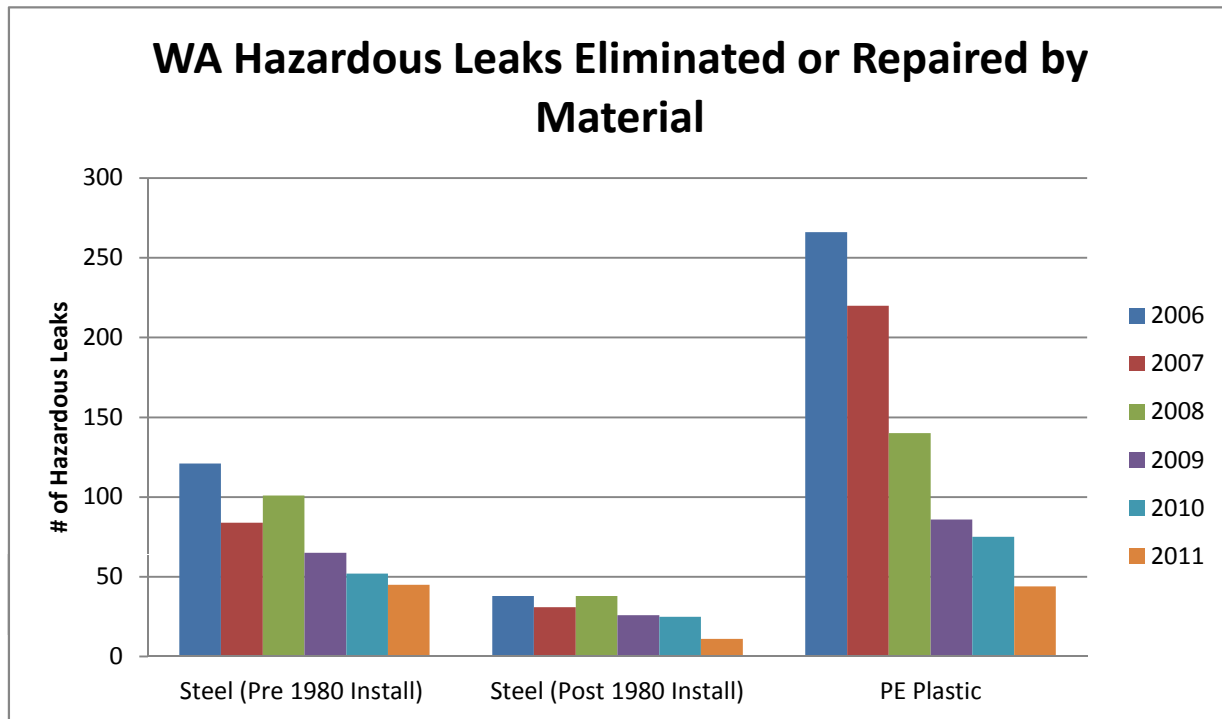


Cascade System Dynamics for June 21 WUTC Commission Meeting on UG-120715

Prepared By: Kathleen Chirgwin on June 20, 2012 Updated July 23, 2012 with Washington State Only Data for Cascade as Requested.

