United States Department of Agriculture

Marketing and Regulatory Programs

Animal and Plant Health Inspection Service

Regional Movement of Plastic-baled Municipal Solid Waste from Hawaii to Washington, Oregon, and Idaho

Environmental Assessment, February 2008

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I. Purpose and Need

The movement of municipal solid waste (MSW) from Hawaii to the continental United States may be approved after compliance agreements have been negotiated and signed between the U.S. Department of Agriculture (USDA)–Animal and Plant Health Inspection Service (APHIS) and the petitioners intending to move MSW, in accordance with recently revised APHIS regulations (71 Federal Register (FR) 49309). The regulations allow MSW from Hawaii to be moved to the continental United States if it is compressed, packaged, shipped, and disposed of in a manner that the APHIS Administrator determines is adequate to prevent the introduction or dissemination of plant pests. In addition, it is the responsibility of the petitioners to ensure that MSW is moved in compliance with all applicable laws for environmental protection.

In July 2006, APHIS prepared an environmental assessment (EA) on the rulemaking that allows the baling and shipment of MSW from Honolulu, Hawaii to the continental United States. A finding of no significant impact (FONSI) was signed on August 15, 2006. Following the issuance of the 2006 EA, two petitioners came forward with requests to move MSW from Honolulu, Hawaii, to Roosevelt Regional Landfill in Roosevelt, Washington. APHIS conducted a thorough review of the potential environmental impacts for these two site-specific requests and issued a FONSI in December 2006 related to those two MSW movement requests.

Additional requests have been received to transport baled MSW via barge from Hawaii to landfills in other States, including Oregon and Idaho. It is possible that additional companies may request approval from APHIS for such activity in the future. APHIS believes it is most efficient to comprehensively review the impacts of these potential MSW actions in one regional programmatic EA rather than prepare numerous separate EAs for seemingly connected actions. Therefore, this regional programmatic EA will consider the movement of a cumulative maximum amount of baled MSW from the State of Hawaii to any qualified landfill in Washington, Oregon, or Idaho, under compliance agreements with APHIS. The standards required for the original applicants in regard to baling, handling, spill response, and disposal described and analyzed in the rulemaking EA would apply to any company that requests to barge baled MSW from Hawaii to Washington, Oregon, or Idaho. A specific environmental analysis will be prepared for each new request for movement of MSW from Hawaii. It will determine whether it is consistent with the environmental effects and impacts analyzed in this 2008 regional programmatic EA. The environmental analysis made for a new request for moving MSW will be made available for a 30-day public comment period followed by an environmental and a pest risk decision regarding the new

MSW proposal. If a new petitioner's request were to result in exceeding the amount of MSW exported from Hawaii (either individually or cumulatively), or exceeding the number of barge trips, or amount of rail or truck traffic considered in this document, APHIS will amend this regional programmatic EA to analyze the potential impacts form the changed conditions. The amended EA would be made available for public comment followed by an environmental and a pest risk decision regarding the changed characteristics for the movement of MSW from Hawaii under the proposal..

This EA has been prepared consistent with the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. 4321 et seq.), the Council on Environmental Quality (CEQ) NEPA regulations in 40 CFR parts 1500 through 1508, and APHIS' NEPA implementing procedures (Title 7 of the Code of Federal Regulations (CFR), Part 372) for the purpose of evaluating how the proposed action, if implemented, may affect the quality of the human environment. APHIS is providing a 30-day public comment period for response to this EA. Written comments are welcomed.

II. Affected Environment

A. Hawaii

The State of Hawaii is one of the smaller States with only 10,941-square miles of territory spread over six larger tropical islands and a number of smaller ones. It is physically separated from the mainland United States by 2,300 miles of Pacific Ocean. Its tropical nature and isolated location have provided Hawaii with many exclusive attributes, as well as some unique challenges. The near shore environments around the islands of the Hawaiian archipelago include a large array of marine animals, corals, and plants, some of which are endemic and found nowhere else. This area includes the Hawaiian Islands Humpback Whale National Marine Sanctuary, which is comprised of five separate areas abutting six of the major islands of the State of Hawaii. The State of Hawaii currently has 10 commercial ports under the Harbors Division of the Hawaii Department of Transportation:

Kauai District	Nawiliwili Harbor and Port Allen Harbor
Oahu District	Honolulu Harbor, Kalaeloa Barbers Point Harbor, and Kewalo Basin
Maui District	Kahului Harbor, Kaunakakai Harbor, and Kaumalapau Harbor
Hawaii District	Hilo Harbor and Kawaihae Harbor

Honolulu Harbor, located on Mamala Bay, is the primary harbor and the hub of the commercial harbor system. Essentially all of Hawaii's overseas waterborne traffic enters and leaves from Honolulu Harbor. It is also the focal point for the movement of interisland cargo. Honolulu Harbor is a port of destination with large volumes of cargo passing over its piers for consumption in the State. Hawaii imports 80 percent of its required goods with 98 percent shipped via water. The port handles over 11 million tons of cargo annually. It is in immediate proximity to downtown Honolulu (Harbors Division, 2007)

Waste disposal has been a major concern for Hawaii. In the 2005 calendar year, the entire State of Hawaii generated 2,227,124 tons of solid waste (OSWM, 2006). Of this, 801,272 tons were diverted (recycled or reused) and 1,425,752 tons were disposed of, either by landfill or incineration (OSWM, 2006). Currently, each island has its own landfill. There are three companies registered under the Hawaii Public Utilities Commission authorized to ship merchandise, including MSW, interisland (OSWM, 2000). There is only one baling facility near Honolulu Harbor.

B. Pacific Ocean

The Pacific is the world's largest ocean. Its area is greater than all of the world's dry land put together and covers one third of the Earth's surface. The average depth of the Pacific is just over 4,000 meters (m), and it contains the deepest ocean trenches in the world. The Mindanao Trench, close to the Philippines, is 6 ½ miles deep; the lowest point is Marianas Trench. The Pacific is almost triangular in shape, narrow in the Arctic north, and broad in the Arctic south. In the west it touches Asia and Australia, in the east the Americas. The rim of the Pacific Basin is ringed with volcanoes, from Alaska through the United States, Mexico, and South America, then on to New Zealand and up to Japan and Russia. This is often called the "Ring of Fire" and includes about 75 percent of all the world's volcanoes.

The Pacific Ocean is the home of many creatures such as the brightly colored fish living in coral areas, squids, sharks, crustaceans, mollusks, and marine mammals. The ecology of the Pacific Ocean is threatened by a variety of reasons including over fishing, rising sea temperatures, increasing acidity and pollution. The Great Barrier Reef and other corals are being steadily eroded by the spread of the crown-of-thorns starfish, which eats the coral. Corals are also at risk from the effects of pollution and tourism.

Many of the Pacific's species, such as sea turtles and sea lions, and a variety of whale species are threatened with extinction. The sea otter

came close to extinction early this century because of overhunting. Similar pressures on whale populations have only recently been eased by the ban on whaling.

C. Continental United States

1. Columbia and Snake River Basins

The Columbia River drops more than 735 m from its headwaters in British Columbia, winding over 1,950 kilometers (km) to the Pacific Ocean. The Columbia River originates in British Columbia, Canada and flows south through the state of Washington where it meets the Snake River to form the partial border between Washington and Oregon. The vast Interior Columbia River Basin is defined by the area drained by the river and its many tributaries (see Figure 1). This 58-million hectare area (about the size of France) extends roughly from the crest of the Cascade Mountains of Oregon and Washington, east through Idaho to the Continental Divide in the Rocky Mountains of Montana and Wyoming, and from the headwaters of the Columbia River in Canada to the high desert of northern Nevada and northwestern Utah.

Figure 1. Columbia and Snake River Basins (USACE, 2007).

The Columbia River Basin is a complex tapestry of mountains, high plateaus, desert basins, river valleys, rolling uplands, and deep gorges woven together by the Columbia River and its tributaries. The Columbia River Basin's deserts, forests, rivers, and rangelands provide integral habitat for 609 known fish and wildlife species including some of the most rare and endangered species in North America: bull trout and sockeye salmon in the rivers of Oregon, Washington, and Idaho; bald eagles and vesper sparrows throughout the Basin; gray wolves, grizzly bears, and even the elusive Canada lynx in remote areas of Idaho and northwestern Montana.

Close to 3,800 invertebrate species have been identified in the Basin; however, an estimated 20,000 more invertebrate species have yet to be described, including various species of ants, spiders, and butterflies. Millions of migratory birds rest and feed in various wetlands and forests within the Basin. The Snake River Birds of Prey area near Boise, Idaho, harbors the densest nesting concentration of birds of prey in North America, including more than 800 pairs of eagles, falcons, hawks, owls, and other raptors.

Anadromous fish are found throughout the Columbia River Basin. These fish reproduce and rear in freshwater, and then migrate downriver to the ocean. As adults, these fish return to the streams and rivers where they hatched to begin the cycle over again. Some anadromous fish travel over 1,440 km on this journey, returning to the exact location where they hatched.

