

***Appendix C***  
***Summary of Proposed Boring Locations***

Table C-1 Summary of Proposed Boring Location for Boardman to Hemingway – IPC Proposed Routes and Alternates

Boring ID	E	N	Elev (meters)	Owner Type	ROE	Access Route Confirmed?	Same As T-Line	Rig Type	Access Restrictions	Access Parcel ID	Parcel Owner	Estimated Distance of Overland Travel (ft)	Access Disturbance (overland)	Anticipated Geology (From Geologic Database)	Category	Hollow Stem Auger (HSA)	Mud Rotary (MR)	Rock Core (RC)	Transmission Line Feature	Notes
BH-001-a	279500.26	5063993.24	203.09	PRIVATE	Y	N				03N24-00120	THREEMILE CANYON FARMS, LLC									
BH-002-a	278171.69	5063412.96	208.42	PRIVATE	Y	N				02N24-00101	PORTLAND GENERAL ELECTRIC									
BH-003-a	275040.05	5063512.59	219.51	PRIVATE	Y	N				02N23-00100	THREEMILE CANYON FARMS, LLC									
BH-004-a	269331.78	5063694.15	243.53	PRIVATE	Y	N				02N23-00100	THREEMILE CANYON FARMS, LLC								Corner	
BH-005-a	269236.71	5060495.33	218.12	PRIVATE	Y	N				02N23-01401	WILLOW FARMS, LLC								HWY 74 Corner	
BH-006-a	268863.32	5059959.48	165.93	PRIVATE	Y	N				02N23-01401	WILLOW FARMS, LLC								Corner	
BH-007-a	269336.44	5057387.26	181.00	PRIVATE	N	N				02N23-02300	KREBS, CLINTON H &								Corner	
BH-008-a	269977.50	5057152.50	209.00	PRIVATE	N	Y	Y	Track		02N23-02300	KREBS, CLINTON H &	1250	Cut fence, clear brush, Drive and crush	Tf	Igneous Rock	X	X	X	HWY 74 Angle	
BH-009-a	275891.47	5057177.01	265.34	PRIVATE	N	Y	Y	Truck		02N23-02900	MILLER, APRIL, 1/2 &	330	Drive and crush	Qmf	Unconsolidated Sediments	X	X		Corner	Easy access
BH-010-a	275858.23	5056365.21	264.62	PRIVATE	N	Y	Y	Track		02N23-02900	MILLER, APRIL, 1/2 &	3010	Drive and crush	Qmf	Unconsolidated Sediments				Corner	
BH-011-a	280637.16	5056282.70	267.70	PRIVATE	Y	Y	Y	Truck		02N24-00700	ELLA RANCH, LLC	2310	Drive and crush.	Qmf	Unconsolidated Sediments	X	X	X		Shallow SS.
BH-012-a	284128.85	5056175.87	284.90	PRIVATE	Y	Y	N	Truck		02N24-00200	ELLA RANCH, LLC	190	Drive and crush	Qmf	Unconsolidated Sediments	X	X	X	Corner	Shallow SS
BH-013-a	284446.80	5055319.17	331.82	PRIVATE		Y	Y	Track		02N24-02200	MCCARTY, DAN &	3970	Clear and Cut	Tac	Sedimentary Rock	X	X	X	Corner	
BH-014-a	289738.10	5055182.63	0.00	PRIVATE	Y	Y	Y	Truck		02N25-00700	DOHERTY, MATTHEW P &	0	None	Qmf	Unconsolidated Sediments	X	X			
BH-015-a	294114.08	5055038.48		PRIVATE	Y	Y	Y	Truck		02N25-00400	KILKENNY LAND CO	210	Drive and crush	Qmf	Unconsolidated Sediments	X	X			
BH-016-a	300450.50	5054795.50	328.32	PRIVATE	N	Y	Y	Truck		02N26-01101	MATHENY, PATRICIA R, TRUSTEE	1520	Drive and crush	Qf	Unconsolidated Sediments	X	X		Corner	

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BH-019-a	307736.12	5054465.89		PRIVATE	P	N				02N27-02100	N & C LAND, LLC								HWY 207 Corner	
BH-020-a	309537.50	5054372.50		PRIVATE	Y	Y	Y	Truck		02N27-01800	HAWKINS COMPANY, INC.	390	Drive and crush	Tf	Igneous Rock	X	X	X	Corner	Easy Access.
BH-021-a	313697.50	5053732.50	404.26	PRIVATE	Y	Y	N	Truck		2N27000003000	HAWKINS CO INC	2990	Drive and crush.	Tf	Igneous Rock	X	X	X	Corner	
BH-022-a	315787.50	5050462.50	530.75	PRIVATE	Y	Y	Y	Truck		01N28-00400	LUCIANI, GEORGE & BEATRICE	170	Drive and crush	Tf	Igneous Rock	X	X	X	Corner	
BH-023-a	321891.36	5048754.00	577.39	PRIVATE	Y	N				01N28-00200	PINE CANYON RANCH, GP			Tf	Igneous Rock					Not accessible at time of site visit due to wet conditions.
BH-024-a	326742.81	5047396.05	635.51	PRIVATE	Y	N				1N29000000600	SCHILLER MARILYN			Tf	Igneous Rock				Angle	Not accessible at time of site visit due to wet conditions.
BH-025-a	332290.79	5046912.43	696.08	PRIVATE	Y	Y	Y	Track		1N29000000500	PENDLETON RANCHES INC		Drive and crush.	Tgn2	Igneous Rock	X	X	X	Angle	May be difficult to access due to CRP credits for landowners. Possibly access from the North, very long track. Entrance from South will require blading.
BH-026-a	334352.50	5044937.50	757.58	PRIVATE	Y	Y	Y	Truck/Track		1N30000001100	PENDLETON RANCHES INC		Drive and crush	Tgn2	Igneous Rock	X	X	X	Corner	Surface very slick when wet. Can truck (4x4) if dry. Some blading may be necessary.
BH-027-b	339514.88	5044651.88	760.39	ROAD		Y	Y	Truck		ROAD	ROAD	0	None	Tgn2	Igneous Rock	X	X	X		Shallow SS.
BH-028-b	346163.10	5044171.03	702.69	PRIVATE	Y	Y		Track		1N31000002300	ROBERTSON JOHN III & VIRGINIA (TRS) ETAL	4280	Drive and crush	Tf	Igneous Rock	X	X	X	Corner	Surface very slick when wet. Can possibly truck (4x4) if dry, stream crossing may be washed out at time of exploration, possible blading required.
BH-029-b	347477.50	5043747.50	632.53	PRIVATE	Y	Y	N	Track		1N31000002300	ROBERTSON JOHN III & VIRGINIA (TRS) ETAL	240	Drive and crush	Tgn2	Igneous Rock	X	X	X	Corner	Surface very slick when wet. Can possibly truck (4x4) if dry, stream crossing may be washed out at time of exploration, possible blading required.
BH-030-b	353096.12	5043493.16	542.68	PRIVATE	Y	Y	Y	Truck		1N31000003000	FILTER MARGARET WINGET	190	Drive and crush.	Tgn2	Igneous Rock	X	X	X	Corner	
BH-031-b	353082.50	5042772.50	578.42	PRIVATE	Y	Y	Y	Truck		1N31000003000	FILTER MARGARET WINGET	2780	Drive and crush.	Tf	Igneous Rock	X	X	X	Corner	
BH-032-b	359175.01	5042602.90	486.61	PRIVATE	Y	Y	Y	Truck		1N32000007500	KOCH MARY M (TRS)	1260	Drive and crush	Tmm	Sedimentary Rock	X	X	X	Angle	Locked gate
BH-033-b	360436.61	5041808.12	490.27	ROAD		Y	Y	Truck		ROAD	ROAD	50	None	Tmm	Sedimentary Rock	X	X	X	HWY 395 Corner	Drill on roadway or back into slope. Powerlines at fence line.
BH-034-b	360780.97	5039337.44	534.58	PRIVATE	Y	Y	Y	Truck		1S32A00002200	WEINKE AMANDA L	2790	Drive and crush.	Tmm	Sedimentary Rock	X	X	X	Corner	Enter from Porter road. Shallow Rock.

