MEMORANDUM

May 14, 2021

TO: Joan Frederiksen and Ryan Curran – Bureau of Planning and Sustainability

FROM: Ethan Brown – Bureau of Environmental Services

COPY: Marie Walkiewicz, Tim Kurtz, Fred MacGregor, Amin Wahab – Bureau of Environmental Services

RE: **BES Stormwater Considerations and Rationale for Zoning Recommendations**

This memorandum is intended to summarize the analyses that BES has conducted thus far for the West Portland Town Center (WPTC) Plan process and to explain the rationale behind our recommendations. In close coordination with BPS, BES did an initial evaluation of our stormwater system, stormwater system deficiencies, and stormwater system needs in the WPTC plan area. Based on that evaluation, BES recommended adjustments to some of the base zoning proposed in the WPTC Plan in order to ensure adequacy of service, reduce risks, and protect downstream resources within and beyond the WPTC plan area. This memo also briefly describes additional BES work underway to plan for integrated system improvements and identify equitable funding strategies and solutions that will support long-term implementation of the WPTC Plan

WPTC Goals

Driven by extensive outreach and engagement with the communities in the plan area, the WPTC Plan is centered around two overarching guiding visions: strong communities and people; and great places with equitable access. The Plan then defines more specific goals to further the overarching visions:

1. *Prevent residential and cultural displacement by providing low-income households and communities of color the choice to remain in place and build wealth.*
2. *Create opportunities for community and cultural spaces to thrive.*
3. *Promote opportunities for businesses, including minority- and women-owned small businesses, that reflect the diverse cultures of the area.*
4. *Foster and support community engagement and outreach to under-represented groups. Increase their capacity for involvement in issues that affect them and provide access to educational, social, cultural, and employment opportunities.*
5. *Improve mental and physical health outcomes for people living and working in the area. Elevate the connection to nature in the redevelopment of the area.*
6. *Design public spaces that consider the physical and social infrastructure needed to support people and businesses, while integrating the topographic, natural, and scenic attributes of this area.*
7. *Increase new and stable housing choices, tools, and programs for all household types and incomes throughout the Town Center. Emphasize efficient use of the land closest to future station areas.*

8. *Create a road map and/or strategy to fund and build a multi-modal and multi-ability circulation system across the town center that is safe, comfortable, accessible, and useful for meeting daily needs.*
9. *Create defined main streets and commercial areas. Enhance conditions for more robust and varied commercial and businesses services.*

BES supports the visions and goals of the WPTC Plan and recognizes that existing limitations in the stormwater system and sanitary system may inhibit the full realization the plan without additional investment to address the issues summarized below.

Overview of existing stormwater management in the West Portland Town Center

Stormwater management in much of southwest Portland, including the West Portland Town Center (WPTC) Plan area, was initially developed for low-density, suburban/semi-rural style development prior to the area's annexation into the city of Portland in the 1960s and 1970s. Rather than handle runoff through a planned and connected stormwater management system, it was managed piecemeal on individual properties and often conveyed through roadsides ditches and informal channels through private backyards, or directed to local streams. As development has continued, the proportion of impervious surfaces from roads and buildings has increased and fewer trees and other vegetation are left to soak up runoff. These changes have altered the natural hydrologic cycle and natural drainage patterns, increasing the amount of runoff flowing into streams and contributing to problems such as soil erosion, incised stream channels, minor street flooding, runoff flowing to downhill properties, slope instability, and increased landslide risks.

In the WPTC Plan area and most of southwest Portland, the ability to manage stormwater is complicated by soils that do not allow rainwater and runoff to infiltrate into the ground very deeply or quickly. Instead, during rain events, water runs off the surface to downhill sites, or into channels or stormwater facilities that drain into area creeks. In addition, the area's hilly topography, landslide susceptibility, and steep slopes further complicate stormwater management.

Within and downstream of the WPTC plan area, the Woods Creek, Ash Creek, Tryon Creek headwaters, and Falling Creek stream systems, and the species they support, have been impacted by extensive loss of streamside native vegetation due to development. The lack of healthy riparian buffers reduces the resilience of these stream systems and makes them more vulnerable to the impacts of additional stormwater runoff from impervious areas. Erosion has exposed sanitary sewer pipes that were once buried under the streams and can also impact slope stability and landslide risk. Another issue in the WPTC plan area and other parts of southwest Portland is that stormwater that soaks into the ground can infiltrate into sanitary sewer pipes, increasing the flow in that system and reducing its capacity to carry additional sanitary flow. This can contribute to sewage overflows.

