STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
P.O. Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

June 13, 2017

Utilities and Transportation Commission
1300 South Evergreen Park Drive SW
Olympia, WA 98504

Re: Pacific County Solid Waste Management Plan, Preliminary Draft 2016

To whom it may concern:

The Department of Ecology (Ecology) received Pacific County's Preliminary Draft Solid Waste Management Plan and formal request for review via e-mail on June 7, 2017. Today, I am forwarding that request along with this cover letter to formally request Utilities and Transportation Commission (UTC) review of the Plan.

Per RCW 70.95.096, Ecology is to provide the UTC with a copy of any Preliminary Draft Local Comprehensive Solid Waste Management Plan immediately upon receipt. The UTC shall then review the Plan's assessment of solid waste collection cost impacts on rates charged by solid waste collection companies regulated under Chapter 81.77 RCW and advise the submitting county and Ecology of the probable effect of the plan's recommendations on those rates. I look forward to receiving your input, and may be reached at:

Greg Gachowsky
Waste 2 Resources Program
Ecology Southwest Regional Office
300 Desmond Drive SE
Lacey, WA 98503
Greg.Gachowsky@ecy.wa.gov
360-407-6125

The Pacific County contact for your review is:

Shawn Humphreys
Pacific County DCD
PO Box 68
South Bend, WA 98586
Shumphreys@co.pacific.wa.us
360-642-9382

Thank you for your review, and please feel free to contact me at any time.

Sincerely,

Greg Gachowsky
Solid Waste Planner
Waste 2 Resources Program

Enclosure

cc: Shawn Humphreys, Pacific County Environmental Health Director
Peter Lyon, Regional Section Manager, Waste 2 Resources Program

Pacific County
DEPARTMENT OF COMMUNITY DEVELOPMENT
BUILDING • ENVIRONMENTAL HEALTH • PLANNING

May 31, 2017

Washington Department of Ecology
Southwest Regional Office
Attn: Peter Lyon
300 Desmond Drive
Lacey, WA 98503

Dear Mr. Lyon:

The Pacific County Solid Waste Management Plan 2016 update preliminary draft has been completed and the County is requesting Ecology's review. I have included 3 copies of the plan along with interlocal agreements from all participating jurisdictions in Appendix A, documentation of SWAC participation in Appendix C, SEPA checklist and determination of non-significance and the WUTC cost assessment.

If you have any questions or comments, please contact me at (360) 875-9356 or by email at shumphreys@co.pacific.wa.us

Sincerely,

Shawn Humphreys
Deputy Director
Environmental Health Director

1216 W. Robert Bush Dr., PO Box 68, South Bend, WA 98586 ph 360.875.9356, fax 360.875.9304
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PACIFIC COUNTY
SOLID WASTE MANAGEMENT PLAN
UPDATE

2016

Table of Contents

Section 1

1.1 Introduction

The original Pacific County Solid Waste Management Plan (SWMP) was prepared in 1973 in response to the Washington State Solid Waste Management Act, Chapter 70.95 RCW. The Act states that:

> *Each county within the state, in cooperation with the various cities located within each county, shall prepare a coordinated comprehensive solid waste management plan (70.95.080 RCW).*

The Act further states that the SWMP must be kept current through periodic review and updating, if necessary (70.95.110 RCW).

Since the adoption of the SWMP in 1973, several solid waste management regulations have been promulgated. Public awareness and concern for the environment and potential impacts from solid waste management has increased significantly.

This SWMP Update has been prepared to:

1. Evaluate the existing solid waste management system, identify problems, project future needs, and recommend solutions or improvements.
2. Evaluate waste disposal alternatives for Pacific County.
3. Plan for compliance with current federal, state, and local solid waste management regulations.
4. Address public concern for the environment as voiced in public hearings and communications to the County.
5. Address the problem of illegal solid waste disposal within the County.

1.2 Solid Waste Disposal Planning History

The original SWMP for Pacific County was adopted in January 1973. In response to changing conditions, the plan was amended in 1976, 1990, 1994, 2000, and 2005. The plan was updated in 2013, but never officially adopted. When the SWMP was initially prepared in 1973, there were five authorized landfills in Pacific County. The two largest sites, the Baleville landfill and Pacific Solid Waste Disposal's landfill, were privately owned and operated while three smaller landfills located in Brooklyn, Naselle, and North Cove were owned and operated by the County. The following information is a compilation of the material regarding these landfills gathered during the DCD investigation.

<u>Baleville</u>

Type of Disposal:	Open burning/Non-conforming sanitary landfill
Location:	Approximately 5 miles outside of Raymond on State Route 105 (SW ¼, SE ¼, Section 08, Township 14, Range 09)
Approximate Size:	2.80 acres
Estimated Waste Contained:	51,000 tons
Years of Operation:	Approximately 11 years

Pacific Solid Waste Disposal

Type of Disposal:	Open burning/Sanitary landfill
Location:	67th east of Sandridge Road
Approximate Size:	1.80 acres
Estimated Waste Contained:	40,000 tons
Years of Operation:	Approximately 12 years

Brooklyn

Type of Disposal:	Open burning
Location:	E ½, SE ¼, Section 16, Township 15 North, Range 7 West.
Approximate Size:	0.70 acre
Estimated Waste Contained:	Approximately 75 tons per year
Years of Operation:	Unknown

North Cove

Type of Disposal:	Open burning
Location:	Approximately 22 miles west of Raymond on State Route 105 (NW ¼, SE ¼, Section 04, Township 14 North, Range 11 West)
Approximate Size:	2.75 acres
Estimated Waste Contained:	11,148 tons
Years of Operation:	Approximately 12 years

Naselle

Type of Disposal:	Open burning
Location:	Approximately 1 mile before the State Route 4 and 401 intersection (NW ¼, NE ¼, Section 05, Township 10 North, Range 09 West)
Approximate Size:	1.20 acres
Estimated Waste Contained:	Approximately 700 tons per year of operation
Years of Operation:	Unknown

The SWMP called for the construction, in 1974, of a single landfill at a new site in the southern part of the County near Long Beach. Immediately following the opening of the new site, all other landfills and disposal sites were to be closed. The siting process was initiated in 1973, with consideration of sites in both north and south county. Both private and public ownership options were considered.

The Solid Waste Interlocal Governing Body Agreement (SWIGB) was originally signed in 1976. This was a contract between Pacific County and all incorporated areas to bring about solutions to the solid waste problem. In 1977, the SWIGB hired a consulting engineer and supervised work on several potential sites, including the preferred landfill site at Range Point. And in 1978, an Engineering Report on the feasibility of the site and an Environmental Impact Statement were prepared for the site. The SWIGB and County Board of Commissioners later rejected that site due in part to conflicting land uses and local opposition. In November 1978, an amendment to the SWMP was supported by the SWIGB which would allow development of private landfills in the County. However, the new landfill near Long Beach was never sited, which delayed the closure of the open dumps. Instead, a north county site, Rainbow Valley Landfill (RVL), was finally established by a private party in 1980.

Estimated Waste Contribution to the Rainbow Valley Landfill	
Contributor	Percentage
Excel Services (Oregon)	36.23
Seaside/Gearhart Transfer Station (Oregon)	26.30
Pacific Solid Waste Disposal Transfer Station	18.43
City of Raymond	7.28
City of South Bend	4.27
Peninsula Sanitation Service	3.43
Rainbow Valley Landfill (self haulers)	3.39
Wahkiakum County	.67

Table 1-1. Percentage of Waste contributed to Rainbow Valley Landfill by weight.

1.3 Rainbow Valley Landfill

Rainbow Valley Landfill

Type of Disposal:	Sanitary Landfill
Location:	Approximately five miles outside of Raymond on State Route 105 (Tax Lot 004, Section 08, Township 14 North, Range 09 West)
Approximate Size:	9 acres
Estimated Waste Contained:	Approximately 209,000 tons
Years of Operation:	Approximately 10 years

Before its closure in 1991, the RVL had been the primary disposal site for Pacific County's solid waste since 1982. Initially, it served only the cities of Raymond and South Bend and the north County rural area. In late 1982, Pacific Solid Waste Disposal's landfill near Long Beach was closed. All waste collected in Pacific County and portions of Wahkiakum County served by Peninsula Sanitation Service, Inc. was taken to the RVL for disposal.

In 1982, Seaside Sanitation, Inc. and Excel, Inc. began hauling waste from the cities of Seaside and Astoria, and from the surrounding areas in Clatsop County, Oregon to the RVL. In 1986, following the closure of the Astoria landfill, these two haulers entered into contracts with the RVL to allow continued disposal at the facility. From 1986 until its closure in 1991, the landfill received waste from all of Pacific County except the North Cove/Tokeland area, from portions of Wahkiakum County served by Peninsula Sanitation, and from most of Clatsop County, Oregon. Table 1-1 illustrates the amount of waste contributed by each hauler in relation to the estimated quantity of waste contained within the RVL.

Past substandard landfill operations at other sites, combined with RVL's close proximity to Willapa Bay, caused concern among County Health Department staff and County residents, particularly those involved with the oyster industry. Hydrogeologic reports and extensive ground water monitoring completed at the landfill by EMCON/Sweet, Edwards, & Associates showed no evidence that the waters of Willapa Bay were impacted by leachate or surface water runoff from the RVL. Soil tests from the landfill area indicated a low permeability ranging from 2.58×10^{-7} to 2.81×10^{-10} cm/sec which minimizes the potential for leachate migration from the landfill operations. These soils were assumed to underlie the entire landfill site to depths in excess of 40 feet and extend below sea level as evidence by hydrogeologic test results.

Although no offsite discharges of contaminated water from the landfill have been documented in either

surface water or in monitoring wells, some people believed that the threat to Willapa Bay from the RVL was sufficient to justify its closure and that any other landfill site in the County should be completely outside of the Willapa Bay drainage area. The Rainbow Valley Landfill was closed on July 31, 1991.

Washington Administrative Code (WAC) 173-304-407 required all landfills closing within the effective date of the regulation to maintain the landfill for a 20-year post-closure period or until the site is determined to have stabilized, meaning no or little leachate generation, little or no gas production, and no settling. During this period, each landfill owner or operator shall provide for ground water monitoring, surface water monitoring, methane gas monitoring, leachate collection and disposal, and any other post-closure requirements as dictated by the jurisdictional health authority. Prior to the closure of the RVL, a closure/post-closure trust fund was established and maintained according to the regulations set forth in Chapter 173-304 WAC. The aim of this fund was to provide for the items described above for the required 20-year post-closure period. Consultants hired to perform the closure/post-closure evaluation estimated a leachate generation rate of 1,000,000 gallons per year. Unfortunately, the leachate generation rates averaged 6,700,000 gallons per year between 1991 and 1996. This great underestimate of the leachate generation rate in association with the lower than expected return on investment for the post-closure trust fund resulted in an inadequate trust fund for this landfill.

In August 1996, after numerous years of study, RVL undertook an aggressive $705,750 "second closure" of RVL in an effort to reduce the excessive amount of generated leachate. This closure effort attempted to effectively reduce the leachate by completing the following engineered alternatives:

- Recontouring and recapping the uppermost 3.5 acres of landfill cover with a 60 mil. geomembrane and two to three feet of clay cover.
- Abandoning and replacing one of the three leachate collection trenches.
- Abandoning a portion of one of the two other leachate collection trenches.
- Improving the surface water conveyance system.
- Improving the leachate collection and loading system.

Costs for this "second closure" were offset by a $500,000 Department of Ecology (Ecology) grant. The RVL post-closure trust fund contributed the remaining $205,750.

Results from the "second closure" indicate a reduction in leachate generation; however, it is evident that leachate generation at this landfill is dependent upon rainfall. A comparison of rainfall versus leachate both pre and post-secondary closure indicate an approximate 50% in leachate reduction after the "second closure" occurred. Figure 1-1 (next page) illustrates the leachate generation at RVL since the second closure and recapping process.

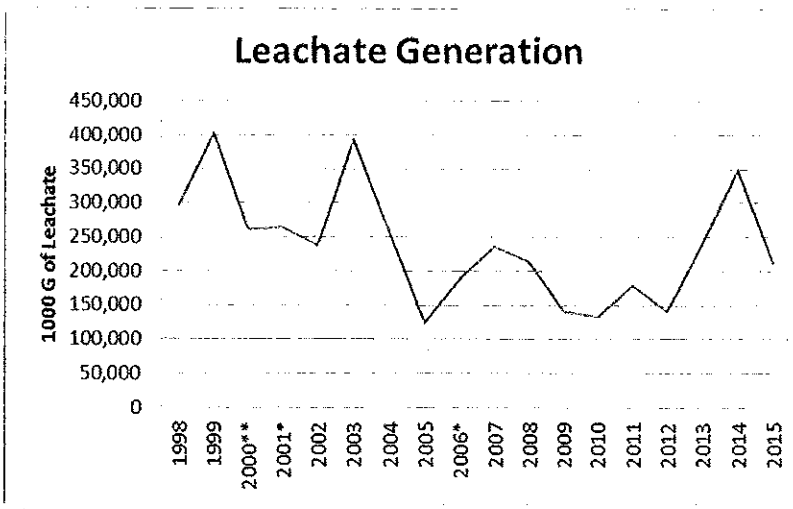

Figure 1-1. Amount of leachate collected from RVL. Asterisks indicate months of missing data.

In order to cover the cost of post-closure activities through post-closure year 20, RVL and Pacific County created a new post-closure account. A resolution placing a $4.05 per ton tipping fee on all solid waste disposed of through the Pacific County transfer stations was adopted by the Board of Pacific County Commissioners in January 1997, and became effective in April 1997.

In 2015, the owners of Rainbow Valley Landfill hired SCS Engineering out of Bellevue, WA, to evaluate the landfill for termination of post-closure. The study is estimated to last about 3 years at a cost of roughly $70,000. The current tipping fees are $4.05 per ton and will be re-valuated in the Financial Assurance Plan that is being developed by the consultants.

1.4 Government Jurisdiction and Responsibility

The state Solid Waste Management-Recovery and Recycling Act (RCW 70.95) assigns primary responsibility for waste handling to local government, while reserving for the state those functions necessary to ensure effective programs throughout the state. Ecology has overall responsibility for carrying out the goal stated in RCW 70.95: to establish a comprehensive statewide program for solid waste handling and solid waste recovery and/or recycling that will prevent land, air, and water pollution and will conserve the natural, economic, and energy resources of the state. Ecology's duties include the adoption and enforcement of basic minimum standards for solid waste handling and for providing technical and financial assistance to local governments in planning, developing, and conducting solid waste handling programs. Considerable emphasis is placed on Ecology to encourage and assist local governments and private industry in developing and implementing solid waste recovery and/or recycling projects.

The Act requires that 20-year comprehensive plans be developed by cities and counties and then reviewed and revised periodically, with technical assistance from Ecology. Upon each review, such plans shall be extended to show long range needs for solid waste handling facilities for twenty years into the future, and a revised construction and capital acquisition program for six years in the future. In accordance with Chapter 70.95.080 RCW, the municipalities in Pacific County are required to enter into an agreement with the County to adopt and amend the SWMP (see *Appendix A).*

RCW 70.95 assigns to the Pacific County Board of Health (BOH) the responsibility to adopt regulations or ordinances governing solid waste handling for implementation of the comprehensive SWMP. The purpose of these regulations or ordinances is to ensure that solid waste storage and disposal facilities are

located, maintained, and operated in a manner that will protect the public health, prevent air and water pollution, and avoid the creation of nuisances. In addition, DCD is responsible for reviewing and issuing permits for solid waste disposal sites or facilities. Ecology reviews such permits for consistency with this Plan, state laws and regulations.

As required by RCW 70.95, Ecology adopted minimum functional standards for solid waste handling (WAC Chapter 173-350), which were adopted by Pacific County in 2004. These guidelines provide county health departments with minimum standards for regulating solid waste handling and disposal. Ecology has also adopted criteria for municipal solid waste landfills (WAC 173-351). The purpose of this administrative code is to establish minimum standards for the operation and development of all municipal solid waste landfills in the state. WAC 173-351 only applies to existing landfills that have received waste after October 9, 1993; those landfills that did not accept waste after the above-mentioned date are subject to the post-closure requirements of WAC 173-304.

RCW Title 81.77 assigns to the Washington State Utilities and Transportation Commission (WUTC) certain responsibilities for regulating solid waste collection. These certificated collectors are regulated as common carriers or contract carriers, using the state highways. They are not regulated as a utility.

Under RCW 81.77, WUTC is responsible for the supervision and regulation of certificated collectors, including removal and fixing rates, regulating the service and safety of the operations, requiring filing of annual reports, and overseeing all matters affecting the relationship between the certificated hauler and the public. All garbage and collection companies are required to obtain a certificate from WUTC declaring that public convenience and necessity require such an operation. Regulations regarding the operation of garbage and refuse collection companies are included in WAC 480-70.

Under various chapters of state law (principally in RCW Title 35 for cities and RCW Title 36 for counties), as interpreted by various opinions of the State Attorney General over the years, the cities and counties have the following powers, among others:

- Cities and Counties may own and operate disposal sites (RCW 35.92 and 36.58). A site operated by one city may be designated as a county disposal site in a county wide plan.

- Cities may operate collection and transportation service (RCW 35.92). Counties may do so only if no private contractor is able to provide service in the area involved (RCW 36.58).

- Both cities and counties may make collection service compulsory and may set rates (RCW 35.21 and 36.58A).

- The County has the duty to provide garbage disposal sites for unincorporated areas (opinion of the Attorney General 5557, No. 283) and may designate where solid waste from unincorporated areas is disposed of (RCW 36.58).

The Interlocal Government Cooperation Act, RCW 39.43, authorizes local governments to work cooperatively in implementing state law. Consequently, local government units, such as a county and several cities, may jointly acquire, construct, and operate solid waste disposal facilities. The act also authorizes a public agency to contract with others to provide a service such as solid waste disposal.

1.5 Development of the Solid Waste Management Plan Update

The SWMP Update was prepared by DCD under the direction of the Pacific County Solid Waste

Advisory Committee (SWAC). The SWAC was organized to advise the Board of Pacific County Commissioners in matters relating to solid waste management. SWAC bylaws were prepared and adopted in May 1987, and amended in 1989, 1996, 2006, and 2009 (see *Appendix B*). The Pacific County DCD staff and members of the Pacific County SWAC are listed in *Appendix C*.

The SWAC members provided valuable assistance during the development and preparation of the update. Regular meetings were used to discuss issues and concerns and to review information and material incorporated in the update. Based on input from the SWAC, Ecology, Royal Heights Transfer Station, Pacific Solid Waste Disposal Transfer Station, and others a preliminary draft of the plan was prepared in mid-2015. Once the draft was prepared it was sent to the SWAC, County agencies, and the public who offered comments regarding the plan update. These comments were incorporated into the document.

The current SWMP will be reviewed every five years as required. Any amendments or revisions to the plan will be approved through the necessary parties. Amendments, being minor changes, will be reviewed by the groups impacted by the alterations and anyone listed in the interlocal agreements as required. A plan revision, as a redefinition of the SWMP, will require a lengthier review period. A draft will be prepared and sent to the SWAC, Ecology, Pacific County transfer stations, County agencies and the public. Once comments have been received, approved, and incorporated as necessary, a final draft will be sent for review and implementation.

Section 2: Planning Area

This chapter describes the physical setting of the planning area in order to provide a context for the discussion of solid waste management activities and issues in Pacific County. The planning area is discussed with regard to its geologic, hydrologic, topographic, and meteorological characteristics. These are related to land use constraints, particularly with regard to potential landfill development.

All planning activity in Pacific County is performed under the Washington State Growth Management Act (GMA) and has had a Comprehensive Plan in place since 1998 with a planning horizon of 25 years. The four incorporated cities also plan under GMA. Collectively, all five Comprehensive Plans identify and plan for both rural and urban areas, an identification of Rural Areas of More Intensive Development, and identifies the provision of urban types of services. The Pacific County Comprehensive Plan establishes clear criteria for the designation of urban and rural areas.

The contents of this chapter are based on the original 1973 SWMP. Updated information regarding past and existing sources of water pollution, rainfall, and ground water monitoring data have been provided for this section.

2.1 Geology

Geologic data that has been evaluated in the preparation of this SWMP includes:

- A geologic text for the Long Beach Peninsula prepared by Ecology.
- Generalized geology map of Pacific County prepared for the Southwest Washington River Basins Study.
- Preliminary geologic map of the South Bend Quadrangle and Raymond Quadrangle Map, Pacific County. Maps prepared by Holly C. Wagner of the United States Department of Interior, Geological Survey.
- Geology of the Montesano Quadrangle, Washington, by Howard D. Gowen and Maurice H. Pease, Jr., of the Unites States Department of Interior, Geological Survey.
- Geology of the Doty-Minot Peak Area, Washington, by Maurice H. Pease, Jr., and Linn Hoover of the United States Department of Interior, Geological Survey.

Detailed geologic data was limited to those areas covered by United States Geologic Survey field sheets provided by Holly C. Wagner. Geologic data for the Long Beach Peninsula area is limited to work prepared by the Southwest Washington River Basins Study.