Within the Basin, there are six species and subspecies of fish whose habitats span from the waters of the Pacific Ocean to the mountains of the Continental Divide, bordering Idaho and Montana. These are fall, spring, and summer chinook salmon, sockeye and coho salmon, and steelhead trout. Salmon are considered keystone species, supporting all others in the Basin. Salmon contribute nutrients to streams that, in turn, support other aquatic and terrestrial species.

For thousands of years, salmon have played an important cultural role for the people in the Columbia River Basin, not only as a keystone species and food source, but also because of their awe-inspiring life cycle. As a result, restoring historic salmon runs has been a driving force behind many recent management initiatives in the Basin.

The Columbia and Snake Rivers carry 50 million tons of cargo per year, to and from the Pacific Ocean along a 465-mile waterway. A series of eight locks facilitate the passage of ships and barges from the ocean to as far inland as Lewiston, Idaho. These locks are part of the same projects and

reservoirs that produce hydropower and help control flooding. From the Pacific to Portland, Oregon, and Washington, dredging ensures that a 40-foot river channel remains open yearlong for ocean-going vessels. This 106-mile portion then connects with a 359-mile section that extends to Lewiston, Idaho. Within the latter area, a 14-foot channel is kept open for barges and other craft. To maintain this channel depth, maximum and minimum reservoir elevations are set. These elevations are determined within the context of meeting needs for electrical generation, flood control, and the release of water to help the passage of fish. In addition to its importance for shipping, the Columbia River is known for its fishery resources. Historically, it contained huge salmonid stocks that supported the indigenous peoples of the area. Over the years, treaties have recognized and maintained the importance of Indian fishing and hunting rights. While greatly reduced from historic levels, salmon and other fish stocks remain an important resource in the Columbia River.

2. Washington

A large percentage of freight to, from, and within Washington is moved by truck (USDOT, 20002a). Truck traffic is expected to grow throughout the State over the next 20 years, and will occur primarily in urban areas and on the interstate highway system (USDOT, 2002a). Washington State currently has two Class I railroads (carriers having revenues in excess of $250 million annually), two regional railroads, and 16 short lines and switching railroads (see Figure 2) which total 3,628 miles of rails operated in the State (WSTC, 2006). Table 1 details the amount of freight shipments to, from, and within Washington for 1998, and projects the numbers for 2010 and 2020 (USDOT, 2002a).

Table 1. Freight Shipments To, From, and Within Washington: 1998, 2010, and 2020 (USDOT, 2002a)

Washington		Tons		
		1998	2010	2020
State Total		466	652	834
Mode:	Air	<1	1	2
	Highway	307	444	571
	Rail	85	126	171
	Water	63	69	76
	Other[1]	11	12	14

[1] The "Other" category includes international shipments that moved via pipeline or by an unspecified mode.

Each State independently manages its wastes according to State- and EPA-approved plans prepared in accordance with subtitle D of the Resource Conservation and Recovery Act. The Washington State Department of Ecology has the primary responsibility for the management

of MSW in Washington. More information about Washington's specific regulations can be found at: http://www.ecy.wa.gov/biblio/wac 173351.html.

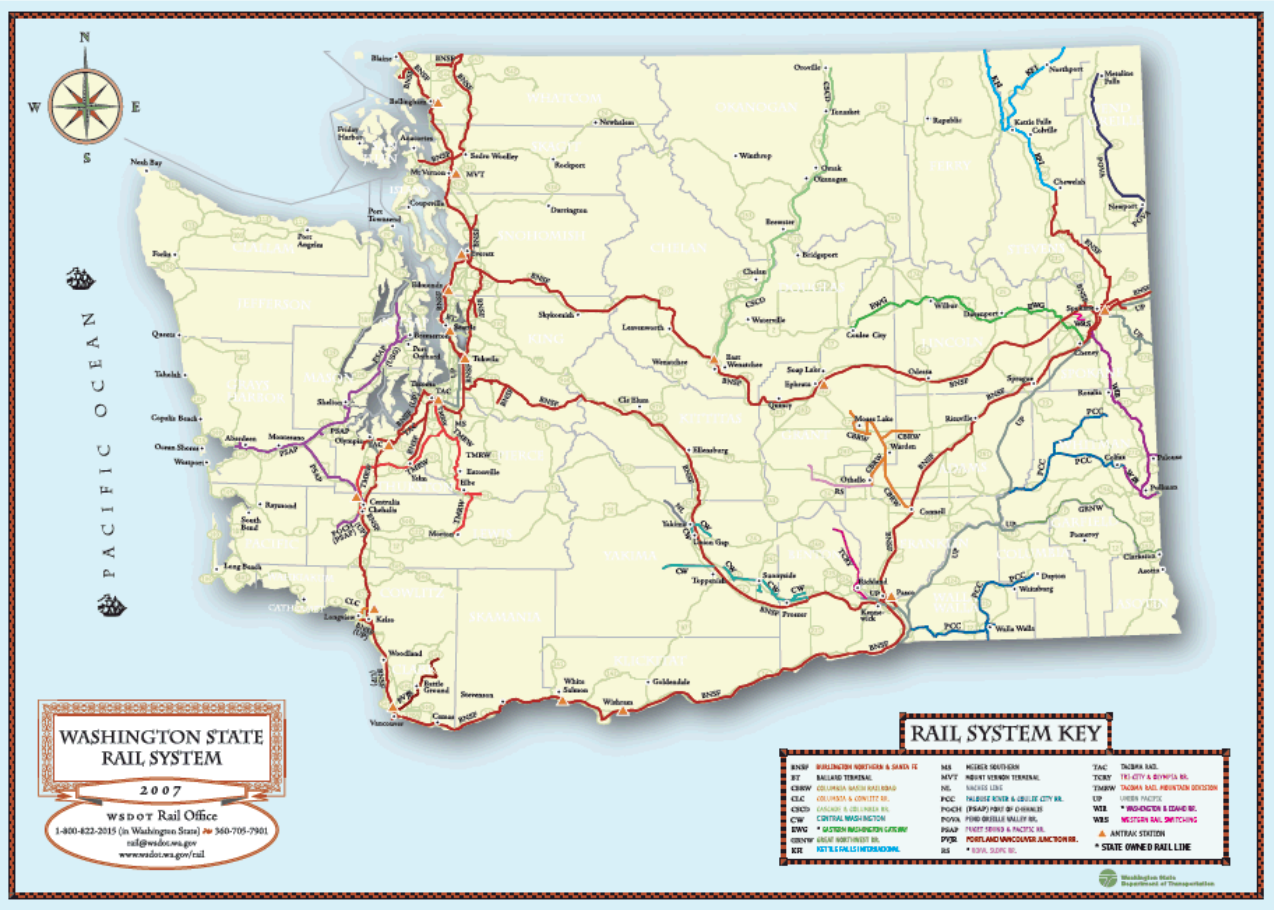

Figure 2. Washington State Rail System (WSDOT, 2007).

3. Oregon

A large number of freight shipments occur by truck in the State of Oregon. Truck traffic is expected to grow throughout the State over the next 20 years in urban areas and along the international highways (USDOT, 2002b). Oregon has two Class I railroads and 20 shortline railroads (Figure 3) which total 2,387 miles of railroad (ODOT, 2001). Table 2 details the amount of freight shipments to, from, and within Oregon for 1998, and projects the numbers for 2010 and 2020 (USDOT, 2002b).

The area of the Oregon landfills and transportation routes are located east of the Cascade Range along the Columbia River. The physical environment is characterized by steep rolling hills; sharp cliffs and canyons are characteristic landforms in this area. Elevations vary from 5,700 feet at Flag Point to 150 feet on the Columbia River. From the higher elevations of the Cascade Range, a general slope occurs to the north and east. Tributary streams dissect steep canyons as they make their way to the Columbia, Deschutes, and John Day Rivers.

Table 2. Freight Shipments To, From, and Within Oregon: 1998, 2010, and 2020 (USDOT, 2002b).

Oregon		Tons		
		1998	2010	2020
State Total		291	428	557
Mode:	Air	<1	<1	1
	Highway	220	323	420
	Rail	53	81	109
	Water	16	20	24
	Other[1]	2	3	4

[1] The "Other" category includes international shipments that moved via pipeline or by an unspecified mode.