Private development has a role in managing stormwater. The Stormwater Management Manual (SWMM) https://www.portland.gov/bes/stormwater/swmm regulates runoff quantity and quality from new development, redevelopment, and improvements in the rights of way. Under the SWMM, development is typically required to manage stormwater on site, to the extent possible, and then meet requirements for connecting to downstream storm systems, where needed. However, sometimes topography, distance or lack of adequate facilities make that challenging. When connections can be made, the costs may be high, affecting development costs. Although the WPTC plan area has some public stormwater pipes, the system is incomplete and not sized to manage stormwater from additional development. As a result, some properties lack an approvable route of conveyance (ARC) to the stormwater system.

Characterization of Stormwater Risk Potential

The Risk Assessment Division of BES' Integrated Planning Group used the comprehensive stormwater infrastructure analysis of the Stormwater System Plan (SWSP) to analyze the stormwater-related risks currently present in the WPTC area and the potential for those risks to be impacted by future development, as proposed within and adjacent to the WPTC Plan area. The SWSP analysis showed a high potential for stormwater risk in and around the WPTC Plan area due to the existing conditions of the plan area and surrounding watersheds, which have been heavily impacted by past development practices. The SWSP analysis suggests the following specific aspects of the plan area that make it particularly vulnerable to stormwater-related risks:

- The stormwater system was developed as a patchwork and there are significant gaps and deficiencies in the conveyance network. As a result, some areas are difficult to serve because they currently lack adequate ways to connect to the stormwater system and have other capacity and connectivity issues.
- Increased impervious area and subsequent increases in runoff volume and flow rates will exacerbate landscape conditions prone to in-stream erosion, landslide hazards, and localized nuisance flooding. Unmanaged stormwater discharge also has negative impacts on stream health and downstream aquatic species populations.
- Increased development may impact the water quality of streams and wetlands that are already impaired by increasing pollutant loading.
- Increased development could result in increased stormwater inputs into vulnerable habitat and sensitive ecological areas.
- Inflow and infiltration of stormwater into the sanitary system is an existing problem in some areas of the plan area and across southwest Portland.

This initial analysis provided sufficient information for BES to identify areas in the WPTC plan area with the most significant limitations in existing infrastructure. When considered in conjunction with the potential for risks to public safety and natural resources, this analysis led BES staff to recommend that BPS delay increasing zoning density for a few select portions of the WPTC plan area, as follows. BES is conducting a more detailed analysis of conditions in order to develop an integrated system plan for evaluating and proposing solutions for some of the area's infrastructure needs.

Stormwater service thresholds, zoning recommendations, and implications for future growth

The summary above is based on available data that BES gathered as part of the WPTC planning process to assess drainage conditions in different parts of the town center and identify areas with the most significant needs for infrastructure improvements. Overall, we determined that additional development could be served in most of the WPTC plan area by existing infrastructure or by improvements done as a condition of development, during the development process. In some cases, future development projects would require significant system extensions to be served adequately and the costs of these extensions could be an impediment to development. Through BES's system planning for the area, we will consider potential strategies for addressing these situations.

While hydraulic and hydrologic models for the storm system in the WPTC are still under development, a screen of the proposed up-zoning in the draft WPTC Plan was conducted in August 2020 using the draft system service level assessments performed by Stormwater System Planning and Sanitary System Planning in June 2020. Using the system assessments along with a staff review of the current type, size, and location of the existing systems, taxlots proposed for up-zoning were evaluated against the assumed ability of those existing systems to manage expected increases in stormwater and sanitary flows at the proposed future densities.

Taxlots were color coded as follows:

- Red = not supported for up-zoning due to service level challenges without clear system solutions
- Yellow / Orange = possibly supported for up-zoning assuming required system extensions can be made – shorter extension distances being yellow, longer distances grading to dark orange
- Green = generally supported for up-zoning due to the presence of an adjacent existing or planned storm system thought to be adequate for the proposed level of development

Annotated descriptions of system issues were provided for key areas. This analysis was done without the benefit of hydraulic storm system models. System-wide capacity will need to be further evaluated when models do become available. In addition, ODOT-owned storm systems (Barbur Blvd and Interstate 5) receive flow from a majority of the plan area, and extensive coordination between the City and ODOT would be required if capacity needs to be increased in those systems.