The area included within the South Bend and Raymond quadrangle maps was introduced and uplifted by volcanic activity in the Eocene and Miocene ages. This uplift and consequent erosion and stream cutting have resulted in the present topography of the Willapa Hills. The elevation of the area is generally from sea level to 1,500 feet with many steep slopes over 25 percent.

There are several areas or outcrops of bedrock. The majority of the outcrops are the Cresent formation, which indicates that the entire area is underlain by this formation. The geologic description of this formation according to Wagner is as follows: "Predominantly fine-grained pillow and blocky-jointed

basalt. Amygdaloidal, augite-rich basalt and zeolite-cemented lapillic tuff and foraminiferal siltstone in the upper part. This formation is believed to be at least 5,000 feet thick."

Several (e.g., at Stony Point) small outcrops of intrusive igneous rocks are also noted. These outcrops are fine to coarse grained intrusives in the form of dikes and sills and are mostly dense basaltic rock. They are of late Eocene age.

This bedrock is generally impermeable and yields little to no ground water. The area south of South Bend is relatively free of faults. However, some surrounding areas may be highly faulted with approximately three major sets of joints or faults in the area. It is highly suspect that the whole area is also well faulted but is overlain with Quaternary deposits which make them impossible to locate and map. Ground water flow (including leachate) would probably be primarily along these joint lines. Thus, there is a potential danger of general ground water contamination in these areas. The principle overburden of the area is mostly terrace deposits of the Quaternary age.

2.2 Geology and Ground Water

This section of the Solid Waste Management Plan Update has been adapted from the Southwest River Basins Study. Ground water supplies in Pacific County are obtained from alluvium in the lower parts of the stream valleys, from beach deposits and dune sands adjacent to the Pacific Ocean, and from marine terrace deposits bordering Willapa Bay and the lower Willapa Valley. Underlying the entire area and cropping out east of Willapa Bay and in the uplands are consolidated Tertiary sedimentary and igneous rocks which generally are not capable of yielding significant quantities of water to wells.

Alluvium of Holocene age is found mainly in the bottoms of major valleys and at the base of cliffs consisting of terrace deposits. The deposits consist predominantly of sand and gravel with lesser amounts of peat, clay, and silt. The thickness of this unit varies from a few feet to several hundred feet. The major occurrence of alluvium is in the flood plains of the major rivers in the area. Porosity and permeability are not excessively high and yields to wells in the area are generally low except in the flood plain of the Columbia River where yields are quite large.

The beach and associated marine deposits are found along the coast of the area. The deposits consist of beach sand with lesser amounts of silt, clay, gravel, and peat and obtain a maximum thickness in excess of 1,400 feet in the area at the north end of the North Beach Peninsula. This unit thins to the south and wedges out along the east side of Willapa Bay. Water levels in wells tapping these deposits range from 4 feet above to about 20 feet below mean sea level and generally are less than 20 feet below the land surface.

Most of the wells tapping the beach sand are shallow (about 25 feet deep), small diameter sandpoints that produce only enough water for house and yard use. Most of the ground water withdrawal is on North Beach Peninsula and along the coast north of Willapa Bay, where large-diameter irrigation wells and infiltration trenches in the beach deposits yield as much as 2,000 gpm.

Terrace deposits of Pliocene-Pleistocene age consist of unconsolidated to semi-consolidated fluvial and glaciofluvial fine-grained sand with lesser amounts of silt and clay. The deposits overlie the bedrock in the northwest part of the area and are more than 800 feet thick north of Willapa Bay and near South Bend. These deposits locally yield more than 200 gpm to wells, but most of their thickness that extends above sea level along the coast and on valley sides is unsaturated. The terrace deposits apparently extend westward beneath North Beach Peninsula and the Tokeland Peninsula. The combined thickness of the terrace and beach deposits exceeds 1,000 feet at the north end of North Beach Peninsula but progressively

becomes less toward the south. Deep artesian aquifers occur in places. Some flowing wells on the Tokeland Peninsula tap an artesian aquifer that lies about 150 to 300 feet below the surface.

The older sedimentary and igneous rock of Tertiary age are composed of shales, sandstones, conglomerates, and volcanic flows and breccias. The thickness of this unit is large and may exceed several thousand feet. The rocks of the unit are generally low in porosity and permeability and yield little water to wells.

Recharge to the ground water occurs mostly during the rainy seasons of winter and spring. The parts of the area underlain by highly permeable beach deposits receive much more recharge from precipitation than do the higher altitude parts underlain by dense bedrock, even though less precipitation falls at the lower altitudes. The lands underlain by alluvium and terrace deposits generally receive intermediate amounts of recharge from precipitation; some of the runoff from the uplands enters the alluvium of the valley floors during the flood stages of the streams.

Ground water discharges as seepage to the stream channels, the bay, and the ocean. In areas where the water table is shallow, evapotranspiration also is a major form of ground water discharge. To date, pumpage is only minor in comparison to natural discharge of the ground water.

2.3 Ground Water Quality

According to the United States Geological Survey Water-Resources Investigations Report 95-4026 (1995) entitled *Ground-Water Flow and Water Quality in the Sand Aquifer of Long Beach Peninsula, Washington:*

> [...]the quality of the shallow ground water was generally good with a few small to moderate problems... Potential human-related sources of contamination of ground water in the Long Beach Peninsula are seawater intrusion caused by ground water withdrawals, agricultural activities - primarily cranberry growing, and sewage effluent from septic systems. No large problems of ground-water contamination were found; however, a few small to moderate problems were found[...].

Because major use is made of ground water on the Long Beach Peninsula and beach areas of the north county, the prevention of ground water contamination is imperative. For this reason it is the recommendation of this report not to locate a land disposal operation within areas characterized by Eolian Deposits of the Quaternary age.

2.4 Topography

Land forms of the County consist of ridges, low-lying hills, ocean beaches, bay front beaches, and tidelands. The hills rise from sea level to elevations of 1,500 feet on the Bear River Ridge in the southwest portion of the county. The Willapa Hills in the eastern portion of the County rise to elevations over 2,000 feet.

The dominant geographic feature of the County is the Willapa Bay estuary which is separated from the Pacific Ocean by the long, narrow barrier spit of the Long Beach Peninsula.

Numerous streams with headwaters in the Willapa Hills flow into the Bay. The most important is the Willapa River which has formed a broad valley through the center of the county, creating an important agriculture-transportation corridor. Other major streams include the Bear, Naselle, Nemah, North, Palix,

and Cedar Rivers. With the exception of the Willapa, most rivers are quite short and are located in steep slope areas with narrow valleys.

For the most part, Pacific County can be considered quite hilly and rugged. Slopes of over 25 percent are common in the hills while lower foothill and river basin slopes range from 5 to 25 percent, but generally do not exceed 15 percent. Slopes in excess of 10 percent are not generally well suited for urban development while slopes in excess of 25 percent are considered undevelopable for urban uses.

In 1997, Pacific County adopted the Pacific County Critical Areas and Resource Lands Ordinance No. 147, which defines areas such as erosion and landslide hazard areas and establishes more specific development guidelines for these areas. According to this ordinance, landslide hazard areas are those areas that are located on slopes greater than 15 percent.

Topographical characteristics in Pacific County have significant effects on the design of the Solid Waste Management Plan. Its impact on population distribution is especially noteworthy. It is assumed that population distribution will be limited to areas of less than 25 percent slope during the design period of this plan. Population is currently distributed in two basic areas of the county. The result of this distribution is dispersal over an extensive area as measured by linear miles or roads.

Slope effects on settlement within a 20-year design period can be anticipated to limit urban development to existing urban service zones or to those relatively flat areas which follow the river valleys and coastal areas of Pacific County. This type of population scattering will probably result in increased transportation and collection costs until a point is reached when the increase in density will bring the unit cost down. This point is not expected to be realized during the life of this Plan.

One of the primary influences on the design of a sanitary landfill site is topography. Because slopes of over 25 percent are common in the county, significant problems must be allowed for within design criteria. Erosion problems on steep slopes are compounded by easily eroded soils in areas lacking vegetative cover.

Accessibility to a preferred site will create increased costs, along with effective control of drainage from slopes commonly having excessive runoff. Use of a completed landfill site in a rugged area can be limited to a very narrow slope because of final grade limitations in areas of steep slope. Sanitary landfill methods considered are the areas method, trench and fill methods, and the ramp method. The ramp method, being the most suitable for steeper slopes, is feasible in areas having up to 30 percent slope, but increased costs due to difficulties of operating a sanitary landfill in this type of terrain (unloading, compacting, covering) may be significant.

2.5 Soils

The discussion which follows is primarily limited to soil evaluations that are related to the selection and operation of a sanitary landfill. Other solid waste management activities that require an evaluation of soils data include construction of an access road and design and construction of transfer facilities. Soil evaluations are analyzed in order to provide a rationale for site selection. It is used in conjunction with the adopted Minimum Functional Standards as a reference for evaluating costs associated with engineered designs intended to simulate or overcome certain soil properties. In most instances, the costs associated with this aspect of disposal site design will be significant.

Soil suitability interpretations are developed by the Soil Conservation Service. The interpretations are not evaluated for every aspect of a sanitary landfill disposal orientation. Interpretations are based on the use

of a soil type (area landfill, trench-type landfill, or cover material). Soil type is then evaluated on the basis of slope, texture, water table, flooding, permeability, depth to bedrock, soil drainage, stoniness class, and rockiness class. However, data contained within a published soil survey cannot be substituted for a geologic investigations of a landfill site.

There are six types of soils within the County that are interpreted as having moderate to slight limitations when used for sanitary landfill operations. These soils are as follows: Arta silt loam, 0 to 6 percent slopes; Cam silt loam, 0 to 3 percent slopes; Dune Lane; Netarts fine sand, 3 to 13 percent slopes; Newskah silt loam, 3 to 15 percent slopes; and Westport sand, 3 to 10 percent slopes. All the foregoing are interpreted as having moderate limitations for usage as a sanitary landfill except the Newskah soils which are interpreted as having slight limitations for landfill operations. The foregoing soil types are few in number and small in areas where utilization of desirable soil features for land disposal is practical. Such soils serve no usable purpose if they are not accessible.

Westport sands, Netarts sand, and Dune Lands are found exclusively along the Columbia River and Pacific Ocean coastline. These soil associations occur in narrow bands that parallel the coastline. These soils generally characterize a fragile dune environment which contains an extensive underlying ground water resource. Additionally, competing use demand for recreation and residential land use make this land expensive to acquire. It is for these reasons that Westport sands, Netarts sands, and Dune Lands will not be considered as a factor for siting a sanitary landfill. Soil Conservation Service scientists have interpreted the Arta silt loam of 0 to 6 percent slopes as presenting moderate limitations to the operation of a sanitary landfill. The Arta silt loam is moderately well drained and fine textured with a seasonal high water table of two feet and a bedrock of weathered shale or siltstone at 48 inches. Because the soil type is characterized by high water table, it does not conform to the adopted Minimum Functional Standards which require four feet between the lower limits of a sanitary landfill and ground water.

2.6 Climate

The most important climatic factor influencing the solid waste program in Pacific County is the high rainfall that predominates during the fall, winter and spring months. Leachate from a solid waste disposal site is directly related to the amount of water which percolates through a land disposal site. This water becomes contaminated with organic and inorganic materials which may eventually reach ground water supplies. In the case of Pacific County, large amounts of annual rainfall generally produce larger quantities of landfill leachate.

2.7 Rainfall

The rainy season begins in the fall, reaches a peak in the winter, and declines in the spring. Fluctuations within short distances of 5 to 20 inches in annual precipitation are common along the Washington coast. Annual precipitation ranges from 65 to 75 inches near the shoreline, 80 to 90 inches in the foothills, and the Willapa Hills typically receive an estimated 100 inches per year. This is compared to 125 to 150 inches along the windward slopes of the Olympia range. Figure 2-1 illustrates the annual precipitation as measured at the City of Raymond's Wastewater Treatment Plant from 2001 through 2011. Starting in 2012, the rainfall data was measured at the Washington State University Cranberry Research Station in Long Beach.

During the spring and summer months, a clockwise circulation of air around large high pressure areas covering most eastern north Pacific, brings a prevailing flow of air from a northwesterly direction into Washington. As the air moves upland from the ocean, its average temperature is 55 to 60 degrees Fahrenheit, becoming warmer and drier as it moves inland. This circulation results in a dry season

beginning in spring and reaching a midsummer peak during July and August, at which time it is not unusual to have two to four weeks of warm to hot weather with a few light rain showers. Fog banks are common in the latter half of the summer and fall, forming offshore and moving inland at night followed by general clearing along the beaches by the following noon.

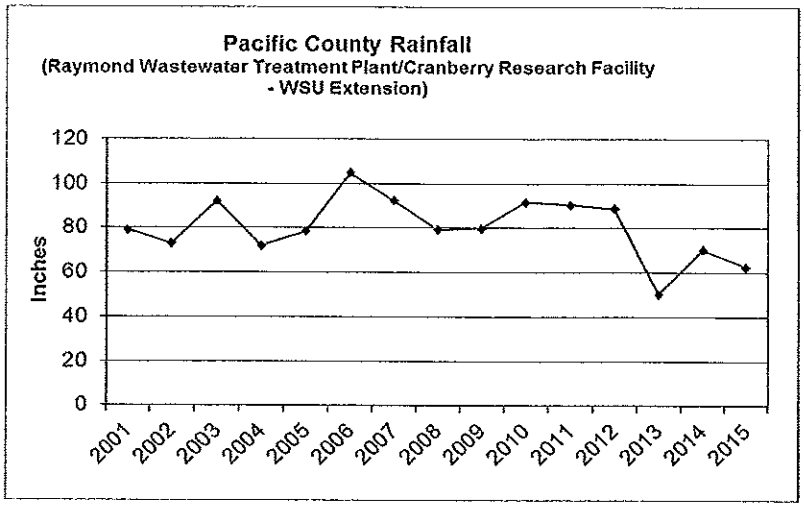

Figure 2-1. Amount of rainfall as recorded at the Raymond Wastewater Treatment Plant from 2001 to 2015.

2.8 Temperature

The second most important climate factor in relation to solid waste handling and disposal in Pacific County is temperature. A mid-latitude west coast, marine-type climate exists along the Washington coast with cool and comparatively dry summers, and mild, wet, and cloudy winters. The air is moist while the daily and annual temperature range is minor.

Decomposition of putrescible waste is dependent upon bacteria that are affected by extreme temperature fluctuations and moisture content. Because the average temperature range is small in Pacific County is minor, optimum decomposition rates should be attainable over a great percentage of the year. Fire hazard reaches extreme conditions only for certain periods during the summer months.

Decomposition deep within the fill is not affected by the air temperature to any great degree, but near-surface and surface decomposition rate fluctuates as the temperature fluctuates. Problems with handling fill or cover material during freezing weather are not of great magnitude.

One of the principle factors influencing temperature in areas close to large bodies of water is water temperature. The ocean current along the Washington coast reverses direction between summer and winter. The California current moves south in the summer and the Davidson inshore current shifts north in the winter. The coastal water temperature varies from 48 degrees Fahrenheit in February, to 58 F in August. In short, the ocean acts as a moderating factor, keeping temperatures near the coast from fluctuating extremely in short periods. Average afternoon temperature along the coast range varies from 65 F to 68 F; in mid-summer, the hottest temperatures, 90 F or above, occur when hot-dry easterly winds crossing the Cascade Mountains reach the coast. High temperatures seldom continue from more than a few days before cooler moist air from over the ocean moves inland.

During the winter, average daily temperatures are in the 40's while average evening temperatures are in the 30's. The coldest weather occurs when dry, cold northeasterly or easterly winds from the east of the

Cascades reach the coast. Additional heat is lost by radiation at night because of frequent clear skies. Temperature may drop to 20 F or lower while maximum temperatures may reach the mid-30s. Cold weather seldom lasts more than a few days before warmer, moist air moves inland from over the ocean. The last freezing temperature in the spring is in the middle of April while the first freeze in the fall is towards the end of October. Snowfall is light in the beach areas, usually with minimum accumulation. Snowfall increases inland and in the foothills.

2.9 Wind

In relation to solid waste handling, wind velocity causes only one problem of any significance, this being the disposal of waste paper at a land disposal site or transfer station. During the rainy season this problem is usually minimal because of the moisture content of paper, while in the summer it can be a nuisance.

In the fall and winter, the low pressure center near the Aleutian Islands intensifies and spreads southward, while the high pressure center becomes smaller and also moves south, resulting in a prevailing flow of warm, moist air from a southwesterly direction. During the winter, weather disturbances crossing the northern Pacific follow a more southerly course, resulting in an increased number of storms striking the Washington coast. Wind velocities of 50 to 70 mph are not uncommon as these storms move inland. The highest wind velocities usually occur at North Head (113 mph) and in the Willapa Hills (2,000 feet - 100 mph). In the spring the frequency of storms over the north Pacific decreases and the ocean becomes gradually calmer. The high pressure area moves northward while the prevailing wind direction gradually shifts from southwest in the winter to west in the spring, northwest by early summer, and back to west in the early fall.

2.10 Hydrology

The hydrology of Pacific County is dominated by the Willapa Estuary and to a lesser degree by the Columbia Estuary. Tributary streams are characteristically short and drain directly into the estuaries. The Willapa River Basin is the largest watershed in the County while the Naselle River is an important basin in the south portion of the County. Flooding within the river basins above the level of tidal influence is caused by intensive rainfall.

The Willapa Estuary was created by the well-developed barrier spit which formed behind North Head. Analysis has shown the peninsula sand was formed by Columbia River sediment. Floods within the estuary are caused by intensive precipitation from winter storms, above normal tides and tidal build-up from westerly and southwesterly winds. A combination of these three factors can lead to severe flooding around the Bay and on the major streams near the Bay.

The waters of the Willapa Bay are particularly favored by strong natural forces causing good circulation in most areas. These forces include tides, runoff from land, and mixing by winds. The California current and the Davidson counter current, coupled with tidal action, have an effect on the exchange of Pacific Ocean water with Bay water.

The basic direction of circulation of water in Willapa Bay and other estuaries of the Pacific Coast is controlled by "Coriolis Acceleration" produced by the rotation of the earth. From the Bureau of Governmental Research and Service, *Preliminary Land Use Plan for the Yaquina Bay Area*, Eugene, Oregon, 1969:

> Because of the earth's rotation, moving water north of the equator "always tends to flow toward the right side of the direction of flow. That is, water flowing toward the south tends

to be pushed westward; water flowing toward the west tends to be pushed northward, etc... Incoming water with the rising tide tends to flow along the south (and west) shores of the bay - - outflow is higher along the north shore." Therefore, a counter-clockwise circulation pattern develops.

Good water circulation transports food to natural communities, removes natural wastes, renews mineral nutrients, maintains high levels of dissolved oxygen and aids dispersal of eggs and larvae of aquatic organisms. In general, this estuarine system is well mixed from May through October, while it alternates between well mixed and partly mixed from November through April. However, during periods of heavy runoff, a layer of fresh water can be found in the upper estuary near tributary systems.

One substantial theory relating ground water to the sea water that surrounds the Long Beach peninsula comes from two turn-of-the-century scientists, Gyben and Herzberg. As explained by J. S. Brown (*A Study of Coastal Groundwater*, U.S. Geological Survey Water Supply Paper 537, pp 16-17, 1925) and applied to ground water existing under an island, "on small pervious islands above mean sea level. Salt water surrounding the island does not penetrate the sand to mean sea level but such islands are found to contain a dome-shaped lens of fresh groundwater floating upon a concave surface of salty water. The fresh groundwater floats on the salt groundwater because its density is lower."

Topography of the Long Beach peninsula is comprised of lowland areas, soils are sandy and of high permeability, and the seasonal high water table is two to three feet below the surface on the average. The Criteria for Municipal Solid Waste Landfills, Chapter 173-351 WAC, states that ten feet of separation between the bottom of the lowest liner and the highest ground water level shall be the minimum allowed without a hydraulic gradient control system. Based on the physical characteristics present in the peninsula area and the existing landfill requirements, it is believed that a landfill could not be sited in the Long Beach peninsula area.

2.11 Willapa Bay

The Willapa Bay estuary, which lies entirely within Pacific County, is a marine estuary that remains in a relatively unspoiled condition. It is known throughout the world for its production of high-quality oysters and other shellfish. These shellfish must be grown in a protected watershed in order to prevent their contamination. Both Pacific County and the State of Washington consider the Willapa Bay estuary to be a resource that should receive the highest degree of environmental protection. In consideration of siting new landfill facilities in the county, the SWAC has recommended that areas in the Willapa Bay watershed be excluded in order to protect this resource.

Potential sites for a new landfill in Pacific County, outside of the Willapa Bay drainage area, are limited to a very few remote areas that are generally mountainous and heavily forested. The ability to site a new landfill in the County has become prohibitively difficult because of these limitations. The SWAC has thus decided that the siting of such an in-county facility is not likely and that future long-term disposal for solid waste must take place out of the County.

Section 3: Existing Conditions, Practices, and Projections

3.1 Introduction

This section is updated from the previous Pacific County Solid Waste Management Plan and reflects the 2015 solid waste conditions and practices in Pacific County. Discussions related to the generation, collection, transportation, processing, and disposal of solid waste are listed below. Also discussed is the generation and handling of special wastes, illegal disposal of solid waste, and future projections for the generation and disposal of solid waste in the County. The current and projected quantities presented in this update are based on those figures supplied by the solid waste haulers of Pacific County and from Royal Heights Transfer Station, and Pacific Solid Waste Disposal Transfer Station.

