

The City's response to questions are shown below in red.

From: Marissa Houlberg <marissa@houlbergdevelopment.com>
Sent: Monday, December 14, 2020 1:57 PM
To: Engineering External Email <engineering@tualatin.gov>
Subject: 2019 Stormwater Master Plan questions and thoughts

Thank you for sharing the document with all and requesting feedback!

This document is dated April 2019 but we are reviewing December 2020. Why over a year to seek feedback when the document was completed early 2019?

This entire project has been a long process and has included multiple changes and turnover with City staff. Implications from COVID19 and other priority projects have also placed this particular project on the "back burner" more than once. But since staff prioritized completing the Stormwater Master Plan, we've picked it back up and are looking forward to completing this process.

There was an updated flood map issued for our area within the last ten years, I believe. Can this be included in the document?

Stormwater problem areas identified based on a stream capacity issue (bank overtopping) were generally omitted as a project opportunity, as stream capacity and natural system flooding was not a Stormwater Master Plan objective.

Overview questions are:

I believe our TDC requires lawns in the Industrial/Mfg section of the city. Does it make sense now to not require lawns because of maintenance/herbicide/water issues and instead give guidance to native plantings? Native plantings require no chemicals, less maintenance and water in addition to protecting stream health.

The Tualatin Development Code contains overall site landscaping minimums, and requires features such as landscaping around building edges and dispersed throughout parking lots; lawns are not specifically required over other kinds of groundcover plantings, though they are commonly chosen to meet the overall landscaping requirements. The codified landscaping standards indicate that native plantings are "encouraged" though they do not directly require or incentivize this type of planting over other landscape styles. Irrigation is also required for landscaped areas. More information is available in TDC Chapters 73B and 73C.

The requirements associated with stormwater management fall under a different set of rules and regulations, ones that typically require hydraulic and/or hydrologic analyses. Potentially, these analyses may include the evaluation of existing or newly planted trees, which could impact the impervious area(s) in question. Additionally, a general evaluation may also involve the analyses of Vegetated Corridors.

Do most of our trails do double duty? Are some bioswales too? Can we educate Tualatin residents so that more residents are aware of the not so obvious stormwater street and rooftop work these greenways are performing?

Some of our parks and trails account for greenspaces and do provide double-duty! The City, in partnership with other jurisdictions, has also been making strides to improve and enhance vegetated areas that would otherwise remain degraded. Often, these enhanced natural areas are adjacent to our parks and trail networks.

Public outreach and education are significant and important aspects that the City has been working towards increasing and improving. For example, we've updated multiple City websites, are working with Tualatin River Keepers to continuously add stormwater art in public places, have plans to increase

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information signs around Tualatin's waterways and Public Water Quality Facilities, and would be open to additional suggestions from our community members.

I made notes as I read the plan so will write my comments and questions as listed in my notes.

Page x

Single Family LIDA. What is the purpose of this inspection program, what is included and what are the benefits?

Tualatin's Private Water Quality Facility Program requires inspection of each Site at least once every four years. However, at the moment, there isn't sufficient capacity or funding for staff to inspect Private Water Quality Facilities associated with Single Family Residences. In order to ensure these water quality facilities are maintained and managed by owners appropriately, an adjustment to the current inspection program is needed. Some of the benefits include ensuring the intention of these facilities is being met and that our environmental systems are being protected.

Page 2-4; Table2-2

Impervious for Commercial and Industrial is 74% and 78%. Is this percentage high because of parking lots? Some percentages are as low as 43%.

Yes. The impervious areas associated with low-density residential planning districts are 43%, usually due to yards and other landscaping areas associated with people's homes and recreational areas. Commercial and Industrial sites usually require additional parking areas, which often increase the impervious areas.

Page 2-4 Basalt Creek planning timeframe is unknown? There is a residential development going in called Autumn Sunrise or a similar type of name. This residential development is not a part of Basalt Creek? There isn't a hydrological assessment for this development?

For the Basalt Creek planning area, future growth and development was expected during the development of the Stormwater Master Plan, but during the work associated with document, the timeframe was unknown. For purposes of the Stormwater Master Plan, the future development conditions of Basalt Creek were not evaluated or assessed hydrologically.

Page 2-6; Table 2-4 Inventory Pipers & Open Channels Diameter 0 - 72 inches Diameters of 42-72 inches are pipe or open channels? I seem to remember a very large pipe south side, parallel to Tualatin Sherwood Rd. Is this pipe 72 inches? What is the purpose of this pipe?

According to table 2-3, "Mapped Open Channels" constitute a length of 7,735.3 ft.

There are stormwater pipes on both the north and south sides of Tualatin-Sherwood Rd, depending on the exact location. In general, these pipes convey stormwater in a west to east direction, discharging either to Hedges Creek or Nyberg Creek. Both of these creeks ultimately discharge into the Tualatin River.

Water Quality Facility Maintenance, City Wide What does a Water Quality Facility look like? How does a WQ Facility function? What does maintenance require/entail?

A Water Quality Facility can be either a depressed area with native vegetation, or it could look like a typical manhole, but contain housing for a filter-cartridge type system. Both types of systems are intended to clean and treat potential pollutants that may be present in stormwater. Most of these water quality facilities also provide flow control, which can significantly reduce erosion potential and help protect downstream areas from loss of property. Tualatin has roughly 100 public water quality

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facilities and 400 private water quality facilities. Maintenance generally involves vegetative management, sediment and debris removal, and a variety of structural protection measures.

Page 4-2; Why are culverts for Open Channel and ditch (potential road washout) designed for 100 year peak flow? Most appear to be designed for 2 & 10 year flooding. How often are our peak 100 year flows happening; seem like twenty-thirty year frequency?

Design regulations and standards associated with our jurisdiction are what typically drive these types of sizing-related questions. Statistically, a 100-year storm event will occur once every 100-years. Similarly, a 25-year storm event would statistically occur once every 25-years. This information is usually based off historical rainfall data and can be used to project and protect the integrity of our stormwater systems.

Page 4-7 Warm Springs, Tonka existing pipes and open channels are undersized.

Can parking areas with pervious surfaces help lower flood occurrences?

Depending on subsurface soil conditions and infiltration rates, pervious surfaces have the potential to minimize downstream runoff from stormwater-related events. Any pervious surface (parking lots included) can reduce the potential for downstream flooding.

How is a creek privately owned? Is it because the landowner owns the land on one or both sides and the creek is included? Is the creek itself owned by the Wetlands Conservancy and not the surrounding land? Considering creeks and rivers extend their boundaries during high water flow does creek ownership extend to the land on either side to accommodate the overflow?

The bed of the creek is likely owned by the landowner, unless it is navigable, then it will most likely be owned by the State. The water itself is not owned by the landowner, but is a state resource, or in some historic first in right times, a separate property interest altogether. DEQ regulates water quality, OWRD regulates the use of water, and ODFW regulates the creatures in it. Bottom line: land and the water that flows over it are distinct and property interests.

There is a whole body of law about what happens when creeks meander and who owns the land. There are many disputes about such land, especially because the legal description will often reference the creek as a border and that border moves. There is also a body of law on common law discharge of water, i.e. cannot purposefully change the water course.

Page 5-3; Table 5-1 Contributing existing Impervious (%) for Saum, Nyberg and Hedges Creeks I noted a 10% jump for contributing 'future' impervious - How do we keep the future number closer to 0%?

Halting any future development would prevent the increase of anticipated impervious areas.

Page 6-3; Table 6-2

Contract landscape at 72 sites \$108,300 How much maintenance is mowing? Can we replace flat areas with natives not requiring mowing?

Landscape services require a significant amount of work above and beyond mowing. Certainly, mowing is considered a large part of landscape maintenance (parks, grassed walkways, greenways, public spaces, etc.), but often this type of maintenance service includes the care of shrubs and trees, maintenance and management of sediment and debris, installation of native plantings, and removal and management of invasive species, etc.

Page 6-5, 6-6 Clearing trees

Sequoia Ridge, Sweet Drive Pond

The City's response to questions are shown below in red.

What type of trees need to be cleared? Why? Isn't our goal to shade our watersheds and lower in stream water temperature?

Water Quality Facilities are designed and are intended to control the rate of stormwater discharge, as well as provide water quality treatment. Some of our public water quality facilities have had voluntary trees seed and sprout themselves into large plants that can damage the integrity of these engineering systems. In order to ensure the structures, slopes, invert elevations, and flow control mechanisms associated with these water quality facilities function as intended, it may include tree removals.

Page 7-10 Stream Vegetation Mgmt.

Cost assumptions based on removing .5 acres of invasive vegetation per year at a unit cost \$4.60/sq. ft.; \$100,000 per year.

Can local volunteers assist in some of the smaller sites to remove invasives? Not just coordinated, one day removal but possible neighborhood project worked on over a more lax/when they want schedule, greater period of time with what needs to be removed and objectives defined? If residents knew how much they were saving the city and themselves by doing the work perhaps those numbers would be motivational?

Great question and good idea! Tualatin uses the help of volunteers for a large variety of projects and we've had excellent turnout over the years. Jackie Konen does a phenomenal job as Tualatin's Volunteer Coordinator and she usually has a long list of projects to help keep our citizens actively involved in our community. In fact, in 2019 she was voted Tualatin's Employee of the Year! Her phone number is 503-691-3087.

Thank you so much for reading!