WA Hazardous Leaks eliminated or Repair by Material

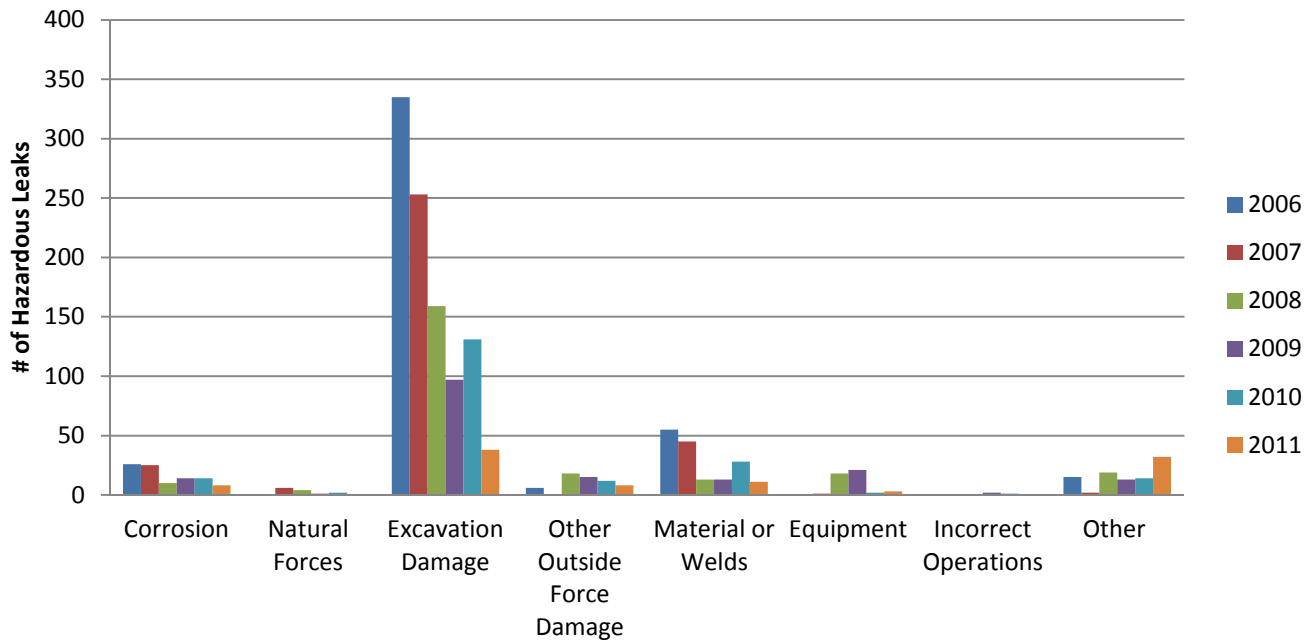
	2006	2007	2008	2009	2010	2011
Steel (Pre 1980 Install)	121	84	101	65	52	45
Steel (Post 1980 Install)	38	31	38	26	25	11
PE Plastic	266	220	140	86	75	44



WA Hazardous Leaks eliminated or repaired by Cause

	2006	2007	2008	2009	2010	2011
Corrosion	26	25	10	14	14	8
Natural Forces	0	6	4	1	2	0
Excavation Damage	335	253	159	97	131	38
Other Outside Force Damage	6	0	18	15	12	8
Material or Welds	55	45	13	13	28	11
Equipment	0	1	18	21	2	3
Incorrect Operations	0	0	0	2	1	0
Other	15	2	19	13	14	32

