean Beach Hospital	N/A
Ilwaco	N/A	Willapa Harbor Hospital	N/A
Long Beach	N/A	Fire District #1	N/A
Raymond	N/A	Fire District #2	N/A
South Bend	N/A	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	N/A
Ocean Beach SD	N/A	Fire District #6	N/A
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Ilwaco	N/A
North Beach Water District	N/A	Port of Peninsula	N/A
Willapa Valley Water District	N/A	Port of Willapa Harbor	N/A
Surfside Homeowners' Assn.	N/A	Public Utility District #2	N/A

#16 – Looped Grid Power Systems

Description	Linear power grids have single points of failure that are vulnerable to a number of hazards. Looped power grids operate in parallel and are thus significantly more resistant to damage allowing the utilities to maintain power after an event.		
Hazard/s Addressed	Earthquakes, Floods (Coastal, Flash, Riverine), Hazardous Materials, Landslides, Severe Storms, Tsunami's, Winter Storms		
Status	Proposed	**Infrastructure Emphasis**	New & Existing
Funding Source/s	HMGP, FDM, Local Budgets	**Cost Estimate**	$10,000 - $100,000
Lead Department/s	Utility District	**Effectiveness**	Medium
Jurisdictional Priority (Lead Department)			
Pacific County	High (Public Works)	Ocean Beach Hospital	N/A
Ilwaco	High (Public Works)	Willapa Harbor Hospital	N/A
Long Beach	High (Public Works)	Fire District #1	N/A
Raymond	High (Public Works)	Fire District #2	N/A
South Bend	High (Public Works)	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	N/A
Ocean Beach SD	N/A	Fire District #6	N/A
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Ilwaco	N/A
North Beach Water District	N/A	Port of Peninsula	N/A
Willapa Valley Water District	N/A	Port of Willapa Harbor	N/A
Surfside Homeowners' Assn.	N/A	Public Utility District #2	High

PCEMA

#17 – Tsunami Shelters (Project Safe Haven)

Description	These elevated structures are engineered to specifically to force a tsunami waves around the structure keeping those on or within the structure safe from its devastating forces. Built in strategic locations with an appropriate warning system in place can protect hundreds or thousands of citizens in one planning area. Identified Project Locations: • 25 Potential Shelter Sites, Referenced in: Project Safe Haven		
Hazard/s Addressed	Floods (Coastal), Tsunamis		
Status	Proposed	**Infrastructure Emphasis**	New & Existing
Funding Source/s	HMGP, FEMA, Local Budgets	**Cost Estimate**	$25,000 - $75,000
Lead Department/s	PCEMA, Municipal Governments, Port Authorities	**Effectiveness**	High
Jurisdictional Priority (Lead Department)			
Pacific County	High (PCEMA)	Ocean Beach Hospital	Medium
Ilwaco	Medium (PCEMA)	Willapa Harbor Hospital	N/A
Long Beach	High (PCEMA)	Fire District #1	Medium
Raymond	Medium (PCEMA)	Fire District #2	Medium
South Bend	Medium (PCEMA)	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	Medium
Ocean Beach SD	Medium	Fire District #6	N/A
South Bend SD	Medium	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	Medium
Naselle Water Company	N/A	Port of Ilwaco	Medium
North Beach Water District	High	Port of Peninsula	Low
Willapa Valley Water District	N/A	Port of Willapa Harbor	Medium
Surfside Homeowners' Assn.	High	Public Utility District #2	N/A

#18 – Property Buyout

Description	Properties at immediate risk to being washed away by the Pacific Ocean or repeated flood damage can be purchased to relocate at-risk citizens and prevent the fallout of losing an occupied home. Identified Project Areas: • North Cove Area (Washaway Beach) • Residential Cluster (302 Pacific St., Raymond, WA 98577)		
Hazard/s Addressed	Coastal Erosion, Coastal Flooding, Riverine Flooding		
Status	Proposed	**Infrastructure Emphasis**	New & Existing
Funding Source/s	HMGP, FEMA, Local Budgets	**Cost Estimate**	$25,000 - $500,000
Lead Department/s	PCEMA, Municipal Governments	**Effectiveness**	Low
Jurisdictional Priority (Lead Department)			
Pacific County	Medium (PCEMA)	Ocean Beach Hospital	N/A
Ilwaco	Low (Administrative Office)	Willapa Harbor Hospital	N/A
Long Beach	Low (Administrative Office)	Fire District #1	N/A
Raymond	Low (Administrative Office)	Fire District #2	N/A
South Bend	Low (Administrative Office)	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	N/A
Ocean Beach SD	N/A	Fire District #6	N/A
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Ilwaco	N/A
North Beach Water District	N/A	Port of Peninsula	N/A
Willapa Valley Water District	N/A	Port of Willapa Harbor	N/A
Surfside Homeowners' Assn.	N/A	Public Utility District #2	N/A

#19 – Public Awareness & Education			
Description	A campaign to inform and educate the public on hazard risks, allowing them to better protect their property through preparation and their lives through warnings and evacuation and shelter procedures		
Hazard/s Addressed	Coastal Erosion, Earthquakes, Flooding (Coastal, Flash, Riverine), Hazardous Materials, Landslides, Severe Storms, Tsunamis, Winter Storms		
Status	Proposed	**Infrastructure Emphasis**	Area & Building
Funding Source/s	HMGP, PDM, Local Budgets	**Cost Estimate**	$25,000 - $50,000
Lead Department/s	PCEMA, Fire Districts, Municipal Governments	**Effectiveness**	Medium
Jurisdictional Priority (Lead Department)			
Pacific County	High (PCEMA)	Ocean Beach Hospital	High
Ilwaco	High (PCEMA)	Willapa Harbor Hospital	Medium
Long Beach	High (PCEMA)	Fire District #1	High
Raymond	High (PCEMA)	Fire District #2	High
South Bend	High (PCEMA)	Fire District #4	High
Naselle/Grays River SD	High	Fire District #5	High
Ocean Beach SD	High	Fire District #7	High
South Bend SD	High	Pacific Transit	High
Willapa Valley SD	High	Port of Chinook	High
Naselle Water Company	High	Port of Ilwaco	High
North Beach Water District	High	Port of Peninsula	High
Willapa Valley Water District	High	Port of Willapa Harbor	High
Surfside Homeowners' Assn.	High	Public Utility District #2	High

#20 – Reinforce Jetties/Seawalls			
Description	Over time, jetties and seawalls will degrade from coastal erosion and storm surge forces from weather in the Pacific Ocean. Reinforcing these, and other engineering measures will ensure the preservation by. Identified Project Locations • Chinook Pier Road • Stringtown Road • Lake Road Road		
Hazard/s Addressed	Coastal Erosion, Flooding (Coastal, Riverine)		
Status	Proposed	**Infrastructure Emphasis**	Existing
Funding Source/s	HMGP, PDM, Local Budgets, SRF	**Cost Estimate**	$5,000 - $50,000
Lead Department/s	PCEMA, Municipal Governments, Port Authorities, Transit Authority	**Effectiveness**	Medium
Jurisdictional Priority (Lead Department)			
Pacific County	Medium (Public Works)	Ocean Beach Hospital	N/A
Ilwaco	N/A	Willapa Harbor Hospital	N/A
Long Beach	N/A	Fire District #1	N/A
Raymond	N/A	Fire District #2	N/A
South Bend	N/A	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	N/A
Ocean Beach SD	N/A	Fire District #7	N/A
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	Low
Naselle Water Company	N/A	Port of Ilwaco	Low
North Beach Water District	N/A	Port of Peninsula	Low
Willapa Valley Water District	N/A	Port of Willapa Harbor	Low
Surfside Homeowners' Assn.	N/A	Public Utility District #2	N/A

#21 – Relocate Vulnerable Structures

Description	Some structures may be able to be relocated from identified coastal erosion or coastal flood zones. Removing them from identified hazard area will eliminate their risk.		
Hazard/s Addressed	Coastal Erosion, Floods (Coastal)		
Status	Proposed	**Infrastructure Emphasis**	Existing
Funding Source/s	HMGP, FDM, Local Budgets, SBA	**Cost Estimate**	$5,000 - $50,000
Lead Department/s	PCEMA, Municipal Governments	**Effectiveness**	Medium
Jurisdictional Priority (Lead Department)			
Pacific County	Medium (PCEMA)	Ocean Beach Hospital	N/A
Tavaco	N/A	Willapa Harbor Hospital	N/A
Long Beach	Medium (Administrative Office)	Fire District #1	N/A
Raymond	N/A	Fire District #2	N/A
South Bend	N/A	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	Medium
Ocean Beach SD	N/A	Fire District #6	N/A
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Tavaco	N/A
North Beach Water District	N/A	Port of Peninsula	N/A
Willapa Valley Water District	N/A	Port of Willapa Harbor	N/A
Surfside Homeowners' Assn.	Medium	Public Utility District #2	N/A