Marissa

12-15-2020

For Public Record- Proposed Update to City of Tualatin Stormwater Management Master Plan

To: The City of Tualatin Department of Engineering

Cc: Members of the Tualatin City Council and City of Tualatin City Council
City of Tualatin Planning Commission

RE: Proposed Update to City of Tualatin Stormwater Management Master Plan

My husband and I appreciate the opportunity to provide Citizen Comments on this first opportunity for Public access and Comment Period on the proposed update to the City of Tualatin's Stormwater Management Master Plan being undertaken by the City. We support the efforts of the City to acknowledge and attempt to respond to the various changes and philosophies regarding Stormwater Management which have occurred since the current Master Plan was adopted several years ago.

We also recognize the City of Tualatin has undergone various changes since the City's Stormwater Master Plan was adopted in 1972. It would be expected the scope of the Land Use Master Plan would include all lands within the City limits- as well as lands identified within the future jurisdiction of the City- and assessment, analysis and stormwater management planning would be applied to all the lands within the scope of the project for both current and future needs.

The need for coordination of Land Use Planning between overlapping governments is necessary and mandated. As the northern portion of the Basalt Creek Area is identified as under the future jurisdiction of the City of Tualatin, and the City has already started the urbanization process, it is important for the City of Tualatin to identify a method for ensuring the effective coordination of Land Use Planning with other local governments- especially those with overlapping jurisdictions or responsibilities. The majority of the Basalt Creek Drainage flows south eventually through the City of Wilsonville and into the Willamette River. Very little of Stormwater drainage from the Basalt Creek Area flows north into the City's existing catchment and conveyance system.

Since Washington County currently has ownership and jurisdiction over the existing stormwater system within the Basalt Creek Area, and the County's stormwater conveyance and treatment systems are within lands under various ownerships, it is important for the City provide a well-crafted Stormwater Management Plan for the Basalt Creek Area.

The City already acknowledged in the Basalt Creek Concept Plan of the potential need to upgrade the existing stormwater system within the Basalt Creek Area to accommodate future development within the Area.

Neither my husband nor I are against development.

As citizens and residents of the Basalt Creek Area the ability to participate in this first solicitation for input/feedback by potentially affected Citizens on this proposed update to a City's Land Use Plan is welcomed. We are particularly interested in the creation of a well written fact-based Update to the City's Stormwater Management Master Plan, as our home and property is within the Basalt Creek Area –in an area which the City has future jurisdiction, and downstream from lands recently annexed into the City and are coming under consideration for development.

As potentially affected Citizens and property owners within unincorporated Washington County, my husband and I have for many years attempted to work with both the City of Tualatin and with Washington County in recognizing and addressing our concerns regarding Stormwater Management within the Basalt Creek Area.

We have presented our concerns as to the need for a fact-based Stormwater Management Plan for the Basalt Creek Area for use as part of Land Use Planning Actions within the area. We have submitted these concerns numerous times, to the staff of the Cities of Tualatin and Wilsonville, to the City of Tualatin Planning Commission, and to the Tualatin City Council including:

- during the development of the Basalt Creek Concept Plan by the Cities of Tualatin and Wilsonville (2012-2018)
- written fact-based testimonies to the City of Tualatin during the City Council 2019 Hearings on the Basalt Creek Comprehensive Plan proposed adoption and integration into the City's governing documents as to the need for further- identification and documentation of Natural Resources, and the need for a Stormwater Plan --to specifically access and address the current and future needs within the scope of the lands to be included within the Comprehensive Plan
- on 3-21-2020 my husband and I submitted written testimony to the Tualatin City Council, again supported by documentation, as to the lack of pertinent facts and information on Land Use Planning for the Public Service of Stormwater Management relating to the application for annexation of 40+acres of lands within the Basalt Creek Area into the City of Tualatin.

My husband and I now present our concerns regarding the proposed Stormwater Management planning within the Basalt Creek Area as presented within the proposed Master Plan Update to the City of Tualatin, the City of Tualatin Planning Commission, and to the City of Tualatin City Council.

This is first opportunity provided by the City for Citizen review and comment on the proposed Update to the City's Stormwater Master Plan.

We note there are inconsistent, conflicting or omitted information between the proposed Update and the City's existing Governing Documents. The lack of relevant, accurate, consistent and necessary information between the proposed Stormwater Master Plan and many of the City's current documents may result in difficulties in the safe effective implementation of Stormwater Management by the City and coordination of Land Use Planning with other governmental units.

Recognizing that my husband and I do not have a professional working knowledge of Stormwater Management or hydraulic dynamics, we have obtained the services of Dave La Liberte, Principal Engineer of Liberte Environmental Associates to review and comment upon the technical aspects of the proposed Update to the City's Master Plan. David M. LaLiberte, P.E., Civil and Environmental Engineer is licensed in the State of Oregon, has compiled these comments under contract with us. Mr. La Liberte' has over 30 years of experience in stormwater, water quality and design solution analysis. His Cumuli Vitae (CV) identifying his education and experience are attached as (Attachment #1 Supplement C). He has personally conducted various hydrodynamic modeling scenarios within the Basalt Creek Area. We believe Mr. La Liberte to be highly qualified to provide relevant comments upon the proposed Update to the City of Tualatin Stormwater Management Master Plan (SWMP).

Mr. La Liberte's comments regarding the City's proposed Update to the SWMP are to be considered a part of our Citizen Comments and are attached.

Also included as an embedded Google Link are additional documents including studies and analysis conducted by Mr. La Liberte' in 2016, ***"Effects of SW Boones Ferry Road Construction (2013-2015) Stormflow Analysis for the Lucini Property Washington County, Oregon"***.

To offer identification of issues and assistance in a Land Use planning action – allowing the City of Tualatin to gain future jurisdiction over the northern portion of the Basalt Creek Area--this Stormflow Analysis was submitted to the Cities of Tualatin and Wilsonville during the Basalt Creek Concept Planning process. This study has also been provided to the City of Tualatin staff on other subsequent occasions.

SEE EMAIL ATTACHMENT --LA LIBERTE' ENVORONMENTAL ATTACHMENTS #1, #2 & #3 (INCLUDES SUPPLEMENTS)

**TECHNICAL COMMENTS RELATING PROPOSED UPDATE TO THE CITY'S MASTER PLAN
(Summarization)**

A summarization of Review of Document Comments

by Mr. La Liberte, Principle Engineer La Liberte' Environmental Associates:

Significant problems in the Plan for the BFR south area are:

- lack of identified stormwater facilities
- omission of hydrologic and hydraulic modeling analysis
- potential for misapplication of design alternatives
- absence of stormwater problem acknowledgement and evaluation
- no assesment of stormflows on steep slopes
- topography and soils suggest that infiltration is not a likely future runoff design solution in the Boones Ferry Road area
 - This is an important issue as to the elevation of lands, steep slopes, and drainage into Basalt Creek
 - The elevation of lands above the drinking water wells is of concern with impact upon the well from which the Lucini's obtain their water
- effect of stormflows on the Basalt Creek Concept Plan are neglected
- no existing and future development stormwater flows are compared
- protection of natural resources is unclear
- no designation of Capital Improvement Projects (CIPs9) in the BFR south area
- There is no assessment of peak and average stormflows on the steep slopes, which constitute the west flank of the BFR south area
 - These Tualatin stormflows discharge to the Basalt Creek Concept Plan area and their existence is not established in the SWMP.
 - Stormflows on these steep slopes have excessive peak and average flow velocities, which cause erosion
SEE: Supplement B Part 1 Analysis Report Section 4.
Stormflow Hydraulics and Part 2 Appendices A2 and I
- The Tualatin SWMP makes no provisions for temporary stormwater storage and discharge facilities when phasing-in large developments such as the Autumn Sunrise property in BFR south.
 - The concern is that arbitrary storage and discharge locations could occur in the interim, before the final stormwater facility is operable.
 - It needs to be specified in the Tualatin SWMP that new construction developments must use stormwater facilities and outfalls consistent only with its final specifications and drawings.



ADDITIONAL COMMENTS -MAPS WITHIN PROPOSED UPDATE TO THE CITY'S MASTER PLAN

PROPOSED MAPS:

- CONTAIN DATED INFORMATION
- OMISSION OF RELEVANT AND NECESSARY INFORMATION REQUIRED FOR LAND USE PLANNING

SEE EMAIL ATTACHMENT #4 MAPS or Pages 13-20

CITIZEN COMMENTS- NARRATIVE

PROPOSED UPDATE TO STORMWATER MASTER PLAN – CITY OF TUALATIN

My husband and I are submitting these Citizen Comments regarding the newly posted first draft (December 1, 2020) of the proposed City of Tualatin Stormwater Management Master Plan Update. Utilizing the State's Land Use Planning Goals as a basis for our concerns. We mention there are multiple other related local, State and Federal mandates which exist and provide additional measures to address stormwater management, property rights and protections, safety, conservation and protection of Natural Resources, and coordination and integration of Public Services with other governmental units or agencies.

STATE OF OREGON STATEWIDE LAND USE GOALS- Used as basis and support of concerns being presented

OAR 660-015-0000 Oregon Statewide Land Use Planning Goals

The state of Oregon has established goals and provided mandates for Land Use Plans – including specific requirements which should be included within the Land Use Plans of local city governments- including City Master Plans.

These Land Use Planning Goals not only provide a framework for creating a Land Use Plan, but they also provide a method for evaluation of various Land Use elements to be included within a potential Plan, as well as mandates for compliance.

Included within our comments are references to these Land Use Planning requirements to provide a common understanding of the basis for our comments and as support for request for resolution to concerns provided within this correspondence.

