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Subject	Watershed Management Plan Framework	Project Name	Task Order 29: Watershed Management Plan Workplan Development
Attention	Jerry Shuster, Brian Landau	Project No.	673265CH
From	Amy Carlson (Jacobs) John Lenth (Herrera)		
Date	August 23, 2019		
Copies to	Dustin Atchison, Jennifer Madsen, File		

The City of Bellevue (City) requested that Jacobs develop a scope of work and workplan to guide the development of a city-wide Watershed Management Plan (WMP). Jacobs and Herrera (as a subconsultant to Jacobs) performed this task order under the existing Utilities Large On-call Professional Services Storm (2016-2018) Agreement, No. 1650029.000.

As part of this task order, Jacobs and Herrera developed a WMP framework, scope of work, and workplan and did so collaboratively with the City of Bellevue through a series of workshops. The purpose of this memorandum is to summarize the approach and work performed under this task order.

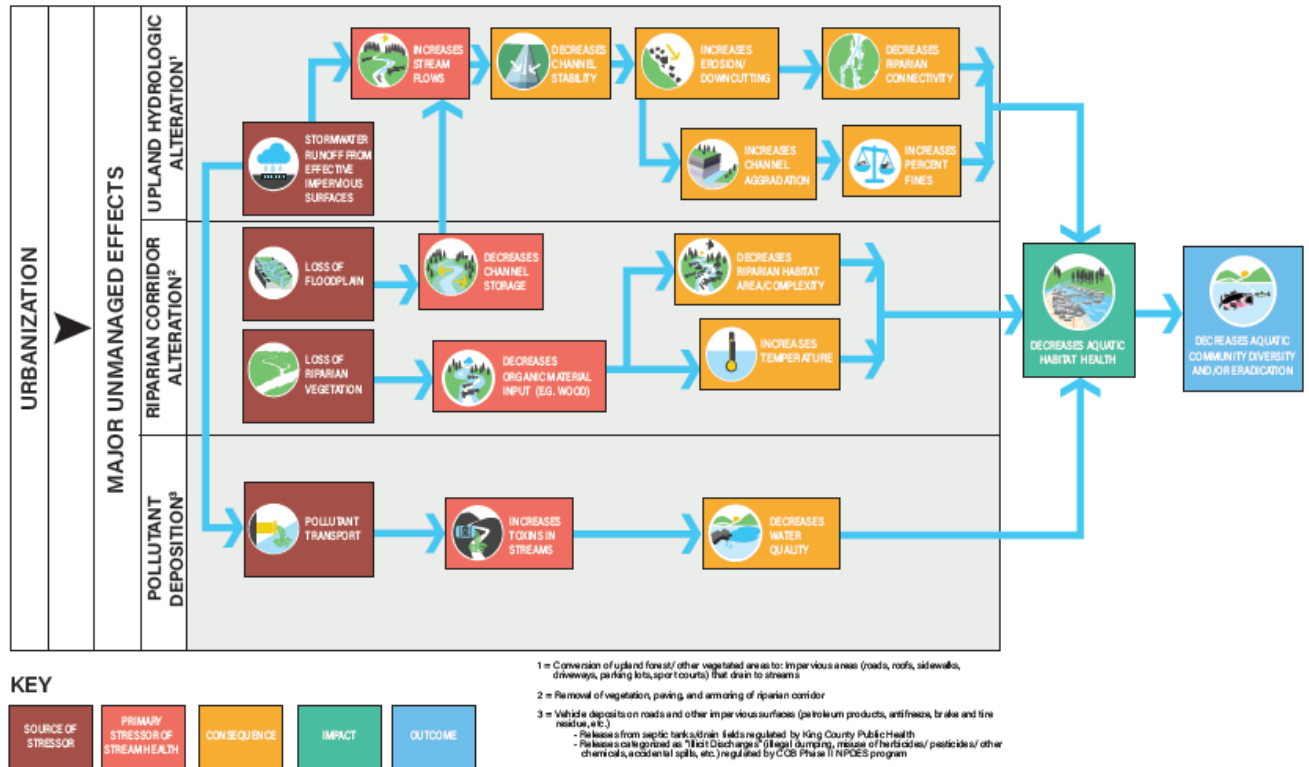
Background and Problem Statement

Urbanization is the primary cause of the decline of aquatic health in Puget Sound lowland streams. Urbanization causes pollutant deposition, riparian corridor alteration, and upland hydrologic alteration that negatively impact aquatic habitats and the communities that depend on them. Figure 1 is a conceptual model developed by the City of Bellevue to aid in watershed planning by illustrating the complexity and interactive nature of the major stressors, consequences, impacts, and outcomes for aquatic habitats and communities from urbanization. Note that this graphic is intended as a high-level summary and might not reflect all of the interdependencies between impacts and stressors, such as wood inputs affecting channel stability and runoff from impervious surfaces affecting temperature. Investments to improve aquatic habitat health can address one or more of the stressors identified in the conceptual model.

The challenge faced by entities tasked with protecting and restoring Puget Sound lowland streams is how, when, and where to make investments to maximize benefit provided using limited resources. The value of embarking on a watershed planning effort is to do just that. The purpose of a watershed planning effort is to develop a portfolio of investments that work in concert to address the most important stressors (such as those presented in Figure 1 below) for a given stream with the goal of restoring aquatic habitat health in the shortest amount of time and for the lowest cost.

Figure 1

Conceptual Model of the Effects of Urbanization on Stream Health



(Conceptual Model developed by City of Bellevue and included here in this memorandum)

Bellevue Watershed Management Plan Goals and Purpose

The City of Bellevue commenced this watershed planning effort focusing on identifying investments for improving the health of Bellevue’s streams using a toolbox of holistic storm and surface water management practices. During development of the framework, scope of work, schedule, and workplan described in this memorandum, the goals and purpose were refined.

The WMP will direct these investments to high priority watersheds to provide measurable environmental benefits to stream health within a shorter time frame compared to the status quo which tends to only focus these investments where development and redevelopment is occurring pursuant to stormwater management regulations and to implement stormwater retrofit projects opportunistically. The WMP will also help prevent further degradation in non-priority watersheds. The WMP will include an implementation plan with recommended projects, programs, policies and operational plans to meet performance goals for Bellevue’s streams, and to provide multiple benefits that help advance City objectives across departments and programs.

The WMP will recommend a diverse portfolio of individual investments (projects, programs, policies, regulatory changes, and operational plans) that together will provide more benefit than the portfolio that would have been developed conducting ‘business as usual’ under the status quo. This benefit can be characterized not just as making progress towards stream health objectives, but also in increasing the quality of life for the residents of and visitors to the City of Bellevue. This may be achieved by using

decision criteria that reflect these multiple benefits to develop and prioritize investments. Investments that provide multiple benefits will score higher and therefore be prioritized over those that don't.