#22 – Slope Reinforcement & Modification

Description	Identified hazard areas considered to be high risk will be the subject of slope modification measures. These measures will vary depending on location specifics, but could include slope modification, earth removal, or retaining wall installation.		
Hazard/s Addressed	Landslides		
Status	Proposed	**Infrastructure Emphasis**	New & Existing
Funding Source/s	HMGP, FDM, Local Budgets	**Cost Estimate**	$5,000 - $50,000
Lead Department/s	PCEMA, Transit Authority	**Effectiveness**	Medium
Jurisdictional Priority (Lead Department)			
Pacific County	Low (Public Works)	Ocean Beach Hospital	N/A
Tavaco	N/A	Willapa Harbor Hospital	N/A
Long Beach	N/A	Fire District #1	N/A
Raymond	N/A	Fire District #2	N/A
South Bend	N/A	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	N/A
Ocean Beach SD	N/A	Fire District #6	N/A
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Tavaco	N/A
North Beach Water District	N/A	Port of Peninsula	N/A
Willapa Valley Water District	N/A	Port of Willapa Harbor	N/A
Surfside Homeowners' Assn.	N/A	Public Utility District #2	N/A

#23 – Stormwater Drainage System Upgrade

Description	Stormwater flood drainage in developed areas which can be improved by upgrading the storm water collection system. This will [illegible]
Hazard/s Addressed	Flood (General, Flash, Riverine)		
Status	Proposed	**Infrastructure Employed**	New & Existing
Funding Source/s	HMGP, FEMA, Local Budgets, Stormwater Grants	**Cost Estimate**	$50,000 - $50,000
Lead Department/s	PCEMA, Municipal Governments	**Effectiveness**	Medium
Jurisdictional Priority (Lead Department)			
Pacific County	Medium (Public Works)	Ocean Beach Hospital	N/A
Ilwaco	Medium (Public Works)	Willapa Harbor Hospital	N/A
Long Beach	Medium (Public Works)	Fire District #1	N/A
Raymond	Medium (Public Works)	Fire District #2	N/A
South Bend	Medium (Public Works)	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	N/A
Ocean Beach SD	N/A	Fire District #6	N/A
South Bend SD	N/A	Pacific Transit	N/A
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Ilwaco	N/A
North Beach Water District	N/A	Port of Peninsula	N/A
Willapa Valley Water District	N/A	Port of Willapa Harbor	N/A
Surfside Homeowners' Assn.	N/A	Public Utility District #2	N/A

#24 – Transportation Routing System

Description	Routing a transportation routing system will allow a community to effectively mitigate the effects of multiple hazards on transporting population. Routing can be gold and [illegible] transportation systems according to their [illegible] whether it is avoid severe weather, flooding, landslides, or [illegible] by having alternate routes, or routes, and thus the location of [illegible] a community security should [illegible] among [illegible] a comprehensive view.
Hazard/s Addressed	Earthquake, Flood (General, Flash, Riverine), Hazardous Materials, Landslides, Severe Storms, Tsunamis, Winter Storms		
Status	Proposed	**Infrastructure Employed**	New & Existing
Funding Source/s	HMGP, FEMA, Local Budgets	**Cost Estimate**	$50,000 - $300,000
Lead Department/s	PCEMA, Municipal Governments, Transit Authority	**Effectiveness**	Medium
Jurisdictional Priority (Lead Department)			
Pacific County	High (Public Works)	Ocean Beach Hospital	N/A
Ilwaco	High (Public Works)	Willapa Harbor Hospital	N/A
Long Beach	High (Public Works)	Fire District #1	N/A
Raymond	High (Public Works)	Fire District #2	N/A
South Bend	High (Public Works)	Fire District #4	N/A
Naselle/Grays River SD	N/A	Fire District #5	N/A
Ocean Beach SD	N/A	Fire District #6	N/A
South Bend SD	N/A	Pacific Transit	High
Willapa Valley SD	N/A	Port of Chinook	N/A
Naselle Water Company	N/A	Port of Ilwaco	N/A
North Beach Water District	N/A	Port of Peninsula	N/A
Willapa Valley Water District	N/A	Port of Willapa Harbor	N/A
Surfside Homeowners' Assn.	N/A	Public Utility District #2	N/A

PCEMA

#25 – Water Line Insulation

Description	Insulating a facility's water pipes helps prevent them from freezing and bursting due to sudden and prolonged low temperatures during winter storms.		
Hazard/s Addressed	Winter Storms		
Status	Proposed	**Infrastructure Emphasis**	Existing
Funding Source/s	HMGP, FDM, Local Budgets	**Cost Estimate**	$5,000 - $50,000
Lead Department/s	PCEMA, Fire Districts, Municipal Governments, Port Authorities, School Boards, Transit Authority, Utility Boards	**Effectiveness**	Low
Jurisdictional Priority (Lead Department)			
Pacific County	Low (Public Works)	Ocean Beach Hospital	Low
Tweed	Low (Public Works)	Willapa Harbor Hospital	Low
Long Beach	Low (Public Works)	Fire District #1	Low
Raymond	Low (Public Works)	Fire District #2	Low
South Bend	Low (Public Works)	Fire District #4	Low
Naselle/Grays River SD	Low	Fire District #5	Low
Ocean Beach SD	Low	Fire District #6	Low
South Bend SD	Low	Pacific Transit	Low
Willapa Valley SD	Low	Port of Chinook	Low
Naselle Water Company	Low	Port of Tweed	Low
North Beach Water District	Low	Port of Peninsula	Low
Willapa Valley Water District	Low	Port of Willapa Harbor	Low
Surfside Homeowners Assn	Low	Public Utility District #2	Low

Appendix G – Mitigation Project Prioritization Tables

Table 74 – Activity & Project Prioritization – Pacific County

Mitigation Activity or Project	[illegible]	Effectiveness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Flood	Earthquakes	Flood Hazards	Hazardous Materials	Landslides	Riverine Flood	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	10	10	5	5	5	10	15	15	5	94	High
Artificial Feeds	14	0.5	15	-	-	-	-	-	-	-	-	-	21.5	Low
Backup Generators	13	1		10	10	5	5	5	10	15	15	5	93	High
Blowers	14	1.5	-	-	-	-	-	5	-	-	-	-	31.5	Low
Bury Utility Lines, Pipes, & Tanks	14	1								15		5	34	Medium
Coastal Erosion Mapping	14	0.5	15	-	-	-	-	-	-	-	-	-	21.5	Low
Earthquake Assessment & Retrofit	14	1.5			10	-		-		-	-	-	29	Medium
Elevate Structures	13	1.5	-	10	-	-	-	-	10	-	15	-	55.5	High
Greenbelts	12	0.5	15	-	-	-	-	-	-	-	-	-	19.5	Low
Hazardous Materials and Waste Management Plan	15	1					5						20	Low
HAZMAT Site Assessment & Cleanup	14	1.5	-	-	-	-	5	-	-	-	-	-	31.5	Low
Insulation & Energy Efficiency Upgrade	12	1										5	17	Low
Interior Furnishing Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Groynes	11	1.5	15	10					10				67.5	High
Landslide Damage Repair	14	1	-	-	-	-	-	5	-	-	-	-	19	Low
Lowpac Grid Power Systems	12	1	-	10	10	5	5	5	10	15	15	5	92	High
Tsunami Shelters (Project Safe Haven)	14	1.5		10							15		51.5	High
Property Buyout	14	0.5	15	10	-	-	-	-	10	-	-	-	31.5	Medium
Public Awareness & Education	12	1	15	10	10	5	5	5	10	15	15	5	105	High
Reinforce Jetties/Seawalls	15	1	15	10	-	-	-	-	10	-	-	-	50	Medium
Relocate Vulnerable Structures	14	1	15	10									29	Medium
Slope Reinforcement & Modification	14	1	-	-	-	-	-	5	-	-	-	-	19	Low
Stormwater Drainage System Upgrade	14	1	-	10	-	5	-	-	10	-	-	-	29	Medium
Transportation Routing System	12	1		10	10	5	5	5	10	15	15	5	92	High
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

