

1 **CONFERENCE CALL MEETING # 7 – MARCH 13, 2014**

2 Meeting Participants: 13 total / 5 agencies

3	Deschutes	none			
4	Jackson	none			
5	Marion	Don Newell	Jolene Bray	Pete DeLapp	Kim Rhodes
6	Washington	Keith Lewis	Dave Schultz	Ed Meeuwesen	Todd Watlin
7	Pierce	Bryan Chappell	Tom Zurfluh	Tyler Bemis	
8	Snohomish	none			
9	Spokane	Bob Keneally			
10	Yakima	Ryan Calhoun			
11	AOC	none			
12	CRAB	none			

13 **ANNOUNCEMENTS / CALENDAR**

14 Phone Conference meetings will be the 1st Thursday of every month from usually 9 AM to 10:30 AM, unless
15 otherwise noted.

16 **HOT TOPICS FROM THE GROUP**

17 The group discussed the upcoming site visit in Spokane and Yakima counties on April 1-3, 2014. Don (Marion)
18 also reminded participants to view the shared files on the OTS website and to send in files to share on this
19 site. He will send out more info later.

20 Ryan (Yakima) said he was going to review new **software that helps staff complete and organize work orders**
21 during the next site visit. He said there is also a field trip planned to the Yakima and Sunnyside shops. Don
22 said he would be working with Ryan to shape up the agenda for the visit.

23 **Topic 16: Pavements (a): Crack Sealing**

24 Don (Marion) asked participants to share information about what each agency is doing with their crack sealing
25 program.

26 **Marion**

27 Kim Rhodes has been doing crack sealing for seven years with Marion County. She said rented equipment was
28 used the first year but then the county purchased a **Crafco 125**. Don said Marion County does a lot of heavy
29 treatment and are usually in the 60's PCI with distresses so we try to crack seal one year ahead of chip
30 sealing. We have regions to crack seal on a four year schedule and Kim will lead the crack sealing of roads
31 this year for next year's chip seal.

32 Don said there is also slurry sealing of urban roads by the engineering division. He said crack sealing is generally
33 done by region. Kim said the main objective is to stay one year ahead of pavement and chip seal workers. Don
34 said spring and fall are the best times to crack seal, as staff is usually busy with chip sealing during the
35 summer.

36 He said a mix of personnel is used with Kim as crew leader, two Medium Equipment Operators, five seasonal
37 workers, and four corrections making up the crack seal crew. They start as early as April and go heavy until
38 the end of June and then try to pick up a couple of months in the fall.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

39 Bob (Spokane) asked how **corrections** are used. Don said two of the permanent employees are operators, the
40 five seasonal workers flag, and the four corrections do the heavy work. They earn \$25 a day per person and
41 come with a bag lunch. Don said all operators receive training regarding working with corrections and if we
42 have any problems with an inmate we return them to the jail. Bob asked if we use the same folks per season.
43 Kim said she usually requests men with the longest sentences but every year there are new inmates.
44 Whenever she gets a new person the lead worker shows them the ropes and county staff don't have to do a
45 lot of training.

46 Kim said she had used and liked the **Polyflex 547** because of the wide range of temperature it can be applied. It
47 sets real well, isn't too tacky, and seems fairly pliable. She said in doing crack seal application during the
48 summer they aren't able to get a lot of cracks that should be done in spring or fall and cracks are always
49 appearing. She said she never liked the **Crafco 211** but it was very flexible and seemed to stretch out with
50 cracks. Kim said staff talked about doing routering but heard this didn't work for well.

51 Don asked if anyone **sanded the material** after applying to cracks. Dave (Wash) said they've tried different
52 techniques and the contractors have sprayed on so traffic didn't pick it up. Kim said Marion County does the
53 same by spraying **Avalanche** and are able to get traffic right on. She said when using the Crafco 211 they
54 were able to spray with **dish soap** and the Avalanche is fairly expensive.

55 Don said Marion County is putting down 90 lbs. of crack a year with a budget of \$54,000. He said they purchase
56 the current material for \$.51/lb. He asked if there were any concerns about performance and if anyone had any
57 tricks to stay down. There were no suggestions.

58 He asked if anyone was **crack sealing for other agencies**. Pierce is contracted out to 2 or 3 of neighboring
59 cities. Kim said Marion County is contracted out a couple of times for Yamhill County, the cities of Hubbard
60 and Keizer.

61 Washington

62 Keith said historically Washington County has not had a regular crack sealing program. They've had sporadic
63 contract work and have had a consultant give recommendations to beef up the crack sealing program. He said
64 they currently are budgeting for a crack seal machine.

65 Keith said he is interested to hear back feedback on **Crafco 125** from Kim because that's what they're interested
66 in buying. He said they've borrowed a crack sealer from Multnomah County and the City of Portland for some
67 work, but have a lot more to do.

68 Dave S. said since 1994 Washington County has contracted their slurry seal and overlay for the roads system. He
69 said they've **contracted** with slurry seal folks to do same year and haven't had a problem of crack seal being
70 done same year as slurry seal. There have been problems with material bubbling up because it was too fresh
71 but overall it has been very successful. He said Washington County will continue this program but transition to
72 own county crews once the crack seal machine is up and running.

73 Don (Marion) asked how they paid (per road, by product). Dave said they **estimate lineal footage** and have folks
74 do preliminary designs and it's fairly close to what ends up being the case. Dave said they only seal the cracks
75 with what is necessary and the cracks that are not suitable they have them router-ed but found it didn't have a
76 lot of value. Don asked if Dave could share a contract with the group and Dave said he would do that.

77 Pete (Marion) asked if they are crack sealing roads to prepare for another treatment or if this is the only treatment.
78 Dave said they are usually doing slurry over but do some stand alone crack seals. Keith said it is mostly urban,
79 neighborhood routes, because arterials are from road fund.

80 Pierce

81 Tom said they have been aggressive with their crack seal program. They **run two crews** with the majority of their
82 work being prep for chip and slurry seal. They **chip seal 160 miles and crack seal that for chip seal** and also do
83 another 20 miles for slurry seal. Tom said time permitting after that, they try to hit their main arterials that have
84 had overlays in past 10 years to maintain life of roads.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

85 He said they do all the work in-house and try to do it when it's not raining because the volume of work that's
86 needed but don't do in the summer. Tom said both crews are eight person crews made up of seasonal
87 workers as flaggers and three full-time workers. Kim asked if there compressor is with same vehicle that pulls
88 crack seal pot. Tom said they use a 3-ton truck to pull the crack seal pot and another vehicle to pull the
89 compressor and use low tack from Crafcoc as material. Kim said Marion County is using polyflex 547. Tom said
90 Pierce County is using material with high emulsion and is resistant to high temperatures. Kim asked how it did
91 with moisture and Tom said they've had no issues. Tom said they have a slim line and a bear cat.

92 Don asked if they had any contaminants falling on the conveyor and Tom said they don't and like the conveyer.
93 Keith (Washington Co.) said they had a bear cat and had problems with it. Tom said there's a lot more steps to
94 making it run and have one employee who does this. This is one reason they switched to the slim line which is
95 not as temperamental.

96 Spokane:

97 Bob said using magma 230D. He said they had some issues with the heated wand but found it to be a good
98 machine. They have a eight person crew with a foreman with seven workers and they prep for chip sealing. He
99 said the foreman works with district manager to identify roads and their season runs from May to September.
100 Bob said they've had their program for 15 years and it's pretty successful. Don told the group that Bob had
101 supplied a photo of a road they chip sealed and it's on the website. He will email other info for Don to share on
102 the website.

103 Yakima:

104 Ryan said they mainly crack seal the roads they are chip sealing. They don't have don't have their own machine
105 so they borrow or rent a crack seal machine from the City of Yakima. Ryan said they will start crack sealing in
106 March and will do for about two weeks. They have an eight person crew and will do 60 miles of chip seal.
107 Ryan said they crack seal the worst of the worst and do it four to five months in advance. They use a Crafcoc
108 product but isn't sure which type. Pete asked if they are doing a hot oil chip. Ryan said yes. Don asked Ryan
109 to share any other information he had and Don would include in these meeting notes.

110 Topic 17: Pavements (b): Pot Holes

111 Marion

112 Don said four to five years ago, Marion County purchased a Berkamp that can haul four tons and has a v-
113 shaped box with an auger. He said it's a four door truck, with all the tools, a little elevator, air for a jack
114 hammer, and material bins.

115 Pete said it's used with another support truck that carries the tack and has torches in case they need to heat the
116 holes to remove water. He said one employee in the support truck is usually looking for potholes before the hot
117 box gets there and starts prepping the holes. The Berkamp truck is fully self sufficient but workers have trouble
118 with it getting cleaned out so they put the tack in the support truck. Pete said they are able to cover a lot of
119 area a lot quicker.

120 The crew is two corrections, two to three seasonal workers, and two permanent operators. Don said workers are
121 treating a third of what should be treated. He said Marion County is seeing PCI's dropping by 15 pts from
122 upper 70's to lower 60's.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

123 He said the county purchased the [truck for about \\$130-\\$140K](#) and they can do repairs year round on any day
124 that's decent with asphalt plants open. The inmates are doing most of the shoveling and jack-hammering. Pete
125 said the hot box is used almost every day and pays for itself. They've partnered with the City of Salem to get
126 an asphalt plant to open so we can get asphalt and have been lucky to get it almost any day needed. The hot
127 box is heated by propane with a heater to keep warm overnight. Pete said it's difficult to keep usable and
128 workers usually clean the truck out every day. He said we've been hit hard with pot holes and our pot hole
129 crew may cut out and repair hole, but this year there are so many holes we're forced to fill and move on.

130 Pete said crews are also probably putting down [half ton a week of cold mix](#). He said crews are also sealing the
131 edges of potholes and then sanding which makes for a nice repair.

132 Washington

133 Keith said they have one patch truck, a 2003 Ford truck with a [5 ton capacity, propane over electric](#). He said like
134 Marion County, Washington County is going down on PCI's. Their overall PCI has dropped about 10 so they
135 are on the downward trend, which means they are expecting more pot holes. He said their patch crew is out
136 once or twice a week. Keith said they've been coordinating some work with local jurisdictions to get enough
137 product and are supplementing with cold mix. He said they purchased a small [bob cat grinder](#) and are doing
138 surface grindings on delamination. He said in the next budget they are budgeting for a trench patcher and
139 hope to have in next six months.

140 Don asked if they had a problem getting material in the winter. Keith said they have three plants they can
141 regularly go between. Pete said plants will fire up for 40 ton but there is one in Marion County that will fire up
142 for 10 ton which is what the City of Salem and Marion County can use in one day.

143 Pierce

144 Bryan said they have a policy to patch pot holes within 24 hours after receiving complaint. They also have a
145 running list and they go back with small bob cat and tar the edges. He said they have [four patch trucks and](#)
146 [currently purchased a new one](#). Tyler said they purchased a new NW Manufacturing truck and said it's the
147 best truck out there. He said they are currently writing the spec for this which will be available to everyone. He
148 said it's [an auger-style truck](#). Tyler said their [last two trucks were belt fed and they had issues with the belt](#).
149 Don (Marion) said they did a lot of re-fabricating of their truck after receiving and he will share photos of
150 Marion County's new truck. Don asked how many trucks they have available on any given day.

151 Tyler said usually three and they also have three asphalt plants in the area and keep three tons of UPM for
152 emergencies or when the plants aren't open. [Bryan said they respond 24/7 to repairing a pothole. Don asked](#)
153 [for a copy of their pothole policy](#). Keith said a 24 hour response sounds optimistic but they usually let them
154 stack up to where it's cost effective and a days worth of work. Tyler said they go out with temporary mix. He
155 said their current system-wide PCI is 87 so they don't get hit with a lot of potholes and have hardly any claims
156 through Risk.

157 Spokane:

158 Randy said they looked at bag material and the biggest argument against that was cost. He said their asphalt
159 plants are closed from November to March and asked Bryan (Pierce) how much we spend. Bryan said they
160 don't purchase premade bags. [They make themselves by using 56 tons of cold mix, which is a lot less](#)
161 [expensive](#), and the plant adds oil to mix. Randy asked how long the bags last and Bryan said no more than a
162 month but said they've had bags for over a year and had no issues with shelf life. He said he could provide
163 contact info to Spokane County. Pete (Marion) asked Pierce County how they put in bag. Bryan said they put it
164 in the back of cold patch truck and shoot it and have a local vendor that provides a 6 mil plastic bag. They heat
165 to 80 to 100 degrees just to get it pliable.

166 Don said he emailed participants a Pothole Criteria document, which rates pot holes, that was drafted at the
167 request of Marion County's legal counsel.

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see **"Over The Shoulder Topic Index"** ongoing WORD file for meetings' topics

169 Don will let everyone know what the discussion items for the next phone call will be and said he might shift to
170 organizational structure.

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**** End of Meeting #7 ****

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175 **CONFERENCE CALL MEETING # 8 – APRIL 3, 2014 @ YAKIMA**

176 Meeting Participants: 14 total / 7 agencies

177	Deschutes	Chris Doty	Tom Shamberger	Chuck Shutte	
178	Jackson	none			
179	Marion	Don Newell	Jolene Bray	Pete DeLapp	Dave Vaupel
180	Washington	Keith Lewis	Dave Schultz		
181	Pierce	Bryan Chappell	Tyler Bemis		
182	Snohomish	none			
183	Spokane	Bob Keneally			
184	Yakima	Ryan Calhoun			
185	AOC	none			
186	CRAB	Bob Moorhead			

187 **ANNOUNCEMENTS / CALENDAR**

188 Don said although this group was scheduled to continue discussion on pavement treatments at the next meeting,
189 he might talk with Snohomish County and ask them to share their experiences in responding to the mudslide
190 disaster. This would push pavement treatments to the June meeting agenda. He said chip seal keeps coming
191 up, but said discussion is moving through pavement treatments subcategories based on poll results (below)
192 from this group and next up is AC patching moving to heavier treatments.

193 **Pavement Treatments:** (a) Crack Sealing; (b) Pot Holes; (c) Chip Seals – part 1; (d)
194 AC / Blade Patching & Other Repairs; (e) Grind & Inlay (wheel paths); (f) AC Overlays
195 – Internal; (g) AC Overlays – Contracting; (h) Full – width milling; (i) Chip Seals – part
196 2; (j) Other Seals & Slurries; (k) Alternative Products

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198 **Topic 18: Site Visit – Spokane Co – April 1 -2, 2014**

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200 **Topic 19: Site Visit – Yakima - April 3, 2014**

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Topic 20: Organization Culture #2: Structures, Labor, and Managing Change

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Deschutes County:

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Chris said Deschutes County has 900 miles of roads in their system (700 miles is paved and 200 miles is gravel and/or dirt) and they have a pretty high number of local access roads.

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He said because Deschutes County has **a lot of development**, there are roads have been dedicated to public use but not accepted into the county transportation system. These roads add a substantial amount of work to staff that have to explain to customers that maintenance is not the county's responsibility but that of the residents or property owners.

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Chris said their department is focused on transportation although they oversee Solid Waste and Survey, and they have 53 employees: 27 FTE in road operations, 4 FTE in Survey, and 21 FTE in engineering which includes their sign group.

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Tom said they have three primary summertime functions: chip seal, vegetation work, and striping. Tom said they **pull from the shop and** vegetation staff and engineering techs to drive during chip sealing.

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He said they do a lot of vegetation work with federal agencies and other cities, and do striping for cities in Deschutes county and adjacent counties, with striping crews receiving overtime.

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Tom said they have the Central Oregon Public Works Partnership (COPWP) intergovernmental agreement, which is like the Management Oregon Resources Efficiently (MORE) **intergovernmental agreement** but focused on central Oregon jurisdictions. Within this agreement, cities and counties do joint purchasing and Deschutes County is the lead agency on the contract. He said they have been able to reduce the cost of crack sealing because other jurisdictions can get hot oil to do work through this contract.

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Chris said they are adopting a culture change of **not having silos in organization**. He said one worker classification ranges from low to apprentice to journeyman-type status, which the union negotiated into the contract. Chris said the county has two or three different levels and workers receive large increases in pay within several years. He is hoping to bargain out because they end up hiring low for entry level without having a solid way of showing how workers will advance.

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Chris said they have recognized **two core services in business plan** for department: **snow and ice** in the winter and **chip sealing** during the summer. He said they've isolated the overlays and contacted that out. This philosophy has allowed the county to lower FTE and focus on these two core services. He said philosophically the cost of a public employee is more than salary and benefits with the added cost of training, utilization, and administrative costs.

