

APPENDIX B: BEACHIE CREEK AND LIONSHEAD FIRES

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ONLINE WEB MAP

<https://experience.arcgis.com/experience/3da30bdf3b6442d09f5a4937e00245b1>



Map of the Beachie Creek-Lionshead Fire Study Area, Marion and Linn Counties, Oregon

2025

Open File Report O-25-09

Debris Flow Hazard, Risk, and Risk Reduction in the Eagle Creek, Beachie Creek-Lionshead, Holiday Farm, and Archie Creek Fire Areas, Multnomah, Hood River, Marion, Lane, and Douglas Counties, Oregon

APPENDIX B, FIGURE B-1

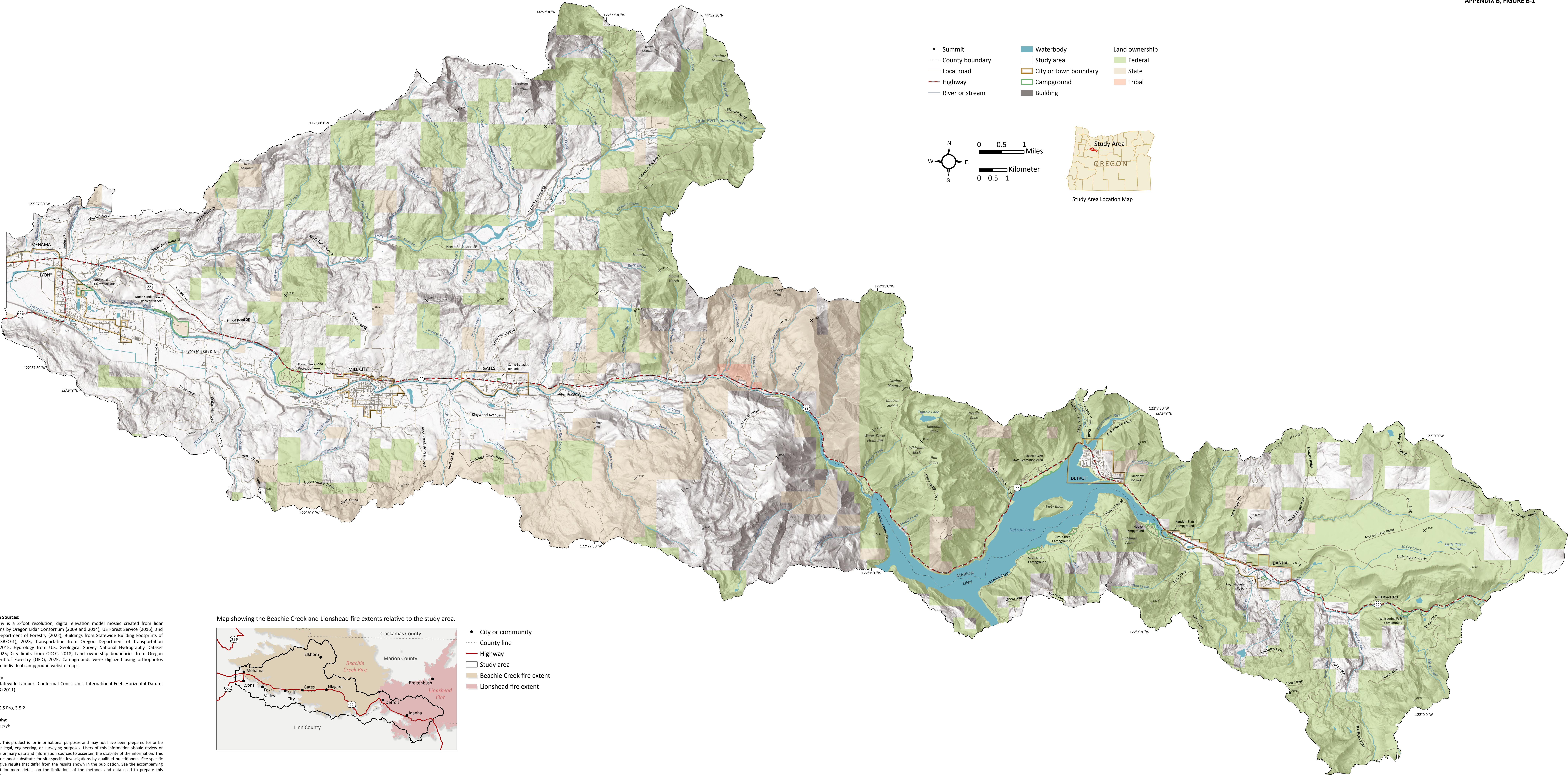


































































Table B-1. Asset inventory of Beachie Creek-Lionshead study area										
Beachie-Lionshead Study Area Asset Inventory by Land Use Categories										
			Agricultural	Commercial	Educational	Government	Industrial	Religious	Residential	Total
										
Detroit	Buildings		56	13	2	3	0	2	239	315
	Permanent Residents		3	3	0	0	0	0	404	411
	Value		\$8,417,806	\$4,595,087	\$2,348,886	\$547,152	\$0	\$659,490	\$57,931,933	\$74,500,354
	Critical Facilities*		0	0	0	0	0	0	0	0
Gates	Buildings		112	4	0	1	2	1	207	327
	Permanent Residents		4	0	0	0	0	0	429	432
	Value		\$17,972,040	\$2,745,615	\$0	\$290,550	\$749,160	\$451,820	\$52,878,602	\$75,087,787
	Critical Facilities		0	0	0	0	0	0	0	0
*Critical facilities are services essential to public health and safety, emergency response, or vital community services, e.g., hospitals, fire stations, water treatment plants										

Beachie-Lionshead Study Area Asset Inventory by Land Use Categories, Continued										
—			Agricultural 	Commercial 	Educational 	Government 	Industrial 	Religious 	Residential 	Total
Idanha	Buildings		46	14	0	5	0	0	94	159
	Permanent Residents		0	0	0	0	0	0	155	155
	Value		\$6,000,120	\$9,158,148	\$0	\$1,477,685	\$0	\$0	\$19,839,181	\$36,475,134
	Critical Facilities		0	0	0	2	0	0	0	2
Lyons	Buildings		454	39	6	11	8	4	566	1,088
	Permanent Residents		0	0	0	0	0	0	1,373	1,373
	Value		\$31,900,200	\$19,866,402	\$8,577,876	\$5,589,736	\$3,442,080	\$5,800,320	\$175,281,262	\$250,457,876
	Critical Facilities		0	0	0	10	0	0	0	10
Mehama	Buildings		54	13	0	1	5	1	108	182
	Permanent Residents		0	0	0	0	0	0	204	204
	Value		\$10,128,240	\$7,873,107	\$0	\$792,300	\$2,958,720	\$683,050	\$27,320,859	\$49,756,276
	Critical Facilities		0	0	0	0	0	0	0	0

Beachie-Lionshead Study Area Asset Inventory by Land Use Categories, Continued										
—			Agricultural 	Commercial 	Educational 	Government 	Industrial 	Religious 	Residential 	Total
Mill City	Buildings		343	27	13	5	0	4	905	1,297
	Permanent Residents		0	0	0	0	0	0	1,847	1,847
	Value		\$22,097,640	\$11,693,559	\$24,737,472	\$4,575,219	\$0	\$4,395,650	\$253,032,644	\$320,532,184
	Critical Facilities		0	0	12	0	0	0	0	12
Linn County, Unincorporated	Buildings		1,032	17	0	0	136	10	491	1,686
	Permanent Residents		0	0	0	0	0	0	1,208	1,208
	Value		\$152,508,000	\$7,456,250	\$0	\$0	\$159,549,480	\$11,322,860	\$168,243,965	\$499,080,555
	Critical Facilities		0	0	0	0	0	0	0	0
Marion County, Unincorporated	Buildings		473	6	0	38	0	0	576	1,093
	Permanent Residents		0	0	0	0	0	0	1,132	1,132
	Value		\$94,221,960	\$2,684,011	\$0	\$18,836,177	\$0	\$0	\$154,867,786	\$270,609,934
	Critical Facilities		0	0	0	1	0	0	0	1