In addition to providing more benefit than the status quo would, the WMP will achieve benefits more cost-effectively. Even if the City of Bellevue were to decide to spend the exact same amount of money on investments as before the WMP, the investments would provide more benefits, and therefore the return-on-investment would be higher. Should the City of Bellevue decide to spend additional funds, the City would know those additional funds would be spent on the right investments that would provide the greatest value. Lastly, with a robust and transparent planning effort such as the WMP, the City of Bellevue may be more successful at obtaining outside funding in the form of grants and may be successful at cost-saving partnerships with the public and private sectors.

The City of Bellevue's WMP will help City staff focus on implementing the highest-value and most cost-effective investments that provide benefits to watersheds and to the people of Bellevue. This will be achieved through an objective and transparent planning process. This WMP will include an adaptive management strategy and performance reporting to track and improve results so as to continuously improve on past performance.

Watershed Management Plan Framework

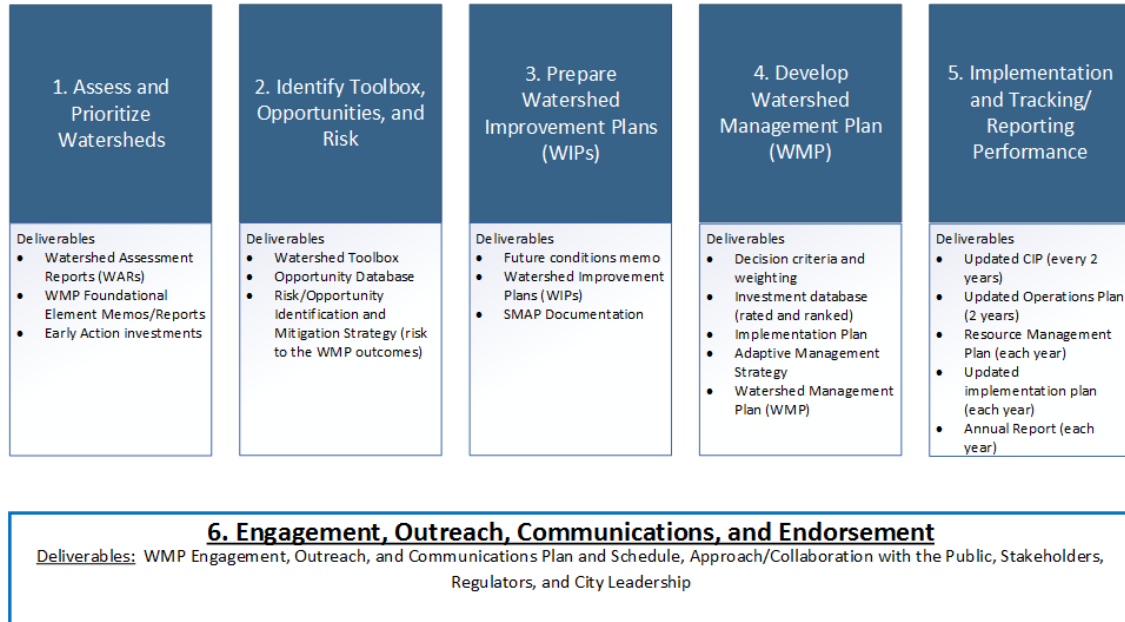
The WMP scoping team (including the City, Jacobs, and Herrera) developed a framework, or approach, to WMP development based on knowledge of and lessons learned from planning efforts of other entities. Figure 2 is a simplified graphical representation of the framework. The WMP Framework is divided into planning elements which are then divided up into Tasks, Sub-Tasks, and Activities. Note that many of these elements are iterative and that these elements are planned in this order but that individual activities can be performed earlier to achieve benefits faster. These are discussed later in this memorandum. Key to the development of the framework was collaboration with the City of Bellevue staff during Workshop #1. The agenda and workshop summary for Workshop #1 (and all workshops) are in Attachment A to this memorandum. A more detailed graphic showing all Tasks, Sub-tasks, and activities is included in Attachment B.

The combined City staff and Consultant project team developed the following definition of terms and descriptions of WMP elements, tasks, sub-tasks, and activities:

- Investments – term used to characterize all the types of things you might do, including capital projects, additional maintenance, operations changes, or programmatic efforts (like education); anything that takes resources
- Performance Goals – the specific objectives for stream health in the watershed; for example: increase the number of returning Salmon, Improve BIBI, reduce peak flows (Might have the same performance goals for all watersheds, with different numerical performance targets (see definition below) based on the priority of the watershed (ex: restore, protect, or status quo)
- Performance Targets – the numerical targets for each of the performance goals; for example: show an increasing trend in salmon returning to Bellevue streams; improve BIBI from Poor to Good; each watershed will have its own numerical performance targets
- Decision Criteria – a set of criteria reflecting stream objectives and multiple other benefits (regulatory requirements, public preferences, open space creation, social justice); Use these decision criteria to rate and rank investments for the implementation plan
- Watershed Assessment Report (WAR) – The report assessing the existing condition of a watershed based on hydrologic, hydraulic, water quality and stream habitat data (ex: presence/absence of stream wood, land use, hydrology, water quality); also characterized: data gaps, if any (what additional data is needed to assess condition?), limiting factors (what is keeping this watershed from being healthy?) (ex: not enough stream wood or erosive peak flows)

Figure 2

Elements of the Watershed Management Plan Framework



- WMP Foundational Elements** – Papers (memos or reports) to document processes and work products that become the building blocks for future planning elements or planning tasks; these will likely include:
 - WMP Framework and Expected Outcomes
 - Define Performance Goals
 - Define Regulatory Strategy - Regulatory requirements for implementing the WMP, including the Stormwater Management Action Plan (SMAP) required by the City’s current municipal stormwater permit issued by the Department of Ecology.
 - Watershed Prioritization - Documentation of the process to identify a sub-set of priority watersheds (also to define watershed versus sub-basin and the scale / detail of planning efforts)
 - Define Performance Targets - For each watershed, basin , or sub-basin, depending on decisions made earlier about scale of planning efforts.
- Watershed Management Toolbox** – A database, or menu, of different tools (or strategies) that could be used to meet watershed management goals; may include Best Management Practices (BMPs), policy/regulatory changes, operational strategies, engineered solutions, management strategies, etc.
- Opportunity Geodatabase** – A GIS database of public property holdings, planned projects and development characteristics that will help staff with identification of opportunities to add community benefit and/or to increase watershed benefit of planned investments. The geodatabase will include early action opportunities.