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Chris said they have tried to strip down to the base level and contract other services, and have increased their chip seal program by 50% while bringing down FTE count. The department's annual budget is \$12 million.

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Marion County:

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Don said Marion County has 1,200 miles of road. He said the operations division has 60 FTEs, plus 5 supervisors and himself, and within this structure were 7 crew leader positions.

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Don said in the winter the crews break into districts and in the summer crews break into work groups (vegetation, crack seal, dirt crew, special projects, bridge crew) with approximately 8 workers. He said there have historically been two **classifications** of operators, heavy equipment operators (HEOs) and medium equipment operators (MEOs), but Marion County has discontinued the HEOs and there is only one left due to attrition.

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Don said he assessed equipment and updated the list, and it's a general rule if someone does a job for part of a year they should be in that job class. He said the county is now converting HEOs to MEOs but are given upgrade time when operating heavy equipment.

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Don said all new hires must now have a **CDL at time of employment** whereas the county used to give 5 months and train up. Don said this was done because the pool of skills was becoming weaker because there were so many non-operators.

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247 He said the new department director has asked Don to target the actual number needed year round to **reduce**
248 **the number of seasonal employees** and add back in some non-CDL full time employees. Don said he is
249 trying to figure out how much that will cost and then add that back into the budget. He said new laws may
250 require agencies to pay insurance for seasonal employees so we might as well make them full time. He said
251 supervisors at Marion County are all exempt and all have call out pager duty every seven weeks. Don said
252 Marion County already had a policy about call out and carried it over to supervisors for additional pay. The
253 department's annual budget is \$25 million and half that amount is for road operations.

254 Washington County:

255 Keith said they have 1,300 miles of road with 225 miles of gravel roads.

256 He said during the economic down turn organizational challenges were to make cuts where there was less
257 impact. He said they opted to go from 4 to 3 graders and reorganize grader areas and haven't seen significant
258 impacts in lower classification of roads.

259 He said through attrition they have **downsized their FTE** in operations and maintenance from 107 or 108 to just
260 under 100. Keith said they are just about at the minimum level to provide round the clock coverage on 12 hour
261 shifts and have gotten to the point that if they make any more significant cuts it will impact public services.

262 He said they have also **cut back in dust abatement program** which used to have an annual budget of \$70,000
263 and is now \$20,000. He said there was some public outcry and they had to have more involvement with
264 residents funding some dust abatement. Don (Marion) and Bob (Spokane) said they did the same thing and
265 that they accommodate the public by providing grading before the application. Keith said they no longer
266 contract for brush spraying but still do shoulder spraying. He said they chip seal about 25-30 miles per year
267 and use small machine patching to keep away from contracting questions.

268 Keith said he manages 62 employees, which includes 3 supervisors and 3 management analysts, and each
269 **supervisor is responsible for about 20 employees**. Their initial cuts took away 2 supervisors and combined
270 the work load. He said this helped break down silos but presented challenges because there are no satellite
271 facilities.

272 He said this does create significant challenges due to time in field, personnel, and organization, and they have
273 slowly integrated slow cuts to the work force. Keith said they have recently started leadership training after
274 being without a training coordinator for some time. This training provides tools to employees who are brought
275 up the ranks and placed **in leadership positions**.

276 He said Washington County has **four levels of equipment operators** and has been in talks to hire new staff with
277 CDLs.

278 He said supervisors aren't in a guild and are hourly employees who receive overtime pay.

279 Keith said most recent contract negotiations talked of skill based type of pay and now lower classification
280 employees that are skilled in all levels will receive \$1.00/hour as an incentive. Don (Marion) said Clackamas
281 County went to a true skill based pay system and regretted it and asked Keith if they had problems. Keith said
282 the language is broad enough and generic enough that it's not a problem and no one has been eligible yet.

283 He said their recruitment process is to hire new employees who work their way up through the ranks and its been
284 over 8 years since anyone has been hired into a higher position.

285 Their work schedules are 4/10's in the summer and 5/8's in the winter, and they run a four person night crew for
286 two months in the winter. They have call out procedures for their 3 supervisors and 3 management analysts
287 who are paid for 1 hour for every 8 hours during non-shift hours they may need to respond. Keith said low risk
288 offenders doing community service are used for vegetation management and are a significant help to program.

289 Dave said in terms of asset management they have about 850 centerline miles and the system is in slight decline
290 dropping about a point a year to about **73 PCI now**. He said they are in defensive mode right now and trying to
291 maintain the system.

292 Dave said they spend about \$5.5 million annually on pavement and are purchasing crack sealing machine in next
293 budget cycle and will be continuing micro-surfacing. He said their bridges are in pretty good shape and one
294 reason is that the capital program is \$22 million. They are **replacing timber bridges with concrete**
295 **structures**.

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296 He said they have a self imposed landscaping program and because their capital programs have a lot of
297 landscape features near roads, staff are being directed to expand this program because it's aesthetically
298 pleasing. All these areas are in the county right-of-way near incorporated cities all within the UGB. Bryan
299 (Pierce) said they also do landscaping in right-of-way.

300 Keith said their performance standards in replying to citizen requests are to reply to emails within 24 hours,
301 schedule within 7 days, and complete the work within 30 days. He said last year they had a shoulder widening
302 project to accommodate farming equipment and bicyclists. They had some challenges since they didn't have
303 the equipment or expertise contractors have and although their costs were a little higher they were in the ball
304 park. Dave said their budget not including capital projects is \$22 million.

305 **Pierce County:**

306 Tyler said they maintain over 1,500 centerline miles with only 22 centerline miles of gravel roads.
307 They have 125 FTEs in road operations. He said at the satellite shops their work is more reactive, and they
308 supplement big crews during chip sealing and do a lot of contract overlay.

309 He said they hire temporary employees to perform basic duties such as working in rain gardens and traffic control.
310 Bryan said they used to have silos and shops with district boundaries, but they went through a reorganization
311 10 years ago and have moved to a central maintenance facility that is the main hub with two satellite shops.
312 He said they've **worked to break down walls and bring staff together** to be one functioning team.

313 Bryan said they have a matrix based on severity and extent with a 1-9 scale that crews can use to interpret issues
314 and then enter real time data into the system. He said an issue receiving a 1-4 rating will create an automatic
315 work order. He said their Asset Management program is a huge tracker and is being used as a model for
316 tracking drainage cleaning for NPDES Phase 1.

317 He said technology is a big asset for Pierce County and they've created a computer room with six computers that
318 staff can use to view programs, email and pay stubs, which he said is a great learning tool for employees
319 without smart phones or home computers. He said because communication can be lost between the main
320 shop and satellite shops, when at the satellite shops he holds impromptu meetings and when at the main shop
321 he often receives Facetime calls with updates.

322 Tyler said their budget is \$32 million.

323 **Spokane County:**

324 Bob said they have 2,527 miles of road which includes 1,000 miles of gravel road.

325 They currently have four road districts and three seasonal satellite shops. Bob said they have approximately 100
326 FTE with non-CDL summer help.

327 He said they have a dedicated **bridge crew and vegetation** crew that are pulled from the districts. He said they
328 have a crack seal team made up of summer help with a lead worker pulled from a district and are looking to
329 expand to two teams.

330 They also have a chip seal team, two pavement removal and replacement (PRR) teams, and are looking at the
331 possibility of creating a drainage crew. Bob said they are in the middle of a reorganization assessment and
332 said Don (Marion) and Keith (Washington) did great job with the assessment.

333 He said Spokane County has **three levels of classifications**: road maintenance specialists 1, 2, and 3. He said
334 RMS 3 ranks at the top and is able to operate any piece of equipment. He said they hire employees with a
335 current CDL and all operators are union represented. Bob said there are 12 managers that are made up of two
336 different guilds. He said although he is a non-represented employee, the assistant superintendent is in a guild
337 and they are trying to make that position non-represented also. He said their annual budget is \$19 million.

338 **Yakima County:**

339 Ryan said they have a satellite shop and their youngest employee with the least experience was 55. He said it
340 was a divided group and he was **tasked with bringing the crews together while being a diplomat**.

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341 Ryan said they have chip seal and tree trimming programs and are working to create other small programs. He
342 said they created a temporary lead tech status where employees are sent through training, receive \$1.00 more
343 per hour and become lead tech in their tree trimming program. He said when the lead tech is gone another
344 worker can step up to temporary lead tech status.

345 Ryan said they bring crews together for chip seal and identify staff that have done well and promote them. He
346 said this is a big push especially now with a low snow season. He said by collecting work orders they identify
347 projects and try to give opportunities for lead tech opportunities. He said this seems to bring some respect to
348 lead tech position, which is how they are trying to incentivize. Ryan said they are in the process of bringing the
349 shops together. He said their annual maintenance budget is \$9 million.

350 **Topic 21: Organization Culture #3: Lessons from Introducing Change**

351 **Deschutes County:**

352 Chris said culture and change is like 12-step program where you first have to recognize you have a problem. He
353 said the second part is they had an opportunity to identify the quality of the new manager to take issues and
354 move the department in the right direction.

355 He said they were **careful in selection of leadership** and as a result there is communication and transparency.
356 He said it's a success but when they get busy they don't communicate enough. In the first staff meeting after
357 Tom was hired as manager they went over budget and department issues and were told it was the first time in
358 15 years this type of meeting had happened. He said these meetings helped break down barriers.

359 Chris said one possible failure is **decades of history and hard feelings keep cropping up** and hanging on. Tom
360 said at one meeting one employee brought in calendars from 15 years ago. He said the employee was told
361 they can't change the past but need to keep moving forward. He said ***culture change is a marathon not***
362 ***sprint.***

363 **Marion County:**

364 Don said he calls this "**vision catching**" and the key is communication. He said the department holds all-group
365 safety meetings and the road crews meet at 7:00 a.m. the third Tuesday of each month, with the rest of the
366 department meeting at 8:00 a.m. During the 7:00 a.m. meeting time, he said they discuss some safety topics
367 but also other business such as what the department is doing, what's in the budget, what equipment is being
368 purchased, etc. He said this was his red shirt day; he makes himself a target which is not very comfortable but
369 he's used to it now. Don said he holds a vegetation academy that is taught by an environmental specialist. He
370 said what he's trying to sell is **fluid management**, meaning one day you're here and next day you're there but
371 the work will be done much more fluid.

372 Dave V. said when he started with Marion County the long-term employees would rather see new employees fail
373 and now they see the value in everyone succeeding.

374 Don said division heads must do a budget presentation to the board each year and they do test drives by
375 presenting to their staff first, opening themselves up to questions and feedback.

376 **Washington County:**

377 Keith said he gets together with crews once a month. He said it's rather uncomfortable but everyone hears the
378 message at same time and goes in same direction at same time, and it also clears out the air.

379 He spoke again about their **new leadership training**. He said lead worker training has fallen by the wayside for
380 years and during that time there were people put in leadership positions didn't have tools to do job. With this
381 leadership training staff learn there's a long history, they can't change the past, and it's a challenge to get
382 beyond that.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

383 Keith said part of what they've done to break down silos is take positions such as traffic maintenance workers,
384 who have very ingrained silo type thinking, and assign them with temporary assignments. He said it's helped
385 to move folks around and get different mindsets. Keith said he thought video conferencing is a great tool for
386 office to field communication.

387 **Pierce County:**

388 Tyler said everyone is touching on **successes we can all see and the big one for them is technology**, which
389 has been huge for Pierce County. They can track historical data and can show the need based on that data.
390 He said he can't wait to show this to participants during the fall site visit.

391 Tyler said a huge challenge is how to maintain morale but the key is good communication and transparency
392 because if you have an unhappy workforce they won't do good work.

393 Bryan said **other successes are breaking down walls between shops and** some of that has to do with tracking
394 by budget. Tyler said they are also helping to retrain staff to look at things that are a cultural challenge by
395 priority order (MOPIA – maintenance, operation, preservation, improvement, administration) of doing work at
396 Pierce County.

397 **Spokane County:**

398 Bob said their situation is almost identical to Deschutes. They are trying to get out to shops and talk about
399 budgets. He said morale was very bad and his predecessor didn't care about retirements and created **a lot of**
400 **distrust**.

401 Bob said he has gone **after labor relationships and there is a commissioner's initiative "Partners In**
402 **Progress.**" He said he meets with staff and said some of the rumors are incredible. He said in every meeting
403 employees take notes because in the past they did this to hold folks accountable.

404 **Yakima County:**

405 Ryan said their success and failure are one in same. Success is doing a lot of great things in technology and
406 doing purposeful work. But he said technology is also a failure because they must be careful that technology
407 doesn't drive work.

408 He said because younger workers are more comfortable with technology they are moving ahead and older
409 workers getting left behind. He cautioned that we can't let technology drive us.

410 **CRAB:**

411 Bob said been listening and has heard **technology is one of the new resources** that we will all have to endorse
412 and Pierce County seems to be leader in this group. He said he has also hears there are similar issues and
413 more than one way to address them, and what works in one county may not work in others.

414 The challenges are coming first to larger counties, especially those on the west side with water issues but are
415 drifting to east. He said Spokane said one of their options is to have fewer paved miles and that resources are
416 not keeping up with demand.

417 Bob said one thing unsaid in this group which he has recognized is the **public's awareness of what we do or**
418 **don't do**. He said counties need new technologies and communication skills to keep their heads above water.

419

420

421

**** End of Meeting #8 ****

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423 **CONFERENCE CALL MEETING # 9 – MAY 1, 2014**

424 Meeting Participants: 19 total / 8 agencies

425	Deschutes	Chris Doty	Tom Shamberger	Ed Landers		
426	Jackson	none				
427	Marion	Don Newell	Jolene Bray	Pete DeLapp	Evie Pech	John Vanderzanden
428	Washington	Keith Lewis	Dave Schultz	Chris Waltz	April Okazaki	Ed Meeuwsen
429	Pierce	Don Wells	Paul Marsh			
430	Snohomish	Cindy Higman				
431	Spokane	Randy Moran				
432	Yakima	Ryan Calhoun				
433	AOC	none				
434	CRAB	Bob Moorhead				

435 **ANNOUNCEMENTS / CALENDAR**

436 Don said it was decided that the site visit scheduled for this **fall would only include Pierce County**. He said he
437 needs verification from Pierce about the dates and will resolve that via email. He said Snohomish County
438 wants to host a site visit in Spring 2015.

439 He said he sent out survey responses regarding the last site visit and there was strong consensus that they work
440 well and participants are happy to attend. He said some participants commented that there wasn't enough time
441 to see everything which helped decide to keep the fall site visit to only Pierce County. Don said this will
442 probably be a Tuesday to Thursday visit. He said there was a lot to see including their technology, fleet and
443 urban practices, and water quality and environmental compliance. He asked if anyone had feedback about
444 only visiting Pierce County.

445 Bob M. said there may be conflicts with that date because of a Road Maintenance Supervisors conference in
446 Spokane and Washington State APWA conference. Don asked Bob to verify dates of conferences and send to
447 him. Don will then work with Bob and Pierce County to set the site visit dates.

448 **Hot Topic 22: Emergency Management: Snohomish County Mudslide Update**

449 Don asked Cindy to describe what the Snohomish County road group did for response to the mudslide and what
450 she did personally in responding. Cindy said they had devastating situation.

451 She said the road department's role was unique because the road involved in the slide was a Washington
452 Department of Transportation (WSDOT) road and no county roads were affected but since it was in
453 Snohomish County their department responded. Cindy said the public works director and other staff were at
454 the slide location and the county's role was to take the lead working with WSDOT.

455 She said she ended up with a **couple of different roles**. She said an emergency coordination center (ECC) was
456 set up by WSDOT and the county set up the 24-hour emergency operations center (EOC) for support. She
457 said all requests were then routed through the EOC and the county's role became support for everything. She
458 said an example of requests would be sandbags or propane heaters.

459 Cindy said **FEMA and the National Guard** came in but in the beginning local agencies went in and tried to help
460 with recovery. She said one of the county's main roles was providing water tankers on site to help
461 decontaminate everybody.