Table 75 – Activity & Project Prioritization – Ilwaco

Mitigation Activity or Project	Cost/Benefit	Timeliness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	5	X	10	15	15	5	79	High
Artificial Reefs	14	0.5	X					-					14	N/A
Backup Generators	13	1	-	X	10	5	5	X	10	15	15	5	78	High
Bluffs	14	1.5						X					14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10								29	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	10	-	15	-	50.5	High
Groundfalls	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	5	-	-	-	-	-	20	Low
HAZMAT Site Assessment & Cleanup	14	1.5					5						21.5	Low
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	X	X	-	-	-	-	10	-	-	-	26	Medium
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	5	X	10	15	15	5	77	High
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	15	-	36.5	Medium
Property Buyout	14	0.5	X						10				19	Low
Public Awareness & Education	12	1	X	X	10	5	5	X	10	15	15	5	77	High
Reinforce Jetties/Seawalls	15	1	X	X	-			-	X				15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	10	-	-	-	29	Medium
Transportation Routing System	12	1	-	X	10	5	5	X	10	15	15	5	77	High
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	10.5	Low

PCEMA

Table 76 – Activity & Project Prioritization – Long Beach

Mitigation Activity or Project	Scoring	Effectiveness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	10	10	5	5	5	5	15	15	5	84	High
Artificial Reefs	14	0.5	5										16.5	Low
Backup Generators	13	1	-	10	10	5	5	5	5	15	15	5	83	High
Dishers	14	1.5	-	-	-	-	-	5	-	-	-	-	14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	5										16.5	Low
Earthquake Assessment & Retrofit	14	1.5	-	-	10	-	-	-	-	-	-	-	29	Medium
Elevate Structures	13	1.5	-	10				-	5	-	15		58	High
Greenbelts	12	0.5	5	-	-	-	-	-	-	-	-	-	16.5	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	5	-	-	-	-	-	20	Low
HAZMAT Site Assessment & Cleanup	14	1.5					5						21.5	Low
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Hazard Reduction	14	1			10								24	Low
Jetties/Seawalls	11	1.5	5	10	-	-	-	-	5	-	-	-	41	Medium
Landslide Damage Repair	14	1						5					14	N/A
Looped Grid Power Systems	12	1	-	10	10	5	5	5	5	15	15	5	82	High
Tsunami Shelters (Project Safe Haven)	14	1.5	-	10	-	-	-	-	-	-	15	-	51.5	High
Property Buyout	14	1.5	5	10					5				24	Low
Public Awareness & Education	12	1	5	10	10	5	5	5	5	15	15	5	87	High
Reinforce Jetties/Seawalls	15	1	5	10	-	-	-	-	5	-	-	-	35	N/A
Relocate Vulnerable Structures	14	1	5	10	-	-	-	-	-	-	-	-	29	Medium
Slope Reinforcement & Mobilization	14	1	-	-	-	-	-	5	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	10	-	5	-	-	5	-	-	-	34	Medium
Transportation Routing System	12	1	-	10	10	5	5	5	5	15	15	5	82	High
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

Table 77 – Activity & Project Prioritization – Raymond

Mitigation Activity or Project	Assessment	Hindsmore Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	5	X	10	15	10	5	74	High
Artificial Reefs	14	0.5	X										18	N/A
Backup Generators	13	1	-	X	10	5	5	X	10	15	10	5	73	High
Blends	14	1.5						X					14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10								29	Low
Elevate Structures	13	1.5	-	X	-	-	-	-	10	-	10	-	43	Medium
Greenbelts	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	5	-	-	-	-	-	20	Low
HMMAT Site Assessment & Cleanup	14	1.5					5						21.5	Low
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	X	X		-	-	-	10	-	-	-	26	Medium
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	5	X	10	15	10	5	72	High
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	10	-	29	Medium
Property Buyout	14	0.5	X	X					10				19	Low
Public Awareness & Education	12	1	X	X	10	5	5	X	10	15	10	5	72	High
Reinforce Jetties/Seawalls	15	1	X	X					X				15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	10	-	-	-	29	Medium
Transportation Routing System	12	1	-	X	10	5	5	X	10	15	10	5	72	High
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	10.5	Low

Table 78 – Activity & Project Prioritization – South Bend

Mitigation Activity or Project	Cost/Benefit	Timeliness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	5	X	10	15	10	5	64	High
Artificial Reefs	14	0.5	X										14	N/A
Backup Generators	13	1	-	X	10	5	5	X	10	15	10	5	63	High
Bluffs	14	1.5						X					14	N/A
Bury Utility Lines, Flows & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10								19	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	10	-	10	-	28	Medium
Greenbelts	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	5	-	-	-	-	-	20	Low
HAZMAT Site Assessment & Cleanup	14	1.5					5						21.5	Low
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing, Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	X	X	-	-		-	10			-	26	Medium
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	5	X	10	15	10	5	62	High
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	10	-	29	Medium
Property Buyout	14	0.5	X	X					10				19	Low
Public Awareness & Education	12	1	X	X	10	5	5	X	10	15	10	5	62	High
Reinforce Jetties/Seawalls	15	1	X	X					10				15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	10	-	-	-	19	Low
Transportation Routing System	12	1	-	X	10	5	5	X	10	15	10	5	62	High
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

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Table 79 – Activity & Project Prioritization – Naselle/Grays River School District

Mitigation Activity or Project	[illegible]	Effectiveness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning System Upgrade	14	1	-	X	10	5	X	X	X	15	X	5	70	Medium
Artificial Reefs	14	0.5	X										14	N/A
Backup Generators	14	1	-	X	10	5	X	X	X	15	X	5	70	Medium
Berms	14	1.5						X					14	N/A
Bury Utility Lines, Flow, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10				-				24	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	X	-	X	-	13	N/A
Gravel Pits	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	15	N/A
HAZMAT Site Assessment & Clean-up	14	1.5					X						14	N/A
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Medium*
Invasive Plant Control, Island Restoration	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Groins	11	1.5	X	X			-	-	X			-	11	N/A
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Liquid Fuel Power Systems	12	1		X	10	5	X	X	X	15	X	5	47	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	X	-	14	N/A
Property Buyout	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	X	15	X	5	47	Medium
Purchase Wetlands	15	1	X	X					X				15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Stabilization	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	X	-	-	-	19	N/A
Transportation Routing System	12	1	-	X	10	5	X	X	X	15	X	5	47	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

*This Mitigation Activity Was Scheduled Or Has Begun Or Is Ongoing

Table 80 – Activity & Project Prioritization – Ocean Beach School District

Mitigation Activity or Project	Score	Hindrance Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	X	X	X	15	15	5	64	High
Artificial Reefs	14	0.5	X										14	N/A
Backup Generators	13	1	-	X	10	5	X	X	X	15	15	5	63	High
Bluffs	14	1.5						X					14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10								29	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	X	-	15	-	35.5	Medium
Groundbelts	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	15	N/A
HERMAT Site Assessment & Cleanup	14	1.5					X						14	N/A
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	X	X			-	-	X	-		-	11	N/A
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	X	X	X	15	15	5	62	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	15	-	35.5	Medium
Property Buyout	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	X	15	15	5	62	High
Reinforce Jetties/Seawalls	15	1	X	X					X				15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Mitigation	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	X	-	-	-	19	N/A
Transportation Routing System	12	1	-	X	10	5	X	X	X	15	15	5	62	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

Table 81 – Activity & Project Prioritization – South Bend School District

Mitigation Activity or Project	[illegible]	[illegible] Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning System Upgrade	14	3	-	X	10	5	X	X	X	15	15	5	64	High
Artificial Reefs	14	0.5	X	-									14	N/A
Backup Generators	13	1	-	X	10	5	X	X	X	15	15	7	67	High
Berms	14	0.5						X					14	N/A
Bury Utility Lines, Pipes, & Tanks	14	2	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	0.5			10								10	Medium
Elevate Structures	14	0.5	-	X	-	-	-	-	X	-	15	-	15.5	Medium
Groynes	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	15	N/A
HAZMAT Site Assessment & Cleanup	14	0.5					X						14	N/A
Insulation & Energy Efficiency Upgrade	12	2	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Tether Retention	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Groynes	11	0.5	X	X			-	-	X	-	-	-	11	N/A
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power System	12	1		X	10	5	X	X	X	15	15	7	67	N/A
Tsunami Shelters (Project Safe Haven)	14	2.5	-	X	-	-	-	-	-	-	15	-	35.5	Medium
Priority Repair	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	3	X	X	10	5	X	X	X	15	15	5	62	High
Purchase Vulnerable Structures	15	1	X	X					X				15	N/A
Repair Maintenance & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	X	-	-	-	19	N/A
Transportation Routing System	12	1	-	X	10	5	X	X	X	15	15	7	67	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	7	16.5	Low