3.2 Existing Conditions & Practices

3.2.1 Demographics

According to the US Census Bureau, the population of Pacific County in 2010 was estimated at 20,920, a decrease of 0.3% over the 2000 Census data (http://quickfacts.census.gov/qfd/states/53/53049.html). Federal Census data illustrates that in 2010 there were 9,499 occupied housing units reflecting a decrease of 47.8% from 1990. Federal Census data also indicates that, in 2010, 16.8 percent of the people in Pacific County were living below the poverty level.

3.2.2 Solid Waste Generation

From 2005 to 2015 the overall solid waste generation rate has started to increase (Figure 3-1). The rate is calculated using the annual reported waste disposal rates at both transfer stations and the estimated Pacific County population. Historically, solid waste in Pacific County has increased at roughly the same rate as the population increase but is recently indicates that the amount of waste is outpacing the population growth. No distinction is made between commercial or residential solid waste generation rates; however, past estimates use a 60/40 split between residential/commercial wastes. This rate formula does not account for the illegal disposal of solid waste.

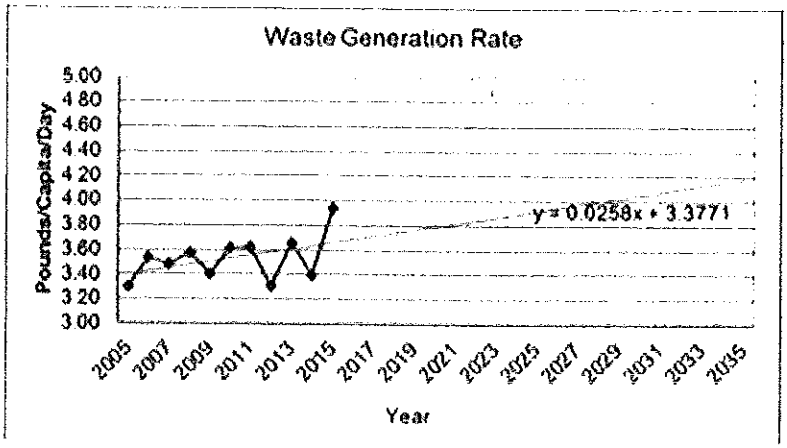

Figure 3-1. Projected Waste Generation Rate for Pacific County based upon current waste collection rates and the population.

The combined commercial and residential per capita waste generation rate using 2010 Census data for Pacific County of 3.94 pounds per person per day is derived from the 15035.35 tons of solid waste collected from the transfer stations in 2015. It also includes the commercial and residential accounts of 5,513 for material deposited in both transfer stations.

Seasonal populations of residents and daily visitors fluctuates significantly, especially along the Long Beach Peninsula area. This variation produces higher volumes of solid waste during the summer months, as seen in Table 3-1. Compositions of the waste also varies, depending on the time of year. Based on the

observations of Pacific Solid Waste Disposal staff, the composition of waste tends to be derived more from the commercial food service businesses and construction, demolition, and land clearing (CDL) waste during the summer months. Though seasonal fluctuations are reflected in overall volume figures, it is important to recognize waste stream variations in composition and volume, particularly in regard to meeting waste reduction and recycling goals.

According to Figure 3-1, the waste generation rate in Pacific County is increasing compared to previous updates when it was noted that the generation rate was decreasing. In 20 years, it is estimated from the data that ¾ of pound more per capita per day will be generated. As the current sold waste handling needs are being met, it is assumed that current facilities and programs are adequate to handle the needs of Pacific County residents up to 20 years in the future.

	Royal Heights	Pacific Solid Waste Disposal	Total
Jan	336.49	847.36	1183.85
Feb	277.04	689.74	975.78
Mar	304.72	846.57	1151.29
Apr	343.76	880.09	1223.85
May	301.77	973.46	1275.23
Jun	307.14	910.56	1217.70
Jul	343.65	970.16	1313.81
Aug	318.91	1093.79	1412.70
Sept	321.88	1135.24	1457.12
Oct	307.25	1168.34	1475.59
Nov	315.88	913.00	1228.88
Dec	313.35	815.20	1128.55
Total	3791.84	11243.51	15035.35

Table 3-1. Tons of waste collected per month by each transfer station, 2015.

3.2.3 Collection

There are two municipal and two private solid waste collection agencies within Pacific County. The cities of Raymond and South Bend provide city owned and operated collection services that offer weekly residential pickup along with commercial pickup.

Peninsula Sanitation Service, Inc. has a certificate that covers the majority of Pacific County *excluding* the incorporated cities of Raymond, South Bend, Long Beach, and Ilwaco, and the North Cove/Tokeland area. The Cities of Long Beach and Ilwaco contract to Peninsula Sanitation Service to operate a collection service. Harbor Disposal, Inc. of Aberdeen, Washington has a certificate that includes the collection of solid waste in the North Cove/Tokeland area. Table 3-2 lists a comparison of the number of accounts for all commercial haulers.

	2005		2011		2015	
Hauler	R	C	R	C	R	C
Peninsula Sanitation Service	4381	593	4869	573	5201	598
Harbor Disposal	390	20	--	--	--	--
City of Raymond	1038	158	890	146	913	149
City of South Bend	779	119	770	112	559	87

Table 3-2. Number of accounts for the service providers in Pacific County. 'R' indicates Residential and 'C' indicates Commercial.

Each collection company is responsible for the proper disposal of the solid waste they collect. Raymond and South Bend dispose of the solid waste generated in their cities at Royal Heights Transfer Station. Peninsula Sanitation Service utilizes both transfer stations for disposal. Waste collected north of Bay Center is taken to Royal Heights Transfer Station for disposal while the waste collected from Bay Center south is taken to Pacific Solid Waste Disposal Transfer Station. Harbor Disposal transports the waste they collect in Tokeland and North Cove to a LeMay Transfer Station located in Grays Harbor County. They were unable to provide any additional data for this report.

Different collection services offer different alternatives for the collection of solid waste. The collection services in Pacific County are as follows with the note that the commercial collection containers are available for temporary residential use.

City of Raymond
230 2nd St, Raymond, WA 98577
Population served: 2,787

Residential

- 32 gallon can collected weekly

Commercial

- 1 yard, 1.5 yard, and 2 yard dumpsters

City of South Bend
1102 W First St, South Bend, WA 98586
Population served: 1,594

Residential

- 32 gallon can collected weekly

Commercial

- 1 yard, 1.5 yard, and 2 yard dumpsters

Peninsula Sanitation Service
116 Howerton Way SE, Ilwaco, WA 98624
Population served: 16,474

Residential

- 30 gallon bag collected as needed
- 60 gallon can collected either weekly or monthly
- 90 gallon can collected weekly

Commercial

- 60 gallon, 90 gallon, and 300 gallon cans
- 20 yard and 30 yard dumpsters

Harbor Disposal
4201 Olympic Highway, Aberdeen, WA 98520
Population Served: 300

Residential

- Mini can (20 gallon) collected weekly
- 32 gallon can collected weekly or monthly
- Curbside recycling

Commercial

- 1 yard, 1.5 yard, 2 yard, 3 yard, 4 yard, 5 yard, 6 yard, 8 yard, 15 yard, 20 yard, 30 yard, and 40 yard dumpsters

3.2.4 Processing

There are two privately owned and operated transfer stations in Pacific County, Pacific Solid Waste Disposal Transfer Station near Long Beach and Royal Heights Transfer Station near Raymond. These transfer stations serve their respective areas of the county and also serve the licensed commercial haulers within the county. Solid waste generation tends to fluctuate depending on the time of year.

The above-mentioned solid waste fluctuation tends to occur in the summer months and is due to the

dramatic increase in tourism, and summer population, along the Long Beach Peninsula.

The wastes generated in Pacific County consist of residential, commercial, institutional, and industrial waste. This waste is typically commingled within one truck during collection, thus there are no records showing the breakdown of the individual waste types. As per current guidelines, transfer stations located in Pacific County are inspected annually to ensure that all standards and guidelines are being met.

3.2.5 Disposal

Final disposal of solid waste from both transfer stations in Pacific County takes place at a landfill operated by Waste Connections, in the Wasco County landfill located near The Dalles in Oregon.

3.2.6 Illegal Solid Waste Disposal

Illegal solid waste disposal is a significant problem in Pacific County. Dumping can contribute to ground and surface water contamination, propagate vectors, and create unsightly aesthetic impacts. County staff indicates that individuals commonly associated with illegal dumping activities often lack the financial resources to afford disposal fees or find that the large amount of forest land provides ample opportunity to illegally dispose of their waste material.

Pacific County DCD staff investigates and illegal and improper solid waste disposal activities reported to the department. Between January 1, 2006 and December 31, 2015, the DCD received, documented, and inspected, 3161 solid waste complaints in the County. Solid waste complaints range from illegal solid waste disposal activities for which the violator is not the property owner, to improper solid waste disposal by the property owner on his/her property has caused a nuisance to the neighboring property owners. Of the complaints received and enforced upon by the county, 2859 were corrected. An additional 13,116 general assistance requests were received which include everything related to solid waste and illegal dumping but not specifically a complaint.

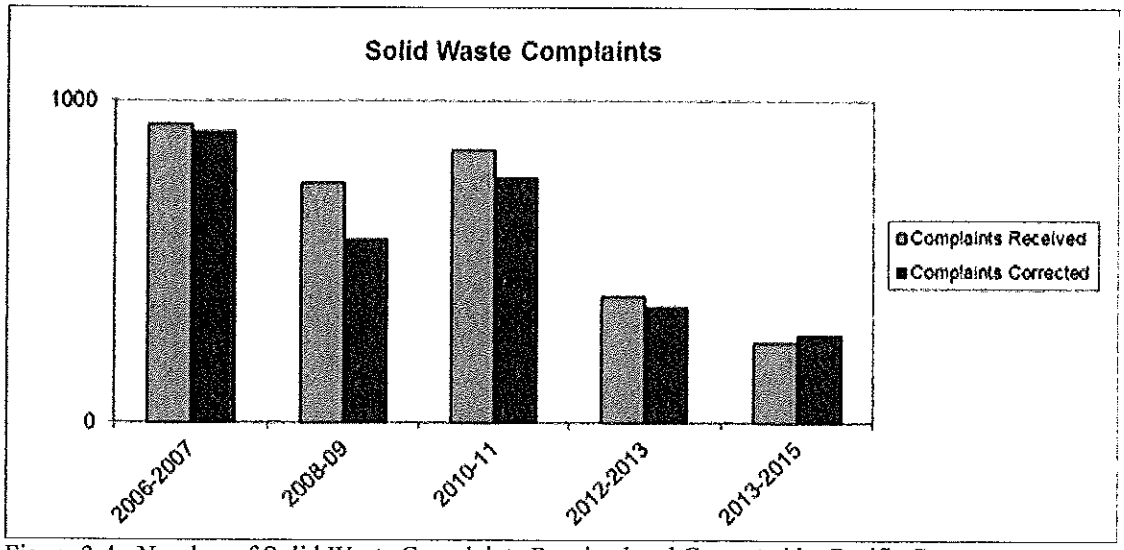

Figure 3-4. Number of Solid Waste Complaints Received and Corrected by Pacific County.

3.2.7 Roadside Litter Program

Since 2005, Pacific County has applied for and received a Community Litter Clean-up Program (CLCP) grant from Ecology to collect, and properly dispose of roadside litter and illegal solid waste piles, when

the grant is available Working cooperatively, the Pacific County Sheriff's Department, Pacific County Department of Community Development, and the Washington State Department of Corrections oversaw the use of county jail inmates and community service workers perform the above-mentioned tasks. In March of 2005, DCD regained program oversight and management from the Pacific County Sheriff's Office.

Since that time each summer, DCD has employed local high school students during the summer break as a youth litter crew to pick up litter on the roads of Pacific County.

In 2015, the Summer Youth Litter Crew cleaned a total of 207 miles, 78.8 of those miles were on state roads and 128.2 on local county roads. A total of 10,011.8 pounds of litter was picked up.

Aluminum Recycle	301.8 lbs
Illegal Dumpsites	2040.0 lbs
Ocean Park Beach Approach	3180.0 lbs
Road Trash	4490.0 lbs

Table 3-3. 2015 Litter Stats.

3.2.8 Funding

The majority of County-sponsored solid waste activities, including waste reduction and recycling education and solid waste enforcement, are grant funded. Currently the county utilizes the Department of Ecology sponsored Coordinated Prevention Grants (CPG). CPGs are typically a two year grant program. In November 1988, the people of Washington approved Initiative 97, which is known as the Model Toxics Control Act. This law established the legal framework to deal with existing hazardous waste sites and to prevent future sites. This included grants to local governments for remedial actions (highest priority), hazardous waste management plans and programs, and solid waste management plans and programs. Ecology developed the CPG program to unify a collection of separate grant programs for the second and third priorities - hazardous and solid waste management plans and programs. The state rule that governs this program is Chapter 173-312 WAC.

In 2013, due to a state budget shortfall, the Department of Ecology had to sell state bonds in order to subsidize the Coordinated Prevention Grants. The state is continuing to sell bonds to subsidize these activities. The table below describes the funding amounts for the CPG and CLCP grants.

	2006-2007	2008-2009	2010-2011	2012-2013	2014-2015
SW Enf (CPG)					
Ecology	*$99,729.00*	*$10,681.90*	*$151,889.00*	*$59,618.25*	*$86,791.25*
Local Match	$33,243.00	$35,616.00	$50,630.00	$19,872.75	$28,920.42
MRW (CPG)					
Ecology	*$25,400.00*	*$139,445.00*	*$142,132.00*	*$63,369.75*	*$129,453.75*
Local Match	$41,800.00	$46,482.00	$47,377.00	$21,123.25	$43,151.25
Litter (CLCP)	$49,233	$102,761	$34,133	$54,751	$37,092

Table 3-4. Funding Amounts received by Pacific Count for Solid Waste Enforcement (Enf), Moderate Risk Waste (MRW), and Litter activities. These amounts reflect the initial funding amount in the grant and do not include any budget adjustments through amendments.

3.2.9 Special Wastes

Special wastes are those wastes that do not meet the same standards as mixed municipal solid wastes. These wastes require special handling and disposal practices because of their bulk or chemical and physical content. The special wastes discussed in this subsection include:

- Construction and demolition waste
- Wood waste
- Agricultural waste and manures
- Automobile hulks
- Asbestos waste
- Petroleum contaminated soils
- Appliances
- Tires
- Sewage biosolids and septage
- Medical waste
- Seafood Waste
- Electronic Waste

The amount of any individual special waste, other than seafood waste, generated within Pacific County is not large enough to support a processing facility. Thus, after minor processing, most special wastes are exported out of the county.

CONSTRUCTION & DEMOLITION WASTE

Construction, demolition, and land clearing (CDL) debris is currently accepted at both Pacific County transfer stations and mixed with other solid waste for export out of the county. The Pacific Solid Waste Disposal Transfer Station removes a portion of the wood waste from this waste stream and grinds it into mulch and landscape cover. Pacific County encourages the recycling of construction and demolition waste.

WOOD WASTE

Wood waste is defined in WAC 173-350-100 as:

> "...solid waste consisting of wood pieces or particles generated as a by-product or waste from the manufacturing of wood products, construction, demolition, handling and storage of raw materials, trees and stumps. This includes, but is not limited to, sawdust, chips, shavings, bark, pulp, hogged fuel, and log sort yard waste, but does not include wood pieces or particles containing paint, laminates, bonding agents or chemical preservatives such as creosote, pentachlorophenol, or copper-chrome-arsenate."

Wood waste is generally attributed to three sources within the County. Including, but are not limited to:

- Sawdust, chips, shavings, bark, hog fuel, and log sort yard waste generated by the wood products industry.
- Stumps from land clearing activities.

- Scrap wood from construction and demolition projects.

The Weyerhaeuser plant in Raymond generates wood waste at its facility. The company utilizes its waste as pulping material, animal bedding, or hog fuel. Weyerhaeuser has approval from the Pacific County Department of Community Development to allow distribution of its wood waste as animal bedding and landscaping material. The Department has stated its support of these uses, provided, the material is kept from being placed in wetlands or in contact with surface water. Property owners receiving over 20 cubic yards of this material at any one site will be required to obtain a permit to allow tracking of the material.

Wood waste is accepted at both transfer stations. The Pacific Solid Waste Disposal Transfer Station accepts wood waste at a reduced tipping fee and grinds this waste into mulch and landscape cover for re-sale back to the public. The Royal Heights Transfer Station comingles this waste with municipal solid waste and disposes of it as such.

AGRICULTURAL WASTE

Currently, in Pacific County, there are seven dairy farms and all of them have waste storage facilities. According to Megan Martin, Natural Resource Technician/Agricultural Planner for the Pacific County Conservation District, these seven dairy farms currently support 2,500 animal units (1 animal unit equals 1,000 pounds) in their operation and generate approximately 21,000,000 gallons of animal waste and rainfall runoff annually. This waste is stored in waste storage facilities (manure lagoons) and spread onto fields during the proper times of the year, when runoff is least likely.

An estimated 2,500 animal units are utilized in beef operations at three full-time farms and numerous hobby farms in the County. These animals generate approximately 6,500,000 gallons of waste per year. This waste is typically "dry stored" by the operator and land applied during the appropriate times of the year, when runoff is least likely.

The Pacific County transfer stations do not accept animal waste for disposal.

AUTOMOBILE HULKS

A "junk vehicle" means a motor vehicle certified under RCW 46.55.230 as meeting all the following requirements (RCW46.55.010(5)):

1) Three years old or older.
2) Extensively damaged, such damage including but not limited to any of the following: a broken window or windshield or missing wheels, tires, motor, or transmission.
3) Is apparently inoperable.
4) Has a fair market value equal only to the value of the scrap in it.

In Pacific County, there are two known automobile hulk companies designated for the reuse of parts and the recycling of scrap metal. Most hulks are taken from these wrecking yards directly to an out of County recycling facility for final reuse and disposal.

ASBESTOS WASTE

Asbestos is a naturally occurring mineral historically used in structures and vehicles. Because of its heat resistant properties asbestos was used in a wide variety of products, including, but not limited to; appliances, ceilings, wall, and pipe coverings, floor tiles, automobile brake pads, and some roofing

materials. Even though its unique qualities allow asbestos to be made into useful products, the breakdown of asbestos, into microscopic fibers, can cause significant health problems.

According to the booklet entitled "Asbestos in the Home", numerous steps have been taken by both the Environmental Protection Agency (EPA) and the Unites States Consumer Product Safety Commission (CPSC) to reduce exposure to asbestos. These steps include:

- In 1973, EPA prohibited the spraying of asbestos containing materials for insulation, fire protection, and soundproofing.
- In 1975, EPA prohibited the use of asbestos for pipe covering if the material is easily crumbled after it dries.
- In 1977, CPSC banned two asbestos containing products: patching compound and artificial fireplace emberizing materials (ash and embers) containing respirable asbestos.
- In 1986, CPSC required labeling of products containing asbestos. These products include asbestos paper and millboard; asbestos cement sheet; dry-mix asbestos furnace and boiler cement; laboratory gloves and pads; asbestos stove mats and iron rests; central hot air furnace duct connectors containing asbestos; and bulk asbestos fibers. Asbestos products not labeled according to these provisions will be considered misbranded and thus may be subject to enforcement action by the commission.
- In 1989, EPA announced a phase-in ban of most asbestos products, culminating in 1996.

The health risks associated with asbestos are very dependent on its physical state, as this product must be inhaled to cause lung and/or stomach cancer. Typically, asbestos is classified as either friable or non-friable. Friable asbestos can easily break apart and become airborne causing a much greater health risk. Non-friable asbestos has less of a tendency to break apart thereby reducing the health risk.

It is not known how much asbestos waste is generated in Pacific County annually. Only the Pacific Solid Waste Disposal Transfer Station will accept non-friable waste if the waste is double bagged by the disposer and a special disposal permit is applied for and received from the regional landfill. A similar special disposal permit may also be obtained in the case of a situation where there is a need to dispose of friable waste.

PETROLEUM CONTAMINATED SOILS

Petroleum contaminated soils are those soils containing significant quantities of gasoline, kerosene, diesel, and/or other petroleum products. The clean-up of such soils in Washington State is governed by the Model Toxics Control Act (RCW 70.105D). Depending on the degree and type of contamination, petroleum contaminated soils can be classified as a solid waste, problem waste, or dangerous waste. Handling depends on that classification.

Commonly, petroleum contaminated soils are either treated on-site or transported to an out of County facility.

Bioremediation is a common on-site treatment method for such wastes. This process utilizes certain bacteria to enhance the degradation of the petroleum products in the soil. Off-site methods include landfill disposal and the utilization of treatment facilities.

The Pacific Solid Waste Disposal Transfer Station will accept petroleum contaminated soils as long as a special disposal permit is applied for, and received, from the regional landfill, and the contaminated soil is sampled by the disposer with the sampling results included in the special permit. The Royal Heights

Transfer Station does not accept petroleum contaminated soils.