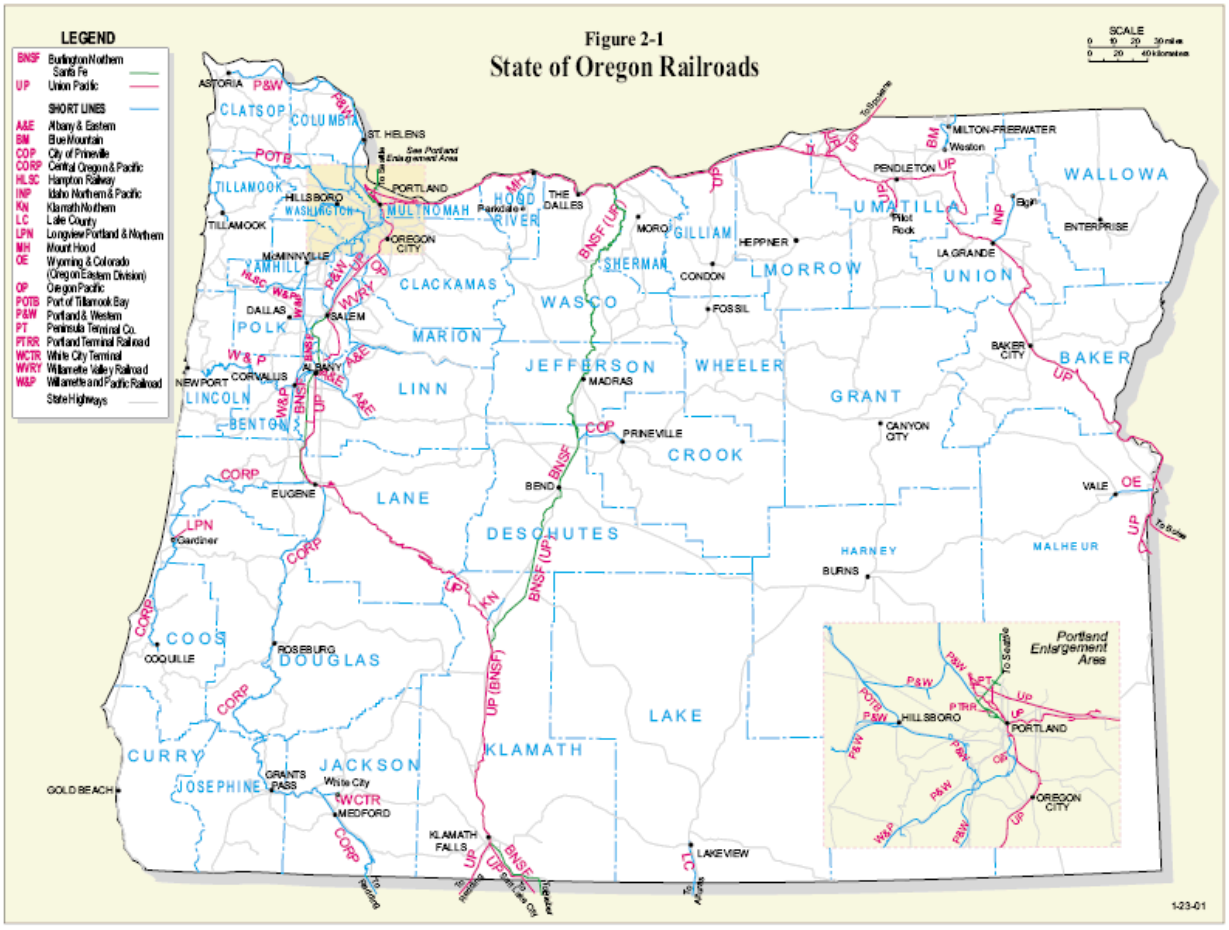

Figure 3. State of Oregon Railroads (ODOT, 2001).

Oregon independently manages its wastes according to State- and EPA-approved plans. Oregon's State Department of Environmental Quality has the primary responsibility for the management of MSW. More information about Oregon's specific regulations can be found at: www.deq.state.or.us/lq/sw/index.htm.

The number of landfills in Oregon declined sharply in the 1990s; however, over the past 4 years, the number of landfills has been fairly stable. At the beginning of 1997, Oregon had 53 operating MSW landfills; by the end of 2006, 30 municipal landfills were still in operation. No new municipal landfills have been established in Oregon since 1993. Since 1994, only two industrial landfills have opened, the most recent in May, 2000.

4. Idaho

Slightly more than 83 percent of freight shipments in Idaho occur by truck, and fewer than 16 percent occur by rail (USDOT, 2002c). It is anticipated that freight traffic will grow throughout the State over the next 20 years, with a large percentage of this increase occurring in truck traffic (USDOT, 2002c). Idaho is served by two Class I railroads and six regional or local railroads which total a 1,940-mile State rail system (ITD, 1996) (Figure 4). Table 3 details the amount of freight shipments to, from, and within Idaho for 1998, and projects the numbers for 2010 and 2020 (USDOT, 2002c).

Idaho also independently manages its wastes according to State- and EPA-approved plans. The Idaho State Department of Environmental Quality has the primary responsibility for the management of MSW in Idaho. More information about Idaho's specific regulations can be found at: www.deq.idaho.gov/about/divisions/waste.cfm.

Table 3. Freight Shipments To, From, and Within Idaho: 1998, 2010, and 2020 (ITD, 1996)

Idaho		Tons		
		1998	2010	2020
State Total		114	179	242
Mode:	Air	<1	<1	<1
	Highway	95	150	205
	Rail	18	26	33
	Water	2	3	3
	Other[1]	<1	<1	<1

[1] The "Other" category includes international shipments that moved via pipeline or by an unspecified mode.

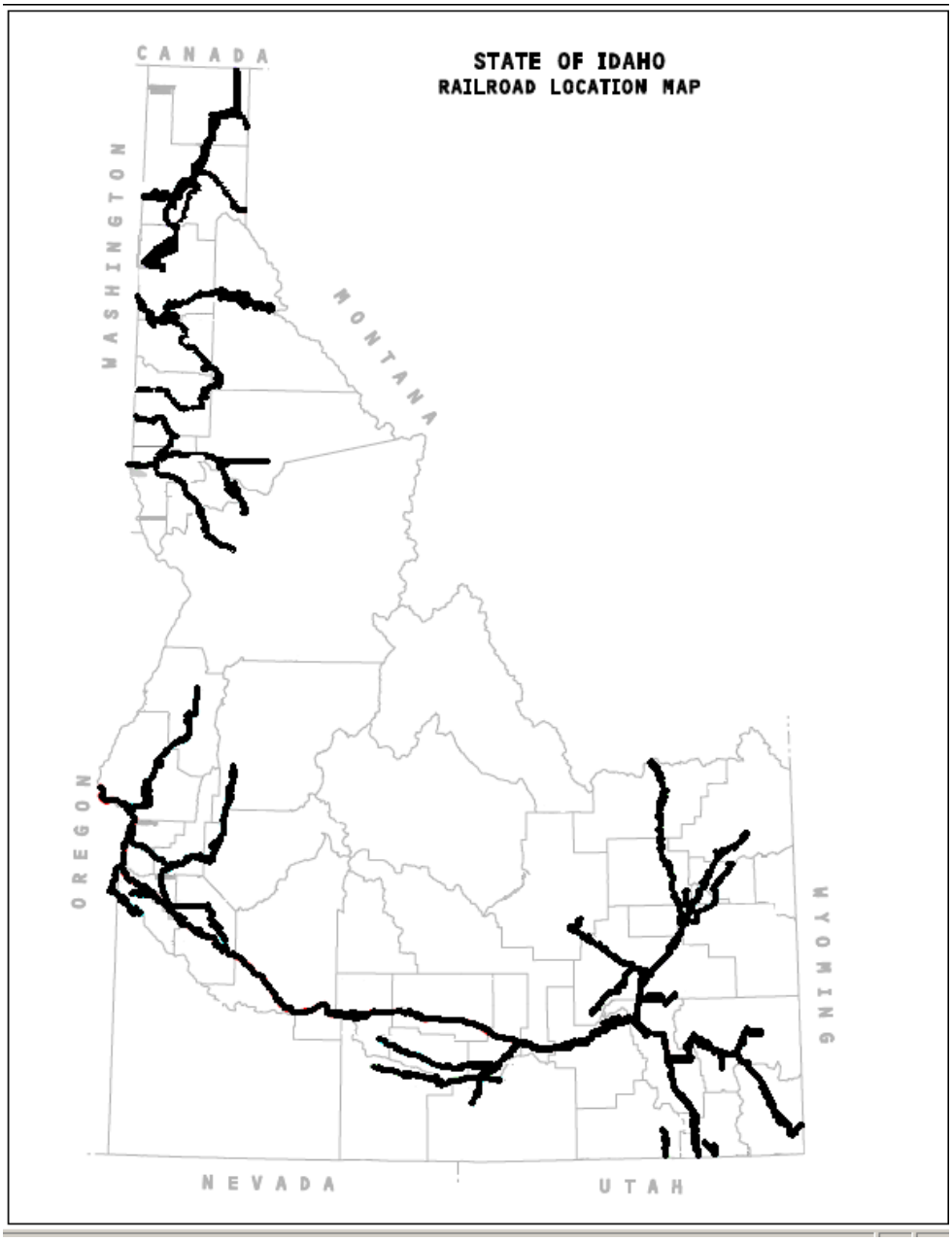

Figure 4. Railroads in Idaho (ITD, 1996).

