Exhibit V
Solid Waste and Wastewater Minimization

Boardman to Hemingway Transmission Line Project

1221 West Idaho Street
Boise, Idaho 83702

Todd Adams, Project Leader
(208) 388-2740
tadams@idahopower.com

Zach Funkhouser, Permitting
(208) 388-5375
zfunkhouser@idahopower.com

Preliminary Application for Site Certificate

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF ATTACHMENTS

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ACRONYMS AND ABBREVIATIONS

Note: Not all acronyms and abbreviations listed will appear in this Exhibit.

°C	degrees Celsius
4WD	4-wheel-drive
A	ampere
A/ph	amperes/phase
AC	alternating current
ACDP	Air Contaminant Discharge Permit
ACEC	Area of Critical Environmental Concern
ACSR	aluminum conductor steel reinforced
AIMP	Agricultural Impact Mitigation Plan
AMS	Analysis of the Management Situation
aMW	average megawatt
ANSI	American National Standards Institute
APE	Area of Potential Effect
APLIC	Avian Power Line Interaction Committee
ARPA	Archaeological Resource Protection Act
ASC	Application for Site Certificate
ASCE	American Society of Civil Engineers
ASP	Archaeological Survey Plan
AST	aboveground storage tank
ASTM	American Society of Testing and Materials
ATC	available transmission capacity
ATV	all-terrain vehicle
AUM	animal unit month
B2H	Boardman to Hemingway Transmission Line Project
BCCP	Baker County Comprehensive Plan
BCZSO	Baker County Zoning and Subdivision Ordinance
BLM	Bureau of Land Management
BMP	best management practice
BPA	Bonneville Power Administration
BOR	Bureau of Reclamation
C and D	construction and demolition
CAA	Clean Air Act
CadnaA	Computer-Aided Noise Abatement
CAFE	Corona and Field Effects
CAP	Community Advisory Process
CBM	capacity benefit margin
CFR	Code of Federal Regulations
CH	critical habitat
CIP	critical infrastructure protection
CL	centerline
cm	centimeter
cmil	circular mil
COA	Conservation Opportunity Area
CO_2e	carbon dioxide equivalent

COM Plan	Construction, Operations, and Maintenance Plan
CPCN	Certificate of Public Convenience and Necessity
cps	cycle per second
CRP	Conservation Reserve Program
CRT	cathode-ray tube
CRUP	Cultural Resource Use Permit
CSZ	Cascadia Subduction Zone
CTUIR	Confederated Tribes of the Umatilla Indian Reservation
CWA	*Clean Water Act of 1972*
CWR	Critical Winter Range
dB	decibel
dBA	A-weighted decibel
DC	direct current
DoD	Department of Defense
DOE	U.S. Department of Energy
DOGAMI	Oregon Department of Geology and Mineral Industries
DPS	Distinct Population Segment
DSL	Oregon Department of State Lands
EA	environmental assessment
EDRR	Early Detection and Rapid Response
EIS	Environmental Impact Statement (DEIS for Draft and FEIS for Final)
EFSC or Council	Energy Facility Siting Council
EFU	Exclusive Farm Use
EHS	extra high strength
EMF	electric and magnetic fields
EPA	Environmental Protection Agency
EPC	Engineer, Procure, Construct
EPM	environmental protection measure
EPRI	Electric Power Research Institute
ERO	Electric Reliability Organization
ERU	Exclusive Range Use
ESA	Endangered Species Act
ESCP	Erosion and Sediment Control Plan
ESU	Evolutionarily Significant Unit
EU	European Union
FAA	Federal Aviation Administration
FCC	Federal Communication Commission
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FFT	find, fix, track, and report
FLPMA	Federal Land Policy and Management Act
Forest Plan	Land and Resource Management Plan
FPA	Forest Practices Act
FSA	Farm Services Agency
FWS	U.S. Fish and Wildlife Service
G	gauss

GeoBOB	Geographic Biotic Observation
GF	Grazing Farm Zone
GHG	greenhouse gas
GHz	gigahertz
GIL	gas insulated transmission line
GIS	geographic information system
GPS	Global Positioning System
GRMW	Grande Ronde Model Watershed
GRP	Grassland Reserve Program
HAC	Historic Archaeological Cultural
HCNRA	Hells Canyon National Recreation Area
HPFF	high pressure fluid-filled
HPMP	Historic Properties Management Plan
HUC	Hydrologic Unit Code
Hz	hertz
I-84	Interstate 84
ICC	International Code Council
ICES	International Committee on Electromagnetic Safety
ICNIRP	International Commission on Non-Ionizing Radiation Protection
IDAPA	Idaho Administrative Procedures Act
IDEQ	Idaho Department of Environmental Quality
IDFG	Idaho Department of Fish and Game
IDWR	Idaho Department of Water Resources
ILS	intensive-level survey
IM	Instructional Memorandum
INHP	Idaho Natural Heritage Program
INRMP	Integrated Natural Resources Management Plan
IPC	Idaho Power Company
IPUC	Idaho Public Utilities Commission
IRP	integrated resource plan
IRPAC	IRP Advisory Council
ISDA	Idaho State Department of Agriculture
JPA	Joint Permit Application
KCM	thousand circular mils
kHz	kilohertz
km	kilometer
KOP	Key Observation Point
kV	kilovolt
kV/m	kilovolt per meter
kWh	kilowatt-hour
L_{dn}	day-night sound level
L_{eq}	equivalent sound level
lb	pound
LCDC	Land Conservation and Development Commission
LDMA	Lost Dutchman's Mining Association
LiDAR	light detection and ranging
LIT	Local Implementation Team

LMP	land management plan
LOLE	Loss of Load Expectation
LRMP	land and resource management plan
LUBA	Land Use Board of Appeals
LWD	large woody debris
m	meter
mA	milliampere
MA	Management Area
MAIFI	Momentary Average Interruption Frequency Index
MCC	Malheur County Code
MCCP	Morrow County Comprehensive Plan
MCE	Maximum Credible Earthquake
MCZO	Morrow County Zoning Ordinance
mG	milligauss
MHz	megahertz
mm	millimeter
MMI	Modified Mercalli Intensity
MP	milepost
MPE	maximum probable earthquake
MRI	magnetic resonance imaging
MVAR	megavolt ampere reactive
Mw	mean magnitude
MW	megawatt
µV/m	microvolt per meter
N_2O	nitrous oxide
NAIP	National Agriculture Imagery Program
NED	National Elevation Dataset
NEMS	National Energy Modeling System
NEPA	*National Environmental Policy Act of 1969*
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NF	National Forest
NFPA	National Fire Protection Association
NFS	National Forest System
NGDC	National Geophysical Data Center
NHD	National Hydrography Dataset
NHOTIC	National Historic Oregon Trail Interpretive Center
NHT	National Historic Trail
NIEHS	National Institute of Environmental Health Sciences
NIST	National Institute of Standards and Technology
NOAA	National Oceanic and Atmospheric Administration
NOAA Fisheries	National Oceanic and Atmospheric Administration Fisheries Division
NOI	Notice of Intent to File an Application for Site Certificate
NOV	Notice of Violation
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service

NRHP	National Register of Historic Places
NSR	noise sensitive receptor
NTTG	Northern Tier Transmission Group
NWGAP	Northwest Regional Gap Analysis Landcover Data
NWI	National Wetlands Inventory
NWPP	Northwest Power Pool
NWR	National Wildlife Refuge
NWSRS	National Wild and Scenic Rivers System
NWSTF	Naval Weapons Systems Training Facility
O_3	ozone
O&M	operation and maintenance
OAIN	Oregon Agricultural Information Network
OAR	Oregon Administrative Rules
OATT	Open Access Transmission Tariff
ODA	Oregon Department of Agriculture
ODEQ	Oregon Department of Environmental Quality
ODF	Oregon Department of Forestry
ODFW	Oregon Department of Fish and Wildlife
ODOE	Oregon Department of Energy
ODOT	Oregon Department of Transportation
OHGW	overhead ground wire
OHV	off-highway vehicle
OPGW	optical ground wire
OPRD	Oregon Parks and Recreation Department
OPS	U.S. Department of Transportation, Office of Pipeline Safety
OPUC	Public Utility Commission of Oregon
OR	Oregon (State) Highway
ORBIC	Oregon Biodiversity Information Center
ORS	Oregon Revised Statutes
ORWAP	Oregon Rapid Wetland Assessment Protocol
OS	Open Space
OSDAM	Oregon Streamflow Duration Assessment Methodology
OSHA	Occupational Safety and Health Administration
OSSC	Oregon Structural Specialty Code
OSWB	Oregon State Weed Board
OWC	Oregon Wetland Cover
P	Preservation
PA	Programmatic Agreement
pASC	Preliminary Application for Site Certificate
PAT	Project Advisory Team
PCE	Primary Constituent Element
PEM	palustrine emergent
PFO	palustrine forested
PGA	peak ground acceleration
PGE	Portland General Electric
PGH	Preliminary General Habitats
Pike	Pike Energy Solutions