WA Hazardous Leaks Eliminated or Repaired by Cause



Cascade System Main Material

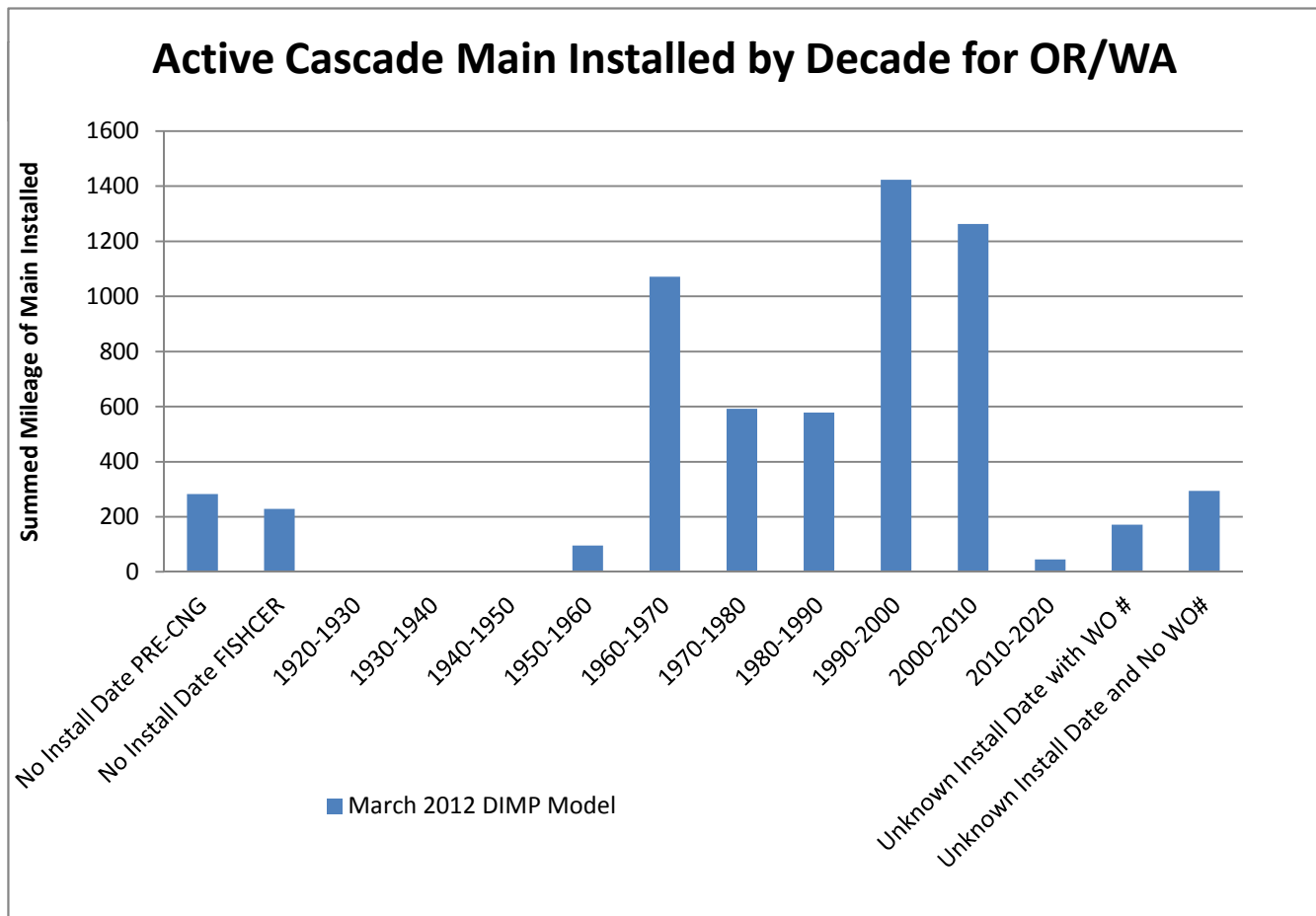
Main Material (feet)	March 2012 DIMP Model OR/WA (ft)	March 2012 DIMP OR/WA Model (mi)	% of System OR/WA	March 2012 Model WA Only (ft)	% of WA State Only
Bare Steel	327672	62	1%	281130	1%
Coated Steel PRE-CNG	1215243	230	4%	816895	3%
Coated Steel FISH	1205101	228	4%	1145021	5%
Coated Steel 1979-1952	8384007	1588	26%	6476576	27%
Coated Steel Post 1980	5281409	1000	17%	3828941	16%
Coated Steel Blank Date	1767582	335	6%	1334765	6%
Plastic	12604016	2387	39%	8851631	37%
Unknown	1133706	215	4%	972255	4%
Sum Check	31918736	6045	100%	23707213	100%

Cascade System (OR/WA) by Material in DIMP March 2012 Model



Cascade System Active Mains Installed by Decade

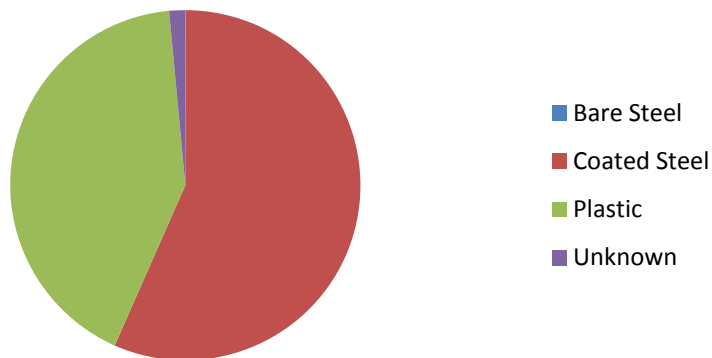
Main Installed by Decade	March 2012 DIMP Model OR/WA (summed main footage)	March 2012 DIMP Model OR/WA (summed main miles)	% of System OR/WA	March 2012 Model WA STATE ONLY	% of WA State Only
No Install Date PRE-CNG	1490393	282.2714394	5%	1093406	5%
No Install Date FISHCER	1207326	228.6601515	4%	1147245	5%
1920-1930	0	0	0%	0	0%
1930-1940	1381	0.26155303	0%	0	0%
1940-1950	5951	1.126988636	0%	5950	0%
1950-1960	503621	95.38275947	2%	422732	2%
1960-1970	5658472	1071.680284	18%	4379472	18%
1970-1980	3123464	591.5651515	10%	2455414	10%
1980-1990	3055638	578.7192992	10%	2257685	10%
1990-2000	7516947	1423.664205	24%	5522768	23%
2000-2010	6665675	1262.438428	21%	4332881	18%
2010-2020	236296	44.75305492	1%	208433	1%
Unknown Install Date with WO #	903364	171.0916667	3%	1378400	6%
Unknown Install Date and No WO#	1549880	293.537822	5%	532245	2%
Unknown Install Date Total	5150963	975.5610795	16%	4151295	17%
Sum	31918741	6045.216102	100%	23736962	100%