462 Cindy said the county was then **asked to help with the recovery mission**. She said at the east end of the slide
463 was the town of Darrington and they were cut off so the county helped provide an access route.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

- 464 She said the county had a lot of **local accounts which allowed them to rent or purchase needed items** and
465 play a large role in making sure other agencies had everything they needed. Cindy said they also ended up
466 providing crews to help with the recovery. She said they didn't think they would be involved with that but they
467 ended up with crews and equipment in the debris field. She said they were the last people to pull out which
468 was surprising since it was a WSDOT road and they were working with FEMA and the National Guard.
- 469 She said she was also put on **the debris removal task team** by the EOC, which was partly because debris would
470 eventually be moved to county solid waste. She said they helped set up sites, get containers, and with sorting,
471 and also worked with the medical examiner's office. Cindy said it was very delicate and tedious operations and
472 they have since pulled their crews and WSDOT has contractors on site. She said they are now beginning to
473 return rental equipment to vendors.
- 474 Dave S. (Washington Co.) asked who tasked **public works staff to do specific things on site** and if other folks
475 were tasked to provide support in EOC. Cindy said it wasn't long before FEMA was on site and they put in
476 requests to the ECC who would call EOC to put in requests. At one time they called Cindy that they needed
477 nine excavators and operators but she couldn't provide because they didn't have any more resources. She
478 said once crews were in the field their direction came from FEMA.
- 479 Tom (Deschutes) said they've been doing table top training and **he's curious about one of biggest obstacles**
480 **they faced in a real event they didn't see in table top working with a lot of agencies.** Cindy said it was
481 very chaotic in at first to make sure who was giving directions and staff even received phone calls in the
482 middle of the night on their cell phones for loads of gravel. She said they couldn't allow that to happen so
483 everybody who called was told they needed to go through the ECC who would put in requests to the county.
- 484 Chris W. (Washington) asked who the other **members on the debris team were.** Cindy said solid waste,
485 WSDOT, and some engineers. She said personal management collected personal items that came off the
486 debris field and engineering services determined where to place a site they were involved. She said medical
487 examiner and health district were involved the whole time, and when they started there were a lot of victims
488 who were not found and human remains were found in the debris field. She said the whole debris site was
489 under the guidance of the medical examiner.
- 490 John V. (Marion) asked if they had any **critical incident stress debriefings.** Cindy said the county had about 25
491 people who worked in the debris field and next Monday during roll call they will have an EAP counselor
492 available to talk with the group about their experiences on the slide. She said counselors will also schedule
493 one-on-one counseling for anyone who wants that.
- 494 Don (Marion) asked if they received any executive direction or guidelines from the **public works director or**
495 **board of commissioners** at the front end of the event. Cindy said the direction she received is whatever she
496 could do or whatever they asked for, to please do it, and if staff got to the point where they had tapped all
497 resources then to say so but until then to do what they can.
- 498 Don asked **if she was trained to work in the EOC. She was she was not** and said it was interesting how they
499 all came together. She said everyone had a role and it was amazing how well it was all done.
- 500 Don asked what work suffered because they diverted resources. Cindy said this time of the year they have
501 construction season and a lot of the people still headed out to their crews but here she had to utilize some of
502 the main operators in the debris field for projects such as opening Barlow Pass for Forest Service. She said
503 the backhoe crew's work was piling up on the maintenance end for ditching and smaller construction projects
504 were held off until this week. She said it feels like they're getting back on track.
- 505 John V. (Marion) asked as far as **volunteer and donation management** if they had anything that helped stretch
506 resources. Cindy said everyone wanted to volunteer to go out there. She said some staff took vacation time to
507 volunteer but it wasn't long.
- 508 Keith (Washington) asked about **handling hazardous waste.** Cindy said out in the debris field for every piece of
509 equip they had four spotters on the ground. She said if they saw anything they had to stop and someone from
510 the medical examiner's office would come out and if identified as human remains it was handled by the
511 medical examiner's office or the National Guard, not by public works staff. She said the entire area was very
512 polluted by chemical hazardous waste and anyone who spent any time out there had to go through a
513 decontamination center.
- 514 Don said this debrief from Cindy has been helpful and asked her to send the groups best regards.

Hot Topic 23: Vegetation: Danger Trees / Tress of Concern

515

516 Don N. (Marion) asked **Don W. (Pierce)** to define **what danger trees are to Pierce County**. Don W. said they
517 are any trees that are leaning, showing signs they are dying, any erosion or potentially falling into right-of-way
518 or may be a hazard. He said two years ago they had a tree that was within a group of trees that fell over during
519 the night and they are now in middle of lawsuit. He said crews were called out in the middle of the night and
520 two cars had pulled up to tree with flashers on. He said a third driver came though and tried to drive around.
521 Don W. said both the driver and passenger were injured and the passenger is suing the driver and county. He
522 said the tree was sitting tucked into a group of trees and not easily seen. He said the county has been trying to
523 be more proactive to these types of issues.

524 Don (Marion) said there is a **statute in Oregon that the adjacent property owner is responsible** for any debris
525 and water that may go in the roads. He said the county doesn't exercise that to the fullest and if everyone did
526 their part the county wouldn't have to mow either.

527 Don N. **asked participants to detail how they approach tree vegetation and what types of programs they**
528 **have.**

529 **Deschutes**

530 Tom asked Don W. if there was prior knowledge there was a danger tree and was there a reasonable expectation
531 that there would be a danger tree. Don W. said the tree did not stick out and they are working with crews to
532 look for leaning trees and if a tree appears to be dead they treat it the same way they treat potholes and deal
533 with it that day.

534 Tom said one thing they do at Deschutes is if they are **aware of a tree they do not mark it** because if they don't
535 get to it that can be a problem for liability.

536 Tom said Deschutes has vegetation crew that in the spring does brushing of roads before chip seal and makes
537 sure they don't have trees that will drop debris onto the chip seal. He said they take care of a lot of danger
538 trees throughout the year and part of their trees are along national forests and they receive permission to take
539 those trees down.

540 Tom said the trees in Deschutes County aren't as big as in western Oregon but can still be a hazard.
541 He said they a **40 foot bucket truck, a chipper** that is dedicated to chipping and removal, but they do not have a
542 dedicated crew. He said they work with owners and leave fire wood along the road.

543 **Marion**

544 Don said that at **Multnomah County** they had a small bucket truck with no proactive response. He said crews
545 relied on semi-trucks to do trimming for them. He said another thing the county has a direct contract for a year
546 round inmate crew and officer who do most of the hand brushing work.

547 Evie said it sounds like most counties run on a similar schedule although for Marion County they are down staff
548 wise. She said the county used to have one year round brushing crew that took care of danger trees and had
549 two crews going in the summer. She said now the county has only one crew in the summer and no crews in
550 the winter. Evie said if a ditching crew goes down they'll get bucket truck and try to catch up on complaints.

551 She said Marion County is **complaint driven** and operations staff is good about calling into dispatch. She said
552 operations crews work with the engineering group as far as doing prep work for pavement treatments, such as
553 slurry seals in urban areas. She said door hangers are used for that work and face to face works best so staff
554 can answer questions.

555 She said as far as danger trees, the county has a **40 foot bucket reach** and also have contractors we request
556 bids from on larger trees. Evie said depending on the time of year and work load, it's anybody's guess which
557 will come in with low bid. She said Marion County has four mowers for each district and mow May through
558 September.

559 She said there is **one reach mower that works in tandem with folks on roadside mowers, two brush cutters**
560 that are generally regulated to winter work, and a fairly active herbicide program that averages 50 miles per
561 day.

562 **Washington**

563 Keith said most Oregon counties are pretty similar but resources and personnel dictates how aggressive they are.
564 He said Washington County doesn't typically do anything with a tree unless it's a road hazard. He said if it
565 looks like it will fall in the road they may be proactive but it is on a case by case basis. He said if a citizen
566 calls, the county will try to proactively work with the property owner since it's their responsibility to live up to
567 their obligation.

568 Keith said they have a **bucket truck with 56 foot reach and a chipper**. He said they do have occasions when
569 they may rent a chipper and also have a chip truck with a box to run a second crew, if needed.

570 He said they are similar to Deschutes in that they have **dumping agreements** and give property owners an
571 opportunity to take the chips. Keith said they will cut up larger pieces of trees and limbs and leave for the
572 adjacent property owner. Dave said they've had several situations where tree roots have created issues and
573 one of the problems is whether excavating and cutting roots will cause a tree to fall so they've hired an arborist
574 who will examine trees and determine if they can cut the roots without taking the trees down. Dave said they
575 have money in their budget for a consultant but this is mostly handled by their vegetation crew.

576 Don N. asked if they also address **canopy issues** for upcoming paving and chip seal work. Keith said the
577 vegetation crew gets it cleaned up first before road work. He said they send quarterly mailings to property
578 owners for vegetation work that needs to be done in the right-of-way. He said Oregon statute states that the
579 property owner does the work and they meet on this throughout the year.

580 **Pierce**

581 Don Wells said trees of concern are handled a few different ways by either responding to a citizen complaint or
582 crews may observe. He said the size of the tree dictates whether crews or a contractor takes down since
583 larger trees are bid out. He said if a tree is leaning and has the **potential to fall in the road**, they try to do
584 same day. He said their vegetation program has crews that go through and create work orders that have a
585 high, medium, and low ratings system.

586 He said they have **two boom/bucket trucks and four chippers that are run year round**, as well as have brush
587 cutters and mowers. He said one of their priorities is to go through chip seal areas to clear beforehand.

588 Tom Z. said with hazard trees they are actively checking out. He said if they feel it will fall down they don't take
589 any chances. He said they will put a dump truck in the road, then close the road and use flaggers. Don W. said
590 if they have citizen concerns if they have a tree that appears healthy **they call an arborist**.

591 Keith (Washington) asked how they **interact with their citizens** and what their policy /practice is (e.g., knock on
592 door, 30-day notice, etc.). Don W. said if the tree needs to be taken down and is a hazard, they try to make
593 contact with property owner and if they can't make contact they will still take it down and follow-up afterward.
594 He said if it is on private property they try to get the property owner to do the same day and if they don't or
595 can't, then the county does. Tom Z. said for vegetation work they hang door knockers and give 30 days to
596 respond about vegetation concerns.

597 He said they have year round vegetation crews and usually run two crews but may go down to one in summer.
598 He said they have a **56 foot bucket truck and a bridge truck** than can be used if needed with an 80 foot
599 reach.

600 **Snohomish**

601 Cindy said they operate similar to Pierce County. She said they have **four bucket trucks and run two of them**
602 **year round**. She said they use spare trucks for other projects and vegetation work is done year round.

603 She said they have situations where property owners are unhappy when they want to take down a danger trees
604 on private property. If the property owner doesn't want to comply they contact the courthouse immediately and
605 they send an express letter that tells them they have a certain number of days to respond. She said if it's an
606 immediate threat, county crews will remove. Cindy said nine out of ten property owners will work with the
607 county. Don asked if property owner takes down the tree is it at county or property owner's expense. Cindy
608 said it depends on circumstances. She said if it's within the right-of-way and it's a danger tree, the county
609 documents and takes down immediately.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

610 She said their trucks are 50 foot and they have rented a 100 foot boom truck, but any larger and they go to a
611 contractor.

612 Spokane

613 Randy said they have five-person vegetation crew and stay busy five months a year. He said they are not
614 nearly as active as Pierce or Snohomish counties on danger trees. He said they sometimes must hire a
615 contractor but mostly do the work themselves with a chipper and 56 boom truck.

616 Yakima

617 Ryan said they aren't nearly as proactive on danger trees but don't have as many trees as other counties. He said
618 if they see a danger tree, they write up a work order and rent a 50 foot boom truck and put together a high
619 reach crew. He said they have two mowers that operate for 2 ½ months out of the year but also have an
620 extensive herbicide program.

621 Hot Topic 24: Vegetation: Trees Falling Training

622 Don told the group that Marion County had a tree falling accident last year that caused OSHA to become
623 involved. He asked participants to describe training they have for staff.

624 Deschutes

625 Deschutes – Tom said the tree fallers they rely on come out of the logging industry. He said they don't have a
626 formal training program and have also contracted out.

627 Tom said another resource they've tried is using large, dead ponderosas that are along the road and inviting the
628 Forest Service to bring in training crews to use as training ground.

629 Tom said they focus on bucket truck safety to make sure staff are proficient.

630 Marion

631 Don said Marion County is doing a good chainsaw safety class and was doing a site visit taking down 40-year
632 old trees. He said they had four classes that were broke into two and those that were comfortable dropped
633 trees in class.

634 Evie said Oregon Department of Forestry Wildlife Division recently offered a tree falling class. She said they
635 put four staff members into the daylong program, which was held at Mehama. She said each employee had to
636 take their own PPE, chainsaws, and pickups, and it was set up as a half day in class and a half day in the field
637 falling trees. Evie said comments from staff were that the training was really worthwhile.

638 Washington

639 Keith said they had similar experience with training. He said they picked 6-8 employees to go through training
640 which was a full day with class room discussion and in the field. He said the plan is to get everyone on
641 the vegetation crew through the training but they haven't arranged yet. Don asked if this was an internal
642 training. April said it is an outside training by a tree faller and is a day and a half training.

643 Pierce

644 Don said they have in house training for their staff that is half day class room and then out in field. They also have
645 trainings for chainsaw safety and falling safety.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

646

Snohomish

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Cindy said they **don't have training at this time**. She said were trying to get connected with the Forest Service and that will probably be their training resource. She said most of their tree fallers come from the timber industry and they have them train the new people when they come in.

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Spokane

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Randy said they **don't have formal tree falling training**. He said they use the same 5-6 people that have come from the logging industry. He likes the idea of a class and that they have chainsaw and chipper safety for all employees. Randy said they may talk to Bob about more information on a formal training. He said if there are wires around of trees they don't fall those trees, they hire contractor to do.

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Don N. said one thing that came out of OSHA fine was not protecting the hinge and how many feet they worked by the power line.

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Evie said if you **can't work on tree within 10 feet of a power line and can't fall a tree within 20 feet of power line without letting the power company know first**.

658

659

Tom (Deschutes) said one thing he's working with on with power companies is often times if he brings a tree concern to the power company they will fall the tree and the county will do the clean-up. He said it's saved them a lot of money and kept them in compliance. Evie said Marion County is doing that with PGE.

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Don N. asked if we addressed issues Pierce County raised. Don W. said he thought it did. Don N. said if anyone has any documents, brochures, etc., to please share with the group and we'll post on the website.

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**** End of Meeting #9 ****

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669 **CONFERENCE CALL MEETING # 10 – JUNE 5, 2014**

670 Meeting Participants: 11 total / 6 agencies

671	Deschutes	Chris Doty		
672	Jackson	none		
673	Marion	Don Newell	Jolene Bray	Pete DeLapp
674	Washington	none		
675	Pierce	Don Wells	Paul Marsh	Tom Zurfluh
676	Snohomish	none		
677	Spokane	Bob Keneally	Randy Moran	Howard Hamby
678	Yakima	Ryan Calhoun		
679	AOC	none		
680	CRAB	Bob Moorhead		

681 **ANNOUNCEMENTS**

682 Don said he had spoken with Bryan in Pierce County about the **fall site visit**. He told everyone that there was a
683 draft agenda for that visit on page four of today's agenda. Bryan said he thought some participants would be
684 attending the APWA conference from October 7-10 and that he wouldn't mind pushing the site visit back a
685 month. Don asked if anyone had a problem going to Pierce County in November.

686 There were no conflicts and Don asked everyone to pencil that on their calendars. He suggested starting Tuesday
687 morning in order to get in two and a half days. Don said the focus will be technology and innovation, fleet
688 solutions, and water quality. He said visiting only Pierce County is in response to feedback received from the
689 last site visit to Spokane and Yakima counties when attendees felt not enough time was spent at each
690 location.

691 Don said he would work with Bryan and asked the group to plan for the visit to go from Tuesday morning to
692 Thursday noon. He asked Bryan to plan how to schedule that and he can send draft agendas this fall.

693 **ANNOUNCEMENT'S / CALENDAR DISCUSSION / HOT TOPICS**

694 Don said he had spoken with Bryan in **Pierce County about the fall site visit**. He told everyone that there
695 was a draft agenda for that visit on page four of today's agenda. Bryan said he thought some participants would
696 be attending the APWA conference from October 7-10 and that he wouldn't mind pushing the site visit back a
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699 two and a half days. Don said the focus will be technology and innovation, fleet solutions, and water quality. He
700 said visiting only Pierce County is in response to feedback received from the last site visit to Spokane and
701 Yakima counties when attendees felt not enough time was spent at each location. Don said he would work with
702 Bryan and asked the group to plan for the visit to go from Tuesday morning to Thursday noon. He asked Bryan
703 to plan how to schedule that and he can send draft agendas this fall.