Land Use Planning Goal #2- LAND USE PLANNING OAR 660-015-0000 (2) provides the framework for the development and requirements for the development of a Land Use Plan- such as the City's proposed Stormwater Management Master Plan Update. Included with Goal #2 are the following goals and mandates apropos to these comments: *(emphasis added)*

- To establish a land use planning process and policy framework ***as a basis for all decision and actions related to use of land*** and ***to assure an adequate factual base*** for such decisions and actions.
- City, county, state and federal agency and special district plans, and actions related to land use **shall be consistent with the comprehensive plans of cities and counties and regional plans** adopted under ORS Chapter 268.
- **All land use plans shall include:**
 - ***identification of issues and problems, inventories and other factual information*** for each applicable statewide planning goal,
 - **evaluation of alternative courses of action and ultimate policy choices**, taking into consideration social, economic, energy ***and environmental needs***.

- The required information shall be contained in the plan document or in supporting documents



- **The plans shall be the basis for specific implementation measures.**

- **These measures shall be consistent with and adequate to carry out the plans.**
- All land-use plans, and implementation ordinances shall... be reviewed and as needed, revised on a periodic cycle to take into account changing public policies and circumstances

It is important that accurate fact-based information relating to potential Land Use actions are obtained and provided as part of any Land Use action. Both Citizens and those who may ultimately be making Land Use decisions require accurate representative unbiased information so that they may understand and comprehend issues pertaining to proposed Land Use issues. This process assists and promotes the transparency of the governmental process, and informed decision making.

Unfortunately, after review of the City of Tualatin's proposed Update to the Stormwater Management Master Plan, my husband and I have found multiple issues which reduce compliance with the Oregon Land Use Planning Goals, as well as other local, State and Federal mandates-particularly with respect to the Land Use Planning for the Basalt Creek Area under the current or future jurisdiction of the City of Tualatin, and/or under other overlapping governmental units or agencies.

HISORICAL LAND USE PLANNING ACTIONS-BASALT CREEK AREA & STORMWATER MANAGEMENT

My husband and I strongly support the City's efforts to review and revise the City's dated Stormwater Management Master Plan which according to the City's website was adopted in 1972

https://www.tualatinoregon.gov/sites/default/files/fileattachments/engineering/page/13099/tualatin_drainage_plan_sept_1972.pdf

A request had to be submitted to the City for access to the Appendices for the proposed Plan.

In the decades since the City's Stormwater Management Plan was adopted in 1972, the type and level of assessment, knowledge and implementation of stormwater management has greatly expanded, and the potential impacts more fully understood. The relevance of impact of Land Use Actions upon the environment has also become more greatly understood, expanding the need for a more comprehensive assessment and analysis of potential outcomes as part of the Land Use Planning process.

In 2004 Metro 04-1040B authorized the addition of the "Tualatin Area" (part of which is now known as the Basalt Creek Area) into the UGB. Metro imposed multiple conditions and requirements for the conservation and protection of multiple natural resources as part of Metro 04-1040B as part of the responsibilities of the local governments.

In 2018 the Basalt Creek Concept Plan jointly authored and adopted by the Cities of Wilsonville and Tualatin -taking the initial steps in the Land Use Planning of over 800 acres within the Basalt Creek Area and included various assessments of Natural Resources within the Basalt Creek Area.

Included within the Basalt Creek Concept Plan are various statements relating to Land Use Planning within the Basalt Creek Area including:

"New stormwater infrastructure will be primarily integrated with the local road network"

..."It is assumed that the existing culverts may not have capacity for future urban conditions and will need to be upsized to provide adequate capacity for runoff from new impervious areas, unless onsite detention or

infiltration is required when the location of public drainage or the topography of the site make connection to the system not economically feasible." (emphasis added)

"The Cities and CWS will adopt an Intergovernmental Agreement that will address areas where cooperative stormwater management is needed."

It is unclear if and when such Stormwater Management Planning for the Basalt Creek Area between these three entities was conducted.

Both Cities also stated within the Concept Plan- they would have "Joint Management" of the "Natural Area" within the Basalt Creek Canyon.

It is unknown what further action has been taken to implement the "Joint Management" of the lands in the center portion of the Basalt Creek Area- where a high percentage of the Natural Resources are located within the Basalt Creek Canyon.

It is not known what Land Use elements of "management" were intended to be the focus of this joint statement, but the potential involvement of the City of Wilsonville within the Land Use Planning of the Basalt Creek Area may result in additional complexities in the determination and implementation of Land Use planning within the Basalt Creek Area.

As the Basalt Creek Canyon receives a majority of the stormwater drainage from the area, the potential involvement and coordination of the City of Wilsonville should be included within any Stormwater Management plan within the Basalt Creek area. The identification of this information was not included within the City's proposed Update to the Stormwater Master Plan.

Included within the Basalt Creek Concept Plan are numerous maps identifying the location of multiple Natural Resources existing within the Basalt Creek Area mainly generated from Metro 2001 data. This type of information regarding Natural Resources within the Basalt Creek Area was not included within the maps the City elected to adopt within the City of Tualatin Basalt Creek Comprehensive Plan and the subsequent adoption and integration into the City's Governing Documents.

A few examples of the maps from the Basalt Creek Concept Plan are included as attachments to this correspondence to help substantiate:

- the existence of these Resources,
- the need for the City of Tualatin to conduct a more current assessment and analysis of multiple Natural Resources known to exist within the Basalt Creek Area for fact-based decision making,
- the need for the City to memorialize the information into the City's Governing Documents to:
 - establish fact-based documents which have evaluated significant factors which exist within lands the City sought to gain future jurisdiction -which are equal to or exceeding the level provided to the majority of the lands within the City.
 - Provide consistency of fact-based documents within the City which various departments can utilize as part of a decision-making process
 - Provide an accurate fact-based reference for use by the Public to gain understanding of the basis for future decisions

These actions will provide greater consistency within all proposed Land Use Plans -including the Stormwater Management Master Plan and may provide greater compliance and positive outcomes in subsequent implementation actions.

Attachment #4 Maps

In 2019, the City of Tualatin Basalt Creek Comprehensive Plan, did not provide stormwater management plans specific for the Basalt Creek Area or a stormwater system map specific to the Basalt Creek Area.

The City has left developers to be responsible for on-site Stormwater Management.

But the City did not identify what actions will be taken if financial costs become too high, if stormwater management requirements exceed onsite management and/or treatment capabilities or should other factors which might preclude full onsite stormwater management and/or treatment develop.

The City did not provide specific guidance as to:

- feasibility of integration into the County's existing stormwater management system (which is already known to be at capacity)
- mechanisms for cooperative planning and integration into the County's existing stormwater management system
- the process and funding to collect, convey, treat and dispose of excess stormwater runoff off site, or
- the role for Citizen Involvement by downstream property owners or other stakeholders.

The proposed Update to the City of Tualatin's Stormwater Management Master Plan does not acknowledge these issues nor provide information as to this issue.

There are questions as to the consistency of the City's Land Use Plans for Stormwater Management planning and implementation for development.

Contrary to the efforts taken to meet compliance requirements within the Basalt Creek Concept Plan, the City of Tualatin elected as part of the Basalt Creek Comprehensive Planning process, to omit maps within the Basalt Creek Area which denoted the existence of multiple Natural Resources within the Basalt Creek Area- which had been included in the Concept Plan.

The lack of information as to the assessment and location of multiple Natural Resources which have requirements for their conservation and protection, causes significant issues as to the ability to comply and implement various Metro, State and Federal requirements to conserve and protect Natural Resources based upon facts.

Consequently, lacking the inclusion of the assessment of the Natural Resources within the City's Governing Documents, inhibits the ability to effectively identify and mitigate negative impacts from Stormwater Drainage as part of the Master Plan for Stormwater Management and in the planning and implementation of any Land Use Action.

Within the City's Basalt Creek Comprehensive Plan -included as a supporting document- is a letter dated 12-5-2006, titled "[City of Tualatin Title 13 and Tualatin Basin Plan Compliance Review.](#)" (Exhibit 6 to Ordinance No. 1418-19

There are several concerns presented by the inclusion of this letter with issues relating to the Basalt Creek Area:

- Although the City has posted this letter on the City's Planning Department's Basalt Creek website, it is unclear as to the relevance of this letter to issues related to the Basalt Creek Area
- The letter is date specific and does not provide information as to changes which may have occurred within the 14 year since it was authored.
- The letter is dated 12-5-2006, prior to the City of Tualatin's right to conduct Land Use Planning for lands within the Basalt Creek area-outside its jurisdiction at the time. It is not known if the scope of subject matter within the review included lands within the Basalt Creek Area.
- It appears the intent of the letter was to evaluate a program, and not an evaluation of Title 13 resources- the letter clearly makes that statement.
- The letter included several statements as to additional actions required for compliance- including issues relating to the need for documentation of identification of various Natural Resources.
- The City did not attach documentation of successful implementation of actions required within the letter, nor application of results of the Tualatin Basin Program and application to the Basalt Creek Area.
- Of most importance the letter states: "*The compliance review by Metro is a review only of whether the amendments Tualatin is proposing are consistent with the UGMFP and is not a review of whether Tualatin has complied, or will comply with the other requirements of Option 5 and the Tualatin Basin Program.*" (emphasis added)

In relevance to the proposed Stormwater Management Master Plan Update, the 2006 Metro letter included the following information:

Stream crossings and detention ponds: We also note that for a number of HFDPs - such as minimizing stream crossings, encouraging perpendicular crossings, using habitat sensitive bridge and culvert designs, use of detention ponds, and allowance of narrow road widths through stream corridors - the City does not propose any code changes. Instead, the City states that its code is silent on such practices, but does not prohibit them, and mostly relies on its adoption of Metro's Title 3 and CWS requirements to meet Title 13's "encourage and facilitate" requirement.

