



THE BUREAU OF
**PLANNING &
SUSTAINABILITY**

DATE: April 14, 2022
TO: City Council and Interested Parties
FROM: Daniel Soebbing
SUBJECT: Wetland Mapping Methodology and Wetland Ezone Policy

During the Planning and Sustainability hearings on the Ezone Project, Ezone Project staff filed a memo that detailed the history of wetland mapping in the City of Portland, including work that has been completed by the Bureau of Environmental Services (BES) since 2018 to conduct a citywide wetland inventory (known as the Wetland Inventory Project, or WIP). The PSC voted to add the results of the BES WIP to the NRI and to apply a minimum wetland protection policy in all resource sites in which there were no previous policies to protect wetlands.

The memo that was presented to the PSC is included below, with revisions that were added to reflect a recent analysis that staff conducted to determine what impact the wetland protection policy has on the draft ezones, overall.

Ezone Project staff wanted to quantify the impact that the wetland mapping and the wetland protection policy had on the draft ezones. They conducted an analysis in which they ran the computer program that generates the draft ezones three different times with different wetland inputs to see how the draft ezones would change. Overall, project staff found that wetlands accounted for 2.3% of the area that is covered by ezones and that there are 410 lots on which there are draft ezones that would not have any ezones at all if ezones were not applied to wetlands.



City of Portland, Oregon | Bureau of Planning and Sustainability | www.portland.gov/bps
1900 SW 4th Avenue, Suite 7100, Portland Oregon, 97201 | phone: 503-823-7700 | tty: 503-823-6868

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Memorandum: Wetland Inventory Protection and Protection Policy
Originally Submitted to the PSC July 27, 2021; Revised April 14, 2022

Background

The original natural resources inventories were completed through area-specific natural resource protection and conservation plans, conducted between 1989-2002 (see Figure 1). Those plans used the technology and information available at that time to map rivers, streams, slopes, forests, habitat and wetlands. The wetland data was primarily from the National Wetland Inventory (NWI), which is derived from remote data, and from on-site wetland delineations done as part of development permits. Where the NWI identified wetlands, the plans typically included a policy to protect them. But if no wetlands were identified in the inventory, the plans and the ESEE decisions contained therein were typically silent on wetland protection.