Table 82 – Activity & Project Prioritization – Willapa School District

Mitigation Activity or Project	Scoring	Timeliness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	X	X	X	15	X	5	49	Medium
Artificial Reefs	14	0.5	X										14	N/A
Backup Generators	13	1	-	X	10	5	X	X	X	15	X	5	48	Medium
Bleachers	14	1.5						X					14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10								29	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	X	-	X	-	13	Low
Greenbelts	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	15	N/A
HEPMAT Site Assessment & Cleanup	14	1.5					X						14	N/A
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing, Board Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	X	X		-	-	-	X	-	-	-	11	N/A
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	X	X	X	15	X	5	47	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	X	-	14	N/A
Property Buyout	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	X	15	X	5	47	Medium
Reinforce Jetties/Seawalls	15	1	X	X					X				15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	X	-	-	-	19	N/A
Transportation Routing System	12	1	-	X	10	5	X	X	X	15	X	5	47	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

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Table 83 – Activity & Project Prioritization – Naselle Water Company

Mitigation Activity or Project	[illegible]	Effectiveness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	General Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Water Storm		
Alert, Broadcast, & Warning System Upgrade	14	1	-	X	10	5	X	X	X	15	X	5	49	N/A
Artificial Reefs	14	0.5	X										14	N/A
Backup Generators	13	1	-	X	10	5	X	X	X	15	X	5	48	Medium
Berms	14	0.5						X					14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	0.5			10								10	Medium
Elevate Structures	13	0.5	-	X	-	-	-	-	X	-	X	-	13	N/A
Generators	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	15	N/A
HAZMAT Site Assessment & Cleanup	14	0.5					X						14	N/A
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Hazard Protection	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Groins	11	0.5	X	X	-	-	-		X	-	-	-	11	N/A
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power System	12	1		X	10	5	X	X	X	15	X	5	47	N/A
Tsunami Shelters (Project Safe Haven)	14	0.5	-	X	-	-	-	-	-	-	X	-	14	N/A
Property Buyout	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	X	15	X	5	47	Medium
Resilience Workforce	15	1	X	X					X				15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	X	-	-	-	19	N/A
Transmission Routing System	12	1	-	X	10	5	X	X	X	15	X	5	47	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

Table 84 – Activity & Project Prioritization – North Beach Water District

Mitigation Activity or Project	Cost Score	Effectiveness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Flooding	Earthquakes	Flash Flooding	Hazardous Materials	Landslides	Riverine Flooding	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	X	X	X	15	15	5	64	N/A
Artificial Reefs	14	0.5	X				-						14	N/A
Backup Generators	13	1	-	X	10	5	X	X	X	15	15	5	63	High
Blankets	14	1.5						X					14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10								19	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	X	-	15	-	35.5	Medium
Groundbelts	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	15	Low
HAZMAT Site Assessment & Cleanup	14	1.5					X						14	N/A
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	-	12	N/A
Interior Furnishing, Bound Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	X	X	-	-	-	-	X	-	-	-	11	N/A
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	X	X	X	15	15	5	62	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	15	-	36.5	Medium
Property Buyout	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	X	15	15	5	62	High
Reinforce Jetties/Seawalls	15	1	X	X					X				15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	X	-	-	-	19	N/A
Transportation Routing System	12	1	-	X	10	5	X	X	X	15	15	5	62	N/A
Water Drainage Inspection	14	0.5	-	-	-	-	-	-	-	-	-	5	36.5	Low

Table 85 – Activity & Project Prioritization – Surfside Homeowners' Association

Mitigation Activity or Project	Cost/Risk	Hindrance Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	10	10	5	X	X	10	15	15	5	84	N/A
Artificial Reefs	14	0.5	5										16.5	Low
Backup Generators	13	1	-	10	10	5	X	X	10	15	15	5	83	High
Flowers	14	1.5	-	-	-	-	-	X	-	-	-	-	14	N/A
Bury Utility Lines, Flues, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	5										16.5	Low
Earthquake Assessment & Retrofit	14	1.5	-	-	10	-	-	-	-	-	-	-	29	Medium
Elevate Structures	13	1.5	-	10		-	-		10	-	15	-	65.5	High
Greenbelts	12	0.5	5	-	-	-	-	-	-	-	-	-	14.5	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	15	N/A
HAZMAT Site Assessment & Cleanup	14	1.5					X						14	N/A
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Hazard Reduction	14	1			10								24	Low
Jetties/Seawalls	11	1.5	5	10	-	-	-	-	10	-	-	-	55.5	High
Landslide Damage Repair	14	1					-	X					14	N/A
Looped Grid Power Systems	12	1	-	10	10	5	X	X	X	15	15	5	42	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	10	-	-	-	-	-	-	15	-	51.5	High
Property Buyout	14	0.5	5	10					10				51.5	N/A
Public Awareness & Education	12	1	5	10	10	5	X	X	10	15	15	5	67	High
Reinforce Jetties/Seawalls	15	1	5	10	-	-	-	-	10	-	-	-	40	N/A
Relocate Vulnerable Structures	14	1	5	10	-	-	-	-	-	-	-	-	29	Medium
Slope Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	10	-	5	-	-	10	-	-	-	39	N/A
Transportation Routing System	12	1	-	10	10	5	X	X	10	15	15	5	82	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

Table 86 – Activity & Project Prioritization – Willapa Valley Water District

Mitigation Activity or Project	Cost/Risk	Effectiveness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	X	X	X	15	X	5	49	N/A
Artificial Reefs	14	0.5	X										14	N/A
Backup Generators	13	1	-	X	10	5	X	X	X	15	X	5	48	Medium
Bluffs	14	1.5						X					14	N/A
Bury Utility Lines, Flow, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10								19	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	X	-	X	-	13	N/A
Greenbelts	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	15	N/A
HEMMAT Site Assessment & Cleanup	14	1.5					X						14	N/A
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	X	X			-	-	X	-			11	N/A
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	X	X	X	15	X	5	47	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	X	-	14	N/A
Property Buyout	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	X	15	X	5	47	Medium
Reinforce Jetties/Seawalls	15	1	X	X					X				15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Mobilization	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	X	-	-	-	19	N/A
Transportation Routing System	12	1	-	X	10	5	X	X	X	15	X	5	47	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

Table 87 – Activity & Project Prioritization – Ocean Beach Hospital

Mitigation Activity or Project	[illegible]	Timeliness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	X	X	X	15	10	5	59	High
Artificial Reefs	14	0.5	X										14	N/A
Backup Generators	13	1	-	X	10	5	X	X	X	15	10	5	58	High
Bionuts	14	1.5						X					14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10								29	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	X	-	10	-	28	Medium
Groundbolts	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	15	N/A
HAZMAT Site Assessment & Cleanup	14	1.5					X						14	N/A
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing, Board Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	X	X		-	-	-	X	-	-	-	11	N/A
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	X	X	X	15	10	5	57	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	10	-	29	Medium
Property Buyout	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	X	15	10	5	57	High
Reinforce Jetties/Seawalls	15	1	X	X					X				15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	X	-	-	-	19	N/A
Transportation Routing System	12	1	-	X	10	5	X	X	X	15	10	5	57	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	10.5	Low

Table 88 – Mitigation Project Prioritization – Willapa Harbor Hospital

Mitigation Project or Activity	[illegible]	[illegible]	Hazard Risk Value										Total	Priority
			[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	X	X	X	15	X	5	49	Medium
Artificial Roots	14	0.5	X										14	N/A
Backup Generators	13	1	-	X	10	5	X	X	X	15	X	5	48	Medium
Bioswale	14	1.5						X					14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10								19	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	X	-	X	-	13	N/A
Greenwalls	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	15	N/A
HAZMAT Site Assessment & Cleanup	14	1.5					X						14	N/A
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Lettres/Seawalls	11	1.5	X	X					X	-	-		11	N/A
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	X	X	X	15	X	5	47	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	X	-	14	N/A
Property Buyout	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	X	15	X	5	47	Medium
Reinforce Jetties/Seawalls	15	1	X	X					X				15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Shore Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	X	-	-	-	19	N/A
Transportation Routing System	12	1	-	X	10	5	X	X	X	15	X	5	47	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