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BH-035-b	365605.59	5038916.90	695.87	PRIVATE	Y	N				1S33000001900	MILLER JOSEPH B			Tgn2	Igneous Rock					
BH-036-b	369982.50	5037463.40	1003.92	PRIVATE	Y	N				1S33000002300	BAUDER PATSY			Tgn2	Igneous Rock				Angle	
BH-037-b	371772.71	5038387.87	735.63	PRIVATE	Y	N		Heli		1S33000002400	PLATT BARBARA L			Tgr2	Igneous Rock				Angle	
BH-038-b	372643.94	5038118.60	954.41	PRIVATE	Y	N		Heli		1S33000002400	PLATT BARBARA L			Tgn2	Igneous Rock				Angle	
BH-039-b	374962.50	5038077.50	819.09	PRIVATE	Y	N		Heli		1S34000002900	UMBARGER DAVID ET AL			Tgr2	Igneous Rock				Angle	
BH-040-b	375838.06	5038556.24	1028.44	PRIVATE	Y	N		Heli		1S34000001501	ETTER RICK & ETTER JOHN			Tgn2	Igneous Rock				Angle	
BH-041-b	378376.42	5037951.67	1148.71	PRIVATE	Y	Y	Y	Truck		1S34000001900	SKILLMAN E MARGARET (LE) ETAL	1950	Drive and crush	Tf	Igneous Rock	X	X	X	Angle	Truck on dry roads only.
BH-042-b	379098.19	5038623.07	1158.55	PRIVATE	Y	Y	Y	Truck		1S34000001900	SKILLMAN E MARGARET (LE) ETAL	60	Drive and crush, Clear Debris	Tf	Igneous Rock	X	X	X	Angle	Truck on dry roads only.
BH-043-b	384531.47	5037949.21	1223.52	PRIVATE	Y	Y	N	Track		1S35000002800	CUNNINGHAM SHEEP CO	800	Clear Debris, Drive and crush	Tf	Igneous Rock	X	X	X	Angle	Good private road off Ross Road. Overgrown, truck if dry only. Minor clearing of fallen trees and debris.
BH-044-b	387751.04	5035839.68	1269.93	PRIVATE	Y	Y	Y	Track		1S35000005000	GALLATIN NE OREGON LAND & TIMBER LLC	130	Clear Debris, possible blading	Tgn2	Igneous Rock	X	X	X	Angle	Debris in roadway, roadway washed out. Road is fair with some bad spots. Possible blading.
BH-045-b	389069.48	5032265.64	1362.36	PRIVATE	Y	Y		Track		1S35000005000	GALLATIN NE OREGON LAND & TIMBER LLC	100	Possible blading, Drive and crush	Tcgn2	Igneous Rock	X	X	X	Angle	Rough, rocky road.
BH-046-b	391942.50	5031602.50	1324.98	PRIVATE	Y	Y	Y	Track		01S35E01100	GALLATIN NE OR LAND & TIMBER	1100	Clear Debris, blading, drive and crush	Tcgn2	Igneous Rock	X	X	X	Angle	Consider moving. Possibly upslope from other side, even if fire block is removed, no access to hole site.
BH-047-b	393252.05	5029980.97	1313.63	PRIVATE	Y	Y	Y	Track		02S36E01000	PENDLETON RANCHES INC	1530	Clear Debris, Drive and crush	Tcgn2	Igneous Rock	X	X	X	Angle	Logging Road
BH-048-b	396363.07	5025884.51	1177.66	Public		Y	Y	Track		02S36E00100	USA FOREST	4700	Possible bladed access. Clear brush	Tcgn2	Igneous Rock	X	X	X		
BH-049-b	398420.70	5024459.84	0.00	Public		Y	Y	Truck		02S36E00100	USA FOREST	200	Drive and crush	Tcgf	Igneous Rock	X	X	X		Good Access.
BH-050-b	401707.50	5021982.50	1094.83	PRIVATE	Y	N		Track		02S36E03800	SCHILLER, ROBERT G	5000	Drive and Crush	Tcgn2	Igneous Rock				Angle	Was not able to access along proposed roads, had to enter from gate along 84 and walk in. Therefore, proposed access route not verified. However, top of ridgeline is flat and could drive and crush over top.