Beachie-Lionshead Study Area Asset Inventory by Land Use Categories, Continued										
—			Agricultural 	Commercial 	Educational 	Government 	Industrial 	Religious 	Residential 	Total
Total in Beachie-Lionshead Study Area	Buildings		2,570	133	21	64	151	22	3,186	6,147
	Permanent Residents		7	3	0	0	0	0	6,752	6,762
	Value		\$343,246,006	\$66,072,179	\$35,664,234	\$32,108,819	\$166,699,440	\$23,313,190	\$909,396,232	\$1,576,500,100
	Critical Facilities		0	0	12	13	0	0	0	25
Beachie-Lionshead Study Area Highways and Roads										
Highways (mi)				Local Roads (mi)				Total (mi)		
42				384				426		
Beachie-Lionshead Study Area Local Campgrounds										
John Neal Memorial Park										
North Santiam State Recreation Area										
Detroit Lake State Recreation Area										
Cove Creek Campground										
Southshore Campground										
Hoover Campground										
Santiam Flats Campground										

Beachie-Lionshead Study Area Local Campgrounds, Continued	
Lakeview RV Park	
River Mountain RV Park	
Whispering Falls Campground	
Camp Benadoo RV Park	
Fisherman's Bend Recreation Area	



Map of Channelized Debris Flow Deposit Areas (Fans), Beachie Creek-Lionshead Fire Study Area, Marion and Linn Counties, Oregon

2025

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Debris Flow Hazard, Risk, and Risk Reduction in the Eagle Creek, Beachie Creek-Lionshead, Holiday Farm, and Archie Creek Fire Areas, Multnomah, Hood River, Marion, Lane, and Douglas Counties, Oregon

APPENDIX B, FIGURE B-2

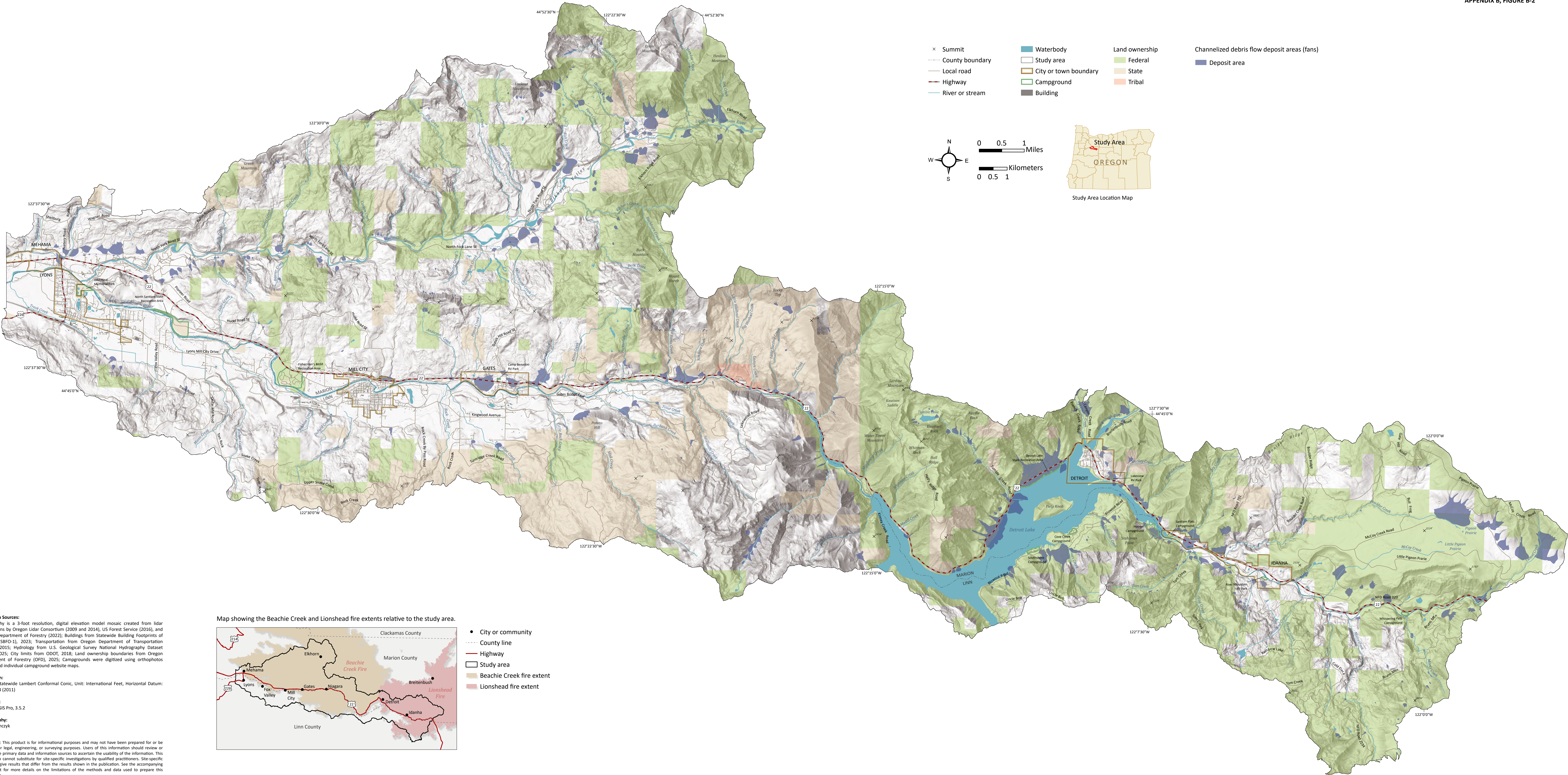


Table B-2. Summary of historic channelized debris flows pre- and post-fire within and adjacent to the Beachie Creek-Lionshead study area		
Pre-Fire Debris Flows		
Imagery Date Rate	Number of Years	Number of Debris Flow Events
pre-1995	5	31
1995-2000	5	125
2000-2005	5	10
2005-2009	4	15
2009-2011	3	1
2009-2014	6	9
2014-2016	3	1
2014-2018	5	14
Total	35	206
Post-Fire Lidar Change Analysis		
Lidar Date Rate	Number of Years	Number of Debris Flow Events
2020-2021	1	1
2020-2022	1	48
Total	2	49