PNSN	Pacific Northwest Seismic Network
POD	Plan of Development
POMU	Permit to Operate, Maintain and Use a State Highway Approach
PPH	Preliminary Priority Habitats
Project	Boardman to Hemingway Transmission Line Project
PSD	Prevention of Significant Deterioration
PSS	palustrine scrub-shrub
R	Retention
R-F	removal-fill
RCM	Reliability Centered Maintenance
RCRA	Resource Conservation and Recovery Act
ReGAP	Regional Gap Analysis Project
RFP	request for proposal
RLS	reconnaissance-level survey
RMP	resource management plan
ROD	Record of Decision
ROE	right of entry
RNA	research natural area
ROW	right-of-way
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SC	Sensitive Critical
SEORMP	Southeastern Oregon Resource Management Plan
SF6	sulfur hexafluoride
Shaw	Shaw Environmental and Infrastructure, Inc.
SHPO	State Historic Preservation Office
SLIDO	Statewide Landslide Inventory Database for Oregon
SMS	Scenery Management System
SMU	Species Management Unit
SPCC	Spill Prevention, Containment, and Countermeasures
SRMA	Special Recreation Management Area
SRSAM	Salmon Resources and Sensitive Area Mapping
SSURGO	Soil Survey Geographic Database
STATSGO	State Soil Geographic Database
SUP	special-use permit
SV	Sensitive Vulnerable
SWPPP	Stormwater Pollution Prevention Plan
T/A/Y	tons/acre/year
TDG	Total Dissolved Gas
TES	threatened, endangered, and sensitive (species)
TG	Timber Grazing
TMIP	Transmission Maintenance and Inspection Plan
TNC	The Nature Conservancy
tpy	tons per year
TSD	treatment, storage, and disposal
TV	television
TVES	Terrestrial Visual Encounter Surveys

TVMP	Transmission Vegetation Management Program
UBAR	Umatilla Basin Aquifer Restoration
UBWC	Umatilla Basin Water Commission
UCDC	Umatilla County Development Code
UCZPSO	Union County Zoning, Partition and Subdivision Ordinance
UDP	Unanticipated Discovery Plan
U.S.	United States
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USFS	U.S. Department of Agriculture, Forest Service
USGS	U.S. Geological Survey
UWIN	Utah Wildlife in Need
V/C	volume to capacity
V	volt
VAHP	Visual Assessment of Historic Properties
VMS	Visual Management System
VQO	Visual Quality Objective
VRM	Visual Resource Management
WAGS	Washington ground squirrel
WCU	Wilderness Characteristic Unit
WECC	Western Electricity Coordinating Council
WHO	World Health Organization
WMA	Wildlife Management Area
WOS	waters of the state
WOUS	waters of the United States
WPCF	Water Pollution Control Facility
WR	winter range
WRCC	Western Regional Climate Center
WRD	(Oregon) Water Resources Division
WRP	Wetland Reserve Program
WWE	West-wide Energy
XLPE	cross-linked polyethylene

Exhibit V
Solid Waste and Wastewater Minimization

1.0 INTRODUCTION

Exhibit V provides an analysis of solid waste and wastewater for the Boardman to Hemingway Transmission Line Project (Project). Exhibit V demonstrates that Idaho Power Company (IPC) will comply with the "solid waste and wastewater" approval standard in accordance with Oregon Administrative Rule (OAR) 345-022-0120, based on information provided pursuant to OAR 345-021-0010(1)(v), paragraphs (A) through (G).

Specifically, Exhibit V demonstrates that IPC has prepared plans to minimize the Project's generation of solid waste and wastewater, as well as plans to recycle or reuse solid waste and wastewater. Construction of the Project will generate both solid waste and wastewater in amounts described in detail herein. Exhibit V details IPC's plans for minimizing and disposing of any wastewater generated by construction of the Project. Although hazardous materials, such as fuel, vehicle fluids and lubricants, herbicides, and blasting materials, will be used, the Project will generate little or no hazardous waste. Insignificant amounts of solid waste and wastewater are expected to be generated during the operation and maintenance of the Project. Additional discussions of hazardous materials are presented in Exhibit G. The information presented in Exhibit V demonstrates that waste generated by construction and operations of the Project is likely to have only a minimal adverse impact on surrounding and adjacent areas.

2.0 APPLICABLE RULES AND STANDARDS

The Oregon Energy Facility Siting Council (EFSC or Council) waste minimization approval standard is set forth in OAR 345-022-0120. Under OAR 345-022-0120, the Council must find through appropriate study that:

- *The applicant's solid waste and wastewater plans are likely to minimize generation of solid waste and wastewater in the construction and operation of the facility, and when solid waste or wastewater is generated, to result in recycling and reuse of such wastes;*
- *The applicant's plans to manage the accumulation, storage, disposal, and transportation of waste generated by the construction and operation of the facility are likely to result in minimal adverse impact on surrounding and adjacent areas.*

To demonstrate compliance with this standard, and in accordance with OAR 345-021-0010(1)(v), Exhibit V must include the following:

> *(A) A description of the major types of solid waste and wastewater that construction, operation and retirement of the facility are likely to generate, including an estimate of the amounts.*
>
> *(B) A description of any structures, systems, and equipment for managing waste that are part of the Project.*
>
> *(C) A discussion of any actions or restrictions proposed by the applicant to reduce consumptive water use during construction and operation.*
>
> *(D) The applicant's plans to minimize, recycle, or reuse the solid waste and wastewater generated.*
>
> *(E) A description of any adverse impact on surrounding and adjacent areas from the accumulation, storage, disposal, and transportation of solid waste, wastewater and stormwater during construction and operation.*

(F) Evidence that adverse impacts area likely to be minimal.

(G) The applicant's proposed monitoring program, if any, for minimization of solid waste and wastewater impacts.

Additionally, the Project Order requires Exhibit V to include the following specific information:

- *Information to support an application for a Water Pollution Control Facilities permit if an onsite septic system is proposed.*
- *A list of all hazardous materials that potentially would be stored or used at the Project site during construction or operation, and a description of the applicant's plans for managing hazardous waste in compliance with Oregon Department of Environmental Quality regulations.*
- *Information regarding how the applicant will manage or dispose of the debris generated by clearing activities, including brush disposal and excess material from road cut and fill operation.*

As documented in Table V-3 (Submittal Requirements Matrix), IPC has drafted Exhibit V to respond to each paragraph of OAR 345-021-0010(1)(v) described above, as well as the additional requirements set forth in the Project Order.

3.0 ANALYSIS

3.1 Analysis Area

Pursuant to the Project Order, the analysis area for Exhibit V is the Site Boundary, which is defined in OAR 345-001-0010(55) as "the perimeter of the site of a proposed energy facility, its related or supporting facilities, all temporary laydown and staging areas, and all corridors and micrositing corridors proposed by the applicant." The Site Boundary for the Project includes the following related and supporting facilities in Oregon:

- Proposed Corridor: 277.2 miles of 500-kilovolt (kV) transmission line corridor, 5.0 miles of double circuit 138/69-kV transmission line corridor, and 0.3 miles of 138-kV transmission line corridor.
- Alternate Corridor Segments: Seven alternate corridor segments consisting of approximately 134.1 miles that could replace certain segments of the Proposed Corridor. IPC has proposed these alternate corridor segments in order to allow flexibility for IPC and EFSC, as well as federal agencies, to reconcile competing resource constraints in several key locations.
- One proposed substation expansion of 3 acres; two alternate substation sites (one 3-acre substation expansion and one new 20-acre substation). IPC ultimately needs to construct and operate only one substation expansion or substation in the Boardman area.
- Eight communication station sites of less than one acre each in size; four alternate communication station sites along alternate corridor segments.
- Temporary and permanent access roads.
- Temporary multi-use areas, pulling and tensioning sites, and fly yards.