PCEMA

Table 89 – Activity & Project Prioritization – Fire District #1

Mitigation Activity or Project	Relative Cost	Hindrance Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	5	X	X	15	15	5	69	High
Artificial Reefs	14	0.5	X										14	N/A
Backup Generators	13	1	-	X	10	5	5	X	X	15	15	5	68	High
Bioswales	14	1.5	-	-	-	-	-	X	-	-	-	-	14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X										14	N/A
Earthquake Assessment & Retrofit	14	1.5	-	-	10	-	-	-	-	-	-	-	29	Medium
Elevate Structures	13	1.5	-	X		-	-	-	X	-	15	-	35.5	Medium
Greenbelts	12	0.5	X	-	-	-	-	-	-	-	-	-	12	N/A
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	5	-	-	-	-	-	20	Low
HAZMAT Site Assessment & Cleanup	14	1.5					5						21.5	Low
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Hazard Reduction	14	1			10								24	Low
Jetties/Seawalls	11	1.5	X	X	-	-	-	-	X	-	-	-	11	N/A
Landslide Damage Repair	14	1						X					14	N/A
Looped Grid Power Systems	12	1	-	X	10	5	5	X	X	15	15	5	67	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	15	-	36.5	Medium
Property Buyout	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	1	X	X	10	5	5	X	X	15	15	5	67	High
Reinforce Jetties/Seawalls	15	1	X	X	-	-	-	-	X	-	-	-	15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	X	-	-	-	19	N/A
Transportation Routing System	12	1	-	X	10	5	5	X	X	15	15	5	67	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

Table 90 – Activity & Project Prioritization – Fire District #2

Mitigation Activity or Project	Activity	Effectiveness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	5	X	X	15	10	5	64	High
Artificial Reefs	14	0.5	X										14	N/A
Backup Generators	13	1	-	X	10	5	5	X	X	15	10	5	63	High
Bioners	14	1.5	-	-	-	-	-	X	-	-	-	-	14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1								15		5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10								29	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	X	-	10	-	28	Medium
Groundhoits	12	0.5	X										12	N/A
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	5	-	-	-	-	-	20	Low
HAZMAT Site Assessment & Cleanup	14	1.5	-	-	-	-	5	-	-	-	-	-	21.5	Low
Insulation & Energy Efficiency Upgrade	12	1										5	17	Low
Interior Furnishing Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Lattice/Seawalls	11	1.5	X	X					X				11	N/A
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	5	X	X	15	10	5	62	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	10	-	29	Medium
Property Tarpaulin	14	0.5	X	X	-	-	-	-	X	-	-	-	14	N/A
Public Awareness & Education	12	1	X	X	10	5	5	X	X	15	10	5	62	High
Reinforcement/Seawalls	15	1	X	X					X				15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Modification	14	1						X					14	N/A
Stormwater Drainage System Upgrade	14	1		X		5			X				19	N/A
Transportation Routing System	12	1		X	10	5	5	X	X	15	10	5	62	N/A
Water Line Insulation	14	0.5										5	16.5	Low

Table 91 – Activity & Project Prioritization – Fire District #4

Mitigation Activity or Project	Feasibility	Effectiveness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Wildfire Storms		
Alert, Broadcast, & Warning System Upgrade	14	1	-	X	10	5	5	X	X	15	X	5	54	High
Artificial Reefs	14	0.5	X										14	N/A
Beach Conservation	13	1	-	X	10	5	5	X	X	15	X	5	53	High
Berms	14	0.5	-	-	-	-	-	X	-	-	-	-	14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X										14	N/A
Earthquake Assessment & Retrofit	14	1.5	-	-	10	-	-	-	-	-	-	-	20	Medium
Elevate Structures	13	0.5	-	X		-		-	X	-	X	-	13	N/A
Groin Walls	12	0.5	X	-	-	-	-	-	-	-	-	-	12	N/A
Hazardous Materials Management Plan	15	1	-	-	-	-	5	-	-	-	-	-	20	Low
HAZWOPER Site Assessment & Clean-up	14	1.5					5						21.5	Low
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Levee Floodwall Construction	14	1			10								24	Low
Jetties/Groins	11	1.5	X	X	-	-	-	-	X	-	-	-	11	N/A
Landslide Damage Repair	14	1						X					14	N/A
Locked Grid Power Systems	12	1	-	X	10	5	5	X	X	15	X	5	52	N/A
Pumping Stations (Project Sale Lands)	14	0.5	-	X	-	-	-	-	-	-	X	-	14	N/A
Property Buyout	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	1	X	X	10	5	5	X	X	15	X	5	52	Medium
Relocation Jetty/Groins	15	1	X	X	-	-	-	-	X	-	-	-	15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Mechanization	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	X	-	-	-	19	N/A
Transmission Pipeline System	12	1	-	X	10	5	5	X	X	15	X	5	52	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

Table 92 – Activity & Project Prioritization – Fire District #5

Mitigation Activity or Project	Average	Effectiveness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	5	X	X	15	10	5	64	High
Artificial Reefs	14	0.5	15										14	N/A
Backup Generators	13	1	-	X	10	5	5	X	X	15	10	5	63	High
Bluffs	14	1.5						X					14	N/A
Bury Utility Lines, Flows, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	15	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10								29	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	X	-	10	-	28	Medium
Groundbelts	12	0.5	15										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	5	-	-	-	-	-	20	Low
HAZMAT Site Assessment & Cleanup	14	1.5					5						21.5	Low
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing, Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	15	X	-	-	-	-	X			-	11	N/A
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	5	X	X	15	10	5	62	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	10	-	29	Medium
Property Buyout	14	0.5	15	X					X				14	Low
Public Awareness & Education	12	1	15	X	10	5	5	X	X	15	10	5	77	High
Reinforce Jetties/Seawalls	15	1	15	X					X				15	N/A
Relocate Vulnerable Structures	14	1	15	X	-	-	-	-	-	-	-	-	29	Medium
Slope Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	X	-	-	-	19	N/A
Transportation Routing System	12	1	-	X	10	5	5	X	X	15	10	5	62	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

Table 93 – Activity & Project Prioritization – Fire District #6

Mitigation Project or Activity	[illegible]	[illegible] multiplier	Hazard Risk Value										Total	Priority
			General Flooding	Central Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Wildfire Hazards		
Alert, Broadcast & Warning Systems Upgrade	14	1	-	X	10	5	5	X	X	15	X	5	54	High
Artificial Reefs	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Backup Generators	13	1	-	X	10	5	5	X	X	15	X	5	53	High
Culverts	14	1.5						X					14	N/A
Dual Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-		-	-	14	N/A
Earthquake Awareness & Retrofit	14	1.5			10								19	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	X	-	X	-	13	N/A
Generators	12	0.5	X	-	-	-	-	-	-	-	-	-	12	N/A
Hazardous Materials Waste Management Plan	15	1	-	-	-	-	5	-	-	-	-	-	20	Low
HAZMAT Site Assessment & Cleanup	14	1.5	-	-	-	-	5	-	-	-	-	-	21.5	Low
Insulation & energy efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Invasive Plant/Pest Losses Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Groins	11	1.5	X	X	-		-		X			-	11	N/A
Landfill Drainage Repair	14	1						X					14	N/A
Looped Grid Power Systems	12	1	-	X	10	5	5	X	X	15	X	5	52	N/A
Natural Stations (Project safe Haven)	14	1.5	-	X	-	-	-	-	-	-	X	-	14	N/A
Property Tower	14	0.5	X	X	-	-	-	-	X	-	-	-	14	N/A
Public Awareness & education	12	1	X	X	10	5	5	X	X	15	X	5	52	Medium
Reinforce Power Poles	15	1	X	X					X				15	N/A
Reinforce Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Mud Flatter	14	1	-				-	X	-	-	-	-	14	N/A
Storm Water Drainage System Upgrade	14	1		X		5			X				19	N/A
Transportation Routing Tower	12	1	-	X	10	5	5	X	X	15	X	5	52	N/A
Water Line Looping	14	0.5	-	-	-	-	-	-	-	-	-	5	19.5	Low