Numerous above and below ground fuel oil tanks exist in Pacific County. These tanks supply heating oil for many, if not most, of the older homes in the area. For commercial underground fuel tanks, the Washington State Department of Ecology maintains a program for these tanks. Ecology currently regulates active tanks on different properties, including gas stations, industries, commercial properties, and governmental entities. The agency works to ensure these tanks are installed, managed, and monitored in a manner that prevents releases into the environment. To do so, the agency conducts compliance and provides technical assistance to tank owners. For more information please visit their web site at http://www.ecy.wa.gov/programs/tcp/ust-lust/tanks.html.

APPLIANCES

Larger appliances, specifically washing machines, dryers, refrigerators, freezers, hot water heaters, stoves, and dishwashers are typically bulky, extremely difficult to compact, and contain large amounts of recyclable ferrous metals. There are two environmental problems associated with certain types of larger appliances: 1) older models contain electrical capacitors containing polychlorinated biphenyls (PCB's), and 2) refrigeration devices utilize chloroflurocarbons (CFC's) as refrigerants. Federal and State regulations require both of these items be removed by a certified technician and disposed of properly.

These appliances are currently accepted at both transfer stations within the County. Disposal prices range from $5 per appliance to $40 per appliance depending on the type and disposal location. The appliances are collected, processed, scrapped, and delivered to a recycling facility outside of Pacific County.

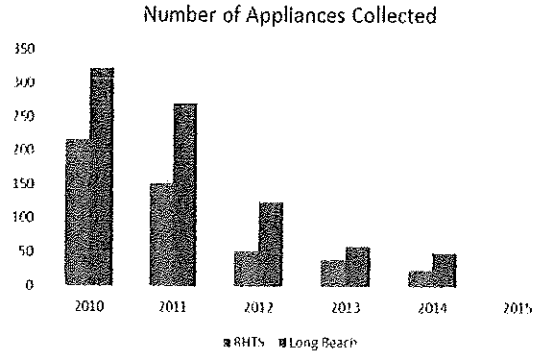

Figure 3-5. Appliance Day participation declined greatly in recent years.

Since the mid-1990s, Pacific County, in cooperation with the local transfer stations, has conducted 1-2 appliance disposal events per year. During these events, the public is invited to deliver their old, unwanted appliances to the transfer station and dispose of that appliance at no charge. The following figure shows the breakdown of appliances and location. Due to declining participation, no events were held in 2015.

With the implementation of the free disposal events, Pacific County was able to keep many of these appliances out of the illegal disposal waste stream. When the time spent in code enforcement and disposal costs for clean-up of illegally dumped appliances is considered, it is more efficient and a better use of resources to hold the free disposal event.

TIRES

Waste tire disposal is generally the responsibility of the retailer. The Pacific County transfer stations accept waste tires and charge disposal costs ranging from $2.00 per car tire up to $18.00 per truck tire with rim. The Pacific Solid Waste Disposal Transfer Station utilizes the disposal services of Waste Recovery in Portland, Oregon for tire processing.

Washington Administrative Code 173-350-350 addresses the storage requirements for tire piles

containing more than 800 tires. There is not believed to be any permanent tire piles at or near the 800 tire limitation in Pacific County.

SEWAGE BIOSOLIDS & SEPTAGE

Sewage Biosolds is defined in WAC 173-350-100 as:

> "...municipal sewage sludge that is a primarily organic, semisolid product resulting from the wastewater treatment process, that can be beneficially recycled and meets all applicable requirements under chapter 173-308 WAC, Biosolids management. Biosolids includes a material derived from biosolids and septic tank sludge, also known as septage, that can be beneficially recycled and meets all applicable requirements under chapter 173-308 WAC, Biosolids management."

There are three municipal sewage treatment plants located in Pacific County. One plant services both Raymond and South Bend, and the cities of Long Beach and Ilwaco each have their own. Currently, only the cities of Long Beach and Ilwaco land apply the biosolids generated at their treatment plants.

In early 1998, the Washington State Department of Ecology adopted rules and regulations pertaining to a generation and disposal of biosolids, which changes the biosolids status from solid waste to commodity. Despite this change, Ecology's Solid Waste Program still regulates biosolids. Counties have the option to enter into a Memorandum of Agreement with the Department of Ecology for the authority and responsibility to inspect, monitor and review plans involving the management of biosolids in their jurisdiction. Presently, Ecology has sole authority over the permitting of the generation and land application of this waste in Pacific County, as the County has not opted to seek delegation from Ecology to administer portions of the State's biosolids program. However, Pacific County could apply for delegation of this authority in the future.

MEDICAL WASTE

Medical waste consists of potentially infectious and injurious wastes originating from facilities such as: hospitals, nursing homes, veterinary clinics, and private residences to name a few. Medical wastes include, but are not limited to, the following items: needles, syringes, bandages, tissues, animal carcasses, or any other pathogenic organisms.

Washington Administrative Code 296-62 requires all employers, whose employees are subject to contact with blood or blood borne pathogens, to provide protection from and proper disposal of these wastes.

Commercially generated medical waste is not accepted for disposal at the transfer stations in the County. Pacific County transfer stations do accept, advertently or inadvertently, medical wastes generated within private households. This waste must be contained within a durable container, such as a PET bottle or sealed coffee can and clearly labeled.

SEAFOOD BY-PRODUCT WASTE

As the major shellfish production and processing center on the Washington coast, Pacific County's economy includes a substantial marine resource component. Dungeness crab, Pacific pink shrimp, albacore tuna, and bottom fish production are the major components of the commercial fishing industry, based primarily in Ilwaco and Chinook. Nearly 120 million pounds of shellfish and fish are produced each year, valued at over $100 million at wholesale level.(WSU Marine Extension: Sept. 16th, 2003).

Pacific County is the enforcement agent of Washington State's Department of Ecology regulations. In accordance with Ecology regulations, seafood waste produced by the five major processing plants within Pacific County must be disposed of properly.

An Ecology sponsored By-Product Utilization Study was conducted in 2004. It determined that land application, composting with wood waste and shell drying are three main options for the utilization of seafood by-products. It found that land application on agricultural farm land is currently the most economical and beneficial use of these materials. It has been proven that the benefit from the shellfish by-products nutrients as fertilizer is an effective means to increase the yield of crop production for cattle feed. In 2015, Pacific County permitted one land application site, using an agronomic rate of 10 wet tons per acre.

In 2003, Pacific County facilitated a demonstration composting project in which seafood by-products were composted with wood-waste using the aerated static pile method. The project was conducted east of Raymond at the Willapa Milk Company Farm. Unfortunately, the site was located too close to a residential area and had to be abandoned due to odor management problems.

ELECTRONIC WASTE

Electronic waste (E-waste) is comprised of a broad range of electronic devices, ranging from hand held cellular phones, computers, monitors, copiers, fax machines, etc.

In 2006, the state of Washington passed an electronic recycling bill that requires that manufactures finance the collection, transportation, and recycling of TV's, monitors, laptops, and desktop computers. As of January 1, 2009, manufacturers were required to implement the new program, e-Cycle Washington, with at least one participating location located in each County, depending on the population. There are two locations in Pacific County, at both transfer stations. All items included in the e-Cycle Washington are accepted at no charge.

3.3 Waste Quantity Forecast

The following solid waste projections are based on the actual waste disposed of at the two transfer stations from 1992 to 2015. Trend/regression analyses completed on these data points show a general increase in future MSW (Figure 3-6).

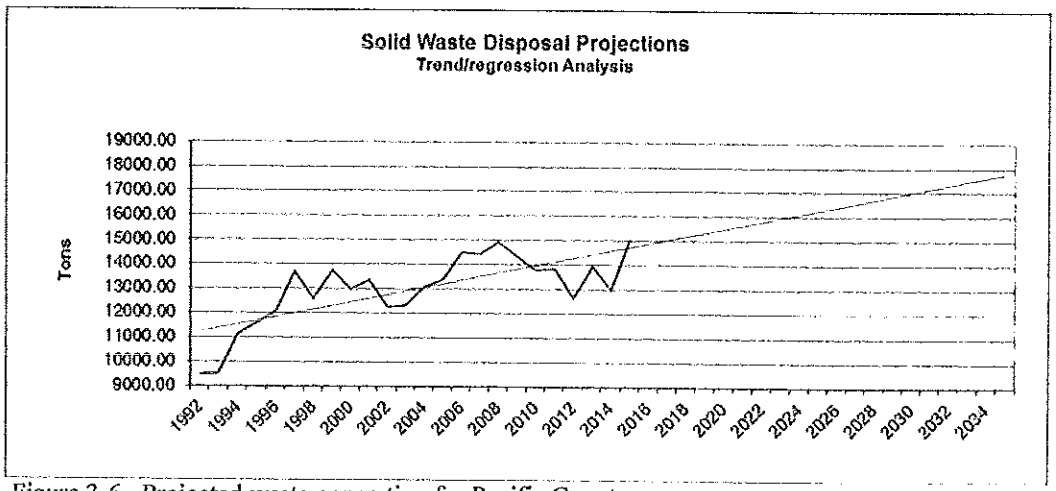

Figure 3-6. Projected waste generation for Pacific County.

3.4 Recommendations

3.1 Assess the Pacific County waste stream through another waste characterizations study. If necessary, make mixed waste paper and cardboard collection available. Promote composting education and training as desired.

3.2 Analyze and consider the implementation of universal solid waste collection County-wide.

3.3 Analyze and consider the implementation of a solid waste disposal district with consideration to the results from the facility siting recommendations listed in Chapter 2.

3.4 Locate and permit all construction waste, demolition waste, inert waste, and wood waste storage and disposal facilities required by WAC 173-350. Identify alternatives for disposal of these items.

3.5 Continue the free County sponsored appliance collection events.

3.6 Continue the County's solid waste enforcement activities.

Section 4: Household Hazardous Waste and Small Quantity Generator Program

4.1 Introduction

This section outlines the policies and procedures used in the operation of the Pacific County Moderate Risk Waste (MRW) Facility and Small Quantity Generator (SQG) Program. The design and intended use of the MRW facility is for the delivery, handling, processing, packaging and shipping of two types of waste:

- MRW generated by households.
- MRW generated by businesses that qualify as conditionally exempt small quantity generators.

MRW has been specifically defined by RCW 70.105.010 as a waste that exhibits any of the properties of hazardous waste, but is exempt from regulation under Chapter 70.105 RCW solely because the waste is generated in quantities below the threshold for regulation, and household wastes that are generated from the disposal of substances identified by the Department of Ecology as hazardous household substances. Because MRW is exempt from state regulations for hazardous wastes, MRW is regulated by local jurisdictions under WAC 173-350-360. Appendix D contains the hazardous household substance list developed by Ecology. Proper operation of the MRW facility protects the environment and public health of Pacific County by:

- Preventing household hazardous wastes, such as pesticides, paints, cleaners, aerosols, acids, etc. from being improperly disposed of in sewers, storm drains, septic systems, the solid waste stream, the ground, air, or waterways.
- Providing a cost-effective hazardous waste collection opportunity for qualifying local businesses.

The facility was originally designed in accordance with the Ecology Publication 92-13, "Moderate Risk Waste Fixed Facility Guidelines", and the Uniform Fire Code. Since then, a new regulation (WAC 173-350-360) was developed and includes the current design and operational requirements. The MRW facility is operated in accordance with all applicable local, state, and federal regulations.

It is Pacific County's intent to follow the waste hierarchy established in RCW 70.105.150 whenever possible. The hierarchy, in descending order of priority, is: waste reduction; waste recycling; physical, chemical, and biological treatment; incineration; solidification/stabilization treatment; and landfilling.

4.2 Existing Conditions

Moderate Risk Waste Inventory

Table 4.1 provides a summary of participation and costs of the MRW program, and Table 4.2 provides a material breakdown of waste collected over the last 5years. In 2015, paint related materials represented the largest waste stream collected, including 3,150 pounds by volume or approximately 18 percent of the material collected in the County. The next highest category of waste is oil based paint, totaling 3,000 pounds.

Year	Customers Served	Pounds	Disposal Cost	Disposal Cost/Customer	Pounds /Customer
2011	149	16,500	$10,650.00	$71.48	110.7
2012	130	13,975	$11,728.50	$90.22	107.5
2013	130	10,830	$10,724.25	$82.50	83.31
2014	98	17,790	$13,594.50	$320.25	181.5
2015	145	17,150	$11,514.86	$79.41	118.3

Table 4.1. Summary of Activity at the MRW Facility.

Material	2011	2012	2013	2014	2015
Antifreeze	1500	500	500	500	1500
Acids	250	650	250	505	750
Bases	500			250	500
Batteries (Lead Acid)	2500	600	200	500	n/a
Batteries (Dry Cell)	1000	500	n/a	800	400
Flammable Liquids	6400	2800	2400	4290	2800
Flammable Gas	n/a	n/a	n/a	n/a	150
Poisons	1250	600	3780	1900	250
Oxidizers	n/a	260		250	250
Latex Paint	n/a	1200	800	2000	2400
Oil Based Paint	n/a	2000	2000	3500	3000
Paint Related Materials	2700	3750	900	3000	3150
Used Oil	31265	30338	36556	28801	27300
Contaminated Oil		800			
Oil Contaminated Debris	50	n/a	n/a	250	n/a
Non Regulated	n/a	n/a	n/a	n/a	2000
Fire Extinguishers	300	250	n/a	n/a	n/a
Mercury Debris	25	25	n/a	25	n/a
Reactives	25	15	n/a	20	n/a
PCB Ballasts	n/a	25	n/a	n/a	n/a
Total	16500	13975	10830	17790	17150

Table 4.2. Summary of Activity by Waste Type at the MRW facility.

4.3 Hazardous Waste Inventory

An inventory of the hazardous waste generators is provided below. This list is based on information provided by Ecology, including dangerous waste generators, remedial action sites, transporters and facilities that manage, treat, and store hazardous waste, and zone designations. This information was updated June 1, 2009.

Dangerous Waste Generators

Ecology maintains a list of dangerous waste generators within Pacific County. Dangerous wastes are those solid wastes that designate as dangerous waste or extremely hazardous waste under WAC 173-303-070 through WAC 173-303-100. The term "Dangerous Wastes" includes federal Hazardous Wastes and wastes regulated only by Washington State. Washington State regulates small, medium, large and exempt hazardous waste generators. A list of these generators is provided below and their definitions are provided below. It should be noted that these lists only include those businesses who have an EPA ID#. There are likely more businesses that generate hazardous wastes in the County who do not have an EPA ID#.

- Small Quantity Generators: A generator whose monthly waste generation is less than the QEL (220 pounds for most common wastes or 2.2 pounds for acutely hazardous wastes) and whose accumulation (at any time) is less than 2,200 pounds for waste with a QEL of 220, or 2.2 pounds for waste with QEL of 2.2 pounds.
    - Currently there are 9 small quantity generators listed on Ecology's Hazardous Waste Facility List. This only includes generators with an EPA id# which is not a requirement for SQG's, therefore the County acknowledges that there are likely more businesses that are not listed.

US CG Station Cape Disappointment	ILWACO
WSU Research and Ext Unit	LONG BEACH
Pacific Transit System Seaview	SEAVIEW
WA DSHS Naselle Youth Camp	NASELLE
WA Parks Northhead Lighthouse	ILWACO
WA Parks Fort Columbia State Park	CHINOOK
WA AGR Pacific 1	LONG BEACH
WA AGR Pacific 2	RAYMOND
Weyerhaeuser Co Raymond Lumbermill	RAYMOND

- Medium Quantity Generators: A generator whose monthly waste generation or accumulation is 220 pounds or more, but less than 2,200 pounds, of dangerous waste.

  There are no MQG's in Pacific County at this time.

- Large Quantity Generators: A generator whose monthly waste generation or accumulation is 2,200 pounds or more of dangerous waste, or 2.2 pounds or more of acutely hazardous waste.

  There are no LQG's in Pacific County at this time.

Remedial Action Sites

Sites within Pacific County that require environmental investigation or are currently undergoing hazardous waste clean-up are listed in Appendix E. This list was generated from Ecology's facility/site database and includes Federal (Superfund) clean-up sites, independent remedial action program sites and state clean-up sites.

Transporters and Facilities

There are currently no businesses within Pacific County that provide hazardous waste transportation or disposal services.

Zone Designations

There are four incorporated Cities within Pacific County. Each City has unique zoning districts that allow for hazardous waste facilities. These Cities are Ilwaco, Long Beach, Raymond & South Bend. Below is a list of zones where hazardous material handling facilities would be permitted in each City.

Ilwaco does not specify hazardous waste handling facilities; however, it does allow for Solid Waste Handling Facilities in Light Industrial (M-1). Any other use would require a conditional use permit.

Long Beach does not specify hazardous waste handling facilities or solid waste handling facilities and, therefore, such activities would be prohibited within City limits.

South Bend does not specify hazardous waste handling facilities, but it may potentially be allowed in the Industrial Use District (I-1) with a conditional use permit.

Raymond does not specify hazardous waste handling facilities; however, it does allow for solid waste handling activites in Light Industrial (M-1) and Heavy Industrial (M-2) with a conditional use permit.

4.4 Moderate Risk Waste Program Services

HHW Collection
Pacific County operates a hazardous waste collection facility where the public can dispose of their household hazardous waste. In addition to the fixed facility, the County also has a mobile trailer and hold collection events in different locations throughout the County. This service is provided free of charge.

Fluorescent Light Collection (Product Stewardship Program)
Pacific County's MRW facility (Long Beach) and Jack's County Store (Ocean Park) are the two collection sites for fluorescent light bulbs through the Light Recycle Washington product stewardship program.

Household and Public Education
Pacific County provides education about the proper disposal of hazardous wastes through our website, by distributing brochures, sending out mailings, posting in local newspapers and by answering calls from the public.

Small Business Technical Assistance
Technical assistance is provided by staff to local small businesses with questions regarding the proper disposal of their hazardous wastes. Outreach is limited, most contact is initiated by the businesses.

Small Business Collection Assistance
Collection assistance is provided to local small businesses through the Small Quantity Generator (SQG) program. Through this program, businesses can dispose of their hazardous wastes at cost.

Enforcement
MRW is regulated by the Pacific County Department of Community Development. Pacific County Board

of Health Ordinance 2C adopts state solid waste and MRW regulations by reference. See Section 7 of BOH Ordinance 2C for additional information on enforcement.

Problems with MRW management are primarily identified through complaints.. Responses may include gathering information through phone consultations or onsite visits, and referring the complaint to other appropriate federal, state or local agencies having jurisdiction. Enforcement or compliance actions may be taken or referred to appropriate agencies, if significant threats to public health, the environment, or worker safety exist.

The 1976 Resource Conservation and Recovery Act (RCRA) makes the management of hazardous waste a priority. While it addresses large generators of hazardous waste, RCRA exempts SQGs and HHW from regulation at the federal level. It also delegates the management of hazardous wastes to the states, at their request. In Washington State, the management of hazardous waste was delegated to the Washington State Department of Ecology (Ecology) by the United States Environmental Protection Agency (EPA) through the RCRA State Authorization rulemaking process.

Hazardous wastes in Washington State are primarily regulated under RCW 70.105, the Hazardous Waste Management Act of 1985, and as amended. In the case of our Program, RCW 70.105.220(1)(a) specifically directed local governments to develop plans to address moderate-risk wastes (MRW). It also required waste characterization studies to help develop a locally appropriate system of managing MRW that would ensure the protection of the environment and public health.

Requirements for the collection and disposal of MRW are set forth in WAC 173-350 Solid Waste Handling Standards. This regulation specified the minimum functional standards for the design and operation of MRW storage and processing facilities, including spill containment, employee training, emergency planning, control of toxic and flammable vapors, and container management.

4.5 Federal Regulations

Resource Conservation and Recovery Act

The 1976 Resource Conservation and Recovery Act (RCRA) provides a comprehensive framework for managing solid and hazardous waste so as to eliminate or minimize public health threats and environmental contamination. RCRA was modified by the Hazardous and Solid Waste Amendments (HSWA) in 1984. HSWA revised the minimum technical standards for the design and operation of solid waste facilities as a result of concerns about the disposal of unregulated quantities of hazardous waste at municipal landfills.

RCRA Subtitle C, the hazardous waste management program, and Subtitle D, the solid waste program, provide the primary sources of federal regulation associated with household and SQG hazardous waste. Subtitle C establishes a framework for managing hazardous waste by regulating generators who produce and accumulate hazardous waste in quantities above limits specified by EPA or state rules; waste transporters; and treatment, storage and disposal facilities (TSDs) handling the waste.

Hazardous waste generated or stored in quantities above the limits specified by EPA or state rules must be tracked by manifest from the point of generation to the ultimate disposal site, better known as "cradle-to-grave" tracking. Business and institutional generators producing and storing hazardous wastes below the specified limits are not fully regulated provided that they comply with rules regarding the designation, management and reporting of wastes. HHW is categorically exempt from RCRA regulation.

The EPA implements and enforces RCRA, although Subtitle C administration and enforcement may be

delegated to states that meet or exceed Subtitle C requirements. Washington State has been authorized to implement the RCRA Subtitle C program, and Ecology administers it. RCRA, Subtitle D, encourages state-governed solid waste management plans and sets out the minimum technical standards for construction and operation of solid waste disposal facilities. Subtitle D requires a permit program to ensure that landfills receiving HHW and SQG hazardous waste meet minimum standards to prevent the release of contaminants.