The features of the Project are fully described in Exhibit B and the Site Boundary for each Project feature is described in Exhibit C, Table C-21. The location of the Project (Site Boundary) is outlined in Exhibit C.

3.2 Methods

Estimated quantities of construction waste, vegetation waste, and wastewater were provided by IPC's engineering group and IPC's engineering contractor, Pike Energy Solutions (Pike). Hazardous materials and waste are discussed in Section 3.2.2 of Exhibit G. IPC's and Pike's experience that qualifies them to make these estimates is detailed in Exhibit D.

Municipal solid waste landfills located within the counties crossed by the Project were contacted by telephone to verify that their facilities are adequate to accept the wastes to be generated by the Project. Letters also were submitted to the operators to request written confirmation that the landfills are able to receive solid waste generated by construction of the Project. Copies of the letters to landfill operators are presented in Attachment V-1. Responses from the landfill operators are shown in Attachment V-2.

3.3 Information Required by OAR 345-021-0010(1)(v)

3.3.1 Estimated Quantities of Solid Waste and Wastewater

OAR 345-021-0010(1)(v)(A) – Solid Waste and Wastewater Estimates

A description of the major types of solid waste and wastewater that construction, operation and retirement of the facility are likely to generate, including an estimate of the amount of solid waste and wastewater.

3.3.1.1 Construction Solid Waste

Based on experience on other transmission line projects, IPC has provided estimates of vegetation waste, native earth materials (soil, rock, and similar), and household-type solid waste. The estimated waste types, quantities, and disposition for the transmission line, communication station sites, and substations are summarized in Table V-1 and in the text below. Sections 3.3.2 through 3.3.6 include IPC's plans for minimizing, reusing, or recycling waste materials to the extent practicable.

Vegetation

Construction of the Project will require clearing of vegetation from portions of the Site Boundary, including substation sites, access roads, multi-use areas, fly yards, and other temporary and permanent disturbance areas. Vegetation waste will consist of herbaceous plant materials scraped from disturbances areas, and trees and shrubs removed to facilitate construction, transmission line stringing, and to prevent interference with energized circuits. IPC and Pike estimate that a total of approximately 23,209 cubic yards of vegetation waste will be generated from construction of the transmission line (see Table V-1). A minimal amount of vegetation waste will be generated in the construction of communication station sites, and about 10 cubic yards of vegetation waste will be generated at the Grassland Substation. It is estimated that approximately 80 percent of vegetation waste will be mulched and spread around on the ground in the Site Boundary. The remaining 20 percent will be disposed of off-site. Where county landfills accept vegetation waste for recycling, the vegetation waste will be recycled. Otherwise, it will be disposed of at the nearest county landfill, preferably in the county construction and demolition (C and D) landfill.

Table V-1. Materials Generation from Construction Activities (cubic yards)

Route	County	Miles Crossed	Landfill	Transmission Line			Communication Station Sites			Substation		
				Vegetation[1]	Native Material[2]	Solid Waste[3]	Vegetation[1]	Native Material[2]	Solid Waste[3]	Vegetation[1]	Native Material[2]	Solid Waste[3]
Grassland Substation	Morrow	N/A	Finley Buttes	NA	NA	NA	NA	NA[6]	NA	10	200	10
Proposed	Morrow	45.8	Finley Buttes	0	41,858	2,718	0	NA[6]	10	NA	NA	NA
Proposed	Umatilla	49.5	Finley Buttes	6,238	68,673	2,620	0	NA[6]	10	NA	NA	NA
Proposed	Union	39.4	Baker County	16,334	89,679	2,481	0	NA[6]	20	NA	NA	NA
Proposed	Baker	69.1	Baker County	637	143,640	3,140	0	NA[6]	20	NA	NA	NA
Proposed	Malheur	72.1	Lytle Boulevard	0	128,864	3,994	0	NA[6]	30	NA	NA	NA
Proposed 138/69kV Rebuild	Baker	5.3	Baker County	0	33,615	381	0	NA[6]	0	NA	NA	NA
Amount Recycled[4]				***18,567***	***224,835***	***12,267***	***0***	NA	***72***	***0***	***160***	***8***
Amount to Landfill[5]				***4,462***	***281,494***	***3,067***	***0***	NA	***18***	***0***	***40***	***2***
Total		***281.2***		***23,209***	***506,328***	***15,334***	***0***	NA	***90***	***10***	***200***	***10***
Alternate Substation												
Horn Butte	Morrow	NA	Finley Buttes	NA	NA	NA	NA	NA	NA	10	200	10
Longhorn	Morrow	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alternate Corridor Segments												
Horn Butte	Morrow	26.9	Finley Buttes	0	24,483	1,489	0	NA[6]	0	100	500	10
Longhorn	Morrow	19.0	Finley Buttes	0	10,407	1,310	0	NA[6]	0	NA	NA	NA
Glass Hill	Union	7.6	Baker County	2,225	14,278	899	0	NA[6]	10	NA	NA	NA
Flagstaff	Baker	15.2	Baker County	0	27,514	1,165	0	NA[6]	0	NA	NA	NA
Willow Creek	Malheur	24.6	Lytle Boulevard	0	45,422	1,399	0	NA[6]	10	NA	NA	NA
Malheur S	Malheur	33.6	Lytle Boulevard	0	49,287	2,290	0	NA[6]	20	NA	NA	NA
Double Mountain	Malheur	7.4	Lytle Boulevard	0	8,364	197	0	NA[6]	0	NA	NA	NA

[1] Vegetation consists of woody vegetation to be removed during construction. It is assumed that approximately 80% can remain within the Site Boundary and 20% will be hauled away to a county landfill for recycling or disposal, as approved by local entities.

[2] Native material consists of excess soil, large rocks, or other natural materials that cannot be reused on-site. It is assumed that approximately 10% of native material excavated for structure foundations and 50% of the native material graded for tower pads and work areas can be re-used within the project on nearby access roads, restoration or on-site fill. Native materials may be suitable for disposal at fill dirt sites, or county construction and demolition (C and D) landfills, as approved by local entities.

[3] Solid waste is non-hazardous refuse from materials delivered to the Project, and includes containers, boxes, bags, sacks, packing materials, broken insulators, scrap conductor, empty wire spools, and other miscellaneous non-hazardous paper, plastic or similar materials. These are materials that will be recycled, hauled directly, or placed in a dumpster or roll-off for disposal at a municipal solid waste landfill, as approved by local entities. Pike estimates that up to 80 percent of solid waste would be recycled.

[4] Amount Recycled for vegetation is the amount of vegetation that will be left on-site. Amount Recycled for solid waste is the amount of material that goes to a recycling facility for future useful purposes.

[5] Amount to Landfill: Includes vegetation and native material that would go to a County C and D landfill, or solid waste that would go to a municipal solid waste landfill.

[6] Native material quantities at communication station sites are included in transmission line quantities.

NA – not applicable

Vegetation waste quantities to be generated by alternate corridor segments are also shown in Table V-1. The percent of vegetation waste to be left on-site or recycled/disposed of off-site is the same as for the Proposed Corridor. Table V-1 does not provide a total of the project amounts of solid waste from all seven alternate corridor segments taken together, because it is unlikely that IPC will develop all of the alternate corridor segments. In the event that IPC does elect to develop any one of the alternate corridor segments in lieu of the corresponding segment of the Proposed Corridor, the net volumes of waste are not likely to deviate substantially from the "total amounts" provided in Table V-1 for the Proposed Corridor.

Native Material

Native material consists of excess soil, fill material, and aggregates that may be generated from access road construction and foundation excavations along the Proposed Corridor and alternate corridor segments and at the Proposed Grassland Substation Expansion. The Project will balance soil cuts and fills to the greatest extent possible to minimize excess, but it is anticipated that some material surplus will remain, which will require disposal. It is estimated that out of approximately 506,328 cubic yards of native material generated, about 281,494cubic yards will need to be hauled off-site (see Table V-1). The native material quantities shown in Table V-1 represent material excavated for foundations and material graded for tower pads and work areas. Approximately 90% of material excavated for foundations and 50% of material removed from tower pad and work area grading will be disposed of at the nearest county landfill in the county C and D landfill or used for daily cover at county municipal solid waste landfills. The construction contractor may also opt to arrange for native material disposal at local sand and gravel/aggregate pits where the materials could be recycled for fill or aggregate sources on unrelated projects. Native material quantities that will be transported off-site by alternate corridor segment are also shown in Table V-1.