Cascade System by Service Material

Service Material (feet)	March 2012 OR/WA (ft)	% of OR/WA System	March 2012 WA DIMP Risk (ft)	% of WA State Only
Bare Steel	5366	0.03%	4944	0.03%
Coated Steel	10938513	56.58%	8680852	58.85%
Plastic	8104103	41.92%	5884786	39.90%
Unknown	285452	1.48%	179173	1.21%
Sum Check	19333434	100.00%	14749756	100.00%

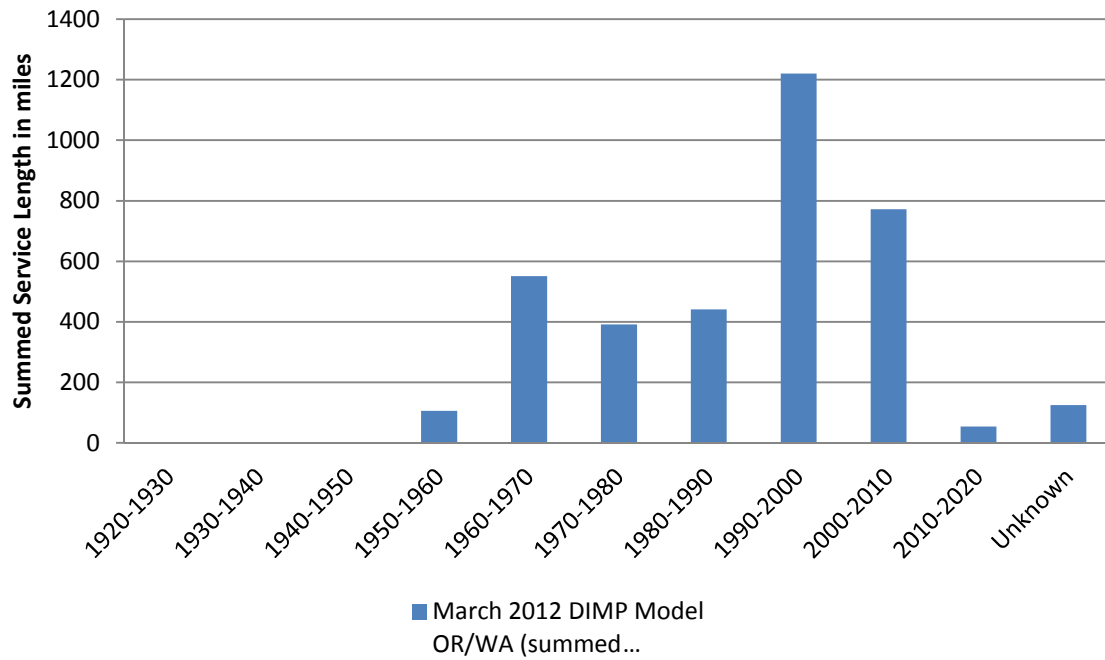
Cascade System by Service Material for OR/WA



Active Cascade Services Installed by Decade

Decade Installed	March 2012 DIMP Model OR/WA (summed service footage)	March 2012 DIMP Model OR/WA (summed service miles)	% of OR/WA System	March 2012 WA STATE DIMP MODEL	% of WA Only
1920-1930	74	0	0%	74	0%
1930-1940	1406	0	0%	1406	0%
1940-1950	874	0	0%	374	0%
1950-1960	557482	106	3%	448613	3%
1960-1970	2910256	551	15%	2330732	16%
1970-1980	2068382	392	11%	1633975	11%
1980-1990	2326770	441	12%	1876753	13%
1990-2000	6445317	1221	33%	4968617	34%
2000-2010	4077087	772	21%	2838588	19%
2010-2020	284529	54	1%	211346	1%
Unknown	657402	125	3%	439118	3%
Sum	19329940	3661	100%	14749755	100%
Sum Check	19329579	3661	100%	14749596	100%

Active Cascade (OR/WA) Services Installed by Decade



Mains by State

State	March 2012 DIMP Model (summed service footage)	March 2012 DIMP Model (summed service miles)	% of Cascade
WA	23736962	4496	74
OR	8181780	1550	26
Sume	31918741	6045	100

Cascade Mains by State