III. Alternatives

A. Proposed Action

This EA considers the movement of baled MSW from the entire State of Hawaii to Washington, Oregon, and Idaho landfills through transport on the Columbia River. Any new request for movement of MSW will be evaluated to ensure that the proposal meets the following criteria.

- APHIS has prepared a detailed pest risk assessment for each proposal and has made the determination that plant pest establishment under the specific proposal is low risk. The following are criteria that have been evaluated under individual pest risk assessments:
    - exclusion of agricultural waste and yard waste (other than incidental amounts (<3%);
    - exclusion of hazardous materials;
    - The bales are created by shredding, compression and wrapping MSW in adhesive-backed, plastic film barriers;
    - Airtight enclosure from creation to burial;
    - Monitoring bales during transport to detect ruptures and punctures during transport;
    - Mitigations for spill response;
    - Proper staging area (not in contact with soil and should be on concrete / asphalt areas away from vegetation);
    - Mitigations to prevent hitchhiking pests; and
    - Burial in regulated landfills adequately protect against escapes via accidental ruptures and punctures during handling and transport;
- The waste will be transported on barges pulled by tug boats from Hawaii to the continental United States where the same barges may enter the Columbia River without transloading the waste to other barges;
- The amount of MSW transported annually does not exceed 500,000 tons (including public, private and military waste) or 100 barge trips; and
- Compliance agreements will be constructed to reduce the potential risks to the lowest level possible within the confines of the business proposal to a level sufficiently low as to be acceptable to the agency.

A specific environmental analysis will be prepared for each new request for movement of MSW from Hawaii. This analysis will compare the proposal with the requirements under this EA and will determine whether it is consistent with the environmental effects and impacts analyzed in this EA. The environmental analysis made for a new request for moving MSW

will be made available for a 30-day public comment period followed by an environmental and a pest risk decision regarding the new MSW proposal. If a petitioner's request were to result in exceeding the amount of MSW exported from Hawaii (either individually or cumulatively), or exceeding the number of barge trips, or amount of rail or truck traffic considered in this document, APHIS will amend this EA in reference to those increased factors or aspects. The amended EA would be made available for public comment followed by an environmental and a pest risk decision regarding that new MSW proposal.

B. No Action Alternative

Under the no action alternative, APHIS would not consider any additional requests for movement of MSW from Hawaii into the continental United States, unless the proposal is in accordance with the 2006 rulemaking EA (USDA, APHIS, 2006c) and the EA entitled "Movement of Plastic Baled Waste from Honolulu, Hawaii to Roosevelt Regional Landfill, Washington" (USDA, APHIS, 2006d).

IV. Environmental Consequences

A. Proposed Action

Under this alternative, any new request for the movement of MSW from Hawaii will require that the proposal is low risk through a detailed pest risk assessment, the waste is transported on barges pulled by tug boats, the amount of MSW cumulatively does not exceed 500,000 tons or 100 barge trips, and a compliance agreement has been constructed to reduce potential risks. If the proposal meets these criteria, the environmental effects will be consistent with the comprehensive environmental consequences described below.

1. Plant Pest Risk

The opportunity for baled MSW to carry plant pests has been a major concern for APHIS and is the primary reason that APHIS has regulatory interest in MSW from Hawaii that may be transported to the continental United States. The opportunity for such pests to be introduced into an environment where they are not normally found, and where they could potentially do environmental harm, is of concern. The compression, baling, and wrapping process that is required for all MSW to be shipped to the continental United States is designed to reduce the potential for impact to an insignificant risk (APHIS, 2006a). By prohibiting agricultural and yard waste (other than incidental amounts, i.e., <3%) that may be present in baled MSW, despite reasonable efforts to maintain source separation), much of the risk of pest presence in the baled MSW is eliminated, resulting in an insignificant risk of pest introduction and establishment in

the continental United States (APHIS, 2006a). A review of the composition of MSW from Hawaii that could potentially be shipped to the continental United States indicates that the greatest potential for pest presence would be in any yard waste, stumps, sand/soil/dirt, and food (APHIS, 2006a).

APHIS' Center for Plant Health Science and Technology (CPHST) developed several pest risk assessments that evaluate the effectiveness of the compressing and packing technology for processing MSW from Hawaii (APHIS, 2006a; APHIS, 2006b; APHIS, 2007a; APHIS, 2007b). This process is necessary to ensure quarantine plant pests that exist in Hawaii but not currently present or widely distributed within and throughout the continental United States do not enter and successfully establish in the States of Washington, Oregon, and Idaho (APHIS, 2006a; APHIS, 2006b; APHIS, 2007a; APHIS, 2007b). Under the circumstances, it was necessary to determine the risk and likelihood of introduction and establishment of these pests in the continental United States, and whether there would be potential economic and environmental impacts. APHIS analyzed the risk of introduction and establishment of these quarantine plant pests in MSW from Hawaii using the compressing and packing technology evaluated by CPHST and found the risk to be insignificant (APHIS, 2006a; APHIS, 2006b; APHIS, 2007a; APHIS, 2007b). Any future requests will be analyzed under these same standards in a pest risk assessment which will be attached to the environmental analysis.

Any pests that remain in MSW (e.g., in the incidental amounts (<3%) of yard and agricultural waste, and soil with weed seeds and food) would be subjected to the compression, baling, and wrapping processes. Compression, baling, and wrapping of MSW results in the crushing and oxygen deprivation of pests (APHIS, 2006a; APHIS, 2006b; APHIS, 2007a; APHIS, 2007b). When bales are wrapped to the point of being airtight, as required, internal temperatures begin to rise and conditions inside the bale become anoxic within several days, thus depriving pests of oxygen (APHIS, 2006a; APHIS, 2006b; APHIS, 2007a; APHIS, 2007b).

Wrapped bales will sit in a staging area for 5 days prior to being loaded onto a barge for transport to the continental United States. This allows time for anoxic conditions to develop within the bales. The required 5-day sitting period in the staging area ensures that any insects or insect propagules or mollusks that remained viable during the compression and packaging process will be killed (USDA, 2006a). Anoxia by itself does not kill most weed seeds and certain pathogens (i.e., bacteria and nematodes) (USDA, 2006a). .

Once the bales have arrived at the landfill destination, they will be transloaded to an asphalt or concrete staging area. The asphalt and staging

area will lower the risk of hitchhikers on the bales. Bales may remain at this staging area for a few weeks before being transloaded to trucks or railcars and then transported to the landfill. Once placed in the landfill, they will be covered with 6 inches of dirt on that same day, and will be buried with 7 feet of material within a short time of their arrival (APHIS, 2006a; APHIS, 2006b; APHIS, 2007a; APHIS, 2007b).

As long as bales are not punctured, any pests that do survive the trip to the landfill (most likely weed seeds and pathogens on rotting food) cannot escape the bale and are buried at the landfill, thus posing no risk to the environment. However, even if the bales are punctured, insects and mollusks will not survive the 5 day anoxic environment prior to transport. Only pathogens that do not require oxygen to survive and weed seeds would be capable of surviving the anoxic environment. These organisms require wind, rain, or human intervention to disperse. Companies are required to monitor bales for ruptures and punctures and repair these immediately if any are found, thus minimizing any chance for any pathogens or weed seeds to escape from the bales (USDA, 2006a).

Baled waste is unlikely to be attractive to birds, rodents or other wildlife because of its composition, appearance, and lack of smell that is usually attributed to trash from biodegradation (APHIS, 2006a). If bales are ruptured, punctured, or torn open during handling, they will either be re-wrapped or patched, depending upon the severity of the puncture, according to the detailed requirements outlined in the compliance agreements, to restore their airtight condition (APHIS, 2006a; APHIS, 2006b; APHIS, 2007a; APHIS, 2007b).

In addition to the pests that may be in the garbage, there is also concern that pests may hitchhike on the bales or pallets. Compliance agreements will specify that the company must inspect the bales and certify that they are pest free at each of the staging areas. The companies are required to ship bales that do not carry any hitchhikers. There is no specific method required by APHIS to achieve this standard besides inspection, although other methods may be used. Mollusks are one of the pests known to hitchhike on pallets and bales. If a mollusk is found on a pallet or bale at any inspection point, the company is required under the Compliance Agreement, to separate the bale on a solid, flat, impervious surface made of asphalt or concrete, circle the bale with salt, and contact local PPQ immediately so that proper action can be taken to mitigate any potential pest risk. To ensure that inspection is adequate, company employees are required to be trained in various procedures for complying with the agreement, including training on Hawaiian plant pests. If a company is found to be in violation of any part of the Compliance agreement then the Compliance Agreement may be cancelled in accordance with 7 Code of Federal Regulations 330.403(d).

There will be no environmental effect if the potential for plant pests to be brought into the continental United States has been mitigated. CPHST will evaluate all proposals for the movement of MSW from Hawaii. Only petitioners that have submitted proposals that have a low plant pest risk will be allowed to bring MSW into Oregon, Washington, or Idaho.