- Early Action Investment Opportunities – Specific investments that would provide more immediate progress on delivering benefits while the WMP planning process is underway
- Watershed Improvement Plans (WIPs) - These reports will identify what investments the watershed needs (to improve ecological function), independent from other potential benefits (ex: community benefits). The WIPs will:
 - Characterize future conditions (growth, climate change, etc.) and identify/obtain additional data/information needed to be able to define investments (ex: Modeling or monitoring) (key: be clear about what data is needed and why ahead of collecting);
 - Develop specific investments to meet the performance targets (focused on watershed needs, independent from other ancillary benefits or needs) (include planning-level estimate of costs); one WIP for each priority basin;
 - Develop Planning Level Cost Opinions; Outline approximately 3 levels of implementation (low, medium, high), with relative costs; use to inform City decision-making during implementation plan development
- Watershed Management Plan (WMP) – The WMP will mesh watershed (ecological) needs described in the WARs and in the WIPs with regulatory requirements and other community benefits/needs. The WMP will include a compilation of work to date and include all watersheds City-wide. The WMP will include:
 - An implementation plan including phasing and funding strategies with levels of investment based on willingness to pay / affordability;
 - Performance evaluation framework including numerical performance targets
 - An adaptive management strategy specifying next steps should performance lag behind expectations

Watershed Management Plan Scope of Work

Based on the Framework, CH2M developed a Scope of Work for WMP development including specification of deliverables for each task, sub-task, and activity. This Scope of Work was a topic of Workshop #2. The agenda and workshop summary for Workshop #2 are in Attachment A to this memorandum. The Scope of Work is included in Attachment C. The Work Breakdown Structure in the Scope of Work mimics the Task structure in the WMP Framework.

The Scope of Work describes the Tasks, Subtasks, and Activities necessary to prepare, review, and gain endorsement of the WMP regardless of which entity (City or other) performs all or part of the work. This Scope of Work, once completed, will be used along with the other deliverables of this Consultant Task Order to inform City decision-making as to which Tasks, Subtasks, and/or Activities are to be performed by which entity.

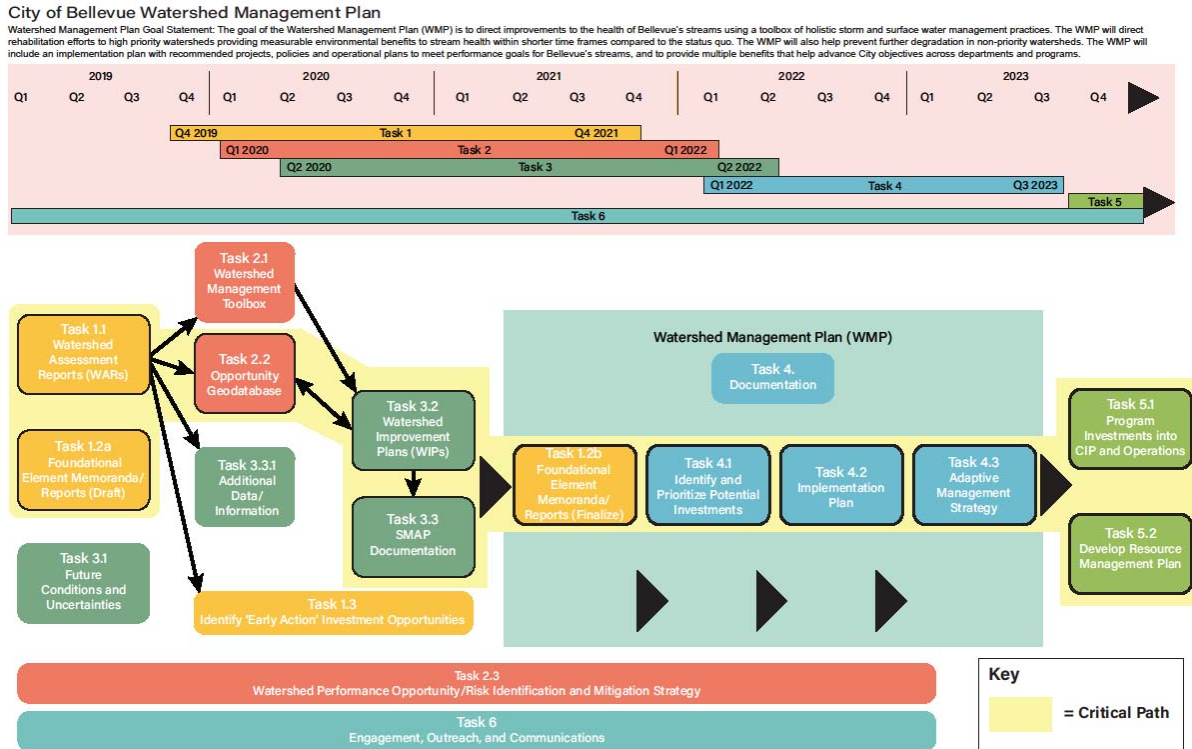
Watershed Management Plan Workplan

Schedule

During Workshop #2, attendees collaborated on phasing of individual tasks, sub-tasks, and activities to inform the development of a schedule. The City wishes to finalize the WMP by the fall of 2023, with early action projects ready to go for inclusion into the Utilities CIP in the fall of 2021. Figure 3 shows the duration and phasing of key tasks and critical path for developing the WMP. A more detailed schedule developed during Workshop #3 is included in Attachment D.

Figure 3

Duration and Phasing of Key Tasks of the WMP



Workplan Tool

Workshop #3 mainly focused on development of a workplan tool including identification of deliverables and specific expertise needed for each task, sub-task, and activity. CH2M and Herrera then developed a planning-level estimate for the level of effort needed to complete each task, sub-task, and activity. Attachment E contains this tool, also delivered to the City of Bellevue electronically in Microsoft Excel format.

Next Steps

The contents of the deliverables from this scoping project will be summarized present to the City of Bellevue Utilities Department Leadership Team for approval to move forward. Should the Leadership Team decide to move forward with the WMP project, CH2M and Herrera recommend that the City proceed with the following tasks between now and the end of 2019, in order to meet the desired schedule for WMP development:

- Sub-Task 1.1 Watershed Assessment Reports (WARs): Review and refine goals and level of detail of WARs; develop Tables of Contents, review level of detail of data collection, commence data analysis on data that has already been collected
- Sub-Task 1.2 Foundational Element Memoranda/Reports: Can commence work on three (3): Document WMP framework, define performance goals, develop criteria and perform watershed prioritization

- Sub-Task 3.1 Define Future Conditions and Uncertainties: Characterize future conditions and uncertainties City-wide; document in a memorandum



Memorandum

Watershed Management Plan Framework,
Scope of Work, and Workplan

Attachment A

Workshop Agendas and Summaries



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MEETING AGENDA

MEETING TITLE	Watershed Management Plan Scoping - Workshop #1
DATE	5/2/2019
TIME	9am-12noon
LOCATION	CH-1E-119

9:00 – 9:15

Introductions and Goals (Amy/Joy)

- Why Amy and Joy?
- Goal of Watershed Management Plan: direct improvements to the health of Bellevue's streams
- Goal of this WMP Scoping Effort: develop the step-by-step approach to meet WMP goal (deliverables: Framework, Scope, Workplan, Cost Estimate; 3 workshops)
- Goal of this Workshop #1: Review and revise draft WMP Framework, consisting of high-level tasks/activities needed to complete a WMP; Desired Outcomes of this Workshop #1:
 - a) Shared understanding of Bellevue work to date, including strategic initiatives
 - b) Receive feedback on the draft framework of the WMP
 - c) Identification of risk (to Bellevue) and concerns with WMP process and outcomes
 - d) On the same page with direction we are headed

9:15 – 9:45

Bellevue's work to date on Watershed Management Planning (Brian/Jerry)

- Strategic Elements – Property, Water Quality, Stream Condition, Stormwater Infrastructure

9:45 – 10:05

Icebreaker (Amy/Joy)

- What was your first paid job?
- What are you most passionate about at your current job? (Why do you do what you do?)