Universal Waste Rule

In 1995, the EPA adopted the Universal Waste Rule, 40 CFR Part 273, to allow generators of certain hazardous wastes to use alternative regulatory requirements for those wastes in place of the more complex hazardous waste requirements. Wastes covered by the Universal Waste Rule (UWR) are typically generated in small quantities by numerous businesses. They include batteries, mercury bearing thermostats and fluorescent lamps. UWR are intended to promote recycling as well as proper disposal, and they ease some of the regulatory requirements for storing, collecting, and transporting universal wastes.

Since states are free to adopt any portion of the UWR, there is flexibility in regulating the specific waste streams. States may also petition to allow additional wastes to be managed under the UWR at the state level, without having them added to the list of federal universal wastes. The easing of full RCRA Subtitle C regulations for certain universal wastes is intended to encourage more extensive collection and recycling programs for these wastes.

Comprehensive Environmental Response, Compensation, and Liability ActThe Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), more commonly known as the "Superfund" act, complements RCRA by providing for the cleanup of sites contaminated by hazardous waste. Many of the sites addressed under CERCLA are inactive or abandoned, having been contaminated before RCRA was enacted, when little was known about the effects of hazardous chemicals on human health and the environment. CERCLA provides EPA with the financial resources and authority to clean up contaminated sites. EPA, along with state regulatory agencies, may arrange for the cleanup of contaminated sites by entering into agreements with responsible parties, issuing orders to require cleanup, or directly performing the cleanup.

Model Toxics Control Act

The Model Toxics Control Act, RCW 70.105D, provides for the identification and cleanup of contaminated sites in Washington State. The act assigns liability for damages to the environment and human health, provides enforcement authority to Ecology, and establishes penalties for failure to comply with Ecology orders. The state toxics control account, created by the statute, funds state hazardous and solid waste planning, enforcement and technical assistance, remedial actions, public education, and emergency response training. Local accounts created by the statute provide grants to local governments for remedial actions and local solid waste and hazardous waste programs.

Used Oil Recycling Act

The 1991 Used Oil Recycling Act, Chapter 70.95I RCW, required each local hazardous waste management plan to establish used oil collection sites based on local goals, enforce sign and container requirements, educate the public on used oil recycling, and create funding estimates for used oil collection. Local governments must also submit annual reports to Ecology describing the number of collection sites and amounts of used oil collected from households. Requirements for transport, treatment, recycling and disposal of used oil are also specified in the Used Oil Recycling Act.

Electronic Product Recycling Act

In 2006, the Washington legislature passed the Electronic Product Recycling Act, RCW 70.95N, requiring a convenient, safe and environmentally sound system for collecting and transporting covered electronic products. Covered electronics include televisions, computers, computer monitors and portable or laptop computers. Manufacturers must finance the collection, transportation and recycling system. Regulations set by Ecology in WAC 173-900 govern program implementation.

The E-Cycle Washington program, launched January 1, 2009, provides recycling for unwanted TVs, monitors, computers and laptops from residents, small businesses, charities, school districts, and small governments. The system is available at no charge at registered collection sites throughout Washington.

Dangerous Waste Regulations (Chapter 173-303 WAC)can be found at the following link: http://apps.leg.wa.gov/WAC/default.aspx?cite=173-303

Used Oil Education and Collection

Pacific County currently operates 6 used oil collection sites. Each site provides an oil bin for the public to dispose of their used motor oil. These sites also contain a trash receptacle to dispose of used containers. These sites are maintained by County staff and pumped by a private contractor (Emerald Services, Inc.).

Additional information about used motor oil recycling can be found in Section 5.4.3.

4.6 Facility Layout and Design

The MRW Facility, located at 318 North Second Street in Long Beach, has been specially designed to prevent environmental contamination of hazardous wastes and to promote worker and neighbor safety. Some design features include:

- The floor was covered with an elastomeric sealant that is chemically resistant and impervious to most chemicals.
- The drains have been plugged with six inches of concrete.
- The floors have been sloped in strategic areas for chemicals
- The building is equipped with forced-air ventilation and natural ventilation.
- The flammables storage room is equipped with 2-hour fire walls, 1½ hour fire doors and a 1½ hour coiling fire door that separates the storage room from the rest of the facility.
- 1½ hour fire walls have been erected within this room so that wastes of different hazard classes can be safely and remotely stored.

The facility is divided operationally into the following areas:

- Receiving Area
- Waste Sorting Area
- Waste Processing Areas
- Waste Holding Areas
- Waste Exchange Area

The facility was designed to meet the requirements of the H-3 occupancy status. Waste must be shipped frequently enough so as not to exceed the storage limit amounts listed within the 2003 International Building Code.

4.7 Operation – Hours and Staffing

The MRW facility is operated from May through September of each calendar year. During these months, the facility is open to the public for household hazardous waste collection at least six hours a month. SQG wastes are accepted by appointment only. Large loads are also handled on a prearranged basis. For safety reasons, the facility is staffed by a minimum of two workers at all times whenever waste is being processed, one of which must have the minimum training requirements as outlined in the Pacific County MRW Operations Plan (updated Fall 2015).

4.8 North County Satellite HHW Collection

In 2002, Pacific County purchased an 8' x 16' enclosed trailer for HHW collections to service other parts of the County further away from the Long Beach area. This trailer is used as a mobile "facility" to collect and transport household hazardous waste to the fixed facility in Long Beach. The County conducts at least 6 collection events per year in different locations.

4.9 Waste Acceptance and Collection Policies

All household-generated moderate risk waste will be accepted at the HHW facility with the exception of the following:

- Radioactive Materials
- Biological Waste
- Explosives/Ammunition
- Asbestos

4.10 Waste Exchange Program

Material meeting the following criteria may be placed on the waste exchange shelves and be made available to the general public for reuse:

- The container is not leaking, rusted or in disrepair.
- The entire label is readable.
- The material is not recalled, canceled or suspended.
- A liability release is signed.

The facility supervisor needs to approve all material prior to placement in the waste exchange area. Any item given away needs to be recorded on the Waste Exchange Release Form when taken by a customer

4.11 Small Quantity Generator Program

The small quantity generator program is designed to allow businesses that generate small amounts of hazardous waste to receive state and federal exemptions for the disposal of their hazardous wastes. The SQG program allows businesses to bring their waste locally (to the moderate risk waste facility) at cost. In order to qualify for the program, businesses must be determined to meet SQG requirements. This means they generate less than 220 pounds of dangerous waste per month or and do not accumulate more than 2200 pounds of dangerous waste at any time. They must also generate less than 2.2 pounds of extremely hazardous waste per month.

Qualifying businesses must make an appointment to drop off waste at the County's MRW facility. The businesses SQG status is verified at the time of drop off. At this time they must also provide billing information and the quantity and types of waste must be determined. After the waste is processed, an invoice is sent to the business for the cost of disposal.

Section 5: Waste Reduction and Recycling

5.1 Introduction

Waste reduction is the top priority waste management technique for the State and Pacific County. In Pacific County, the waste management duties are divided between the County and incorporated cities. The cities are responsible for waste collection and disposal within their jurisdictions. The County provides the education and supplemental programs, such as recycling drop boxes, newspaper articles, and K-12 educational presentations, with the support of the cities.

The most desirable and logical approach to solid waste management is to:

- Reduce the amount of solid waste generated (Reduce)
- Recycle the maximum amount possible (Recycle)
- Use as much as possible of what remains (Reuse)
- Proper disposal of the waste, that cannot be managed by the above three steps, in landfills or through energy recovery/incineration facilities.

5.2 Waste Reduction

Waste reduction may be simply defined as reducing the amount or toxicity of waste generated. Minimizing waste produces a corresponding reduction in the need for handling, transporting, processing, and disposing of waste products. An initial reduction of input material to a solid waste management system has a powerful effect on the amount of waste that must be accounted for, and regulated, well into the future.

Washington State law mandates that waste reduction be given first priority in solid waste management plans. Waste reduction, though a logical and potentially effective strategy in future solid waste management programs, is by its very nature an intangible thing. Because there is no waste to "manage", implementation of reduction strategies is not as straightforward a process as more traditional management methods. Changes must take place in the way consumer products are designed, packaged, manufactured, and marketed in order to make meaningful waste reductions. Packaging is the fourth largest industry in the nation and consumers have become markets for disposable products of convenience. Some of the most durable and permanent materials, i.e. plastics, are commonly used for the most fleeting of purposes.

Regardless of how much sense it may make to avoid over packaged, wasteful products, our free market economy will continue to respond to market demands. Consumers may make intelligent, environmentally sound decisions at the point of product purchase which, when combined with similar actions of others, may produce a strong cumulative impact in reducing waste. Sometimes called "precycling", this type of selective shopping should be encouraged. The following consumer practices may make a contribution to waste reduction:

- Select products made from recycled materials or capable of being recycled.
- Avoid over packaged products.
- Avoid disposable products.
- Express product and packaging preferences to store managers as a means of influencing the kinds of products ordered.
- Buy in bulk
- Reuse items
- Repair items

A social commitment to request and accept changes in consumer goods and practices will be necessary in order for these strategies to have an effect. This is why education holds a central role in implementing these changes and is likely to be the focus of both short- and long-range waste reduction strategies.

However conscientious the consumer may be, more direct action in reducing waste through governmental influence will be a fundamental element of future reduction efforts in the state. The amendments to State Law in ESHB 1671 included the following waste reduction provisions:

- Expansion of the "Environmental Excellence" award for products produced and packaged in a manner that helps ensure environmental protection.
- Establishment of a product packaging task force to evaluate methods to reduce volume, weight, and toxicity of packaging, reduce single-use packaging, and increase public awareness of this solid waste problem.
- Allowing for preferential purchase of products made from recycled materials, in the procurement of goods by local governmental entities.

These, and other broad ranging waste reduction activities, are best implemented at the state and nationwide level in order to have maximum effect on reduction. Such strategies as packaging taxes and product bans in certain jurisdictions have created problems. For example, one city may prohibit styrofoam packaging while another does not. This may create unfair competitive advantages to retailers and complexities for suppliers. Additionally, local ordinances may create unneeded levels of regulations which are best handled at the state level.

An important element of waste reduction involves replacing undesirable materials that are used to manufacture and package consumer goods. Plastics, inks, and batteries often contain chlorides as well as lead and cadmium, which ultimately find their way into the waste stream. These and other substances make waste handling and disposal more difficult and expensive. Developing alternative processing or using degradable materials would reduce the environmental burdens of disposal.

5.3 Recycling

Recycling, as defined in WAC 173-350-100, means: 'transforming or remanufacturing waste materials into usable or marketable materials for use other than landfill disposal or incineration. Recycling does not include collection, compacting, repackaging, and sorting for the purpose of transport'. Recyclable materials are 'those solid wastes that are separated for recycling or reuse, including, but not limited to, papers, metals, and glass, that are identified as recyclable material pursuant to a local comprehensive solid waste plan', according to WAC 173-350-100.

Naturally, successful recycling programs depend on the location of markets for the recovered materials. Merely separating such products from other trash does not guarantee their reuse. Most recycling efforts focus on a relatively small number of commodities such as aluminum, steel and iron, glass, paper, waste oil, certain plastics, and rubber.

Public Perception of Recycling

Clearly, recycling has captured public attention. In February 1988, the National Solid Waste Management Association questioned 1,500 American adults about waste management. Fully 70 percent believed that recycling "can solve much of the country's solid waste disposal problems." Yet when asked who should support recycling programs that don't break even, only 15 percent said that they were willing to pay a direct tax or fee.

Surveys performed in the 1990s indicated that a high percentage of people participated in the various recycling programs available in the County and would like to see the program expand.

Proponents of recycling must take care to avoid overselling this vital tool and to acknowledge its limitations. Such limitations include the following:

- Elimination of what can be recycled. Oily rags, paper mixed with food residues, disposable diapers, and many plastics are not likely to find a buyer. Old paint cans and chemicals wastes are potentially dangerous and require special handling and processing to recover their material value.

- Certain "multi-material products" cannot be properly separated, or they require expensive equipment that makes separation too costly.

- Virgin raw materials are often cheaper than recycled products. In some cases, such differences are reinforced by tax policies (e.g. depletion allowances for mining and oil production) or by long-distance freight rates that may favor virgin materials.

The key to future recycling efforts lies in finding new markets for reusable products, in developing technologies that will minimize processing costs, and in educating the public of the benefits of recycling.

Despite these drawbacks, recycling will play a major role in resolving the mounting, nationwide problem of insufficient disposal capacity. Perhaps the most significant outcome will be to extend the life of existing landfills and lessen the need for new ones. Landfills can then be reserved for residue that cannot be handled in other ways.

Benefits From Recycling

Significant benefits will be realized from the implementation and efficient management of an effective waste recycling program in Pacific County. The most obvious benefit is the avoided cost of disposal, defined as "disposal savings", which results from a reduced waste stream.

Revenues received when recycling different commodities can be considered as another benefit of a recycling program. However, with a deluge of recyclables entering the market in the recent years, and the volatile domestic and overseas markets, the value of each material has fluctuated greatly.

Recycling can reduce many environmental (i.e. water quality) impacts that may have been, or will be, caused by the siting of a sanitary landfill in an improper area.

Considering all of the above-mentioned benefits, recycling remains a positive alternative.

Recycling Potential

To establish a specific goal, the SWAC examined the various recycling technologies and programs available to the County. The estimated recycling volumes based on local and state programs, and established recycling strategies.

What is Recycled

According to the 22nd Annual Solid Waste in Washington State Status Report (Dept. of Ecology publication # 14-07-035), the state wide recycling rate decreased to 48.9% in 2013. Ecology has calculated a recycling rate for Pacific County of 21.8% for 2014. The number was generated from the

total tonnage of recycled and diverted materials by the total amount of waste reported.

Limited recycling activities are currently taking place in Pacific County. The following are some of the activities that have contributed to those numbers listed in Table 5-1.

Long Beach Recycling, a Pacific Solid Waste Disposal Inc. subsidiary, operates a recycling center at the transfer station in Long Beach. Incoming waste is sorted for recyclable materials and a limited buy-back service is offered to the public.

Royal Heights Transfer & Recycling Center operates a recycling center at the transfer stations outside of Raymond. As with Long Beach Recycling, incoming waste is sorted for recyclables and a limited buy-back service is offered. In 2015, 255.32 tons of material was recovered from the waste stream out of 3502 tons of solid waste.

Commodity	Tons
Aluminum	31.2
Newspaper	161
High-Grade Paper	
PET & HDPE Plastic	39
Glass	225
Ferrous Metal	303.5
Non-ferrous Metal	17.1
Cardboard	426.4
Batteries	2
Tires	17
Magazines	
Wood	1266
Electronics	66.12
Motor Oil	4
Antifreeze	1
Total	**2559.32**

Table 5.1. Tons of recyclable material collected at County owned recycling bins.

- Pacific County presently owns seven, thirty cubic yard recycling drop boxes. The drop boxes are located around the population centers of the County, and are maintained by Peninsula Sanitation Service. In 2015, these boxes collected a combined total 291 tons of recyclable material. Cape Disappointment State Park, Surfside Homeowners Association and the Sunset Sands Homeowners Association have recycling drop boxes. Their recycling data is not included in Figure 5-1.

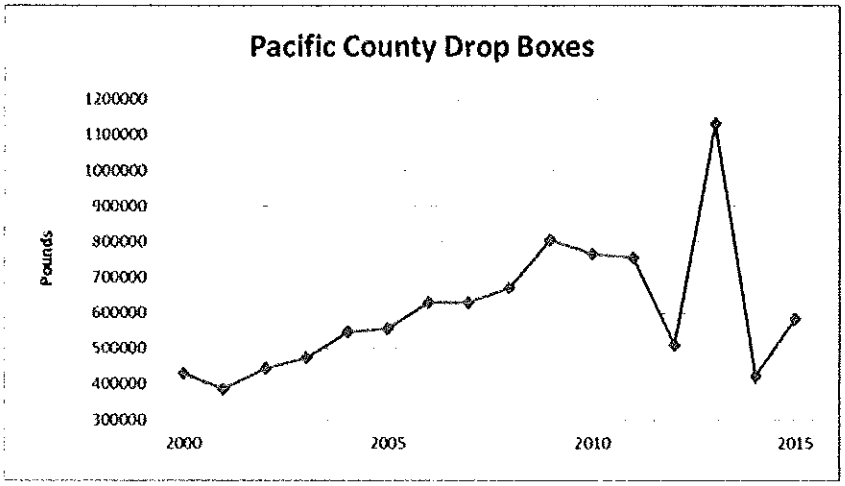

Figure 5.1 Pounds Collected at Drop Box Locations.

Pacific County owns six waste oil collection facilities located throughout the County. These facilities are open 24 hours per day and require the recycler to deposit his or her own oil into the existing tank. Figure 5-3 details the motor oil recycling that has occurred from 2002 to 2015.

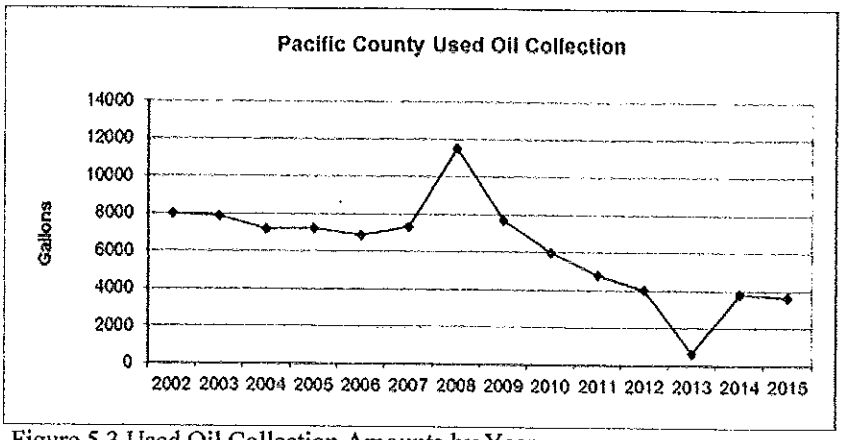

Figure 5.3 Used Oil Collection Amounts by Year.

Recyclable materials accumulated in Pacific County are presently sold to the following buyers:

Aluminum Cans	- South Sound Recycling, Tumwater - Metro Metals, Vancouver
Other Aluminum	- Metro Metals, Vancouver
Newspaper	- Norpac, Longview
Mixed Paper	- Waste Control, Longview
High Grade Paper	- Waste Control in Longview
PET & HDPE Plastic	- Waste Control, Longview
Glass	- Owens Brockway, Portland
Ferrous Metal	- Metro Metals, Vancouver - Butchers, Hoquiam
Non-Ferrous Metal	- South Sound Recycling, Tumwater - Metro Metals, Vancouver
Cardboard	- Longview Fibre, Longview
Batteries	- Evergreen Battery, Portland -South Sound Recycling, Tumwater
Tires	- Tire Disposal and Recycling, Portland -Tire Factory, Les Schwab, Prineville
Magazines	- Norpac, Longview

5.4 Waste Management and Recycling Options

There are many program options that exist that could assist with an increase in waste reduction and recycling activities within the county. However, the general effect of the implemented options can be very difficult to measure. Some waste management options that may be considered include:

- Public education (including K-12, commercial, retail, and industrial education)
- Variable garbage can rates
- County and city procurement standards for durable, recyclable, reusable, and recycled content
- On-site composting (including education, technical assistance, and demonstration projects);
- Product or product packaging prohibitions
- Container or product packaging deposits
- Product use and reuse standards
- Waste exchanges
- In-house programs, such as employee education, increased use of scrap paper, increased use of electronic mail, increased double-sided copying and printing, cloth towels or electric hand dryers in restrooms, and decreased use of non-recyclable paper
- Curbside recycling collection
- Curbside organic waste collection

Existing Programs in Pacific County

As can be seen below, the primary focus of Pacific County is education. Helping people become aware of wasteful purchasing habits and avenues of recycling is a huge resource in waste reduction strategies. As funding and support become greater, more programs, such as curbside recycling, co-mingled recycling and an organized composting program, will be implemented.

Education

K-12

In order to achieve the reduction goal, an effective, well designed education program will be required in conjunction with a commitment. The County should begin to develop effective education programs on waste reduction and recycling to be used from kindergarten through high school, and in adult education classes. The State of Washington developed an extensive K-12 waste management education program titled "A-Way With Waste". Unfortunately the program was eliminated due to budgetary constraints at Ecology. However, the curriculum for the waste reduction programs developed for the "A-Way With Waste" program exist and can be utilized by the County.

Public

Public participation is an essential element of any recycling effort. The goal of increased yearly recovery will not be met without an aggressive effort to educate the public about recycling needs and opportunities. Funding and technical assistance, to continue and expand existing programs, should be sought at the state and federal levels. Educational opportunities include schools, media, enclosures in disposal bills or other public agency mailings, displays in commercial establishments, and by conducting an information booth at the Pacific County Fair.