Based on this analysis, BES recommended sites with the following stormwater conveyance situations be proposed for increases in zoning density:

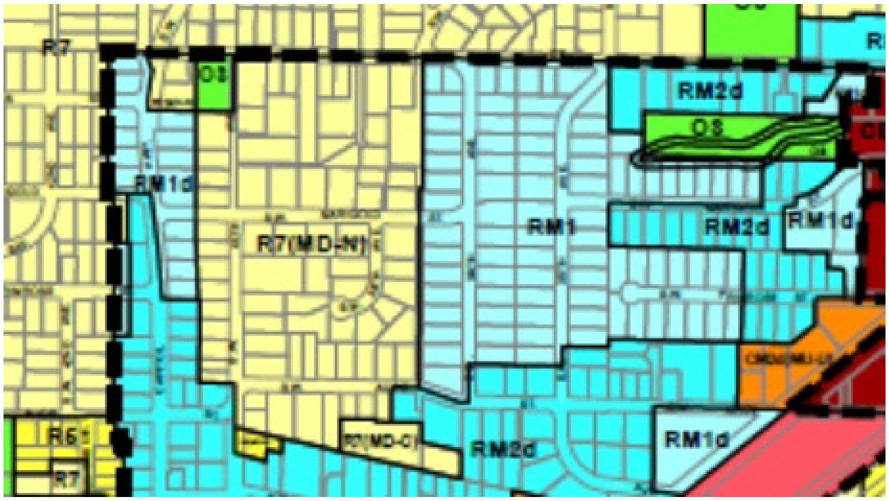
1) Stormwater conveyance is available and appears to have adequate capacity to serve additional anticipated growth (new and redevelopment).
2) A connection to stormwater conveyance appears to be feasible immediately adjacent to the site, to be constructed at time of development.
3) The site can likely be served with a lengthier connection (stormwater main extension up to 1000 feet) to the conveyance system, to be constructed prior to or at time of development.

BES recommended sites retain existing zoning designation (no increase in density) if the sites were unable to access public stormwater conveyance with sufficient capacity to serve additional development and where there was one or more of the following constraints:

1) Sites with the only stormwater conveyance available being backyard drainages (private), informal, and/or unconnected conveyances.
2) Sites with access only to undersized conveyances that are unable to serve additional development and that currently serve properties with steep slopes.
3) Sites on or adjacent to landslide prone areas where additional stormwater discharge would result in increased risks to public safety and natural resources both on and downslope/downstream.

BES identified three areas as having significant development constraints due to these conditions:

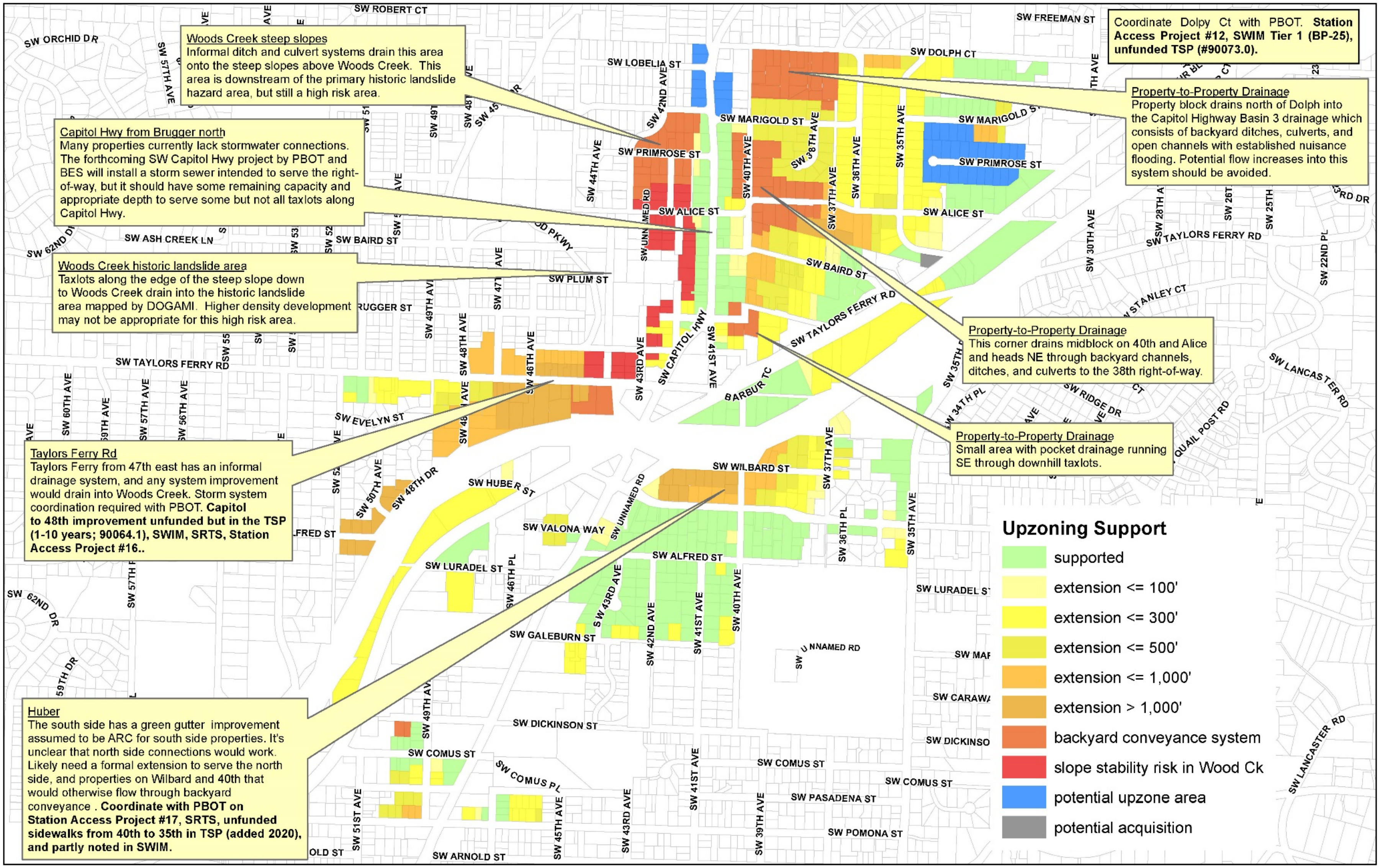
- Northwest corner of the plan area, bordered by SW 40th, Dolph Court, SW 37th Ave and Alice Street. In this area, it is unclear how a multi-dwelling development could connect to public stormwater facilities or conveyance without impacting private property. BES will study potential stormwater management alternatives in the upcoming WPTC system plan, but staff isn't confident that a strategy will be identified to support higher density development. For that reason, BES recommends retaining both the existing zoning and the existing Comprehensive Plan designation for this area.



- Properties located north and south of Taylors Ferry Road and a small portion of properties west of Capitol Highway on the slope to Woods Creek. This area has a combination of landslide risks and stormwater constraints. When stormwater system improvements are made to address these risks, rezoning to the Comprehensive Plan designation would be appropriate.
- Properties for a small portion of Wilbard Street, east of Capitol Highway and south of the I-5 Freeway. This area has a combination of landslide risks and stormwater constraints. When stormwater system improvements are made to address these risks, rezoning to the Comprehensive Plan designation would be appropriate.

The following map illustrates the analysis that was done to develop BES's recommendations for zoning and Comprehensive Plan designations The analysis also identified the need to plan stormwater system improvements that avoid local and downstream impacts to streams.

BES Storm System Support for Proposed BPS Upzoning



Sanitary service implications for future growth

The overall capacity of the existing sanitary system was determined to be generally adequate to serve additional development, as anticipated with the implementation of the WPTC Plan. However, this assumes that stormwater infiltration into the sanitary system will be corrected in the future to ensure long-term system capacity.

BES next steps – planning for the future

Given the challenges described above and the goals of the WPTC Plan, BES has initiated a more comprehensive assessment of the area's stormwater and sanitary systems based on existing records, site visits, system modeling, asset condition assessment, field surveys and GIS analysis. BES will use the assessment to develop a *West Portland Town Center Sanitary and Stormwater System Plan*, which will articulate priorities and future work needed to support anticipated growth and align with transportation improvements anticipated for the area, and identify challenging areas that may lack current solutions . The BES system plan will also include a phasing and funding strategy to sequence, coordinate with other city bureaus and implement critical investments and work.