10:05 – 10:15

Break

10:15 – 11:10

Draft Framework (Amy/Joy)

- Planning elements – what's missing? What's not necessary?
- Activities/Tasks – how far do we take certain elements?
- Phasing of individual elements?

11:10 – 11:15

Break

11:15 – 11:45

Risks and Opportunities (Amy/Joy)

- Risk to the process and/or outcomes of this WMP? Opportunities?

11:45 – 12:00

Next Steps and Closing

- Did we achieve the desired outcomes of this Workshop #1?
- Timing/agendas for Workshops #2 and #3



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WORKSHOP SUMMARY

MEETING TITLE	Watershed Management Plan Scoping - Workshop #1
DATE	5/2/2019
TIME	9am-12noon
LOCATION	CH-1E-119
ATTENDEES	Brian Landeau, Jerry Shuster, Kit Paulsen, Michael Krueger, Todd Dahlberg, Christa Heller, Amy Carlson, Joy Michaud (could not attend: Don McQuilliams)

Introductions and Goals (Amy/Joy)

- Goal of Watershed Management Plan: direct improvements to the health of Bellevue's streams (discussion later in workshop about this goal statement: desire to add: usable tool; meaningful, above and beyond regulatory requirements); this isn't just a Utility plan – this is a City-wide plan for water resources
- Goal of this WMP Scoping Effort: develop the step-by-step approach to meet WMP goal (deliverables: Framework, Scope, Workplan (with level of effort/cost); 3 workshops); at end of scoping, City staff to present to BUD for review/endorsement – including WMP goal statement (draft of which was in project charter); understanding/confirming hierarchy and 'line of sight' within the City will be important; key: early ID of tangible things; resulting WMP should not sit on a shelf, must be actionable including early action projects.
- Goal of this Workshop #1: Review and revise draft WMP Framework, consisting of high-level tasks/activities needed to complete a WMP; Desired Outcomes of this Workshop #1:
 - a) Shared understanding of Bellevue work to date and ongoing (streams, water quality, property, infrastructure)
 - b) Receive feedback on the draft framework of the WMP
 - c) Identification of risk (to Bellevue) and concerns with WMP process and outcomes
 - d) On the same page with direction we are headed

Bellevue's work to date on Watershed Management Planning (Brian/Jerry)

- Strategic Elements – Property Management, Water Quality, Open Stream Condition, Primary Stormwater Infrastructure
- These will all inform the Watershed Management Plan, All at various stages of development
- Acknowledging current City staff are very busy
- Initiatives approved but sources of money need to be identified
- A lot has been done in 6 months - developed a WMP framework, started WARs, and begun Open Streams Assessment

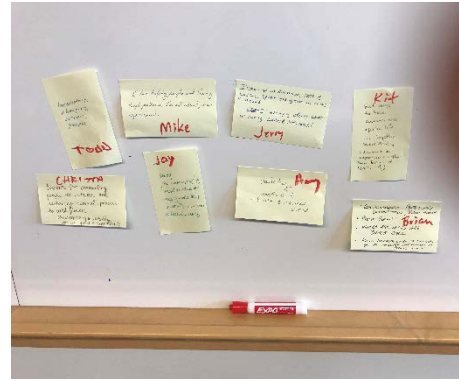
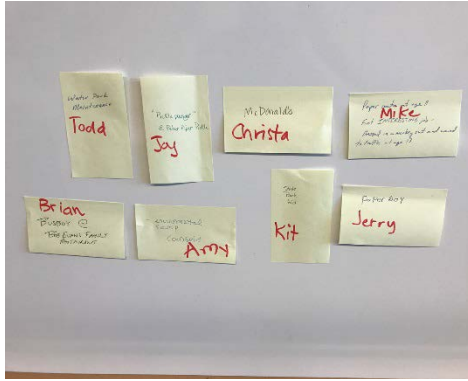
Icebreaker (Amy/Joy)

- What was your first paid job?
- What are you most passionate about at your current job? (Why do you do what you do?)



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WORKSHOP SUMMARY



Icebreaker, continued...

Themes identified in the 'passionate about at your current job' category:

- People/nature
- Variety
- Challenge
- Desire to improve
- Optimism
- Make a difference
- Integration

Draft Framework (Amy/Joy)

Image of presented 'straw dog' Framework

(def: of straw dog: Something presented for discussion purposes, knowing that it will be 'pruned' heavily; intended as a place to start, recognizing the finished product may look very different)



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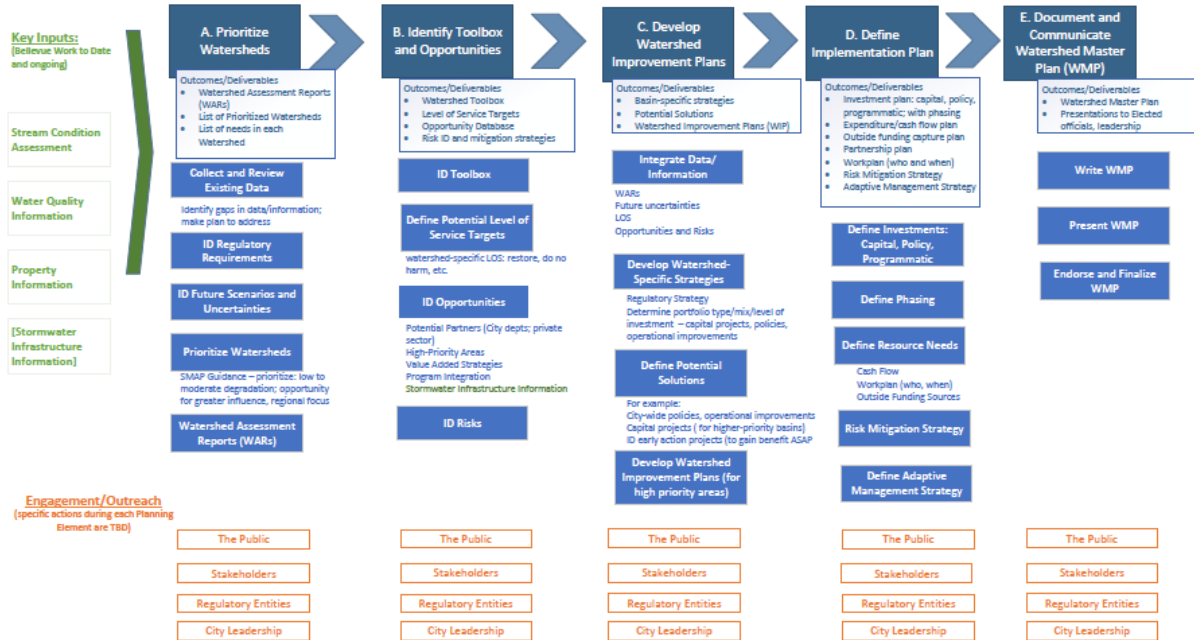
WORKSHOP SUMMARY