Recommendation: We recommend that the City amend its code to affirmatively support these HFDPs. Doing so would leave no doubt that the City is encouraging and facilitating these HFDPs.

It is not known if the City implemented this recommendation- or if the recommendation is still relevant.

If the use of this letter is intended to indicate compliance to mandates for the conservation and protection of Natural Resources within the Basalt Creek Area, it would seem prudent for the City to establish documentation of an assessment of the Natural Resources within the Basalt Creek Area, and documentation of actions taken by the City to comply with such mandates- based upon current facts and standards to meet compliance needs.

In 2020, the City of Tualatin started actions to annex large acres of land within the NE portion of the Basalt Creek Area. A large portion of these lands currently act as the stormwater catchment, retention, and reabsorption basin for the greater area. The City is currently taking Land Use Planning actions which will allow the development of over 60 acres of this current stormwater catchment area.

Along with the removal of several acres which contain many characteristic factors of a natural stormwater catchment area (which have decreased the flow and velocity of stormwater and increase its reabsorption), future development may remove these factors while significantly increasing impervious surfaces with the creation of buildings, streets, and parking lots.

CURRENT CONCERNS REGARDING THE PROPOSED STORMWATER MASTER PLAN UPDATE

TECHNICAL ISSUES

A summary of the Technical Issues presented within the Stormwater Master Plan Update are summarized at the beginning of this correspondence, with the full review included as a Google Link attachment #1, #2 #3.

It is readily apparent when reading the proposed Master Plan Update, that much of the information contained with the draft is dated, and not reflective of current issues, or needs.

Page 5-2 includes the following information:

*"Basalt Creek runs north-south in the southern portion of the City. Much of the contributing land use is low-density and rural residential, **but with pending adoption of the Basalt Creek Concept Plan concept plan [sic], future development is anticipated to impact the contributing land use and stream condition. Ownership is currently private and public (City).**" (emphasis added)*

The Basalt Creek Concept Plan was adopted by the Cities of Wilsonville and Tualatin in 2018, indicating the proposed plan may not have been revised as to changes within the Basalt Creek Area for over two years. Since that time, the City of Tualatin generated and adopted the Basalt Creek Comprehensive Plan.

Although the proposed Stormwater Management Plan readily identified and anticipated the negative impact future development within the Basalt Creek Area would have upon the stream condition- the proposed Plan did not identify actions to be taken to provide further assessment and/or alternative solutions to attempt to address and mitigate stormwater impact upon the "stream condition".

IMPACT NATURAL RESOURCES

A review of the City's newly proposed draft to Update the City of Tualatin Stormwater Management Master Plan, does not currently identify the evaluation of Natural Resources within the Basalt Creek Area, nor the methods to be utilized to ensure compliance with the various mandates for the conservation and protection of numerous Resources. The State Land Use Goal requires documentation of compliance with State Goal #5 NATURAL RESOURCES AND OPEN SPACES, and State Goal #6 AIR, WATER AND LAND RESOURCES QUALITY which are the basis upon many of our concerns regarding the proposed Update to the City's Stormwater Master Plan.

NEED FOR COORDINATION OF LAND USE PLANNING WITH OVERLAPPING GOVERNMENTS- STATE GOAL #2

While both Cities had knowledge of, and participated within the decision making Land Use Planning process in planning the location of Washington County's proposed Basalt Creek Parkway Extension regional transportation 5+ lane expressway through the middle of the Basalt Creek Area--- neither the Basalt Creek Concept Plan nor the City of Tualatin

Basalt Creek Comprehensive Land Use Plans acknowledged, addressed or provided guidance as to coordination of stormwater management planning within the Basalt Creek Area for Washington County's proposed major transportation project within overlapping jurisdictions.

It is unclear as to the amount of land Washington County will require for their proposed project which will be needed not only for road construction, but also a proportionally large amount of land for stormwater management and treatment within wetlands and other lands within the future jurisdiction of the City of Tualatin. Nor did either plan address or provide guidance (and intended compliance) as to how all local governments would ensure conservation and protection of various Natural Resources within the Basalt Creek Area from direct or indirect effects of stormwater or stormwater management which might be caused by the proposed project and potential impact upon Natural Resources within the future jurisdiction of the City of Tualatin.

Compounding the lack of a clear plan for a coordinated Stormwater Management plan to address the permanent installation of this major transportation project through multiple Natural Resources, the Basalt Creek Concept Plan states, "joint management" management of the "Natural Area" within the Basalt Creek Area by the Cities of Wilsonville and Tualatin and introduces a possible intergovernmental agreement between the two Cities for stormwater management within the Basalt Creek Area.

Due to the proximity of the eastern terminus of the proposed Washington County Basalt Creek Parkway Extension on SW Boones Ferry Road, and the anticipated City of Tualatin major residential development of 400+ units and Commercial Neighborhood development within approximately 1/4 mile, of each other on SW Boones Ferry Road, there will be significantly increased need and demand for Stormwater Management and treatment with a limited geographic area and in lands with overlapping governmental jurisdictions.

As my husband and I are potentially affected property owners, we have on multiple occasions reached out to the staff of both the City of Tualatin and of Washington County to gain a better understanding how the Land Use planning actions by both governments are coordinating Land Use planning within the area. We have expressed our desire to be able to have potentially affected property owners participate in the coordinated planning of major Land Use Projects on lands near overlapping jurisdictions due to various direct and indirect impacts upon our property. We have not gained much success in these actions.

Unfortunately, there appears to be a continued lack of coordination and communication between these two entities as to the conception, planning and design of major Land Use Projects within the Basalt Creek Area.

Recognizing the lack of effective coordination in Land Use Planning by these two local governments, and to promote better compliance with mandates for the coordination of planning for Public Services by local governments, a well authored Stormwater Management plan would include clear requisites to:

- identify major Land Use Projects under consideration by another government (as a potential constraint or added factor in Land Use Planning)
 - provide guidance as to how to coordinate the provision of Public Services within overlapping jurisdictions.
- The proposed Stormwater Management Plan does not address this issue or provide clear guidance for implementation.

CURRENT STORMWATER MANAGEMENT SYSTEM WITHIN BASALT CREEK AREA

- HAS PREVIOUSLY FAILED AND IS A LIMITATION AND CONSTRAINT FOR FUTURE DEVELOPMENT

- IS UNDER THE JURISDICTION OF --OR IMPACTED BY--

LAND USE PLANNING ACTIONS OF OTHER LOCAL GOVERNMENT

The current Stormwater Management System along SW Boones Ferry Road within the Basalt Creek Area was designed and constructed as part of Washington County's SW Boones Ferry Road Improvement Project (2012-2015). During the design phase of this Land Use transportation project, my husband and I contacted the County on multiple occasions regarding our concerns of potential negative downstream stormwater impacts we identified within the proposed design. We were assured the outflow from the County's design would be equal or 10 % less than stormwater outflow which we previously experienced from a more primitive/less sophisticated stormwater system.

The 2016 Stormwater Analysis within the Basalt Creek Area by Mr. La Liberte' which was the basis of the report, *"Effects of SW Boones Ferry Road Construction (2013-2015) Stormflow Analysis for the Lucini Property Washington County, Oregon"*, was generated due to my husband's and my desire to understand the cause of flooding into our property from stormwater emitting from a Washington County Stormwater Outflow an apparent failure of the stormwater management system in 2015. There have been no significant changes made to the County's Stormwater system since 2015 upstream from our property.

Currently a large percentage of the stormwater drainage from the NE portion of the Basalt Creek Area flows south- eventually through the City of Wilsonville and into the Willamette River. Much of the stormwater within the NE portion of the Basalt Creek Area is captured within a stormwater catchment basin on undeveloped lands east of SW Boones Ferry Road, and collected within Washington County's stormwater collection, conveyance and treatment system. A majority of the stormwater catchment basin on the east side of SW Boones Ferry Road and north of Greenhill Lane is on lands recently annexed into the City of Tualatin.

The stormwater drainage from this area flows away from the majority of lands within the City of Tualatin and outside of the City of Tualatin's existing stormwater collection, conveyance and/or treatment facilities.

Mr. La Liberte's study identified multiple factors which lead to the flooding of our property from the stormwater system which currently exists within Basalt Creek Area in the area around SW Boones Ferry Road.

From this investigation we gained knowledge that the **County's design and planning for the stormwater management system installed along SW Boones Ferry Road as part of the SW Boones Ferry Road Improvement Project, was:**

- **based upon drainage needs of undeveloped land, and**
- **not designed to meet anticipated drainage needs of developed lands with higher nonporous surfaces (buildings, streets, and sidewalks etc.) which cause higher stormwater runoff and less reabsorption into the land which has previously acted as a major stormwater catchment area.**

Both the City of Tualatin, and Washington County are undertaking Land Use planning actions within the Basalt Creek Area affecting properties under overlapping jurisdictions. My husband and I have on multiple occasions attempted to gain insight as to the coordination of Stormwater Management Planning within the Basalt Creek Area from these two local governments.

As downstream property owners within Washington County, we have specifically expressed concerns and requested Land Use Planning information from the City of Tualatin as to the City's Stormwater Management Plan within the Basalt Creek Area and of potential impacts upon the current existing system under the jurisdiction of Washington County - during the Basalt Creek Concept Planning, during the City of Tualatin Basalt Creek Comprehensive Planning and as part of the City's annexation process for ANN 19-2002- without fact based information which would provide us understanding of the City's proposed Land Use actions and potential impacts caused by increased needs or changes to this Public Service. The Basalt Creek Concept Plan adopted by the City in 2018 acknowledged limitations within the existing Stormwater Management system within the Basalt Creek Area and identified the need for system upgrades with development of the Basalt Creek Area.