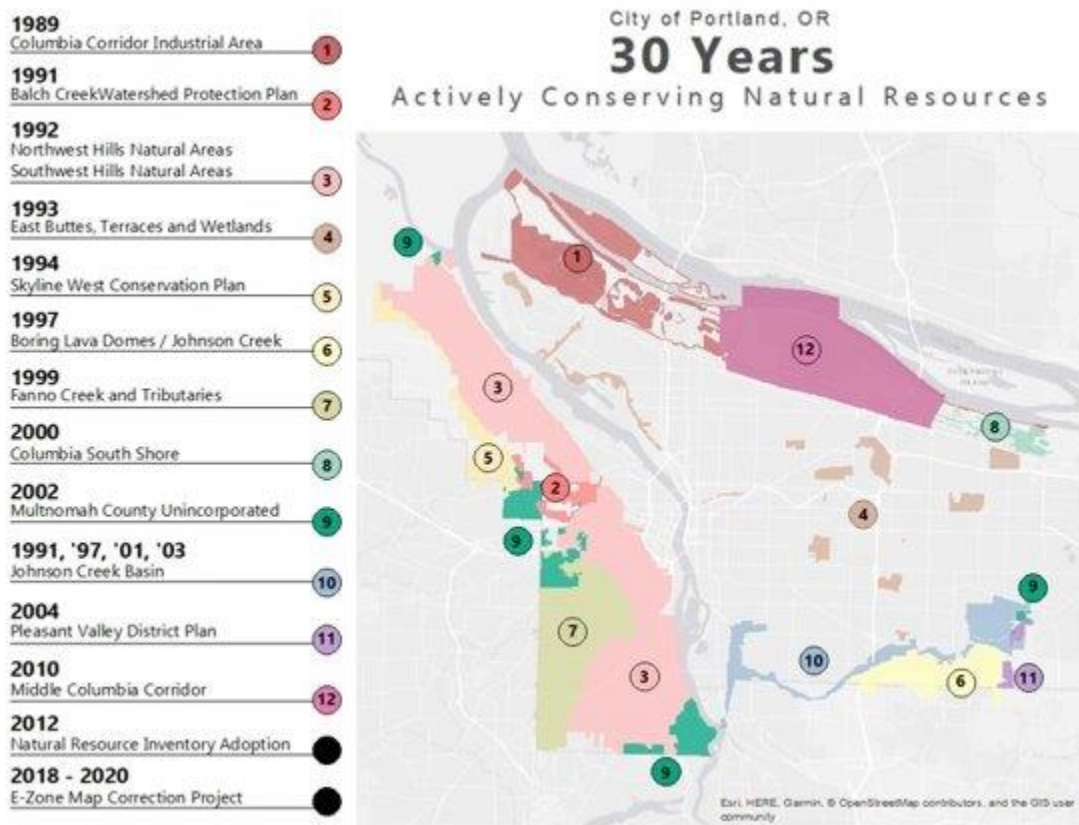


Figure 1: Adopted Natural Resource Protection Plans

In 2010, after Metro adopted the Title 13 Regional Inventory of Riparian Corridors and Wildlife Habitat, Portland undertook an update to the wetland data. The methodology for that update is available online in the adopted Natural Resources Project Report (2012)

https://www.portland.gov/sites/default/files/2020-02/oct2012_adopted_nriu_projectreport.pdf. The steps of the wetland data refinement project were:

1. Develop a wetland mapping protocol
2. Review existing DSL and City land use and development permits



3. Review existing information including hydric soils and topography mapping
4. Limited field visits to verify the mapping methodology

The results of the wetland data refinement project were: 37 wetlands being added to the inventory, totaling 48 acres of newly mapped wetlands; the boundaries of 16 wetlands were updated, adding 24 acres of wetlands; and 11 wetlands were confirmed as mapped correctly. In addition, 13 sites were identified as having potential wetlands and flagged for follow up research.

The 2012 adopted Natural Resources Inventory (NRI), which included the wetland data refinement, was the starting point for the Ezone Map Correction Project and the Wetland Inventory Project.

Wetland Inventory Project

The Bureau of Environmental Services (BES) began the Wetland Inventory Project (WIP) concurrent with the Ezone Map Correction Project in 2018. The methodology for WIP is documented in the Proposed Draft Volume 5 report available online https://www.portland.gov/sites/default/files/2020-07/proposeddraft_v5_appendices.pdf. Two of the major steps in WIP are:

1. Produce a “potential wetlands” map and send a request to all property owners for access to perform an on-site wetland determination; and
2. Conduct on-site (when requested by a property owner) or off-site wetland determinations following the state-approved methodology.

While the 2010 wetland data refinement project did identify potential wetlands, the full state-approved methodology was not utilized. Therefore, WIP includes a much more comprehensive inventory of potential wetlands. In March 2020, 1,509 properties were sent a letter about WIP, the identification of a potential wetland on their property, and a *Permission of Access* form to return for a free wetland determination. Of these, 902 properties were in the Ezone Map Correction Project geography. Please note that a single wetland may span one or more properties.

BES hired SWCA Environmental to perform wetland determinations on private property. They were ready to begin work in spring of 2020, however, work stopped due to the pandemic and wetland determinations were postponed to the 2021 field season. BES used the delay to refine the map of potential wetlands using remote data like USGS hydric soils and LiDAR. In November 2020, BES provided BPS with an updated map of potential wetlands. In January 2021, 618 additional properties were sent a letter about WIP, the identification of a potential wetland on their property, and a *Permission of Access* form to return for a free wetland determination. In addition, anyone who had already returned the *Permission of Access* form was contacted to schedule a determination in spring 2021.

SWCA Environmental performed 268 wetland determinations in the spring of 2021. Wetland determinations follow a state-approved methodology that evaluate hydrology, soils and plants to determine the presence and extent of a wetland.

Results of the Wetland Inventory Project



In total, between 2018 and today, 269 acres of wetlands have been identified citywide by WIP (within the entire Urban Services Area) that were not previously mapped in the NRI (the majority of the wetlands that are mapped in Portland are in the Columbia Corridor area, which is not included in the Ezone Project). This is an 11% increase in citywide wetland area compared to the existing NRI wetland mapping.

In January 2021, there were 333 acres of wetlands mapped within the Ezone Map Correction Project geography. With additions and deletions to wetland mapping that were made by WIP staff to reflect wetland determination results, there are now 296 acres of verified wetlands in the project area. Figure 2 shows refinements based on wetland determinations within the Ezone Map Correction Project Area. At this point, the wetland data in the project geography has a high degree of accuracy and meets the state-approved mapping methodologies.