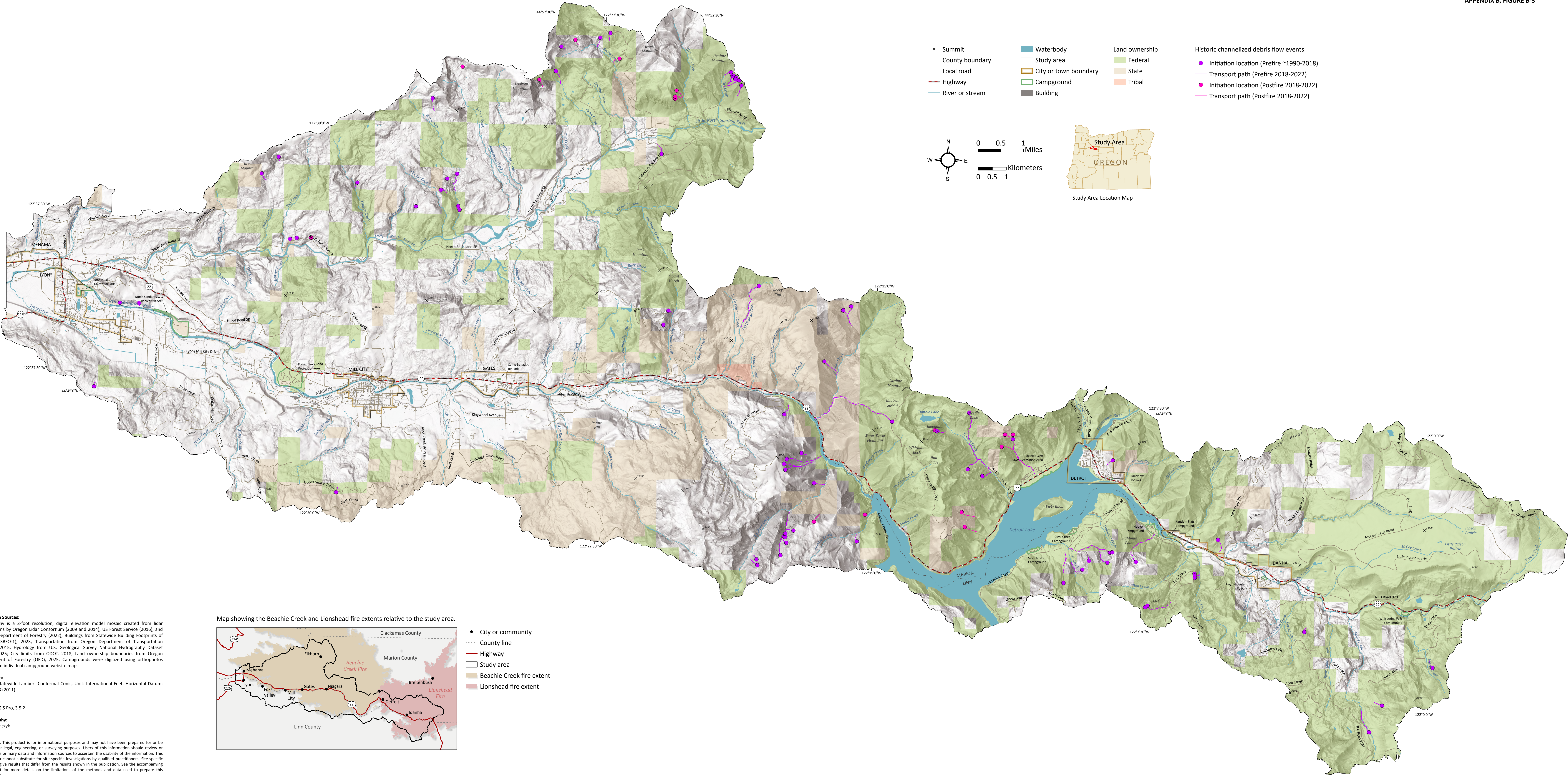
Map of Historic Channelized Debris Flow Events, Beachie Creek-Lionshead Fire Study Area, Marion and Linn Counties, Oregon

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Debris Flow Hazard, Risk, and Risk Reduction in the Eagle Creek, Beachie Creek-Lionshead, Holiday Farm, and Archie Creek Fire Areas, Multnomah, Hood River, Marion, Lane, and Douglas Counties, Oregon

APPENDIX B, FIGURE B-3





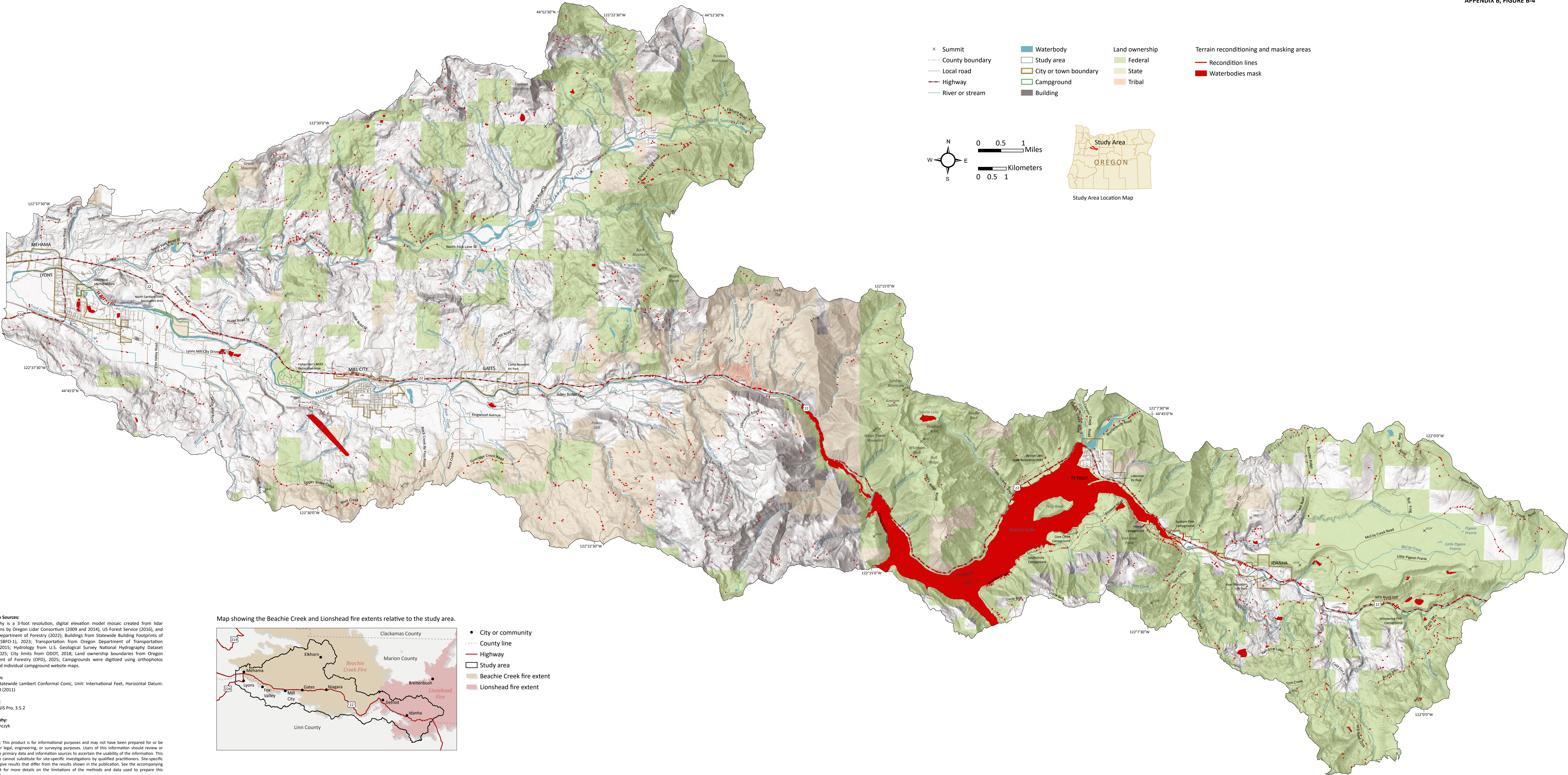
Map of Terrain Reconditioning and Masking Areas, Beachie Creek-Lionshead Fire Study Area, Marion and Linn Counties, Oregon

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Debris Flow Hazard, Risk, and Risk Reduction in the Eagle Creek, Beachie Creek-Lionshead, Holiday Farm, and Archie Creek Fire Areas, Multnomah, Hood River, Marion, Lane, and Douglas Counties, Oregon