Table 94 – Activity & Project Prioritization – Pacific Transit

Mitigation Activity or Project	[illegible]	Effectiveness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Flooding	Earthquakes	Flash Flooding	Hazardous Materials	Landslides	Riverine Flooding	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast & Warning Systems Upgrade	14	1	-	X	10	5	5	X	X	15	10	5	64	N/A
Artificial Reefs	14	0.5	X										14	N/A
Backup Generators	13	1	-	X	10	5	5	X	X	15	10	5	63	High
Biomass	14	1.5	-	-	-	-	-	X	-	-	-	-	14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	7	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5			10								29	Medium
Elevate Structures	13	1.5	-	X		-	-	-	X	-	10		28	Medium
Greenbelts	12	0.5	X	-	-	-	-	-	-	-	-	-	12	Low
Hazardous Materials and Waste Management Plan	15	1					5						20	Low
HAZMAT Site Assessment & Cleanup	14	1.5	-	-	-	-	5	-	-	-	-	-	21.5	N/A
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	X	X	-	-	-	-	X	-	-	-	11	N/A
Landslide Damage Repair	14	1						X					14	N/A
Looped Grid Power Systems	12	1	-	X	10	5	5	X	X	15	10	5	62	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	10	-	29	Medium
Property Buyout	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	1	X	X	10	5	5	X	X	15	10	5	62	High
Reinforce Jetties/Seawalls	15	1	X	X	-	-	-	-	X	-	-	-	15	N/A
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1		X		5			X				19	N/A
Transportation Routing System	12	1	-	X	10	5	X	X	X	15	10	5	57	High
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	16.5	Low

Table 95 – Activity & Project Prioritization – Port of Chinook

Mitigation Activity or Project	Scoring	Hindrance Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	X	X	10	15	15	5	74	High
Artificial Reefs	14	0.5	X										14	N/A
Backup Generators	13	1		X	10	5	X	X	10	15	15	5	73	High
Planers	14	1.5						X					14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1								15		5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5	-	-	10	-	-	-	-	-	-	-	29	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	10	-	15	-	50.5	High
Greenbelts	12	0.5	X	-	-	-	-	-	-	-	-	-	12	Low
Hazardous Materials and Waste Management Plan	15	1					X						15	N/A
HAZMAT Site Assessment & Cleanup	14	1.5	-	-			X	-	-			-	14	N/A
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Hazard Reduction	14	1			10								24	Low
Jetties/Seawalls	11	1.5	X	X					10				26	Medium
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1	-	X	10	5	X	X	X	15	15	5	62	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	15	-	26.5	Medium
Property Buyout	14	0.5	X	X					10				19	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	10	15	15	5	72	High
Reinforce Jetties/Seawalls	15	1	X	X					10				25	Low
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	10	-	-	-	29	N/A
Transportation Routing System	12	1		X	10	5	X	X	10	15	15	5	72	N/A
Water Diversification	14	0.5										5	16.5	Low

Table 96 – Activity & Project Prioritization – Port of Ilwaco

Mitigation Activity or Project	Occurrence	Effectiveness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Floods	Earthquakes	Flash Floods	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	X	X	10	15	15	5	74	High
Artificial Reefs	14	0.5	X										14	N/A
Backup Generators	13	1	-	X	10	5	X	X	10	15	15	5	73	High
Bionuts	14	1.5						X					14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5		-	10								29	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	10	-	15	-	50.5	High
Groundfalls	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	15	N/A
HERMAT Site Assessment & Cleanup	14	1.5					X						14	N/A
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Irrigation Furnishing, Inward Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	X	X					10	-	-	-	26	Medium
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	X	X	10	15	15	5	73	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	15	-	36.5	Medium
Property Buyout	14	0.5	X	X					10				14	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	10	15	15	5	72	High
Reinforce Jetties/Seawalls	15	1	X	X					10				25	Low
Relocate Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Slope Reinforcement & Modification	14	1	-	-				X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	10	-	-	-	29	N/A
Transportation Routing System	12	1	-	X	10	5	X	X	10	15	15	5	72	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	36.5	Low

Table 97 – Mitigation Project Prioritization – Port of Peninsula

Mitigation Project or Activity	[illegible]	[illegible] weight	Hazard Risk Value										Total	Priority
			Coastal Erosion	Coastal Flooding	Earthquakes	Flood Events	Hazardous Materials	Landslides	Riverine Flooding	Severe Storms	Tsunamis	Wildfire Hazards		
Alert, Broadcast, & Warning Systems Upgrades	14	1	-	X	10	5	X	X	10	10	5	3	64	High
Artificial Reefs	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Backup Generators	13	1	-	X	10	5	X	X	10	10	5	3	62	High
Blanket	14	1.5	-	-	-	-	-	X	-	-	-	-	14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	10	-	3	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5	-	-	10	-	-	-	-	-	-	-	24	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	10	-	5	-	25.5	Medium
Greenbelt	12	0.5	X	-	-	-	-	-	-	-	-	-	12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	16	N/A
HAZMAT Site Assessment & Cleanup	14	1.5	-	-	-	-	X	-	-	-	-	-	14	N/A
Insulation & Energy Efficiency Upgrades	12	1	-	-	-	-	-	-	-	-	-	3	17	Low
Interior Furnishing Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Interior Retrofit	11	1.5	X	X	-	-	-	-	10	-	-	-	24	Medium
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1	-	X	10	5	X	X	10	10	5	3	67	N/A
Tsunami Shelter (Project Info Needed)	14	1.5	-	X	-	-	-	-	-	-	5	-	21.5	Low
Property Buyout	14	0.5	X	X	-	-	-	-	10	-	-	-	14	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	10	10	5	3	62	High
Reinforce Jetty/Seawalls	15	1	X	X	-	-	-	-	10	-	-	-	25	Low
Reinforce Vulnerable Structures	14	1	X	X	-	-	-	-	-	-	-	-	14	N/A
Levee Reinforcement & Modification	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	10	-	-	-	29	N/A
Telecommunication Backup System	12	1	-	X	10	5	X	X	10	10	5	3	62	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	-	15.5	Low

Table 98 – Activity & Project Prioritization – Port of Willapa Harbor

Mitigation Activity or Project	[illegible]	Effectiveness Multiplier	Hazard Risk Value										Total	Priority
			Coastal Flooding	Coastal Flooding	Earthquakes	Flash Flooding	Hazardous Materials	Land Slides	Riverine Flooding	Severe Storms	Tsunamis	Winter Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	X	X	10	15	15	5	74	High
Artificial Reefs	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Backup Generators	13	1		X	10	5	X	X	10	15	15	5	73	High
Bioneers	14	1.5	-	-	-	-	-	X	-	-	-	-	14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1								15		5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Comprehensive Assessment & Retrofit	14	1.5			10								29	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	10	-	15	-	50.5	High
Greenbelts	12	0.5	X	-	-	-	-	-	-	-	-	-	12	Low
Hazardous Materials and Waste Management Plan	15	1					X						15	N/A
HAZMAT Site Assessment & Cleanup	14	1.5	-	-	-	-	X	-	-	-	-	-	14	N/A
Insulation & Energy Efficiency Upgrade	12	1										5	17	Low
Interior Furnishing Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	X	X					10				26	Medium
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1	-	X	10	5	X	X	10	15	15	5	72	N/A
Tsunami Shelters (Project Safe Haven)	14	1.5		X							15		36.5	Medium
Property Buyout	14	0.5	X	X	-	-	-	-	10	-	-	-	19	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	10	15	15	5	72	High
Reinforce Jetties/Seawalls	15	1	X	X	-	-	-	-	10	-	-	-	25	Low
Relocate Vulnerable Structures	14	1	X	X									14	N/A
Slope Reinforcement & Mod Buffer	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1	-	X	-	5	-	-	10	-	-	-	29	N/A
Transportation Routing System	12	1	-	X	10	5	X	X	10	15	15	5	72	N/A
Water Line Insulation	14	0.5	-	-	-	-	-	-	-	-	-	5	10.5	Low