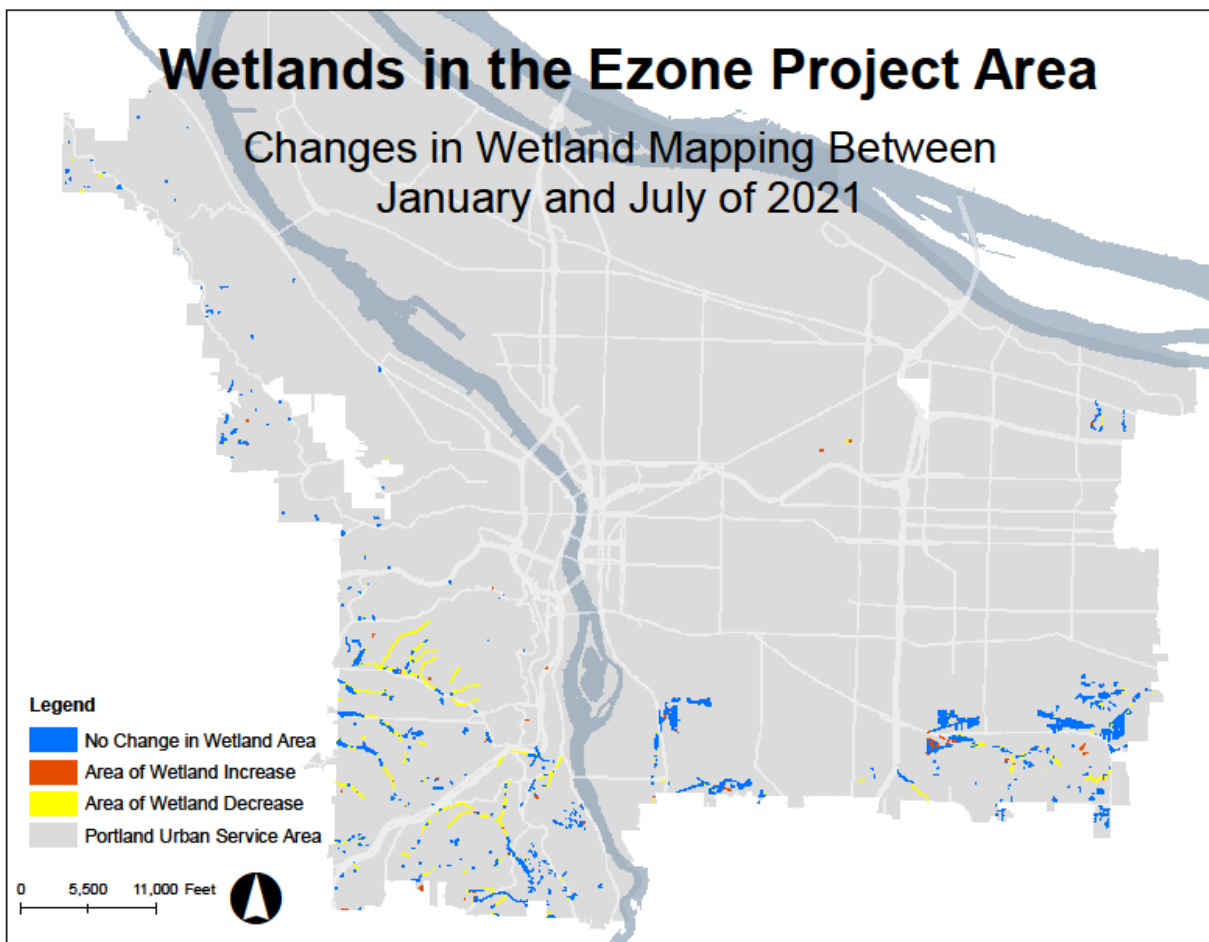


Figure 2: Wetlands that are mapped in the Ezone Map Correction Project geography. Colors are used to show how wetland mapping has changed as a result of wetland determinations.

The wetland determinations that were conducted by SWCA were done according to a specific methodology that is approved by US Army Corps of Engineers. Wetland **delineations** are a more thorough methodology. If private property owners disagree with WIP wetland mapping or SWCA wetland determinations, they can hire a consultant to do a wetland **delineation**. If the Oregon DSL



concur with a wetland **delineation**, this will supersede any results of a wetland determination and the **delineated** wetland will replace the wetland mapping in the NRI and the WIP.

Within the Ezone Map Correction Project geography, there is a net increase of 98 acres of mapped wetlands compared with the NRI wetland mapping that predated the WIP. All of the properties where these wetlands have been found have received notice about the Ezone Map Correction Project, with the exception of 4 properties which were brought in based on DSL-concurred wetland delineations that were conducted by property owners in processes that were unrelated to the WIP, and which were finalized in Spring of 2021.

The Bureau of Environmental Services is continuing to devote resources to provide free wetland determinations to property owners that request them. In Spring of 2022, they conducted 5 wetland determinations at the request of property owners. These wetland determinations resulted in edits to wetland mapping that have been included in an amendment package that is up for consideration by City Council at the April 14, 2022 hearing on amendments to the Ezone Project. They plan to offer wetland determinations in 2023 or beyond if any are requested or there are questions or disputes about wetland mapping. If future wetland determinations result in changes to wetland mapping or the deletion of a wetland from the wetland inventory, a quasi-judicial process can be used to make changes to the ezones, when necessary.