We have specifically asked the City of Tualatin and Washington County on multiple occasions how both of these two local governments have coordinated the Land Use Planning Goals for Washington County's proposed Basalt Creek Parkway Extension Project. Our questions have included how Stormwater Management will be integrated into the County's existing Stormwater System, how or where additional conveyance and/or treatment facilities will be located within lands with overlapping jurisdictions and of potential impacts to the City of Tualatin's Land Use Planning for the urbanization of the Basalt Creek Area and associated increased stormwater management needs on private or public lands. Again, my husband and I have received little fact-based information as to how these two local governments with overlapping jurisdictions have conducted Land Use Planning for a key Public Service of Stormwater Management within an area containing multiple known constraints and limitations.

My husband and I have reasonable concerns as to potential negative impacts from stormwater due to poorly planned and executed Land Use actions. The need for a well-developed integrated Stormwater Management plan for the Basalt Creek Area is necessary for the safety and protection of Citizens, property and surrounding Natural Resources.

Thank you for the opportunity for participating in this first Citizen Involvement Public event for the City's Proposed Update for the Stormwater Master Plan.

My husband and I look forward to hearing what steps the City will be taking the City's adoption process for this proposed Land Use Plan Action

As Citizens and potentially affected property owners, we request Actual Notice of any future Public Meetings-where this proposed Land Use Action may be an agenda topic--- including but not limited to the City of Tualatin Planning Commission, and/or the Tualatin City Council.

Respectfully submitted,
Grace Lucini
John Lucini
23677 SW Boones Ferry Road
Tualatin, OR 97062

ATTACHMENTS #1, #2, & #3 Documents La Liberte' Environmental Associates (Google Link)
#4 MAPS (Google Link) & (Hard Copy Pages 13-20)

ATTACHMENT #4

MAPS WITHIN PROPOSED UPDATE TO THE CITY'S MASTER PLAN

PROPOSED MAPS:

-CONTAIN DATED INFORMATION

-OMISSION OF RELEVANT AND NECESSARY INFORMATION REQUIRED FOR LAND USE PLANNING

An example of questionable information provided within many maps within the proposed Stormwater Management Plan for the City, is **Figure 2-2 Project Area Overview**.

The Legend within Figure 2-2 provides keys as to the location of

- **Open Space-Parks/Greenways/Natural Areas/Private***
- **Open Space- WPA/Setbacks/NRPO/Wetlands**

However, there is no indication of the wetlands, and multiple Natural Resources known to exist within the Basalt Creek Area and within the Basalt Creek Canyon.

Many of these types of Natural Resources may be negatively affected by stormwater drainage, and an accurate assessment as to the quantity, quality and location of Natural Resources which are to be conserved and protected should be assessed, evaluated and memorialized within a Stormwater Management Plan and integrated into the City's Governing Documents for to provide and assure consistency within the City's various Land Use Plans.

Another factor not denoted within the maps within proposed Stormwater Management Plan, is the identification of the "Natural Area" within the Basalt Creek Canyon.

This area which contains wetlands and various Natural Resources requiring conservation and protection was identified within the Basalt Creek Concept Plan in which both Cities agreed to have "joint management" of the "Natural Area". It would seem reasonable this information which might impact Land Use Planning within the Basalt Creek Area and is downstream from the Basalt Creek lands already annexed into the City, would be identified on the Figure 2-2 map, and include additional information within the narrative of the proposed Stormwater Management Plan as a potential constraint or limitation in the planning of Stormwater Management in the area or upstream from the "Natural Area".

This map also includes the notation of "Brown and Caldwell City of Tualatin Stormwater Master Plan Date: April 2019 Project 149233" in the lower left corner of the map. An assumption would be that the information provided within this map would be current and accurate as of April 2019- the date indicated on the lower left corner of the map. It is unknown how current the information contained within this map may be but lacking the inclusion of information Basalt Creek Area lands already within the City's boundaries, makes one question when the data for this map was last collected.

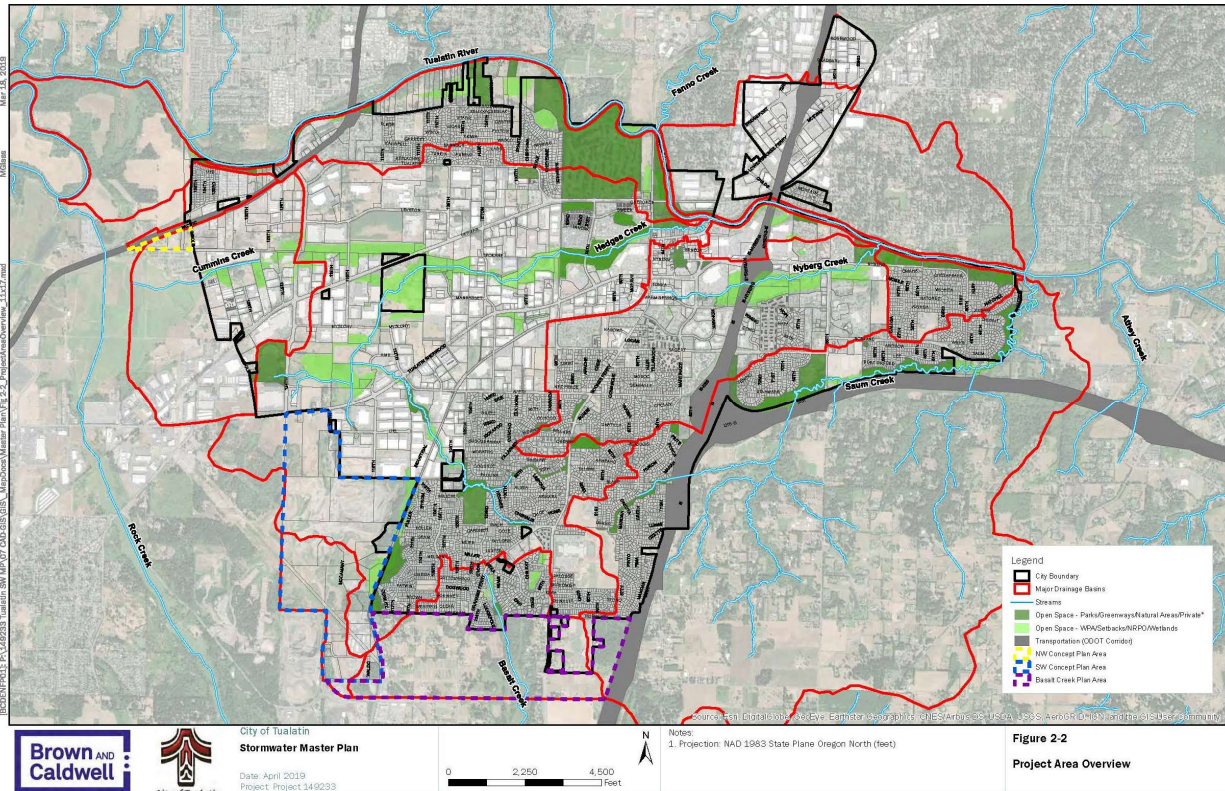


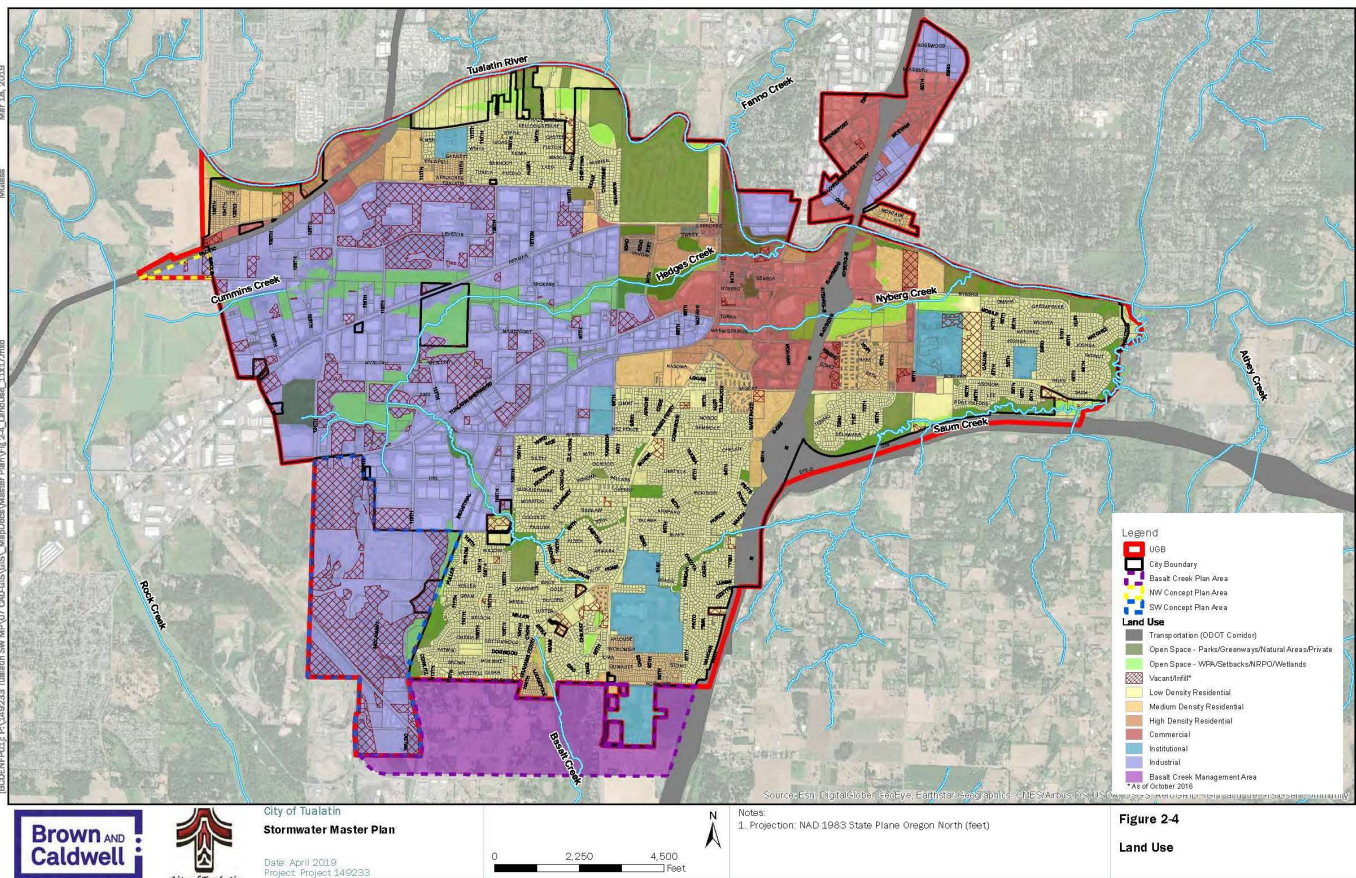
Figure 2-4 "Land Use" Map Not Consistent with City's Current Land Use Zoning