Solid Waste

Solid waste generated during construction will include scrap metal, wire, wood, concrete, incidental litter, and other debris. Much of this waste will be packing material such as crates, pallets, and paper wrapping to protect equipment during shipping. Pike estimates that approximately 15,334 cubic yards of solid waste will be generated (see Table V-1). Given the bulk of the materials are wood, wire, and metal, Pike estimates that up to 80 percent (12,267 cubic yards) of solid waste will be recycled. The remaining 20 percent (3,067 cubic yards) will be disposed of at the nearest county landfill as shown in Table V-1. Worker personal items, such as meal residue, cups, cans, etc., represent a very minor amount of household-type waste included within the 20 percent of solid waste going to a landfill. Solid waste quantities to be generated by alternate corridor segment are also shown in Table V-1. The proportion of solid waste to be recycled vs. landfilled will be the same for alternate corridor segments as for the Proposed Corridor.

3.3.1.2 Construction Wastewater

Sanitation Facilities

Temporary sanitation during construction activities will consist of portable toilets located at multi-use areas and construction sites. Portable toilets will be provided by a subcontractor, who will be responsible for servicing the facilities at regular intervals and disposing of wastewater in accordance with local jurisdictional regulations. The construction contractor will ensure that a sufficient number of toilets is provided, and that the portable restroom company complies with applicable regulations, uses holding tanks for biological waste that conform to OAR Chapter 340, Division 71 and transports waste in accordance with Oregon Revised Statute (ORS) 466.005.

Concrete Washout Residue

Most of the wastewater produced over the life of the Project will be concrete washout water produced during construction of tower and substation foundations. Designated aboveground washouts will be used to contain residual concrete, concrete associated liquids, and the wash water from cleaning trucks, hoppers, and chutes. Washout containment best management practices (BMPs) will be earthen berm or straw bale enclosures lined with plastic, a storage tank, or other structure approved by the engineer or inspector. These washouts will be located within each structure work area at least 50 feet away from storm drains, ditches, streams, or other water bodies. Washouts will be monitored to ensure there are no leaks and that they are operating effectively. They will be cleaned out when they reach 75 percent of their design capacity. Care will be taken to ensure these structures do not overflow during storm events. The locations of concrete washouts are provided in the Erosion and Sediment Control Plan (ESCP), Exhibit I, Attachment I-3.

After a concrete washout is no longer needed, IPC and its contractor will ensure proper disposal of washout materials. Washout liquids are generally allowed to evaporate or they will be pumped out and properly disposed of by the construction contractor. Washout liquids will not be discharged into storm drains, ditches, streams or other water bodies. Dried concrete will be broken up and used as clean fill on the Project, recycled, or properly disposed of by other means. Hardened concrete that is not recycled may be buried in embankments on-site in accordance with applicable permit requirements.

Multi-use areas may contain portable concrete batch plants during the construction period. The contractor will obtain any necessary permits for batch plant operation at the multi-use areas and will comply with applicable permit requirements.

Some foundations may require slurry to stabilize foundation shafts during drilling. Slurry fluids will be recycled to the extent practicable. Excess and degraded slurry fluids will be disposed of at off-site location(s). The disposal will be in strict accordance with local, state, and federal environmental, and pollution laws and ordinances. Synthetic slurries will continue to be contained and disposed to an available municipal sanitary sewer in accordance with the permit requirements.

Dust control water will be sprayed onto disturbed areas to moisten the surface. The amount of water used for dust control will be sufficiently small that it will not create runoff, but instead will infiltrate into the ground or evaporate. Washing of large construction equipment to prevent the spread of weeds will also generate a minimal amount of wastewater. Construction contractor vehicles will be cleaned using high-pressure equipment (compressed air or water) when moving from weed-contaminated areas to other areas along the Project. The cleaning activities will focus on tracks, feet, or tires, and vehicle undercarriages including axles, frame, motor mounts, running boards, and front bumper/brush guards. All washing of vehicles will be performed in designated, approved wash stations. The washing of the construction vehicles will generate a minimal amount of wastewater. Wash station locations will be monitored to ensure that weedy vegetation does not germinate at the wash stations.

Stormwater is not considered to be wastewater. Stormwater management will be in conformance to State of Oregon stormwater management rules. Precipitation that falls on construction areas will be managed as stormwater in accordance with an ODEQ National Pollution Discharge Elimination System (NPDES) construction stormwater permit (1200-C) and ESCP (see Exhibit I, Attachment I-3).

3.3.1.3 Operations Solid Waste and Wastewater

Insignificant amounts of solid waste and wastewater are expected to be generated during the operation and maintenance of the Project. Solid waste will include replaced equipment and components, packing materials, and soils. The transmission line will be patrolled regularly to inspect insulators, wire and tower conditions, and a small amount of solid waste will be generated during repairs or replacements.

Permanent disturbance areas, including the cleared Proposed Corridor or alternate corridor segments and permanent roads, will be managed to limit the types and height of vegetation that is allowed to regrow in these areas. Vegetation management techniques will be implemented in accordance with IPC's standard practices using motorized hand tools, clearing and grubbing machinery, and herbicides to retard the growth of trees within the wire and border zones. These methods are described in the Vegetation Management Plan, Exhibit P, Attachment P-5. During vegetation management cycles, which will occur on four or five year intervals, it is estimated that approximately 850 cubic yards of vegetation waste will be created.

3.3.1.4 Retirement Solid Waste and Wastewater

The Project is designed to have an indefinite useful life. As a general matter, IPC designs, constructs, and operates its transmission system on the assumption that the system's transmission lines will not be retired. In the event that IPC is required to retire the transmission line, it will do so in accordance with an EFSC-approved retirement plan, as required by OAR 345-027-0020(9) and OAR 345-027-0110. Retirement and site restoration activities will also be in full compliance with all applicable statutes and regulations in effect at the time of retirement.

Wire and structures are removed in a similar fashion to how they are constructed, except in reverse. Vibration dampers will be removed from the conductors, all wire will be put into stringing sheaves at each insulator attachment, and the wire will be removed and placed onto reels. Then, towers will be deconstructed in sections, just as they were installed, after which individual steel members will be removed one by one.

The majority of the material generated at retirement is recyclable. All steel, aluminum, and copper will be salvaged or recycled if their condition allows. Likewise, all recyclable hardware will be recycled, and the remainder disposed of at the county landfill. Optical ground wire (OPGW) will be recycled for aluminum, steel and alloy materials as practical. The labor involved with separating the glass portions from the metal portions of insulators makes recycling likely unfeasible; therefore, insulators will be disposed of as solid waste.

Project retirement wastewater will be limited mainly to dust abatement water, applied to unpaved disturbed areas to minimize generation of blowing dust. Retirement wastewater will be applied in quantities that will minimize surface runoff. Wastewater used for dust abatement will be allowed to evaporate or infiltrate into the native soil.

Table V-2 presents estimates for the amount of materials that would be removed from the Project. Steel, aluminum, OPGW, and copper, representing the majority of the material, would be recycled. Non-recyclable materials will be placed in the landfill, or concrete waste will be disposed of on-site or removed to a county construction/demolition landfill.