Government Procurement Standards
Because Pacific County government is one of the largest employers in the County, it is important that it be a leader within the waste reduction and recycling fields. To lead by example is a very important, educational, and motivational characteristic. Examples of waste reduction strategies the County could employ within the work place are:

- The purchase of equipment that will allow for waste reduction, such as double sided copy machines.
- The purchase of supplies that can be re-used such as washable plates and glasses.
- The purchase of materials made with a percentage of recycled or recycled materials, such as stationary, envelopes, business cards, tissue products, recycled or reclaimed paint, and recycled or reclaimed motor oil and antifreeze.
- The purchase of materials that are standardized and easily repaired.
- The purchase of vehicles with low emissions and low gas mileage.

Motor Oil Recycling
Historically, most automotive service stations accepted waste motor oil from customers and the general public, and have combined this motor oil with the oil generated at their establishment for collection by a waste motor oil hauler. During the 1980's, however, as a result of various real and perceived liability issues associated with the acceptance of waste motor oil from the public, most service stations discontinued this practice.

The marketing strategy for waste oil generated at County-owned facilities will seek first to ensure reliable, safe, and efficient pumping and hauling services. A second priority will be to encourage re-refining of the waste oil, with the limitation that the costs not exceed that for the bunker fuel market, unless additional funding becomes available. No specific goal is established in this area because of the current limitations in the re-refining market. Beyond County efforts to increase purchases of re-refined lubricating oils, expansion of this market is beyond the control of local government.

Program Evaluation

Waste Reduction Planning by Non-Residential Generators

Pacific County can require or request all, or a number of non-residential generators to prepare and implement plans to reduce and recycle wastes at their operations. Such requirements are usually supported by a specific waste reduction planning form, technical assistance in completing the form, and fines for non-compliance. Waste reduction plans can be a valuable source of reporting and monitoring information. The plans themselves can be structured in such a way as to be a helpful tool in assisting business and operations managers in identifying opportunities for waste diversion. Some businesses may have legitimate concerns over confidentiality, and some generators may find required waste reduction planning to be a difficult compliance burden.

Waste audits are a specific form of technical assistance provided to non-residential generators of waste and could be incorporated into the waste reduction planning for all non-residential generators. An audit would show a business where their waste is generated, why it is generated and the composition of waste. The specific processes for determining the types of wastes recycled and other disposal options are outlined in the Pacific County Waste Audit Process.

The County can provide waste audits to local businesses as a method of motivating and educating businesses and institutions about the need to and opportunities for reducing and recycling wastes. Ecology could provide waste audit training to County staff or a group of volunteers. Programs elsewhere

using a similar pool of volunteers have proven to be successful in assisting businesses to reduce their waste stream.

Local Taxes, Fees, and Fines

The County can use its regulatory power to develop taxes, fees, or fines targeting wasteful products and behaviors.

Product and Packaging Deposits

Pacific County can require deposits on specific products, creating some incentive for consumers to buy less of a product or to return the recyclable portion of that product for their refund. Implementation of this program could prove difficult unless statewide cooperation is procured.

At present, many communities throughout the country have organized some sort of recycling program. Such programs usually follow one of three basic patterns:

- Household separation/curbside collection - Individual households are encouraged (or required) to sort reusable materials such as bottles, cans, and newsprint before putting them at the curbside for collection. Such materials may be placed in segregated containers or bagged together, separated from ordinary, household trash. The latter are termed "commingled" or "blue bag" recyclables. Commingled recycling is the most common method used of curbside recycling.
- Material recovery facilities - Unsorted trash or recyclables are collected and taken to a material recovery facility, usually located at landfills or transfer stations. There, workers separate recyclables from other rubbish. Material recovery facilities separating recyclable from unsorted trash are commonly referred to as "dirty" material recovery facilities. Those facilities that sort and separate the different types of recyclables are commonly referred to as "clean" material recovery facilities.
- Drop-off centers - Consumers separate newsprint, bottles, cans, and other materials at home and deliver them to designated collection points. Offering a purchase price, certain "buy back" centers can provide additional incentive for individuals. This is the most common form of recycling in the County.

Many communities have discovered that public response to recycling programs is best when such programs are easy to use. In some cases, local governments and private companies have provided "commingled" recycling options to their customers to make separation as uncomplicated as possible. Participation rates may also rise where programs offer curbside pickup on the same day as regular trash pickup. Alternative steps may include door-to-door collection by volunteer groups or by private haulers who resell the waste products to brokers and manufacturers.

Although most programs rely on public education to sustain participation levels, in some places recycling is mandated by statute. Where such programs exist, local governments have usually set penalties for failure to separate recyclables, adhere to collection schedules, or follow other simple procedures. These penalties include warnings and fines and in extreme cases, municipal officials may even refuse to pick up a violators trash.

Waste recycling in Pacific County can be implemented in several ways. Most successful recycling programs are usually structured around one of the following methods:

- *Source Separation* - Source separation is the setting aside of recyclable waste material (from the waste stream) at the point of generation for segregated collection, after which it is transported to

specialized waste processing sites or final manufacturing markets. Education is the key component in any source separation program. The public should be informed of the benefits of high recycling rates and be informed of the ways they may participate. Systems that are simple to use tend to achieve high participation rates and maintain high quality recovered products. There are two types of source separation: voluntary and mandatory.

- *Voluntary Source Separation* - The majority, by weight, of typical source-separated material is waste paper and paperboard. The remainder consists of ferrous metal and aluminum cans, glass containers, tires, large appliances, and waste lubricating oil.

  The two primary collection methods of voluntary separated materials are curbside collection and drop-off centers. Numerous municipal collection programs are operating nationally and many collect newspapers only.

  The success of source-separated programs depends largely on the availability of reliable and continuing markets for the recovered materials. These markets are typically serviced by initiating contracts with buyers specifying minimum quantities and costs, and adhering to market specifications. The reliability of source separation depends on consistent public participation as well as steady markets. Participation may be encouraged through simple, convenient pick-up schedules which coincide with regular garbage collection days. Provision of free receptacles also help boost participation.

- *Mandatory Source Separation* - Mandatory source separation is defined as a legally mandated separate collection system for recyclables. The success of such programs depends on the participation rate and on the quality of the separated material. In the United States cities trying mandatory separation, the average participation rate is rarely above 50 percent. The quality of recovered material may also drop substantially, resulting in a higher rejection rate or lower price at markets.

It should be noted that the low overall percentage of households presently receiving residential solid waste collection in the County is a significant obstacle to high recovery rates of recyclable materials. The most effective source separation programs have utilized scheduling pick-up along with normal garbage collection. Mandatory collection increases recovery of materials from the waste stream.

- *Separation at Point of Transfer or Disposal* - This method involves separating the recyclable material after the waste has been collected and hauled from the source of generation. Recycling has become a process requiring relatively large equipment, space, and labor. Any transfer station that is built in Pacific County should be designed for efficient separation and sorting and shipping of the recyclable materials remaining in solid waste received, to allow the flexibility to respond to changes in market requirements, volumes, and products recovered.

- *Drop-Off Centers* - Any recycling program should include conveniently located collection points where consumers can drop off material which they have previously separated at home. Appropriate incentives to encourage participation should include convenient location, buy-back capability, attractive and safe surroundings, appropriate hours of operation, and other creative incentives to develop supportive attitudes among consumers.

Curbside Recycling

Curbside recycling has the highest diversion potential of any of the recycling alternatives, except for mixed municipal solid waste composting. This is due to the convenient nature of the program and large portion of the waste stream targeted. Curbside recycling is technically feasible with many program design options, and successful implementation has been demonstrated in many communities. While high unit costs are often associated with the initial implementation of curbside programs, later stages of most programs achieve higher participation, higher materials diversions, and a corresponding decrease and stabilization of unit program costs. While the County's existing program consists of drop box recycling, the switch to curbside collection would not be difficult, since the Cities of South Bend and Raymond already have city owned solid waste collection systems that may easily incorporate curbside recycling. However, expansion into the County would involve oversight and regulation by the County and/or the Washington Utilities and Transportation Commission instead of the Cities.

The level of diversion that would ultimately be achieved by curbside recycling in the County is highly dependent upon the degree of program expansion and public participation. To date, the issue of curbside recycling throughout the Cities and County has been extremely controversial. The ultimate extent of program expansion will be a policy determination by the public, SWAC, Board of Pacific County Commissioners, and City Councils. This determination should be based primarily on an evaluation of whether the waste diversion potential and convenience is worth the cost of program implementation. The lower collection efficiencies typically experienced in rural areas negatively affect the cost of offering curbside recycling. As most of the residential waste stream in Pacific County is generated in both rural unincorporated areas and high tourist areas the County Commissioners have not yet granted approval.

Commercial Composting Facility

According to WAC 173-350-100, composting means "the biological degradation and transformation of organic solid waste under controlled conditions designed to promote aerobic decomposition. Natural decay of organic solid waste under uncontrolled conditions is not composting." A waste characterization study conducted by Ecology in 1992 revealed that nearly 33% of the waste stream is comprised of organic, potentially compostable, materials. A commercial compost facility has the potential to remove a large amount of waste material from the waste stream and recycle that material into a usable product.

All regulations concerning a commercial composting facility fall under the WAC 173-350-220. This section of the Dept. of Ecology Solid Waste Handling Standards detail the location standards, design, operating standards, ground water monitoring, closure requirements, financial assurance, and permit application process. The feasibility of a composting facility in Pacific County is being evaluated. The Pacific County Comprehensive Plan would be amended to include the criteria for siting, locating and other requirements of a commercial composting facility, in accordance with WAC 173-350-220.

REUSE

The County can develop and implement a waste exchange program. This program can provide a database as to the location or locator for specific wastes, or can provide actual warehouse space where products can be stored. Pacific County can also utilize the Industrial Materials Exchange (IMEX), the regional waste exchange managed by the Seattle-King County Department of Public Health. With the Moderate Risk Waste Facility in Long Beach, the County can also provide a County wide waste exchange program, where clean and safe waste that has been delivered to the County MRW facility can be offered to individuals in the community who may need it.

5.5 Recommendations

5.1 Continue in-house waste reduction measures, including a policy statement, in all county facilities. Assist other public facilities and private organizations to follow the county's model program.

5.2 Continue the County program, encourage procurement policies that favor durable, reusable, repairable, efficient, recyclable, and recycled content goods. Policy language may include "as long as the cost of recycling and/or purchasing recycled materials does not exceed 5% the cost of products made without any recycled content, the County will purchase the product with the recycled material."

5.3 Implement a program that can offer reduced rate backyard composting bins.

5.4 Develop a quarterly newspaper article on solid waste.

5.5 Expand the K-12 educational efforts.

5.6 Support a Master Composter educational program to include the locating of a permanent Master Composter/Master Gardener educational display site by providing available staff and training as needed.

5.7 Continue the local "waste exchange" program at the County MRW facility or provide interested parties other waste exchange programs.

5.8 Encourage neighborhood yard waste composing co-ops or composting areas. The County would provide technical support.

5.9 Encourage the use and/or market for biodiesel by providing education outreach about the benefits of alternate fuels, such as brochures and presentations.

5.10 Pursue a pilot curbside recycling program. Implement a rate structure in association with the curbside recycling program. Depending on the outcome of the pilot program it will be evaluated for a mandatory source separation ordinance.

5.11 Review the per capita diversion and economics of the pilot program and evaluate the expansion of this program into the unincorporated areas of the County.

5.12 Continue to implement the County-wide recycling education.

5.13 Continuously evaluate the feasibility of curbside and drop-off collection of lower priority materials such as mixed waste paper and cardboard.

5.14 Evaluate the feasibility of siting a commercial composting facility in Pacific County.

5.15 Create parameters and develop a pilot commercial composting facility if feasible.

5.16 Complete another waste stream survey.

5.17 Evaluate the need for a yard and food waste program.

Section 6: Conclusions and Goals

This section of the Solid Waste Management Plan Update discusses each subject area in terms of brief conclusions and recommended actions to achieve stated goals. Where possible, distinct, specific actions are called for to implement the plan goals. Other issues require additional information gathering, technical analysis, or other less tangible actions before proceeding. All recommendations listed will be implemented by Pacific County utilizing the staff made available through the funding sources defined for each project. Potential funding sources are discussed at the end of this section.

Goal 1: To divert approximately 6 tons of HHW per year from the waste stream and significantly reduce the amount of hazardous waste being disposed of improperly and/or entering the solid waste stream.

Goal 2: To facilitate awareness activities that will educate the public and businesses to reduce, reuse, and/or recycle waste, and to utilize other recycling facilities in Pacific County in order to increase the recycling rate to 25%.

Existing Solid Waste Conditions, Practices, and Projections

Conclusions

The combined commercial and residential per capita waste generation rate is projected to increase over the next 20 years. Although waste collection is mandatory in some municipalities in Pacific County, illegal dumping continues to be a problem. Illegal disposal not only creates an unsightly problem, it also represents a danger to the environment and to public health and safety, and it is expensive to clean up.

Recommendations

3.1 Conduct another waste characterizations study. If necessary, make mixed waste paper and cardboard collection available. Promote composting education and training as desired.

3.2 Perform a feasibility study to determine implementation of universal solid waste collection County-wide.

3.3 Research benefits of a solid waste disposal district and proceed with implementation if research is positive and approval can be gained.

3.4 Locating and permit all construction waste, demolition waste, inert waste, and wood waste storage and disposal facilities required by WAC 173-350. Identify alternatives for disposal of these items.

3.5 Continue the County sponsored appliance collection events. The County will continue to sponsor these events.

3.6 Continue the County's solid waste enforcement activities. The County will continue to respond to solid waste enforcement and violation issues.

Implementation Schedule

Recommendation	2016	2017	2018	2019	2020
3.1					
3.2					
3.3					
3.4					
3.5					
3.6					

Moderate Risk Waste Collection and Programs

Conclusions

MRW collection continues to be a popular public service offered, although participation numbers have decreased in recent years with the economy. An option for safe disposal of these unwanted items is vital to avoid contamination of the environment and harm to public health.

Recommendations

4.1 Continue operation of HHW Facility and satellite HHW collection during the summer months and consider opening occasionally during the winter as resources and demand allow.

4.2 Continue operating motor oil recycling bins and expand as resources allow.

4.3 Continue offering SQG disposal services to local businesses. Re-evaluate program, as resources allow, to consider current roadblocks to participation and how to expand the program.

4.4 Continue current education program and expand as resources allow. This includes K-12 program, the County fair and other events.

Implementation Schedule

Recommendation	2016	2017	2018	2019	2020
4.1					
4.2					
4.3					
4.4					
4.5					

Waste Reduction

Conclusions

The current combined residential and commercial waste generation rate in Pacific County is 4.98 pounds per capita per day. Although effective education and strong commitment will be required, there is sufficient potential in Pacific County to support the goal of reducing the county's waste generation rate. Local actions, in combination with state and federal resources, can achieve the stated goals.

To establish a specific recycling goal, SWAC examined the various technologies available to the County. When the waste stream is separated into its various categories it appears that most waste is recyclable. Given the location of Pacific County and the distance from urban markets, it is still possible to offer recycling opportunities for paper, cardboard, glass, and some metals. With a large rural population, it may be advantageous to use the residential and perhaps commercial biodegradable waste in a County composting facility and offer the product to the residents.

Recommendations

5.1 Continue in-house waste reduction measures, including a policy statement, in all county facilities. Assist other public facilities and private organizations to follow the county's model program.

5.2 Continue the County program, encourage procurement policies that favor durable, reusable, repairable, efficient, recyclable, and recycled content goods.

5.3 Implement a program that can offer reduced rate backyard composting bins.

5.4 Develop a quarterly newspaper article on solid waste.

5.5 Expand the K-12 educational efforts.

5.6 Support a Master Composter educational program to include the locating of a permanent Master Composter/Master Gardener educational display site.

5.7 Continue the local "waste exchange" program at the County MRW facility or provide interested parties other waste exchange programs.

5.8 Encourage neighborhood yard waste composing co-ops or composting areas. The County would provide technical support.

5.9 Encourage the use and/or market for biodiesel.

5.10 Pursue a pilot curbside recycling program. Implement a rate structure in association with the curbside recycling program. Depending on the outcome of the pilot program it will be evaluated for a mandatory source separation ordinance.

5.11 Review the per capita diversion and economics of the pilot program and evaluate the expansion of this program into the unincorporated areas of the County.

5.12 Continue to implement the County-wide recycling education.

5.13 Continuously evaluate the feasibility of curbside and drop-off collection of lower priority materials such as mixed waste paper and cardboard.

5.14 Evaluate the feasibility of siting a commercial composting facility in Pacific County.

5.15 Create parameters and develop a pilot commercial composting facility if feasible.

5.16 Complete another waste stream survey.

5.17 Evaluate the need for a yard and food waste program.

Implementation Schedule

Recommendation	2016	2017	2018	2019	2020
5.1					
5.2					
5.3					
5.4					
5.5					
5.6					
5.7					
5.8					
5.9					
5.10					
5.11					
5.12					
5.13					
5.14					
5.15					
5.16					
5.17					

6.2 Funding Sources

Financing for capital and operational costs could come from two primary sources of available revenue: locally generated sources and non-local sources. The locally generated sources include general government taxes, revenue or general obligation bonds, developer financing and county funding. Non-local sources of revenue would come from Federal, State and other public program funds.

The following sources of funding could be considered and developed as appropriate to implement the recommendations appearing in the Plan:

- Creation of a County-wide solid waste disposal district with the power to make appropriate assessments.
- Procure solid waste disposal tipping fees.
- Procure bond issuance.
- Procure grants from state, federal, and foundation sources.

Solid Waste Disposal District
RCW 36.58.100 authorizes the legislative authority of any County to establish one or more solid waste disposal districts within the County to provide a funding mechanism for solid waste disposal services.

Once formed, this district has the capability to levy taxes to fund disposal activities and issue general obligation bonds for capital purposes.

Solid Waste Disposal Fees
Presently, all funding for all solid and hazardous waste projects in Pacific County is derived from a per ton tipping fee placed on all solid waste handled through the local transfer stations which is based on the CPI rates. Of the per ton fee, $0.10 of the fee is retained by the transfer station for administrative purposes with the remainder placed into the Solid Waste Management Fund to be used for the implementation of the solid waste program.

In 2015, the County received approximately $93,000 from this fund. These funds provided a portion of the 25 percent match requirements for the Coordinated Prevention Grant.

Bond Issuance
While the issuance of bonds is not anticipated, there are bonds available for capital purposes. General obligation bonds pledge the credit of the County that the debt service payment on the bond will be made to bondholders. With this method of financing, Pacific County's solid waste fund would actually pay the debt service; however, in the case of default, the County would gain responsibility.

The State of Washington establishes the maximum limit of general obligation debt that counties and municipalities may accrue at any one time.

Grants from State, Federal, and Foundation Sources
In November 1988, Washington citizens approved Initiative 97, the Model Toxics Control Act (Chapter 70.105D RCW). The initiative supersedes the Hazardous Waste Cleanup Act of 1987. The Model Toxics Control Act established the legal framework for dealing with existing hazardous waste sites and

preventing the creation of future sites. The Act includes grants to local governments for the following purposes, in descending order of priority:

1. Remedial action.
2. Hazardous waste management plans and programs.
3. Solid waste management plans and programs.

The CPG program provides grants for the second and third priorities and are issued every two years and will be closed out every two years. Some projects may continue beyond the two year period. In those cases, the local government will have to reapply during the next grant funding cycle in order to receive grant funding to complete the project.

CPG will pay only for projects and programs that:

1. Conform to the current approved local hazardous waste management plan, as required by Chapter 70.105 RCW, or local comprehensive solid waste management plan, as required by Chapter 70.95 RCW, or amendments to these plans.
2. Comply with all applicable local, state, and federal ordinances, laws, and regulations, including state and local permitting requirements and State Environmental Policy Act requirements.
3. Have an established management system and financial capabilities that will ensure the program or project initiated under the grants will continue operation after the grant is terminated.
4. Are consistent with the policies of the grant guidelines.
5. Are consistent with the most recent version of Ecology's *Administrative Requirements for Ecology Grants and Loans*

Pacific County has applied for and received Coordinated Prevention Grant funding at each grant cycle for Solid Waste Code Enforcement activities and MRW activities.

6.3 Conclusions

The County should assess the costs necessary to implement the Solid Waste Management Plan Update as soon as plan recommendations are finalized, reviewed, and approved. Based on the magnitude and type of recommended actions identified, sufficient funding will be available through a combination of the above-mentioned methods.

PACIFIC COUNTY SOLID WASTE MANAGEMENT PLAN

APPENDIX A: INTERGOVERNMENTAL AGREEMENTS

INTERGOVERNMENTAL AGREEMENT FOR
INTEGRATED SOLID WASTE MANAGEMENT

THIS AGREEMENT, made and entered into this 23RD day of May, 2017, by and between PACIFIC COUNTY, Washington (hereinafter referred to as COUNTY) and the incorporated municipalities of Ilwaco, Long Beach, Raymond, and South Bend within the County; all of which are organized under the laws of the State of Washington and are herein collectively referred to as PARTICIPATING GOVERNMENTS.