City of Bellevue Watershed Management Plan - Framework

Draft for Discussion Purposes Only (revised 5/2/19)

Watershed Management Plan Goal Statement: The goal of the WMP is to direct improvements to the health of Bellevue's streams using a toolbox of holistic storm and surface water management practices. The WMP will direct rehabilitation efforts to high priority watersheds providing measurable environmental benefits to stream health within shorter time frames compared to the status quo. The WMP will also help prevent further degradation in non-priority watersheds. The WMP will include an implementation plan with recommended projects, policies and operational plans to meet level of service (LOS) goals for Bellevue streams.

WMP Planning Elements:



Discussion:

- Defined Elements (A-E) across the top, with 'buckets' as the blue boxes
- Draft Framework is presented as linear when it is not; more iterative, especially in Elements A – C
- Struggle with the framework that shows prioritization ahead of WARs (response: May have to do initial prioritization, that will include identifying the SMAP sub-basin, ahead of being able to do the final prioritization; will re-work this to show dependencies and sequence)
- SMAP – can be a sub-basin within the WAR
- Desire to identify watershed early (even without all the information from stream assessments, etc.), likely Coal Creek (use this as a pilot for WAR); do this by very early assessment – L, M, H; will want community input on which watersheds are important
- Watershed Assessment Reports (WARs) – still need to be fleshed out; Will do a pilot to define but these will be data driven (as opposed to WIPs/WMP which are multiple benefits and prioritization, based on WARs); do these include specific projects, or not? WARs identify areas of "restoration potential" but not specific projects; If watersheds are deemed "Important" by the stakeholders, then the sites with a high "restoration potential" within those watersheds should be turned into projects in the implementation plan.
- Watershed Improvement Plans – should have high-level costs and feasibility assessment – to inform willingness to pay discussions; do these only for high-priority watersheds; do WIPs get modified by social/willingness to pay factors, or are WIPs what's needed by the watershed, then modified by social factors in the implementation plan?
- Need to define – how does this relate to, or 'nest' within, City Comprehensive Plan? (needing a section on integration with GMA to make sure these are included as subarea plans); City to send information on 'line of site' linkages between the plans
- Consistency with sub-area plans will be important – but how much can we actually mesh with this other effort and still be able to get this done?
- Level of Service – discussion around this topic; will need to take a deeper dive into what we mean by this, what other entities have done to define LOS around streams and stream health; will need to manage expectations



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around level of service; Desire to define beneficial uses as part of LOS/performance standards; could start with something simple such as: "Maintain, to the maximum extent, the integrity of stream channels to support biological functions and other designated uses." (Straw Dog.)

- Multiple benefits – discussion around this topic; beneficial uses; who benefits? What about other non-stream benefits?
- [interest in 'heat map' approach to help inform solution development (taking tools and needs, and applying the best tool at the right location)]
- How might we move forward into WMP development without having all the data we'd like or need to have?
- Interest in hearing more about:
 - Bellingham Green Links
 - Redmond, WA (city might meet with Redmond in parallel to this process)
- Add/define to future versions of this framework (next steps; a partial list):
 - Environmental Justice and Social Equity – when/how to screen for these elements
 - Definitions – for example, the differences between Watershed Assessment Report (WAR), Watershed Improvement Plan (WIP), Implementation Plan, Watershed Master Plan (WMP)
 - Show outcomes of WMP as its own column on the right side of the page
 - Rationale as to why we've broken out the individual elements and buckets – case studies/lessons learned
 - Identification of tangible benefits/projects– show this on the framework (at each element/stage, can do this to some level) (SMAP watershed – early actions! That sub-basin will likely be in a watershed)
 - Better definition of outcomes/deliverables and of inputs to the next element
 - Labels – letters for elements (A-E) and/or numbers for buckets (A1, E3, etc.)
 - Outline what are we trying to achieve and who is responsible – for each element
 - Needs to include discussions on what type of engagement/outreach activity during each of the 5 elements
 - For Workshop #2: discuss sequencing of each element and bucket

Risks and Opportunities (Amy/Joy)

b

- Risks identified:
 - Risk to the process and/or outcomes of this WMP? Opportunities?
 - Perceived as 'need to do' rather than 'want to do'
 - Misalignment with larger planning efforts (ex: King County, Ecology)
 - Bogs down process – trying to do too much, takes longer, confuses stakeholders/others
 - BUD/Council decreases utilities' current efforts
 - BUD/Council writes off "streams"
 - Don't use all existing data because lack of resources
 - Lack of leadership or community support for action items
 - Timeline – missed opportunities? (already in 2019)
 - One or more of the improvements are met with this statement from stakeholders: "There goes our City, planning in a vacuum [again]!"
 - WMP plan becomes mired in competing priorities and dies before ever taking action
 - Changing laws, policies, and priorities add complexity or prohibitive costs before project implementation
 - We are doing this 10 years too late (or 20?)
 - Stakeholders turn this into a salmon-centric plan without looking at other beneficial uses
- Opportunities identified:
 - Buy-in by the community – inclusivity, education/outreach, engagement
 - Inform and influence regulatory processes?
 - Identify off-site mitigation opportunities for internal (COB) and external projects
 - Integrate between departments for projects, programs, acquisition, etc.
 - True 'one city' efforts that provide larger lift and benefits
 - Coordinated impact across departments: Utilities, parks, transportation, urban planning, etc.
 - Environmental improvements increase the quality of streams across the City
 - Clear understanding of what we are trying to achieve
 - Improved sequencing of projects for the CIP

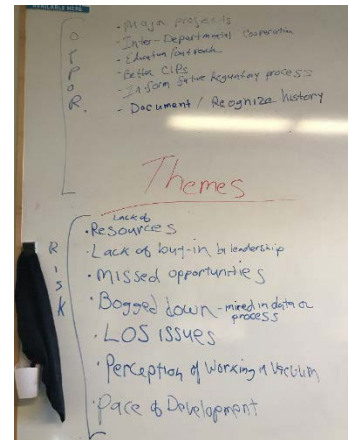


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- Build stronger communications between divisions, departments, community
- Prioritized list of CIPs for storm portfolio
- Improves planning efforts with parks and transportation
- Speed up stream recovery – ya!
- Do more with less
- Access to multiple funding opportunities
- Acknowledge the warts; do something meaningful!
- Provide watershed improvements that are fiscally sound, benefit water quality and/or the environment, and are acceptable to stakeholders
- Include parks, transportation, and planning/land use on project team to flesh out opportunities
- Development may improve stream/water health
- Prioritized action plan for future work – always have a ‘wish list’ or something to strive for
- Document current status of stream condition and community interests/desires
- Historian; documentation
- Big projects in the City: Bellevue Grand Connection – opportunities to work together