Table V-2. Waste Materials Generated from Retirement

Corridor	County	Miles Crossed	Number of Structures	Structure Steel (tons)	Conductor Steel (tons)	Conductor Aluminum (tons)	Shield Wire Steel (tons)	OPGW (tons)	Copper Grounding Materials (tons)	Miscellaneous Hardware (cubic yards)	Insulators (tons)	Concrete Waste (cubic yards)
Grassland Substation	Morrow	N/A	NA[1]	NA	NA	NA	NA	NA	NA	NA	NA	NA
Proposed	Morrow	45.8	221	3,907	260	1,329	64	50	4	1,326	377	1,989
Proposed	Umatilla	49.5	204	4,133	275	1,406	67	53	4	1,224	348	1,836
Proposed	Union	39.4	180	3,338	222	1,136	54	43	4	1,080	307	1,620
Proposed	Baker	69.1	294	5,806	386	1,975	95	75	6	1,764	502	2,646
Proposed	Malheur	72.1	317	6,007	399	2,044	98	77	6	1,902	541	2,853
Proposed 138/69-kV Rebuild	Baker	5.3	72	600	14	31	4	0	1	216	34	99
Total		***281.2***	***1,288***	***23,792***	***1,556***	***7,922***	***382***	***298***	***26***	***7,512***	***2,109***	***11,043***
Alternate Substation												
Horn Butte	Morrow	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Longhorn	Morrow	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alternate Corridor Segments												
Horn Butte	Morrow	26.9	133	2,284	152	777	37	29	3	798	277	1,197
Longhorn	Morrow	19.0	102	1,539	102	524	25	20	2	612	174	918
Glass Hill	Union	7.6	31	627	42	213	10	8	1	186	53	279
Flagstaff	Baker	15.2	77	1,263	84	430	21	16	2	462	131	693
Willow Creek	Malheur	24.6	114	2,058	137	700	34	26	2	684	194	1,026
Malheur S	Malheur	33.6	147	2,744	182	934	45	35	3	882	251	1,323
Double Mountain	Malheur	7.4	34	619	41	211	10	8	1	204	58	306

[1]The Grassland Substation is private PGE Utility property, and it would remain in service even if the B2H terminal was no longer used. The station site pad, foundations, security fence, major structures, bus, etc. would all remain in service. Only the major equipment installed for the B2H terminal would be removed, all of which would be salvageable/recyclable.
NA – not applicable; OPGW – optical ground wire

3.3.2 Waste and Wastewater Management

OAR 345-021-0010(1)(v)(B) – Management and Disposal of Waste, Wastewater and Stormwater

A description of any structures, systems and equipment for management and disposal of solid waste, wastewater and storm water.

IPC will comply with all applicable waste handling and disposal regulations on all lands associated with the Project. Solid waste will be stored in a manner that does not constitute a fire, health or safety hazard until such waste can be hauled off for recycling or disposal, as appropriate. The following sections describe the handling and disposal of solid waste, wastewater, and stormwater anticipated throughout the duration of the Project.

3.3.2.1 Construction Waste, Wastewater, and Stormwater Management and Disposal

The multi-use areas will serve as the collection points for solid waste generated at each of the tower construction or road construction sites along the Site Boundary. Waste generated at the Grassland Substation or alternate substation will be collected on-site for recycling or disposal in accordance with ODEQ regulations.

Excavation along the Proposed Corridor or alternate corridor segments and at substations will generate solid wastes that will be used as fill as much as possible; however, some of the excavated material will be removed for disposal. Surplus excavated material may be used to construct shallow earthen berms on the edge of the corridor or spread along access roads in layers to raise the road profile and improve drainage. The volumes shown in Table V-1 reflect the waste that will be hauled away or recycled in the Site Boundary for each county during construction of the Project.

The majority of waste associated with substation construction results from spoils created during site grading. The values shown in Table V-1 reflect the amount of vegetation and rock larger than 6 inches in diameter that cannot be processed and converted into backfill for compaction. Approximately 90 percent of the native material excavated during foundation installation is waste product. Surplus native material may be temporarily stockpiled until it can be incorporated into earthwork in other portions of the Project or disposed of off-site. Where feasible, native material will be disposed of at local gravel pits for recycling for unrelated construction projects. Native material that cannot be recycled will be disposed of at a county C and D landfill.

Stockpile protection measures will be in place to reduce the potential for air and stormwater pollution originating from stockpiles of construction materials, including:

- Stockpiles will be located a minimum of 100 feet away from storm drains, ditches, streams, and other water bodies.
- Physical diversions will be provided to protect stockpiles from concentrated runoff.
- Stockpiles will be covered with plastic or comparable material prior to a rain event and during the rainy season.
- Silt fence, fiber filtration tubes, or straw wattles will be placed around stockpiles to limit sediment migration.
- When disposal of surplus fill is necessary, the first option will be to utilize acceptable sites within the corridor and/or roadway right-of-ways and in the general proximity of the source as a disposal site. Disposal sites will have undergone adequate review and consideration for environmental and cultural issues.

On-site disposal options may include:

- Construction of shallow earthen berms on the exterior of the corridor;
- Construction of access road embankments, spreading materials in layers over existing road bed fill ruts to raise road profile and improve drainage. Materials shall be consolidated and shaped to form a smooth travel surface.

If no disposal sites are readily available or the area is environmentally sensitive, IPC's contractor will haul surplus material to disposal sites on IPC-controlled property or other available private or public property. All soil stockpiles will be managed in accordance with ODEQ stormwater requirements. The ESCP provides BMPs for management of material stockpiles.

Above-grade waste will consist of packing material such as crates, pallets, and paper wrapping to protect equipment during shipping. It is assumed that a 12 cubic yard dumpster will be filled once a week with waste material for the duration of each substation facility. A waste hauling subcontractor will be used to manage recycling and waste disposal. Project recycling or disposal containers will consist of rolloffs or dumpsters supplied by the waste handling subcontractor. Containers storing food wastes will be covered, leak-proof, and maintained to prevent a nuisance (e.g., odor, sight) and control vectors such as animals and insects. Materials such as wood pallets, plastic, metal, and paper will be separated from disposable wastes for recycling. Disposable waste will be disposed of by the subcontractor at nearby landfills. Interim recycling or disposal for solid waste prior to final disposition may be at county transfer stations.

Vegetation waste will be crushed, chipped, burned, spread, or stacked and left on-site as vegetation growth medium, erosion and sediment control or wildlife habitat, disposed of at a landfill.

Sanitary wastewater from portable toilets will be handled by a sanitary system subcontractor used to provide the sanitary facilities. This will consist of scheduled removal of the sanitary waste using a vacuum truck and disposal in accordance with the sanitary system subcontractors permits.

Concrete washout stations will be distributed throughout the Project and will generally be located within each structure work area. The construction contractor will obtain any necessary permits for concrete washout and will comply with applicable permit requirements. The procedures for constructing, maintaining, and disposing of concrete debris and washout water at washout stations will also be covered in the ESCP. The locations of concrete washouts will be provided in the ESCP. The ESCP is a part of the 1200-C stormwater permit required by ODEQ. IPC has submitted a 1200-C permit application, including an ESCP (see Exhibit I, Attachment I-3). Construction stormwater will be managed in accordance with the 1200-C permit and ESCP, as described in Exhibit I, Attachment I-3.

3.3.2.2 Operations Waste, Wastewater, and Stormwater Management and Disposal

The amount of operations-derived solid waste will be minimal compared to construction waste. Any solid waste generated during replacement of insulators, hardware, splices, or tower retrofits will be collected by the maintenance crews and transported to appropriately permitted, off-site to facilities that handle the disposal or recycling of these items. Vegetation waste will be crushed, chipped, spread, or stacked and left on-site as vegetation growth medium or wildlife habitat. Generation of wastewater is not anticipated during operations.

Permanent stormwater structures will minimize Project-derived erosion or sedimentation using stormwater BMP processes, as appropriate and in accordance with ODEQ stormwater requirements. Permanent BMPs will be selected based on location and need and will be

described in the ESCP. Examples of permanent stormwater BMPs include but are not limited to vegetation covered slopes, stormwater detention ponds, rock-lined or armored drainages, permanent drainage ditches, grass covered swales, and properly installed and maintained culverts.

3.3.2.3 Solid Waste Disposal Facilities

Several municipal solid waste landfill facilities are located along the Project. All municipal solid waste landfill facilities must comply with the federal regulations in 40 Code of Federal Regulations (CFR) Part 258 (Subtitle D of the Resource Conservation and Recovery Act [RCRA]), or equivalent state regulations. The disposal of solid waste in Oregon must be conducted in accordance with ORS Chapter 459 and OAR Chapter 340, Divisions 93 through 97. The state rules were re-written in 1993 to conform with new federal standards for solid waste facilities, contained in 40 CFR Part 258.