WHEREAS, the PARTICIPATING GOVERNMENTS in Pacific County agree to participate and adopt, pursuant to the Solid Waste Management Act, Chapter 70.95 RCW, The Solid Waste Disposal Act, Chapter 36.58 RCW, and the Municipal Utilities Act, Chapter 35.92 RCW, the Pacific County Comprehensive Solid Waste Management Plan Update, 2016, hereinafter referred to as the PLAN UPDATE covering the integrated management of solid waste in the County; and

WHEREAS, it is to the mutual advantage of the PARTICIPATING GOVERNMENTS and their citizens, to contract pursuant to Chapter 39.34 RCW for the purpose of providing a joint county-city integrated solid waste management program; and

WHEREAS, the PARTICIPATING GOVERNMENTS have been operating under agreements pursuant to adopted resolutions by the various cities in Pacific County; and

WHEREAS, it has been determined that formal adoption is needed;

NOW, THEREFORE, for and in consideration of the mutual promises and covenants contained herein, it is agreed by the PARTICIPATING GOVERNMENTS hereto as follows:

SECTION 1 - PURPOSE OF THE AGREEMENT

1.1 The purpose of this Agreement is to establish and adopt a comprehensive solid waste management plan as mandated in Chapter 70.95 RCW, for collection, recycling, waste reduction, and disposal of solid waste produced or generated within the boundaries of the PARTICIPATING GOVERNMENTS by specifying the party responsible for the management of said programs, and the powers and duties of the PARTICIPATING GOVERNMENTS.

SECTION 2 - SOLID WASTE ADVISORY COMMITTEE

2.1 The COUNTY shall maintain a Solid Waste Advisory Committee consisting of up to nine (9) members appointed by the Board of Pacific County Commissioners. The committee shall consist of members representing a balance of interests including, but not limited to, citizens, public interest groups, businesses, solid waste industry, agriculture, and city officials. The committee shall comply with the rules and regulations established in the

existing bylaws of the Pacific County Solid Waste Advisory Committee. This committee shall hereinafter be referred to as SWAC.

SECTION 3 - SOLID WASTE MANAGEMENT

3.1 The COUNTY is hereby designated as the exclusive agent for the PARTICIPATING GOVERNMENTS for the administration of the PLAN UPDATE and, subject to the provisions of the bylaws of the Pacific County Solid Waste Advisory Committee, shall have full authority to implement solid waste management programs and services for all PARTICIPATING GOVERNMENTS and the residents within the boundaries of said PARTICIPATING GOVERNMENTS, excluding the manner of collection and transfer of solid waste within the corporate limits of those cities and towns which are PARTICIPATING GOVERNMENTS. Such management shall be conducted in compliance with all state and federal laws and regulations. Included with such management shall be the carrying of public liability insurance with limits in accordance with standard practice at any such time.

SECTION 4 - FUNDS AND BUDGET

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5.1 The COUNTY shall maintain accounts for the solid waste management program in accordance with the requirements of the Washington State Auditor.

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SECTION 6 - INDEMNIFICATION

6.1 Each party hereto shall indemnify and hold harmless each of the other parties and their respective officers, agents and employees from any and all claims, actions, suits, liability, loss, costs, expenses and damages of any nature whatsoever, by reason of or arising out of any act or omission of the party, its officers, agents and employees associated with that party's solid waste activities.

SECTION 7 - PROPERTY RIGHTS

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SECTION 9 - ADMISSION OF NEW PARTIES

9.1 Additional municipal entities may be added to this Agreement upon such terms and conditions as the PARTICIPATING GOVERNMENTS and new party agree upon in writing.

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10.1 The Pacific County Comprehensive Solid Waste Management Plan and any subsequent plan updates shall be deemed to have been adopted when the plan(s) have been approved

by the governing bodies representing seventy-five (75) percent of the population of Pacific County, as set forth by the Washington State Office of Financial Management.

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11.1 The PLAN may be amended at any time following the recommendation of the SWAC and approval by the governing bodies (county commissioners, city/town councils) representing seventy-five (75) percent of the population of Pacific County, as set forth by the Washington State Office of Financial Management.

SECTION 12 - TERM

12.1 Commencing on the date this Agreement is last executed, this Agreement shall continue for the life of the 2016 Pacific County Comprehensive Solid Waste Management Plan Update.

12.2 Any party hereto may withdraw and terminate its rights and obligation under this Agreement if it is their intention to establish their own Plan Update, satisfying all requirements to do so under the applicable laws of the State of Washington. In such cases, twelve (12) months notice of intent to withdraw shall be given to all parties hereto.

SECTION 13 - EFFECTIVE DATE

13.1 This Agreement shall be effective upon its execution by the COUNTY after execution by all other PARTICIPATING GOVERNMENTS and shall supersede the existing Intergovernmental Agreement for Integrated Solid Waste Management.

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Lisa Ayers, Chair

Frank Wolfe, Commissioner

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ATTEST:

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Julie Struck, Mayor

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Jerry Phillips, Mayor

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Marie Guernsey
Marie Guernsey, Clerk of the Board

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ATTEST:

Marie Guernsey, Clerk of the Board
5/23/17

PACIFIC COUNTY SOLID WASTE MANAGEMENT PLAN

APPENDIX B: SOLID WASTE ADVISORY COMMITTEE BY-LAWS

BY-LAWS OF THE
PACIFIC COUNTY SOLID WASTE COMMITTEE

NAME

The committee shall be known as, "The Pacific County Solid Waste Advisory Committee" hereafter SWAC.

PURPOSE

The purpose and charge of the SWAC shall be to:

A. Advise Pacific County on all aspects of solid waste management planning.

B. Assist Pacific County in the development of programs and policies concerning solid waste management.

C. Review and comment on proposed solid waste management rules, policies or ordinances prior to their adoption.

D. Advise Pacific County on other solid waste matters as assigned by the Board of County Commissioners.

COMPOSITION AND TERMS

SWAC consists of nine (9) members, which may include individuals, firms, corporations and/or municipalities, appointed by the Pacific County, Washington, Board of County Commissioners. SWAC members shall serve for two (2) calendar years (January through December). Upon establishment of SWAC five (5) members shall serve two (2) years, four (4) members shall serve one (1) year. Length of committee members' terms shall initially be determined by lot. Members may be appointed at the pleasure of the Board of County Commissioners.

OFFICERS AND DUTIES

There shall be a Chair, Vice Chair, and Secretary of the Committee. Officers will be elected by the Committee sitting in regular, open, public meetings.

Officers of the Committee shall serve for one year from the date of election. No officer shall serve for more than two consecutive terms.

The Chair will preside over Committee meetings and coordinate the development of the agenda with staff representatives of the Pacific County Department of Community Development. The Chair will sign all correspondence originated by the Committee on behalf thereof.

The Vice Chair will preside over Committee meetings in the absence of the Chair.

The Secretary will be responsible for keeping the official record of proceedings of the Committee.

The Committee may remove any officer whom the elect by the following procedure:

> Any member of the Committee may offer a motion for removal at a meeting. If the motion is seconded, it will be considered and voted on at the next regular meeting of the Committee. Approval of a motion for removal will require a two-thirds majority of the members present and voting.

COMMITTEE

The Chair may appoint such standing and ad hoc committees as may be considered useful and appropriate to investigate any matter of interest to the Committee.

ABSENCES

A Committee member who accrues three consecutive, unexcused absences from regular meetings may be removed from the Committee by the Chair with the concurrence of the majority of the members.

MEETINGS

Regular meetings of the SWAC will take place on the third Tuesday of every quarter at 10 a.m. The meetings will be established by the majority vote of the Committee. All regular and special meetings of the Committee shall be held in a place that is open and easily accessible to the public. The Committee is subject to, and will conform with, the provisions of RCW 42.30, the State Open Meetings Act.

QUORUM

A quorum is required to be present before the Committee can take action. A simple majority of the appointed members of the Committee shall constitute a quorum.

REPORTS, RECOMMENDATIONS, AND CORRESPODENCE

Reports, recommendations, and correspondence submitted to the Board of County Commissioners shall be forwarded on behalf of the majority of the members over the signature of the Chair. Minority reports, if any, shall be attached to, and forwarded with such reports, recommendations, or correspondence without comment by the chair.

CONDUCT OF MEETINGS

The meetings agenda will be constituted as follows:

1. Call to order
2. Roll call
3. Minutes of previous meeting(s)
4. Old business
5. New business
6. Public forum: five (5) minute limit at the pleasure of the Chair; extension at the pleasure of SWAC members in attendance.

Adopted May 19, 1987

Amended May 2, 1989: Each member shall be allowed one vote on items considered by the Committee. No proxy vote will be allowed.

Amended March 19, 1996

Amended May 16, 2006: The regular meetings will occur on the third Tuesday of every other month.

Amended January 22, 2009: The regular meetings will occur on the third Tuesday of every quarter.

Name	Representing
Alexander, Jay	Peninsula Sanitation
Hein, Dennis	Public
McNelly, Megan	Pacific County
Spencer, Michael	Public
Steele, Anne	Public

PACIFIC COUNTY SOLID WASTE MANAGEMENT PLAN

APPENDIX C: SOLID WASTE ADVISORY COMMITTEE MEMBERS

Participating Pacific County Solid Waste Advisory Committee Members

and

Department of Community Development Staff

The Pacific County Solid Waste Management Plan update was prepared by the Pacific County Department of Community Development with assistance from the Pacific County Solid Waste Advisory Committee,

Pacific County Solid Waste Advisory Committee

- Dennis Hein
- Michael Spencer
- Anne Steele
- Peninsula Sanitation

Pacific County Department of Community Development

- Megan McNelly, Solid Waste Manager
- Shawn Humphreys, Environmental Health Director

PACIFIC COUNTY SOLID WASTE MANAGEMENT PLAN

APPENDIX D: HAZARDOUS HOUSEHOLD SUBSTANCE LIST

HAZARDOUS HOUSEHOLD SUBSTANCES LIST				
Substance(s) or Class(es) of Substances	**Primary Hazards**			
	Flammable	**Toxic**	**Corrosive**	**Reactive**
Group 1: Repair and Remodeling				
Adhesives, Glues, Cements	X	X		
Roof Coatings, Sealants		X		
Caulkings and Sealants		X		
Epoxy Resins	X	X		X
Solvent Based Paints	X	X		
Solvents and Thinners	X	X	X	X
Paint Removers and Strippers		X	X	
Group 2: Cleaning Agents	**Flammable**	**Toxic**	**Corrosive**	**Reactive**
Oven Cleaners		X	X	
Degreasers and Spot Removers	X	X	X	
Toilet, Drain, and Septic Cleaners		X	X	
Polishes, Waxes, and Strippers	X	X	X	
Deck, Patio, and Chimney Cleaners	X	X	X	
Solvent Cleaning Fluid	X	X	X	X
Household Bleach (< 8% solution)			X	
Group 3: Pesticides	**Flammable**	**Toxic**	**Corrosive**	**Reactive**
Insecticides	X	X		
Fungicides		X		
Rodenticides		X		
Molluscides		X		
Wood Preservatives		X		
Moss Retardants		X	X	
Herbicides		X		
Fertilizers		X	X	X
Group 4: Auto, Boat, and Equipment Maintenance	**Flammable**	**Toxic**	**Corrosive**	**Reactive**
Batteries		X	X	X
Waxes and Cleaners	X	X	X	

HAZARDOUS HOUSEHOLD SUBSTANCES LIST				
Substance(s) or Class(es) of Substances	**Primary Hazards**			
	Flammable	**Toxic**	**Corrosive**	**Reactive**
Paints, Solvents, and Cleaners	X	X	X	X
Additives	X	X	X	X
Gasoline	X	X	X	X
Flushes	X	X	X	X
Auto Repair Materials	X	X		
Motor Oil		X		
Diesel Oil	X	X		
Antifreeze		X		
Group 5: Hobby and Recreation	**Flammable**	**Toxic**	**Corrosive**	**Reactive**
Paints, Thinners, and Solvents	X	X	X	X
Pool/Sauna Chemicals	X	X	X	X
Photo Processing Chemicals	X	X	X	X
Glues and Cements	X	X	X	
Inks and Dyes	X	X		
Glazes		X		
Chemistry Sets	X	X	X	X
Pressurized Bottled Gas	X	X		X
White Gas	X	X		X
Charcoal Lighter Fluid	X	X		
Batteries		X	X	X
Group 6: Persistent Bioaccumulative Toxins (PBT's)	**Flammable**	**Toxic**	**Corrosive**	**Reactive**
Mercury • CFLs and Fluorescent Tubes • Auto Switches • Thermometers • Barometers • Thermostats • Button Cell Batteries		X (all)	X(all)	

HAZARDOUS HOUSEHOLD SUBSTANCES LIST				
Substance(s) or Class(es) of Substances	**Primary Hazards**			
	Flammable	**Toxic**	**Corrosive**	**Reactive**
Lead • Lead Acid Car Batteries • Fishing Weights • Unused Lead Shot • Unused Traffic Paint • Unused Art Supplies (for Stained Glass and Lead Pottery Glaze)		X (all)		
Polybrominated Diphenyl Ether (PBDE's) • Televisions • Computers • Other Electronic Products Note: These items should all be treated as electronics and recycled.		X (all)		
Polycyclic Aromatic Hydrocarbons (PAH) • Roofing Sealant • Pavement Sealant • Used Motor Oil		X (all)		
Polychlorinated biphenyl (PCB) • Caulking (manufactured prior to 1979) • Light Ballasts (manufactured prior to 1979)		X (all)		
Group 7: Miscellaneous	**Flammable**	**Toxic**	**Corrosive**	**Reactive**
Ammunition	X	X	X	X
Asbestos		X		
Fireworks	X	X	X	X
Marine Aerial Flares	X	X		
Pharmaceuticals		X		
Non-controlled Substances		X		
Sharps				
Personal Care Products	X	X	X	

PACIFIC COUNTY SOLID WASTE MANAGEMENT PLAN

APPENDIX E: HAZARDOUS WASTE CLEAN-UP SITES

Facility/Site ID	Facility/Site Name	Program Facility Names	Address	City
1194	RAINBOW VALLEY LANDFILL INC	RAINBOW VALLEY LANDFILL, RAINBOW VALLEY LANDFILL INC, Royal Heights Transfer Station & Recycling Center	114 AIRPORT RD	RAYMOND
1195	WEYERHAEUSER TRUCK SHOP	WEYERHAEUSER TRUCK SHOP	HWY 101	RAYMOND
1196	WA WSU Long Beach Research & Ext Unit	WA WSU LONG BEACH RESEARCH & EXT UNIT	2907 PIONEER RD	LONG BEACH
1197	PART TIME AUTO WRECKING	PART TIME AUTO WRECKING	2803 SANDRIDGE RD	ILWACO
1198	UNOCAL SERVICE STATION 6298	PACIFIC TRANSIT, UNOCAL SERVICE STATION 6298	6TH & DURYEA ST	RAYMOND
1199	PACIFIC WHOLESALE	PACIFIC WHOLESALE	S TERMINUS 3RD ST	RAYMOND
5040	WA Parks North Head Lighthouse	WA Parks North Head Lighthouse	NORTH HEAD LIGHTHOUSE RD	ILWACO
5580	WA DOT Property Raymond Maint Facility	WA DOT Property Raymond Maint Facility	103 5TH ST	RAYMOND
13059	Matzen Residential Property	Matzen Residential Property	14310 BIRCH ST	LONG BEACH
17151	GARLAND & MILLER PROPERTY	ACE TOWING, GARLAND & MILLER PROPERTY	9503 SANDRIDGE RD	LONG BEACH
20584	SOUTH BEND POST OFFICE	SOUTH BEND POST OFFICE	120 CENTRAL AVE	SOUTH BEND
21331	RESIDENTIAL PROPERTY	HERMAN PROPERTY, RESIDENTIAL PROPERTY	5739 STATE ROUTE 101	SOUTH BEND
22828	JV Auto Wrecking	JV Auto Wrecking	1110 WILLAPA AVE	SOUTH BEND
25108	TURNER & SON INC	TURNER & SON INC	1285 & 1500 HENKLE ST	RAYMOND
30472	QWEST SOUTH BEND CENTRAL OFFICE	QWEST SOUTH BEND CENTRAL OFFICE	1ST ST & ALDER ST	SOUTH BEND
760531	ACE TOWING	ACE TOWING	706 HWY 100	ILWACO
2258757	LONG BEACH BP	LONG BEACH BP	1400 PACIFIC HWY S	LONG BEACH
3063964	OYSTERVILLE STORE	OYSTERVILLE STORE	3012 OYSTERVILLE RD	OYSTERVILLE
3255339	LOYNES RESIDENCE	LOYNES RESIDENCE	1137 LARCH ST	RAYMOND
3887406	NEMAH RIVER BRIDGE	NEMAH RIVER BRIDGE	MP 77 N NEMAH RIVER RD	SOUTH BEND
5226628	RAYMOND 101 QUICK STOP	RAYMOND 101 QUICK STOP, RAYMOND QUICK STOP 101 CHEVRON	622 HEATH ST	RAYMOND
6728892	LAIRD PROPERTY	LAIRD PROPERTY	3900 OLDANI RD	RAYMOND
9612322	LITSCHKE PROPERTY	LITSCHKE PROPERTY	809 HWY 101	CHINOOK
9775774	Tokeland Cattle Dip Tank	Tokeland Cattle Dip Tank	2406 TOKELAND RD	TOKELAND
31518862	TETZ OIL SOUTH BEND	TETZ OIL SOUTH BEND, Wilcox & Flegel SOUTH BEND	511 OREGON ST	SOUTH BEND
36791325	ILWACO PORT LYLES CANNERY	ILWACO PORT LYLES CANNERY	ADVENT ST HOWEDTON	ILWACO
37273159	JACKPOT INDUSTRIES	JACKPOT INDUSTRIES, Jackpot Industries Inc	1725 OCEAN AVE	RAYMOND
41428984	SOUTH BEND SHELL & SEAFOOD MARKET	SOUTH BEND SHELL & SEAFOOD MARKET	1208 ROBERT BUSH DR	SOUTH BEND
49228295	HILLTOP MIDDLE SCHOOL	BUS GARAGE, HILLTOP MIDDLE SCHOOL	442 BRUMBACH ST NE	ILWACO
62771479	TETZ OIL RAYMOND DOT	TETZ OIL RAYMOND DOT	2711 OCEAN AVE	RAYMOND
78567384	WA DOT Parcel 4 02258	WA DOT Parcel 4 02258	2711 OCEAN AVE DOT	RAYMOND
97796553	WA DOT Parcel 4 02221	WA DOT Parcel 4 02221	511 OREGON ST DOT	SOUTH BEND

DETERMINATION OF NON-SIGNIFICANCE

Description of Proposal: Adopt updated Comprehensive Solid Waste Management Plan, in accordance with the Guidelines of Chapter 70.95 RCW, which were revised in 2002.

Proponent(s): Pacific County

Lead Agency: Pacific County

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist, review of public testimony considered during public workshops, public meetings and public hearings, Solid Waste Advisory Committee record, and other information on file with the lead agency. A complete plan can be found at the Pacific County website under Public Notice http://www.co.pacific.wa.us/dcd/public_notices.htm or at either office.

This DNS is issued under WAC 197-11-340(2); the public comment period for this action will expire February 22, 2017

Responsible Official:	Tim Crose
Position/Title:	Planning Director
Phone:	(360) 642-9382/(360) 875-9356
Address:	PO Box 68, South Bend, WA 98586
Email:	tcrose@co.pacific.wa.us

Date: February 8, 2017

WAC 197-11-960 Environmental checklist.

ENVIRONMENTAL CHECKLIST

Purpose of checklist:

The State Environmental Policy Act (SEPA), chapter 43.21C RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions for applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Use of checklist for nonproject proposals:

Complete this checklist for nonproject proposals, even though questions may be answered "does not apply." IN ADDITION, complete the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D).

For nonproject actions, the references in the checklist to the words "project," "applicant," and "property or site" should be read as "proposal," "proposer," and "affected geographic area," respectively.

A. BACKGROUND

1. Name of proposed project, if applicable:
   Pacific County Solid Waste Management Plan Update

2. Name of applicant:
   Pacific County Department of Community Development

3. Address and phone number of applicant and contact person:
   PO Box 68
   South Bend, WA 98586

   Megan McNelly, Solid Waste Manager

4. Date checklist prepared:
   February 2017

5. Agency requesting checklist:
   Pacific County

6. Proposed timing or schedule (including phasing, if applicable):
   Proposed Implementation of the Pacific County Solid Waste Management Plan Update (SWMP) would begin immediately and would proceed through the next scheduled plan revision.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

The SWMP will be finalized according to the Department of Ecology's "Guidelines for Local Solid Waste Management Plans". Additions or further activities will occur only with SWMP revisions.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Chapter 70.95 RCW requires local governments to prepare a comprehensive Solid Waste Management Plan, in addition, local governments are also required to prepare Moderate Risk Waste Management Plans governing moderate waste handling and disposal. The Pacific County Moderate Risk Waste Management Plan was prepared and adopted in 1990.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

There are no specific properties addressed in the Solid Waste Management Plan.

10. List any government approvals or permits that will be needed for your proposal, if known.

SWMP approvals are required from the Board of Pacific County Commissioners, Pacific County Incorporated Cities, and the Department of Ecology. All solid waste and recycling facilities will require permits from Pacific County.