Other plant pest concerns with the movement of baled MSW using barges and tug boats are the concerns with hull fouling and ballast water. Both of these issues are no different in the movement of MSW from Hawaii than they are in any other type of shipping. Hull fouling occurs when organisms like barnacles, mussels, sponges, algae and sea squirts attach themselves to the hulls of ships, fouling them. These organisms then colonize the hull and "hitch a ride" from one port or bioregion to the next. Invasions can occur when these fouling organisms come into contact with structures in a new port or release their larvae into its waters.

Both barges and tug boats use the industry standard ablative coating system to prevent hull fouling. The ablative coating provides a slick surface on which fouling organisms cannot adhere. Currently, barges and tug boats are using Interclene®, formula BRA 572, from International Paint; however, the specific anti-fouling coating used could vary in the future. The EPA regulates anti-foulants pursuant to its authorities under the Federal Insecticide, Fungicide, and Rodenticide Act. Underwater moving equipment is further protected with sacrificial zinc anodes. Therefore, hull fouling has been minimized and the movement of baled MSW from Hawaii into the continental United States should not result in any additional environmental effects.

There is potential that ballast water may contain foreign species. Both barges and tug boats have ballast tanks. The ballast tank is designed to take in and expel water to provide trim and stability. To accomplish this, barges and tug boats draw water from the ocean, as required, to meet trim and stability requirements. However, barges are ballasted only during the loading and unloading phase alongside the dock. As barge cargo is unloaded, the stability of the barge shifts, requiring the barge to ballast for trim and stability. Similarly, as the barge is loaded, the center of gravity shifts requiring the barge to ballast to accommodate the weight change. All water taken on to ballast barges for loading or unloading is released into the same water body from which it was taken. No ballast water is carried in the barge ballast tanks for the voyage across the ocean. Tug boat ballast water is drawn from the sea and discharged at sea. Therefore, there is minimal, if any, risk of transferring foreign species from taking in and expelling water from the ballasts of both barges and the tug boats because the water will be expelled (returned) to the same environment from which it was taken.

2. Water Transportation

(a) Interisland Transportation

Currently, each island has its own landfill. There are three companies registered under the Hawaii Public Utilities Commission authorized to ship merchandise, including MSW, interisland (OSWM, 2000). The allowance of transport of baled MSW from a baling facility to the continental United States may lead to an increase in interisland transport of MSW. This is most likely to be between the other islands and the main port at Honolulu Harbor since Honolulu Harbor is located near the only bailing facility in the State of Hawaii that exists today. Currently interisland transport of commodities mainly exists between Honolulu Harbor and the other islands since Honolulu Harbor is the biggest harbor capable of handling large commercial shipments. Honolulu Harbor handles over 8 million short tons of cargo annually and serves as the hub for the interisland cargo distribution to the other islands of Hawaii (Harbors Division, 2007). Considering the amount of interisland transport of other commodities currently in existence, the potential increase of interisland barge traffic is anticipated to be minimal. It is assumed that the interisland routes would be similar to those currently in use. Therefore, the effects of the increase of interisland transportation, if any, will be minimal.

(b) Transport Across the Pacific

The trip across the Pacific Ocean will take 12 to 18 days, resulting in any plant pest being exposed to anoxic conditions for approximately 2 to 3 weeks prior to reaching the continental United States.

An increase in the number of barges is not anticipated because the current petitioners have stated they will use barges that normally return to the mainland empty. Instead of having empty barges traveling over the ocean the barges will return with the baled MSW. However, for purposes of this EA, APHIS will consider the effects from the maximum number of barge trips annually (100) sent across the Pacific Ocean transporting MSW.

A total of 980,000 tons of MSW annually has been requested by applicants for transport to landfills in Washington, Idaho, and Oregon by the companies that have requested APHIS' permission for this action; additional companies could request APHIS' permission to transport more to the continental United States. In the 2005 calendar year, 1,425,752 tons of MSW (public, private and military) were disposed of in the State of Hawaii, either by landfill or incineration (OSWM, 2006); however, the State of Hawaii has indicated that it will only allow 300,000 tons of MSW to be exported off-island. However, the State may only regulate export of

state-owned MSW and therefore APHIS has assumed another 200,000 tons possible for MSW (private, public, and military waste) for a total of 500,000 tons. If a barge can carry 5,000 tons of MSW, this would result in approximately 100 barge trips per year, slightly more than 1 per week.

In this EA, APHIS assumes that there may be 100 barge trips consisting of baled MSW from Hawaii per year across the Pacific Ocean to the continental United States, potentially transporting up to 500,000 tons of MSW. APHIS considers this to be a "reasonable worst-case scenario." Under this scenario, approximately 100 barge trips (about 2 per week) would occur.

The tugboat and barge industry is a relatively environmentally-friendly form of surface transportation. This mode of transportation consumes significantly less fuel than either truck or train transportation. This results in less air pollution and less noise. In addition, the tugboat and barge industry must comply with an array of strict Federal regulations aimed at ensuring safety and environmental protection that are administered and enforced primarily by the U.S. Coast Guard under Title 33 of the Code of Federal Regulations. These regulations establish strict prohibitions on the discharge of oil and solid waste into the marine environment. The Coast Guard may board a barge or towing vessel at any time to verify compliance with these standards.

There will be minimal, if any, environmental affects to the Pacific Ocean from the maximum number of 100 barge trips a year moving garbage from Hawaii to the continental United States. It is unlikely that a bale would fall from the barge because bales will be well secured on the barge and the chance of a barge accident is low (USDA, 2006a). Collisions and allisions are more likely to occur in areas of congestion such as rivers and ports and not in the open ocean. Fuel and oil leaks, although they may occur while in transit in the Pacific Ocean they are less likely to affect the environment because of the dilution factor of the ocean compared to the dilution factor in a river. These issues will be discussed in the following section.

(c) Columbia River

The movement of baled MSW from Hawaii into Washington, Oregon, and Idaho could increase barge traffic on the Columbia River. In this EA, we have assumed that all of the 100 barges would travel up the Columbia River as a worst-case scenario.

A 2004 U.S. Army Corps of Engineers study indicated the net volume of tonnage for the Columbia Basin was 54,390,000 (short) tons of freight (all commodities), with over 1,113,000 tons shipped between Vancouver, Washington, and The Dalles, Oregon, and 2,231,000 tons moving above The

Dalles (USACE, 2006). Assuming an average of 5,000 tons per barge load, there are approximately 10,000 barge trips per year on the Columbia River. If 100 additional barge trips per year are added, the anticipated increase in barge traffic (approximately 100 trips per year) would represent approximately 1 percent of all barge traffic on the Columbia River. This represents a minimal increase in barge traffic on the Columbia River.

It is unlikely that a bale would fall from the barge in the main stem of the Columbia River because bales will be well secured on the barge and the chance of a barge accident is very low. The U.S. Army Corps of Engineers (USACE 2002, 2003) gave a mean accident rate for barges of 28.3 per billion ton-miles. Of those, only 4 of the 167 accidents on the Columbia River involved freight barges. Although loss of a bale in the river as a result of a barge accident is unlikely, applicants must prepare emergency response plans to retrieve bales and loose MSW from the river. All efforts will be made to retrieve lost bales should an accident occur.

The APHIS risk assessment (USDA, 2006b) estimated the annual likelihood of a bale-rupturing accident was 0.37 percent for barges. If a bale should become damaged or breaks open during a fall or a collision, it is possible that the contents of the bale could affect water quality if it contained certain items. For instance, household chemical waste is a potential pollutant and has the capability to affect water quality; however, household chemical waste comprises only 0.3% of Hawaiian MSW (R.M. Towhill Corp., 1999) and these hazardous materials should be sorted out prior to baling. Because the potential quantity of household chemical wastes being present in the bales is very low, combined with the low probability of a bale-rupturing barge accident, it is very unlikely that there would be an effect on water quality in the main stem of the Columbia River. Therefore, the potential impacts on water quality are not considered further.

Oil and fuel leaks from boat traffic can decrease water quality. Tug boats carry fuel and oil, however, barges do not. Tugs carry between 100,000 and 200,000 gallons of fuel and 500 gallons of oil. No fuel or oil will be discharged from these barges during the voyage; an appropriate quantity of fuel will be loaded in Hawaii such that the remaining fuel is sufficient for the trip up the Columbia River, but not so excessive that a discharge is required to make draft for passage though the locks. Nevertheless, APHIS has assessed the risks associated with the potential for routine leakage of small amounts of fuel or oil in the Columbia River and determined that any effect from a fuel/oil spill from a barge is expected to be a short-term event; the effects are lessened almost immediately because of the small size of these potential spills and the rapid evaporation of the most toxic fractions of the fuel (APHIS, 2007c; pp. 67-69).

3. Transfer of MSW from Hawaii to Train and Truck

The potential for impacts to occur is wherever bales are moved from one staging area or mode of transportation to another. The transfer points include: (1) the staging area in Hawaii where baled MSW is moved, handled, and loaded onto barges, (2) the staging area where the baled MSW is transloaded from the barges and loaded onto railcars or trucks; (3) any staging area where the baled MSW is transloaded from railcars to trucks; and (4) the final destination where the baled MSW is unloaded from railcars or trucks and placed into the landfill.