Solid waste suitable for disposal at municipal facilities will be transported by a disposal subcontractor. For additional discussion regarding solid waste disposal facilities, see Exhibit U. Solid waste disposal typically varies by county. The following provides waste disposal information for the counties crossed by the Project:

- **Morrow and Southern Umatilla Counties:** Morrow County and southern Umatilla County utilize the Finley Buttes Landfill. Finley Buttes Landfill is a modern municipal solid waste disposal facility permitted by the ODEQ. The landfill is privately owned, but approved by the Morrow County in 1987. The landfill is expected to provide service in its current configuration for the next 50 to 100 years. Finley Buttes can accept municipal solid waste, construction/demolition waste, and special waste including liquids with proper approvals. Waste in these counties will either be hauled directly to the landfill, or first moved to transfer stations located near populated areas.
- **Union County:** There is no operating municipal landfill in Union County. Residential and commercial waste is transferred to the Baker Sanitary Landfill.
- **Baker County:** Baker County maintains the Baker Sanitary Landfill near Baker City, permitted by the ODEQ.
- **Malheur County:** Malheur County holds permits from ODEQ for the operation of the Lytle Boulevard Landfill located approximately 10 miles south of Vale, Oregon. The daily operation is conducted by a private contractor.

IPC contacted these landfills by telephone to verify that they have adequate capacity to receive Project solid waste. Follow-up letters were submitted to the landfill operators to request written confirmation that the facilities are available to receive Project solid waste. Copies of the landfill letters are presented in Attachment V-1, and responses received are contained in Attachment V-2. Only Baker County Sanitary Landfill responded in writing to IPC's requests for assurance that Project generated wastes would not impact the landfill. Telephone interviews with landfill operators are contained in Exhibit U, Attachment U-1.

3.3.3 Water Minimization

OAR 345-021-0010(1)(v)(C) – Minimize water use

A discussion of any actions or restrictions proposed by the applicant to reduce consumptive water use during construction and operation of the facility.

IPC will minimize water use by implementing appropriate BMPs to reduce water use to the greatest extent feasible. Construction water will be purchased from off-site sources, and IPC will take actions to minimize water uses. Drilling slurry fluids for stabilization of drilled shaft

foundations will be recycled to the extent practicable. The amount of water for concrete mixing is controlled by the need for a proper water-cement ratio to provide adequate concrete strength and is therefore relatively fixed, although water reducing additives will generally be incorporated into the concrete mix design. Water for dust abatement will be minimized to prevent surface water migration and accompanying erosion or sediment transport, and to maximize the efficiency of the water trucks used to control dust. The construction contractors may also elect to use eco-sage, biodegradable, liquid copolymers to stabilize road surfaces where extended use is anticipated. Water used at concrete washout stations is typically provided by the concrete truck, and it is in the interest of drivers to conserve water to minimize water fill-ups.

Water is not necessary to operate the transmission line, except for short-term maintenance or repair events.

3.3.4 Recycling or Reuse Plans for Solid Waste and Wastewater

OAR 345-021-0010(1)(v)(D) – Minimize, recycle or reuse solid waste and wastewater

The applicant's plans to minimize, recycle or reuse the solid waste and wastewater described in (A).

3.3.4.1 Construction Solid Waste and Wastewater Minimization

IPC will promote a recycling program to minimize waste to be disposed of in landfills. IPC has an existing Investment Recovery department that maintains a facility to process scrap and they will work with vendors throughout their service territory. IPC's construction contractor will submit a plan for approval by IPC on how solid waste materials will be reused, recycled, or disposed of in accordance with OAR 340-083-0010. That plan will specify the number and types of waste containers to be maintained at construction sites, multi-use areas and substations, and how solid waste or wastewater will be segregated for recycling or disposal. It will also specify the names and locations of recycling and waste disposal facilities that will be used for the Project, as well as collection and hauling requirements.

Wastes generated during construction along the Proposed Corridor or alternate corridor segments or access roads will be collected in recycling and disposal containers at the multi-use areas. Separate disposal and recycling containers will be labeled by waste type to segregate materials as appropriate for recycling or disposal. Disposal and recycling containers will be of adequate size, design, and number to handle the amount of waste being generated. Landfill-supplied containers, such as 20- or 30-cubic-yard rolloffs, will be used to collect scrap metal, wood and paper products, concrete waste and other recyclable materials. Paper products and other materials, such as chemicals, batteries, glass, metals, and plastic, will be recycled when practical. As disposal and recycling containers reach capacity they will be removed to disposal facilities that can handle these materials, and the containers will be replaced with empty units. Transportation of wastes will comply with OAR 340-093-0220. IPC's waste hauling contractor will be responsible for overseeing waste management, transporting waste to appropriate disposal facilities, and managing disposal and recycling containers.

Most excess spoils generated during road cut and fill and foundation excavation activities will be incorporated into Project grading activities as fill material. Excess spoils areas will be identified in the ESCP. Solvents and thinners will be filtered and reused whenever possible.

3.3.4.2 Operations Phase Solid Waste and Wastewater Minimization

The amounts of waste materials and wastewater generated during operations are expected to be minimal. Wastes derived during this part of the Project will likely be recycled or disposed of off-site by individual operations and maintenance crews. Any vegetation waste will remain on-site as chips or stacked logs.

3.3.5 Effects from Project Waste

OAR 345-021-0010(1)(v)(E) – Waste Effects

A description of any adverse impact on surrounding and adjacent areas from the accumulation, storage, disposal and transportation of solid waste, wastewater and stormwater during construction and operation of the facility.

No adverse impacts are expected during construction and operations from the Project accumulation, storage, disposal, and transport of solid waste, wastewater, or stormwater. Project waste will be stored only on a temporary basis, and then disposed of or recycled off-site in ODEQ-permitted municipal solid waste landfills that comply with Subtitle D of RCRA and equivalent Oregon regulations and recycling facilities. Transportation of wastes to landfills or recycling facilities will involve periodic truck trips over public and private roads between the Project and the nearest transfer station, landfill, or recycling facility. Given the number and frequency of these trips and the anticipated volume of waste materials, these trips are not anticipated to have adverse effects on the adjacent or surrounding area. The landfills will experience a small increase in their waste volumes. However, no landfill will receive more than approximately 1,600 cubic yards of solid waste.

Table U-3 in Exhibit U provides daily quantities of waste by landfill. The total estimated solid waste from this Project is expected to amount to less than a day to only a few days of landfill capacity per landfill.

The majority of Project water will be used for dust abatement. It will be applied in quantities sufficient to minimize dust from construction vehicles, but not sufficient to result in runoff. Other construction water will be used to produce Portland cement concrete, and where soil conditions necessitate drilling slurry required to maintain excavations for drilled shaft foundation construction. Water will also be used in the application of hydro mulch to help stabilize disturbed slopes. Minimal water will be used by concrete trucks to wash their chutes and drums after delivering concrete. Concrete washout will occur at dedicated concrete washout stations. Their locations will be described in the ESCP (Exhibit I, Attachment I-3) and their operation will be in accordance with ODEQ stormwater requirements. Concrete washout water will be allowed to evaporate or infiltrate into the native soil.

Stormwater and erosion will be managed via the 1200-C permit, and ESCP (see Exhibit I, Attachment I-3). The effects of wastewater will be minimal. Water used for dust abatement will be applied at rates to maximize infiltration and minimize runoff.

3.3.6 Evidence of Minimal Impacts

OAR 345-021-0010(1)(v)(F) – Evidence of Minimal Impacts

Evidence that adverse impacts described in (D) are likely to be minimal, taking into account any measures the applicant proposes to avoid, reduce or otherwise mitigate the impacts.

Generation of wastes from construction will be minimized by estimating materials needs and employing efficient construction practices. Waste generated during construction, operation or retirement of the Project will be recycled when feasible. In 2011, IPC's Investment Recovery facility processed 1,327 tons of material including 106 tons of paper, 48 tons of wood, 121 tons of ACSR conductor and 531 tons of scrap iron.

Because waste generation will be minimal, there is little anticipated adverse impact on surrounding or adjacent areas from solid waste or wastewater associated with Project construction, operations, or retirement. As discussed in this exhibit, waste will be reused or recycled, or when necessary, disposed at permitted disposal facilities. Any waste disposed on-

site (e.g., wood chippings from clearing operations) will be inert, disposed of in a manner consistent with applicable regulations, and protective of human health and the environment.

Solid wastes will be disposed of in ODEQ permitted landfills. Disposal of native construction materials as fill on-site will be conducted in accordance with OAR 340-093-0080 and other applicable regulations. OAR 340-093-0080 provides a permit exemption to the permit requirement for disposal of inert wastes (such as soil, rock, and concrete) that do not contain contaminants that could adversely affect waters of the state or the United States. To meet the clean fill definition, any inert construction debris to be disposed of on-site will be separated from other debris that is not inert.