The BES system plan is expected to include a combination of recommendations to address the issues in the area. Potential actions could include:

- Programs to work with property owners to reduce the amount of runoff from existing development.
- Updates to the Stormwater Management Manual to tailor regulations on new development and ROW improvements to local conditions.
- Changes to operations and maintenance practices for existing infrastructure.
- Infrastructure projects to address existing system issues and improve system capacity to serve future growth.
- Implementation of regional stormwater facilities to reduce impacts of runoff on local streams.
- Stream enhancement projects to minimize the impacts of stormwater discharge on stream health, in the area and downstream.

Cross-bureau coordination – funding for the future

The previously mentioned challenges and infrastructure needs in the WPTC Plan area and across SW Portland will not be easy or cheap to resolve. In most cases, improving stormwater infrastructure and improving the local street infrastructure are co-dependent, but with disparate funding sources and opportunities. Neither PBOT or BES have discretionary funds to spend on infrastructure around future development projects, particularly on local streets, even if the developer is paying to improve all or portions of the ROW in front of their development. In addition, incremental improvements funded by developers may be possible for street improvements, but incremental stormwater improvements may not be possible in SW Portland because of the existing lack of infrastructure and downstream capacity limitations.

Major (non-local) street improvements are prioritized based on safety and equity and generally must be included in the Transportation System Plan (TSP). Although the WPTC Plan area has transportation deficiencies and needs for safety improvements, other areas of the city have greater need and may receive funding prior to the WPTC Plan area.

Currently, improvements to residential local streets are generally paid for through Local Improvement Districts (LIDs), which require property owner support and are most successful with matching funds from the City. LIDs are most commonly used to improve unpaved streets and to reconstruct paved streets not built to current engineering standards. If an LID is formed, the City manages the design and construction of the project, and property owners do not pay until the work is complete. Although LIDs have been successfully used to provide sanitary sewer, water main improvements, traffic signal, and utility undergrounding improvements in conjunction with street improvements for economies of scale to provide comprehensive and complete infrastructure solutions to neighborhoods, the complexity of issues with stormwater infrastructure and connectivity in this area may limit the possible application of this funding tool without significant subsidies. However, BES is committed to coordinating with PBOT to search for new funding tools which may allow for street improvements in conjunction with stormwater facilities.

The failure of the regional bond measure significantly reduced the nearer-term possibility for substantial improvements to the stormwater conveyance system under SW Barbur Boulevard, an ODOT facility. BES and the City rely on the existing stormwater infrastructure for conveyance from the neighborhood to the north, and upslope, of SW Barbur. If the bond measure had passed, the entire ROW would have been reconfigured and rebuilt, including the underground utilities. However, the failure of the bond measure now requires the continued reliance on existing infrastructure, which does not have sufficient capacity to serve the full buildout of the WPTC Plan without improvements. For these reasons, staff from BPS, BES, and PBOT are working to determine the most feasible way to phase and fund infrastructures projects that support the goals of the WPTC Plan.

In order to address infrastructure needs and challenges of the area, staff from BPS, PBOT and BES assessed potential projects for the first phase of WPTC Plan implementation. Projects were assessed for their readiness for implementation and opportunities for cross-bureau collaboration. The assessment included the following considerations:

- Support for affordable housing and commercial spaces (existing or proposed)
- Opportunities to serve culturally welcoming spaces
- Expansion of housing opportunities, focused on affordability
- Climate justice
- Existing condition of infrastructure
- Proximity to planned transportation projects
- Connections to the town center

Considerations for BES were risks to the storm and stream systems, level of improvement needed to serve anticipated growth, and the potential for implementing manageable solutions.

Through the process, the inter-bureau team identified the following projects as priorities for near-term implementation:

- Taylors Ferry
- Huber Street
- Plum Street
- Interim safety improvements for the Crossroads

- Green Ring segments in the south that connect transit center, schools, and parks including Galeburn Street (between Capitol Highway and SW 40th Avenue) and SW 40th or 41st Avenue (north of Galeburn connecting to the ped bridge over the I-5 Freeway to the Barbur Transit Center, which is the proposed site for a future cultural center).

Of those projects, Taylors Ferry is a high priority for BES, while Huber Street and Plum are moderate priorities. The other projects are critical for improving transportation safety, especially for people walking, rolling, and biking, but are lower priorities for BES.

In summary, BES supports the visions and goals of the WPTC Plan and recognizes that existing limitations in the stormwater system and stormwater system may inhibit the full realization the plan without additional investment to address the issues summarized in this memo. BES remains committed to working with city and community partners to find funding solutions and continue improving access to and capacity of our stormwater infrastructure, while focusing investments in ways that address inequities and improve public health and safety.