also provides the notation of "Brown and Caldwell City of Tualatin Stormwater Master Plan Date: April 2019 Project 149233 in the lower left corner of the map.

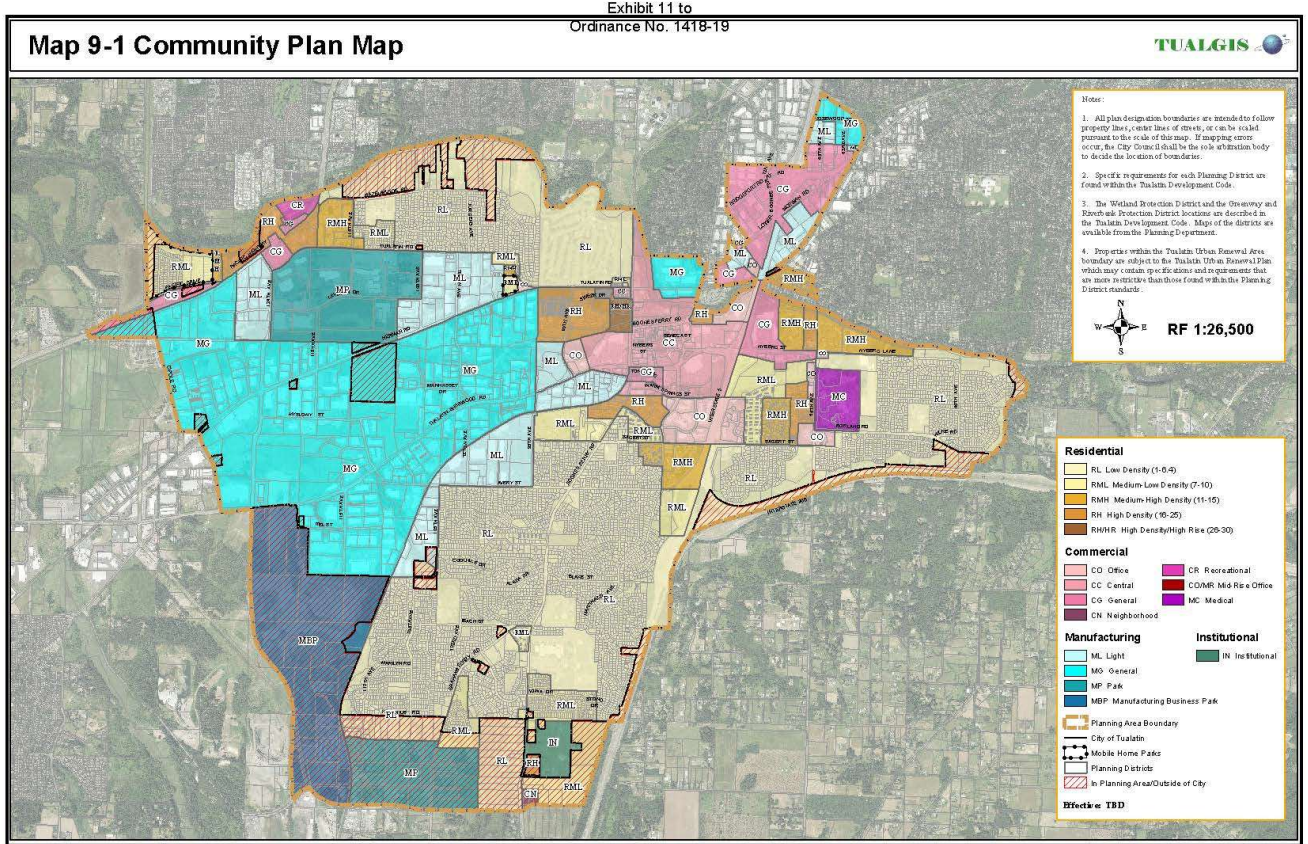
Yet, an asterisk notation within the Legend box states, "* As of October 2016".

Major changes have occurred as to Land Use within the City of Tualatin in the four years since this map was apparently generated.

The information provided as to the Land Use zoning or designations do not accurately reflect the Land Use Planning Actions of the Basalt Creek Concept Plan adopted in 2018, nor the City of Tualatin Basalt Creek Comprehensive Plan. Land Use Zoning within the Basalt Creek Area does not provide accurate information of current Land Use Zoning and Planning within the Basalt Creek Area and may hinder the planning for Stormwater Management in the assessment of current and future needs based upon type of land use. Approximately 60 acres within the Basalt Creek Area have already been annexed into the City of Tualatin, and into the responsibilities and regulations of the City for Land Use planning- including Stormwater Management.



The proposed Stormwater Master Plan Update is not consistent with the Land Use Plan adopted by the City in 2019 in Ordinance 1418-19, and consequently would not be compliant with Statewide Planning Goal #2



72-1 Natural Resources Protection Overlay district (NRPO) and Greenway Locations

72-3 Significant Natural Resources

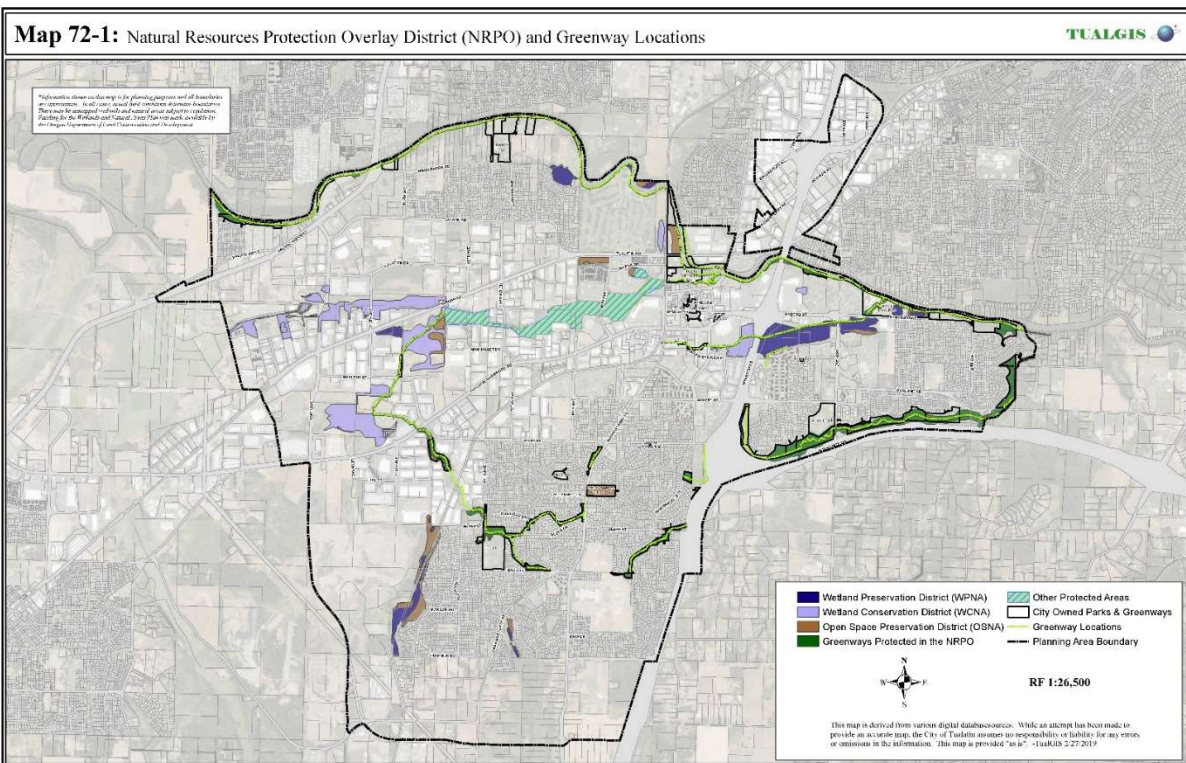
There is an absence of necessary information provided for the Basalt Creek Area for Natural Resources