At each of the bale transfer points identified above, there is a small potential for dropping a bale into the water or compromising the integrity of one or more bales of MSW that could result in spillage of the contents on the ground or into the water. Information provided by one of the applicants indicates that when bales were dropped from heights ranging from 7.5 feet to 12 feet, the bales did not rupture and remained intact. Rather than bales rupturing, it is more likely that equipment operators handling bales could accidentally puncture the bales. Even though puncturing may occur, it is unlikely that any material will exit out of the bale because the baled MSW is compressed very tightly (estimated at more than 800 kilograms per cubic meter). In addition, the likelihood of live pest species escaping, while not zero, is very low because it is unlikely any host material will be present, and any pests will have survived the compression and packaging process with anoxic conditions. Even if material did exit the bale upon puncture, in most cases the spilled MSW would be quickly retrieved and the bale patched or repackaged according to the requirements of the compliance agreement. If this were to happen over water, it would be more difficult to retrieve the spilled MSW.

Physical risks that must be considered in such a situation include a physical disruption of the environment caused by the broken bales and the physical retrieval of the strewn contents. Physical removal of MSW that has been spilled on land will be relatively easy to retrieve. Most, if not all, of the land that will be used during the transfer of bales will be commercial or industrial in nature and, therefore, not suitable habitat for wildlife. Consequently, any cleanup activities are unlikely to have an environmental effect. MSW that is spilled into waterways will be more difficult to retrieve, and some may not be retrievable. This could result in an incremental, however, permanent degradation of the natural aquatic environment. Since hazardous wastes are not permitted in the baled MSW, any negative impacts will be restricted to biological or physical impacts, and no chemical pollution is likely to result from the MSW itself.

Baled MSW could potentially fall from the barge, either in the ocean or in the Columbia River. If this were to happen, the baled MSW will sink to

the bottom because of the relative density, as compared to fresh water and salt water. These bales may remain intact or could break open, depending on conditions. The U.S. Army Corps of Engineers (2002, 2003) gave a mean accident rate for barges of 28.3 per billion ton-miles. Of those, only 4 of the 167 accidents on the Columbia River involved freight barges (Marine Safety Offices, 2006). The mean fraction of accidents that could cause bales to rupture was 0.11, estimated from the number of accidents involving hazardous materials which resulted in spills from 1990 to 1997. However, applicants must submit spill response plans should bales fall into the water and thus should be prepared for rapid response and cleanup should this occur.

The APHIS risk assessments (APHIS, 2006b; APHIS, 2007a; APHIS, 2007b) analyzed the potential for bale-rupturing accidents based on specific proposals submitted by applicants. Although none of the risk assessments analyzed the transport of 500,000 tons of MSW, the risk assessments demonstrated the low probability of bale-rupturing accidents for barge, truck, and rail transport. This information is summarized below.

- The APHIS risk assessment for Washington State estimated the annual likelihood of a bale-rupturing accident was 0.03 percent for trucks, and 0.37 for barges. Mean years to the first bale-rupturing accident for trucks was estimated at 3,333 years, and for barges 130 years. The risk of catastrophic rupture of bales, while in transport by truck or barge to Roosevelt landfill, is very low. These risk figures were based on the proposed transport of 300,000 tons of baled MSW from Hawaii per year (APHIS, 2006b).

- The APHIS risk assessment for Gilliam County, Oregon, estimated that for the proposal by the petitioner to offload the baled MSW from Hawaii at the Port of Arlington and truck it to Columbia Ridge Landfill, the risk of a bale-rupturing accident for trucks was 0.045 percent, and for barges 0.41 percent. Mean years for the first bale-rupturing accident for trucks was 2,222 years, and for barges 246 years. For the alternate route, where baled MSW is off-loaded near Ranier, Oregon, and transported by rail to the Columbia Ridge Landfill, the risk of any bale-rupturing accident by train was 0.002 percent, while that for barges was 0.77 percent. Mean years to the first bale-rupturing accident for trains was 50,000 years and for barges, 130 years. These risk figures were based on the proposed transport of 120,000 tons of baled MSW from Hawaii per year. For both options, the risk of catastrophic rupture of bales is low, less than 1 percent (APHIS, 2007a).

- The APHIS risk assessment for Elmore County, Idaho, estimated that for a proposal by the petitioner to barge baled MSW from

Hawaii 60 miles up the Columbia River and then off-load the bales onto railcars at Rainier, Oregon, the mean annual probability of a bale-rupturing accident by barge was 0.07 percent, and for trains 0.26 percent (APHIS, 2007b). Mean years to the first bale-rupturing barge accident was 645 years. Mean years for the first bale-rupturing rail accident was estimated to be 1,429 years. These probabilities are based on a figure of 360,000 tons transported annually (APHIS, 2007b).

4. Rail and Truck Transportation

Flatbed semi-tractor trailer trucks or other truck types may be used to transport baled MSW from barge or rail offloading sites to landfills. In certain cases, railcars will be used to transport the baled MSW directly to landfills. All of these transportation options would increase truck or rail traffic in Washington, Oregon, or Idaho, depending on the destination landfill. APHIS has assumed that the trucks and trains will not be covered, but this is not known to be a potential problem.

Increased rail and truck traffic will occur as baled MSW is transported from unloading sites on the Columbia River to landfills. Increase in traffic can result in more accidents and strikes of animals. Collisions between wildlife and vehicles result in the loss of wildlife, vehicle damage and, occasionally, human injuries or fatalities. The United States lacks data on wildlife collisions. However, the Yoho National Park in Canada has collected wildlife collision data between 1986 and 2005 (Yoho, 2007). The wildlife and environmental conditions within this area are very similar to the wildlife and environmental conditions that exist in the areas of Washington, Oregon, and Idaho that are evaluated in this EA. The Yoho park staff recorded over 500 wildlife-vehicle collisions involving large animals (Yoho, 2007). Most victims of highway strikes are large ungulates (deer, elk, and moose); however, wolves, coyotes, and black bears are also commonly hit (Yoho, 2008). The impact of highway strikes on small mammal, bird, and amphibian populations is unknown, as these collisions are rarely reported.

Using an estimate of 500,000 tons of MSW from Hawaii per year, a bale weight of 1.7 tons and a transport weight of 112 tons per railcar (based on information submitted by Idaho Waste Systems), approximately 4,465 railcars would be added to total rail transport per year, assuming that all of the baled MSW is transported by railcar to landfills. Based on this figure, transport of baled MSW by rail would result in less than 1 percent increase in the number of railcars per year in Oregon and Washington, and a 3 percent increase in the number of railcars per year in Idaho. These rail estimate increases are very conservative and assume that all baled MSW from Hawaii would be transported by rail, a scenario that is unlikely since not all landfills capable of receiving MSW are located near existing rail lines.

Using an estimate of 500,000 tons of MSW from Hawaii per year, a bale weight of 1.7 tons, and a transport weight of 34 tons per truck (based on information submitted by applicants in Washington), a total of 14,706 trips would be added to truck transport per year, assuming that all of the baled MSW is transported by truck to landfills. Based on information supplied by USDOT, this would result in a 0.2, 0.1, and 0.5 percent increase of truck/highway freight traffic in Oregon, Washington, and Idaho, respectively. These truck traffic estimate increases are very conservative and assume that all of the baled MSW from Hawaii would be transported by truck, a scenario that is unlikely.

5. Landfills

Currently, there are three facilities in the State of Washington, five in the State of Idaho, and six regional landfills in the State of Oregon that have the ability to approve plans for the acceptance and management of out-of-State MSW (see Figure 4). Future expansion of facilities accepting out-of-State MSW will be determined by the individual States, and is outside the scope and purview of this EA and APHIS. In the event that additional facilities are added to the list of those currently able to accept out of state MSW, this EA will need to be amended. Current landfills must meet EPA and state requirements to ensure that there are limited environmental impacts.

EPA regulations encourage source reduction and recycling to maximize landfill life, specify safe design and management practices that will prevent releases of contaminants into ground water; specify operating practices that will protect human health; have careful closure procedures, including monitoring of landfill conditions and effects of landfills on the surrounding environment (EPA, 1993).

The federal government sets minimum national standards applicable to municipal solid waste disposal. States are responsible for enforcing the waste programs. States develop their own programs and EPA's role is to evaluate the programs and decide if they are adequate to ensure safe disposal of MSW (EPA, 1993).
Municipal solid waste landfills must meet location, operation, design, ground water monitoring and corrective action, closure and post-closure care and financial assurance before EPA will certify an MSW site. The main emphasis of the federal regulations is to protect ground water and prevent pollution from inadequately designed and operated landfills (EPA, 1993).