APPENDIX B, FIGURE B-4





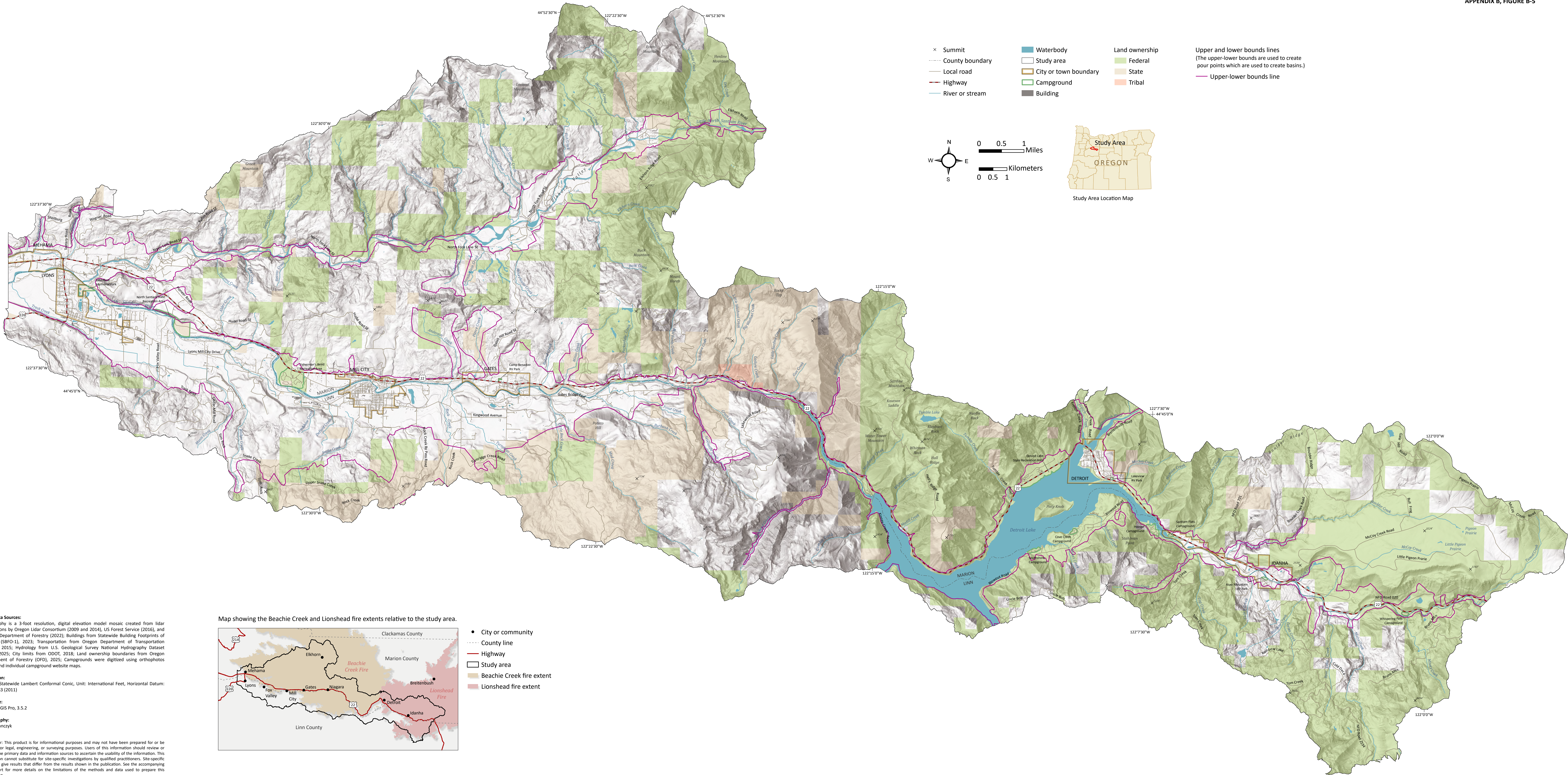
Map of the Upper-Lower Bounds, Beachie Creek-Lionshead Fire Study Area, Marion and Linn Counties, Oregon

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Debris Flow Hazard, Risk, and Risk Reduction in the Eagle Creek, Beachie Creek-Lionshead, Holiday Farm, and Archie Creek Fire Areas, Multnomah, Hood River, Marion, Lane, and Douglas Counties, Oregon

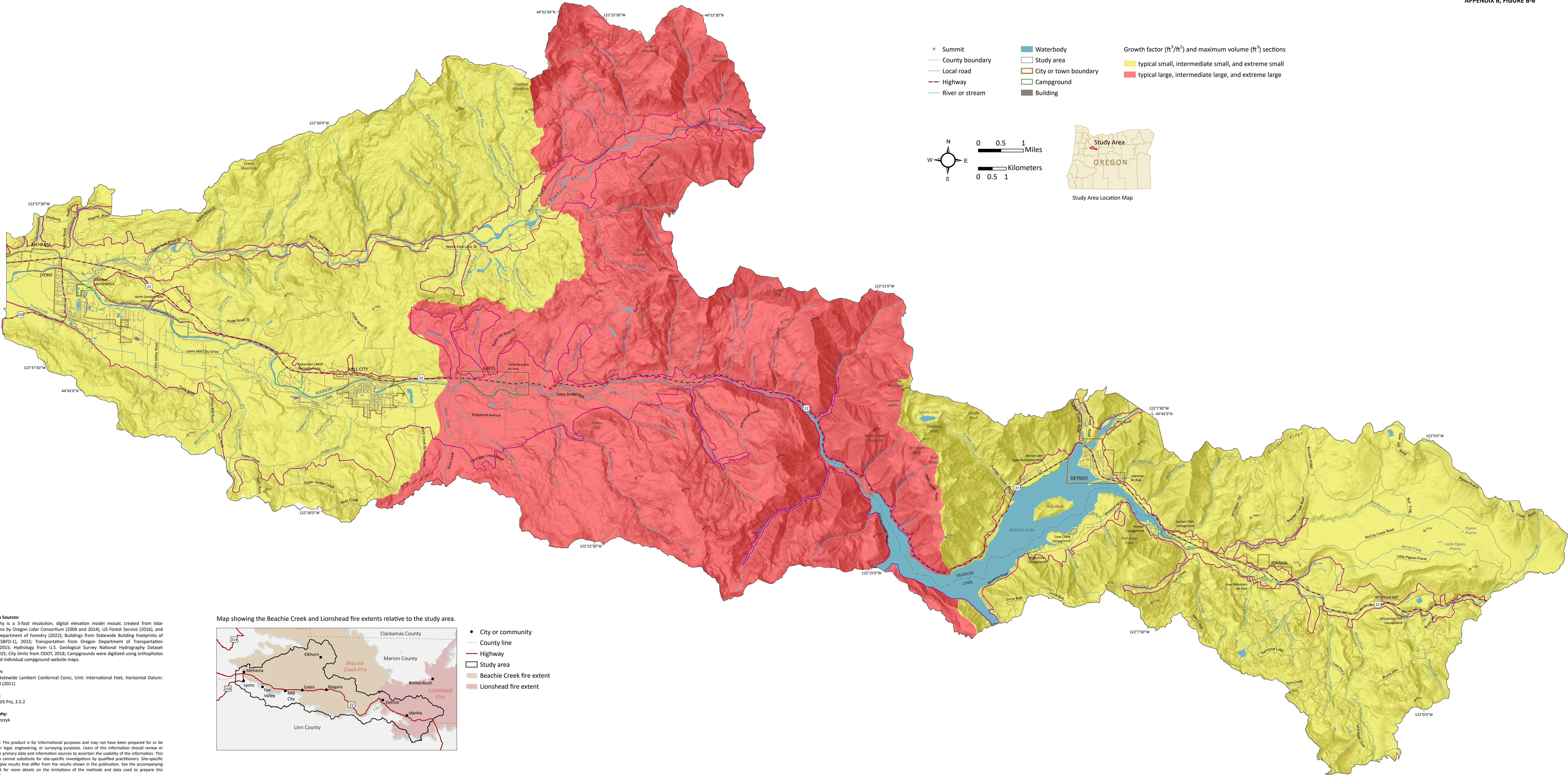
APPENDIX B, FIGURE B-5





Map of the Growth Factors for Modeling Inundation Susceptibility, Beachie Creek-Lionshead Fire Study Area, Marion and Linn Counties, Oregon