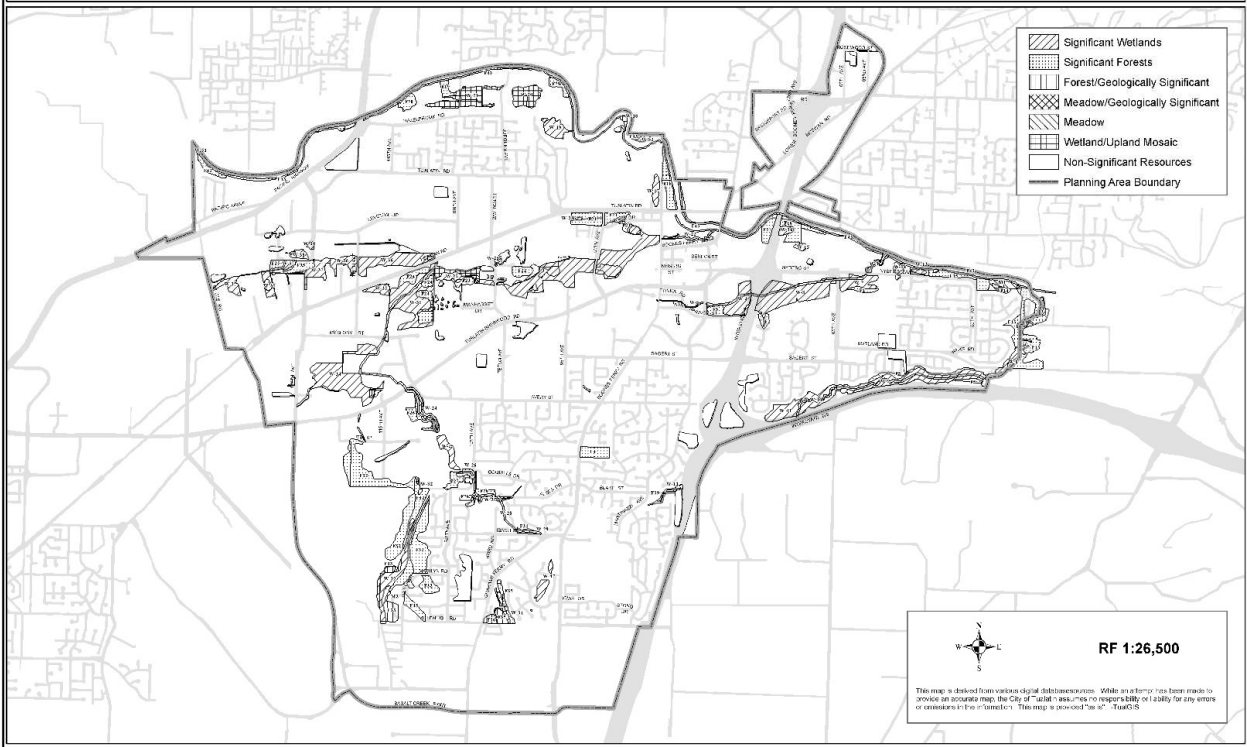
Lacking necessary evaluations as to the level, location and quality of Natural Resources within the Basalt Creek Area within the proposed Stormwater Management Master Plan Update, it would be difficult for the City of Tualatin to utilize the maps adopted into the City's Governing Documents (as part of the adoption of the Basalt Creek Comprehensive (Ord. [1427-19](#), § 47, 11-25-19)), as supportive or back up documents to the proposed Update, as these maps obtained from the City's website do not identify or provide substantive information as to the multiple Natural Resources which are known to exist within the Basalt Creek Area.

City of Tualatin Maps downloaded from the City's municipal Code website

https://library.municode.com/or/tualatin/codes/development_code?nodeId=THDECOTUOR_APXAMA

also lack essential information necessary for the development of a Land Use Plan, or effective implementation of a Land Use Action within the Basalt Creek Area and are not suitable support documents for the proposed Update to the City's proposed Stormwater Management Master Plan Update.





There are significant inconsistencies in the level of acknowledgement and identification of various Natural Resource which are required to be evaluated for potential impact within all Land Use Plans, and Planning Actions. The omission of pertinent information regarding the existence of multiple Natural Resources within the northern portion of the Basalt Creek Area as presented within the City's Governing Documents, and within the City's proposed Stormwater Master Plan update are notable.

However, the City included the Basalt Creek Concept Plan document adopted by the City in 2018, and utilized as a supporting document to the Basalt Creek Comprehensive Plan in 2019 did provide needed information as to Land Use evaluative factors such as the Natural Resources and constraints which exist within the Basalt Creek Area.

Examples of pertinent documentation from the Basalt Creek Concept Plan as to the quantity and quality of these Natural Resources is provided including a summary of a rationale for inclusion of this information into the Basalt Creek Land Use Concept Plan.

Metro Title 13: Nature in Neighborhoods

Title 13 requires local jurisdictions to protect and encourage restoration of a continuous ecologically viable streamside corridor system integrated with upland wildlife habitat and the urban landscape. Metro's regional habitat inventory in 2001 identified the location and health of fish and wildlife habitat based on waterside, riparian and upland habitat criteria. These areas were named Habitat Conservation Areas.

Table 7 Title 13 HCA Categories with Acreage

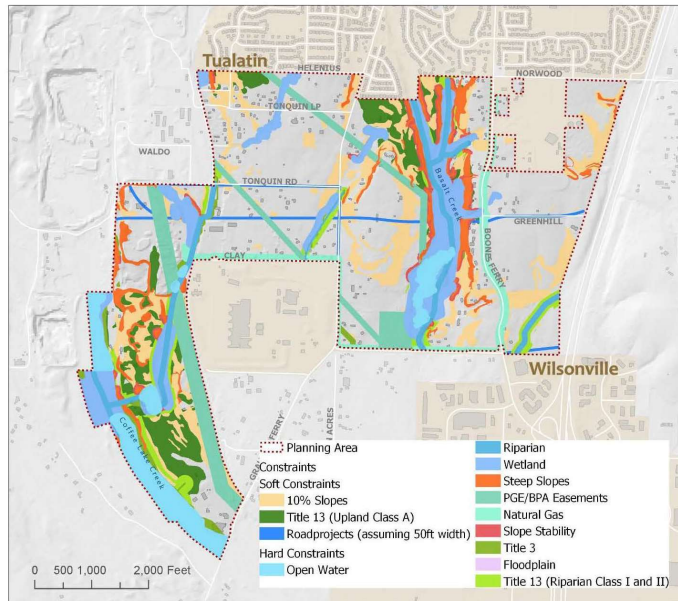
HCA Categories	Acres	Description
Riparian Wildlife Habitat Class I	130	Area supports 3 or more riparian functions
Riparian Wildlife Habitat Class II	31	Area supports 1 or 2 primary riparian functions
Riparian Wildlife Habitat Class III	7	Area supports only secondary riparian functions outside of wildlife areas
Upland Wildlife Habitat Class A	103	Areas with secondary riparian value that have high value for wildlife habitat
Upland Wildlife Habitat Class B	72	Area with secondary riparian value that have medium value for wildlife habitat
Upland Wildlife Habitat Class C	37	Areas with secondary riparian value that have low value for wildlife habitat
Designated Aquatic Impact	52	Area within 150 ft. of streams, river, lakes, or wetlands

Exhibit 2 to Ordinance No. 1418-19

Environmental constraints are summarized below and unless otherwise noted were fully excluded from the developable land input in the scenario testing for the Basalt Creek Concept Plan:

- Open Water
- Streams
- Wetlands
- Floodplains (50% reduction of developable area)
- Title 3 Water Quality and Flood Management protections
- Title 13 Nature in Neighborhoods (20% reduction of developable area in areas designated Riparian Habitat Classes I and II)
- Steep Slopes (25% slopes and greater)

Figure 13 Natural Resources Map



It is unclear as to the rationale for the omission of pertinent information required to be an evaluated component in the development of all Land Use Plans and implementation of Planning Actions have not been included within the proposed Stormwater Master Plan Update, nor in the City's Governing Documents as provided via the City's

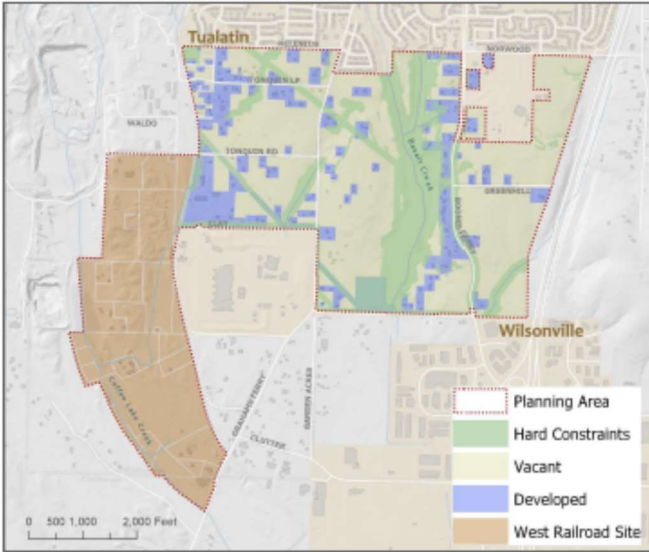
**Exhibit 2 to
Ordinance No. 1418-19**

The goal is to classify every parcel within the Planning Area into one of the categories described below:

Table 2 Land Supply within the Basalt Creek Planning Area by Type and with Acres.

Land Supply by Type and Acreage		
Land Type	Acres	Description
Vacant Land	331	Unconstrained land that is ready to build with no major structures located on the site
Developed Land	123	Land already built upon which includes acreage covered by roadways
Constrained Land	153	Land that cannot be built upon due to environmental or other hard constraints
West Railroad Area	238	Excluded from development plan due to large amount of constraints and limited access
Total Land Supply	847	

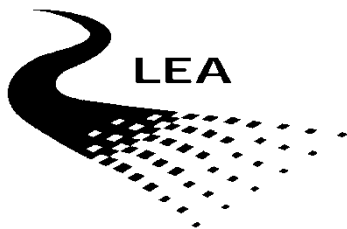
Figure 6 Land Supply by Type.