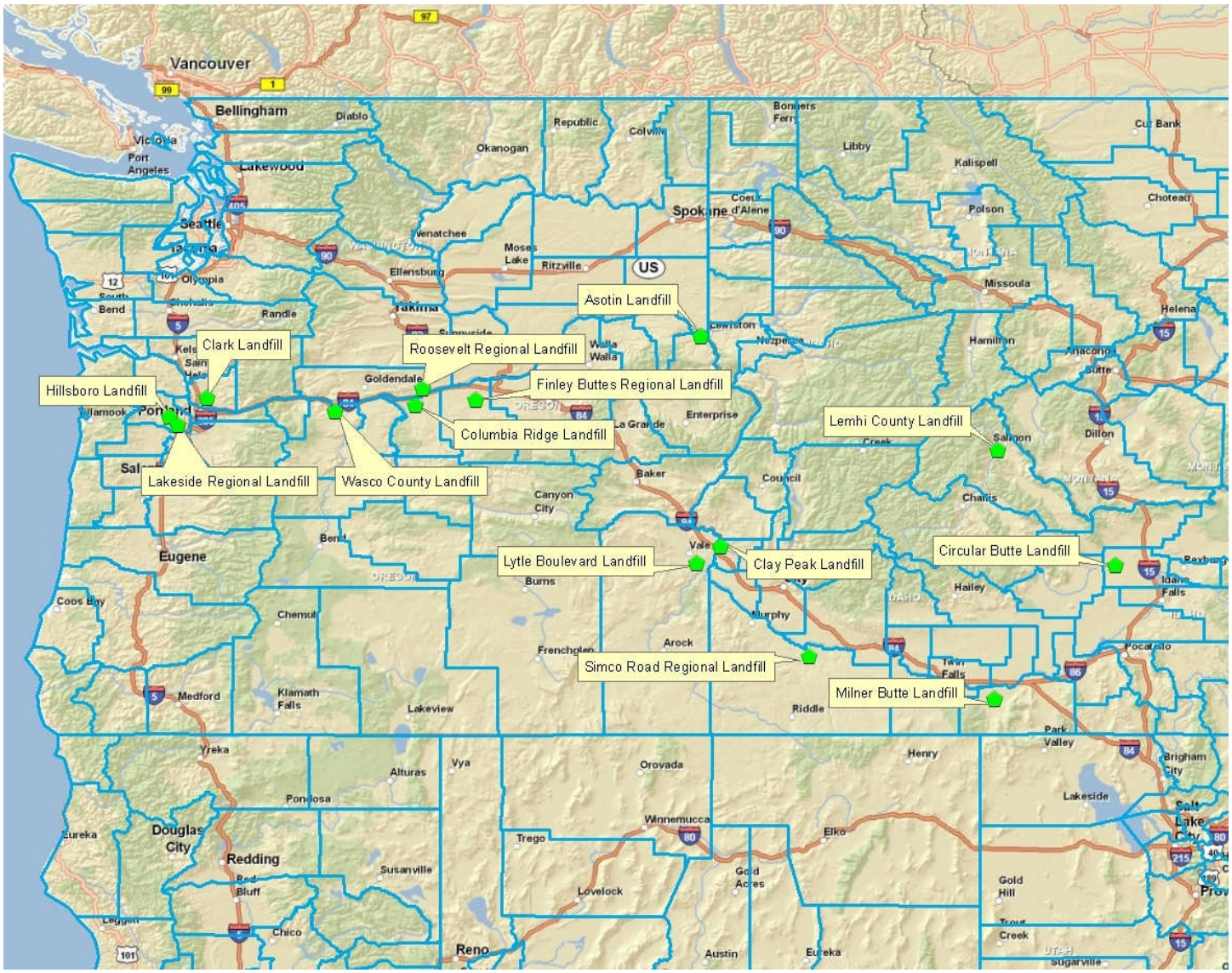

Figure 5. Locations of Landfills Eligible for Out-of-State MSW.

B. No Action

Under the no action alternative, APHIS would not consider any additional requests for movement of MSW from Hawaii into the continental United States, unless the proposal meets the criteria in the 2006 rulemaking EA (USDA, APHIS, 2006c) and the environmental assessment entitled "Movement of Plastic Baled Waste from Honolulu, Hawaii to Roosevelt Regional Landfill, Washington" (USDA, APHIS, 2006d). If the only requests for MSW shipments from Hawaii to the continental United States conformed to these previous EAs, there would not be any significant impacts to the environment.

However, Hawaii would not have an option to ship additional garbage that was not analyzed under the previous EAs and would be limited to disposal of garbage to the Roosevelt Landfill in Washington State. The loss of this option may add to additional pressure to find a workable solution for the lack of landfill space in Hawaii, thus forcing either the very difficult attempt to try and open a new MSW landfill in Hawaii, the expansion of current landfills in Hawaii, or finding another alternative for landfilling (i.e., recycling, burning, etc.).

V. Cumulative Effects Analysis

NEPA and its implementing guidelines require an assessment of the proposed project and other projects that have occurred in the past, are occurring in the present, or are likely to occur in the future, which together may have cumulative impacts that go beyond the impacts of the proposed project itself. According to the Act (40 CFR §1508.7 and 1508.25[a][2]): "Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to the other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. In addition, to determine the scope of Environmental Impact Statements, agencies shall consider cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement" (40 CFR § 1508.7).

The purpose of this cumulative effects analysis is to determine if the effects of transporting MSW from Hawaii and the act of baling the MSW have the potential to interact or accumulate over time and space, either through repetition or when combined with other effects, and under what circumstances and to what degree they might accumulate.

A. Plant Pest Risk

The cumulative impacts arising from the plant pest risk from the movement of baled MSW from Hawaii into the continental United States will be minimal, if any, since no increase in ship or barge traffic beyond current limits is anticipated. In addition, the plant pest risk assessment indicates that the mitigations imposed for the transport of baled MSW from Hawaii will limit the potential for a plant pest to become established in the continental United States. There is a potential cumulative impact from plant pest issues because of hull fouling and ballast water exchange; however, these are minimized based on the industry standard ablative

coating system and the general practices of ballast water for both the barge and the tug boat. The risk of foreign pests from the movement of baled MSW from Hawaii, added together with the risks of foreign pests from the transportation of other commodities to and from Hawaii, does not cumulatively reach a significant effect level.

B. Water Transportation

1. Interisland Transport in Hawaii

There may be limited cumulative impacts from an increase of interisland transport of unbaled or baled MSW from each island landfill to the central baling facility in Honolulu, if this becomes a practice. Currently, each island maintains its own landfill. It is anticipated that by granting the permit to allow the movement of baled MSW from Honolulu Harbor to the continental United States, other islands may want to transport unbaled MSW from their island to Honolulu Harbor, as well. Honolulu Harbor handles over 8 million short tons of cargo annually and serves as the hub for the interisland cargo distribution to the other islands of Hawaii (Harbors Division, 2007). In addition, Oahu produces the most garbage out of the other Hawaii islands. The total amount of garbage to be shipped to the continental United States may not exceed 500,000 tons which translates to a potential of 100 additional barge trips a year. Even if all the garbage is shipped interisland this amount of garbage is minimal compared to the 8 million short tons of cargo that goes through the Honolulu port. It is anticipated that MSW will be transported using the standard shipping lanes.

2. Pacific Ocean

The movement of baled MSW across the Pacific Ocean is not expected to have any cumulative impacts on barge traffic. The main impacts with transport across the Pacific Ocean are the striking of marine mammals. Most marine mammal strikes occur at speeds of 13 knots or faster. The tug boats and barges travel at low speeds of approximately 6 knots. Cumulative effects from MSW waste spillage is expected to be non-existent due to the stringent packaging of MSW, the bales are secure on the barges, fuel or oil leaks, if any, will be diluted, and rates of accidents will be lower because there is more ability to maneuver in the open ocean than in a river such as the Columbia River.

3. Columbia River

There may be a slight increase in vessel traffic in the Columbia River due to the transport of baled MSW. The cumulative impact from spilled MSW is not expected to be significant because of the types of waste transported, the stringent baling procedures, and the rare occurrence of spillages over time. The cumulative impact of animal strikes by vessels is not expected because of mandatory low speeds (6 knots); most animal strikes occur at speeds of 13 knots or faster.

The Columbia River annually carries approximately 54 million tons of cargo (USACE, 2006) to and from the Pacific Ocean along a 465-mile waterway. The potential added vessels transporting the baled MSW will have a slight cumulative impact on vessel traffic; however, this is not expected to be significant considering the large amount of vessel traffic that already exists.

C. Transfer of Bales

The baled MSW would be transported on barges that entered the Columbia River, unloaded in staging areas, and transported by rail and truck to individual landfills (Figure 4). Potential cumulative impacts include puncturing or spilling of MSW at the transfer point. Bales will be monitored at transferring stations to ensure that there are no punctures or tears. If there is a puncture or tear it must be repaired immediately. The APHIS risk assessments analyzed the potential for bale-rupturing accidents concluding that there is a low risk that this will occur (USDA, 2006a; USDA, 2006b; USDA, 2007a; USDA, 2007b).