Water will be used primarily for dust control and concrete mixing. Water will be transported to the Project via water trucks and will be used only as needed. No on-site sewage treatment system is proposed.

Based on the summary above, material adverse impacts from Project waste are not expected.

3.3.7 Waste Minimization Monitoring

OAR 345-021-0010(1)(v)(G) – Waste and Wastewater Minimization Monitoring

The applicant's proposed monitoring program, if any, for minimization of solid waste and wastewater impacts.

IPC's solid waste and wastewater plans will minimize generation of solid waste and wastewater in the construction and operations of the Project and maximize recycling and reuse of any such wastes that are generated. IPC's plans to manage accumulation, storage, disposal, and transportation of waste generated by the construction and operation of the Project will also result in minimal adverse impact on the surrounding and adjacent areas.

IPC expects that no significant adverse impacts from waste or wastewater will occur on the adjacent or surrounding areas, and accordingly, no monitoring program is proposed. Waste minimization activities will be subject to periodic inspections to ensure compliance with applicable regulations.

4.0 CONCLUSIONS

Exhibit V fulfills the requirements of OAR 345-021-0010(1)(v) and establishes that the Project complies with all provisions of Oregon laws related to solid waste and wastewater identified in the Project Order. Accordingly, IPC has demonstrated that it complies with the Council's approval standard for Waste Minimization found in OAR 345-022-0120.

5.0 SUBMITTAL AND APPROVAL COMPLIANCE MATRICES

Tables V-3 and V-4 provide cross references between Exhibit submittal requirements of OAR 345-021-0010 and the Council's Approval standards of OAR 345-022-0000 and where discussion can be found in this Exhibit.

Table V-3. Submittal Requirements Matrix

Requirement	Location
OAR 345-021-0010(1)(v)	
(v). **Exhibit V.** Information about the applicant's plans to minimize the generation of solid waste and wastewater and to recycle or reuse solid waste and wastewater, providing evidence to support a finding by the Council as required by OAR 345-022-0120. The applicant shall include:	
(A) A description of the major types of solid waste and wastewater that construction, operation and retirement of the facility are likely to generate, including an estimate of the amount of solid waste and wastewater.	Section 3.3.1
(B) A description of any structures, systems and equipment for management and disposal of solid waste, wastewater and storm water.	Section 3.3.2
(C) A discussion of any actions or restrictions proposed by the applicant to reduce consumptive water use during construction and operation of the facility.	Section 3.3.3
(D) The applicant's plans to minimize, recycle or reuse the solid waste and wastewater described in (A).	Section 3.3.4
(E) A description of any adverse impact on surrounding and adjacent areas from the accumulation, storage, disposal and transportation of solid waste, wastewater and stormwater during construction and operation of the facility.	Section 3.3.5
(F) Evidence that adverse impacts described in (D) are likely to be minimal, taking into account any measures the applicant proposes to avoid, reduce or otherwise mitigate the impacts.	Section 3.3.6
(G) The applicant's proposed monitoring program, if any, for minimization of solid waste and wastewater impacts.	Section 3.3.7
Project Order Section VI (v) Comments	
If an onsite septic system is constructed in conjunction with a related and supporting facility for the proposed Facility, it may require a WPCF permit from ODEQ. The applicant should provide information demonstrating that the proposed septic system is exempt from the WPCF permit requirement or, if it is not exempt, that it meets the requirements for a permit.	Section 2.0
Exhibit V must include all information that would otherwise be required by ODEQ in an application for the WPCF permit (See OAR Chapter 340, Division 71). This includes providing evidence that the applicant has verified that the site is suitable for an onsite sewage disposal system by applying to ODEQ or its designated agency for a site evaluation of groundwater and soil conditions.	Because IPC does not propose any restroom facilities or on-site sewage disposal, the related WPCF permit is not applicable.
The applicant must comply with ODEQ regulations concerning the storage and management of hazardous materials and the clean-up and disposal of hazardous waste. Exhibit V must include a list of all hazardous materials that potentially would be stored or used at the facility site during construction and operation, and a description of the applicant's plans and programs for storage of hazardous materials and management of hazardous waste. If the applicant proposes any on-site fuel storage during construction, the fuel storage areas and management plan should be described in detail in the application.	Exhibit G

Table V-3. Submittal Requirements Matrix (continued)

Requirement	Location
The proposed Facility will entail clearing activities through forested lands. Exhibit V must contain information on how the applicant will manage or dispose of the debris generated by clearing activities, including brush disposal, and excess material from road cut and fill operation.	Section 3.3.2

Table V-4. Approval Standard

Requirement	Location
OAR 345-022-0120 Waste Minimization Standard	
OAR 345-022-0120 Waste Minimization Standard (1) Except for facilities described in sections (2) and (3), to issue a site certificate, the Council must find that, to the extent reasonably practicable: (a) The applicant's solid waste and wastewater plans are likely to minimize generation of solid waste and wastewater in the construction and operation of the facility, and when solid waste or wastewater is generated, to result in recycling and reuse of such wastes;	Sections 3.3.2 to 3.3.5
(b) The applicant's plans to manage the accumulation, storage, disposal and transportation of waste generated by the construction and operation of the facility are likely to result in minimal adverse impact on surrounding and adjacent areas.	Section 3.3.6
(2) The Council may issue a site certificate for a facility that would produce power from wind, solar or geothermal energy without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.	Because the Project would not produce power from wind, solar, or geothermal energy, this standard is not applicable.
(3) The Council may issue a site certificate for a special criteria facility under OAR 345-015-0310 without making the findings described in section (1). However, the Council may apply the requirements of section (1) to impose conditions on a site certificate issued for such a facility.	Because the Project is not a special criteria facility, this standard is not applicable

6.0 RESPONSE TO COMMENTS FROM REVIEWING AGENCIES AND THE PUBLIC

No comments were cited in the Project Order from reviewing agencies and the public related to solid waste and wastewater or the waste minimization standard.

7.0 REFERENCES

No references.

ATTACHMENT V-1
LETTERS TO LANDFILL OPERATORS

March 26, 2012

Site Manager
Finley Buttes Landfill
P.O. Box 350
Boardman, OR 97818

Subject: Idaho Power's Boardman to Hemingway Transmission Line Project.

Dear Sir:

Idaho Power Company (IPC) is proposing to construct a transmission line (Boardman to Hemingway Project, (Project) from the Grassland Substation near Boardman, Oregon to the Hemingway Substation in southwest Idaho. The Project will comprise 298.6 miles of single-circuit 500-kV electric transmission line, 5.0 miles of existing 138- and 69-kV transmission lines rebuilt onto double-circuit structures, and 0.3 mile of 138-kV transmission line. The purpose of IPC's proposed Project is to provide additional capacity connecting the Pacific Northwest and the Intermountain regions of southwestern Idaho to alleviate existing transmission constraints and ensure sufficient capacity to meet present and forecasted load requirements. Federal and state laws require IPC to plan for and meet load and transmission requirements. The Project has been selected by IPC as a critical component in an overall resource portfolio that best balances cost, risk, and environmental concerns. Construction of the transmission line would begin in approximately fall 2013 and continue to the planned in-service date in summer 2016.

IPC is currently seeking permits for the Project via Oregon's Department of Energy, Energy Facilities Siting Council (EFSC). Oregon Administrative Rule OAR 345-021-0010(1)(v) requires information be provided to meet EFSC's Waste Minimization approval standard in OAR 345-022-0120). The Waste Minimization standard includes a requirement that, "The applicant's plans to manage the accumulation, storage, disposal and transportation of waste generated by the construction and operation of the facility are likely to result in minimal adverse impact on surrounding and adjacent areas". The disposal of solid waste in Oregon must also be conducted in accordance with ORS Chapter 459 and OAR Chapter 340, Divisions 93 through 97. The state rules were re-written in 1993 to conform to federal standards for solid waste facilities (RCRA Subtitle D), contained in 40 CFR, Part 258.

It is estimated that approximately 14,000 cubic yards of non-hazardous waste will be generated during Project construction, including scrap metal, wire, wood, concrete, incidental litter and other debris. Much of this waste will be packing material such as crates, pallets and paper wrapping to protect equipment during shipping. These materials will be recycled whenever possible. Worker personal items, such as meal residue, cups, cans, etc. will also result in a very minor amount of household-type waste. Based on a distribution of the waste across the Project area, it is estimated that approximately 5,000 cubic yards of recycled and disposable materials may be generated in Morrow and southern Umatilla counties. IPC understands that non-

hazardous waste in these areas is typically disposed of at Finley Buttes landfill. Waste generated during operations would be minimal, and likely would predominantly consist of household-type waste.