The implementation of specific requirements listed in this plan may require grant funding from state agencies. In this case, approvals are required from the Board of Pacific County Commissioners and the Department of Ecology.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The SWMP addresses the management of solid waste in Pacific County. The plan discusses topics ranging from solid waste disposal, illegal disposal, waste reduction, and recycling. The plan also lists recommendations to be implemented over the next 3-5 years and describes funding mechanisms available to implement the recommendations.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The SWMP encompasses the entire County of Pacific, including the Incorporated Cities of Ilwaco, Long Beach, Raymond, and South Bend.

B. ENVIRONMENTAL ELEMENTS

1. **Earth**

a. General description of the site (circle one): Flat, rolling, hilly, steep slopes, mountainous, other . . . . . .

Pacific County is located in the southwest corner of Washington State and encompasses approximately 908 square miles. The County surrounds the Willapa Bay with flat lands and is hilly in some areas.

b. What is the steepest slope on the site (approximate percent slope)?

There are some areas within the County that have slopes over 25%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any prime farmland.

Soils vary throughout the County from clay, loam, to sand depending on the area.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Pacific County does have areas of unstable soils.
Site specific information will be provided as locations are identified.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

Does not apply. Site specific information will be provided as locations are identified.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Does not apply. Site specific information will be provided as locations are identified.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Does not apply. Site specific information will be provided as locations are identified.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Does not apply. Site specific information will be provided as locations are identified.

2. **Air**

a. What types of emissions to the air would result from the proposal (i.e., dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities if known.

Does not apply. Site specific information will be provided as locations are identified.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

Does not apply. Site specific information will be provided as locations are identified.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

The proposed amendment includes requirements that will reduce and control emissions or other impacts to air quality.

3. **Water**

a. Surface:

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

Pacific County surrounds the Willapa Bay and sits to the north of the Columbia River with a multitude of tributaries and watershed running into these two large bodies of water.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

Does not apply. Site specific information will be provided as locations are identified.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.
Does not apply. Site specific information will be provided as locations are identified.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.
Does not apply. Site specific information will be provided as locations are identified.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.
Does not apply. Site specific information will be provided as locations are identified.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.
Does not apply. Site specific information will be provided as locations are identified.

b. Ground:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities if known.
Does not apply. Site specific information will be provided as locations are identified.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.
Does not apply. Site specific information will be provided as locations are identified.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.
Does not apply. Site specific information will be provided as locations are identified.

2) Could waste materials enter ground or surface waters? If so, generally describe.
Does not apply. Site specific information will be provided as locations are identified.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

4. Plants

a. Check or circle types of vegetation found on the site:

X deciduous tree: alder, maple, aspen, other
X evergreen tree: fir, cedar, pine, other
X shrubs
X grass
X pasture
X crop or grain
X wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
X water plants: water lily, eelgrass, milfoil, other

X other types of vegetation

b. What kind and amount of vegetation will be removed or altered?
Does not apply. Site specific information will be provided as locations are identified.

c. List threatened or endangered species known to be on or near the site.
Does not apply. Site specific information will be provided as locations are identified.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:
Does not apply. Site specific information will be provided as locations are identified.

5. **Animals**

a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

birds: hawk, heron, eagle, songbirds, other: **All are present**
mammals: deer, bear, elk, beaver, other: **All are present**
fish: bass, salmon, trout, herring, shellfish, other: **All are present**

b. List any threatened or endangered species known to be on or near the site.
Does not apply. Site specific information will be provided as locations are identified.

c. Is the site part of a migration route? If so, explain.
Does not apply. Site specific information will be provided as locations are identified.

d. Proposed measures to preserve or enhance wildlife, if any:
Does not apply. Site specific information will be provided as locations are identified.

6. **Energy and natural resources**

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.
Does not apply. Site specific information will be provided as locations are identified.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.
Does not apply. Site specific information will be provided as locations are identified.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:
Does not apply. Site specific information will be provided as locations are identified.

7. **Environmental health**

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.
The Moderate Risk Waste facility does accept Household Hazardous Waste during the summer months. The waste is properly taken in and then packaged for disposal using proper methods. There are no chemicals hazards to the individuals inside and/or outside the facility.

1) Describe special emergency services that might be required.
Does not apply. Site specific information will be provided as locations are identified.

2) Proposed measures to reduce or control environmental health hazards, if any:
Does not apply. Site specific information will be provided as locations are identified.

b. **Noise**

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?
Does not apply. Site specific information will be provided as locations are identified.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.
Does not apply. Site specific information will be provided as locations are identified

3) Proposed measures to reduce or control noise impacts, if any:
Does not apply. Site specific information will be provided as locations are identified.

8. **Land and shoreline use**

a. What is the current use of the site and adjacent properties?
Does not apply. Site specific information will be provided as locations are identified.

b. Has the site been used for agriculture? If so, describe.
Does not apply. Site specific information will be provided as locations are identified.

c. Describe any structures on the site.
Does not apply. Site specific information will be provided as locations are identified.

d. Will any structures be demolished? If so, what?
Does not apply. Site specific information will be provided as locations are identified.

e. What is the current zoning classification of the site?
Does not apply. Site specific information will be provided as locations are identified.

f. What is the current comprehensive plan designation of the site?
Does not apply. Site specific information will be provided as locations are identified.

g. If applicable, what is the current shoreline master program designation of the site?
Does not apply. Site specific information will be provided as locations are identified.

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.
Does not apply. Site specific information will be provided as locations are identified.

i. Approximately how many people would reside or work in the completed project?
Does not apply. Site specific information will be provided as locations are identified.

j. Approximately how many people would the completed project displace?
Does not apply. Site specific information will be provided as locations are identified.

k. Proposed measures to avoid or reduce displacement impacts, if any:
Does not apply. Site specific information will be provided as locations are identified.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:
Does not apply. Site specific information will be provided as locations are identified.

9. **Housing**

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.
Does not apply. Site specific information will be provided as locations are identified.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.
Does not apply. Site specific information will be provided as locations are identified.

c. Proposed measures to reduce or control housing impacts, if any:
Does not apply. Site specific information will be provided as locations are identified.

10. **Aesthetics**

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?
Does not apply. Site specific information will be provided as locations are identified.

b. What views in the immediate vicinity would be altered or obstructed?
Does not apply. Site specific information will be provided as locations are identified.

c. Proposed measures to reduce or control aesthetic impacts, if any:
Does not apply. Site specific information will be provided as locations are identified.

11. **Light and glare**

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?
Does not apply. Site specific information will be provided as locations are identified.

b. Could light or glare from the finished project be a safety hazard or interfere with views?
Does not apply. Site specific information will be provided as locations are identified.

c. What existing off-site sources of light or glare may affect your proposal?
Does not apply. Site specific information will be provided as locations are identified.

d. Proposed measures to reduce or control light and glare impacts, if any:
Does not apply. Site specific information will be provided as locations are identified.

12. **Recreation**

a. What designated and informal recreational opportunities are in the immediate vicinity?

Does not apply. Site specific information will be provided as locations are identified.

b. Would the proposed project displace any existing recreational uses? If so, describe.
Does not apply. Site specific information will be provided as locations are identified.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:
Does not apply. Site specific information will be provided as locations are identified.

13. **Historic and cultural preservation**

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.
Does not apply. Site specific information will be provided as locations are identified.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.
Does not apply. Site specific information will be provided as locations are identified.

c. Proposed measures to reduce or control impacts, if any:
Does not apply. Site specific information will be provided as locations are identified.

14. **Transportation**

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.
Does not apply. Site specific information will be provided as locations are identified.

b. Is site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?
Does not apply. Site specific information will be provided as locations are identified.

c. How many parking spaces would the completed project have? How many would the project eliminate?
Does not apply. Site specific information will be provided as locations are identified.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).
Does not apply. Site specific information will be provided as locations are identified.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.
Does not apply. Site specific information will be provided as locations are identified.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.
Does not apply. Site specific information will be provided as locations are identified.

g. Proposed measures to reduce or control transportation impacts, if any:
Does not apply. Site specific information will be provided as locations are identified.

15. **Public services**

a. Would the project result in an increased need for public services (for example: fire protection, police protection, health care, schools, other)? If so, generally describe.
Does not apply. Site specific information will be provided as locations are identified.

b. Proposed measures to reduce or control direct impacts on public services, if any.
Does not apply. Site specific information will be provided as locations are identified.

16. **Utilities**

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.
Does not apply. Site specific information will be provided as locations are identified.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.
Does not apply. Site specific information will be provided as locations are identified.

C. SIGNATURE

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: .....

Date Submitted: 2/2/2017

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(do not use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?

   The implementation of the recommendations and existing practices proposed within the solid waste management plan update should result in a decrease in discharge to water, emissions to air, production, storage, or release of toxic or hazardous substances, or production of noise. The changes will result in the handling of solid waste and the implementation of programs aimed at reducing environmental burdens.

   Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

   The proposed SWMP update should aid the improvement of the flora and fauna of Pacific County through proper solid waste disposal.

   Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources?

   Projects associated with the implementation of the SWMP update should not deplete energy sources or natural resources.

   Proposed measures to protect or conserve energy and natural resources are:

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?

   The SWMP update would enhance these areas by educating the public on proper solid waste disposal methods, thus enhancing the water and air quality of the area.

   Proposed measures to protect such resources or to avoid or reduce impacts are:

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?

   The proposed SWMP update would not allow or encourage shoreline use that is incompatible with the existing plans.

   Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

   The proposed SWMP update should not provide an increased demand on transportation or public service.

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

   The proposed SWMP update shall allow for the compliance with and the enhancement of all local, state, and federal laws regarding the protection of the environment.

COST ASSESSMENT QUESTIONNAIRE

Please provide the information requested below:

PLAN PREPARED FOR THE COUNTY OF: PACIFIC

PLAN PREPARED FOR THE CITY OF: Long Beach, Ilwaco, South Bend, Raymond

PREPARED BY: Megan McNelly

CONTACT TELEPHONE: **360.875.9356** **DATE:** **01/03/2017**

DEFINITIONS

Please provide these definitions as used in the Solid Waste Management Plan and the Cost Assessment Questionnaire.

Throughout this document:

YR.1 shall refer to **_2016____.**
YR.3 shall refer to **_2018____.**
YR.6 shall refer to **_2021____.**

Year refers to (circle one) **calendar** (Jan 01 - Dec 31)
fiscal (Jul 01 - Jun 30)

1. **DEMOGRAPHICS:** To assess the generation, recycling and disposal rates of an area, it is necessary to have population data. This information is available from many sources (e.g., the State Data Book, County Business Patterns, or the State Office of Finance and Management).

1.1 Population

1.1.1 What is the **total** population of your County/City?

YR.1 _20833_____ YR.3 _20800_____ YR.6 _20755__

1.1.2 For counties, what is the population of the area **under your jurisdiction?** (Exclude cities choosing to develop their own solid waste management system.)

YR.1 _same as above_ YR.3 _____ YR.6 _____

1.2 References and Assumptions

2. **WASTE STREAM GENERATION:** The following questions ask for total tons recycled and total tons disposed. Total tons disposed are those tons disposed of at a landfill, incinerator, transfer station or any other form of disposal you may be using. If other please identify.

2.1 Tonnage Recycled

2.1.1 Please provide the total tonnage **recycled** in the base year, and projections for years three and six.

YR.1: 2822 YR. 3: 2817 YR. 6: 2812

2.2 Tonnage Disposed

2.2.1 Please provide the total tonnage **disposed** in the base year, and projections for years three and six.

YR.1: 14834 YR.3: 16816 YR.6: 19790

2.3 References and Assumptions

3. **SYSTEM COMPONENT COSTS:** This section asks questions specifically related to the types of programs currently in use and those recommended to be started. For each component (i.e., waste reduction, landfill, composting, etc.) please describe the anticipated costs of the program(s), the assumptions used in estimating the costs and the funding mechanisms to be used to pay for it. The heart of deriving a rate impact is to know what

programs will be passed through to the collection rates, as opposed to being paid for through grants, bonds, taxes and the like.

3.1 Waste Reduction Programs

3.1.1 Please list the solid waste programs which have been implemented and those programs which are proposed. If these programs are defined in the SWM plan please provide the page number. (Attach additional sheets as necessary.)

IMPLEMENTED	PROPOSED
	SWMP pgs 46-48
Waste Exchange	K12 Education Waste Audits Local Taxes, Fees, & Fines Backyard Composting Government Procurement Package & Product Deposits

3.1.2 What are the costs, capital costs and operating costs for waste reduction programs implemented and proposed?

IMPLEMENTED

YR.1: 500 YR.3: 500 YR.6: 503

PROPOSED

YR.1: 0 YR.3: $94,000 YR.6: $27,000

3.1.3 Please describe the funding mechanism(s) that will pay the cost of the programs in 3.1.2.

IMPLEMENTED

YR.1: Grant/County YR.3: Grant/County YR.6: Grant/County

PROPOSED

YR.1: N/A YR.3: Grant/County YR.6: Grant/County

3.2 Recycling Programs

3.2.1 Please list the proposed or implemented recycling program(s) and, their costs, and proposed funding mechanism or provide the page number in the draft plan

on which it is discussed. (Attach additional sheets as necessary.)

IMPLEMENTED

PROGRAM	COST	FUNDING
Waste Exchange	$500	Grant/County
HHW Facility	$39,621	Grant/County
Recycling Dropboxes	$70,000	Grant/County
Oil Recycling	$15,000	Grant/County

PROPOSED

PROGRAM	COST	FUNDING
Curbside Recycling	$800,000	Grant/County

3.3 Solid Waste Collection Programs

3.3.1 Regulated Solid Waste Collection Programs
Fill in the table below for each **WUTC regulated** solid waste collection entity in your jurisdiction. (Make additional copies of this section as necessary to record all such entities in your jurisdiction.)

WUTC Regulated Hauler Name Peninsula Sanitation/Long Beach Recycling
G-permit #_G-11_____

	YR. 3	YR. 6
RESIDENTIAL		
- # of Customers	5201	5196
- Tonnage Collected*	6286	6284
COMMERCIAL		
- # of Customers	598	600
- Tonnage Collected*	4639	3641

*reported as residential and commercial waste

3.3.2 Other (non-regulated) Solid Waste Collection Programs Fill in the table below for other solid waste collection entities in your jurisdiction. (Make additional copies of this section as necessary to record all such entities in your jurisdiction.)

Hauler Name City of Raymond

	YR. 1	YR. 3	YR. 6
# of Customers	1060	1056	1052
Tonnage Collected	1427	1427	1427

Hauler Name City of South Bend

	YR. 1	YR. 3	YR. 6
# of Customers	641	640	639
Tonnage Collected	1320	1320	1320

3.4 Energy Recovery & Incineration (ER&I) Programs
(If you have more than one facility of this type, please copy this section to report them.)

3.4.1 Complete the following for each facility:

Name: N/A
Location: _____
Owner: _____
Operator: _____

3.4.2 What is the permitted capacity (tons/day) for the facility? _____

3.4.3 If the facility is not operating at capacity, what is the average daily throughput?

YR.1 _____ YR.3 _____ YR.6 _____

3.4.4 What quantity is estimated to be land filled which is either ash or cannot be processed.

YR.1 _____ YR.3 _____ YR.6 _____

3.4.5 What are the expected capital costs and operating costs, for ER&I programs (not including ash disposal expense)?

YR.1 _____ YR.3 _____ YR.6 _____

3.4.6 What are the expected costs of ash disposal?

YR.1 _____ YR.3 _____ YR.6 _____

3.4.7 Is ash disposal to be:
_____ on-site?
_____ in county?
_____ long-haul?

3.4.8 Please describe the funding mechanism(s) that will fund the costs of this component.

3.5 Land Disposal Program
(If you have more than one facility of this type, please copy this section to report them.)

3.5.1 Provide the following information for each **land disposal facility** in your jurisdiction which receives garbage or refuse generated in the county.

Landfill Name: N/A
Owner: _____
Operator: _____

3.5.2 Estimate the **approximate tonnage** disposed at the landfill by **WUTC regulated haulers.** If you do not have a scale and are unable to estimate tonnages, estimate using cubic yards, and indicate whether they are compacted or loose.[1]

YR.1 _____ YR.3 _____ YR.6 _____

3.5.3 Using the same conversion factors applied in 3.5.2, please estimate the **approximate tonnage** disposed at the landfill by other contributors.

YR.1 _____ YR.3 _____ YR.6 _____

3.5.4 Provide the cost of operating (including capital acquisitions) each landfill in your jurisdiction. For any facility that is privately owned and operated, skip these questions.

YR.1 _____ YR.3 _____ YR.6 _____

3.5.5 Please describe the funding mechanism(s) that will defray the cost of this component.

3.6 Administration Program

3.6.1 What is the budgeted cost for administering the solid waste and recycling programs and what are the major funding sources.

Budgeted Cost

YR.1 _____ YR.3 _____ YR.6 _____

Funding Source

YR.1 _____ YR.3 _____ YR.6 _____

[1] Compacted cubic yards will be converted at a standard 600 pounds per yard. Loose cubic yards will be converted at a standard 300 pounds per cubic yard. Please specify an alternative conversion ratio if one is presently in use in your jurisdiction.

3.6.2 Which cost components are included in these estimates?

3.6.3 Please describe the funding mechanism(s) that will recover the cost of each component.

3.7 Other Programs

For each program in effect or planned which does not readily fall into one of the previously described categories please answer the following questions. (Make additional copies of this section as necessary.)

3.7.1 Describe the program, or provide a page number reference to the plan.

3.7.2 Owner/Operator: _____

3.7.3 Is WUTC Regulation Involved? If so, please explain the extent of involvement in section 3.8.

3.7.4 Please estimate the anticipated costs for this program, including capital and operating expenses.

YR.1 _____ YR.3 _____ YR.6 _____

3.7.5 Please describe the funding mechanism(s) that will recover the cost of this component.

3.8 References and Assumptions (attach additional sheets as necessary)

4. FUNDING MECHANISMS: This section relates specifically to the funding mechanisms currently in use and the ones which will be implemented to incorporate the recommended programs in the draft plan. Because the way a program is funded directly relates to the costs a resident or commercial customer will have to pay, this section is crucial to the cost assessment process. Please fill in each of the following tables as completely as possible.

Table 4.1.1 Facility Inventory

Facility Name	Type of Facility	Tip Fee per Ton	Transfer Cost**	Transfer Station Location	Final Disposal Location	Total Tons Disposed	Total Revenue Generated (Tip Fee x Tons)
Peninsula Sanitation	Transfer Station						
- Commercial		130.69		Long Beach	Wasco		
- Self Haul		130.69		Long Beach	Wasco		
Royal Heights	Transfer Station						
- Commercial		128.69		Raymond	Wasco		
- Self Haul		128.69		Raymond	Wasco		

Table 4.1.2 Tip Fee Components

Tip Fee by Facility	Surcharge	City Tax	County Tax	Transportation Cost	Operational Cost	Administration Cost	Closure Costs
Royal Heights	23.75		6.59	38.59	55.61	0.10	4.05
Peninsula Sanitation	23.75		6.54	38.59	57.61	0.10	4.05

Table 4.1.3 Funding Mechanism

Name of Program Funding Mechanism will defray costs	Bond Name	Total Bond Debt	Bond Rate	Bond Due Date	Grant Name	Grant Amount	Tip Fee	Taxes	Other	Surcharge
MRW Collection/Disposal					CPG	75% ~ 123,394	25% ~ 41,132			
Per two years										

Tip Fee/Ton by Facility	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
Peninsula Sanitation	79,386	80,973.72	81,783	82,601	83,0427	83,511
Royal Heights	26,684	27,217	27762	28317	28833	29,172

4.2 **Funding Mechanisms** summary by percentage: In the following tables, please summarize the way programs will be funded in the key years. For each component, provide the expected percentage of the total cost met by each funding mechanism. (e.g. Waste Reduction may rely on tip fees, grants, and collection rates for funding). You would provide the estimated responsibility in the table as follows: Tip fees=10%; Grants=50%; Collection Rates=40%. The mechanisms must total 100%. If components can be classified as "other," please note the programs and their appropriate mechanisms. Provide attachments as necessary.

Table 4.2.1 Funding Mechanism by Percentage

Year One

Component	Tip Fee %	Grant %	Bond %	Collection Tax Rates %	Other %	Total
Waste Reduction	25	75				100%
Recycling	25	75				100%
Collection						100%
ER&I						100%
Transfer						100%
Land Disposal						100%
Administration						100%
Other						100%

Table 4.2.2 Funding Mechanism by Percentage

Year Three

Component	Tip Fee %	Grant %	Bond %	Collection Tax Rates %	Other %	Total
Waste Reduction	25	75				100%
Recycling	25	75				100%
Collection						100%
ER&I						100%
Transfer						100%
Land Disposal						100%
Administration						100%
Other						100%

Table 4.2.3 Funding Mechanism by Percentage

Year Six

Component	Tip Fee %	Grant %	Bond %	Collection Tax Rates %	Other %	Total
Waste Reduction	25	75				100%
Recycling	25	75				100%
Collection						100%
ER&I						100%

Transfer						100%
Land Disposal						100%
Administration						100%
Other						100%

4.3 References and Assumptions

Please provide any support for the information you have provided. An annual budget or similar document would be helpful.

4.4 Surplus Funds

Please provide information about any surplus or saved funds that may support your operations.