704 **UPCOMING CALENDAR**

- 705 • **Site Visit #4:** Snohomish: Late winter / early spring 2015

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Topic 25: Pavements (c): Chip Seals

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Don asked everyone to share what they were doing with chip seals.

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Deschutes County:

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Chris said they started last week, a week earlier than normal. He said they have a pretty aggressive program doing **118-centerline miles** with 85-90 miles in the county road system and the rest in cities. He said they plan to finish the cities before June and then work on the county roads in July and August. Chris said they are mostly doing chip seal with a little striping and vegetation work.

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Marion County:

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Don said Marion County is beefing up its chip seal prep and the department has spent a lot of money patching and doing repairs. He said the PSIs are in the 70's, so there's a lot of prep. Don said they are doing prep work in the fall and spring before chip sealing, and sometimes two years ahead.

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He said they have a crack seal crew that works pretty steady for five months. Pete said the chip seal program is **28.5-centerline miles this year**.

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He said a lot of it is in hill country and they will start out with **1/2" chip** on Crooked Finger Road, which is at an elevation of 2,200'. He said they would switch to **3/8"** when they chip seal at lower elevations. Pete said they would also do a double chip with 1/2" chip and top with 3/8" chip with rock that consists of river crushed rock. He said this year they are getting **rock from a quarry that will not be washed**. He said the rock has a different shape with no rounded edges. He said it's a nicer rock and will be nice to see how it lays down. Pete said they are **using high float oil from Albina** and hopes to be done by August 1st with all chip and fog seals. He said they are working with the City of Salem road crew to help with patching to be able to start by July 21.

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Pierce County:

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Tom said program is **160-lane miles** and **county crews will do 150-miles and a contractor will do 10-miles**. He said they will **fogseal the entire program** two days after chip seal. He said they want to start by June 13 and hope to end by August 14.

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Tom said they are using one chip spreader and have two 4 gallon distributors and two tankers. He said they will leave with 1,800 gallons on hand than return to shop for more oil to supplement throughout the day as needed. He said they have set up times with Albina for delivery to tank farm and keep it heated so it's always ready to go. He said crews prep all their roads a year in advance.

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Spokane County:

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Howard said they start in the middle of June and finish by September 1. He said they will run two brand new distributors and chip spreaders, and will do 94-centerline miles with 3/8".

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He said most of the roads were prepped last year but there is still minor crack sealing to be done. He said the chip seal will be done with CRSTP, and they will look at all roads this year and will decide which to fog seal. Howard said they are adding a steel roller to their process this year and will let the group how effective that is.

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Topic 26: Pavements (d): A/C Grader Blade Patching & Other Repairs

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Deschutes County:

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Chris said he doesn't believe they need to do a lot of blade patching. He said they grouped a **lot of major patches together and contracted out**. He said this year timing dictated they do sooner so they did themselves. He said they will occasionally rent a paving machine for bigger patches but for most part will do the old fashioned way.

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Marion County:

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Don said they have a Layton Box to pull behind a paver. Due to past management decisions it is not possible to own a paver. He said they have phased out grader patching.

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Pete said they use 3/8" if they are patching roads and use 5/8" if doing inlay patching. He said the cost is \$47 per ton and if doing 2 1/2" deep inlays costing \$2 per lineal foot to pave these inlays and is no problem with 1/2". He said crews do a lot of raking and feathering for smoother rides and 5/8" tends to rake out nicer than 1/2".

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He said they normally go over patching with chip seal but unfortunately are not a year ahead as they should be. He said chip sealing will begin July 7 and crews will be patching up to that time. Don said they have a heavy fall patching program and will drop back to that when the chip seal is over.

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Pete said crews will try to patch as long as possible but when weather gets cold they have to stop. He said they had some failure that they thought was due to the weather but it turned out to be a bad mix. He said the plant was changing ingredients and it was failure to Marion County and other roads. Pete said the plant reimbursed the county for some of it and said not all the roads unraveled but good portion of them did. He said it was good working with Knife River and they are making up for it. He said crews will be patching up these failures from last fall.

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Pierce County:

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Bryan said they are currently doing grader and AC patching. He said they select roads for chip sealing a year in advance. He said the supervisor goes out and chose those that can be improved. He said they pre-level grader patch between 13,000 and 18,000 (ton ?) per year and will cover that with chip seal within one year.

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He said they do grader patching now and then again for two weeks in July and August. Don said one reason Marion County ceased grader patching is because they had to downsize the work force a few years ago and had to get selective what AC to do.

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Bryan said they do their own box saving in-house and **try not to chip seal any intersections** in their program. He said they pave intersections and cul-de-sacs.

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Bryan said they do small sections of road and try not to have over 5-7 tons. He said they also do contract overlay for multi-lane roads and big intersections with a budget of \$3 million.

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Spokane County:

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Howard said they have been AC blade patching for about 50-60 years. He said they used cold mix, which was good if used directly, but the plant was constantly tweaking the mix.

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He said they switched to 3/8" hot mix with great success and are getting longer patches. He said there is a lot less rattling and crews are able to go down to smaller depth on the shoulder because the 3/8" mix tends to compact tighter. He said they were very happy with the 3/8" hot mix, it was easier to blade in, it had less chip loss, and it blends in tapers better.

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He said their cost is \$112 per ton and production reports was \$102 per ton so they are getting better, but it also depends what part of county they are working.

781 **Topic 27: Pavements (e): Grind & Inlay (wheel paths)**

782 **Deschutes County:**

783 Chris said will do grind and inlay in overlay program depending on pavement condition. He said this year's
784 program is probably half a mile and one section of overlays will be ground as part of that contract.

785 **Marion County:**

786 Don said on wheel path inlays, last year they bought a **RoadTek 400** machine which cost \$456,000. He said it's
787 made in Tennessee so it's USA made, and you can buy 2', 3', and 5' drums. He said they bought 3' and 5'
788 drums.

789 Don said they also have a paving screed without heat on it. He said one problem is with wider patches the wheels
790 of the tires are getting into some of the patches.

791 He said he looked at PSI maps and loading distresses and 10 miles on either side of 1-5 and Hwy 22 through
792 Marion County there is a saturation of wheel rutting due to trucks using county roads running beside these
793 highways. He said the county didn't have decent tool to address these ruts which helped with the justification
794 for this purchase.

795 He said the paving crew is either chip sealing, doing grind and inlays, or Layton box work. He said they went with
796 the 3' foot drum because they wanted enough of county road left after patching.

797 He said they are using the 5' drum for other additional work during chip seal season for bridge decks, California
798 curb and gutter, and road widening.

799 Pete said with the 3' averaging miles per day and grinding at 8:00 a.m., they have 5000 feet done by 11:30 a.m.
800 He said they start grinding at 8:00 a.m., paving by 9:00 a.m., grinding ends at 11:00 a.m., and by 5:00 p.m. the
801 crews have finished and done 5,000 feet of grinding.

802 He said according to purchasing rules the county isn't allowed to sell any **grindings** so now they are giving some
803 away and stockpiling others for future use. Pete said they are building a new equipment yard in Silverton and
804 have hauled several hundred ton of grindings as base. He said they considered using for shoulder work and
805 sometimes will deliver to local residents.

806 Pete said another contractor wanted to lay 6" – 8" grindings on a gravel road but he was reluctant to let them do
807 that because after time it will get pot holes and become a grader's nightmare.

808 Don said the problem he has is finding the right sweeper. He said they have two air sweepers and have to make
809 multiple passes. He said they don't have a high dump sweeper and has tried to get Tymco to build a special
810 head the width of the trough.

811 Don said he is interested in how other counties resolved that. He said they have a hydraulic front end sweeper
812 with a 6' side cast rotary broom that can sweep below the front tires. He said it has enough flex in its bristles to
813 reach the grind, and if working on a gravel shoulder or raised curb area, they can have pick up the broom to go
814 through.

815 He said Marion County is averaging 200 tons a day so that's about 3 hours of grinding.

816 **Pierce County:**

817 Bryan said they are also aggressive on grind and inlay and run almost year round. He said they do 10,000-12,000
818 tons per year and contract overlays.

819 He said they use a grader for paving screens and have a double boot system on a sliding rod.

820 He said they also have **patch gates** in the trucks. Don asked them to send a picture of this so he can post on the
821 OTS website. Bryan said most trucks have three patch gates. He said the trucks are square boxes with a
822 sloped tail gate. Don asked for picture of this also. Bryan said they do prep to widen out radiuses and this is
823 definitely a program they run on and off throughout the year.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

824 Pete asked if they do paving during cold weather. Bryan said they try not to during the winter months or when its
825 44 degrees or less. He said they also reuse their grindings on shoulders and gravel road applications.

826 Pete asked how that worked on **dust control**. Bryan said it does work on dust control and Clean Air accepts it if
827 they are put down as grindings and rolled out. He said they put it on thin spreads on gravel roads mix of gravel
828 and grindings. He said he talked to a sales rep for EnvironTech and said to put down base of grindings with
829 mag chloride and will last longer than just gravel.

830 **Spokane County:**

831 **Spokane** – Howard said most grind and inlay work is contracted out. He said they have pavement removal crews
832 and they do a lot of full depth patches.

833 He said they are looking at filling in **wheel ruts** with chip seal. He said their ruts aren't deep and are usually
834 isolated in urban areas. Randy said they only go 4".

835 He said they are partnering with the City of Spokane and have a new grinder they are contracting with them. He
836 said they are swapping chip seals for them and grinding for the county. Howard said they stock pile grindings
837 and work with EnvironTech on this and have a lot of success. He said they did one gravel road cul-de-sac with
838 grindings and haven't had to grade in six years.

839 **Topic 28: Pavements (f): Internal AC Overlays (Long line patching/ leveling)**

840 **Deschutes County:**

841 Chris said they used to **do internal ac overlays about three weeks out of the year** in early spring. He said they
842 don't do anymore and won't because they dropped staffing levels and had to draw the line around core
843 services. He said anything they can have done by the contractors, they will try to carve those pieces out and
844 overlays lend themselves to that.

845 **Marion County:**

846 Pete said the county isn't allowed to do paving because this is work put out to bid with contractors. He said county
847 staff mostly does patching sections, which eventually will get paved. He said they are doing one road now and
848 the City of Salem will be using their paver. He said engineering staff has done some long length grindings and
849 they started in May and did 4 miles of full length paving.

850 Don said regarding leveling, agriculture tractors are getting quite large with 8' tires. He said there isn't much
851 substance on **edges** and the tractors are breaking them down. He said a **lot of leveling is going into the**
852 **right lane** and bringing it back up.

853 He said crews are getting good with the Layton box but is unsure what product they can get in the future. Don aid
854 they are also buying (4) 12-yarders that has **Eaton programmable automatic/manual transmissions**. Pete
855 said it will work well when hauling rock on the road but is too jerky when pulling the Layton box or paving
856 wheel inlays. He said they are going back to automatics on trucks. Don said the trucks are rolling back a bit
857 and leaving a wrinkle.

858 **Pierce County:**

859 Bryan said they don't do a whole lot of overlays. He said they have a **14-foot Leroy paver** that does intersections
860 and cul-de-sacs. He said they only have two complete roads to pave and that's because the roads are
861 between two cities and they pave the entire road so they don't have to go back for maintenance. He said this
862 is their two biggest projects for the year.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

863

Spokane County:

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Howard said they do internal overlays and the cost varies based on the severity of patch. He said the cost is about \$10,000 per day to run this crew so they are very selective. He said they can typically run from June through September depending on the budget. He said performance has been spotty and they are making a good attempt to improve that with trucking and getting correct rollers. He said they are also working on proper tacking system because they usually have a wand.

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Howard said with education on materials, tacking, and rollers, their paving program will improve. He said they have two Leroy pavers and they are four years old. He said they are very nice pavers and do a great job. He said they can go 12 ½" wide. Howard said they are using single trucks and if have a pump they will dump straight in. Bob said the majority of roads will go with 3/8" and may do base coat of 5/8". Bob said if they are only 25 – 30 feet long, they won't do blade patching.

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Don (Marion) said when this group resumes meeting in September we will talk further about contracting out overlays and the scope of types of overlays they see from contractors. He said with that comes grind and inlay full lane. He said the group will talk further about processes with chip seals and then move into slurrys, micros, and whatever is out there, which will probably take two more sessions. He said he will go back to previous surveys to see the priority order for discussion topics.

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Bryan (Pierce) said he wants to know if there is anything else folks want to see when up there in the fall. Don said he wants to put emphasis on looking at fleets and hopefully will talk to fleet manager as well as the purchasing acquisitions for specs on trucks. He said he would also like to see how they are using mobile GPS data collection to track the fleet.

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Don said if anyone has issues or questions they want the group to address to email them to him. He said he talked to Dr. Talkalu and he's writing a maintenance module that he is taking back to Federal Highway and he's interested in Marion County's program. Chris said Dr. Talkalu also comes to Deschutes County. Don said he will introduce OTS to the Association of Oregon Counties meeting next week. He said this will continue to be core group and he will make the meeting notes available.

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**** End of Meeting #10 ****

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893 **CONFERENCE CALL MEETING # 11 – SEPTEMBER 4, 2014**

894 Meeting Participants: 16 total / 6 agencies

895	Deschutes	Tom Shamberger	Chris Doty	Chuck Shutte	Ed Landers
896	Jackson	None			
897	Marion	Don Newell	Jolene Bray	Pete DeLapp	Dave Chamness
898	Washington	Keith Lewis	Dave Schultz	Brian Irish	
899	Pierce	Bryan Chappell	Tom Zurfluh		
900	Snohomish	None			
901	Spokane	Bob Keneally	Bud Simmons		
902	Yakima	None			
903	AOC	None			
904	CRAB	Bob Moorhead			

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907 **ANNOUNCEMENTS / CALENDAR DISCUSSION / HOT TOPICS**

908 Don told the group that he had changed the format of the meeting notes, combining meeting notes 1-6 and notes
909 7 to current, which highlighted the upcoming meeting dates and discussion topics. He said the updated files
910 have been posted in the OTS website folder.

911 Don said he had discussed the OTS work group with Dr. Talkalu, who expressed excitement about the project. He
912 said he and Dr. Talkalu may be presenting a white paper on these efforts. Don said a part of this process
913 is reorganizing the meeting notes so they can be viewed by outside groups. He said staff has experienced
914 some problems with files after switching to Windows 7 earlier this year and are working to ensure these files
915 are accessible to the OTS group.

916

917 Don said the Oregon Association of County Engineers and Surveyors (OACES) asked him for a presentation on
918 OTS at their conference in October 20 and 21. He said he is asking Chris Doty (Deschutes) to join him and
919 invited other attendees to participate as well. He said if anyone is interested in joining him in telling the story of
920 OTS, to please contact him. He said the presentation will include OTS as well as the MORE-IGA.

921

922 Don said Bryan at Pierce County has been working to identify dates for the fall site visit. He said the visit will be
923 held November 4-6 and a tentative agenda is posted on the website. He said Bryan identified all the topics
924 Don wanted to address at the visit, which include their chip seal program, asset management software, decant
925 station, satellite shop visit, and mobile GPS for their fleet.

926 Tom said developed test site next to their shop and hired contractor to shoot slurry seal using different oils, which
927 they can view over an 8-year period to see which holds up best. Don said one of the lessons learned from the
928 spring field trip is that visiting two counties over a few days is too much, so they decided to only do one county
929 per site visit and hopes to be in Snohomish in spring 2015. He asked the group if there were any items they'd
930 like Bryan to address during visit. Tom (Deschutes) asked for a demonstration of wedding the chip spreader
931 for hot oil.

932 Dave (Washington) asked about asset management system and seeing how that functions. Don said what he
933 likes about Bryan's agenda is that it covers a lot of things the entire group is interested in.

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935 SUMMER WORK UPDATE

936 Deschutes County:

937 Tom said they had just finished **chip sealing**. He said they had nine rain days and their total program was about
938 **105 miles**. He said the striping was going fairly well. Tom said they were not doing any in-house paving but
939 did have contract paving, which that went well. He said they are now getting ready to start shoulder season
940 and fall work leading up to next year's chip seal.