Wetland Protection Policy Recommendation

In the west hills of Portland, the previous natural resource protection plans (1991-2002) did not address wetlands explicitly in most cases. However, wetlands are a critical component of the city's stormwater infrastructure, capturing and storing water, which reduces flood risks and improves water quality. Wetlands also provide habitat for wildlife, including at-risk species like red legged frogs. Therefore, staff are recommending a consistent protection policy for wetlands and the riparian area around wetlands:

1. Apply a protection 'p' overlay zone to wetlands and land within 25 feet of wetlands;
2. Apply a conservation 'c' overlay zone to land between 25 and 50 feet of wetlands.

This approach is consistent with Metro Title 13, Nature in Neighborhoods, which requires protection of wetlands and land within 50 feet of wetlands. This policy is also consistent with citywide policy for protection of streams.

There are some specific geographies in Portland where the previously adopted natural resource protection plans did specifically address protecting wetlands. In those geographies, the existing wetland protection policy would be retained rather than the above proposed policy. For example, in lower Johnson Creek around Crystal Springs, the policy adopted in the 1990s was to apply a protection 'p' overlay zone to wetlands and land within 50 feet of wetlands. That more protective policy would be retained. The new wetland policy would only be applied where no existing wetland policy has been adopted by a previous natural resource protection plan.

The PSC voted to approve this amendment to the Ezone Project and to amend the NRI with updated wetland mapping at their July 27, 2021 work session. The draft ezone maps now incorporate this policy and wetland mapping.



Analysis of the Impacts of Wetland Mapping on the Draft Ezones

Many of the wetlands that are included in the inventory are located in areas that overlap with streams and contiguous forest vegetation. Therefore, much of the area that is covered by the ezones that are applied to wetlands would be covered by ezones that are applied to other features even if there was no policy to apply ezones to wetlands. But there are wetlands that are mapped in areas that do not intersect with other natural resources, and even when wetlands are located in stream riparian areas, the protection policies that apply to the wetlands may cause the overall area that is covered by the ezones to change.

Project staff conducted an analysis to determine what impact the application of ezones to wetlands has on the overall area that is covered by ezones. To conduct this analysis, they ran the computer program that generates the draft ezones three times under different conditions:

1. Standard computer program inputs, including vegetation mapping, stream mapping, top of bank (where mapped), steep slopes, manual edits, and up to date wetland mapping.
2. Standard program inputs utilizing the old wetland inventory (pre 2018) instead of the up to date wetland mapping.
3. Standard program inputs with no wetlands at all.

Running the ezone computer program under these three conditions produced three different versions of the draft ezones. The following statistics summarize the three different draft ezone outputs that were produced:

Condition 1: Up to date Wetland Mapping

Acres of C Zone: 4256
 Acres of P Zone: 9120
 Total Ezone Acres: 13376
 Total Number of Taxlots with Ezones: 13546

Condition 2: Old (Pre-2018) Wetland Mapping

Acres of C Zone: 4283
 Acres of P Zone: 8964
 Total Ezone Acres: 13246
 Total Number of Taxlots with Ezones: 13378

Condition 3: No Wetlands Included

Acres of C Zone: 4306
 Acres of P Zone: 8774
 Total Ezone Acres: 13080
 Total Number of Taxlots with Ezones: 13136

Discussion of Computer Program Outputs



If there were no wetland protection policies at all, draft ezones would be applied to 13,136 lots. With wetland protection policies and the use of the most updated wetland mapping, draft ezones are applied to 13,546 lots. The difference between these totals is 410 lots. Those are 410 lots that have ezones solely because there are wetlands that are mapped on them or in close proximity to them. In many cases, the draft ezones may only cover small portions of these lots. But there are some lots on which the ezones cover large areas.

The difference in the combined area of ezone coverage when wetlands were included versus when they were excluded is 296 acres. That is, 2.3% of the total area that is covered by ezones is due entirely to wetland mapping and wetland protection policy.

The impacts of the wetland-related ezones may be significant on specific properties. But the features that are protected by these ezones provide valuable ecosystem services that would be difficult to replace if development was allowed to impact these features. As discussed in the Ezone Project Documents and Findings, wetlands provide vital habitat functions and are critical natural components of the stormwater system. They help to protect life and property from the effects of erosion, runoff, and flooding. When wetlands are impacted by development or filled, the water that they would otherwise store is displaced into the surrounding properties, putting structures and the people that live in them at risk.