Identified themes (for both risks and opportunities) that we heard multiple times and/or that resonated with the group:

- Risk: lack of resources, leadership buy-in (or not), missed opportunities, bogged down in the process of getting data, level of service discussions, perception of working in a vacuum, pace of development (are we too late?)
- Opportunities: major projects by others (City, others), inter-departmental coordination, education/outreach, better CIPs, inform future regulatory decision-making/processes/requirements, document/recognize history and how far we’ve come



Next Steps and Action Items

- Develop agendas for Workshops #2 and #3
 - Workshop #2: sequencing, integration, and dependences, WBS, top task; also: engagement/outreach buckets (other things?). Focus on big picture elements
 - Workshop #3: Workplan, LOE, resources
- Workshop #2 Materials to the team by Tuesday May 28th for June 3rd workshop, will likely include: agenda, updated framework, straw dog sequencing, outreach/engagement buckets on the framework, plus examples of, and descriptions of level of detail for, the WAR, WIP, implementation plan, and WMP
- Risks and Opportunities: did a great job during this workshop of identifying risks and opportunities for the process, now need to do it for the outcomes
- Provide background/examples/case studies:
 - Case Studies: Come to Workshop #2 with case studies (topics TBD – Brian/Jerry to decide on case studies/deep dives);
 - Examples: Prior to Workshop #2 send example Watershed Improvement Plans (WIPs) and Implementation Plans to team
 - Examples: Elements working together (A-E) (how does it all work in sync?), the value of an implementation plan?
 - Examples: come prepared to share why we are recommending the breakdown of elements and buckets in the Framework (refer to other WMPs we’ve done elsewhere)
 - Examples: Integrating transportation, parks, and other city department’s plans/agendas/projects (asset management, then implementation too)



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MEETING AGENDA

MEETING TITLE	Watershed Management Plan Scoping - Workshop #2
DATE	6/3/2019
TIME	9am-12noon
LOCATION	CH-1E-119

9:00 – 9:15

Welcome and Goals (Amy/John)

- (re-)Introductions
- Review Goals:
 - a) Goal of Watershed Management Plan: improvements to the health of Bellevue's streams
 - b) Goal of this WMP Scoping Effort: develop the step-by-step approach to meet WMP goal
 - c) Recap of Workshop #1: WMP Framework; outlined risks and opportunities
 - d) Desired Outcomes of this Workshop #2:
 - Consensus on bundles (or tasks) – all that we need are included (ex: A2, D3, etc.)
 - Work Breakdown Structure (WBS) of scope of work; Sequencing (or phasing) of tasks
 - List of deliverables for each Element
 - e) Workshop #3 focus: durations and schedule; workplan; cost/level of effort (who and when)

9:15 – 10:00

WMP Framework – revised draft (Amy/John)

- Other definitions we should include? (see back page)
- Additional bundles (tasks) needed?
- Activities we missed?
- Comments on list of Deliverables (under each Element)?

10:00 – 10:15

Break

10:15 – 11:45

Sequencing/Phasing of Tasks (Amy/John)

- What Elements, Tasks, and Activities are currently in progress?
- What additional Activities can be started right away? (don't have predecessors)
- What can be done concurrently?
- Where in the framework do we have iterative processes? (ex: communication and implementation)

11:45 – 12:00

Next Steps and Closing

- Did we achieve the desired outcomes of this Workshop #2?
- Timing/agenda/outcomes for Workshop #3



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WORKSHOP SUMMARY

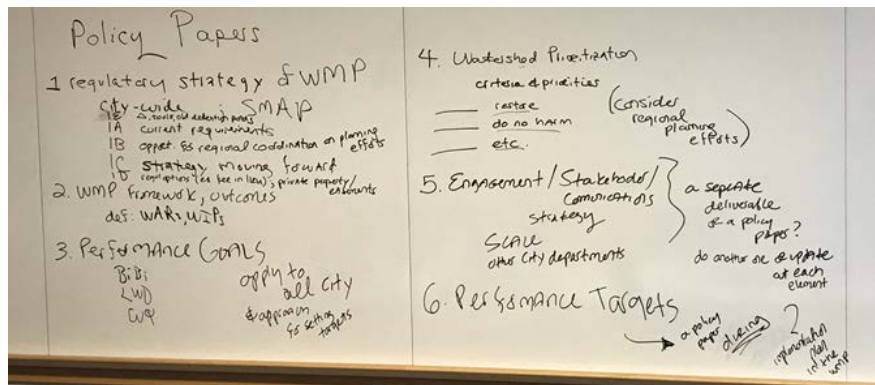
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Welcome and Goals (Brian/Jerry)

- Goal of Watershed Management Plan: improvements to the health of Bellevue’s streams
- Goal of this WMP Scoping Effort: develop the step-by-step approach to meet WMP goal
- Recap of Workshop #1: WMP Framework; outlined risks and opportunities
- Desired Outcomes of this Workshop #2:
 - a) Consensus on bundles (or tasks) – all that we need are included (ex: A2, D3, etc.)
 - b) Work Breakdown Structure (WBS) of scope of work; Sequencing (or phasing) of tasks
 - c) List of deliverables for each Element
- Workshop #3 focus: durations and schedule; workplan; cost/level of effort (who and when)

WMP Framework – revised draft (Amy/John)

- Confirmed/revised tasks, including new tasks: Watershed Management Policy Papers (WMPPs)
- Identified need to define (or document previous work on) scale of planning efforts: watershed, sub-basin-etc.
- Feedback – to split up D1 Implementation Plan into two separate tasks: Identify & prioritize investments (D1) and Implementatin Plan (D2).
- Defined anticipated Policy Papers (see picture to the right):
 - a) Document WMP Framework; include descriptions of definitions of WMP, WIP, WMPPs, and WARs; describe expected outcomes of the WMP process (as described in the WMP Goal Statement – including ‘measurable benefits to streams, faster than status quo, and others)
 - b) Define Performance Goals (City-wide versus watershed)
 - c) Define regulatory strategy (and regulatory requirements, including SMAP guidance and/or requirements)
 - d) Perform Watershed Prioritization (and document the process to identify this sub-set of priority watersheds; also need to define watershed versus sub-basin and the scale / detail of planning efforts)
 - e) Define Performance Targets (for each watershed, basin , or sub-basin, depending on decisions made earlier about scale of planning efforts).
 - f) Engagement/Stakeholder strategy – while listed initially as a Policy Paper, this was pulled from this list of Policy Papers and instead is listed as a separate deliverable under the Engagement/Outreach Top Task
- Identified need to develop an engagement, outreach, and a communicaitons plan and schedule, including: input from, decisions by, coordination with, and/or communicaitons to: the public, regulators, City Leadership, other City Departments (these activities will occur during each of the Planning Elements A-E.)