LEA Comments
On the Draft Tualatin Stormwater Master Plan
(Dated April 2019)

Prepared for
John and Grace Lucini
23677 SW Boones Ferry Road
Tualatin, Oregon
97140

Prepared by
Dave LaLiberte
Principal Engineer
Liberte Environmental Associates, Inc.
Wilsonville, Oregon



December 14, 2020

Draft Comments on the Tualatin Stormwater Master Plan (Draft, April 2019)

Due December 15, 2020, by Dave LaLiberte, P.E., Liberte Environmental Associates (LEA)

Summary Comments

These comments are based on the Draft Tualatin Stormwater Master Plan (SWMP) dated April 2019. Comments highlight issues in the Plan concerning Southwest Boones Ferry Road (BFR) south of Norwood Road, referred to as “BFR south”.

Significant problems in the Plan for the BFR south area are: lack of identified stormwater facilities¹ omission of hydrologic and hydraulic modeling analysis², potential for mis-application of design alternatives³, absence of stormwater problem acknowledgement and evaluation⁴, no assessment of stormflows on steep slopes⁵, effect of stormflows on the Basalt Creek Concept Plan are neglected⁶, no existing and future development stormwater flows are compared⁷, protection of natural resources is unclear⁸, no designation of Capital Improvement Projects (CIPs⁹) in the BFR south area, and other Plan related problems.

Supplement documents collected by Liberte Environmental Associates (LEA) for these comments are identified as:

Supplement A - LEA Request for Tualatin SWMP Appendices

Supplement B - *Effects of SW Boones Ferry Road Construction (2013-2015): Stormflow Analysis for the Lucini Property* (LEA, November 2016).

This report is included in two parts: Supplement B Part 1 (Report) and Part 2 (Appendices) under separate cover because of their size.

Supplement C –David M. LaLiberte, P.E., Cumuli Vitae (CV)

David M. LaLiberte, P.E., Civil and Environmental Engineer licensed in the State of Oregon, has compiled these comments under contract with John and Grace Lucini (see Comment LEA2 below). Dave has over 30 years of experience in stormwater, water quality and design solution analysis. His education and experience are attached as Supplement C – Cumuli Vitae (CV).

¹ See Specific Comment LEA6.

² See Specific Comment LEA5.

³ See Specific Comment LEA9.

⁴ See Specific Comments LEA9, 11 and 14 as they pertain to the SWMP Table 3-1 and Figure 7-1.

⁵ See Specific Comments LEA5, 7 and 8.

⁶ See Specific Comments LEA6, 7, 8, 12 and 15.

⁷ See Specific Comment LEA5.

⁸ See Specific Comment LEA6.

⁹ See Specific Comment LEA4, 9, 10 and 11.


Specific Comments



Comment LEA1. Many of the questions raised in these Tualatin SWMP comments focus on the area along BFR south. The BFR south area is shown within the city limits in all of the corresponding master plan figures. That is: Figures ES-1, 2-2 through 2-6 and 7-1.

Comment LEA2. Many of these comments refer to *Effects of SW Boones Ferry Road Construction (2013-2015): Stormflow Analysis for the Lucini Property* (LEA, November 2016), contracted by John and Grace Lucini, 23677 SW Boones Ferry Road, Washington County, Oregon, Tualatin, Oregon, 97140. This report is referred to as the “Stormflow Analysis” and is attached to these comments as Supplement B Part 1 (Report) and Part 2 (Appendices).

Comment LEA3. The Tualatin SWMP Appendices were obtained (Dec 10, 2020) from the City of Tualatin as part of this comment period ending December 15, 2020. A description of the SWMP Appendix request is contained in LEA Supplement A.

Comment LEA4. Some of the comments reference procedures in other areas of Tualatin. For example, Project Opportunity Area 6 – Alesa, aka Capital Improvement Project #17 (CIP17), calls for infiltration/retention that could be erroneously applied to the BFR south area. These procedures will potentially be applied to the hydrologic and hydraulic modeling in BFR south, and possibly any resulting CIP and stormwater design considerations.


Comment LEA5. The Tualatin SWMP does not include any hydrologic or hydraulic (H/H) modeling for stormwater flows in BFR south. The SWMP must include H/H modeling of the BFR south and affected areas such as the Basalt Creek corridor. Stormwater piping, channels, inlets, outfalls and other stormwater related facilities exist in BFR south (see LEA Supplement B Part 2: Appendices B through E) but are undocumented and un-analyzed in the SWMP. A perusal of the Tualatin SWMP Appendices A through C demonstrates that engineering data and analyses have all been omitted for the BFR south area. The SWMP must include stormwater facilities in Figure 2-6 – Stormwater System Overview for the BFR south and affected areas such as the Basalt Creek corridor. Comparison existing and developed future stormwater flow conditions are not performed. Evaluation of stormflows on hazardous steep slopes is omitted. Assessment of downstream conveyances below Tualatin outfalls is not conducted for the BFR south impacted areas. 


Comment LEA6. The Tualatin SWMP does not include any wetlands in BFR south although they do exist. The SWMP Figure 2-5 - Stream Ownership omits the majority of stormwater impacted wetlands in Tualatin. Metro’s Title 13 – Nature in Neighborhoods is intended to protect natural resources in urban areas but none of these opportunities are identified in the Plan for BFR south. The SWMP calls for protecting natural resources in subsections 1.1 Stormwater Master Plan Objectives and 2.2 Future Planning Areas. None of these opportunities are evaluated in the Plan for BFR south especially for the Basalt Creek Concept Plan area.  


Comment LEA7. SWMP Figure 2-3 - Topography and Soils map contains too many TEXT overlays in the vicinity of Boones Ferry Road South of Norwood Road and the Lucini Property.


The sensitive steep slope topography in this vicinity can't be read. The "Boones Ferry" and "Basalt Creek" labels need to be moved from this visually important area of this map.


Comment LEA8. SWMP Table 2-1 (Page 2-3) in combination with Figure 2-3 - Topography and Soils suggests that infiltration is not a likely future runoff design solution in the BFR south. This is particularly important since this area is perched above steep slopes draining to Basalt Creek. This area is also above drinking water wells in the area including the Lucini property.


Comment LEA9. When the SWMP Appendix A - CIP Fact Sheets documentation is accessed for the Siuslaw Water Quality Retrofit, which includes the Alsea Road area (CIP17), there is no mention of infiltration in the design. But Table 3-1, Opportunity Area 6, aka CIP17, plainly refers to infiltration. The potential application of infiltration at the CIP17 site is of concern because it is inappropriate based on poorly draining soils (see next comment). As it relates to the BFR south area, applying the same inappropriate infiltration design approach will potentially cause significant problems (see next comment). 

Comment LEA10. The BFR south area needs to exclude infiltration facilities as an alternative to reducing surface flow. Figure 7-1 (Page 3-2) does not show any CIP in the vicinity of BFR south although potential problems exist (see LEA Supplement B Part 2: Appendix A.2). 


Comment LEA11. SWMP Figure 7-1 does show the location of CIP17, which is additionally described in Table 3-1 - City of Tualatin Stormwater Project Opportunities Number 6 as Alsea/BF Rd and 99th/Siuslaw Greenway. This CIP17 would drain to Hedges Creek and is comprised of "C" type soils as identified by Hydrologic Soil Group (see Section 2.4 -Soils, Table 3-1 and Figure 2-3). "C" type soils poorly drain and do not support functional infiltration facilities. The concern is that the "C" type soils above the Lucini property may be subjected to the same contradictory conclusion as the CIP17 site. This problem of misapplying design solutions may also exist for other conditions because BFR south has not been evaluated by Tualatin for hydrology and hydraulics as well as CIP. 

Comment LEA12. SWMP Figure 2-6 - Stormwater System Overview omits the stormwater inlets, piping and other stormwater facilities in and around BFR south. The Stormwater Outfalls to the Basalt Creek Management Area and Greenhill Lane are not indicated (see LEA Supplement B Part 2: Appendix A.2). Downstream channels below the outfalls are not shown. 

Comment LEA13. The SWMP Section 9 has incomplete References to Clean Water Services (CWS). The CWS document date and title are not current. For consistence in citing standards, the CWS reference must read "Design and Construction Standards" dated December 2019. 

Comment LEA14. Nowhere in the Tualatin SWMP is a Stormwater Field Monitoring or Sampling program identified or proposed. This is despite the fact that Table 3-1 indicates numerous flooding and water quality problems resulting from stormwater flows. Table ES-1 – Capital Project Summary is being proposed without monitoring and sampling program basis. 

Comment LEA15. There is no assessment of peak and average stormflows on the steep slopes, which constitute the west flank of the BFR south area. These Tualatin stormflows discharge to the Basalt Creek Concept Plan area and their existence is not established in the SWMP.

Stormflows on these steep slopes have excessive peak and average flow velocities, which cause erosion (see Supplement B Part 1 Analysis Report Section 4. Stormflow Hydraulics and Part 2 Appendices A2 and I). 

Comment LEA16. The Tualatin SWMP makes no provisions for temporary stormwater storage and discharge facilities when phasing-in large developments such as the Root property in BFR south. The concern is that arbitrary storage and discharge locations could occur in the interim, before the final stormwater facility is operable. It needs to be specified in the Tualatin SWMP that new construction developments must use stormwater facilities and outfalls consistent only with its final specifications and drawings. 