D. Rail and Truck Transport

The increase in rail and truck traffic will be slight and no cumulative impacts in traffic congestion are anticipated. This EA analyzed the effects from transporting 500,000 tons annually of MSW from Hawaii into the United States. Using this estimate of 500,000 tons, if all 500,000 tons were to be transported via train it would add approximately 4,465 railcars resulting in less than 1 percent increase in either Oregon or Washington and less than 3 percent increase per year in Idaho. Assuming all the baled MSW is transported by truck the increases are less than .5 percent in Idaho, .2 percent in Oregon, and .1 percent in Washington. Thus, resulting in very minimal amounts of increased rail or truck transportation for the movement of MSW from Hawaii.

E. Additional Facilities

1. Hawaii Islands

It is anticipated that additional baling facilities may be built on other islands to allow for movement of baled MSW from Hawaii to the continental United States. If additional baling facilities are built, the actual building of these facilities will have to adhere to State laws and regulations.

2. Landfills

The potential cumulative impacts of the proposed action to each of the landfills will be incremental and within the established capacity of the facility. The landfills will take only as much MSW as the capacity allows. It is anticipated that if a landfill does not have the capacity for the out-of-State MSW, the importation of this MSW will be discontinued.

In addition, the acceptance of MSW from Hawaii in Idaho, Oregon, or Washington will result in an extension of the life of the Waimanalo Landfill in Hawaii. It is not anticipated that the movement of baled MSW from Hawaii to Idaho, Oregon, or Washington will result in the development of a new landfill or an expansion of current landfills in these States.

VI. Endangered Species Act and Marine Mammal Protection Act Compliance

A. Endangered Species Act

Section 7 of the Endangered Species Act (ESA) and its implementing regulations require Federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat. APHIS has prepared a biological assessment that considers the effects of transportation by barge, truck, and train, and landfilling of baled Hawaiian MSW on all federally-listed species and designated critical habitat in Oregon, Idaho, and Washington, and on species occurring in the Pacific Ocean where barges would cross from Hawaii to the Columbia River.

APHIS has determined that, with the implementation of certain protection measures, the proposed action may affect, but is not likely to adversely affect, the humpback whale, blue whale, fin whale, sei whale, sperm whale, Southern Resident killer whale (and designated critical habitat), green sea turtle, hawksbill sea turtle (and designated critical habitat), olive ridley sea turtle, leatherback sea turtle (and designated critical habitat), loggerhead sea turtle, steller sea-lion (and designated critical habitat), and the Hawaiian monk seal (and designated critical habitat) during the barging of baled MSW from Hawaii to the continental United States.

Both barges and tugs use the industry standard ablative coating system to prevent hull fouling. Many of these treatments may result in copper leaching. Dissolved copper is known to cause olfactory impairments in salmonids. Therefore, APHIS considered the effect of copper leaching from anti-hull fouling paints used on barges in the Columbia River and determined that this may affect, but are not likely to adversely affect listed salmonids in the Columbia River. In addition, use of such treatments may prevent invasive species from being carried into the Columbia River.

In the unlikely event that a barge accident were to occur and MSW bales were to fall into the Columbia River, or that oil/fuel would leak from tug

boats into the river, APHIS has determined that this may affect, but is not likely to adversely affect salmon, steelhead, and bull trout in the Columbia River. The proposed action may affect, but is not likely to adversely affect the designated critical habitat of these fish.

APHIS has also determined that the increased transport of MSW bales via train or truck, potentially increasing mortality from strikes, may affect, but is not likely to adversely affect the Columbian white-tailed deer, Canada lynx, grizzly bear, northern Idaho ground squirrel, woodland caribou, gray wolf, and the pygmy rabbit (Columbian Basin DPS).

Measures necessary to protect listed species as a result of this and/or future consultations with the U.S. Fish and Wildlife Service and to the National Marine Fisheries Service (the Services) will be included in all compliance agreements between APHIS and the applicants.

In the occurrence of a catastrophic event, such as the capsizing of a barge loaded with bales of Hawaiian MSW or an oil spill APHIS will initiate emergency consultation with the Services. Spills and capsizing would be an unpredictable event (temporally/geographically) and therefore, not possible to assess at this time.

In accordance with the Section 7 consultation process, APHIS has provided the biological assessment to the Services for their review and has requested concurrence with its effect determinations.

B. Marine Mammal Protection Act

The Marine Mammal Protection Act (MMPA) prohibits, with certain exceptions, the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas, and the importation of marine mammals and marine mammal products into the United States. All marine mammals are protected under MMPA. The marine mammal species that could potentially be impacted by the proposal to move baled MSW from Hawaii to permitted landfills in Washington, Oregon, and Idaho include the 23 species found in Hawaii waters, 32 species found in Washington waters, 27 species found in Oregon waters, and 31 species found in California waters. These species could be harassed by the operation of towing vessels during barge movement. The physical presence of barges could lead to disturbance of marine mammals by visual or other cues. Marine debris could be generated if the integrity of bales of MSW from Hawaii is not maintained.

The potential for collisions between the barge/tug boats and marine mammals is very low due to the slow tow speed (6 to 8 knots). Noise or visual disturbance will not likely occur because marine mammals have

demonstrated little behavioral reaction to slow-moving vessels, according to surveys conducted (NMFS, 2006). The baled MSW from Hawaii will be inspected at multiple points during the transport process to ensure that bales are intact and MSW will not be released. Therefore, implementation of the proposed action is expected to be protective of marine mammals within the action area.

VII. Tribal Consultations

Executive Order (EO) 13175, "Consultation and Coordination with Indian Tribal Governments," was issued to ensure that there would be "meaningful consultation and collaboration with tribal officials in the development of Federal policies that have tribal implications…."

In September 2006, APHIS sent out 24 letters to tribal leaders and organizations of the Columbia River Basin to give notification of the final rule, "Interstate Movement of MSW from Hawaii," as well as a proposal to ship baled MSW from Hawaii to Roosevelt Regional Landfill. The letters contained a copy of the rule, the final EA (Movement of Plastic-baled Municipal Solid Waste from Hawaii to the Continental United States Environmental Assessment, July 2006), and the pest risk analysis for the rule and for the individual proposal. In May 2007, APHIS informed tribal leadership of the 13 Columbia River Basin tribes of the pending preparation of pest risk analyses and EAs related to specific requests to ship MSW from Hawaii to specific sites in Oregon and Idaho. APHIS will continue to notify tribes of any additional proposals that come in on a site-specific basis.

VIII. Consultation and Review

Listed below are offices that were consulted and/or provided review during the development of this document.

U.S. Department of Agriculture
Animal Plant Health Inspection Service
Plant Protection and Quarantine
Riverdale, MD

U.S. Department of Agriculture
Animal Plant Health Inspection Service
Plant Protection and Quarantine
Western Region
Fort Collins, CO

U.S. Department of Agriculture
Animal Plant Health Inspection Service
Plant Protection and Quarantine
Washington, DC

U.S. Department of Agriculture
Animal Plant Health Inspection Service
Plant Protection and Quarantine
Honolulu, Hawaii

U.S. Department of Agriculture
Animal Plant Health Inspection Service
Plant Protection and Quarantine
Center for Plant Health Science and Technology
Raleigh, NC

U.S. Department of Agriculture
Animal Plant Health Inspection Service
Policy and Program Development
Riverdale, MD

U.S. Department of Agriculture
Office of General Counsel
Washington, DC

Affiliated Tribes of Northwest Indians
Natural Resources Committee
Plummer, ID

Columbia Basin Fish and Wildlife Authority
Portland, OR

National Tribal Environmental Council
Albuquerque, NM

Inter Tribal Agriculture Council
Billings, MT

Northwest Regional Representative of Inter Tribal Agriculture Council
Pendleton, OR

Confederated Tribes of the Umatilla Indian Reservation
Pendleton, OR

Coeur d'Alene Tribe
Plummer, ID

Yakama Nation
Toppenish, WA

Kootenai Tribe of Idaho
Bonners Ferry, ID

Spokane Tribe of Indians
Wellpinit, WA

Shoshone-Paiute Tribes of Duck Valley Reservation
Owyhee, NV

Confederated Tribes and Bands of the Yakama Nation
Toppenish, WA

Confederated Tribes of the Salish and Kootenai
Pablo, MT

Nez Perce Tribal Executive Committee
Lapwai, ID

Shoshone-Bannock Tribes of Fort Hall
Fort Hall, ID

Kalispell Business Committee
Usk, WA

Confederated Tribes of the Colville Reservation
Nespelem, WA

Burns Paiute Tribe
Burns, OR

Confederated Tribes of the Warm Springs Reservation of Oregon
Warm Springs, OR

National Marine Fisheries Service
NOAA Fisheries
Silver Spring, MD

U.S. Fish and Wildlife Service
Endangered Species
Arlington, VA

U.S. Fish and Wildlife Service
Endangered Species
Portland OR

U.S. Fish and Wildlife Service
Endangered Species
Wenatchee, WA

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OSWM—See Office of Solid Waste Management

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