941 Marion County:

942 Pete said they finished **chip sealing** on August 11. He said they did **29 miles this year** and the weather was
943 touch and go. He said there were so many forest fires that Albina couldn't produce oil and shut down for about
944 a week. Pete said the program well this year and there were no incidents on the job. He said they had the
945 roads fogged and striped by the week of August 11th.

946 He said they did double chips this year with 1/2" chips with 3/8" chips over that using **unwashed quarry rock**
947 instead of river rock. He said it went well and will see how it works out. Bryan (WA) asked if they got the sand
948 equivalency on the unwashed rock. Pete said Albina and ODOT tested the rock and it came back perfect for
949 chip seal. Pete said although it was unwashed, it was very clean, and cleaner than the washed rock used in
950 previous year. He said they got the rock from Raccoon Rock, a rock pit outside of Sublimity.

951 Washington County:

952 Keith said they did **27 miles of chip sealing** and it went well. He said they had new people in crew leader
953 positions and it took just over three weeks to complete. Keith said they changed the process this year with the
954 crew taking the initiative and they finished in three weeks, which is half their normal time. He said they used
955 Baker Rock out of Beaverton and paid \$13.25 per ton.

956 He said their striping program is going well and starting into overtime. He said they currently have 72-73% of their
957 program done and are now machine patching small overlays. He said their paver went down and they are
958 currently borrowing one from the City of Beaverton. Keith said their vegetation work was done earlier in the
959 year and they continue to utilize shoulder mowers and brush cutters.

960 Brian said their 2014-15 overlay program includes 15 centerline miles on their major networks. He said they just
961 got rolling and half their segments are done. He said their overlays used to be done in-house with operations
962 but are now done with Capital Projects which added a layer of bureaucracy. He said bids came in at
963 approximately \$3 million. He said Baker Rock got the contract and they have an inspector from operations
964 that makes sure the work is completed to specifications. Brian said later in the year they are doing widening in
965 the transit area for bikes.

966 Pierce County:

967 Bryan said they had a great summer overall with only two rain out days in early July. He said they **finished 144**
968 **lane miles of chip seal** on August 12 and they will **now fog seal the entire program**.

969 Bryan said they hired a contractor to use a couple different types of oil and chip sealed an additional nine miles
970 for a total of 152 miles. He said they have completed striping and fog sealing.

971 Spokane County:

972 Bud said they started off shaky with heavy rains in March and April, which put them \$2 million in the hole. He said
973 they had to cut a few grind and inlay projects to come up with funds for water damage. He said they **chip**
974 **sealed 92 road miles** by August 28.

975 He said they still had one pavement crew running for roads that need to be debased.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

976 Bob said they were in the **middle of reorganization**, which had been approved by their board of commissioners
977 this summer, so they will move ahead with new facilities and hiring new managers. He said this will reduce
978 manager to crew ratio to 15-17 workers to 1 manager.

979 Bud said he took a trip to Oregon and spent a week with Tom in Deschutes County looking at their facilities. He
980 said they looked at a lot to see what is best for Spokane. Don said during fall site visit this group will look at a
981 newer satellite shop in Pierce County. Tom (Pierce) said 160 people are working out of that building and about
982 15 out of one satellite shop and 20 out of another satellite shop. Don said folks from Spokane will appreciate
983 seeing the new shop during the visit.

984 CRAB:

985 Bob said the Road and Street Supervisor meeting in is Yakima in September.

986 Don said the equipment rodeo is next week. Keith said Washington County is sending 5 participants, 1 judge
987 and 1 organizer. Tom said Deschutes will also be heavily involved.

988 Topic 29: Pavements (g): AC Overlays – Contracting Out

989 Deschutes County:

990 Tom said they don't do any in-house paving anymore. He said they normally rent a paver and do a thin lift over
991 paving, but have decided to roll this into the contract. He said the **program budget is \$1.5-\$2 million and**
992 most overlays are for arterials and collectors.

993 Tom said they are looking at other options and are enticed by ultrathin overlays using different products. He said
994 they are looking at taking a road that was overlaid 6-7 years ago and doing ultrathin overlay on it as a test to
995 see how they like it. He said this may happen in a year or so. Marion County:

996 Marion County:

997 Don said Marion County's road funding comes from the gas tax and car registration fees. He said that comes to
998 about \$20 million each year but there are a lot of projects. He said the pavement treatment program was cut to
999 about \$3 million. Don said the operations (Ops) division receives about \$1.5 million and the engineering
1000 division also receives **\$1.5 million, which funds the overlay program**. He said any grants or stimulus
1001 funding received by the county is on top of that.

1002 Don said Ops buys all their rock out of their allotment for 190 miles of roads and are able to get a 30 mile chip
1003 seal out of it. He said they try to team up with engineering who give them the road psi, and they try to
1004 accentuate each other's programs. Don said they planned to chip seal 80% of the roads that were paved 4-7
1005 years ago. He said Ops crews maintain the local road system and engineering is responsible for paving the
1006 rest of the system, which is about 200 miles. He said this is a little complicated but works for now.

1007 He said their department has a new director and if there is a need for more chip seals there is latitude to do. He
1008 said the contract overlay is \$1.5 million but could be boosted by an additional \$1 million through federal
1009 funding.

1010 He said the North Fork project received \$1.5 million in federal funding. Dave Chamness, project engineer, said
1011 the capital projects section is a cradle-to-grave system with engineers and inspectors. He said they did 8 ¼
1012 miles of overlays and some were inlays or mill and replace through the floodplain. He said they had a \$1.2
1013 million budget but that was increased through change orders to \$1.4 million.

1014 He said they did some interesting things, such as last year's **hot in-place recycle paving** which went well but
1015 had some problems.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

- 1016 He said this year they **incorporated fiber** into the overlays and had good success. He said their contracts specify
1017 fiber and a contractor complained so they opened up but have some concern with the other product clumping.
1018 Dave said they had a proprietary way of injecting at the plant. He said they used it on 1/3 of their projects this
1019 year and it went well.
- 1020 He said one year they did an inlay from Salem to Silverton and last year they did an inlay with 70/22 with ¾" lift.
1021 He said one thing touted with the fiber is that it reduces design thickness. He spoke about asphalt escalation
1022 and said they were hit hard this year.
- 1023 Dave said the bid in was done in February and the price was \$141 ton and by July it was \$633 ton. He said last
1024 year with the price drops, they got money back from the contractor because the swing can go either way. Keith
1025 asked about fiber reinforcement. Dave said several in the Portland area have used and they are sold on it. He
1026 said they did a TSR test with fiber and it panned out to be stronger than without the fiber test.

1027 **Washington County:**

- 1028 Brian said in fiscal 2014-15 they contracted out on their major network, **14.7 centerline miles on their**
1029 **collectors**. He said they usually do 32 square yards of work. He said they did widening and overlay on 7
1030 centerline miles of work. He said the widening is an improvement for pedestrian and bike travel.
- 1031 He said the urban portion is a separate funding source (not road tax) and they are doing just under 2 centerline
1032 miles. He said they seal coat 275 square yards of slurry seal. He said this is the third year they've targeted
1033 collectors and they did about 3 ½ centerline miles which was contracted work. He said it worked well for them
1034 and cost about \$4 square yard.
- 1035 Don asked about a micro surfacing product. Brian said they use Type 2 slurry seal but it has a chemical grade. He
1036 said they can have traffic on it in an hour as opposed to 2-3 hours and it also holds up better. Dave (Marion)
1037 asked if the slurry vendor applied or if it was done by a different contractor. Brian said it was applied by
1038 Intermountain Slurry who took the bid this year. Tom (Pierce) said Intermountain is also doing their slurry.

1039 **Pierce County:**

- 1040 Tom said they have **8.5 centerline miles of contract overlays**. He said the pavement management group
1041 calculates numbers and then as a group gives each road a score and sets priority for which need to be at top
1042 of list until they exhaust funding. He said their funding this year was \$2.2 million.
- 1043 He said they also have **concrete roads** that are in bad shape so they set out a bid to revitalize existing road and
1044 then pave over the top. He said they did 1.2 centerline miles at \$800,000. He said they do prep for all paving if
1045 they are paving over top. He said they don't have many inlays but they are mostly main arterials.
- 1046 He said they do most of their milling and grinding in-house, which they then hand off to construction engineering
1047 to do inspection and design. Keith asked if they had gone through and found themselves overlaid out (have
1048 to mill and fill). Tom said he doesn't have the numbers and does more day-to-day operations. Dave (Marion)
1049 asked about grinding in-house.
- 1050 He said Marion County has a grinder, and Ops does in track inlays getting the road ready for the contractor and
1051 that works well for them. Tom said they do all in-house paving with grind and inlay and this is one of their best
1052 tools which they use as much as possible. He said it drops the cost and the contractor doesn't add in the cost
1053 of prepping the road. Don asked about cutting hedge. Tom said it is 40".

1054 **Spokane County:**

- 1055 Bob said they didn't contract out anything this year. He said they did grind and inlay partnering with the City of
1056 Spokane.

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Topic 30: Pavements (h): Full-Width Milling, Pavement Inlays

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Deschutes County:

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Chris said they utilize the grind-inlay technique depending on pavement and the nature of failure. He said 10-20% has a mill and fill component. He said if the shoulders are in good shape and traffic lanes are failing, they will do grind and inlay. He said if all is failing, all will go. He said they don't have a lot of urban areas to worry about but where they do that's a good solution.

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Chris said this is part of a contracted program. He said they have used Knife River and High Desert Ag and Paving, and will subcontract a milling machine.

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Don said Marion County wants to purchase a Bobcat to work alongside a grinding machine. He said they just completed an interesting job near Donald. He said they worked with the railroad and did dig-outs in combination with a grinder profiling it. He said their grinder went down and they brought in the City of Salem's grinder to finish. He said it all came off really well, and the cold planer was really useful on this job in taking out some raised asphalt and doing some leveling.

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Marion County:

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Don said when they got stimulus money several years ago, they started using it on a bigger scale on rural roads.

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He said with a conventional overlay 7% of the total contract is re-rocking the road. He said they're doing fog-line to fog-line on two lane roads, and if out of town to chip grind and inlays about 5, 6, and 7%.

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He said they try to cover up the seam on the fog-line. He said if they stop there, that leaves the original paved surface for bicyclists. Dave said usually contractors will contract grind and inlay, but one has their own grinder.

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He said when they do urban projects they do the curb along the mill line. He said they have had complaints from contractors because it's difficult for them to change the machine.

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He said when doing inlays in rural or urban roads, they tend to get tunnel focused for travel lane and don't think the turn land has as much traffic. He said his advice is to mill out the center turn lane at the intersection because they see stresses also. He said their vendors are Knife River who contracts with Kerr, and Houck has their own grinder. Don said they have been doing night grinding and they are able to grind out and have paved by morning.

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Dave said the contract requires they grind and inlay within the same work shift so there's no drop off for traffic. He said for a joint seal they come back the next night and do a panel so they don't have to worry about the seal and do it at the fog-line. He said they require the contractor to use hot oil and sand to seal the joint. He said contractors complain but some anticipate and ask if they can use emulsified asphalt but hot oil and sand is required.

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Washington County:

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Keith said a couple of years ago they got a Bobcat with a grinder attachment and 18" grinding wheel. He said they have been using it a lot on wheel path grindings on a few arterials. He said they are also looking to purchase a paving box in future.

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He said they had an opportunity to patch back wheel paths and will see if a future need is out there since wheel paths deteriorate first. He said he doesn't have numbers of what they've done but will use through the season.

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Brian said specific to mill and fill, they don't have anything this year that targeted grind and fill back in. He said it depends on the needs of a specific segment and they do targeted grind and repair. He said they've used Baker Rock and Kodiak Benge.

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Pierce County:

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Bryan said all their grind and inlays are done in-house and is about 16,000 tons.

1099 **Spokane County:**

1100 Bob said they didn't do any grind and inlays. He said they had pretty rough road with scabbing. He said they put
1101 down a mat of 5/8" rock high floated with 6.0 shot, and rolled it in and swept it a few days later. He said its
1102 holding well. He said this road was originally an oil mat road and it didn't hold up.

1103 They did not mill the oil mat in, and put 5/8 rock on top at 2" and then shot again, rocked it again and rolled it in.
1104 Don asked if this was a damp area or conventional area. Bob said it was not a damp area. Don asked if there
1105 were photos he could share and Don will put on website.

1106 **Topic 31: Pavements (i): Chip Seals – Part 2**

1107 Don asked folks to share any info in more detail about their successes,

1108 **Deschutes County:**

1109 Tom said they did a couple of things out of ordinary, one was on a road with a psi that was 0 and the other was
1110 17. He said they didn't feel they could put down asphalt so they did a double chip and shot it .8 or .5 with 1/2"
1111 and covered up with 3/8". He said it's in industrial area with a lot of log trucks and is holding up well.

1112 Tom said they are watching and this may be good tool. He said they also had a section through Tumalo that had
1113 bike lanes. He said they did an 11' wide line, or 22', with 3/8" and then came back with a chip spreader with
1114 quarter-ten and then keyed in edge. He said it made a really nice road surface.

1115 He said last year they did a **carbon seal** on bike lanes and then did travel lanes but got unraveling. He said they
1116 are not getting with this. Tom said he thought this was a good tool and gives a good durable surface. He said
1117 they did 17 miles for the City of Bend, a couple of miles for the City of Sisters, and six miles for the City of
1118 Redmond. He said they did quarter-ten on the major roads and 3/8" on cul-de-sacs. He said staff have got
1119 good and don't have any rock loss in scrubbing. He said the cost is about \$1.85-\$1.90 square yard in rural
1120 areas and \$2.10-\$2.20 square yard in urban areas, which is well below the cost of resurfacing.

1121 **Marion County:**

1122 Don said they should be chip sealing 70 miles a year but are doing 30 miles instead. He said they went one
1123 dimensional and went to 90S from Albina. He said he likes to fog 100% of the roads. He said they chip seal
1124 Mondays through Thursdays and fog on Fridays. He said they fog as they go, which reduces flying rock. He
1125 said the striping crew comes in mid-day Friday.

1126 Pete said they **used quarry unwashed rock** this year and had to up the oil rate from 44-45 to 47 and had very
1127 little float. He said sweeping off to side was minimal and a lot less dust. He said they use 90-1S oil, which
1128 works for Marion County. He said Albina is trying to sell them on new oil but the roads this year take on quite a
1129 bit of traffic and are not ready to take on any new since 90-1S works well. Pete said 50/50 cuts back 90-1S for
1130 fogs and shoots at .14.

1131 **Washington County:**

1132 Keith said their program is **27 miles chip seal**. They do single shot chip seals and no gravel road upgrades. He
1133 said they did try a new product CRST3. He said they completed the program in half the time as normal due to
1134 crews initiating the process. He said the program took about three weeks.

1135 He said they use highlight in motion for chip seals. Don asked who was shooting. Keith said they are shooting .45
1136 themselves and using coated rock 60/40 this year at .08. He said they did one road end to end in comparison
1137 CRS3P and 100S to see how chip seal oils react side by side. Keith said they fog everything they chip seal but
1138 not the test road because they are waiting to see how oils perform.

see **"Over The Shoulder Topic Index"** ongoing WORD file for meetings' topics

1139

Pierce County:

1140

Tom said this was the first year using **AC15P** and they were very happy. He said they had no breakdowns and did 150 miles. He said they had to chip seal on an island and everything had to be ferried over. He said it was a slow process with the ferries, which was the hardest part of the program.

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Tom said they found this year that the rock grade wasn't high enough on 3/8 rock and more rural roads turned out great. He said they did more roads with heavier traffic and some roads when done on hot days flushed a little. He said they want to bump up rock on heavy traffic roads next year. Tom said they get their oil from a couple of suppliers.

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Spokane County:

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Bob said they changed their chip seal program this year. He said they added a steel drum roller and don't have nearly the rock loss. He said they are hoping that will be an added benefit. Bob said most of their oil was CRS2P, and they shot it at about 18-18 ½ and did about 19.2 centerline miles. He said they probably will go up to about 125 centerline miles. He said they got a two week late start because of two new distributors that weren't ready.

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Don said the group will discuss seals and slurries, and alternative products next month. He reminded folks to let him know if they would like to join him presenting on OTS at OACES in October.

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**** End of Meeting #11 ****

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1160 **CONFERENCE CALL MEETING # 12 – OCTOBER 2, 2014**

1161 Meeting Participants: 16 total / 7 agencies

1162	Deschutes	Tom Shamberger	Ed Landers	Randy McCulley
1163	Jackson	None		
1164	Linn	Jim Ablemen		
1165	Marion	Don Newell	Dave Chamness	Duane Klopfenstein Kathy Lee
1166	Washington	Keith Lewis	Dave Schultz	
1167	Pierce	Bryan Chappell	Paul Marsh	
1168	Snohomish	None		
1169	Spokane	Bob Keneally	Bud Simmons	Bryan Hopp
1170	Yakima	None		
1171	AOC	None		
1172	CRAB	Bob Moorhead		

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1175 **ANNOUNCEMENTS / CALENDAR DISCUSSION / HOT TOPICS**

1176 Don said the Oregon Association of County Engineers and Surveyors (OACES) asked him for a presentation on
1177 OTS at their conference in October 20 and 21. He said he is asking Chris Doty (Deschutes) to join him and
1178 invited other attendees to participate as well. He said if anyone is interested in joining him in telling the story of
1179 OTS, to please contact him. He said the presentation will include OTS as well as the MORE-IGA.

1180 Don said Bryan at **Pierce County** has been working to identify dates for the **fall site visit**. He said the visit will be
1181 held November 4-6 and a tentative agenda is posted on the website. He said the emphasis will be on high
1182 tech and how to use the CMS connection, online updates, how to assign, issue and complete the RTC and
1183 where to place the data. He said they have reserved two hotels with a total of 25 rooms that are close to the
1184 facility and will extend the GSA rate of \$129 a night. He asked for a head count as soon as possible.

1185 Bob from **Spokane** mentioned that the 7 a.m. start for the meetings seem a little early. However, Bryan thought it
1186 would work out best to start early since dispatch starts their work at 6:30 a.m. and after that it can get very
1187 busy. This way the meetings will start early and finish early.

1188 Don stressed the need to know how many people will be attending the meeting by the middle of the month.
1189 **Snohomish** said they will be there and Don from **Washington County** will be there. A question was asked if
1190 there was a place for GIS training. Bryan said there will be some of the IT guys available to show the new
1191 technology, how to use the IPAD, and use hands on technology to familiarize everyone with what is available.

1192 Don said there will be 5 different groups and Bryan said they made sure to get everyone out of the office in break
1193 off groups to see the facility. The groups will consist of seeing the facility, the fleet department, the technology
1194 department, decant and then go over the Chip Seal program. The meetings will be grouped in such a way so it
1195 would be possible to see all of the groups or leave if necessary. Bryan said if there is a need for additional
1196 information to contact him directly.

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1198

Topic 32: Class 8 – 12-yard Dump Trucks

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Deschutes County:

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Randy said they currently have a 2009 12 yarder, 600 or 700 Columbia body built bed. They run a 12-foot, one way plow on the front and they run the draw-back axle on it.

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They also have a Fuller that has a 13-speed transmission, high tread tire and liners in the rock boxes and a converter for the sander.

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1204

The rest of the fleet has mounted sanders on them.

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Linn County:

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Wade Welch, from Fleet maintenance said they don't have any 12 yarders but they have three 2006 Nationals with ISN's which are the same as what Deschutes has. The Nationals are not set up for plows but they have a DLL deep lug logger with 425 225 two front tires.

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They also have a fleet 10 yarder 2003 Volvo that they can put a plow bumper on. Most of their fleet are from ODOT surplus.

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1211

They are trying to speck out a dual purpose de-icing and rock hauling for summer use and they are interested in information about the Altership transmission. The de-icer they get will have to be a slip in.

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Marion County:

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Duane, the Fleet Manager said **Marion County** currently have 16 trucks built like Deschutes. Some have a plow/sander. Many of the fleet are older than 1990 including Volvos, Freightliner, and an International that has a manual transmission.

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They do have a **2014 Freightliner** with elliptical bodies and the 2 new ones have high lift gates. And all gates have a couple of feedgates that are used for asphalt and drop axles. Last 3 purchases in the past 3-years were **Internationals**.

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The last 3 new trucks have **Eaton transmissions** which we are no longer buying. With Marion not having a self propelled paver, they are not smooth enough for slow take offs or slow work for the Layton drag behind paver despite the vendor's effort to reprogram them. And they don't work well for inlay work when you are backing into spaces since they kick back and roll back toward people. They are great for hauling rock and snow removal.

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Washington County:

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Keith said **Washington County** currently has six 12 yarders with built up boxes for heavy duty work.

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They have four transfer trailers that have drop axels and they are replacing two of the 1994 vintage ones.

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They don't have any dump truck size vehicles. But they did have conversation about plowing and Clean Water Services using their operators to get more plows on the road. However, due to union issues, this has been a problem.

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They have a mixture **newer Kenwoods** and they have older Freightliners that will be replaced. The two transfers will be replaced in years come. The dump trucks are all set up for plows. The upgraded cooling system has had to have a frame.

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1234

And it was suggested that if anyone is ordering for plows they should order them now. They also have 12 footers with bits, a de-icer with two 1500 gallon and one with a 750 gallon that they slip into.

1235

1236

Angel said Freightliner is replacing the Columbia body for trailers. They talked about making transfers trailers in Bellvue but had a question regarding any issues with the Comings trailers. Angel also asked if anyone has had any luck with the higher horse power.

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Keith said there is a cost benefit since they don't push snow.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

1240 **Pierce County** mentioned they use a pup for their transfers and plow configurations. Will put Angel's question on
1241 hold.
1242 Angel also asked how much a transfer would be. They currently have a preliminary budget of \$150,000 for a truck
1243 and trailer. Duane from **Marion County** said they paid \$158,000 for their last purchase for just a 12-yarder
1244 (no trailer).

1245 **Pierce County:**

1246 Bryan said all their Class A multi-body trucks are equipped with plows. They have a Cummins engine, 16
1247 standard 8 size trucks and 2 multi bar trucks.
1248 They have **Hook trucks** that they use but it depends on how large capacity and the loss of capacity. They usually
1249 use the 8 or 9 yarders but they more versatility on the 8 yarders to pull on the containers. Due to the short
1250 season they have they use different configurations in Pierce County. So they use the **Stellar lifts** and use a
1251 local vender for the 5 yarders.
1252 Their plows are **compositor plows** and they use **Cooper blades** on a carbide bit. The service life of the bits are a
1253 year or 2 before they have to change the bits.
1254 Bryan asked Washington County if they use a drop box so the truck is not sitting there. Keith said they don't use
1255 the drop boxes for the dumping program but they do for the sweeping. The boxes are covered so they use
1256 them for the road side litter program. Washington County received their drop boxes as a hand-me-down.
1257 Don looked at the drop boxes and they seem to work well in urban areas, however, to pay for themselves, you
1258 need to invest into at least two chassis, which come at a premium price. Marion County had equipment hauler
1259 drivers to deliver the boxes when they did their urban services.

1260 **Snohomish County:**

1261 Cindy told Don they had Peterbuilt trucks.

1262 **Spokane County:**

1263 Bud said Spokane County has a mixed fleet. The basics Class A truck is a mid 80's oversize Mac truck with the
1264 capacity 12 or more on the high size. Out of 45 Class A dump trucks they switched to Chasse over haulers.
1265 They are starting to go to angle plows to pull by directional plows. The fixed plows are still the mainstay and they
1266 have quite a few Mac trucks but the three year goal is to get ten more plows. DD13 are excellent and Bud
1267 would like to know where people going to buy them.
1268 Bud also questioned who has a long range replacement plan and how they set a budget for that. Tom from
1269 **Deschutes County** said they have a program in place where they currently have budgeted \$200,000 but will
1270 need a million and half for replacement costs. They projected a 15 year cycle since 2009 and they are now 5
1271 years into the plan and they project they will have the money at the end of the 15 year cycle. So far they have
1272 done two cycles that way however, they usually are able to keep their equipment and use it as necessary.
1273 Bud wanted to know who develops the plan and is it by mileage hours or age. Tom stated they usually replace it
1274 due to age and the current fleet is averaged at 10,000 miles.
1275 Bud wanted to know what trucks are being bought. Duane from **Marion County** said they recently purchased two
1276 Freightliners with the plows and sanders and the reason they stick with Freightliner compared to other brands
1277 is the cost is \$3,000 cheaper of a bid then for the other companies.
1278 Bud wanted to know if the cheapest truck to run is through a co-op. Bob from **CRAB** said that quite a bit of
1279 buying is out of contracts and he can show Bud the bidding process.
1280 Bud said the Input committee went out to test the Freightliners and they are planning on testing other local
1281 dealers. Jim from **Linn County** said they have been having some Allison transmissions problems.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

1282 Bud said that during their winter plowing while fully loaded, the transmission slows down, making the vehicle
1283 downshift which causes a high potential to skid. However, the new **generation of Allison transmissions have**
1284 **rectified this issue**. Now it appears the upshift is the problem. There were a couple of manual holding Allison
1285 transmissions that didn't have downshift issues. And **Eaton alter shifts are great but not so good when**
1286 **backing** up and have a tendency of kicking out of gear, however, for removing ice and snow they work really
1287 well.

1288 It was noted that everyone uses a clutch differently, so when getting feedback, it is important to take that into
1289 consideration.

1290 Don said he would like to talk to Bud on the phone about this process and the questions he has since **Marion**
1291 **County** has a lot of experience on **Long-term Fleet replacement modeling**. Bud asked if anyone uses multi-
1292 year contracts. Duane from **Marion County** said that they do not since they use a co-op or piggyback the
1293 contracts.

1294 **Pierce County** does use the purchasing bids HGAC to buy co-op which is where they bought their equipment.
1295 They write specs for oddball bids but they don't make it a multi-year contract.

1296 Bud asked the group who reviews the bids. Do they get operator input? Jim from **Linn County** does get the
1297 operators involved when they plan to purchase the equipment because then they can input their ideas on what
1298 they really need.

1299 Bud asked if the fleet manager is the one who makes the decision final on what to get. Don said he usually has a
1300 lot of discussions but ultimately Duane makes the final decision on what to buy. Don invited all the key
1301 operators to give insight and some ideas about equipment and even had a full day demo with feedback to help
1302 with their decision making.

1303 Bud said their **stripper** is over 20 years old and they were getting input from operators. They bought an Easy-
1304 liner through a co-op.

1305 **CRAB:**

1306 Bob said they work with Washington County for information about brands and contracts, etc.

1307 Duane mentioned the Municipal fleet managers meeting in Bend, For more information contact Tom and Randy
1308 in Deschutes County.

1309 **Topic 33: Pavements (J): Other Seals & Slurries**

1310 **Deschutes County:**

1311 Don mentioned that Portland did **straight up fog seals** on older, non-treated surfaces. Question to the group was
1312 anyone else doing the same?

1313 Tom said this week they did the fairgrounds parking lot which consisted of two miles of albino base. They swept it
1314 and got it prepped. They got a discount on the product (what product?). When they used the standard
1315 product it seemed like the harder pan worked better. Then the vender recommended crack sealing after the
1316 fog seal. The idea was that the fog seal wont penetrate, creating a longer lasting product. He hasn't used it on
1317 regular streets yet, just on the parking lot. They closed the parking lot for two days to let the product sit and
1318 they covered the lines. They will contract out to put the new lines back in the parking lot. The seal they used
1319 previously was losing a lot of its rock so they used the 3/8 chip to rejuvenate the asphalt.

1320 They don't have a big budget for the streets so they only did heavy sweeping and called it good.

1321 **Linn County:**

1322 Jim said they didn't do any chip sealing this year since the funding wasn't there. They did do a single shot chip
1323 seal two years ago and continued it this year. They fog sealed those streets which hadn't been done in the
1324 past and on the higher volume roads. Four years ago they slurry sealed and was impressed how well it was
1325 holding up. They will chip seal and slurry next year since the cracks are not coming through yet.

1326 **Marion County:**

1327 Dave Chamness said they did 100 miles of urban streets. They doubled the slurry budget and it was money well
1328 spent. It seems to be a very effective program and they now have an inspector out there.

1329 The Slurry contract currently is only three or four days with about 1.24 to 1.35 per sq yard. They did get caught in
1330 the weather but seemed to be performing well.

1331 Don mentioned that last year they chipsealed a rural no curb subdivision and put in 10 miles of chip seals in there.
1332 They held off and brought in the slurry program this year. Those two different products worked well together.
1333 They kept the chip spreader straight, shooting the cul-de-sac bulbs and intersection returns with the slurry.
1334 Dave said those roads were higher cost locations but the residents were really happy with it. The Black liner
1335 was the contractor out of Vancouver.

1336 Don said they were trying some **rubberized slurries** and upped the rate and notice it became really slippery. We
1337 had to go out and rough up the surface. Lesson learned is to not to play with the shot rates – higher mixture
1338 rates are not better.

1339 **Washington County:**

1340 Dave Schultz said they did the **slurry seal** program the last couple of years in local urban, neighborhood routes
1341 and it was very successful. The PCI was about 85 combinations of overlays and chip seals. They are letting
1342 some of the roads age a bit (3 years) before they do them again. They did 16 miles but some years back did
1343 up to 40 miles. It will need to be done again but not right away.

1344 The **crack seal** was done by internal forces. The Black line did the slurries last year. He has some general slurry
1345 questions but people don't like to be locked in while they are doing the work.

1346 **Micro-surfacing** didn't seem like it had a lot of success in previous years, but some of the other jurisdictions have
1347 been using it with good success. A pavement consultant looked at the processes and recommended the
1348 micro-surfacing. They did it last year with no problems and all indications it is performing as it should. They
1349 are experimenting with the urban collectors to see how it performs.

1350 **Pierce County:**

1351 Bryan said we had **slurry program** in a couple residential areas to appease the property owners. They started
1352 again this year. They put a bid out for a product. The two residential areas for slurries and rubberized slurry
1353 was a messy process but it turned out very good.

1354 They cape sealed and will be monitoring that. The field blended chip seal seems to be much more flexible and
1355 supposed to reflect through. They are using the standardized rubberized chip on rural highway.

1356 **Spokane County:**

1357 Randy said they did their **crack seal** internally. The slurry seal they didn't do but when they do they will contract
1358 out. He had a question regarding the City of Spokane slurry seals. He didn't know, but thought it might be
1359 contracted out. Don politically had to stop doing the slurry seal, but had to contract it out.

1360 **CRAB:**

1361 Bob said they went to a maintenance conference and it seems they were having the usual complaints on rural
1362 areas. So they suggested to call the it **crushed stone surfacing** instead because they had better response.

see **"Over The Shoulder Topic Index"** ongoing WORD file for meetings' topics

1363 Post meeting, Don looked up in the ASHTO manual -SECTION 321540 - Crushed Stone Surfacing – which is a
1364 "dry (no oil)" layering of rock layers.

1365

1366 Don will stay in touch with travel information for the meeting and suggested the group think outside the box and
1367 bring as many additional staff as they could. He encouraged all to be in attendance.

1368

1369 **** End of Meeting #12 ****

1370

1371 **CONFERENCE CALL MEETING # 13 – NOVEMBER 6, 2014**

1372 Meeting Participants: 15 total / 6 agencies

1373 **Deschutes** None (3 attending week's Pierce Co visit)

1374 **Jackson** None

1375 **Marion** Don Newell Pete DeLapp Dave Vaupel Jolene Bray

1376 Burnie Pearson (IT-GIS)

1377 **Washington** Keith Lewis Richard Crucchiola Brian Irish

1378 **Pierce** Bryan Chappell Tom Zurfluh Paul Marsh Don Wells

1379 **Snohomish** Alan Smith

1380 **Spokane** Bob Keneally (2 others attended week's Pierce Co visit)

1381 **Yakima** None

1382 **AOC** none

1383 **CRAB** Bob Moorhead

1384

1385 **HOT TOPICS/UPDATES:**

1386 Don said at the next meeting the group will discuss radio communications and Washington County has provided
1387 15 questions to help guide the conversation. He asked participants to bring their radio 'gurus' to this meeting.

1388 Don said at the next meeting the group will also discuss the last topic on pavement preservation, specifically
1389 alternative products, and may briefly touch on micro seals. He said not to be surprised if the December
1390 meeting is pushed to January and reminded everyone that the January meeting is on the 8th not the 1st.

1391 **Topic 34: Review Pierce County Processes/Systems**

1392 Don asked the group to comment on processes, equipment, and/or technology they saw at Pierce County that
1393 was new or different that they were impressed with. He invited participants to comment on other items or
1394 topics they may have come up during the site visit.

1395 **Marion County:**

1396 Pete said he liked Pierce County's program that allowed them to see the **location of their trucks** when they're
1397 being used and that this would be useful to Marion County.

1398 Dave said he liked the whole process of how things are mapped and inventoried. He said everything is a click
1399 away and easy to prioritize, which makes everyone more efficient and accountable.

1400 Don said he liked how they integrated all the technology into one comprehensive system and are now getting
1401 good data coming out of their accounting system. He said he also liked the way they are quickly rolling out
1402 field operations using apps on smartphones and iPads. He said crews used to need a Toughbook that was
1403 very expensive and now can use an iPhone while cleaning out a catch basin to do data logging.

1404 **Washington County:**

1405 Keith said some of the best things he saw **were total integration and work product**. He said all supervisors had
1406 iPads and were able to do field ready asset management, with condition ratings of catch basins and ditches all
1407 readily available. He said Pierce County has a better funding level. Keith said Washington County is talking
1408 about scheduling through a dispatcher and getting system in place, and what Pierce County has in place is
1409 good. Keith said they will learn from Pierce County and try to catch up.

1410 **Snohomish:**

1411 Al said they are about half way to where Pierce County is now. He said Snohomish County has an **ABL system** in
1412 with data for brush cutters and brooms and have hooked up the paint striper. Al said snow and ice trucks have
1413 ABL system and can dispatch during a snow fight. He said crews have lap tops to send data into the field so
1414 they can tell which catch basins have been cleaned.

1415 He said they also have a geo grid where staff can do timesheets on line. He said he is very impressed with how
1416 Pierce County uses iPads and iPhones to collect data and Snohomish County would like to get there. He said
1417 they are integrating a service system and their provider for GPS in vehicles is Cartograph, whereas Pierce
1418 County uses Location Technology Inc. (LTI).

1419 **Spokane:**

1420 Bob said in particular he liked Pierce County's **scheduling system**. He said they are working diligently to roll out
1421 electronic time cards and are interested in how Pierce County works their scheduling system.

1422 **CRAB:**

1423 Bob said he's interested in how crews are assigned to two remote shops and one central shop and are required to
1424 report to work at any shop at their own expense with one day notice. He said that gives flexibility to crews
1425 because they're all available to work out of any shop.

1426 **Pierce:**

1427 Brian said one thing he wishes they had highlighted is YouTube videos they use for public outreach. Don said
1428 links to these are available on the OTS website. Brian encouraged everyone who hasn't viewed to take a look.
1429 He said they were created by professionals who have worked in the telecommunications field. Tom said they
1430 use this for a reference tool also and link to their Facebook page.

1431 Keith said part of benefit of these videos is public involvement and education in their work and the transparency
1432 makes them more visible and helps their public image. Brian said their county officials like public education
1433 and are considering placing signs on informational signage on their equipment.

1434 Don said Marion County has done similar things and there is a cable access group that can help with filming.
1435 Keith said Washington County has cable access that will occasionally put out public outreach information, but
1436 not at the level of Pierce County. Bob (Spokane) said they created a video highlighting an employee that
1437 saved a person's life.

1438 Al (Snohomish) said they've been taking lots of pictures of projects, but no videos, and sending them to their
1439 public information officer who uses them community outreach presentations. Bob (CRAB) said they don't do
1440 videos.

1441 **Topic 35: Review Pierce County High Tech – Mobile GPS Systems**

1442 **Marion County:**

1443 Don said Marion County has had some success but has not yet moved to **mobile active GPS**. He said they have a
1444 system that is older that costs \$1,000 seat. He said they have an herbicide spray log they use because some
1445 residents are sensitive about what and where they spray. He said with Northstar with different heads they are
1446 able to data log where we've sprayed, what chemicals, what width, and when it was turned off and on, and
1447 then post that data so people can see where there was spraying. He said crews provide a general notification
1448 to neighborhoods when spraying is planned because some people have requested it, but they keep it on
1449 general terms.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

1450 He said that one system has been very helpful to see in a map format because if someone complains that staff
1451 killed vegetation they can see exactly where they sprayed. Don asked Burnie for examples of logging geo
1452 locations. Burnie said they covered the spray truck and convert the data to a file in GIS apps. He said they use
1453 Tremble Geo 7000 to collect culvert data, which has high accuracy depending on satellites to within 5 feet or
1454 less. He said the ability to have the picture with that data is very useful. He said there are some future
1455 products such as Collector that Marion County is looking at putting that on a smartphone or tablet but they are
1456 only in early discussion.

1457 **Washington County:**

1458 Keith said their **shoulder spraying** is contracted and data about when, where, weather conditions and nozzles is
1459 part of that contract. He said they get reports but they aren't as transparent about sharing the information. He
1460 said they get calls and complaints about killed vegetation, but haven't had as many problems recently. He said
1461 one contractor got into trouble because he didn't keep good data. Keith said Washington County does some
1462 spot spraying but don't electronically track. Richard said the terms of contract are that they must provide all
1463 GPS data as GIS files as matter of the contract provisions.

1464 **Snohomish County:**

1465 Al said their program allows them to see where all the **brooms** are and whether they are or aren't sweeping, and
1466 allows them to also track their brush cutters and mowers but they're shut down right now.
1467 He said with their **striper** they collect data and then download it in the evening on the wireless network. He said
1468 they have a camera to take pictures and it's helped with claims because it shows when they were are at
1469 locations and can be matched to when a complainant claims their car got paint on it.
1470 He said their **snow plows** can tell how many miles they can sand. Al said most of their dump trucks (80%) are
1471 covered and all their pickups but the backhoes and other equipment doesn't have data yet.
1472 Don asked if it's affordable and cost effective. Al said it is and during mowing they can use the data to increase
1473 production with crews.
1474 He said with ThermoLase they can GPS every pothole patched and can load that data. Don said Pierce County
1475 has talked about **culture change** and asked Al what staff thought of this.
1476 Al said they got pushback from the union but responded that if crews are doing what they are supposed to be
1477 doing it's not a problem. He said they haven't disciplined over this but have used it to check when there's a
1478 complaint and sometimes it clears staff but sometimes it doesn't.

1479 **Spokane County:**

1480 Bob said they have GPS on their **graders and plows** and they can track on flat screens now to check what roads
1481 have been plowed and can track whether blades were down. He said they haven't gotten into other pieces of
1482 equipment but are slowly working towards that. He said they have a good product and are slowly transitioning
1483 staff from using a map on the wall to using the flat screen. He said they have done this for two seasons and
1484 crews are getting used to it and they're seeing good results.

1485 **CRAB:**

1486 Bob said in his experience Snohomish and Pierce are far ahead more rural counties that probably won't go to this
1487 technology. He said larger counties that are involved in OTS may be using it someday but it isn't anyone's
1488 priority in the smaller, more rural counties.

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Pierce:

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Brian said one thing they do very well is how in depth they've gone with their iPad usage. He said anything in GIS that can viewed at a desk can also be viewed anywhere in the field or road shops by crews. He said it's a great tool and maybe in the future they can do a better presentation and show the interface. Tom said they showed a PowerPoint presentation but could have instead used the actual app to show how and why they use on a day to day basis.

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Don said most supervisors have tail crews and usually are creating or monitoring timecards. He asked Tom if these tools help with timecards. Tom said he can double check accuracy from mileage entered by driver, by ABL, and by work order. Brian said regarding their vactor program, they can look at catch basins and using this technology has allowed them to be NPDES compliant. He said they have been able to track signs and properly allocate staff and resources.

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Pete asked if they were able to post on line when there are issues. Brian said they use the iPad to post notices on the web. Don said his public works director was interested in how Pierce County is using SKYPE for building inspection approvals. Brian said they also use for septic inspection approvals.

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Brian said a couple of counties have expressed interest in coming back with IT staff to get a better understanding. Don said he thought Marion County would like to do that possibly next summer. Brian said Deschutes and Washington counties also expressed interest.

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Paul asked if they can enter info directly into system when updating asset inventory in field or if there is an intermediate check point the supervisor verifies. Brian said they currently don't use ARC GIS online; they use CMS and track online through maintenance collection. He said when they clean a catch basin they collect data and at the end of shift they dump that data into the system. Brian said road side vegetation work is set up and just waiting for maintenance collection to do final step.

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Paul asked if CMS is also GPS. Brian said yes but mainly for storing data and ARC is the interface. He asked about the start-up and ongoing costs for counties doing ABL. Don said they will collect and share with the group but that costs are coming down. He said it was \$25 per unit per month but is now down to \$5. He said he is most concerned about subscription costs but there is a downward trend on this. He said a PowerPoint will be posted on the OTS website.

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Don said Pierce County is heavily involved in automation and asked if they use public works or IT staff and how many staff are involved in maintenance. Brian said in the last 15-20 years they have had one IT staff that worked with road operations and is very familiar with GIS. He said they have another individual with a GIS degree and another with certification. He said all are public works employees and the only IT support they receive is when they need to push a device.

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Brian said all supervisors have iPads with \$40 /month data plans. He said all vactor trucks have multi-user iPad platforms with AirWatch so any employee can log in. He said they have 9 multiuser devices and the rest is with supervisors.

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Brian said they will be moving to multiuser iPads without data plans for sweepers and brush cutters, and they can push the data up when they're back in the shops. Richard said all their inspectors have android phones with hotspot capability.

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Brian said Pierce County IT department only allows iPhones and iPads. Keith said this has been a good talk about technology regarding radios and phones, monthly costs, ABL, and Washington County may want to rethink how they do business. Brian said they did get rid of radios and went with satellite phones through Verizon for about \$30-\$32 per month and this has worked well. He said they have a lockable mounting system so the phone doesn't leave the vehicle. Richard asked how they are broadcasting messages to the entire workforce if there's a big event such as an earthquake. Brian said they train staff what to do if that happens and instruct them to check on families, return to the shop, and then report to fit site.

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Bob (Spokane) asked if Pierce County utilizes cameras like WashDOT does for remote areas. Brian said they have plans to do that in the next few months but haven't installed a camera yet. He said they will do a basic video camera and transmit data back through the phone system. He said they are also looking to mount one or two cameras on vehicles for a street view.

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see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

1538 Don said Marion County has ODOT cameras in the area they can view and flood gauges that broadcast data on
1539 the web. Keith said Washington County has a few micro climates that tend to freeze that they need to track
1540 and it's a combination of watching temp maps and ODOT cameras to come up with plan. Don said they have a
1541 slide area and have someone check that slide twice a day even on weekends. Alan said they use WashDOT
1542 cameras, river gauges for flood levels and a weather net service.

1543 Don said looking at their mission and the mission of their systems. Alan said he liked what Pierce County is doing.
1544 He said Snohomish County is heading in the right direction and will probably be contacting Pierce County later
1545 as they build their system.

1546 Keith said from top to bottom the whole org is very clear and maintenance and operations is a top priority, with
1547 improvements coming later. He said they take care of what they have before they make improvements. Keith
1548 said Washington County has also come to that realization and are trying to play catch up with maintenance.
1549 He said improvements are new and exciting and what the public wants to see but if you can't maintain what
1550 you have, what's the use. He said this is very much as system wide message to take care of what you have
1551 before you build more stuff.

1552 Don asked for they could define the line between maintenance and operations. Don (Pierce) said snow, wind, and
1553 rain falls into operations and mowing, vegetation, shoulders, and potholes is maintenance, but a lot of it falls
1554 into emergency weather situations. Don (Marion) said he has maintenance and operations crews, and splitting
1555 those two terms is tough. He said to him maintenance is physical and operations is usability.

1556 Bob (Spokane) said they differentiate along the same lines. Don (Marion) said their thinking leans towards
1557 operations being part of maintenance. Brian (Washington Co.) said the two terms are somewhat
1558 interchangeable depending on the activity and they haven't really fleshed out that discussion because they
1559 haven't had a need. He said they view work in operations as support of maintenance and they are there to
1560 assist them by giving the tools they need to get things done on a daily basis. Alan said theirs is pretty much
1561 the same as others.

1562 Don asked Tom to talk about learning the total system integration systems and planning tools. Tom said there
1563 was a learning curve but being able to look at a map or work order and easily assign it out, and then being
1564 able to look at the dashboard to see what workers are doing is making it a lot easier for them. He said when
1565 they first got their scheduling tool other supervisors were skeptical, but now can't live without it. He said when
1566 introducing a new tool, it's all about the learning curve.

1567 Don said he hears that urban supervisors aren't getting out as much as remote supervisors and it weighs on
1568 remote supervisors that they aren't getting all their administrative duties done. Tom said field supervisors get
1569 out every day but in his position he may only get out once a week, but they can use technology inspection data
1570 to assign work, it's all on the map highlighted, and he assigns as it makes sense. He said it saves a
1571 tremendous amount of time and they don't need to supervisors to go out into the field to assign work, which
1572 frees up field staff. He said they don't have to ask any supervisors where to send staff but also want to make
1573 sure they don't get to a point that field supervisors drive by an area.

1574 Tom said they give training to staff to use technology and forms. Richard said their board of commissioners
1575 adopted a work program that is a detailed plan for what they will do for the year (inspections, routines, work,
1576 etc.) and asked if they know what percentage is planned/unplanned work. Brian said 70% is scheduled and
1577 30% is unscheduled through phone calls/emergencies.

1578 Don thanked Pierce County for hosting the site visit.

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1580 **** End of Meeting #13 ****

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see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

1583 **CONFERENCE CALL MEETING # 14 – DECEMBER 4, 2014**

1584 Meeting Participants: 15 total / 4 agencies

1585	Deschutes	Tom Shamburger	Randy McCulley	Chris Doty	Chuck Shutte	Ed Landers
1586	Jackson	None				
1587	Marion	Don Newell	Virgil Hamm	Jolene Bray		
1588	Washington	Keith Lewis	Richard Crucchiola	Dave Schultz	Larry Kanub	Brian Irish
1589	Pierce	None				
1590	Snohomish	None				
1591	Spokane	Bob Keneally	Howard Hamby			
1592	Yakima	None				
1593	AOC	None				
1594	CRAB	None				

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1597 **HOT TOPICS/UPDATES:**

1598 Don said next month's OTS meeting will be held on the second Tuesday (January 8th) because the 1st
1599 Tuesday is a holiday. He said there has been a request to add **customer service as a hot topic** to the
1600 January agenda. He said he will frame up some questions for the group. Don said of agencies have
1601 processes or standards they follow to email to him and he'll post on the website for participants to
1602 review before the next meeting.

1603 Don there are two major topics left, drainage and traffic markings, and the group will go to drainage
1604 next and then traffic in the late winter. He said there are other major topics such as bridge
1605 maintenance they can discuss next spring.

1606 **Topic 36: Radio Communications**

1607 **Original Questions from Richard Crucchiola Washington County**

1608 Here are the questions I think would be a good survey for your counter parts in the Over the Shoulder group
1609 about how they use two-way radio communications in their agencies. I'm interested in the following and I'm
1610 hoping others would find these responses useful as well:

- 1611 1) What are your primary means of communication between the office and field personnel?
- 1612 2) Between field personnel? (Two-way radios, cellphones, pagers, satellite phones)
- 1613 3) Roughly what percentage of your road system is covered by poor communications solutions and what do you
1614 do to mitigate these problems?
- 1615 4) Who controls the radio system in their jurisdiction (Public Works, Fire, Law Enforcement, 911, IT)?
- 1616 5) Who controls FCC licensing for their radio systems (In-house, consultant)?
- 1617 6) What frequencies do they use (800 MHz, VHF, UHF)?
- 1618 7) Do they have more than one set of frequencies within a given band of frequencies?
- 1619 8) Do they use more than one frequency set for redundancy?
- 1620 9) Do they actively share radio templates with partner agencies for interoperable communications?
- 1621 10) Who acquires and maintains the mobile and handheld radios (equipment repairs, radio programming)?
- 1622 11) Who maintains the radio infrastructure (Towers, Repeaters, Basestations)?

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

- 1623 12) In what department(s) do the communications technicians work (IT, 911, Fleet, Public Works, Law
1624 Enforcement, Fire)?
- 1625 13) To what degree to individual departments maintain their radio equipment?
- 1626 14) Who dispatches their crews (In-house dispatcher)?
- 1627 15) What job classification is used for Dispatching?

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1629 Deschutes County:

- 1630 Randy said primary means of communication between office and field is two-way radios. He said they
1631 drifted into cell phones but switched back to **800mhz two-way radios** and added a lot to trucks. He
1632 said they have about 20% of roads with poor communication and to mitigate problems they use cell
1633 phones. He said law enforcement have VHF radios and can put up mobile repeaters.
- 1634 He said the sheriff's office controls radios in their jurisdiction, which covers the entire central Oregon
1635 system, and has its own technicians. He said he's unsure who controls licensing but has an email in
1636 to FCC but hasn't heard back.
- 1637 Randy said they are looking to upgrade to T25 that they don't have currently. He said they only use
1638 800's at the road department and law enforcement has 800's and VHF. He said at Public Works they
1639 have a couple radios that can talk VHF and have their own talk group for the road department which
1640 can be broken down. Randy said they run small VHF for flagging and small crews, and use 800's for
1641 chip seals so everyone is in loop. He said they don't have any satellite phones at this time.
- 1642 Randy said frequencies are for 800mhz trunk system and VHF depending on agency. He said the road
1643 department uses 800 radios they purchased about four years ago.
- 1644 He said they bought P25 Phase 1 and when they upgrade in the future they will need to be Phase 2
1645 and will all have to be replaced. He said their cost per unit is over \$600 per year which is regulated
1646 by the amount of users and system to operate. He said they have a lot of frequencies for other
1647 agencies and share templates and are working to get interoperable radios so they can communicate
1648 with state and other agencies.
- 1649 Virgil (Marion) said the 800 trunk system has multiple frequencies in order to trunk and has a failsafe if
1650 one transmitter fails, it drops over to the other transmitter so you'll never know one system fails you.
1651 Randy said acquiring and maintenance is done by department, installation is done by Day Wireless,
1652 and the sheriff's office has its own technicians.
- 1653 Randy said their technician is through the sheriff's office but personal radios are through Day Wireless,
1654 and that cost is directly to their department. He said they maintain their own radio equipment but not
1655 infrastructure.
- 1656 Tom said they don't have a dedicated dispatcher for Deschutes County and supervisors take all calls.
1657 He said they have a front office person with a radio they will occasional use but mostly self-perform
1658 dispatch duties. He said it's pretty effective and they like to call out on radio so supervisors have a
1659 direct hand.
- 1660 Richard (Washington) asked if crews separated their radio talk by crews or frequency. Tom said they
1661 sometimes separate groups by north or south county, and a lot of flagging is line of sight and not
1662 part of the trunking system. He said they occasionally will overlap if working closely together but
1663 generally have a small enough crew that they rarely have overlap on radio but have the ability to
1664 separate out. Richard asked if calls go to the supervisor and the supervisor then fields to crew.
- 1665 Tom said yes and they also use **cell phones** but if it's a group call, it goes over the radio. He said their
1666 front desk takes calls from the public so all have the capability to receive email via cell phones or

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1667 calls, and they relay that via cell phone or radio to crews. He said they receive a stipend for their
1668 personal phone so they don't have to carry two phones.

1669 Don asked if the front desk has radio. Tom said they have a radio but it's mostly turned down and they
1670 are not communicating directly with crews. He said he turns in a daily so they know where everyone
1671 is and if they receive a call they can see if a crew is in that area. He said they got a lot of calls from
1672 citizens in Marion County but not so much in Deschutes County, so this system works effectively for
1673 them.

1674 Marion County:

1675 Virgil said the primary means of communication for Marion County is two-way radios. He said they are
1676 using **VHF multiple system** with multiple talk groups (road crew, bridge crew, sign shop, etc.) so
1677 they can communicate between themselves without tying up the radio.

1678 He said **flagging channels** are part of the same radio. Virgil said people in trucks can be aware of
1679 what flaggers are doing at work sites.

1680 He said roughly **15% of the road system has poor communications** but a small percentage has no
1681 communication up in canyons. He said it's not a big issue because they can still use tack or flagging
1682 channels on the radio so they don't totally lose communication but may not be able to reach
1683 dispatcher.

1684 He said Public Works radio system is maintained by the radio shop at Public Works, and they also
1685 maintain radio systems for other cities and county agencies in Marion County.

1686 Richard (Washington) asked if flagging is **simplex only**. Virgil said they are simplex but are UHF
1687 simplex and can scan other channels. Don said on big chip seal job, if a truck driver is coming into a
1688 job, they can talk with flagging group as they come into the site and then up to the spreader they can
1689 switch to that crew. He said it's a pretty handy tool. Virgil said the Public Works, Sheriff's Office, and
1690 Health have satellite phones and are only used for emergencies not for day to day operations.

1691 Don said **Pierce County dropped day to day radio system and switched to using cell phones** and
1692 GPS in vehicles. He said they are using a lot of mobile devices (iPhones, iPads) and issuing
1693 direction through these.

1694 Virgil said Marion County is using **UHF** in some areas. He said the network covers the whole county
1695 and can segregate groups. He said their LTR protocol was developed by EF Johnson and is pretty
1696 old technology. He said typically mobile radio costs \$400 but proprietary radios might cost \$2000
1697 because you're paying for the license.

1698 Virgil said most other agencies are on **VHF** except the City of Salem, which has trunk 800, but they are
1699 looking at trunk 745 system with P25 system upgrade. He said it is very expensive and doesn't
1700 cover things like they think. He said supervisors and lead workers have UHF and VHF radios that
1701 are used for interoperability with other agencies when doing traffic control or other things. He said
1702 Public Works maintains and repairs its own equipment.

1703 Virgil said they have three radio shop employees who maintain the radios for Public Works, Sheriff's
1704 Office (repeaters and mobile equipment), Jail, and other county police and fire departments at their
1705 request.

1706 Virgil said they also maintain two sites specifically and have fixed receivers at 11 sites. He said they do
1707 all the installations of new radio equipment in vehicles as well as lights, sirens, antennas on towers,
1708 and microwave items. He said it's a very diversified shop.

1709 Don said they have two toll ferries with card swipes and that communication may be upgraded to
1710 microwave to increase bandwidth for card swipes.

see "Over The Shoulder Topic Index" ongoing WORD file for meetings' topics

1711 Richard (Washington) asked how they interface with Salem's 911 Center and who takes care of their
1712 towers. Virgil said nobody is in control of some of that. He said the 911 center takes care of consoles
1713 and structure in the building, but most agencies they dispatch for take care of their own radio
1714 equipment.

1715 He said its sometimes phones and sometimes microwave, so it may be multiple people responsible for
1716 different parts and pieces. He said NORCOM is moving towards owning the communications part
1717 (base station repeaters and equipment) and then the agencies own the radio equipment in vehicles.
1718 Virgil said its unfortunate no one entity is in charge of the system because there is less
1719 interoperability and more overlap in systems.

1720 Keith asked if Marion County was an anomaly with UHF system. He said Washington County switched
1721 from UHF going to narrow banding with the idea that 800mhz is the latest and greatest but very
1722 expensive. He asked for background and deciding factors at Marion County.

1723 Virgil said Marion County Public Works was on a VHF low band system about 30 years ago and
1724 transitioned to a single UHF repeater which gave them more capability. He said the department then
1725 migrated as it got bigger and needed more channels and went to an LTR trunking system to better
1726 utilize the channels they had. He said they can put on more users with fewer conflicts by using the
1727 trunk system versus individual repeaters. Virgil said they have one site with 6 channels and one site
1728 has 2 channels, and the dispatch talk group is networked and retransmitted from both sites.

1729 Virgil said Marion County Public Works maintains radios and towers in-house.

1730 He said the dispatcher receives calls, logs them into the computer, and then dispatches to the
1731 appropriate person. Don said public works has customer service software that tracks issues (e.g.,
1732 potholes, etc.) and are always talking to crews who may report problem. He said all calls are logged
1733 into a database where the issue and response are documented.

1734 He said a lot of radio traffic decreased by about 40% with the use of cell phones between crews and
1735 supervisors and many employees using own personal cell phones. Virgil said this position is part of
1736 Admin Support staff and is a very busy person. He said he can provide that job class if there is any
1737 interest. Virgil said they have a communications technician and electronics technician in the radio
1738 shop. He said the electronics technician position was classed this way because he fixes more than
1739 just communications.

1740 He said the UHF LTR trunking system can actually make phone calls through a standard phone to a
1741 vehicle in the system, and the call only goes to that vehicle. He said the system can also make a
1742 person-to-person call from one radio to another radio that nobody else can listen in on. He said there
1743 are no licensing requirements required.

1744 Virgil has he has a First Class FCC license which is no longer in existence because they've changed
1745 licensing. He said other radio shop employee has an FCC license but it's an older version and not
1746 required.

1747 Don said Marion County also the Emergency Management facility and have a room for amateur radio
1748 operators' use. Virgil said this is a fairly extensive radio room for amateurs and has multiple metered
1749 bands in UHF and an antenna that will work with any of those bands. He said there are more
1750 horizontal antennas for close range communication on HF frequencies, and multiple antennas for 2
1751 meters and 70 cm for use by the amateur radio users.

1752 He said amateurs maintain the repeaters at Prospect and House Mountain for providing emergency
1753 communication when needed. He said they have a text radio interfaces with the Internet wthey they
1754 can type text to the radio system that is connected to the Internet that comes out of Washington,
1755 D.C.

1756 Don said there are two 911 centers in Marion County and staff secured \$1 million homeland security
1757 grant for a microwave tower in Woodburn that gives a direct shot into the state system.

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1758 Richard asked if radio or communication technicians are **low or medium voltage certified**. Virgil said
1759 no.

1760 **Washington County:**

1761 Richard said Washington County primarily uses two-way radios and back up with cellular phones.
1762 He said about **15-20% of their road system has poor coverage**. He said if they have a job using
1763 simplex and they have the option of having an inspector with satellite phone for safety reasons. He
1764 said they have seven satellite phones that can be used to mitigate poor coverage zones. He said
1765 they are using 800 on the 911 district.

1766 Richard said they previously had their own VHF system but in 2010 they flipped to 800 as their primary
1767 and VHF as backup. He said they retained their VHF equipment so they can rely on that if 800
1768 becomes overloaded. He said the 911 center controls the system and FCC licensing, and they also
1769 maintain the infrastructure.

1770 Don asked if the 911 center is on **800 if they are paying a monthly or annual subscription fee** on
1771 each unit. Richard said they are paying about \$150/year per radio for 150 radios.

1772 Don asked if the loaders and trucks had radios. Richard said they are in trucks but they have handhelds
1773 for graders or brushers.

1774 Don asked if their budget went up when they switched over. Richard said yes and also with the
1775 conversion to P25, and are now being told they have to do it again.

1776 He said the switch didn't last as long as they hoped because the 911 center wanted to go to digital. Don
1777 said when he was with **Multnomah County** they rolled out 800s but retained VHF and put bridges in
1778 the radio shop so they could have conversations between VHF and 800. He said they saw that fees
1779 would be tremendous so only bought a few units, but this allowed them to have access to ODOT,
1780 City of Portland, and state police, but they retained their VHF system.

1781 Richard said they saw how communications fell apart during Hurricane Katrina so they purchased one
1782 **satellite phone**, and as time by they realized they can be used anywhere and decided to invest in
1783 more. He said the geography of Washington County is hills and coast range, so they have black
1784 spots in their radio system. He said crews can stay in contact with the public works yard via the
1785 satellite phone. He said they are in camera bags with magnetic mounts and an antenna to put on a
1786 truck or vehicle. He said the monthly fee is \$20-\$30 and can also do prepaid for minutes.

1787 Richard said for 30 years Washington County was on one channel on VHF and then had additional
1788 single frequency for flagging. He said about 4-5 years ago, their 911 center upgraded fire and law
1789 enforcement to the 800 system and there was a glut of 800 radios they were able to buy for \$1000
1790 each. He said they made the investment in P25 Phase 1 and thought could use it for a while, but
1791 now everyone is going to Phase 2.

1792 He said they have mostly 800 in their trucks, VHF needs to be installed in other vehicles, and they have
1793 VHF handhelds. Richard said they are on the Motorola trunk-ing system and they have 6 towers
1794 around the county that are controlled by Clackamas County, so they are interoperable. He said they
1795 share radio templates, which includes other public works agencies, fire, and law enforcement, so
1796 they are interoperable with other agencies. He said they acquire own equipment, but maintenance
1797 between the 911 center and Day Wireless.

1798 Richard said they have similar amateur system in Washington County to what is in Marion County with
1799 similar capabilities. He said all agencies of significance will have a presence that allows
1800 interoperability as backup if 800 or VHF systems fail. He said communications techs are all at the
1801 911 center and there are none at county government. Richard said Washington County doesn't have
1802 a radio tech to support their 1,500 radios so they rely on the 911 center or Day Wireless. He said it's

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1803 become apparent that it's odd that they're not self-supporting and are giving consideration to
1804 bringing this into county government infrastructure.

1805 Richard said all internal maintenance goes to the 911 center and repeaters are contracted with Day
1806 Wireless who has dispatching system over radio. He said they have a bank of radios in server room,
1807 an array of antennas on the building and a dispatcher connected via Ethernet.

1808 He said they can do bridging across talk groups and frequencies at the software console. He said most
1809 radios are simpler units that don't have F10 keys but if they put in 10 key they can do radio-to-radio.
1810 Keith said dispatchers are generally designated during regular work hours. He said they have
1811 simplex communication for trucking and flaggers with five talk groups and the expectation is all
1812 employees in transit will be on the dispatch channel.

1813 Keith said with dispatching of crews they have one dispatcher at any given time. He asked if Marion
1814 County has two. Don said one on duty all the time but often a second who assists or provides
1815 coverage. Keith said they haven't crossed over the line but are considering admin support for
1816 dispatch. He said a management analyst now acts as dispatch by monitoring all radio
1817 communications. Richard said they are also interface with the 911 center who will call Washington
1818 County dispatch to relay information.

1819 He said their **dispatcher is a class above admin support** and warehouse staff is also capable of
1820 jumping in when the dispatcher is out or on vacation.

1821 Don asked if Washington County has an internal software dispatch log like what is used by Marion
1822 County. Richard said they created a database last year and anyone who has dispatching duties can
1823 get into the app, which can also be viewed by anyone in county government.

1824 Don said Marion County also has a mapping feature created by IT staff. Richard said they would like to
1825 get this in the next year or so, but now only have text. He said all lead workers and supervisors have
1826 ATT cell phones and are able to see where a phone is located and can compare to the dispatch log
1827 for accuracy.

1828 **Spokane:**

1829 Bob said they are pretty similar to Deschutes County. He said their primary means of communicating is
1830 by two-way VHF radio with cell phones as backup. **He said crews use their personal cells, not**
1831 **phones distributed by the county.** He said they have not looked into satellite phones and
1832 approximately 20% of their road system has poor communication.

1833 Bob said he is interested in hearing what Pierce County did. He said the radios, infrastructure, and FCC
1834 licensing are controlled by the communications shop and have VHF frequency they use. He said
1835 they have multiple channels on radios and share and monitor frequencies with the sheriff's office
1836 and road department. Bob said they have a separate flagger channel and also use the same system
1837 as Marion County for bigger jobs, such as chip seal projects.

1838 Bob said their **communications shop** maintains the radios and infrastructure for them and the sheriff's
1839 office. He said they do not have a dispatcher but have a lot of people monitoring radios from the
1840 county engineer down. He said all managers monitor radios and have handhelds in their offices and
1841 there is a radio monitoring system in the hallway.

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1843

1844 Richard (Washington) said he appreciated everyone taking the time to go through questions and said
1845 this will help them develop internal tech support for public works, sheriff's office, and the health
1846 department. He said they were looking for observations and advice from other OTS participants.

see **"Over The Shoulder Topic Index"** ongoing WORD file for meetings' topics

1847 Don said things will look different 10 years from now and they need to look at the steps to get there and
1848 make it affordable. Virgil said Washington County may not have 10 keys on their radios, but needs
1849 to look at their system and if they can key, it will go directly to the dispatcher and not to other trucks.
1850 He said with some of this it can be broken down to two people but depending on how the radio is set
1851 up it may not need a key pad to work.

1852 Richard said they are also looking at bridging unit that connects radios to cell phones but they haven't
1853 got buy-in from the 911 center.

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1856 **Announcements / Calendar**

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1858 Don said Pierce County is hosting a webinar **"Using Mobile Technology to Meet NPDES Compliance**
1859 **Cost Effectively"** 12/11 at 11:00 a.m. He said there is a cost and he will send the link.

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1861 **** End of Meeting #14 ****

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