Table 99 – Activity & Project Prioritization – Public Utility District #2

Mitigation Activity or Project	Hazard Risk Value												Total	Priority
	Hazard Risk Value	Effectiveness Multiplier	Coastal Erosion	Coastal Hazards	Earthquakes	Flood Hazards	Hazardous Materials	Landslides	Riverine Floods	Severe Storms	Tsunamis	Water Storms		
Alert, Broadcast, & Warning Systems Upgrade	14	1	-	X	10	5	X	X	X	15	10	5	59	N/A
Artificial Roots	14	0.5	X										14	N/A
Backup Generators	13	1		X	10	5	X	X	X	15	10	5	58	High
Bioswale	14	1.5						X					14	N/A
Bury Utility Lines, Pipes, & Tanks	14	1	-	-	-	-	-	-	-	15	-	5	34	Medium
Coastal Erosion Mapping	14	0.5	X	-	-	-	-	-	-	-	-	-	14	N/A
Earthquake Assessment & Retrofit	14	1.5	-	-	10								29	Medium
Elevate Structures	13	1.5	-	X	-	-	-	-	X	-	10	-	28	Medium
Greenbelts	12	0.5	X										12	Low
Hazardous Materials and Waste Management Plan	15	1	-	-	-	-	X	-	-	-	-	-	15	Low
HAZMAT Structures Inspection & Cleanup	14	1.5					X						14	Low
Insulation & Energy Efficiency Upgrade	12	1	-	-	-	-	-	-	-	-	-	5	17	Low
Interior Furnishing Hazard Reduction	14	1	-	-	10	-	-	-	-	-	-	-	24	Low
Jetties/Seawalls	11	1.5	X	X					X	-	-	-	11	N/A
Landslide Damage Repair	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Looped Grid Power Systems	12	1		X	10	5	X	X	X	15	10	5	57	High
Tsunami Shelters (Project Safe Haven)	14	1.5	-	X	-	-	-	-	-	-	10	-	29	Medium
Property Buyout	14	0.5	X	X					X				14	N/A
Public Awareness & Education	12	1	X	X	10	5	X	X	X	15	10	5	57	High
Reinforce Jetties/Seawalls	15	1	X	X	-	-	-	-	X	-	-	-	15	N/A
Relocate Vulnerable Structures	14	1	X	X									14	N/A
Slope Reinforcement & Mod Bottom	14	1	-	-	-	-	-	X	-	-	-	-	14	N/A
Stormwater Drainage System Upgrade	14	1		X		5			X				19	N/A
Transportation Routing System	12	1	-	X	10	5	X	X	X	15	10	5	57	N/A
Water Line Insulation	14	0.5										5	16.5	Low

Appendix H – Adoption Resolutions

Appendix I – Federal Approval Letter

CITY OF ILWACO
CITY COUNCIL AGENDA ITEM BRIEFING

A. Meeting Dates: Council Workshop: Public Hearing:
Council Discussion Item: 4/11/16 Council Business Item:

B. Issue/Topic: **Knowles Contract for Fire Protection**

C. Sponsor(s):
1. Cassinelli 2.

D. Background (overview of why issue is before council):
Paul and Beryl Knowles own property outside the fire protection limits of the City of Ilwaco, and would like to obtain a contract for fire protection services from the Ilwaco Fire Dept.

E. Discussion (specific details relevant to the issue, pros/cons, alternatives and any other decision-making details):
1. This is required for insurance purposes for Mr. and Mrs. Knowles
2. This is a revised contract from the one which had been previously used by the Fire Chief for fire protection services.
3. This contract serves the home located at 1597 SR 101, and the vacant property located at 1595 SR 101.

F. Impacts:
1. Fiscal: $200.00/year to the fire dept. budget
2. Legal: This contract has been reviewed by Heather Reynolds.
3. Personnel:
4. Service/Delivery:

G. Planning Commission: ☐ Recommended ☒ N/A ☐ Public Hearing on

H. Staff Comments:

I. Time Constraints/Due Dates:

J. Proposed Motion: **I move to approve the mayor enter into the contract for Fire Protection Services for Mr. and Mrs. Knowles for the property located at 1595 & 1597 State Route 101, Ilwaco Washington.**

CITY OF ILWACO

120 First Avenue North
PO Box 548 • Ilwaco, WA 98624
Phone: 360.642.3145
Fax: 360.642.3155

FIRE PROTECTION AGREEMENT

This Agreement for Fire Protection Services, hereinafter "Agreement" is hereby entered into this _____ day of_____, 20____ between **Paul J. and Beryl J. Knowles** ("Property Owner") and the City of Ilwaco (City).

1. Purpose

The purpose of this Agreement is to provide fire protection services for property owner's residence (the "Property") located at:

Location: **1595 & 1597 State Route 101, Ilwaco WA 98624**
Legal Description: 101126 005, and 101126 002; S RD
APN: 10112633005, and 10112633002

2. Consideration

Property Owner agrees to remit payment for each per year for services. The first payment is in the amount of **$200.00** and shall be due to upon execution of the agreement by both parties. City may, by Resolution, adjust fees for out of district service annually. City will notify Property Owner of any fee adjustment. Each subsequent payment shall be paid by the 30th day of June in each year thereafter that this agreement remains in place.

3. Protection Provided

The City agrees to provide fire protection services for Property owner in the event of fires and other local emergencies. The City may, in responding to specific incidents or requests for assistance, rely on such support provided through mutual aid or interlocal cooperation agreements in addition to its own personnel, vehicles, and equipment. The City Fire Chief shall be sole judge of the most expeditious and efficient manner of handling and responding to calls for service and the rendering of fire protection services. The City shall be required to use only reasonable diligence and make a reasonable effort to respond to calls the Property, in the same manner as if the Property was within the protection areas of the City. The City makes no guarantee or assurance of providing responses within any specific period of time or of the number or types of equipment and number of personnel that will respond at any particular emergency. The duty of the City to provide emergency services under the provisions of this Agreement is a duty owed to the public generally. By entering into the Agreement, the City does not incur a special duty to Property Owner.

4. Water

Property Owner shall furnish such quantities of water as the City may require or be able to use in its firefighting operations Property. The City shall not be held liable or deemed negligent for any lack of sufficient quantities of water available at the Property in its firefighting activities as required under this Agreement.

5. Indemnity

Property Owner agrees to waive any claim against the City that may arise as a result of this agreement, or the performance under this agreement, and further agrees to save, defend, indemnify and hold harmless the City from any and all claims, suits and liability for damages of any kind, nature, or description occasioned by the City's performance under this agreement or which may arise as a result of this agreement other than those caused by the negligent acts of the City.

6. No Third Party Benefit

This agreement is entered into for the benefit of the property owner and shall confer no benefits, direct or implied to any third persons.

7. Modification

This Agreement shall not be modified in any way without the written consent of both parties.

8. Termination of Agreement

This Agreement will automatically extend on a year by year basis, unless terminated by written notice of either party. City may terminate on seven days' notice for non-payment of annual fees. This agreement may also be terminated by either party at any time, provided that written notice of such intent is made to the affected party(s) not less than thirty (30) days prior to the effective date of such termination.

9. Attorney's Fees and Costs

In the event a claim or action is initiated as a result of an unresolved dispute arising from this Agreement, the prevailing party to such claim or action shall be entitled to reimbursement from the non-prevailing party for all costs, including attorney's fees, incurred by the prevailing party, whether such costs are incurred with or without litigation or on appeal.

10. Governing Law

The parties agree that this Agreement shall be governed, construed, and enforced in accordance with the laws of the State of Washington. Any action arising from this Agreement shall be filed in the Superior Court of Pacific County, Washington.

In witness whereof, said parties have caused this contract to be executed by their proper officials this _____ day of _____, 20_____.

_____	_____
Paul J. Knowles	Mayor, City of Ilwaco
_____	Attest: _____
Beryl J. Knowles	City Clerk

CITY OF ILWACO
CITY COUNCIL AGENDA ITEM BRIEFING

A. Meeting Dates: Council Workshop: Public Hearing:
Council Discussion Item: 04/11/16 Council Business Item:

B. Issue/Topic: **Interlocal Agreement for Building Inspector Services**

C. Sponsor(s):
1. Cassinelli 2.

D. Background (overview of why issue is before council): The City of Ilwaco has contracted with the City of Long Beach for building inspecting services for 18 years; which is also the last time that the agreement was reviewed. Ilwaco currently receives building permit fees and remits 50% of those fees to the City of Long Beach every quarter.

E. Discussion (specific details relevant to the issue, pros/cons, alternatives and any other decision-making details): This revision was requested by the City of Long Beach to update the previous agreement and clarify some specifics. As Long Beach is not responsible for code enforcement or any other services unless addressed within the agreement.

F. Impacts:
1. Fiscal: None, rates remain the same
2. Legal: Heather drafted the agreement
3. Personnel:
4. Service/Delivery:

G. Planning Commission: ☐ Recommended ☒ N/A ☐ Public Hearing on

H. Staff Comments:

I. Time Constraints/Due Dates:

J. Proposed Motion: **I move to approve the mayor to enter into the Interlocal agreement for building inspector services between the City of Ilwaco and the City of Long Beach.**

INTERLOCAL AGREEMENT

FOR BUILDING INSPECTION SERVICES

This Agreement, made and entered into this ____ day of _____, 2016, between the City of Ilwaco, a municipal corporation of the State of Washington, hereinafter referred to as "Ilwaco," and the City of Long Beach, a municipal corporation of the State of Washington, hereinafter referred to as "Long Beach."