2025





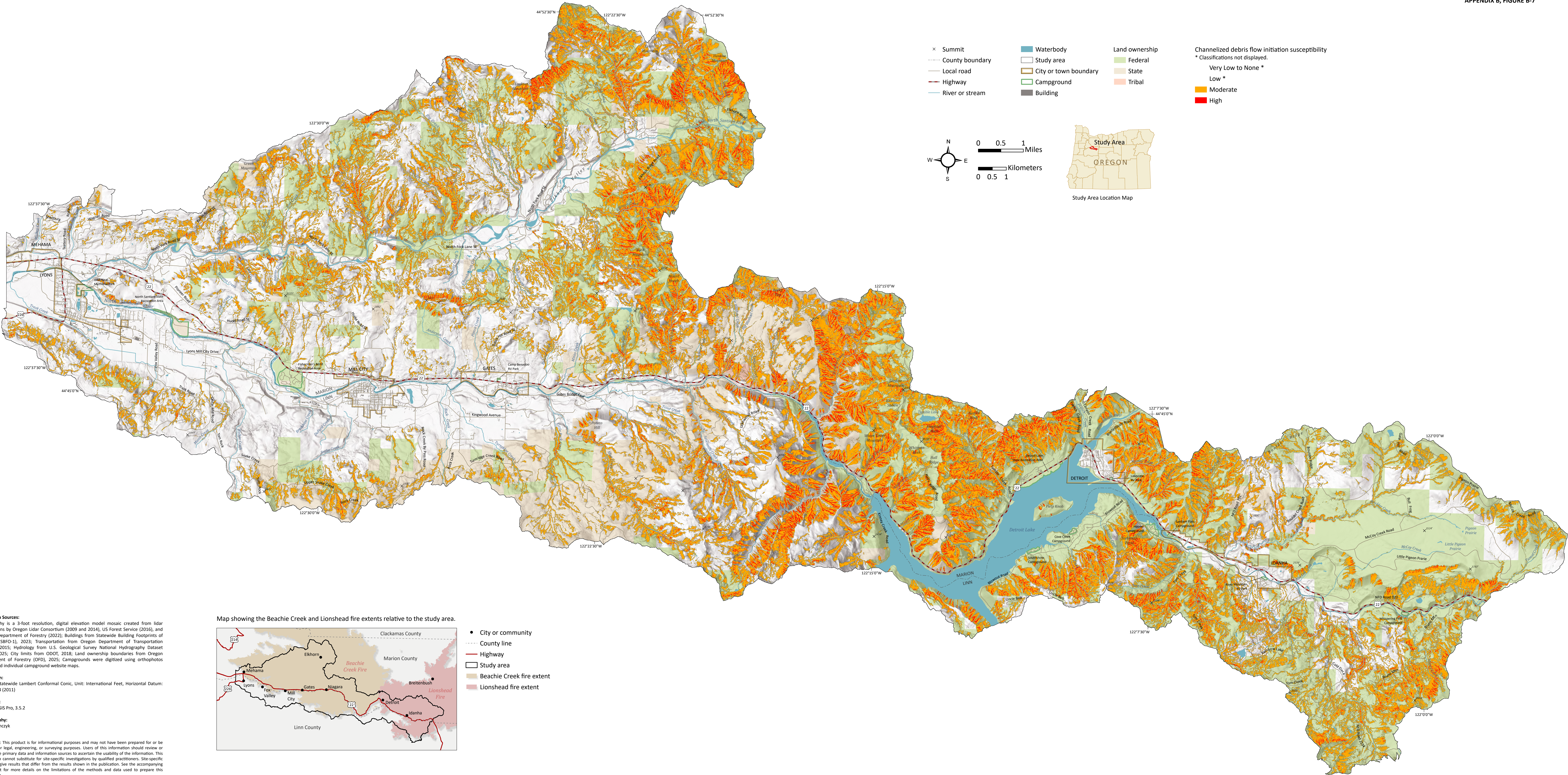
Map of Initiation Susceptibility, Beachie Creek-Lionshead Fire Study Area, Marion and Linn Counties, Oregon

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Debris Flow Hazard, Risk, and Risk Reduction in the Eagle Creek, Beachie Creek-Lionshead, Holiday Farm, and Archie Creek Fire Areas, Multnomah, Hood River, Marion, Lane, and Douglas Counties, Oregon

APPENDIX B, FIGURE B-7





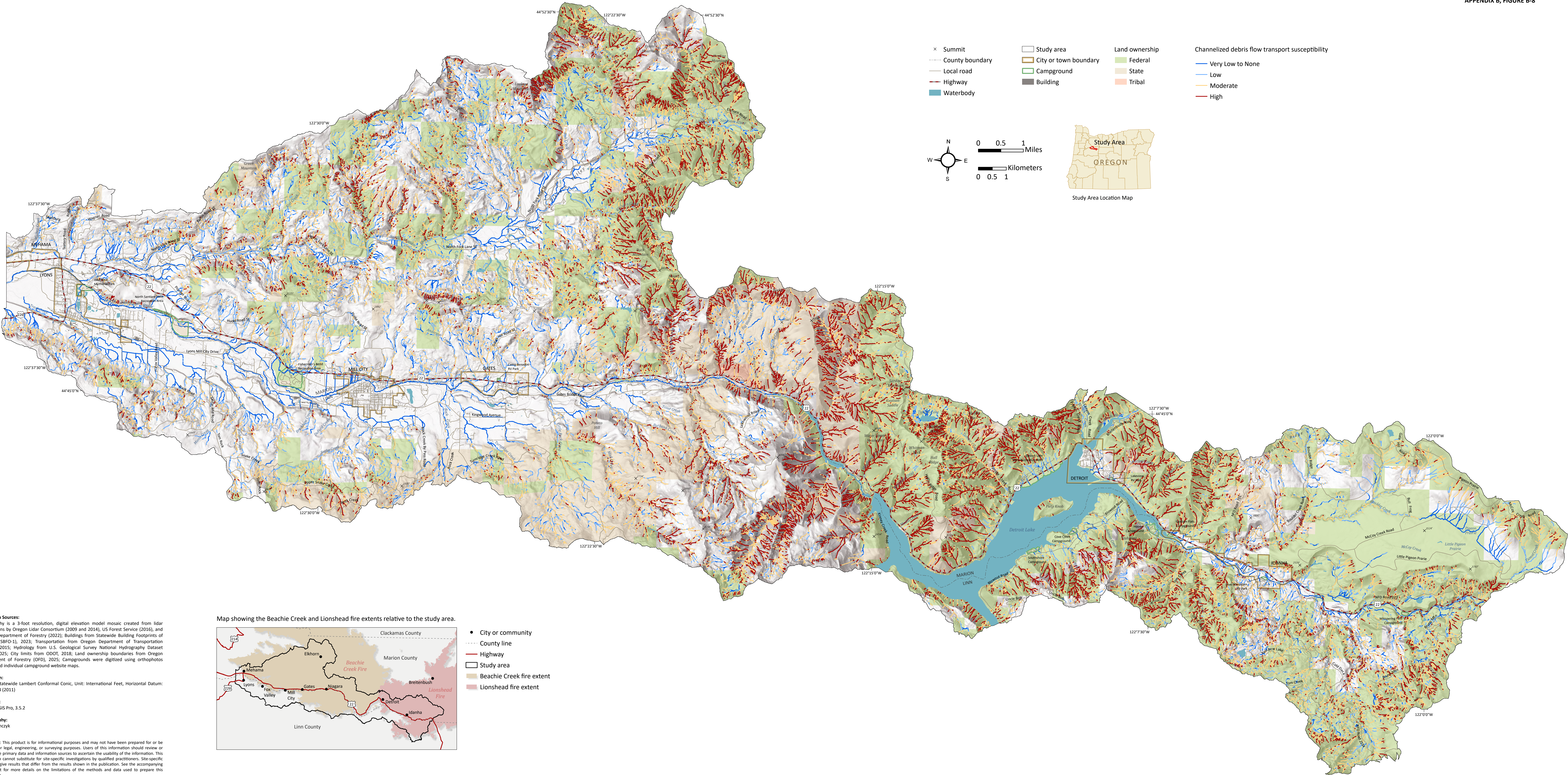
Map of Transport Susceptibility, Beachie Creek-Lionshead Fire Study Area, Marion and Linn Counties, Oregon

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Debris Flow Hazard, Risk, and Risk Reduction in the Eagle Creek, Beachie Creek-Lionshead, Holiday Farm, and Archie Creek Fire Areas, Multnomah, Hood River, Marion, Lane, and Douglas Counties, Oregon

APPENDIX B, FIGURE B-8



Map Data Sources:
Topography is a 3-foot resolution, digital elevation model mosaic created from lidar acquisitions by Oregon Lidar Consortium (2009 and 2014), US Forest Service (2016), and Oregon Department of Forestry (2022); Buildings from Statewide Building Footprints of Oregon (SBFO-1), 2023; Transportation from Oregon Department of Transportation (ODOT), 2015; Hydrology from U.S. Geological Survey National Hydrography Dataset (NHD), 2025; City limits from ODOT, 2018; Land ownership boundaries from Oregon Department of Forestry (ODF), 2025; Campgrounds were digitized using orthophotos (2025) and individual campground website maps.