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BH-051-b	402268.39	5020094.85	996.76	PRIVATE	Y	N		Track		03S36E00200	SCHILLER, MARILYN	6700	Drive and Crush	Tcgn2	Igneous Rock				Grande Ronde River Angle	Was not able to access along proposed roads, had to enter from gate along 84 and walk in. Therefore, proposed access route not verified. However, top of ridgeline is flat and could drive and crush over top.
BH-052-b	408464.02	5018088.14	1162.80	PRIVATE		N		Track		03S37E01300	WILLIAMS, JOHN COLLIER	8650	Drive and Crush	Tcgf	Igneous Rock				Landslide Deposit Angle	
BH-053-b	409772.38	5015773.88	1246.93	PRIVATE		N		Truck		03S37E01302	SEYFRIED, ANNE KRAUSE 1/2	90		Tcgf	Igneous Rock					No ROE. Drill on roadway. Gate on Morgan Lake Rd ~0.8 miles from site.
BH-056-b	418937.50	5004947.50	1237.97	PRIVATE	Y	Y	N	Track		04S38E05700	BOOTHMAN RANCHES INC	3540	Clear debris, Drive and crush	Tpd	Igneous Rock	X	X	X	Angle	Track access may be difficult due to large boulders and debris. If not accessible, consider moving to flat meadow between b-279 and b-280.
BH-057-b	421157.50	5002097.50	1335.14	PRIVATE	Y	N				04S38E05600	N & C LAND LLC			Tcgf	Igneous Rock				Angle	Could not get access along proposed route due to ROE restrictions. Verified no track or truck access from east side of location.
BH-058-b	421567.50	5001252.50	1222.37	PRIVATE	N	N				05S38E00100	COUNSELL, DALE L ETAL			Qls	Landslide Debris				Landslide Deposit	
BH-059-b	423902.50	4998327.50	1034.05	PRIVATE	Y	Y	N	Truck		05S39E00900	N & C LAND LLC	90	Drive and crush.	Qu	Unconsolidated Sediments	X	X		I-84	Access from road, drill in field. Fiber optics, and gas lines along roadway.
BH-060-b	426245.24	4996497.40	1055.60	PRIVATE	Y	N				05S39E02800	WARD AGRICULTURAL PROPERTIES	8560	Bladed access	Tob	Igneous Rock					CRP Land - No access when wet
BH-061-b	431113.98	4992227.24	1078.08	PRIVATE	Y	Y	N	Track		05S39E04300	N & C LAND LLC	4560	Clear and Cut, Drive and crush	TRPwc	Igneous Rock	X	X	X	HWY 237 Angle	Will need to track up hill. Enter through gate along HWY 237, private 2-track road along fenceline.
BH-062-b	432840.01	4987468.92	1053.14	PRIVATE	Y	N				06S40E00100	SMOKE RANCH LP									
BH-063-b	434099.67	4984185.22	1079.80	PRIVATE	Y	N				06S40E01200	SMOKE RANCH LP			TRv	Igneous Rock					Access restricted due to landowner not wanting visitors driving along wet roads.
BH-064-b	435545.13	4980072.65	1190.07	PRIVATE	P	N				07S40E00600	THE DLX LLC			Ta	Sedimentary Rock					Access restricted due to landowner not wanting visitors driving along wet roads.
BH-065-b	436774.54	4977101.30	1334.25	PRIVATE	P	N				07S40E00600	THE DLX LLC			TRqd	Igneous Rock					Access restricted due to landowner not wanting visitors driving along wet roads.
BH-066-b	437988.06	4973985.57	1130.96	PRIVATE		Y	N	Truck		07S40EROADS		0	None	Tob	Igneous Rock	X	X	X		Move to N. side of Colton Pit Road. Bring water!!
BH-067-b	439010.08	4971361.99	1038.39	PRIVATE	Y	Y	Y	Truck		08S40E00200	COLTON, CHARLES M & SONS INC	470	Drive and crush	Tob	Igneous Rock	X	X	X	Unnamed East Baker Fault	Gate at bend near intersection of Shetky and Bidwell.
BH-068-b	439614.66	4969809.82	1034.06	PRIVATE	Y	Y	N	Truck		08S40E00200	COLTON, CHARLES M & SONS INC	5690	Drive and crush	Qal	Unconsolidated Sediments	X	X		Angle	Gate at bend near intersection of Shetky and Bidwell.

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BH-070-c	445698.52	4963485.82	1202.84	PRIVATE		N				08S41E00800	USA			Tob	Igneous Rock				Angle	
BH-071-c	444889.21	4962717.20		PRIVATE		N				09S41E00100	USA BLM (INTERPRETIVE CENTER)								Angle	
BH-072-c	442992.50	4960272.50	1297.73	PRIVATE		Y	N	Heli		09S41E01100	USA	0	None	TRi	Igneous Rock	X	X	X	Angle	
BH-073-c	443654.72	4954939.45	1455.35	PRIVATE		N				09S41E03400	NELSON, DEAN L, REX O & SUSAN			Tyb	Igneous Rock					
BH-074-c	444188.83	4950009.60	1211.11	PRIVATE	Y	Y		Truck		10S41E01900	HAT BRAND LAND & LIVESTOCK,LL C	620	Drive and crush	Tst	Sedimentary Rock	X	X	X	I-84 Angle	Enter locked gate south of property. IGM.
BH-075-c	447599.26	4948874.30	1224.42	Public		Y	N	Track		10S41E02800	USA BLM	1840	Drive and crush	TRPbe	Sedimentary Rock	X	X	X	Angle	Enter off US-30, through gate. Track on overgrown road, uphill.
BH-077-d	459728.13	4942492.05	1016.30	PRIVATE	Y	Y	Y	Truck		11S42E00200	TROY, G WAYNE & HELEN M TTEE	160	Clear brush, Drive and crush	Tst	Sedimentary Rock	X		X		
BH-078-d	462878.12	4940220.66	910.22	PRIVATE		Y	Y	Track		11S43EROADS		0	None	Tl	Sedimentary Rock	X		X	Talus/Colluvium	ST, IGM. Move to roadway
BH-079-d	466328.59	4937732.50	917.61	PRIVATE	Y	Y	N	Truck		11S43E01800	FLACK DURKEE LP	0	None	Qal	Unconsolidated Sediments	X	X		Angle	Move to roadway near d-044. SM, IGM.
BH-080-d	470447.50	4934762.50	1023.52	PRIVATE	Y	N				11S44E01300	KEITH, JOSEPH M ETAL			Tl	Sedimentary Rock				Corner	Was not able to get ROE along proposed route.
BH-081-d	471184.58	4930409.69	928.70	Public		Y	N	Truck		12S44E00100	USA BLM	0	None	Tcr	Igneous Rock	X		X	Angle	Back into cut along roadway.
BH-082-d	470692.50	4928432.50	789.06	PRIVATE	Y	Y	N	Heli		12S44E1900800	WICK, JEFFERY P & DORI A			Tcr	Igneous Rock	X	X	X	Angle	No access. Consider deleting
BH-083-d	472652.50	4924612.50	712.70	PRIVATE	Y	Y	Y	Truck		12S44E03100	DOMAN, LINDA J	130	Drive and crush	Qal	Unconsolidated Sediments	X	X		Angle	Phone lines, Power lines, rail lines, natural gas lines.
BH-084-d	473549.09	4920924.58	779.40	PRIVATE		N				13S44E01500	HAMMOND RANCH LLC #3			Jw	Sedimentary Rock				Angle	
BH-085-d	473337.50	4916067.50	948.11	PRIVATE	Y	Y	N	Track		13S44E03200	DURBIN CREEK RANCHES PTR	650	Drive and crush	Tb	Igneous Rock	X	X	X	Landslide Deposit Angle	Long track. Follow power line road. RC, Shallow rock, Possible landslides
BH-086-d	476075.16	4912417.77	786.42	PRIVATE	N	N				14S44E01100	BOKIDES PROPERTIES, LLC			Tg	Igneous Rock				Angle	

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BH-087-d	472362.50	4908587.50	1192.79	PRIVATE	Y	Y	N	Track		14S44E02500	MAKI, JACKIE A ETAL	1450	Drive and crush	Tg	Igneous Rock	X		X		Decent 2-track road system throughout area. Choose most direct path to boring location. IGM
BH-088-d	470414.40	4907307.70	1258.06	PRIVATE	Y	Y	N	Track		14S44E02400	OREGON, STATE OF (STATE LANDS)	450	Drive and crush	Jwj	Sedimentary Rock	X	X	X		Decent 2-track road system throughout area. Choose most direct path to boring location.
BH-089-d	467217.50	4905207.50	1268.29	PRIVATE	Y	Y		Track		15S43E00100	MAKI, WILLIAM A ETAL		Drive and crush	Tg	Igneous Rock	X	X	X	Angle	Decent 2-track road system throughout area. Choose most direct path to boring location.
BH-090-d	464972.96	4904774.78	1181.98	Public		Y		Track		15S43E00300	U S A		Drive and crush	Jwj	Sedimentary Rock	X	X	X		Decent 2-track road system throughout area. Choose most direct path to boring location.
BH-091-d	459508.28	4903721.14	1080.79	PRIVATE	Y	N		Track		15S43E00600	WRIGHT, LEE & GLENORA F TRUST			Tob	Igneous Rock				Angle	
BH-093-d	453872.50	4902542.50	956.14	PRIVATE		N				15S42E00600	DAVIS LAND & LIVESTOCK CO			Tst	Sedimentary Rock				Angle	
BH-094-d	452642.50	4900467.50	983.87	PRIVATE		Y	N	Track		15S42EROADS		820	Drive and crush	JTRs	Sedimentary Rock	X	X	X	HWY 26 Angle	Track up slope, offset to top of hill. IGM, Look at routes direct and through ODOT property (No ROE at this time)
BH-095-d	452932.15	4899294.48	982.16	PRIVATE	N	N				15S42E02500	THOMSON, MARK A & CAROL A			Tgo	Igneous Rock				Angle	Consider deleting of road through property the north is not truck accessible (no ROE at this time)
BH-096-d	452863.54	4894967.29	866.33	Public		N				16S42E00800	U S A				Sedimentary Rock				Angle	
BH-097-d	454232.71	4893754.48	856.29	PRIVATE		N				16S42E00500	HEID, MONTE ETAL								Angle	
BH-098-d	456200.51	4887858.77	0.00	Public		N				16S42E01300	U S A								Cottonwood Mountain Fault	
BH-099-d	459165.96	4885495.64	1015.29	Public		Y	N	Heli		17S42E00200	U S A	0	None	Tst		X	X	X	Angle	
BH-100-e	461978.4815	4880045.44	977.50	Public		Y	N	Heli		17S43E00400	U S A	0	None	Tst	Sedimentary Rock	X	X	X		Move to roadway
BH-101-e	461050.64	4874881.78	825.89	PRIVATE	P	Y	Y	Truck		18S43E00400	J R LAND & LIVESTOCK INC	1010	Drive and crush	Tst	Sedimentary Rock	X		X	Angle	Shallow rock
BH-102-e	461278.40	4869939.57	940.81	Public		Y	Y	Heli or Track		18S43E01100	U S A	750	Drive and crush	Qas1	Unconsolidated Sediments	X	X			Very long track to get to site. Possible Heli will be easier and more economical.
BH-104-owy	463188.33	4863941.41	959.28	Public		Y	Y	Track		19S43E02200	U S A	250		Tbcu	Igneous Rock	X	X	X	Angle	Possible access without taking down fence, however we do not have ROE at this time. IGM

1. Boring locations developed by Shaw on alignments current as of 10/13/2011.
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Table C-1 Summary of Proposed Boring Location for Boardman to Hemingway – IPC Proposed Routes and Alternates

Boring ID	E	N	Elev (meters)	Owner Type	ROE	Access Route Confirmed?	Same As T-Line	Rig Type	Access Restrictions	Access Parcel ID	Parcel Owner	Estimated Distance of Overland Travel (ft)	Access Disturbance (overland)	Anticipated Geology (From Geologic Database)	Category	Hollow Stem Auger (HSA)	Mud Rotary (MR)	Rock Core (RC)	Transmission Line Feature	Notes
BH-105-owy	465382.40	4860854.37	890.00	Public		Y	Y	Truck		19S43E00100	U S A	70		Qas1	Unconsolidated Sediments	X	X		HWY 207	May switch to Track to accomodate owy-a-025
BH-106-owy	467089.89	4858950.13	829.99	Public		Y	N	Track		19S43E00100	U S A	5150		Tic	Sedimentary Rock	X		X	Angle	Track overgrown road.
BH-107-owy	470420.40	4858453.15	736.00	PRIVATE		N				19S44E00100	PROBERT FAMILY TRUST			Qal	Unconsolidated Sediments	X	X			
BH-108-owy	472253.78	4858415.92	784.41	PRIVATE		N				19S44E00100	PROBERT FAMILY TRUST			Qas1	Unconsolidated Sediments	X	X		Angle	
BH-109-owy	477888.39	4855122.36	826.00	PRIVATE		Y	Y	Track		20S44E00100	PROBERT FAMILY TRUST	1140		Qal	Unconsolidated Sediments		X		Angle	
BH-110-owy	480042.36	4850220.57	940.97	Public		Y	Y	Track		20S45E00100	U S A	220	Drive and crush	Qas1	Unconsolidated Sediments	X	X			
BH-111-owy	482548.79	4845110.81	876.00	Public		Y	N	Heli		21S45E00100	U S A			Tig	Sedimentary Rock	X		X	Angle	If access route is bladed, will be track rig.
BH-113-owy	485980.00	4842480.00	702.00	Public		Y	Y	Track		21S45E00100	U S A	130	Drive and crush	Qal	Unconsolidated Sediments		X	X	Owyhee River Angle	Track to accomodate owy-a-109
BH-114-owy	488077.84	4841072.07	859.21	Public		Y	Y	Track		21S46E04000	U S A	320	Drive and crush	Qas	Unconsolidated Sediments	X	X		Angle	Need to track in from west of boring location. Proposed access path was closed.
BH-115-owy	490160.76	4834891.31	918.79	Public		Y	N	Track		22S46E00300	U S A	3350		Tbcm	Igneous Rock	X	X	X		
BH-116-owy	491722.79	4831133.03	831.33	Public		Y	N	Track		22S46E00300	U S A	5050	Drive and crush	Tic	Sedimentary Rock	X	X	X		
BH-117-owy	493115.82	4828063.33	770.79	Public		Y	Y	Truck		23S46E00800	U S A	270	Drive and crush	Tic	Sedimentary Rock	X		X	Angle	
BH-118-owy	493135.79	4826752.39		Public		Y	Y	Truck		23S46E00800	U S A	270	Drive and crush	Tstl	Sedimentary Rock	X		X	Angle	
BH-119-e	495774.39	4823500.70	762.15	PRIVATE	Y	N				23S46E01900	WOOD, FLOYD D				Igneous Rock				Angle	
BH-120-e	497887.46	4821753.93	926.75	ID_BLM		N								Tpd						Proposed rig access route not traveled due to ROE restrictions.
BH-121-e	502278.97	4818410.98	828.25	ID_BLM		N								Tmf	Igneous Rock					Proposed rig access route not traveled due to ROE restrictions.

1. Boring locations developed by Shaw on alignments current as of 10/13/2011.
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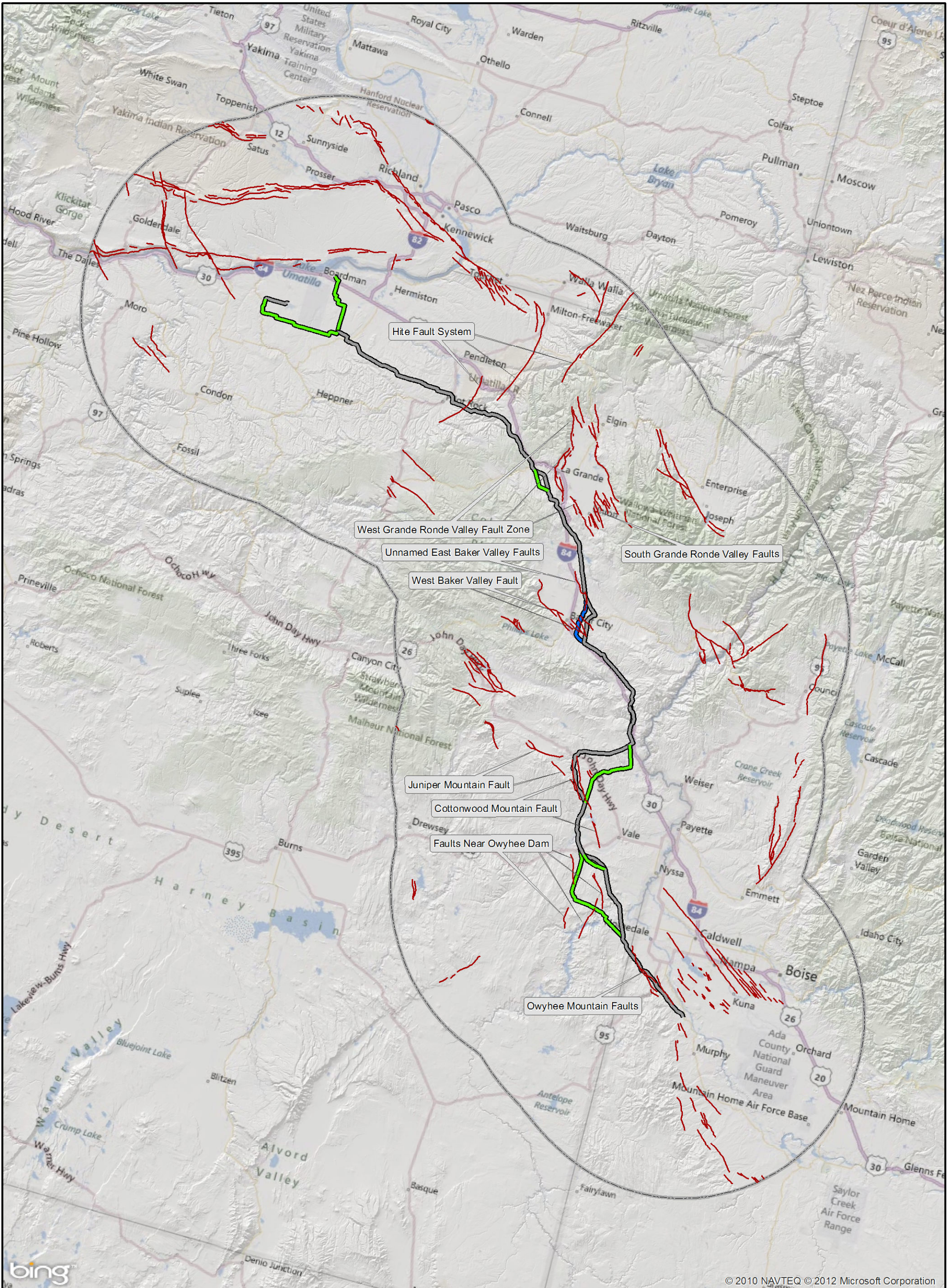
Table C-1 Summary of Proposed Boring Location for Boardman to Hemingway – IPC Proposed Routes and Alternates

Boring ID	E	N	Elev (meters)	Owner Type	ROE	Access Route Confirmed?	Same As T-Line	Rig Type	Access Restrictions	Access Parcel ID	Parcel Owner	Estimated Distance of Overland Travel (ft)	Access Disturbance (overland)	Anticipated Geology (From Geologic Database)	Category	Hollow Stem Auger (HSA)	Mud Rotary (MR)	Rock Core (RC)	Transmission Line Feature	Notes
BH-122-e	504287.50	4815832.50		ID_BLM		Y								Tmf	Igneous Rock					Proposed rig access route not traveled due to ROE restrictions.
BH-123-e	506902.50	4815557.50	771.01	PRIVATE	Y	Y	Y	Track		RP02N05W220010A	AEVERMANN, LONNY	360	Drive and crush	Tpd	Igneous Rock	X	X	X	Angle	
BH-125-e	515173.36	4808979.30	813.83	ID_BLM		Y	Y	Track				200	Drive and crush	Tmf	Igneous Rock	X		X		Shallow Rock
BH-126-e	518277.50	4806762.50		ID_BLM		Y	Y	Truck				120	Drive and crush	Tmf	Igneous Rock	X		X	Angle	Shallow Rock. This access road is very rough, may require track rig.
BH-127-e	521495.91	4803900.55	817.74	ID_BLM		Y	N	Truck				180	Drive and crush	Tpd	Igneous Rock	X		X	Angle	Shallow Rock. Follow roadway proposed by Kalib
BH-128-e	523405.60	4802827.31	837.41	ID_BLM		N								Kii	Igneous Rock				Angle	Access restricted due to BLM Restrictions on motorized vehicles. Need to determine what this restriction entails, if it is a permanent restriction, these roadways will likely be very overgrown by the time the drilling crews arrive on site.
BH-129-e	524062.50	4802096.25	818.55	ID_BLM		Y	N	Truck				40	Drive and crush	Kii	Igneous Rock	X		X	Angle	
BH-130-e	526674.03	4801460.19	749.85	ID_BLM		Y	N	Truck				100	Drive and crush	Tpd	Igneous Rock	X		X	Angle	
BH-131-e	527466.80	4800011.53	727.06	PRIVATE		Y	Y	Truck		RP01S03W114202A	IDAHO POWER	210	None	Tpd	Igneous Rock	X	X	X		
BH-209-138dc						N													Dead End	
BH-207-138dc						N													Angle	
BH-204-138dc						N													Angle	

1. Boring locations developed by Shaw on alignments current as of 10/13/2011.
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3. Rock core may not be necessary in soft sedimentary rock.

***Appendix D***  
***Seismic Evaluation***

***Quaternary Faults, Historical Earthquakes,  
and Acceleration Maps***

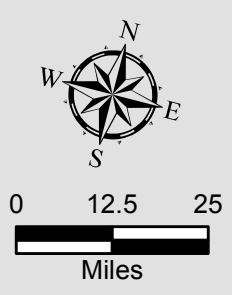


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**LEGEND**

- ALIGNMENTS**
- IPC Alternative —
  - IPC Proposed Route —
  - NEPA Alternative —

- FEATURES**
- 50 Mile Project Buffer
  - Fault —
- Source: USGS



Boardman - Hemingway  
500vK Transmission Line Project  
Oregon - Idaho

**QUATERNARY FAULTS**

October 2012 22-1-02947-130

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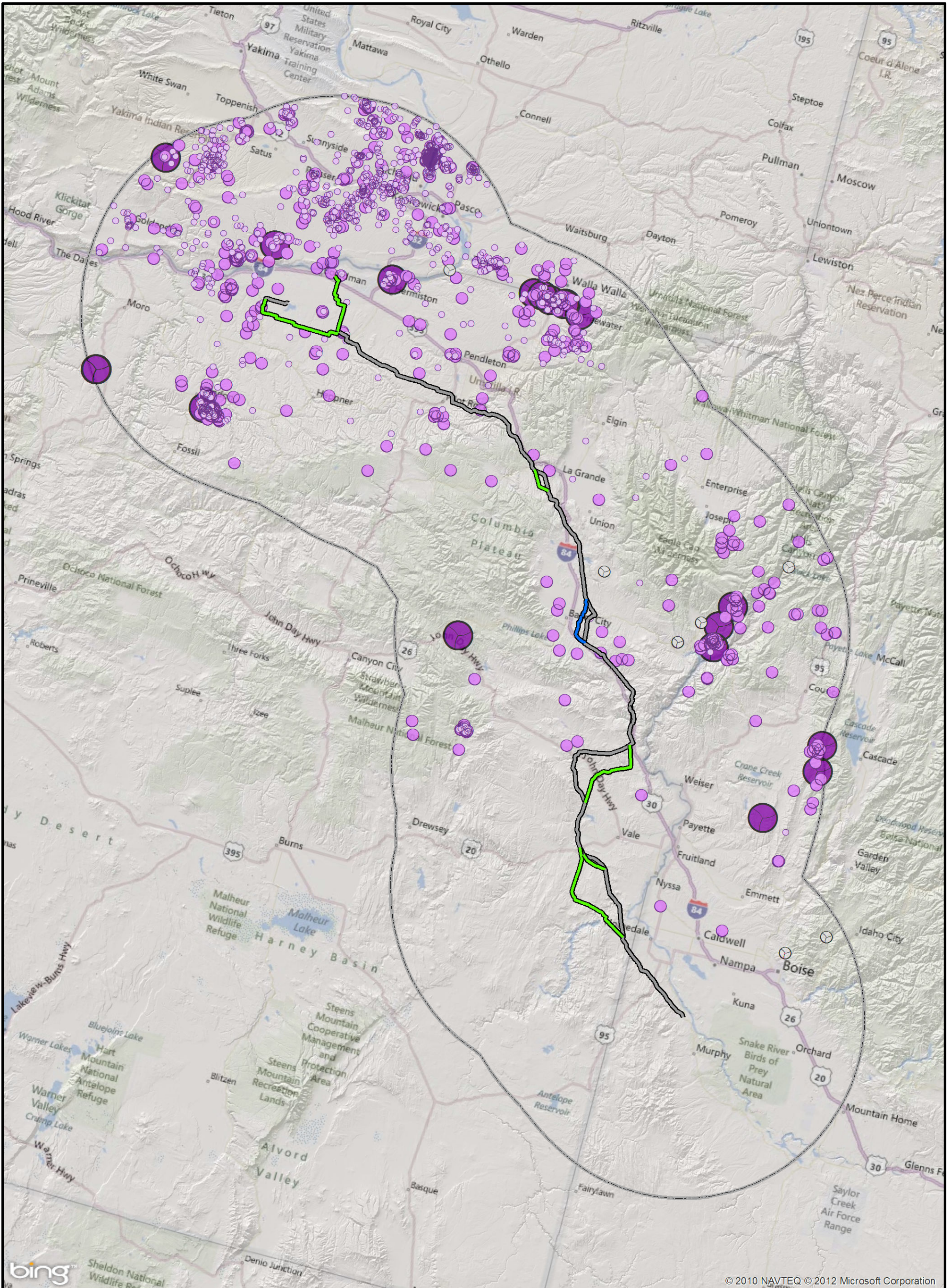
D-1

Table D-1 Summary of Significant Faults within 5 Miles of the Proposed Alignments

Fault Name	Fault ID	Primary County, State	Time of Most Recent Deformation <sup>1</sup>	Slip Rate (mm/yr)	Slip Direction	Slip Sense <sup>2</sup>	Dip Direction	Length (km)
Owyhee Mountains fault system	636	Twin Falls County, ID	<1,600,000 Ma	<0.2	N NE	Normal	NE	206
South Grande Ronde Valley faults	709	Union County, OR	<750,000 ka	<0.2	N NE	Normal	NE	23
Unnamed East Baker Valley faults	712	Baker County, OR	<1,600,000 Ma	<0.2	N SW	Normal	SW	27
West Baker Valley fault	804	Baker County, OR	<130,000 ka	<0.2	N NE / N SW	Normal	NE / SW	33
Juniper Mountain fault	805	Malheur County, OR	<15,000 ka	<0.2	N N	Normal	N	17
Cottonwood Mountain fault	806	Malheur County, OR	<15,000 ka	<0.2	N NE	Normal	NE	42
Faults near Owyhee Dam (Class B)	808	Malheur County, OR	<1,600,000 Ma	<0.2	N NE	Normal	NE	37
West Grande Ronde Valley fault zone, Mount Emily section	802a	Union County, OR	<15,000 ka	<0.2	N NW	Normal	E	29
West Grande Ronde Valley fault zone, La Grande section	802b	Union County, OR	<15,000 ka	<0.2	N NE	Normal	NE	15
West Ronde Valley fault zone, Craig Mountain section	802c	Union County, OR	<15,000 ka	<0.2	N SW / N E	Normal	SW / E	10
J ite fault system, Thorn Hollow sectiop	845c	Umatilla County, OR	<130,000 ka	<0.2	N NE	Sinistral	NW	44
Hite fault system, Agency section	845d	Umatilla County, OR	<1,600,000 Ma	<0.2	N NE	Sinistral	NW	28

1. Ma = million years ago, ka = thousand years ago

2. Sense of movement for a fault is based on the angle of dip of the fault and the relative direction of movement across the fault. Terms used to describe sense of movement include dip-slip, normal, reverse, thrust, strike-slip, dextral (right-lateral), sinistral (left-lateral), and oblique.



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**LEGEND**

**ALIGNMENTS**

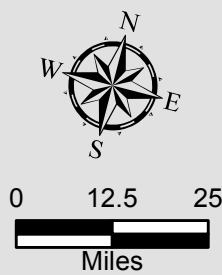
- IPC Alternative —
- IPC Proposed Route —
- NEPA Alternative —

**MAGNITUDE**

- Unknown
- Less Than 2.0
- 2.1 - 3.9
- Greater Than 4.0

**BOUNDS**

- 50 Mile Project Buffer



Boardman - Hemingway  
500kV Transmission Line  
Oregon - Idaho

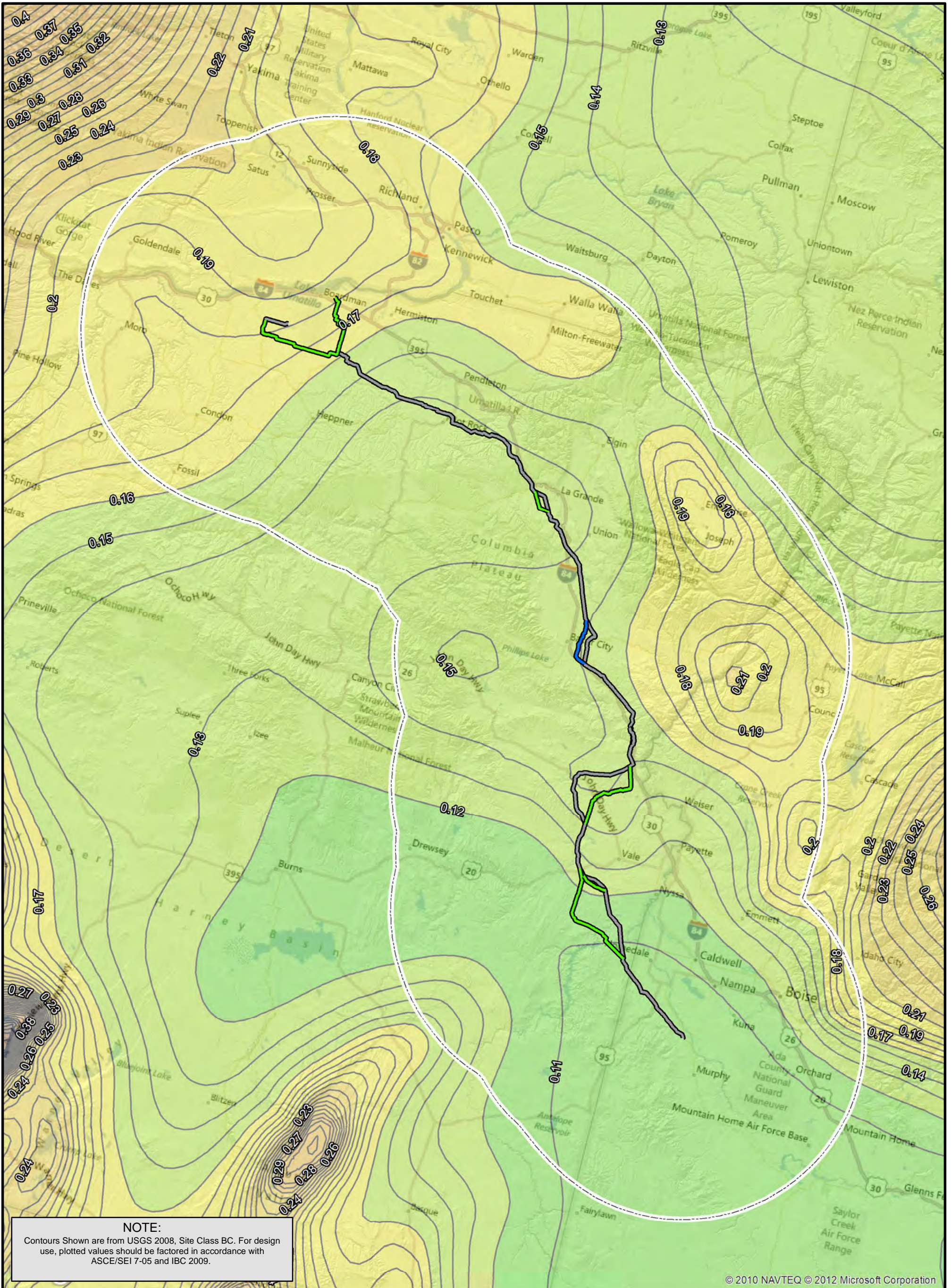
**HISTORICAL EARTHQUAKES**

August 2012

22-1-02947-100

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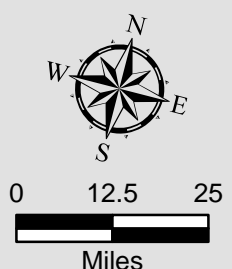
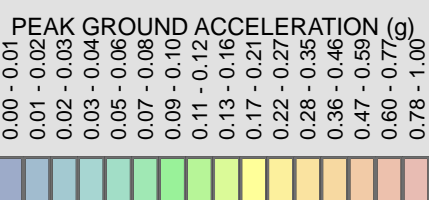
D-2



**LEGEND**

- ALIGNMENTS**  
 IPC Alternative  
 IPC Proposed Route  
 NEPA Alternative

- BOUNDS**  
 50 Mile Project Buffer  
 Source: USGS 2008



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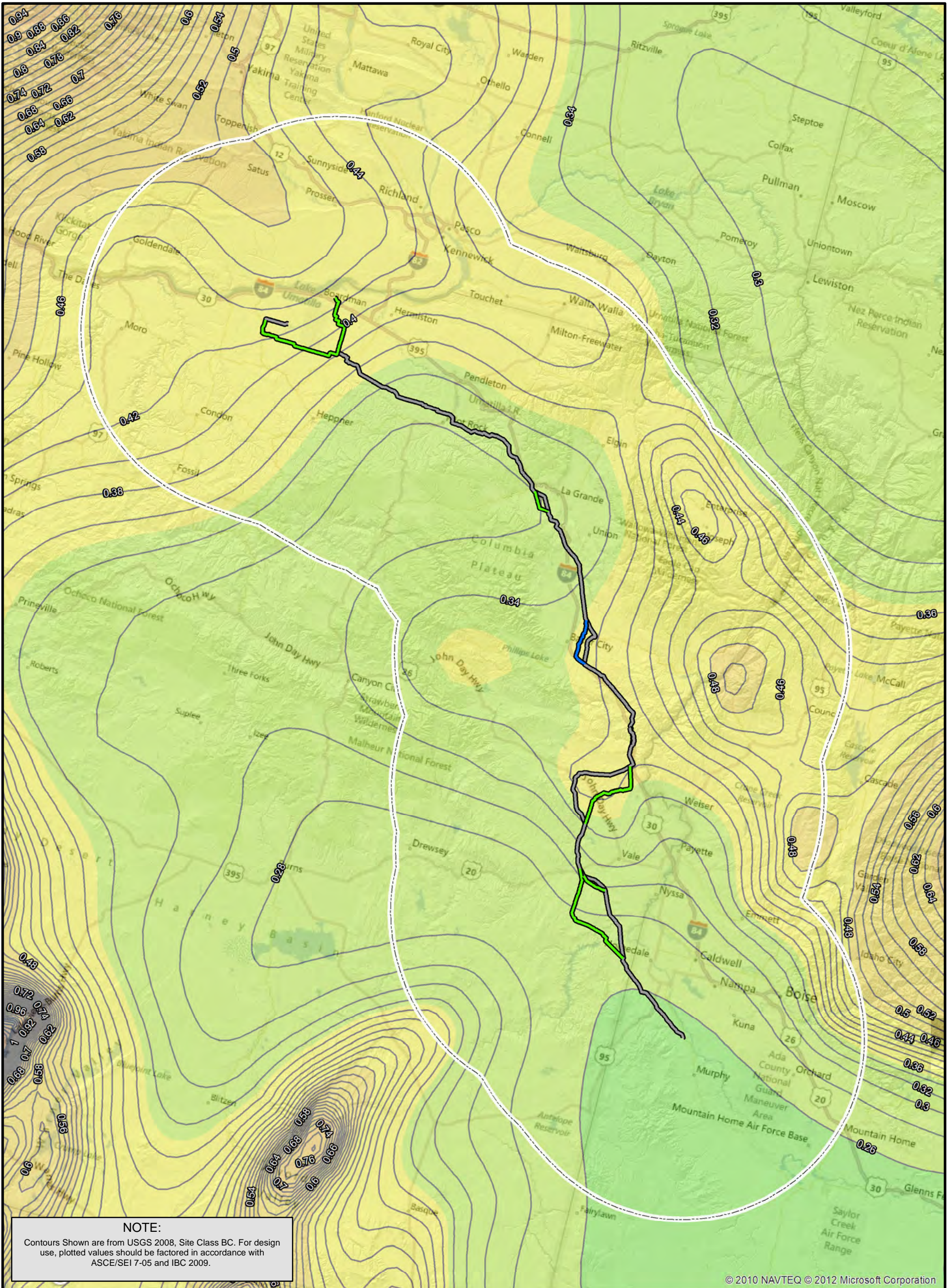
Boardman - Hemingway  
500kV Transmission Line  
Oregon - Idaho

**Peak Ground Acceleration  
2,500 YR RI**

November 2012 22-1-02947-100

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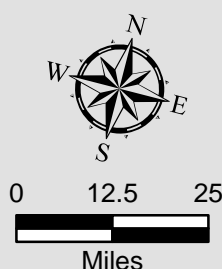
**LEGEND**

- ALIGNMENTS**
- IPC Alternative
  - IPC Proposed Route
  - NEPA Alternative

- BOUNDS**
- 50 Mile Project Buffer
- Source: USGS 2008

**PERIOD SPECTRAL ACCELERATION (g)**

0.00 - 0.03	0.03 - 0.04	0.04 - 0.06	0.06 - 0.08	0.08 - 0.10	0.10 - 0.14	0.14 - 0.19	0.19 - 0.26	0.26 - 0.35	0.35 - 0.48	0.48 - 0.65	0.65 - 0.88	0.88 - 1.19	1.19 - 1.62	1.62 - 2.21	2.21 - 3.00g
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Boardman - Hemingway  
500kV Transmission Line  
Oregon - Idaho

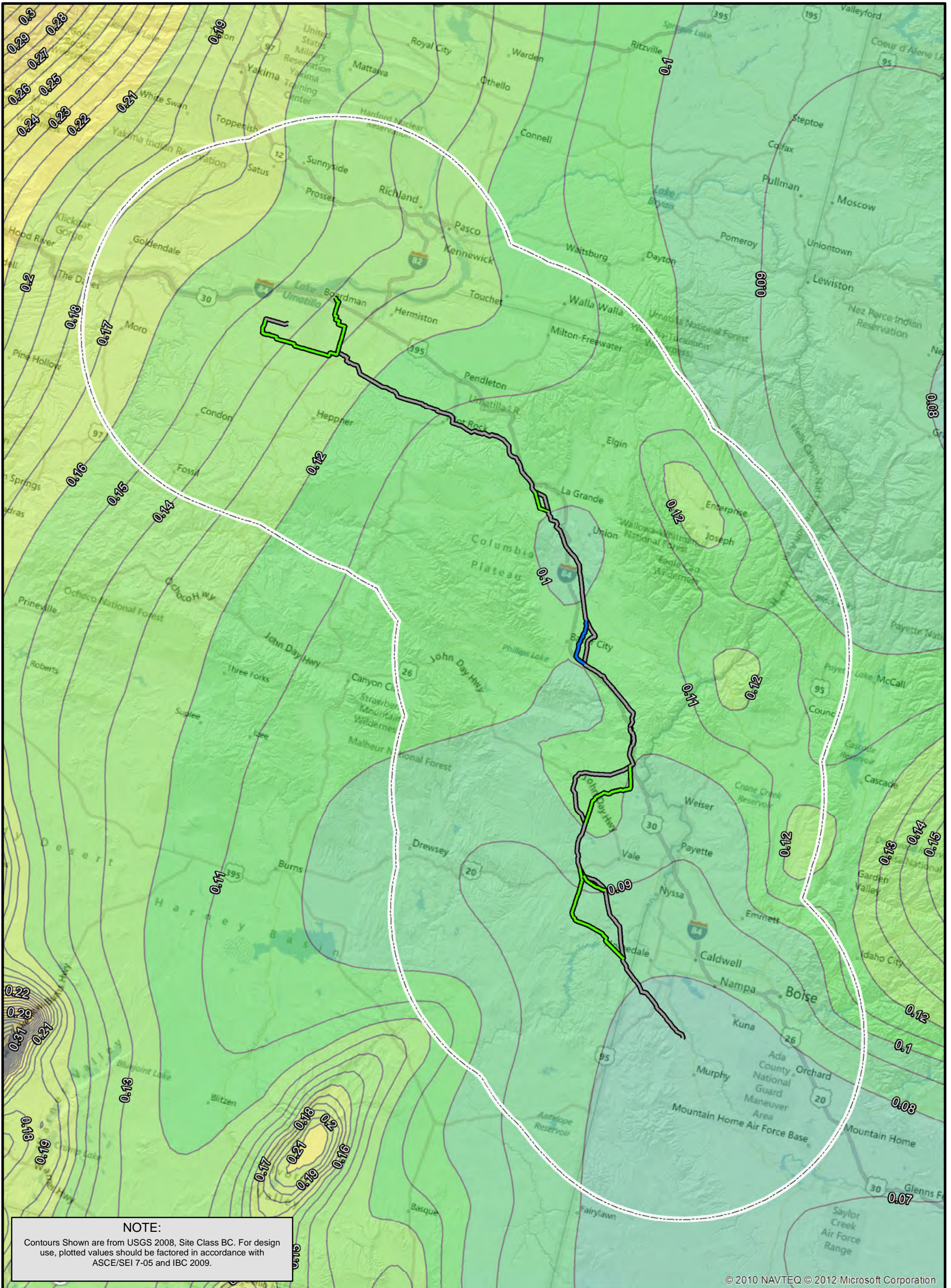
**0.2 sec Period Spectral Acceleration  
2,500 YR RI**

November 2012

22-1-02947-100

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**NOTE:**  
Contours Shown are from USGS 2008, Site Class BC. For design use, plotted values should be factored in accordance with ASCE/SEI 7-05 and IBC 2009.

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**LEGEND**

<b>ALIGNMENTS</b>	<b>BOUNDS</b>	<b>PERIOD SPECTRAL ACCELERATION (g)</b>
IPC Alternative	50 Mile Project Buffer	0.00 - 0.01
IPC Proposed Route		0.01 - 0.02
NEPA Alternative		0.02 - 0.03
	Source: USGS 2008	0.03 - 0.04
		0.04 - 0.05
		0.05 - 0.06
		0.06 - 0.07
		0.07 - 0.08
		0.08 - 0.09
		0.09 - 0.10
		0.10 - 0.11
		0.11 - 0.12
		0.12 - 0.13
		0.13 - 0.16
		0.16 - 0.21
		0.21 - 0.27
		0.27 - 0.35
		0.35 - 0.46
		0.46 - 0.59
		0.59 - 0.77
		0.77 - 1.00(g)

0 12.5 25  
Miles

Boardman - Hemingway  
500kV Transmission Line  
Oregon - Idaho

**1.0 sec Period Spectral Acceleration  
2,500 YR RI**

November 2012 22-1-02947-100

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**D-5**