This letter seeks to fulfill the EFSC requirements to assure that the waste generated by the Project would not adversely impact Finley Buttes landfill, and to assure that waste disposed at the landfill would be in accordance with federal and Oregon solid waste disposal rules and standards.

IPC respectfully requests acknowledgement of this letter and a written response by Finley Buttes to assure minimal impact to the landfill based on the estimated volume and type of construction waste, and that waste disposed of at the landfill would be in accordance with federal and state rules and statutes.

We appreciate your attention to this matter. If you have questions or comments, please contact us at your convenience.

Respectfully submitted,

Keith Georgeson
Project Leader
Boardman to Hemingway Project
208-388-2034
kgeorgeson@idahopower.com

March, 26 2012

Mr. David Henry
Baker Sanitary Landfill
P.O. Box 169
Baker City, OR 97814

Subject: Idaho Power's Boardman to Hemingway Transmission Line Project.

Dear Sir:

Idaho Power Company (IPC) is proposing to construct a transmission line (Boardman to Hemingway Project, (Project) from the Grassland Substation near Boardman, Oregon to the Hemingway Substation in southwest Idaho. The Project will comprise 298.6 miles of single-circuit 500-kV electric transmission line, 5.0 miles of existing 138- and 69-kV transmission lines rebuilt onto double-circuit structures, and 0.3 mile of 138-kV transmission line. The purpose of IPC's proposed Project is to provide additional capacity connecting the Pacific Northwest and the Intermountain regions of southwestern Idaho to alleviate existing transmission constraints and ensure sufficient capacity to meet present and forecasted load requirements. Federal and state laws require IPC to plan for and meet load and transmission requirements. The Project has been selected by IPC as a critical component in an overall resource portfolio that best balances cost, risk, and environmental concerns. Construction of the transmission line would begin in approximately fall 2013 and continue to the planned in-service date in summer 2016.

IPC is currently seeking permits for the Project via Oregon's Department of Energy, Energy Facilities Siting Council (EFSC). Oregon Administrative Rule OAR 345-021-0010(1)(v) requires information be provided to meet EFSC's Waste Minimization approval standard in OAR 345-022-0120). The Waste Minimization standard includes a requirement that, "The applicant's plans to manage the accumulation, storage, disposal and transportation of waste generated by the construction and operation of the facility are likely to result in minimal adverse impact on surrounding and adjacent areas". The disposal of solid waste in Oregon must also be conducted in accordance with ORS Chapter 459 and OAR Chapter 340, Divisions 93 through 97. The state rules were re-written in 1993 to conform to federal standards for solid waste facilities (RCRA Subtitle D), contained in 40 CFR, Part 258.

It is estimated that approximately 14,000 cubic yards of non-hazardous waste will be generated during Project construction, including scrap metal, wire, wood, concrete, incidental litter and other debris. Much of this waste will be packing material such as crates, pallets and paper wrapping to protect equipment during shipping. These materials will be recycled whenever

possible. Worker personal items, such as meal residue, cups, cans, etc. will also result in a very minor amount of household-type waste. Based on a distribution of the waste across the Project area, it is estimated that approximately 5,600 cubic yards of recyclable or disposable waste may be generated in Baker County. IPC understands that non-hazardous waste in this area is typically disposed of at the Baker Sanitary Landfill. Waste generated during operations would be minimal, and likely would predominantly consist of household-type waste.

This letter seeks to fulfill the EFSC requirements to assure that the waste generated by the Project would not adversely impact the Baker Sanitary Landfill, and to assure that waste disposed at the landfill would be in accordance with federal and Oregon solid waste disposal rules and standards.

IPC respectfully requests acknowledgement of this letter and a written response by Baker Sanitary Landfill to assure minimal impact to the landfill based on the estimated volume and type of construction waste, and that waste disposed of at the landfill would be in accordance with federal and state rules.

We appreciate your attention to this matter. If you have questions or comments, please contact us at your convenience.

Respectfully submitted,

Keith Georgeson

Keith Georgeson
Project Leader
Boardman to Hemingway Project
208-388-2034
kgeorgeson@idahopower.com

March, 26 2012

Mr. Craig Geddes
Malheur County Solid Waste Department
251 “B” Street West
Vale, OR 97918

Subject: Idaho Power’s Boardman to Hemingway Transmission Line Project.

Dear Mr. Geddes:

Idaho Power Company (IPC) is proposing to construct a transmission line (Boardman to Hemingway Project, (Project) from the Grassland Substation near Boardman, Oregon to the Hemingway Substation in southwest Idaho. The Project will comprise 298.6 miles of single-circuit 500-kV electric transmission line, 5.0 miles of existing 138- and 69-kV transmission lines rebuilt onto double-circuit structures, and 0.3 mile of 138-kV transmission line. The purpose of IPC’s proposed Project is to provide additional capacity connecting the Pacific Northwest and the Intermountain regions of southwestern Idaho to alleviate existing transmission constraints and ensure sufficient capacity to meet present and forecasted load requirements. Federal and state laws require IPC to plan for and meet load and transmission requirements. The Project has been selected by IPC as a critical component in an overall resource portfolio that best balances cost, risk, and environmental concerns. Construction of the transmission line would begin in approximately fall 2013 and continue to the planned in-service date in summer 2016.

IPC is currently seeking permits for the Project via Oregon’s Department of Energy, Energy Facilities Siting Council (EFSC). Oregon Administrative Rule OAR 345-021-0010(1)(v) requires information be provided to meet EFSC’s Waste Minimization approval standard in OAR 345-022-0120). The Waste Minimization standard includes a requirement that, “The applicant's plans to manage the accumulation, storage, disposal and transportation of waste generated by the construction and operation of the facility are likely to result in minimal adverse impact on surrounding and adjacent areas”. The disposal of solid waste in Oregon must also be conducted in accordance with ORS Chapter 459 and OAR Chapter 340, Divisions 93 through 97. The state rules were re-written in 1993 to conform to federal standards for solid waste facilities (RCRA Subtitle D), contained in 40 CFR, Part 258.

It is estimated that approximately 14,000 cubic yards of non-hazardous waste will be generated during Project construction, including scrap metal, wire, wood, concrete, incidental litter and

other debris. Much of this waste will be packing material such as crates, pallets and paper wrapping to protect equipment during shipping. These materials will be recycled whenever possible. Worker personal items, such as meal residue, cups, cans, etc. will also result in a very minor amount of household-type waste. Based on a distribution of the waste across the Project area, it is estimated that approximately 3,700 cubic yards of recyclable and disposable waste may be generated in Malheur County. IPC understands that non-hazardous waste in these areas is typically disposed of at the Lytle Boulevard Landfill. Waste generated during operations would be minimal, and likely would predominantly consist of household-type waste.

This letter seeks to fulfill the EFSC requirements to assure that the waste generated by the Project would not adversely impact Lytle Boulevard Landfill, and to assure that waste disposed at the landfill would be in accordance with federal and Oregon solid waste disposal rules and standards.

IPC respectfully requests acknowledgement of this letter and a written response by Malheur County Solid Waste Department to assure minimal impact to the landfill based on the estimated volume and type of construction waste, and that waste disposed of at the landfill would be in accordance with federal and state rules.

We appreciate your attention to this matter. If you have questions or comments, please contact us at your convenience.

Respectfully submitted,

Keith Georgeson

Keith Georgeson
Project Leader
Boardman to Hemingway Project
208-388-2034
kgeorgeson@idahopower.com

ATTACHMENT V-2
RESPONSES FROM LANDFILL OPERATORS

BAKER SANITARY SERVICE INC.

4/18/12

Keith Georgeson and Idaho Power,

I have received the letter detailing estimated waste that will be generated on the planned Boardman to Hemingway Project and can assure that, based on the information provided, that the BtHP would not impact the Baker landfill in a negative way and that the waste will be disposed of properly in accordance with federal and state rules.

Let me know if you have any questions,

David Henry, President
Baker Sanitary Service, Inc.

3048 Campbell Street P.O. Box 169 Baker City, OR 97814 (541) 523-2626 (541) 523-2821, fax