Projection:
Oregon Statewide Lambert Conformal Conic, Unit: International Feet, Horizontal Datum: NAD 1983 (2011)

Software:
Esri® ArcGIS Pro, 3.5.2

Cartography:
Jon J. Franczyk

Disclaimer: This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information. This publication cannot substitute for site-specific investigations by qualified practitioners. Site-specific data may give results that differ from the results shown in the publication. See the accompanying text report for more details on the limitations of the methods and data used to prepare this publication.

Map showing the Beachie Creek and Lionshead fire extents relative to the study area.





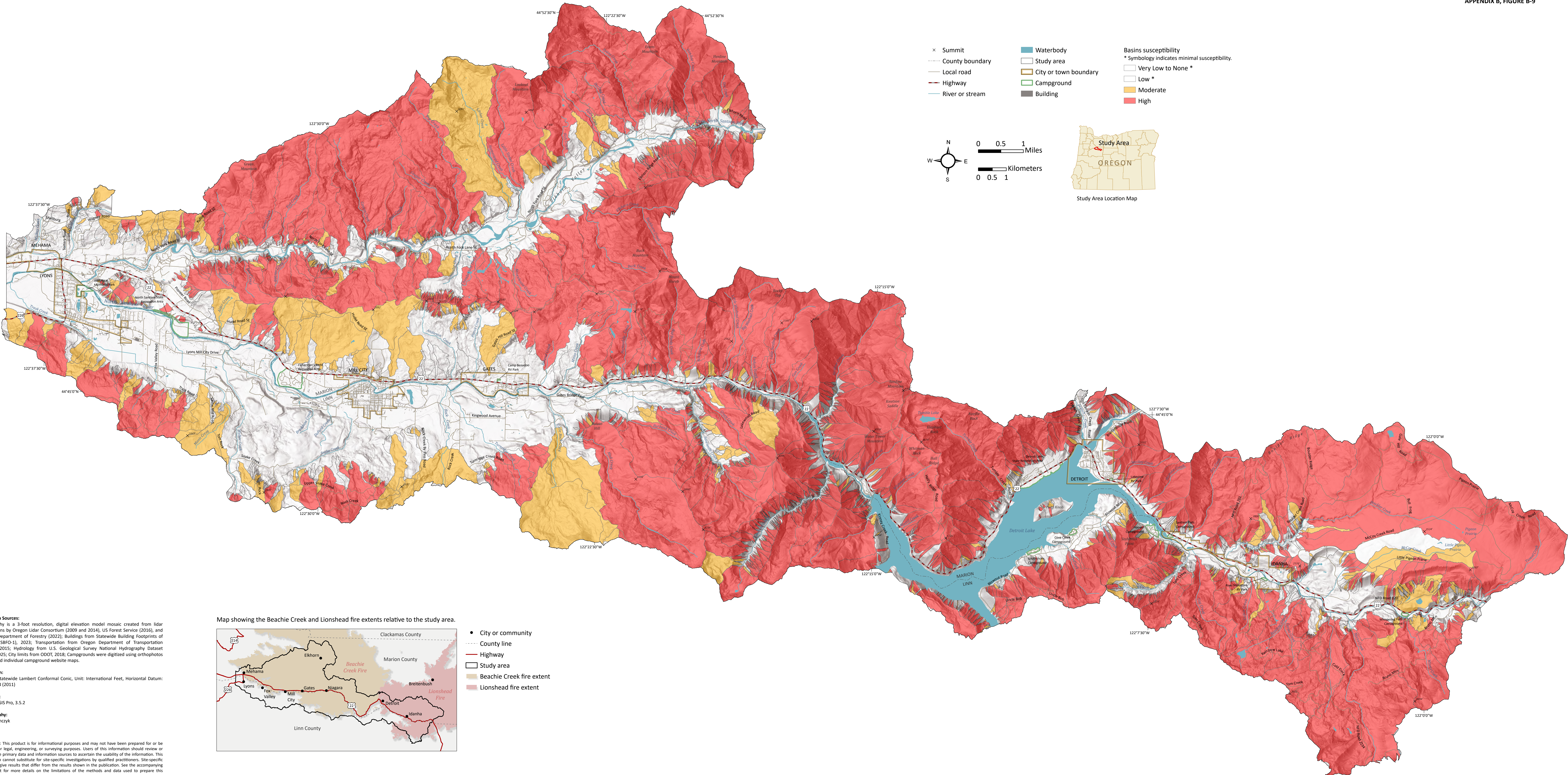
Map of Basin Susceptibility, Beachie Creek-Lionshead Fire Study Area, Marion and Linn Counties, Oregon

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Debris Flow Hazard, Risk, and Risk Reduction in the Eagle Creek, Beachie Creek-Lionshead, Holiday Farm, and Archie Creek Fire Areas, Multnomah, Hood River, Marion, Lane, and Douglas Counties, Oregon

APPENDIX B, FIGURE B-9





Map of Inundation Susceptibility, Beachie Creek-Lionshead Fire Study Area, Marion and Linn Counties, Oregon

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Debris Flow Hazard, Risk, and Risk Reduction in the Eagle Creek, Beachie Creek-Lionshead, Holiday Farm, and Archie Creek Fire Areas, Multnomah, Hood River, Marion, Lane, and Douglas Counties, Oregon