RECITALS

WHEREAS, by authority granted in RCW 39.34.010, units of local government may enter into agreements with other units of local government for the performance of any or all functions and activities that a party to the agreement, its officers or agents have the authority to perform, and

WHEREAS, Ilwaco desires Long Beach to provide a Building Inspector for all construction occurring in Ilwaco, and Long Beach is agreeable to providing that service and the terms and conditions stated below.

NOW, THEREFORE, IT IS AGREED BY AND BETWEEN THE PARTIES AS FOLLOWS:

I. LONG BEACH OBLIGATIONS

1. Employ a qualified Building Inspector.

2. Provide for transportation, training, electronic and telephonic communication, and other overhead costs for the building inspector.

3. If the scale and/or complexity of a project in Ilwaco requires an additional or specialized inspector, then Long Beach shall contract or hire such an inspector, which will be a joint decision of Long Beach and Ilwaco.

4. Provide plan review services as needed.

5. Provide on-site inspections when required.

6. Meet with appropriate City of Ilwaco staff regarding questions Ilwaco may have on budgeting, expenditure of Ilwaco building department funds. Meet when required for coordination and administration with the Ilwaco City Planner. Meet, if the need should arise, with the Ilwaco City Council.

7. As the employing agency, Long Beach will provide worker's compensation and all the usual payroll taxes and deductions on behalf of its employees performing the services agreed herein.

8. The Building Inspector will ascertain that construction they are inspecting or reviewing in Ilwaco complies with all relevant local, state, federal and international building requirements.

9. The Building Inspector will file any reports required by the State pertaining to building code enforcement in Ilwaco.

10. The Building Inspector is not the Ilwaco Public Official responsible for nuisance violations under Titles 8 of the Ilwaco City Code.

II. ILWACO OBLIGATIONS

1. Designate the Long Beach building inspector as the Ilwaco building inspector.

2. Adopt by reference as part of the Ilwaco City Code the model codes listed below, as approved and adopted by the state building code council, together with any amendments of additions, modifications thereto, or recodifications.

   i. Uniform Building Code (UBC) and Standards;
   ii. Uniform Plumbing Code (UPC) and Standards;
   iii. Uniform Mechanical Code (UMC) and Standards;
   iv. International Property Maintenance Code (IPMC);
   v. Uniform Swimming Pool, Spa and Hot Tub Code;
   vi. Uniform Code for the Abatement of Dangerous Buildings;
   vii. Washington State Barrier Fee Regulations;
   viii. Washington State Energy Code;
   ix. Washington State Ventilation and Indoor Air Quality Code;
   x. Washington State Historic Building Code;
   xi. Uniform Building Code Appendix Chapter 15 (Reroofing);
   xii. Uniform Building Code Appendix Chapter 33 (Excavation and Grading);
   xiii. Uniform Building Code Appendix Chapter 34, Division 1 (Life Safety Requirements For Existing Buildings Other Than High-Rise Buildings).

3. Maintain its fee schedule to be similar to other communities in Pacific County.

4. Pay Long Beach 50% of every building permit and plan review fee collected (less all required state payments) for any action in which the Building Inspector is involved.

5. Administer the permit program including: collection of fees and acceptance of applications, issuance of permits, notification of Long Beach of the need for inspection or review and notification to applicant of any additional fee due after plan review. Notice to Long Beach shall be in writing and include a copy of the application and permit.

III. INDEMNITY

1. In providing the building inspection services stipulated herein, the building inspector is acting as an agent of Ilwaco and shall abide by all ordinances and regulations of

Ilwaco. Ilwaco shall indemnify, protect and hold harmless Long Beach, and the building inspector, from all claims, actions or damages of every kind and description which may accrue to or be suffered by any person or persons, corporation or property by reason of the performance of any such works, character of materials used or manner of installation, maintenance and operation or by the improper occupancy of rights of way or public place or public structure, and in case any such suit or action is brought against Long Beach or the building inspector for damages arising out of or by reason of any of the above causes. Ilwaco will, upon notice or commencement of such action, defend the same at its cost and expense and satisfy any judgment given in such action that is adverse to the City of Long Beach and/or the building inspector.

2. Long Beach will hold Ilwaco harmless for all workers compensation claims, or employment related claims, of Long Beach employees. Ilwaco will hold Long Beach harmless for all workers compensation claims, or employment related claims, of Ilwaco employees.

3. Ilwaco is solely responsible for the financial management of the Building Inspection program, and will hold the Long Beach and building official harmless for any penalty imposed as a result of any financial or program audit.

IV. TERMINATION

This agreement is entered into on this _____ day of _____, 2016. It will terminate, if not sooner terminated by 60 days written notice from one party to the other, on December 31, 2021.

City of Ilwaco	City of Long Beach
_____	_____
Mayor	Mayor

CITY OF ILWACO

301 Spruce Street • P.O. Box 548
Ilwaco, WA 98624

Phone: 360-642-3145 Fax: 360-642-3155

BUILDING INSPECTION SERVICE CONTRACT

THIS AGREEMENT, effective the 1st day of July, 1998, by and between the CITY OF LONG BEACH and the CITY OF ILWACO.

WITNESSETH

That in consideration of the terms and the conditions contained herein and attached and made a part of this agreement, the parties hereto covenant and agree as follows:

I. The City of Long Beach hereby agrees to perform inspection and plan review for the City of Ilwaco in accordance with portions of the State Building Code as defined by Chapters 19.27.031 (1), (2), (4), and (5) and 19.27A.010 (1), (2), (4), (5), and (6), RCW, and as amended and updated by the State Building Code Council pursuant to Chapter 19.27.074, RCW.

II. Building inspection services shall commence July 1, 1998 and shall continue until termination on behalf of either the City of Long Beach or the City of Ilwaco. Either party may abrogate the services provided by this contract following a thirty (30) day written notice to the other party.

III. Subject to the City of Long Beach fiscal limitations, the City of Long Beach agrees to employ personnel in the Department of Public Works and to provide the materials and to cause to be done the above described work and to provide technical assistance to the City of Ilwaco required to assure compliance with the code enumerated in Section I.

IV. For services provided, the City of Ilwaco hereby agrees to reimburse the City of Long Beach for fees collected in accordance with the permit fee and plan review fee schedules established in the applicable codes for the inspection and plan review services provided. This reimbursement shall be fifty percent (50%) of the total fees collected by the City of Ilwaco.

V. It is agreed by the City of Long Beach and the City of Ilwaco that no inspection services are implied in this contract nor will inspection services be provided for enforcement and/or compliance with the following codes:

1. Chapters 19.27.031 (3) and 19.27.010 93), RCW, and as amended and updated by the State Building Code Council pursuant to Chapter 19.27.074, RCW.

2. Uniform Code for the Abatement of Dangerous Buildings published by the International Conference of Building Officials.

VI. It is further agreed that in providing building inspection and plan review services stipulated herein, the building official and the building inspector(s) are acting as agents of the City of Ilwaco and shall abide by all ordinances and regulations as provided by the City of Ilwaco. In accepting this agreement, the City of Ilwaco agrees to protect and save harmless the City of Long Beach, the building official and the building inspector(s) from all claims, actions or damages of every kind and description which may accrue to or be suffered by any person or persons, corporation or property by reason of the performance of any such works, character of materials used or manner of installation, maintenance and operation or by the improper occupancy of rights of way or public place or public structure, and in case any such suit or action is brought against said City of Long Beach, building official or buildings inspector(s) for damages arising out of or by reason of any of the above causes, the City of Ilwaco will, upon notice or commencement of such action, defend the same at its cost and expense and will fully satisfy any judgement after the said suit or action shall have finally been determined if adverse to the City of Long Beach, the building official and/or the building inspector(s).

CITY OF: ILWACO

Michael J. Mello, Mayor

ATTEST:

Linda Marsh, City Clerk-Treasurer

DATE: May 12, 1998

CITY OF: LONG BEACH

Kenneth Ramsey, Mayor

ATTEST:

Nabiel Shawa, City Administrator

DATE: 6/1/98

APPROVED AS TO FORM:

James Finlay, City Attorney

DATE: