Caudill, Jeff

From: Meharg, Emily
Sent: Wednesday, June 1, 2016 9:35 AM
To: Caudill, Jeff
Subject: RE: Tree canopy report - proposed draft

I used the difference between 5% and 10% for the CC2035 table, since that is the increment of change. The Baseline values are already embedded into the CC2035 table as a starting point so the numbers in the 2035 table are the increments beyond that.

From: Caudill, Jeff
Sent: Wednesday, June 01, 2016 9:19 AM
To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Subject: RE: Tree canopy report - proposed draft

I now realize that I didn't look closely at the numbers you put in to realize that it was just a rounding issue. However, it looks like the Trees on Buildings column is the same for Baseline and CC2035. The CC2035 should be the 10% values. Am I still missing something?

-J

From: Meharg, Emily
Sent: Wednesday, June 01, 2016 8:54 AM
To: Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>
Subject: RE: Tree canopy report - proposed draft

Weird, both columns are up to date on my end, in both excel and the cloud document. I repasted them into v2 and removed the orange shading. Can you see them now? Or are you not referring to the tables? I didn't update the conclusions text since I wasn't sure if anything would change again.

From: Caudill, Jeff
Sent: Tuesday, May 31, 2016 10:37 PM
To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Subject: RE: Tree canopy report - proposed draft

Emily,
Can you incorporate the updated trees on buildings values into the Baseline and CC2035 Scenarios tomorrow (Wednesday) morning? I guess we'll go ahead and do the low value (5%) for the Baseline and the high value (10%) for the CC2035, as you recommended. The updated table is here: N:\work\environmental\THE RIVER PLAN\CENTRAL REACH\Targets\TreeCanopy\Data\BLI_lots_trees_on_bldgs.xlsx

Also, it looks like the Master Plan canopy estimates are still to be entered into the CC2035 summary table. Do you need anything more from me to update that?

Thanks.

-J

From: Meharg, Emily
Sent: Friday, May 27, 2016 4:05 PM
To: Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>; Jortner, Roberta <Roberta.Jortner@portlandoregon.gov>
Subject: Tree canopy report - proposed draft

I did a pretty thorough read through of our Tree Canopy - Proposed Draft. My comments are in track changes. I also updated all of the tables (and accepted changes to the tables so they're easier to look at), except for the two aspirational tables. I think we're on track to finish before Roberta retires!

Caudill, Jeff

From: Jortner, Roberta
Sent: Thursday, May 19, 2016 11:58 AM
To: Caudill, Jeff
Cc: Meharg, Emily
Subject: RE: Trees on Buildings

Good idea (I think).

From: Caudill, Jeff
Sent: Thursday, May 19, 2016 11:54 AM
To: Jortner, Roberta <Roberta.Jortner@portlandoregon.gov>; Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Subject: RE: Trees on Buildings

To account for the limitations in C Eastside I assumed only 10% in that area, and 25% elsewhere.

-J

From: Jortner, Roberta
Sent: Thursday, May 19, 2016 10:30 AM
To: Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>; Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Subject: RE: Trees on Buildings

Yes. I think from a methodology explanation, we're using 25% of the area of the sites as a proxy for 25% of the sites themselves. This accounts for the variability of site size and the fact that we don't know which sites will/won't elect to incorporate trees… Maybe run the 25% assumption by Mark R?

From: Caudill, Jeff
Sent: Thursday, May 19, 2016 10:24 AM
To: Jortner, Roberta <Roberta.Jortner@portlandoregon.gov>; Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Subject: RE: Trees on Buildings

Yeah, I think it is a good idea to assume a percentage of the BLI sites will proved trees. I've updated the calculation to assume that 25% of the sites will incorporate trees on buildings. See about right?

-J

From: Jortner, Roberta
Sent: Tuesday, May 17, 2016 12:23 PM
To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>; Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>
Subject: RE: Trees on Buildings

That's a good point too Emily. Using a percentage of the BLI sites makes sense to me…

From: Meharg, Emily
Sent: Tuesday, May 17, 2016 11:59 AM
To: Jortner, Roberta <Roberta.Jortner@portlandoregon.gov>; Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>
Subject: RE: Trees on Buildings

Good point, Roberta. I was definitely thinking of this as part of the CC2035 scenario. But, if we're already seeing trees on buildings, which we are, then it seems like maybe this should go in the baseline – at least the low. Also, I'm wondering if we want to assume a certain percent of the BLI sites >.45 acres would incorporate trees on buildings, rather than all of them. As it is now, the projected increment of change from trees on buildings is much higher than any other projected changes, with the exception of street trees in recently planted districts and street trees associated with development (both from the baseline scenario). In the CC2035 scenario, both the low and high trees on buildings would be higher than any other increment of change, with innovative street design coming in second. I think we should set up a meeting to go over both with Mark, Marc, and Lora.

From: Jortner, Roberta
Sent: Tuesday, May 17, 2016 11:11 AM
To: Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>
Cc: Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Subject: RE: Trees on Buildings

Looks good Jeff.
Three questions:

1. Are likely to see the integration of trees on buildings in the Central Eastside Industrial Area?
2. Is the 10% scenario is plausible enough to include in the high estimate/target? Maybe one more reality check w/Mark Raggett?
3. Does this go in the Baseline scenario or CC2035 scenario. I'd love to see it in the CC2035 scenario, but will need to be able to provide rationale as to how the plan is encouraging the incorporation of trees into buildings.

RJ

From: Caudill, Jeff
Sent: Monday, May 16, 2016 6:29 PM
To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>; Jortner, Roberta <Roberta.Jortner@portlandoregon.gov>
Subject: Trees on Buildings

Emily and Roberta,
I decided to us a half city block (0.45 acres) for the minimum area for trees on buildings. I actually calculated both 0.4 and 0.45 acres and it made only a small difference anyway.

Take a look at the “Summary” worksheet (and separate data for each subdistrict, if you’d like) and let me know if you see any issues or have any further suggestions.

N:\work\environmental\THE RIVER PLAN\CENTRAL REACH\Targets\TreeCanopy\Data\BLI_lots_trees_on_bldgs.xlsx

Thanks

-J

Caudill, Jeff

From: Meharg, Emily
Sent: Wednesday, May 18, 2016 4:17 PM
To: Jortner, Roberta
Cc: Caudill, Jeff
Subject: RE: UFC May Agenda Correction

Here's what we found in terms of raw A and B cutout strip numbers, without accounting for MS codes or distinguishing between BLI and non-BLI.
\\BPSFile1\Common$\work\environmental\THE RIVER PLAN\CENTRAL REACH\Targets\TreeCanopy\CentralCity_AandBStrips.docx

Together, they constitute roughly 20% of the total potential planting spaces in the Central City.

From: Jortner, Roberta
Sent: Tuesday, May 17, 2016 11:04 AM
To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Cc: Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>
Subject: FW: UFC May Agenda Correction

FYI – see last item on the UFC agenda. Emily, do you have a sense of the impact of removing the Type A strips and Type B cutouts from the Central City tree canopy estimates?

From: Lipai, Natasha
Sent: Tuesday, May 17, 2016 7:32 AM
To: Lipai, Natasha <Natasha.Lipai@portlandoregon.gov>
Subject: UFC May Agenda Correction

Good Morning,

I am resending this month's agenda with a correction. Please see attached.

Sincerely,
-Natasha

Natasha Lipai
Operations Aide (CSA II)
Portland Parks & Recreation | Urban Forestry
1900 SW Fourth Avenue, Suite 5000
Portland, OR 97201
Call or text: 503-823-8398 | Office hours: 7:00 AM – 3:30 PM
Natasha.Lipai@PortlandOregon.gov
portlandparks.org

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Caudill, Jeff

From: Meharg, Emily
Sent: Friday, April 29, 2016 1:15 PM
To: Agarwal, Maya; Ramsey, Jeff
Cc: Caudill, Jeff; Jortner, Roberta
Subject: RE: 2014 canopy on parks

Great! We're running everything by subdistrict so I'll subtract 1.07 acres from the low end of Downtown's preferred range and leave the rest of the preferred ranges the same.

Thank you,
Emily

From: Agarwal, Maya
Sent: Friday, April 29, 2016 12:58 PM
To: Ramsey, Jeff <Jeff.Ramsey@portlandoregon.gov>; Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Cc: Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>; Jortner, Roberta <Roberta.Jortner@portlandoregon.gov>
Subject: RE: 2014 canopy on parks

Hi Jeff, that seems logical and reasonable to me.
Thank you,
Maya

Maya Agarwal
City Planner II | Planning Group
Portland Parks & Recreation
1120 SW Fifth Ave., Suite 1302
Portland, Oregon 97204
503-823-2507 (office)
503-865-3143 (fax)
Maya.Agarwal@portlandoregon.gov

From: Ramsey, Jeff
Sent: Friday, April 29, 2016 12:40 PM
To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>; Agarwal, Maya <Maya.Agarwal@portlandoregon.gov>
Cc: Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>; Jortner, Roberta <Roberta.Jortner@portlandoregon.gov>
Subject: RE: 2014 canopy on parks

Hi Emily,

Attached is the latest version of that spreadsheet I did for us. It shows an approx. 1.07 acre decline in canopy in Downtown Waterfront Park. It might be easier to just subtract the 1.07 acres from the low end of the overall goal and see where it puts us, keeping our high end goal.

Maya what do you think?

Jeff

Jeff Ramsey
Title 11 Coordinator
Botanic Specialist II, Forestry | Urban Forestry
Portland Parks & Recreation
971-201-9018

From: Meharg, Emily
Sent: Friday, April 29, 2016 9:48 AM
To: Agarwal, Maya <Maya.Agarwal@portlandoregon.gov>; Ramsey, Jeff <Jeff.Ramsey@portlandoregon.gov>
Cc: Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>; Jortner, Roberta <Roberta.Jortner@portlandoregon.gov>
Subject: RE: 2014 canopy on parks

Hi Maya and Jeff,

I have a couple follow up questions.

Maya, the 36-42 range was for acres, not percent; the percent range was 37.5-44.2%. (Note: both of these ranges included Buckman and Lillis Albina, which are not in the Central City. The preferred acreage range with those parks removed was 32.12-37.65 and the preferred percent range was 40-47%.) So when you say you want to adjust to 34-42, I'm assuming you mean subtracting 2 acres of canopy from the low end of the preferred acreage range. Is this correct? If so, I can adjust the low end of the preferred canopy acreage for Waterfront Park by two acres (across the 3 subdistricts that it spans), but the difference between existing 2007 canopy and 2014 canopy in Waterfront Park is only 1.15 acres, so I'd be removing more than that difference. Alternatively, I could spread the 2 acre reduction equally across all subdistricts that have existing parks, or I could distribute it across all parks that showed a higher existing canopy in 2007. It would help to know the rationale for the reduction. My assumption is that it is based on the difference in existing canopy between 2007 and 2014, but the 2014 canopy is only 1.11 acres less than the 2007 canopy across the Central City so I'm guessing there's more to it than that. Can you provide us with the rationale so we can include it in the report? And can you confirm which approach we should take to factor in the reduction?

Jeff, is the excel sheet you sent me on 4/13 the most up to date one?

Thank you,
Emily

From: Agarwal, Maya
Sent: Thursday, April 28, 2016 3:35 PM
To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Cc: Ramsey, Jeff <Jeff.Ramsey@portlandoregon.gov>
Subject: RE: 2014 canopy on parks

Hi Emily, Jeff had indicated that Waterfront Park's canopy number was higher with the 2007 numbers than with our more recent data. Perhaps the numbers for Waterfront Park could be adjusted down until we reach the overall target range of 34-42%.
Thank you,
Maya

Maya Agarwal
City Planner II | Planning Group
Portland Parks & Recreation

1120 SW Fifth Ave., Suite 1302
Portland, Oregon 97204
503-823-2507 (office)
503-865-3143 (fax)
Maya.Agarwal@portlandoregon.gov

From: Meharg, Emily
Sent: Thursday, April 28, 2016 2:44 PM
To: Agarwal, Maya <Maya.Agarwal@portlandoregon.gov>
Cc: Ramsey, Jeff <Jeff.Ramsey@portlandoregon.gov>
Subject: RE: 2014 canopy on parks

Great, thanks, Maya!

Were there any changes to preferred canopy ranges for individual parks? The way I ran the calculations for existing parks was specific to each existing park, where I subtracted existing canopy from Parks' preferred canopy acres range for each individual park.

From: Agarwal, Maya
Sent: Thursday, April 28, 2016 2:25 PM
To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Cc: Ramsey, Jeff <Jeff.Ramsey@portlandoregon.gov>
Subject: RE: 2014 canopy on parks

Hi Emily,
We decided to revise the 2035 target range from the 36-42% we had to 34-42%, to reflect the more accurate data.
Thank you,
Sincerely,
Maya

Maya Agarwal
City Planner II | Planning Group
Portland Parks & Recreation
1120 SW Fifth Ave., Suite 1302
Portland, Oregon 97204
503-823-2507 (office)
503-865-3143 (fax)
Maya.Agarwal@portlandoregon.gov

From: Ramsey, Jeff
Sent: Thursday, April 28, 2016 1:49 PM
To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Cc: Agarwal, Maya <Maya.Agarwal@portlandoregon.gov>
Subject: RE: 2014 canopy on parks

Hi Emily,

I think Maya knows what the decision on this was. I'll let her follow up. Maya?

On a related note, I ran into Roberta and she said that the new canopy layer showed a huge increase in the Central City as a whole, which was interesting because we saw a slight decrease in Parks. Can you send me the CC numbers? That way, I can make sure that I was using the same methodology and I could look at what areas were driving the canopy gains.

Thanks!
Jeff

Jeff Ramsey
Title 11 Coordinator
Botanic Specialist II, Forestry | Urban Forestry
Portland Parks & Recreation
971-201-9018

From: Meharg, Emily
Sent: Thursday, April 28, 2016 1:36 PM
To: Ramsey, Jeff <Jeff.Ramsey@portlandoregon.gov>
Subject: 2014 canopy on parks

Hi Jeff,

I just wanted to check in to see where Parks is at with the preferred tree canopy on existing parks. Are there going to be any changes in preferred canopy ranges based on the 2014 existing canopy? Or can I go ahead with the preferred canopy ranges from before?

Thanks,
Emily

Methodology for removing A and B,Y potential planting spaces from street tree investment:

1. From the Discussion Draft, we had the total canopy capacity for potential planting spaces associated with non-BLI lots. This included A and B,Y strips.
2. Subtracted total potential canopy for A strips (data from Neil)
3. Subtracted total potential canopy for B,Y strips (data from Neil)
4. For A MS codes:
    a) Applied filters for: MS, at least 1 potential planting space, text in notes field, and not a BLI lot.
    b) Assigned a % for potential planting spaces that are As (ex. if notes field had A,C,C - % of As would be .33; if notes field had A,A,A,C, % of As would be .75) – note: assumed equal distribution of total potential planting spaces across all sides
    c) Multiplied % by total number of potential planting spaces to get # of A potential planting spaces
    d) Added # of A potential planting spaces up by district
    e) Calculated percent of estimated MS spaces that are As by district (# of A potential planting spaces/total # of potential planting spaces, by district). Multiplied by 314 for canopy.
    f) Calculated # of potential planting spaces for MS, at least 1 potential planting space, not a BLI lot, and no notes, by district. These are our MS missing data for As.
    g) Applied percent estimated MS spaces that are As by district. Multiplied by 314 for canopy.
    h) Subtracted sum of canopy for estimated MS spaces that are As with notes plus estimated MS spaces that are As for no notes data.
5. For B MS codes: repeat above except apply concreteRe=Y filter as well.

Caudill, Jeff

From: Loehlein, Neil
Sent: Tuesday, April 12, 2016 8:56 AM
To: Meharg, Emily
Cc: Jortner, Roberta; Caudill, Jeff
Subject: RE: Tree Canopy Green Loop Strips Count

Thanks Emily, this is very helpful. I won't worry about the segments that coincide with grey streets.

Neil

From: Meharg, Emily
Sent: Monday, April 11, 2016 5:39 PM
To: Loehlein, Neil <Neil.Loehlein@portlandoregon.gov>
Cc: Jortner, Roberta <Roberta.Jortner@portlandoregon.gov>; Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>
Subject: RE: Tree Canopy Green Loop Strips Count

Hi Neil,

Good question. I think the Green Loop/grey streets issue only came up with the required setback option 1 under the aspirational scenario. The regular 2035 Green Loop analysis uses potential planting spaces associated with non-BLI (and OS BLI) sites, whereas the grey streets are tied to development (optional setbacks/required building lines), which would use non-OS BLI sites. So, I don't think there should be any overlap between the two in the 2035 scenario, which means you don't need to leave out sections of the Green Loop that coincide with grey streets. Does that make sense? Roberta, Jeff, did I miss anything?

Here are the steps I have written down:

Green Loop – 2035 Scenario
Layers: Green Loop alignment, BES data
1. Calculate the "number of potential planting spaces-front" with A strips and B cutout strips removed for all OS BLI and non-BLI tax lots from BES's data with an address along the Green Loop alignment, by district. Include SW Salmon, NW Flanders, SE Salmon, and NE Multnomah connectors.
2. For areas along the Green Loop with multiple alignment options, use the average number of front potential planting spaces across all options, by district.
3. Calculate canopy associated with front potential planting spaces based on BES planter strip codes (small = 314 sq ft, med= 1256 sq ft, large = 2826 sq ft), subtracting 20% of canopy for medium trees and 30% for large trees in zones that allow lot line to lot line development.
4. Apply 30% constraint for vaults/voids.

Let me know if you have any questions.

Thanks,
Emily

From: Loehlein, Neil
Sent: Monday, April 11, 2016 3:59 PM

To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Subject: Tree Canopy Green Loop Strips Count

Hey Emily,
I'm going to start on getting a count of the A and B/cutout strips for the Green Loop and E/W connections, and I wanted to know if I should leave out sections of the Green Loop that coincide with Grey Streets. I think I left these out when I was running the tree canopy numbers, because it would double count the potential tree canopy. Thoughts?

Thanks,
Neil

Caudill, Jeff

From: Meharg, Emily
Sent: Tuesday, April 12, 2016 9:36 AM
To: Loehlein, Neil
Cc: Jortner, Roberta; Caudill, Jeff
Subject: RE: one more Q

I just intercepted Marc on his way in. NE Multnomah, while classified as a temporary alignment, is still seen as a major E/W connector. So we'll stick with it as our fourth E/W connector. You can include the entirety of NE Multnomah within the CC boundary (east to 16th Ave, not just to 11th where the temporary alignment line stops).

Thanks!
Emily

From: Loehlein, Neil
Sent: Tuesday, April 12, 2016 9:07 AM
To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Cc: Jortner, Roberta <Roberta.Jortner@portlandoregon.gov>; Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>
Subject: RE: one more Q

Great, thanks for looking into it.

Neil

From: Meharg, Emily
Sent: Tuesday, April 12, 2016 9:06 AM
To: Loehlein, Neil <Neil.Loehlein@portlandoregon.gov>
Cc: Jortner, Roberta <Roberta.Jortner@portlandoregon.gov>; Caudill, Jeff <Jeff.Caudill@portlandoregon.gov>
Subject: RE: one more Q

Let me check with Mark/c. I double checked my notes from our meeting with Mark and we had definitely settled on those four streets, but the meeting was back in November so maybe something changed. It could also be that, as the temporary alignment, NE Multnomah would still be one of the first to get the Green Loop treatment. Not sure. I'll let you know what I learn!

From: Loehlein, Neil
Sent: Tuesday, April 12, 2016 8:55 AM
To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Subject: RE: one more Q

Strange, NE Multnomah is considered a temporary route, which we excluded for the analysis (along with 'future' routes). Did Urban Design change the status of the NE Multnomah segment? It wasn't really considered a connector so much as it was a provisional route that would be active until the ped/bike bridge was built over the Banfield Hwy.

Neil

From: Meharg, Emily
Sent: Monday, April 11, 2016 5:45 PM

To: Loehlein, Neil <Neil.Loehlein@portlandoregon.gov>
Subject: RE: one more Q

For the 2035 scenario, we just used four of them: SW Salmon, NW Flanders, SE Salmon, and NE Multnomah. It seems strange that NE Multnomah isn't on either of the lists, but those were the four Mark suggested we use.

From: Loehlein, Neil
Sent: Monday, April 11, 2016 4:17 PM
To: Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Subject: one more Q

Hey Emily,
I have one other thing I need a bit of clarification on. There are eight E/W connections…five are classified as ASP (I'm guessing this means 'aspirational') and three classified as REG (probably 'regular'). Which ones should I be using to count the # of strips?
Here are the streets, if that helps:

ASP class:
SW Oak
SE Ankeny
NW Pettigrove
SE Clay
SW Montgomery

REG class:
SW Salmon
SE Salmon
NW Flanders

Thanks,
Neil

Caudill, Jeff

From: Jortner, Roberta
Sent: Wednesday, March 30, 2016 2:26 PM
To: Kobel, Nick; Martin, Kevin
Cc: Caudill, Jeff; Meharg, Emily
Subject: RE: Tree canopy methodological differences

Hi Nick, and Kevin,
Perfect timing! We're currently updating the Central City tree canopy targets and methodology document. It seems like the key driver for the differences relates to the evolving precision and resolution of the data. From the draft paragraph, perhaps explain what's meant by "main" tree canopy with regard to 2007 data. Also, re the 2014 data, can we say what type of "imagery" was used along with the LiDAR and anything about improve level of resolution?

rj

From: Kobel, Nick
Sent: Wednesday, March 30, 2016 12:28 PM
To: Jortner, Roberta <Roberta.Jortner@portlandoregon.gov>
Cc: Loehlein, Neil <Neil.Loehlein@portlandoregon.gov>
Subject: FW: Tree canopy methodological differences

Hi Roberta,

I heard you were asking about the methodological differences. Here's the conversation with Joe Gordon about the methodological changes. Please see the attached document. I don't understand what he's saying about 2007 data in the attachment though, likely because it's jargon.

We are trying to get a paragraph in the Portland Plan too describing the changes. Here is a draft copy of that paragraph.

There were some methodological changes that account for the increase in tree canopy coverage from 2003 to 2014. First, 2003 landcover imagery was analyzed by Metro staff to capture large areas of tree canopy (i.e., "forests"), but individual trees or small stands were not captured. Therefore, the citywide canopy of 26 percent is likely an underestimate. Second, 2007 landcover imagery utilized infrared orthophotos to capture the main tree canopy as well as shrubs and smaller patches of trees. The tree canopy estimates from 2007 indicated a citywide coverage of 29 percent, which is also likely an underestimate. Finally, 2014 tree canopy estimates were derived from both imagery and LiDAR to consider feature heights. This beta model improves the accuracy of tree canopy estimates, but the final accuracy assessment for 2014 tree canopy is ongoing and will be released with the final version of the 2014 canopy model, expected when.

Nick Kobel | nick.kobel@portlandoregon.gov | (503) 823-9906
Bureau of Planning and Sustainability | City of Portland

From: Kobel, Nick
Sent: Wednesday, March 30, 2016 8:42 AM
To: 'Joe Gordon' <Joe.Gordon@oregonmetro.gov>
Subject: RE: Tree canopy methodological differences

Hi Joe,

Thanks for the update. I think it will suffice to make a note on the change in methodology and that 2007 was an underestimate. We won't use this yet to adjust the target or goal, which we are close to having exceeded, until the dust has settled. We are sending it in for revisions today or tomorrow, and then it goes to graphic production for a couple weeks. We don't need anything from you before publication though.

Thanks for the info and following up!

Nick Kobel | nick.kobel@portlandoregon.gov | (503) 823-9906
Bureau of Planning and Sustainability | City of Portland

From: Joe Gordon [mailto:Joe.Gordon@oregonmetro.gov]
Sent: Wednesday, March 30, 2016 8:24 AM
To: Kobel, Nick <nick.kobel@portlandoregon.gov>
Subject: [Approved Sender] RE: Tree canopy methodological differences

Hi Nick,

No good fix yet. I think it's fair to say that the 2007 canopy likely underestimates by an unknown amount. I think it's also fair to say that the measured increase in canopy is real (i.e., a small percentage of trees are removed as the majority continue to grow) although likely an overestimate.

To be honest, I've been a bit sidelined by other projects, but still working on solving this issue. When are you publishing?

Joe

Joe Gordon
GIS Specialist | Metro Research Center
503-797-1587 | joe.gordon@oregonmetro.gov

From: Kobel, Nick [mailto:nick.kobel@portlandoregon.gov]
Sent: Monday, March 28, 2016 1:29 PM
To: Joe Gordon
Subject: RE: Tree canopy methodological differences

Hi Joe,

Thanks for this information. I'm curious if you ever arrived at a final methodological adjustment for comparing the data to previous years. We are about to publish, but I wanted to see if there was any update.

Nick Kobel | nick.kobel@portlandoregon.gov | (503) 823-9906
Bureau of Planning and Sustainability | City of Portland

From: Joe Gordon [mailto:Joe.Gordon@oregonmetro.gov]
Sent: Tuesday, February 16, 2016 1:14 PM
To: Kobel, Nick <nick.kobel@portlandoregon.gov>
Subject: [Approved Sender] RE: Tree canopy methodological differences

Hi Nick,

I've come up with ~25% canopy in 2007 (which is still an underestimate), and ~30% for 2014 for the City of Portland.

I'm trying to figure out a way to "fix" or "adjust" the 2007, given that both the input datasets are problematic (i.e., one portion of region derived from image-based land class, one portion of region developed from lidar/imagery which was flown in spring (not all areas had full foliage)).

That being said, this version of 2007 canopy is more accurate than the previous 2007 land class, and the 2014 is the most accurate canopy layer so far, simply because the data is better (leaf-on lidar, full region).

Joe

Joe Gordon
GIS Specialist | Metro Research Center
503-797-1587 | joe.gordon@oregonmetro.gov

From: Kobel, Nick [mailto:nick.kobel@portlandoregon.gov]
Sent: Monday, February 08, 2016 2:17 PM
To: Joe Gordon
Subject: RE: Tree canopy methodological differences

Hi Joe,

Thank you for the clarification. It's interesting to see not only the change in the coverage output, but also the physical, on-the-ground changes that occurred (some trees got bigger, some swaths felled).

The third question is one we will still need some guidance on. We will have to readjust our targets/goals, but we need some kind of gauge as to how much different the two are. Do you know when this will be available?

Thanks!

Nick Kobel | nick.kobel@portlandoregon.gov | (503) 823-9906
Bureau of Planning and Sustainability | City of Portland

From: Joe Gordon [mailto:Joe.Gordon@oregonmetro.gov]
Sent: Friday, February 05, 2016 2:22 PM
To: Kobel, Nick <nick.kobel@portlandoregon.gov>
Subject: [Approved Sender] RE: Tree canopy methodological differences

Nick,

See my explanation of methodologies (attached), as well as side-by-side visuals of imagery and classification for 2003, 2007, and 2014.

I haven't quite answered the 3rd question relating specifically to comparability over-time.

Let's touch base…

Joe

From: Kobel, Nick [mailto:nick.kobel@portlandoregon.gov]
Sent: Monday, February 01, 2016 10:28 AM
To: Joe Gordon
Subject: RE: Tree canopy methodological differences

Thanks for getting back to me. I'll look for the update at the end of the week.

Nick Kobel | nick.kobel@portlandoregon.gov | (503) 823-9906
Bureau of Planning and Sustainability | City of Portland

From: Joe Gordon [mailto:Joe.Gordon@oregonmetro.gov]
Sent: Monday, February 01, 2016 8:17 AM
To: Kobel, Nick <nick.kobel@portlandoregon.gov>
Cc: Loehlein, Neil <Neil.Loehlein@portlandoregon.gov>
Subject: [Approved Sender] RE: Tree canopy methodological differences

Hi Nick,

Thanks for reaching out. You're timing is good. We are currently putting together the metadata, and also being forced to address the issues of comparability over time as we try to incorporate the data into our own analyses.

My general, overarching, tentative response is that, yes, methodology is the underlying issue.

I'll have specific answers for you by the end of the week (2/5), addressing (a) current methods, (b) methodological differences between 2003, 2007, and 2014, and (c) the possibility of approximating either 2003 canopy with current methods (or conversely 2014 canopy with 2003 methods).

More soon…

Joe

Joe Gordon
GIS Specialist | Metro Research Center
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From: Kobel, Nick [mailto:nick.kobel@portlandoregon.gov]
Sent: Friday, January 29, 2016 4:51 PM
To: Joe Gordon
Cc: Loehlein, Neil
Subject: Tree canopy methodological differences

Hi Joe,

We are doing a progress report on the Portland Plan, and one of our metrics is tree canopy. In 2003, the tree canopy in Portland was 26%. We set a goal of having 33% coverage by 2035. Using the latest data (still in beta), the canopy figure has jumped to 32%. While this is ostensibly great news, I sense it is more of a methodological change than an actual change in coverage. This leaves me with a few questions:

- Could you write a brief paragraph written to a general audience explaining the difference in methodologies?
- What primarily accounts for the difference in the 2003, 2007 and 2014 figures? Methods or an actual change in canopy?
- Do you have any way of approximating what the coverage was in 2003 using the updated methodology? Alternatively, what would the coverage be today using the 2003 methodology?

This new figure means we will have to update our goals and targets. That's not so much a problem, but we need a consistent baseline from which we base the goals.

We are working on a draft report and will need this information by mid-February, or sooner if possible. Looking forward to your input.

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From: Loehlein, Neil
Sent: Friday, January 29, 2016 4:19 PM
To: Kobel, Nick <nick.kobel@portlandoregon.gov>
Subject: RE: updated spreadsheet

I would check in with Joe Gordon at Metro, he was one of the people who created the layer. I think it's still technically in its beta version right now. I did a calculation from the 2007 data, and the canopy acreage is significantly less (25,388 acres). Maybe Joe or Jackson will be able to shed some light on the large discrepancy between the two layers.

Neil

From: Kobel, Nick
Sent: Friday, January 29, 2016 3:34 PM
To: Loehlein, Neil <Neil.Loehlein@portlandoregon.gov>
Subject: RE: updated spreadsheet

Awesome! Our 2035 goal is 33% citywide.

But now that makes me question the methodology. Know who I need to talk to to get a paragraph describing the changes from their 2004 method and their 2014 method? Perhaps Al Mowbray at Metro?

From: Loehlein, Neil
Sent: Friday, January 29, 2016 3:07 PM
To: Kobel, Nick <nick.kobel@portlandoregon.gov>
Subject: RE: updated spreadsheet

Hey Nick,

Here's what I got:
Total Acreage of City--92,843
Acres Deciduous—19,687
Acres Coniferous—10,274
Acres Total Canopy—29,960
% Canopy coverage for PDX—32.27%

neil

Caudill, Jeff

From: Agarwal, Maya
Sent: Thursday, August 13, 2015 11:53 AM
To: Jortner, Roberta (Planning)
Cc: Cairo, Jenn; Edmunds, Sallie; Meharg, Emily; Dragoy, Astrid; Horner, Brett; Roth, Emily; Glenn, Sue; Davis, Terri; Maginnis, Larry; Hughes, Mart; Ramsey, Jeff; Bohannan, Danielle
Subject: RE: Central City Tree Canopy in City parks and public spaces

Hello Roberta,
I checked in with Brett regarding potential canopy in planned future parks. The memo I sent last week stated that PP&R did not address 2035 canopy in potential new parks, and I now understand that this statement was incorrect. Actually, the total 2035 canopy target range identified in the table would be applied to the average of all future parks. We may have a range of types of parks in the future (from plazas to more heavily-forested spaces), and during the planning process for those future parks we could refer to canopy ranges of similar types of spaces within the spreadsheet to get an sense of preferred canopy cover. But overall, the average canopy cover of planned parks would reflect the total 2035 canopy cover range identified in the spreadsheet (37.5% to 44.2%). Does that make sense?
Thank you,
Maya

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Healthy Parks, Healthy Portland

From: Jortner, Roberta (Planning)
Sent: Tuesday, August 11, 2015 2:46 PM
To: Agarwal, Maya
Subject: RE: Central City Tree Canopy in City parks and public spaces

Thanks Maya!

From: Agarwal, Maya
Sent: Tuesday, August 11, 2015 2:37 PM
To: Jortner, Roberta (Planning) <Roberta.Jortner@portlandoregon.gov>
Subject: RE: Central City Tree Canopy in City parks and public spaces

Hello Roberta,
I've attached the revised table, with confusing column heading amended.
Thank you,
Maya

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PORTLAND PARKS & RECREATION
Healthy Parks, Healthy Portland

From: Agarwal, Maya
Sent: Friday, August 07, 2015 2:00 PM
To: Jortner, Roberta (Planning) <Roberta.Jortner@portlandoregon.gov>
Cc: Cairo, Jenn <Jenn.Cairo@portlandoregon.gov>; Edmunds, Sallie <Sallie.Edmunds@portlandoregon.gov>; Meharg, Emily <Emily.Meharg@portlandoregon.gov>; Horner, Brett <Brett.Horner@portlandoregon.gov>; Roth, Emily <Emily.Roth@portlandoregon.gov>; Dragoy, Astrid <Astrid.Dragoy@portlandoregon.gov>; Glenn, Sue <Sue.Glenn@portlandoregon.gov>; Davis, Terri <Terri.Davis@portlandoregon.gov>; Maginnis, Larry <Larry.Maginnis@portlandoregon.gov>; Hughes, Mart <Mart.Hughes@portlandoregon.gov>; Ramsey, Jeff <Jeff.Ramsey@portlandoregon.gov>; Bohannan, Danielle <Danielle.Bohannan@portlandoregon.gov>
Subject: RE: Central City Tree Canopy in City parks and public spaces

Hello Roberta,
We've had some interesting discussions regarding existing and potential future canopy cover in Central City parks. Please find attached the results of our discussions, and our methodology/assumptions/caveats. If you'd like, I'd be happy to walk you through this over the phone or in person.
Thank you,

Sincerely,
Maya

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PORTLAND PARKS & RECREATION
Healthy Parks, Healthy Portland

From: Jortner, Roberta (Planning)
Sent: Thursday, July 23, 2015 12:56 PM
To: Horner, Brett <Brett.Horner@portlandoregon.gov>; Agarwal, Maya <Maya.Agarwal@portlandoregon.gov>
Cc: Cairo, Jenn <Jenn.Cairo@portlandoregon.gov>; Lev, Deborah <Deborah.Lev@portlandoregon.gov>; Edmunds, Sallie <Sallie.Edmunds@portlandoregon.gov>; Meharg, Emily <Emily.Meharg@portlandoregon.gov>
Subject: Central City Tree Canopy in City parks and public spaces

Hi Brett and Maya,

Thanks again for the work session you held to discuss potential tree canopy in Central City parks and public spaces managed by PP&R. We so appreciate the time that you and quite a few other PP&R Planning, Urban Forestry, Maintenance, and other staff have put into making this happen!

We're looking forward to seeing what you come up with for the "baseline scenario." Please remember that we'll also need a brief description of your methodology/process, key assumptions, and caveats. We're assuming you'll be addressing the planned new Central City parks as we discussed during the meeting (i.e., apply the average tree canopy for the Central City). Potential parks we have on our radar include parks in South Waterfront (Zidell under RI Bridge), Goose Hollow (on redeveloped Lincoln HS site), Pearl District (at Centennial Mills, the

USPS redevelopment site, and PNCA Park Block), and parks along NE Clackamas St. in Lloyd District. Do you have others in mind?

It would be great if we could get your proposed baseline canopy scenario in early August, if possible (e.g., August 7thish?), so we can start incorporating it into the larger scenario for the Internal Draft.

Also, we think it will be incumbent on us to develop one to three "aspirational" tree canopy scenarios that would provide additional tree canopy on Central City ROW, taxlots, and public parks and public spaces. We will present these scenarios, along with their pros and cons. In terms of parks we understand that providing for more canopy could/would have some impacts on uses and costs (e.g., maintenance). If you are already planning to provide a "range" for potential tree canopy, we could use the high end of the range for aspirational scenarios. Another option would be to assume a simple percentage increase in canopy or a minimum canopy for all parks, or for a subset of parks (you would pick the subset). Another way might be to vary specific assumptions, e.g., we could say that public plazas should have x percent tree canopy to provide shade options and reduce urban heat island. Another might be to assume acquisition of additional parks and open space. Again, we could be clear about pros/cons, and any barriers that would need to be addressed to allow a higher canopy scenario to happen.

We invite your recommendations for how you'd like to approach the development of a couple of aspirational canopy scenarios for Central City parks and public spaces managed by PP&R. We would like to at least nail down the approach or methodology for inclusion in the Discussion Draft. It would be great to have your recommendations in the early August timeframe as well, so we can discuss and confirm for the Internal Draft.

Let us know if you have questions about the content or the timeline.

Thanks again for your participation and leadership in this effort!

Roberta and Emily

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Caudill, Jeff

From: Jortner, Roberta (Planning)
Sent: Wednesday, July 22, 2015 12:17 PM
To: Morehead, Grant; Haley, Robert; Schooley, Sara; Ramsey, Jeff; Karps, Jennifer
Cc: Meharg, Emily
Subject: RE: PLEASE REVIEW: Assumptions for trees in Central City ROW

Hi all,

As part of the Central City 2035 plan, BPS is collaborating with other bureaus to develop proposed tree canopy targets for different, diverse areas (quadrants/districts) within the Central City. These targets are expected to be adopted by resolution and would be used, along with other targets (e.g., affordable housing) to measure progress toward City goals in the future.

We have had initial discussions about tree canopy capacity for Central City rights-of-way with some of you. We'd like to include a others to continue this process. Below is a list of assumptions and questions for you to review.

We would appreciate your feedback within a week or so (by July 31). Are there others from PBOT, BDS, others who should review this? If so please forward to them and copy us too so we can keep them in the loop.

These assumptions reflect our conversation with Grant and Bob. We'd like your confirmation and feedback on our baseline assumptions (Are they correct? Do we need to modify anything?) and on potential changes to assumptions relating to existing conditions/policies that could increase tree canopy in the ROW (What's feasible? What would result in the biggest increases in canopy and at what cost?). Ultimately, we will need to examine the relative benefits, costs, and tradeoffs of these potential changes, and develop targets that are both practical and aspirational. (Note: We've also provided a more detailed project background and approach at the end of the email if you would find that helpful.)

Please keep in mind that our analysis is based on available data. For example, we do not have a GIS dataset that includes a spatial representation of the sidewalk corridor widths; we do have the annotation layer that describes the widths but it does not map them spatially.

Assumptions and Questions
Below are our current assumptions and questions related to sidewalk corridors and sidewalk dedications.

Sidewalk Corridors
Baseline assumption:
- 9' is the minimum sidewalk width needed for a tree to be planted.

Future scenario questions:
- Could we test the impact of changing the recommended sidewalk corridor widths generally, by zone, or for different types of streets (e.g., City Walkways in a Pedestrian District, City Walkways outside of a Pedestrian District, Local Service Streets in a Pedestrian District, etc.)? For example:
  - Could the furnishing zone be increased at the expense of the TPZ or frontage zone?
  - Is 6' the absolute, or the recommended minimum TPZ in a Pedestrian District? If there were a scenario with an alternate minimum, what should that be?
  - Is 5'6" the absolute or the recommended minimum TPZ outside of a Pedestrian District. Is the TPZ accepted down to 4'6"? Smaller?

Sidewalk Dedications
Baseline assumption:

- For any new development in the Central City that has a sidewalk <10', a sidewalk dedication can be taken to bring the sidewalk up to 12'.

Future scenario flexibility questions:

- Could we run a scenario where the City requires a larger dedication? Is there a maximum dedication that can be required?
- Is there a minimum (or maximum) sidewalk corridor width that must be reached during redevelopment?
- Are sidewalk dedications required only in Pedestrian Districts? Or anywhere where the sidewalk corridor is less than the recommended width?

Are there any other existing ROW-related policies or standard practices that could be varied to look at scenarios for increasing tree canopy in ROW (e.g., placement of vaults, other?) in the future?

Please let Emily and me know if you have questions.

Thank you,
Roberta and Emily

Background
BPS has been working with PP&R/UF, BES, PBOT, and BDS to develop recommended tree canopy targets/benchmarks/capacity as part of the Central City 2035 planning effort. These targets are expected to be adopted by resolution next year, along with targets relating to jobs, parking, housing units, etc. The targets will be used to measure progress towards Central City 2035 policies, and will (hopefully) inform updates to the targets in the Urban Forest Management Plan.

The development of Central City tree canopy targets will help implement new Comprehensive Plan urban forest-related policies, meet Climate Change Preparation Strategy objectives to reduce urban heat island, and support measures of success adopted in the Portland Plan. In addition, community stakeholders have strongly supported Central City tree canopy targets during the planning effort so far, calling for the City to be aspirational in establishing the targets.

Approach
Given the diversity of the Central City 2035 planning area, we anticipate recommending targets for individual districts within the West, North/Northeast, and Southeast Quadrants. Preliminary targets have already been endorsed through initial plans for the West and North/Northeast quadrants. These targets were developed through a largely qualitative assessment of existing and potential tree canopy. We want to "reality check" these targets by using a more rigorous approach in which we model existing and potential tree canopy using GIS. We'll start with a "baseline" tree canopy scenario that estimates potential future capacity for street/ROW trees, trees on private property, and trees in public spaces/parks. The baseline canopy scenario will reflect estimates of potential canopy given existing conditions, such as existing zoning regulations, ROW-related policies (e.g., pedestrian walkway widths, planting practices), and physical capacity.

We would then like to run at least a couple of different scenarios to estimate potential tree canopy if certain conditions change. For example, both street tree canopy and tree canopy on private sites could potentially increase if the City requires a building setback rather

than allowing 100% building coverage (lot line to lot line development). For these aspirational tree canopy scenarios, we're looking for areas of flexibility that would allow for increasing tree canopy. We would like PBOT and BDS's help both in making sure our baseline ROW assumptions are accurate and in helping us think through possible changes to these assumptions in relation to future increases in tree canopy in the ROW.

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Caudill, Jeff

From: Jortner, Roberta (Planning)
Sent: Wednesday, June 24, 2015 10:20 AM
To: Agarwal, Maya; Horner, Brett; Cairo, Jenn; Ramsey, Jeff; Jogerst, Casey; Lev, Deborah; Darling, Joshua
Cc: Meharg, Emily; Brooks, Mindy (Planning); Edmunds, Sallie; Lillard, Lora
Subject: Central City Tree Canopy Targets

Hi all,

In anticipation of tomorrow's meeting that Maya scheduled, we want to provide some context and ideas to "prime the pump" for discussion. Apologies in advance for the long email!

As Maya mentioned, PP&R, BES, and PBOT are working with BPS to develop recommended tree canopy targets/benchmarks as part of the Central City 2035 planning effort. These targets are expected to be adopted by resolution next year, along with targets relating to jobs, parking, housing units, etc. The targets will be used to measure progress towards Central City 2035 policies, and will (hopefully) inform updates to the targets in the Urban Forest Management Plan.

The development of Central City tree canopy targets will help implement new Comprehensive Plan urban forest-related policies relating, Climate Change Preparation Strategy objectives to reduce urban heat island, and will support measures of success adopted in the Portland Plan. In addition, community stakeholders have strongly supported Central City tree canopy targets during the planning effort so far, calling for the City to be aspirational in establishing the targets.

Given the diversity of the Central City 2035 planning area, we anticipate recommending targets for individual district within the West, North/Northeast, and Southeast Quadrants of the Central City 2035 planning area. Preliminary targets have already been endorsed through initial plans for the West, and North/Northeast quadrants. These targets were developed through a largely qualitative assessment of existing and potential tree canopy. We want to "reality check" these targets by using a more rigorous approach, starting with a "baseline" tree canopy scenario that estimates potential future capacity for street/ROW trees, trees on private property, and trees in public spaces/parks. Tomorrow's meeting will focus on tree canopy in parks and public spaces. Some of you are participating in other discussions focusing on ROW trees.

The baseline canopy scenario will reflect estimates of potential canopy given existing conditions, such as existing zoning regulations, ROW-related policies (e.g., pedestrian walkway widths, planting practices), physical capacity, and existing character of public parks and spaces. We would then like to run at least a couple of different scenarios to estimate potential tree canopy if certain conditions change. For example, both street tree canopy and tree canopy on private sites could potentially increase if the City requires a building setback rather than allowing 100% building coverage (lot line to lot line development), or stepping buildings back above the first floor. We also want to explore options to increase tree canopy in existing parks and public spaces, and anticipated tree canopy in new public parks and spaces. We will need to examine the benefits, costs, and tradeoffs of these scenarios, and to ultimately develop targets that are both practical .

We are requesting the PP&R provide assumptions and recommended targets for public parks and spaces. It will be important that PP&R "owns" these assumptions and targets for public parks

and spaces in the Central City. We will also be asking PP&R to participate in the public process, including responding to stakeholder input and input from the Planning and Sustainability Commission. We will likely want to take the targets to the Urban Forestry Commission for consideration as well.

We understand that this will be general analysis rather than some sort of master planning effort. One possible approach might be to group public parks and space into categories or typologies, and then to estimate potential tree canopy by typology for the baseline scenario, and for a couple of alternative future scenarios. For example, typologies could be based on paving and vegetation:

- Paved (e.g., Pioneer Square, Director's Park, Eastbank Esplanade)
- Primarily paved with some trees/vegetation (e.g., Jamison Square)
- Primarily vegetated with turf - sites for large gatherings/sports (e.g., Waterfront Park, Hawthorne Bowl, The Fields)
- Primarily vegetated - sites for smaller gatherings (e.g., Park Blocks, Caruthers Park, Holladay Park, Tanner Springs)

Anticipated new parks could be assigned one of the typologies or have a separate typology.

This is just one idea we are offering, however there are likely many different ways to think about future tree canopy scenarios and targets for Central City parks and public spaces. We look forward to meeting with you on Thursday and brainstorming ideas with you.

Roberta

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Caudill, Jeff

From: Meharg, Emily
Sent: Wednesday, May 20, 2015 1:38 PM
To: Jortner, Roberta (Planning)
Subject: FW: Street Tree Inventory Data
Attachments: Downtown_Planting_Opportunities.zip; Downtown_Planting_Opportunities metadata.docx

Here are Jeff's numbers for small, medium, and large canopy along with planter strip width and overhead wires

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From: Brooks, Mindy (Planning)
Sent: Tuesday, May 19, 2015 5:34 PM
To: Meharg, Emily
Subject: Fw: Street Tree Inventory Data

Here is the data from JEff Ramsey

From: Ramsey, Jeff
Sent: Thursday, January 8, 2015 2:37:17 PM
To: Brooks, Mindy (Planning)
Subject: Street Tree Inventory Data

Hi Mindy,

It was good to meet with everyone this morning. As I mentioned, the street tree inventory data is on the Hub, in the Parks folder. Can't miss it. So far we have covered the majority of the CC Planning District, including the entire NE quadrant, SE south of Hawthorne Blvd., Downtown, University, and West End. Additionally, in 2013 we did a stocking level survey of Downtown/University because BES hadn't been there yet. This the "ROW planting opportunity" information we spoke of, that Jennifer's team has completed in most other CC areas. These data are attached, along with a short metadata document explaining the methods and codes.

You also asked for a general guideline for tree sizes. Here's what we've gone by in the past, along with the general planting site sizes in which those trees would be planted.

Small: 20ft x 20ft canopy (sites less than 4ft in width)
Medium: 40 x 40 canopy (sites between 4-5.9' with or without overhead high voltage wires, sites greater than 6' with HV wires)
Large: 60 x 60 canopy (sites greater than 6' wide without HV wires)

Hope this helps—let me know if you have any questions going forward.

Best,
Jeff

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http://portlandoregon.gov/trees

Central City Tree Canopy

Scenarios:

- **Existing**
- **Baseline future**
- **Potential future (varying different factors w/sensitivity analysis; pros/cons)**
- **2015 tree canopy 'target", "benchmark", "objective"**

Assumptions

General

1. Scenarios will be produced for each quadrant and "districts" within quadrants
2. Assume dynamic equilibrium with regards to tree growth and attrition* (*except hot zone areas like the Park Blocks)

Existing Canopy Scenario

Per LiDAR for:

1. ROW
2. City property – parks (by category), other
3. Other public property
4. Private property – by zone; greenway?
5. Parking lots?
6. Building footprint - % area by zone

LiDAR questions for GIS:

- Canopy density/depth/layering
- Number of trees? (is there a way to associate tree canopy with specific tree?)
- Resolution – tree/shrub ambiguity (is there a height cut-off for canopy?)

Baseline 2035 Tree Canopy Scenario

- Based on physical capacity, current rules/requirements/practices/plans

<u>Rights of Way (Street Trees)</u>

1. Determine tree size specs (Small d=20'; medium d=40'; large d=60'
2. Adjust tree canopy sizes to reflect constraints*
3. Sort by furnishing zone/planting strip width code (BES data)
4. Assign adjusted tree size to each furnishing zone/planting strip width code
5. Determine fraction of planting spaces to be planted considering constraints**
6. For each furnishing zone apply this equation:

0.75 x total planting spaces x sq.ft. canopy/planting space = baseline future tree canopy

*Tree canopy area assumptions adjusted to reflect:

i. Above ground constraints
   - Buildings: zoning, setbacks, coverage assumptions
   - Overhead wires (accounted for in strip code)

ii. Other constraints
   - Low soil volume
   - Pollution
   - Climate change/urban heat island
   - Pests

**Fraction of total planting spaces assumed to be planted reflects:

i) Below ground constraints
   - Vaults, underground utilities, water mains (compare BES data and Parks/UF data for downtown)

iii. Ground level constraints
   1. Driveways, hydrants, other furnishings (accounted for in BES data?)
   2. Setbacks from corners, light posts, etc. (accounted for in BES data?)

iv. Time/management constraints

<u>Through Pedestrian Zone assumptions</u>

- TPZ for ADA ≥ 3'
- Minimum sidewalk corridor for street trees = 9' (6" curb zone, 3' furnishing zone, 5'6" through pedestrian zone, 0 frontage zone)
- Clarify code for available planting spaces "A" (2.5-2.9' sites) given Pedestrian Design Guide minimum furnishing zone for street tree of 3'
- TPZ recommended widths:
   - 8' for arterials in Pedestrian Districts
   - 6' for local streets in Pedestrian Districts
   - Is 5'6" the minimum TPZ for street trees in non-Ped Districts (e.g., Lower Albina and Central Eastside Industrial District)?

<u>Street Typology Assumptions – to be addressed</u>

<u>Rights of Way (Street Trees) - Non-Baseline Future (2035) Canopy Scenarios</u>

<u>ROW Variations/sensitivity analysis</u>

1. Increase building setback and landscape requirements
2. Require wider sidewalk zone from development
3. Road diet
4. Subsurface modifications to allow larger trees
5. Vary TPZ or Street Typology Assumptions
6. Tree grates (modify size constraints)

Private Property/Parking Lots

Apply to potential redevelopment sites:

- Zoning – lot coverage allowance/requirement; setbacks; landscape requirements/Title 11
    - E.g., 100% lot coverage → 0; 85% lot coverage plus 10' or 5' setback → ?
- Potentially adjust based on building coverage ratios/zone and existing canopy

Parks and Public Spaces

NOT master planning

Base on categories for purposes of estimating potential for trees and canopy:

- Paved (e.g., Pioneer Square, Director's Park, Eastbank Esplanade)
- Primarily paved with trees/veg (e.g., Jameson Square)
- Primarily veg with turf and festival gatherings/sports (e.g., Hawthorne Bowl, Waterfront Park, The Fields)
- Primarily veg with smaller gatherings (e.g., Park Blocks, Caruthers Park, Holladay Park, Tanner Springs)

New/future parks??

Proposed Assumptions for Central City Baseline Tree Canopy Capacity – Taxlots

Draft March 18, 2016

General directions:

- **Apply the following to model tree canopy capacity on Central City sites assumed to develop/redevelop – non-OS BLI vacant or underutilized sites. (Assume existing tree canopy on non-vacant or underutilized sites does not change.)**
- **Use 2014 LiDAR**
- **By district, by zone**
- **Area in acres**

I. For zones allowing 100% building coverage with no landscaping requirements (CX, EX, IG1, IH – *for RX see below*):

1. Assume a range of 0 tree canopy, up to actual tree canopy on non-BLI lots.
   Rationale:
   a. Title 11 Tree density standards do not apply to these zones.
   b. Existing Central City Plan District requires development to the front property line on certain streets to achieve goals for active ground floor (Required Building Lines).

2. Adjust to include 100% tree canopy for minimum landscape area where sites abutting residential zones.

   Rationale:

   a. For sites abutting residential zones, zoning requires minimum landscaped area at L3 which should, in theory, result in full canopy coverage. Requires 1 large tree for 30 linear feet landscaped area, 1 medium tree for 22 linear feet landscaped area, 1 small tree for 15 linear feet landscaped area (check w/BDS re: adjustments to this – haven't done this 3/18/16.)

II. For EG1 and EG2 which allow 85% building coverage with 15% landscaping requirements:

1. Assume tree canopy covers 10 (low) - 15% (high) of site area. Potentially adjust the high to reflect existing coverage if appropriate.

   Rationale:

   a. Title 11 tree density standards require 10% tree area for industrial sites and 15% tree area for commercial/retail/office/mixed use development, (or alternative calculation that would result in more tree canopy). This range also acknowledges

that property owners may choose to pay a fee in lieu of planting to the City's Tree Fund, and currently Tree Fund revenues need not be used to plant trees in the Central City.

III. For R1 which allows 60% building coverage with minimum 20% landscape requirement, RH which allows 85% building coverage with minimum 15% landscape requirement, and RX which allows 100% building coverage, w/no landscaping requirement and with Title 11 Tree Density minimum standard of 20%:

1. Assume tree canopy covers 10% (low) and 20% (high). Potentially adjust the high to reflect existing coverage.
   Rationale:
   a. This accounts for both the Title 33 landscape standards of 15% or 20%, and the Title 11 Tree density standards which require 20% tree area for sites in multi-family residential zones (or alternative calculation that would result in more tree canopy). This range also acknowledges that property owners may choose to pay a fee in lieu of planting to the City's Tree Fund, and currently Tree Fund revenues need not be used to plant trees in the Central City.

2. Adjust to include 100% tree canopy for minimum landscape area where sites abutting residential zones.
   Rationale:
   a. For sites abutting residential zone zoning requires minimum landscaped area at L3 which should, in theory, result in full canopy coverage *(check w/BDS re: adjustments to this. Haven't done this yet 3/18/16.)*

IV. For sites along the Willamette/containing greenway that are not PP&R-owned.

1. Assume tree canopy covers 40-80% of area within the 25' river setback (25' from TOB) plus the area between OHW and TOB (potentially adjust to reflect existing coverage).
   Rationale
   a. Per Greenway Overlay zones code (33.440), there is a minimum landscaping standard of one tree for every 20' of river frontage and all trees and shrubs are to be planted within and riverward of the river setback. This is in addition to any landscape requirements of other chapters of Title 33. Currently, there is a 25' minimum river setback.

tree classification: explanation of methodology

Methodology: 2003 Landcover, Forest

From RLIS Discovery:

For forest landcover types, technical staff were trained to identify relatively dense groupings of trees (>60% coverage) as patches. Cross analysis with satellite canopy data shows that 76% of the patches delineated are predominately closed forest canopy (76% to 100% total coverage). The remaining 24% are predominately open forest (51% to 75% total coverage).

http://rlisdiscovery.oregonmetro.gov/metadataviewer/display.cfm?meta_layer_id=2098

General Info:

This layer was derived from manually-digitized polygons of large areas of tree canopy (i.e., "forest"). It does not capture individual trees or small stands, and under-estimates overall canopy coverage.

Methodology: 2007, Landcover, Main Tree Canopy / Woodland

From RLIS Discovery:

This layer depicts a simple collection of landcover classes extracted from the Metro Photo Consortiums 2007 six inch color infra red orthophotos. The classification was preformed using radiometric, texture, and geometry based classification methods. The data depicts main tree canopy/woodlands, grass and shrubs, built and scarified, and open water landcover types. The cell size is 3x3 feet and the minimum size for a feature mapped is 900 square feet.

http://rlisdiscovery.oregonmetro.gov/metadataviewer/display.cfm?meta_layer_id=2303

General Info:

This layer was derived from a classification of imagery alone. Although radiometry, texture, and geometry can achieve good results, the model still generally underestimates trees, as evidenced quantitatively by the "tree" class producer's accuracy being lower than the user's accuracy, as well as qualitatively by comparing imagery with the landcover classification, whereby misclassification can be seen for some individual trees and texturally "smoother" canopy areas.

Methodology: 2014 Tree Canopy, Beta Version

General Info:

This layer was derived using 2014 imagery and lidar. The process entailed identifying relevant thresholds for normalized difference vegetation index (from imagery) and feature heights (from lidar), as well as morphological cleaning to remove noise and small errors (i.e., power lines). Generally speaking, this method does a good job of identifying small trees as well as medium and large stands, as evidenced qualitatively by side-by-side comparisons of imagery and tree canopy classification. Some errors still occur (no model is perfect!), but this model is likely an improvement in terms of accurately representing canopy at various scales (i.e., individual tree, large stand). The primary reason for an improvement in accuracy is the availability of better and more complete data.

The final accuracy assessment is ongoing, and will be released with the final version of the 2014 canopy model.

imagery and classification side-by-side comparison

2003 Landcover, Forest
2003 Imagery

2007 Landcover, Main Tree Canopy / Woodland
2007 Imagery

2014 Tree Canopy, Beta Version
2014 Imagery
Enterprise Services Research
CenterMetro

perhaps useful to look at imagery and classification together

2003 Landcover, Forest

2007 Landcover, Main Tree Canopy / Woodland

2014 Tree Canopy, Beta Version
Enterprise Services\Research Center\Metro

Tree canopy, the Green Loop, and required setbacks - Meeting notes 11/4/2015

The Green Loop Assumptions

1. Treat the west and east sides differently. The west side will have more starting canopy because of the Park Blocks. The east side will have less starting canopy but we anticipate a major investment in Green Loop treatments resulting in a more notable transformation.
2. There's still not a single alignment – the GIS layer shows options in places. One approach would be to use average canopy/potential planting spaces across all options, by district.
3. The Urban Design team has collected data along the Green Loop, and will be looking at the costs along different alignment options. Included in the data are the number of new trees that would be planted to help create the Green Loop feel. We can assume medium trees for our modeling purposes. Mark will send this data to Emily and Roberta.
4. The east-west Green Loop connectors will be similar in character to the Green Loop. Salmon Street is a priority connector on both sides of the river. For the 2035 scenario, we could start by modeling potential new canopy on two connector streets on each side of the river: SW Salmon and NW Flanders on the west, and SE Salmon and NE Multnomah on the east. For an aspirational scenario, we can add in the remaining proposed east-west and north-south connectors.
5. There are some open spaces associated with the Green Loop. Some of these, like the Post Office Site, are already factored into our 2035 new parks analysis; others we will need to add into our 2035 scenario. The Post Office Site has a 20% tree canopy target based on the West Quad canopy target for the Pearl District. University Place would also see an increase in canopy through the extension of the Halprin sequence (a 4.5 acre site). There's also an expected 2 – 3 acres of new privately owned open space in the Lloyd District associated with the American Asset Trust property and Oregon Square. Use quadrant targets to estimate tree canopy for these sites?

Required Setbacks

1. Count BLI lots along the 2035 optional landscaped setback streets (grey streets) and the Green Loop alignment, minus the Green Loop stretch on the west side between SW Salmon and W Burnside.
2. Make assumptions about tree canopy per BLI lot.

Super Blocks and Master Plan Sites

1. Super blocks and Master Plan sites will be required to provide some open space. Use these to estimate potential additional park-like open space in the CC 2035 scenario.
2. There are GIS layers with super blocks and Master Plan sites.
3. We willcalculate the total area of super blocks and master plan sites by district, then assume some percent as plazas/open space, and then assume some percent of that as tree canopy. A good assumption would be 25% in the public realm (streets and parks space).

Caudill, Jeff

From: Haley, Robert
Sent: Monday, August 10, 2015 11:01 AM
To: Ramsey, Jeff; Meharg, Emily; Karps, Jennifer; Bohannan, Danielle
Cc: Jortner, Roberta (Planning)
Subject: RE: Central City Tree Canopy - tree planting questions

You cannot believe everything you see on any of the City's GIS layers. For utility vaults for transformers, there is no one who removes the vaults from the GIS layer if they have been actually removed. This could account for the UF inventory showing trees on top of utility vaults. For newer utility vaults, I have never seen a tree called out to be placed on the vault. There simply is not enough depth from the bottom of the sidewalk to the top of the vault. Of course there are other types of vaults. There are some older buildings that have vaulted basements out to the curb line. Many of these have the sidewalk itself as the top of the basement making is a structured sidewalk. For newer below grade structured parking that extend to the curb line, PBOT's standard is to provide 5-ft of clearance from the top of the parking garage to the bottom of our sidewalks. Sometimes this is less depending the grade of the side from one street frontage to the other. In these cases, we require the garage to contain separate vaults to accommodate street trees that extend down into the parking garage. In other below grade parking garages we only allow the garage to extend out to the edge of the pedestrian through zone and not extend into the 4-ft furnishing zone. And still in other, we require the 5-ft clearance just under the furnishing zone and less from the pedestrian through zone to the property line. There are also separation requirements for trees and water line, sewer line, street lights, signal poles, bike racks, and driveways for both parking and loading. I can't stress enough how highly competitive space in our rights-of-way is within the sidewalk corridor. All utility connections both public and private are jockeying for their spot. It amazes me we get as many street trees as we do.
Bob

From: Ramsey, Jeff
Sent: Friday, August 07, 2015 3:03 PM
To: Meharg, Emily ; Karps, Jennifer ; Bohannan, Danielle ; Haley, Robert
Cc: Jortner, Roberta (Planning)
Subject: RE: Central City Tree Canopy - tree planting questions

Hi Emily,

Fun questions!

My only response to #1 is to check the UF inventory data against aerial photos. Our inventory data was input by volunteers, so while each point will definitely represent a tree that was (very near) there at the time, I can't promise they wouldn't be 5'+ off and thus potentially over a vault/void.

Question #2: In cases where Silva Cells or structural soils are able to increase soil volumes, there is the potential for bigger trees being approved for planting (albeit from a shorter list—sequoias in a 4x6' cutout are probably not a good idea!). In practice, it would be on a case by case basis, but for the purpose of this exercise, we can assume that bigger trees can fit in spaces with increased soil access. To answer your question then, the planter strip dimensions do not necessarily trump soil volume.

Best,
Jeff

From: Meharg, Emily
Sent: Friday, August 07, 2015 2:28 PM
To: Karps, Jennifer; Ramsey, Jeff; Bohannan, Danielle; Haley, Robert
Cc: Jortner, Roberta (Planning)
Subject: Central City Tree Canopy - tree planting questions

Hi Jennifer, Jeff, Danielle, and Bob,

Roberta and I would like to get your input on a couple questions that have arisen in the Central City Tree Canopy Target analyses. Both are related to tree planting practices.

1. We looked at UF's street tree inventory and PBOT's encroachments (vaults/voids) in GIS and noticed that the existing street trees layer sometimes coincides with the vaults/voids layer. In other words, it appears that there are currently street trees on top of vaults/voids. We were under the impression that trees couldn't be planted on top of vaults/ voids (plus a 5' buffer) so were assuming they wouldn't be for our potential ROW canopy analysis; now we're wondering if there are any caveats to this. For example, **is there a certain depth requirement for vaults/voids that would allow trees to be planted over them?** Or a certain type of vault/void that can be planted over?

2. We are going to model the effect on tree canopy of changing different variables, including physical variables like setbacks or sidewalk width as well as cultural/political variables like increasing funding for street tree planting and maintenance. The question we have is in regards to potential variables that would make room for larger trees to be planted. Based on the planting strip codes, it looks like large trees require a 6' or wider planting strip, yet the typical PBOT sidewalk corridor recommended width for the planting zone is 4'. Assuming adequate canopy space, **is planter strip width the critical factor in getting larger trees planted or can increased soil volume trump this?** In other words, if we were to propose requiring the use of Silva Cells (or requiring a certain minimum soil volume) on all new developments, but still only had the 4' planter strip width, could a large tree get planted (assuming enough canopy space too)? Similarly, in conjunction with Silva Cells, could a

Let me know if you have any questions and please let us know your thoughts!

Thanks,
Emily

PORTLAND PARKS & RECREATION

Healthy Parks, Healthy Portland

August 7, 2015

Roberta Jortner
Senior Environmental Planner, BPS
1900 SW Fourth Ave., Room 7100
Portland, OR 97201-5330

Dear Roberta,

Portland Parks & Recreation (PP&R) understands that the Central City 2035 plan will include proposed targets related to many topics. City Council will adopt these targets by (non-binding) resolution, and the targets will serve to help the City understand if the plan is being achieved as envisioned. Tree canopy coverage of parks and open spaces is one topic included in the Central City 2035 plan update. You will recall from our previous meetings that PP&R has expressed some concerns related to identifying a specific tree canopy target for Central City parks, and PP&R is more comfortable with suggesting a *range* of potential canopy targets for Central City parks. For BPS's inclusion in the August 2015 internal draft of the Central City 2035 plan, PP&R staff completed an exercise to begin thinking about and discussing existing and future (2035) canopy in existing Central City parks, and we have provided that information to BPS in the attached spreadsheet.

Following is a summary of the process related to PP&R's 2035 canopy range exercise:

Methodology:

- PP&R staff: Planning, Urban Forestry, Zone Staff, and City Nature East
- Staff met at a first meeting for a tabletop exercise, using available resources: Google Maps (and Street View), Bing, City of Portland GIS data, and current canopy cover data in Central City parks (compiled by Urban Forestry staff).
- <u>At the first meeting, staff:</u>
  - Viewed images of each Central City park and property boundaries using resources.
  - Examined existing canopy cover at each Central City park.
  - Discussed existing and future tree health/species mix, maintenance issues, programming issues, unresolved issues, and preferred range of canopy cover in 2035.
  - Provided personal/professional opinion regarding the preferred range of canopy cover in 2035. The opinions were qualitative and subjective.
- Staff compiled the personal/professional opinions into average "low" and "high" canopy target ranges for each Central City park, and staff met for a second meeting to double-check the results and adjust any numbers as needed.

Administration
1120 S.W. 5th Ave., Suite 1302
Portland, OR 97204
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www.PortlandParks.org
Amanda Fritz, Commissioner
Mike Abbaté, Director
Sustaining a healthy park and recreation system to make Portland a great place to live, work and play.

Key Assumptions:

- PP&R used a 2007 data set in which canopy coverage includes any canopy that covers a park property, whether or not the tree is planted on park property (i.e., some canopy in a park could be provided by trees planted in the public right-of-way).
- PP&R plans to update its 2004 *Urban Forestry Management Plan* in 2016, and we hope that this tabletop exercise could help inform the plan update. The update is likely to be a more precise canopy assessment and may recommend some other target range than the 37 to 44% canopy coverage we are recommending here.
- PP&R's resources (Google Maps, Street View, Bing, City of Portland GIS data, and current canopy cover data) represent the best data that PP&R presently has available.
- In the future, younger trees will grow and develop more canopy, and some older trees will die.
- PP&R did not address canopy cover in potential new parks. Although there may be opportunities to include new trees in future parks, determining space available for trees in each park requires a robust process that considers numerous factors in the greater context encompassing each park (e.g., landscape plan, connections, existing and desired park uses). When PP&R acquires or redevelops park land in the Central City, staff will consider available tree planting space along with other park needs via a robust planning process.

Key Issues Identified During the Exercise:

- Maintenance: it is challenging to maintain turf underneath large canopy trees, and the public has an expectation of turf in parks.
- Programming: amount and type of tree canopy must be consistent with programming uses of the park.
- Trees species adjustments: 2035 tree canopy goals must also consider the tree species that make up the canopy. PP&R may make recommendations for tree species that should change, for improved tree health, hardiness, longevity; programming; and other needs.
- Security: Crime Prevention Through Environmental Design **(**CPTED) principles may recommend more tall-canopy trees rather than trees of shorter stature.
- Some parks (especially downtown park blocks) may have too much canopy. Reducing canopy in some locations could be beneficial.

Caveats:

- Opinions regarding tree canopy were qualitative and subjective.
- Any potential tree additions to Central City parks must be considered carefully, with input from various PP&R staff, Urban Forestry, etc.
- PP&R used a 2007 data set with about an estimated 90% accuracy. The data set is several years old and may not represent current conditions. A more current data set could be more accurate.
- A tabletop exercise in the office is a general overview, and it has limitations. A more accurate approach would include site visits.

If you would like to discuss this further, please contact me by phone at (503) 823-1674, or by email at Brett.Horner@PortlandOregon.gov.

Sincerely,

Brett Horner
Planning Manager
Portland Parks & Recreation

Cc: Emily Roth, PP&R
Maya Agarwal, PP&R
Jenn Cairo, PP&R
Astrid Dragoy, PP&R
Sue Glenn, PP&R
Terri Davis, PP&R
Larry Maginnis, PP&R
Mart Hughes, PP&R
Jeff Ramsey, PP&R
Danielle Bohannan, PP&R
Emily Meharg, BPS

Central City 2035 –Tree Canopy Scenarios/Targets for Public Parks and Spaces

PP&R/BPS Meeting June 25, 2015 – Draft meeting notes:

Meeting participants: *Maya Agarwal, Brett Horner, Deborah Lev, Jeff Ramsey, Jenn Cairo, Roberta Jortner, Emily Meharg*

1. BPS provided some context regarding Central City 2035, the rationale for producing tree canopy targets as part of this planning effort, and the timeline (see attachment).
2. PP&R questioned the timeline of the 2035 canopy targets in relation to the UFMP update that will happen next year. PP&R noted that it might make more sense to let the UFMP update drive the CC canopy targets discussion. BPS noted that it is important to account for trees and tree canopy as we produce long-range land use plans, and that hopefully the Central City targets can support and inform the tree canopy targets as they are updated with the UFMP. The UFMP update of the targets could potentially refine the Central City 2035 targets as well.
3. How are we going to come up with canopy targets? How to determine the right number? There is no right number. BPS is planning to develop a baseline canopy scenario, essentially playing out current conditions, zoning, ROW planting policies, parks character, etc. Then we hope to develop a couple of additional scenarios to see if/how varying certain assumptions can provide more canopy, and what the impacts and costs of those changes are. Hopefully this scenario analysis will inform the development of targets that are reasonable, practical and aspirational.
4. One strategy for estimating future tree canopy in Central City park' would be to visit each park and assess the current canopy. Is it good as is? Too much? Too little? This approach would take time and PP&R doesn't have the capacity to do it by mid-August.
5. Are we going to look at scenarios involving a potential reduction in tree canopy, or only at scenarios to increase tree canopy? It is important to be honest.
6. The Central City has some of the lowest canopy coverage in Portland. It is also one of the worst areas in Portland in terms of urban heat island, pollution, stormwater runoff, etc. Increasing tree canopy would help address many of these issues. The bottom line is we need more tree canopy in the Central City. Regardless of the approach we take to developing an overall tree canopy target/range, we should start with that at the core.
7. In planning new parks in the Central City, PP&R will look at tree canopy in addition to recreation and other needs and improvements. This is a change from the past, where tree canopy was treated more as an afterthought and as decoration, with recreation needs driving parks planning.
8. PP&R has some concerns that setting specific targets by park type would constrain future design. It could be made clear that these targets are for use in high level planning and are not meant to be binding or to apply to each and every park. These caveats could be written into the methodology and potentially the resolution, along with acknowledging that the UFMP update will revisit these targets.
9. Initial tree canopy targets are included in the West Quadrant and N/NE Quadrant plans. The approaches City staff used to develop these targets were primarily qualitative in nature, and based on professional judgment. The targets are not broken down in terms of tree canopy on private vs public land. Staff is now developing tree canopy scenarios and targets for private,

streets/ROW, and parks/public spaces using more extensive data and GIS analysis. Targets will be developed for each district within the Central City quadrants. This gives us an opportunity to more systematically assess canopy capacity for parks, streets/ROW, and private sites, and to conduct sensitivity analyses to see how changing basic assumptions could impact tree canopy results. We can also more easily illustrate the proportion of existing and potential future canopy in parks compared to canopy ROW and private property. There might be more canopy on average in parks, but the relative amount of park land in the Central City is small. So this would illustrate the importance of trees on private property and streets/ROW.

10. PP&R/UF created a table of current canopy cover in Central City parks. The current average percent canopy cover is 34.2%. The UFMP states 25% minimum canopy cover for each park. If each park in the Central City was brought up to a 25% cover minimum, that alone would bring the average canopy cover in the Central City up to 40%.
11. PP&R expressed some concern over setting a 25% canopy cover minimum for every park. What about parks like Director Park? It was pointed out that street trees also provide canopy over parks. For example, O'Bryant Square has 39% canopy cover, much of which is from adjacent street trees.
12. Is there a way to determine what percent of tree canopy over parks is from street trees?
13. PP&R's next step is to conduct a table top exercise using maps and aerial photos and other information. They will review existing and potential new parks in the Central City planning area, and consider how much canopy could be attained without sacrificing key parks uses, needs, and functions. Some of this canopy will be generated on the park property and some from street trees, and that's okay. They will, look at the current percent canopy cover and assess whether the canopy is likely to increase, decrease, or stay the same. They may come up with canopy ranges for the parks or for parks typologies. PP&R planning staff, UF, and maintenance will be involved in this discussion. There may be some field visits as well.
14. The hope is that this initial planning exercise could be completed by mid-August for inclusion in the internal draft that is scheduled to be provided in September.
15. The Central City tree canopy work should be brought to the Forestry Commission at some point.

Draft Highlights from Central City ROW Tree Canopy meeting June 10, 2015

Participants: Grant Moorehead (PBOT), Bob Haley (BDS), Jennifer Karps (BES), Emily Meharg and Roberta Jortner (BES). Jeff Ramsey (PPR/UF) was unable to attend but provided input via email.

1. While we have a few 15' sidewalk corridors along N/S streets in the Central City, the standard sidewalk corridor in the downtown is 12' – comprised of 6" curb zone, 4' furnishing zone, 6' through pedestrian zone (TPZ) and 1.5' frontage zone (edge TPZ to property line). We also have 10' corridors in some locations and will require a 2' dedication when there's a teardown and re-build.
2. 6' TPZ is "bible".
3. Pedestrian plans call for 15' corridor some places (City walkways) but can't always get this. City is requiring 12' for new development in Pedestrian Districts. Development in the Central Eastside will also be required to install a 12' cooridor on City Walkways and 11' on local walkway streets.
4. Trees could be planted on narrower sidewalk corridors (minimum 9') if existing buildings are remodeled.
5. New development in the Central City Pedestrian District will be required to install a 12' corridor.
6. PBOT GIS data on the components of the sidewalk corridors is not reliable, but data on the aggregate width is fairly reliable.
7. Although Title 11 requires street trees every 25', we're lucky if we get ½ to 2/3 of this. Look into recent developments (e.g., since the Fox Tower) in different areas to see how many trees are actually being planted.
8. Electrical vaults can be 25' long, precluding planting of trees. It would be preferable to have the vaults installed on the property that's being served, but there are challenges with maintaining access to them and creating "dead space".
9. Could use silvicells to improve tree planting opportunities and tree health. Tree grates are not good for trees. UF could consider restricting?
10. Because much of Central City is CX and zones allowing buildings lot-line to lot-line, the result is that in most instances we won't plant anything but small canopy trees in the future. It is not good for trees to be planted where large portions of the canopy have to be pruned off. UF won't allow the planting of trees that are as large as existing trees in many areas. Having a 10-15' setback could allow a medium canopy street tree to be built, as well as small trees and vegetation in the setback. It is unlikely that large canopy trees would be planted in the Central City.
11. Canopy scenarios should include additional setbacks and design options (e.g., stepping buildings back above the first floor).
12. Central Eastside Industrial – Stakeholders have been concerned about trees in the industrial area, and perceived conflicts with trucks and other equipment. The bigger

issue is the impact on the trees. If the City could invest in maintaining/training the trees, we could avoid or reduce conflicts between the uses and the trees.

13. It will be challenging to get trees west of Water Ave. SE 2nd and 3rd have limited sidewalks, E/W streets under the roads and viaduct. More normal from Grand eastward.
14. Central City doesn't have special street standards like the River District. Pettigrove has requirements for 18' sidewalk corridor, leaving room to provide larger trees and closed canopy across the ROW. Result is narrower ROW.
15. Road diets could be considered in the Central City, but have become controversial and require Commissioner approval.
16. Consider opportunities for medians, like those supporting Ponderosa's on Sandy Blvd.
17. Tree canopy scenarios will recognize potential for new ROW trees on development sites. Assumptions for ROW tree planting in non-development situations should be conservative. When the City offers free trees and installation, we get a low response rate (e.g., 1%). If we have a scenario that assumes a greater amount of planting, then we should assume that the City is taking on tree maintenance and not giving property owners the choice to opt out of having trees along the ROW adjacent to their property. This would take resources and a culture shift within the City, and lots of education.
18. How will views be considered? (Example: Trees are blocking the Portlandia statue on the Portland Building.)