APPENDIX B, FIGURE B-10

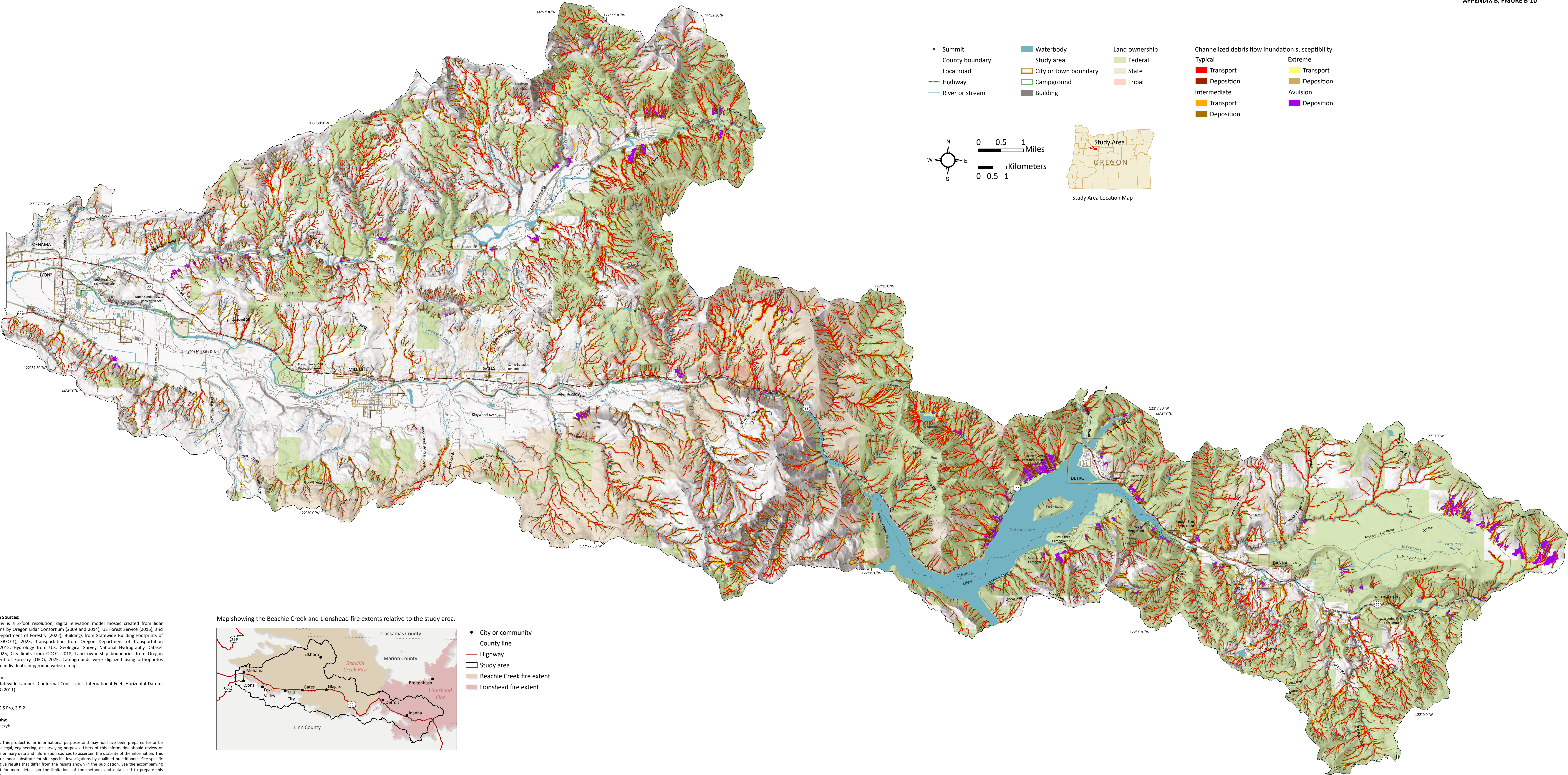



































Table B-3. Results of post-fire debris flow risk analysis of assets in the entire Beachie Creek-Lionshead study area

Risk Analysis by Land Use Categories in the Beachie Creek-Lionshead Study Area								
—		Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk ²	Percent of Total Assets at Risk
<div><div>Agricultural</div><div></div></div>	Buildings 	18	47	81	36	123	185	7.2%
	Value 	\$2,491,920	\$8,571,000	\$13,593,360	\$7,406,880	\$21,644,880	\$32,796,840	9.6%
	Critical Facilities ¹ 	0	0	0	0	0	0	0%
<div><div>Commercial</div><div></div></div>	Buildings 	0	0	2	0	9	10	7.5%
	Value 	\$0	\$0	\$3,263,730	\$0	\$3,836,101	\$6,864,421	10.4%
	Critical Facilities 	0	0	0	0	0	0	0%
<div><div>Educational</div><div></div></div>	Buildings 	0	0	0	0	0	0	0%
	Value 	\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities 	0	0	0	0	0	0	0%










¹Critical facilities are services essential to public health and safety, emergency response, or vital community services, e.g., hospitals, fire stations, water treatment plants.













² Indicates the number of respective assets affected by any combination of risk types, e.g., a building may be at risk of typical and intermediate inundation as well as avulsion. For further explanation, see Section 3 of the report.










Risk Analysis by Land Use Categories in the Beachie Creek-Lionshead Study Area, Continued									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Government 	Buildings		1	6	12	19	20	23	35.9%
	Value		\$213,000	\$1,428,300	\$3,792,450	\$12,141,377	\$12,212,177	\$13,890,827	43.3%
	Critical Facilities		0	0	0	1	1	1	7.7%
Industrial 	Buildings		0	2	6	0	0	6	4.0%
	Value		\$0	\$306,600	\$8,486,640	\$0	\$0	\$8,486,640	5.1%
	Critical Facilities		0	0	0	0	0	0	0%
Religious 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%












Risk Analysis by Land Use Categories in the Beachie Creek-Lionshead Study Area, Continued									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Residential 	Buildings		24	75	132	61	221	294	9.2%
	Permanent Residents		45	144	256	91	446	578	8.6%
	Value		\$5,870,956	\$18,910,457	\$34,087,306	\$11,819,092	\$55,660,665	\$73,496,505	8.1%
	Critical Facilities		0	0	0	0	0	0	0%
Total Impacted Structures	Buildings		43	130	233	116	373	518	8.4%
	Permanent Residents		45	144	256	91	446	578	8.5%
	Value		\$8,575,876	\$29,216,357	\$63,223,486	\$31,367,349	\$93,353,823	\$135,535,233	8.6%
	Critical Facilities		0	0	0	1	1	1	4.0%

Risk Analysis by Road Type in the Beachie Creek-Lionshead Study Area							
—	Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Highways (mi)	6.9	11.8	15.3	2.9	6.4	18.8	44.5%
Local Roads (mi)	40.7	60.4	75.9	11.7	22.5	88.9	23.2%
Total Impacted Miles	6.9	11.8	15.3	2.9	6.4	18.8	44.5%
Risk Analysis at Local Campgrounds in the Beachie Creek-Lionshead Study Area							
John Neal Memorial Park	—	—	—	—	—	—	—
North Santiam State Recreation Area	✓	✓	✓	—	—	—	—
Detroit Lake State Recreation Area	✓	✓	✓	✓	✓	—	—
Cove Creek Campground	—	—	—	—	—	—	—
Southshore Campground	—	—	✓	—	—	—	—
Hoover Campground	✓	✓	✓	✓	✓	—	—
Santiam Flats Campground	—	—	—	—	—	—	—
Lakeview RV Park	—	✓	✓	✓	✓	—	—
River Mountain RV Park	—	—	—	—	—	—	—
Whispering Falls Campground	—	✓	✓	—	—	—	—
Camp Benadoo RV Park	—	—	—	—	—	—	—












Total Impacted Campgrounds		3	5	7	3	3	7	58.3%
Risk Analysis by Land Use Categories in Linn County Unincorporated Communities								
—		Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk ²	Percent of Total Assets at Risk
<div>Agricultural</div>	Buildings 	1	2	7	1	1	9	0.9%
	Value 	\$49,080	\$78,480	\$676,560	\$50,760	\$219,480	\$946,800	0.6%
	Critical Facilities 	0	0	0	0	0	0	0%
<div>Commercial</div>	Buildings 	0	0	0	0	0	0	0%
	Value 	\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities 	0	0	0	0	0	0	0%
<div>Educational</div>	Buildings 	0	0	0	0	0	0	0%
	Value 	\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities 	0	0	0	0	0	0	0%

Risk Analysis by Land Use Categories in Linn County Unincorporated Communities, Continued									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Government 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Industrial 	Buildings		0	2	6	0	0	6	4.4%
	Value		\$0	\$306,600	\$8,486,640	\$0	\$0	\$8,486,640	5.3%
	Critical Facilities		0	0	0	0	0	0	0%
Religious 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%










Risk Analysis by Land Use Categories in Linn County Unincorporated Communities, Continued									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Residential 	Buildings		0	6	9	0	6	9	1.8%
	Permanent Residents		0	11	19	0	13	19	1.6%
	Value		\$0	\$1,682,666	\$2,834,996	\$0	\$1,893,286	\$2,834,996	1.7%
	Critical Facilities		0	0	0	0	0	0	0%
Total Impacted Structures	Buildings		1	10	22	1	7	24	1.4%
	Permanent Residents		0	11	19	0	13	19	1.6%
	Value		\$49,080	\$2,067,746	\$11,998,196	\$50,760	\$2,112,766	\$12,268,436	2.5%
	Critical Facilities		0	0	0	0	0	0	0%












Risk Analysis by Land Use Categories in Marion County Unincorporated Communities									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk ²	Percent of Total Assets at Risk
Agricultural 	Buildings		16	37	56	23	56	97	20.5%
	Value		\$2,424,840	\$7,653,360	\$10,766,880	\$5,734,560	\$11,277,720	\$19,957,680	21.2%
	Critical Facilities		0	0	0	0	0	0	0%
Commercial 	Buildings		0	0	0	0	1	1	16.7%
	Value		\$0	\$0	\$0	\$0	\$99,540	\$99,540	3.7%
	Critical Facilities		0	0	0	0	0	0	0%
Educational 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Marion County Unincorporated Communities, Continued									
Land Use Category			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Government 	Buildings 		1	6	12	19	20	23	60.5%
	Value 		\$213,000	\$1,428,300	\$3,792,450	\$12,141,377	\$12,212,177	\$13,890,827	73.7%
	Critical Facilities 		0	0	0	1	1	1	100%
Industrial 	Buildings 		0	0	0	0	0	0	0%
	Value 		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities 		0	0	0	0	0	0	0%
Religious 	Buildings 		0	0	0	0	0	0	0%
	Value 		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Marion County Unincorporated Communities, Continued									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Residential 	Buildings		16	32	47	18	52	85	14.8%
	Permanent Residents		34	72	104	28	110	180	15.9%
	Value		\$4,567,734	\$9,438,344	\$13,654,225	\$3,498,240	\$14,244,487	\$23,684,030	15.3%
	Critical Facilities		0	0	0	0	0	\$0	0%
Total Impacted Structures	Buildings		33	75	115	60	129	206	18.8%
	Permanent Residents		34	72	104	28	110	180	15.9%
	Value		\$7,205,574	\$18,520,004	\$28,213,555	\$21,374,177	\$37,833,924	\$57,632,077	21.3%
	Critical Facilities		0	0	0	1	1	1	100%












Risk Analysis by Land Use Categories in Detroit									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk ²	Percent of Total Assets at Risk
Agricultural 	Buildings		0	1	3	10	8	10	17.9%
	Value		\$0	\$116,520	\$300,000	\$1,434,360	\$1,157,400	\$1,434,360	17.0%
	Critical Facilities		0	0	0	0	0	0	0%
Commercial 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Educational 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Detroit, Continued									
Land Use Category			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Government 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Industrial 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Religious 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Detroit, Continued									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Residential 	Buildings		5	20	34	31	34	46	19.2%
	Permanent Residents		6	30	53	43	61	80	19.7%
	Value		\$868,330	\$4,128,517	\$7,464,523	\$6,008,313	\$8,605,635	\$11,240,303	19.4%
	Critical Facilities		0	0	0	0	0	0	0%
Total Impacted Structures	Buildings		5	21	37	41	42	56	17.8%
	Permanent Residents		6	30	53	43	61	80	19.4%
	Value		\$868,330	\$4,245,037	\$7,764,523	\$7,442,673	\$9,763,035	\$12,674,663	17.0%
	Critical Facilities		0	0	0	0	0	0	0%












Risk Analysis by Land Use Categories in Gates									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk ²	Percent of Total Assets at Risk
Agricultural 	Buildings		0	0	0	0	41	41	36.6%
	Value		\$0	\$0	\$0	\$0	\$6,679,560	\$6,679,560	37.2%
	Critical Facilities		0	0	0	0	0	0	0%
Commercial 	Buildings		0	0	0	0	1	1	25.0%
	Value		\$0	\$0	\$0	\$0	\$1,185,621	\$1,185,621	43.2%
	Critical Facilities		0	0	0	0	0	0	0%
Educational 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Gates, Continued									
Land Use Category			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Government 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Industrial 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Religious 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Gates, Continued									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Residential 	Buildings		0	1	4	0	70	70	33.8%
	Permanent Residents		0	3	10	0	135	135	31.5%
	Value		\$0	\$450,424	\$1,327,456	\$0	\$14,298,992	\$14,298,992	27.0%
	Critical Facilities		0	0	0	0	0	0	0%
Total Impacted Structures	Buildings		0	1	4	0	112	112	34.3%
	Permanent Residents		0	3	10	0	135	135	31.3%
	Value		\$0	\$450,424	\$1,327,456	\$0	\$22,164,173	\$22,164,173	29.5%
	Critical Facilities		0	0	0	0	0	0	0%












Risk Analysis by Land Use Categories in Idanha									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk ²	Percent of Total Assets at Risk
Agricultural 	Buildings		1	4	10	2	8	16	34.8%
	Value		\$18,000	\$323,280	\$1,286,520	\$187,200	\$1,109,160	\$2,345,400	39.1%
	Critical Facilities		0	0	0	0	0	0	0%
Commercial 	Buildings		0	0	1	0	0	1	7.1%
	Value		\$0	\$0	\$3,028,320	\$0	\$0	\$3,028,320	33.1%
	Critical Facilities		0	0	0	0	0	0	0%
Educational 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Idanha, Continued									
Land Use Category			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Government 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Industrial 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Religious 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Idanha, Continued									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Residential 	Buildings		3	10	22	12	13	31	33.0%
	Permanent Residents		5	14	34	20	23	50	32.4%
	Value		\$434,892	\$1,573,083	\$4,169,927	\$2,312,539	\$2,796,043	\$6,107,780	30.8%
	Critical Facilities		0	0	0	0	0	0	0%
Total Impacted Structures	Buildings		4	14	33	14	21	48	30.2%
	Permanent Residents		5	14	34	20	23	50	32.4%
	Value		\$452,892	\$1,896,363	\$8,484,767	\$2,499,739	\$3,905,203	\$11,481,500	31.5%
	Critical Facilities		0	0	0	0	0	0	0%

Risk Analysis by Land Use Categories in Lyons									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk ²	Percent of Total Assets at Risk
Agricultural 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities ¹		0	0	0	0	0	0	0%
Commercial 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Educational 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Lyons, Continued									
Category			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Government 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Industrial 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Religious 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Lyons, Continued									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Residential 	Buildings		0	0	0	0	0	0	0%
	Permanent Residents		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Total Impacted Structures	Buildings		0	0	0	0	0	0	0%
	Permanent Residents		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%












Risk Analysis by Land Use Categories in Mehama									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk ²	Percent of Total Assets at Risk
Agricultural 	Buildings		0	0	0	0	3	3	5.6%
	Value		\$0	\$0	\$0	\$0	\$528,960	\$528,960	5.2%
	Critical Facilities ¹		0	0	0	0	0	0	0%
Commercial 	Buildings		0	0	0	0	3	3	23.1%
	Value		\$0	\$0	\$0	\$0	\$1,407,173	\$1,407,173	17.9%
	Critical Facilities		0	0	0	0	0	0	0%
Educational 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Mehama, Continued									
Land Use Category			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Government 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Industrial 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Religious 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Mehama, Continued									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Residential 	Buildings		0	0	0	0	14	14	13.0%
	Permanent Residents		0	0	0	0	35	35	16.9%
	Value		\$0	\$0	\$0	\$0	\$5,047,322	\$5,047,322	18.5%
	Critical Facilities		0	0	0	0	0	0	0%
Total Impacted Structures	Buildings		0	0	0	0	20	20	11.0%
	Permanent Residents		0	0	0	0	35	35	16.9%
	Value		\$0	\$0	\$0	\$0	\$6,983,455	\$6,983,455	14.0%
	Critical Facilities		0	0	0	0	0	0	0%

Risk Analysis by Land Use Categories in Mill City									
Land Use Category			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk ²	Percent of Total Assets at Risk
Agricultural 	Buildings		0	3	5	0	6	9	2.6%
	Value		\$0	\$399,360	\$563,400	\$0	\$672,600	\$904,080	4.1%
	Critical Facilities ¹		0	0	0	0	0	0	0%
Commercial 	Buildings		0	0	1	0	4	4	14.8%
	Value		\$0	\$0	\$235,410	\$0	\$1,143,767	\$1,143,767	9.8%
	Critical Facilities		0	0	0	0	0	0	0%
Educational 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Mill City, Continued									
Land Use Category			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Government 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Industrial 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%
	Critical Facilities		0	0	0	0	0	0	0%
Religious 	Buildings		0	0	0	0	0	0	0%
	Value		\$0	\$0	\$0	\$0	\$0	\$0	0%

	Critical Facilities		0	0	0	0	0	0	0%
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Risk Analysis by Land Use Categories in Mill City, Continued									
—			Typical Inundation	Intermediate Inundation	Extreme Inundation	Avulsion	Fan Deposit	Number of Assets at Risk	Percent of Total Assets at Risk
Residential 	Buildings		0	6	16	0	32	39	4.3%
	Permanent Residents		0	14	35	0	69	79	4.3%
	Value		\$0	\$1,637,423	\$4,636,179	\$0	\$8,774,900	\$10,283,082	4.1%
	Critical Facilities		0	0	0	0	0	0	0%
Total Impacted Structures	Buildings		0	9	22	0	42	52	4.0%
	Permanent Residents		0	14	35	0	69	79	4.3%
	Value		\$0	\$2,036,783	\$5,434,989	\$0	\$10,591,267	\$12,330,929	3.8%
	Critical Facilities		0	0	0	0	0	0	0%