Utilities

- Further refined list of deliverables for each Planning Element and also Engagement/Outreach efforts
- Finalized list of planning elements and tasks (which will be the basis for the Scope of Work):
 - A. Assess and Prioritize Watersheds
 - A1 Watershed Assessment Reports (WARs)
 - A2 Watershed Management Policy Papers (WWPPrs)
 - A3 Identify 'early action' investments
 - B. Identify Toolbox, Opportunities, and Risk
 - B1 Watershed Toolbox
 - B2 Opportunity Database
 - B3 Risk Identification and Mitigation Strategy
 - C. Prepare Watershed Improvement Plans
 - C1 Future Conditions and Uncertainties (see note below defining what this is, pending review by the City)
 - C2 Additional data/information
 - C3 Watershed Improvement Plans (WIPs)
 - D. Develop Watershed Management Plan
 - D1 Identify and Prioritize Investments
 - D2 Implementation Plan
 - D3 Adaptive Management Strategy
 - D4 Documentation
 - E. Implement Watershed Management Plan
 - E1 Program Investments into CIP and Operations
 - E2 Develop Resource Management Plan
 - F. Engagement, Outreach, Communications, and Endorsement (activities occur during each of the WMP Planning Elements A-E)

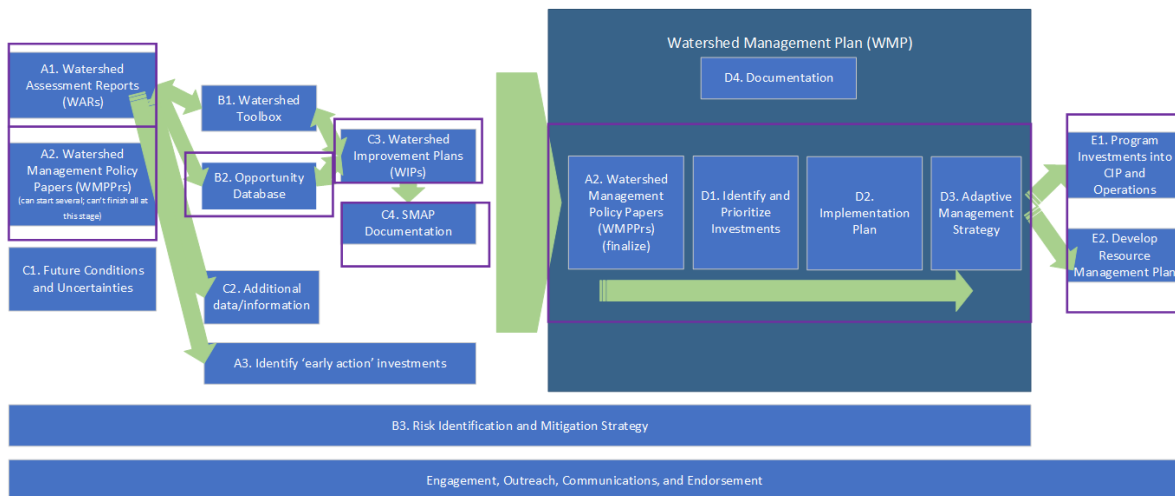
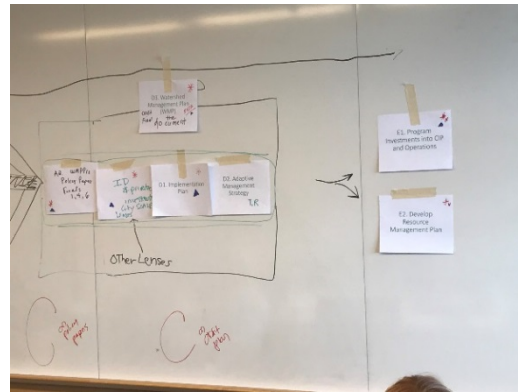
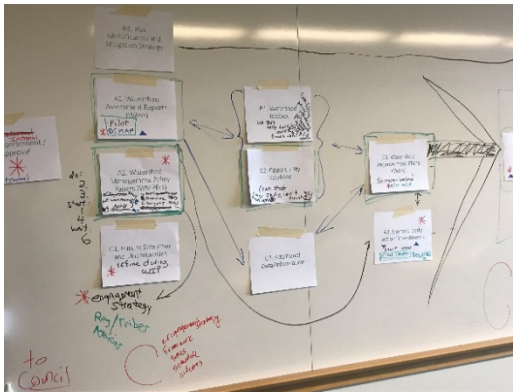
Sequencing/Phasing of Tasks (Amy/John)

- The team storyboarded the individual tasks (see photo below, with a summary of phasing identified during the workshop shown on the diagram, also below)
- Tasks are currently in progress: A1 Watershed Assessment Reports and A2 Watershed Management Policy Papers
- Tasks that could be started immediately: B3 Risk Identification and Mitigation Strategy and C1 Future Conditions and Uncertainties (note: potential look/feel/content of these deliverables are described below; will be discussed with the City ahead of specifying in Scope of Work)
 - B3 Risk Identification and Mitigation Strategy: Prepare risk register (starting with risks/opportunities identified during Workshop #1 and identifying additional risks), include probability and consequence of risk for each, develop mitigation strategy for each; do we include both Risks and Opportunities in this Register? Deliverable: Spreadsheet Risk Register
 - C1 Future Conditions and Uncertainties: Technical Memorandum; characterization of potential future conditions and acknowledgement of uncertainties; not quantification of how things might change, just discussion; applies City-wide, so one memo prepared for entire City (basin-specific information will be in WIPs)
- Tasks that have to wait until the very end: E1 Program Investments into CIP/Operations and E2 Develop Resource Management Plan
- Tasks that are ongoing throughout the process: Engagement/Outreach, B3 Risk Identification, A3 Identify Early Action Investments
- Tasks that need to be substantially complete before D1 (ID and prioritize investments) and D2 (Implementation Plan) can start: A1, A2, B1, B2, C1, C2, C3, C4
- Which Watershed Management Policy Papers under A2 can be done when?
 - Start and finish immediately:
 - Document WMP Framework and expected Outcomes
 - Define Performance Goals (City-wide versus watershed)
 - Can start but refine as process continues:



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- Define regulatory strategy (and regulatory requirements, including SMAP guidance and/or requirements)
- Perform Watershed Prioritization (and document the process to identify this sub-set of priority watersheds; also need to define watershed versus sub-basin and the scale / detail of planning efforts)
 - Start later: Define Performance Targets (for each watershed, basin , or sub-basin, depending on decisions made earlier about scale of planning efforts)
- Critical path items (defined as: Can't move forward without these substantially complete)
 - A2 Policy Papers, C3 Watershed Improvement Plans, final SMAP prepared during C4, D1 ID investments, D2 Implementaiton Plan
- During which tasks does outreach/engagement occur (working draft list)?
 - Public engagement (input from) and other stakeholders: A2, C3, E1
 - Regulators: A1, A2, C4
 - City leadership (decision-making): A2, A3, B3, C1, C3, D1, D2, D3, E1, E2



PURPLE = critical path

Next Steps and Action Items

- Develop agenda for Workshop #3 (Brian, Jerry, John, and Amy developing this)
- Workshop #3 Materials to the team by Friday July 5th for July 11th workshop



Utilities

MEETING AGENDA

MEETING TITLE	Watershed Management Plan Scoping - Workshop #3
DATE	7/11/2019
TIME	10:30AM – 1:30PM
LOCATION	CH-1E-110

10:30-10:45 **Welcome and Goals (Amy/John)**

- Review Goals:
 - a) Goal of Watershed Management Plan: Improve the health of Bellevue's streams
 - b) Goal of this WMP Scoping Effort: develop the step-by-step approach to meet WMP goal
 - c) Recap of Workshop #1: WMP Framework; outlined risks and opportunities
 - d) Recap of Workshop #2: update WMP Framework, WBS for SOW; Sequencing/Phasing
 - e) Desired Outcomes of this Workshop #3:
 - Durations/Schedule – understand deadlines, and confirm durations required to meet schedule expectations
 - Workplan - Level of Effort/Resources Required to meet schedule

10:45 – 11:00 **Risks/Opportunities (Amy)**

- Follow-up discussion from Workshop #1 on risks/opportunities
- Proposed approach for outlining/managing risks/opportunities during WMP development:
 - a) Risk/opportunity register - WMP goals (i.e. stream health; ex: investments do not provide the level of habitat restoration desired)
 - b) Risk/opportunity register - WMP development and process (i.e. project risk; ex: lack of endorsement of WMP document from City leadership)

11:00 – 12:00 **Durations/Schedule (John)**

- Deadlines that drive the WMP schedule – what are these? SMAP, inform CIP, ahead of (and to inform) storm/surface water master plan development
- Durations for Tasks to meet these deadlines?
- Durations for Subtasks and Activities to meet these deadlines? (potential deep dive discussion: WAR development for the four watersheds – Kelsey, Coal, Lake Washington, Lake Sammamish)

12:00 – 12:15 **Break/Lunch**

12:15 – 1:15 **Workplan (Resources Needed to Meet Schedule) (Amy)**

- What expertise is needed for each Subtask and Activity?
- What do the deliverables for each Subtask and Activity look like?
- Resources needed for Subtasks and Activities to meet these deadlines? (potential deep dive: WAR development for the four watersheds – status and what's needed for each and when)

1:15-1:30 **Next Steps and Closing**

- Next steps and timing



Utilities

WORKSHOP SUMMARY

MEETING TITLE	Watershed Management Plan Scoping - Workshop #3
DATE	7/11/2019
TIME	10:30AM-1:30PM
LOCATION	CH-1E-110
ATTENDEES	Brian Landeau, Jerry Shuster, Kit Paulsen, Michael Krueger, Don McQuilliams, Todd Dahlberg, Christa Heller, Amy Carlson, John Lenth

Welcome and Goals (Amy/John)

- Goal of Watershed Management Plan: Improve the health of Bellevue's streams
- Goal of this WMP Scoping Effort: develop the step-by-step approach to meet WMP goal
- Recap of Workshop #1: WMP Framework; outlined risks and opportunities
- Recap of Workshop #2: update WMP Framework, WBS for SOW; Sequencing/Phasing
- Desired Outcomes of this Workshop #3:
 - a) Durations/Schedule – understand deadlines, and confirm durations required to meet schedule expectations
 - b) Approach for outlining/mitigating risks and opportunities
 - c) Workplan - Level of Effort/Resources Required to meet schedule

Risks and Opportunities (Amy)

- Follow-up discussion from Workshop #1 on risks/opportunities
- Proposed approach for outlining/managing risks/opportunities during WMP development:
 - a) Risk/opportunity register - WMP goals (i.e. stream health; ex: investments do not provide the level of habitat restoration desired)
 - b) Risk/opportunity register - WMP development and process (i.e. project risk; ex: lack of endorsement of WMP document from City leadership)
- During workshop, the team updated a preliminary draft set of risk/opportunity registers – see attached updated risk registers reflecting our discussion; these risk/opportunity registers can serve as a starting point for risk register development during WMP delivery

Durations/Schedule (John)

- Presented a preliminary draft task-level schedule (provided as a PDF ahead of the meeting) showing key dates: finish ahead of stormwater master plan development, considering SMAP deadlines, and in time to inform CIP development 2 years from now
- Comments from the team, with schedule updated in real time:
 - a) WIPs don't have to be complete ahead of August 1, 2021 date, but 'early actions' and placeholders should be
 - b) Stream data collection is on-going – nearly done with Coal; just starting Kelsey now; at current staff levels, will finish data collection in December 2021; projecting 0.3 miles a day of stream
 - c) Now with draft permit out, SMAP deadline is now March 31 2023
 - d) 10 year planning window; with 25 or 30 years included in future conditions characterization
- See updated schedule (attached); consultant team will now take this schedule and outline resources needed to meet this schedule (see 'Workplan' below)

Workplan (Resources Needed to Meet Schedule) (Amy)

- For scoping purposes, assume four watersheds: Kelsey, Coal, Small Lake Sammamish (including Lewis), and small Lake Washington
- Add Subtask 5.3 to Task 5 (Implement WMP); this really needs an additional sub-task/activity for all the tracking/reporting that happens over the next 10 years (will update Framework) – call it: Tracking and Reporting Performance



WORKSHOP SUMMARY

Utilities

-
- Discussion focused on expertise/deliverables, with draft of each distributed as a PDF ahead of the meeting; Comments on expertise/deliverables:
 - a) City is resource-limited in: GIS mapping and analysis; GIS support; public engagement (though are soon to have a PIO), habitat biologist, water quality scientist
 - b) City doesn't have in-house (or resources are focused elsewhere): fluvial geomorphologist, H&H modeling, financial analyst (rather than a pure economist), land use planner, policy analyst, ESJ expert, data analyst/statistician, graphic artist
 - c) For each deliverable: outline, draft, revised draft, and final
 - d) As early step – need to outline review process – what documents go to the public versus internal City decision-makers, and is their function review/endorsement, or are part of the preparation of that deliverable?
 - e) As early step – need to determine templates for deliverables – look/feel, and audience (and level of detail, etc.)
 - f) See attached PDF of an updated list of scope tasks and deliverables reflecting the conversation



Memorandum

Watershed Management Plan Framework,
Scope of Work, and Workplan

Attachment B

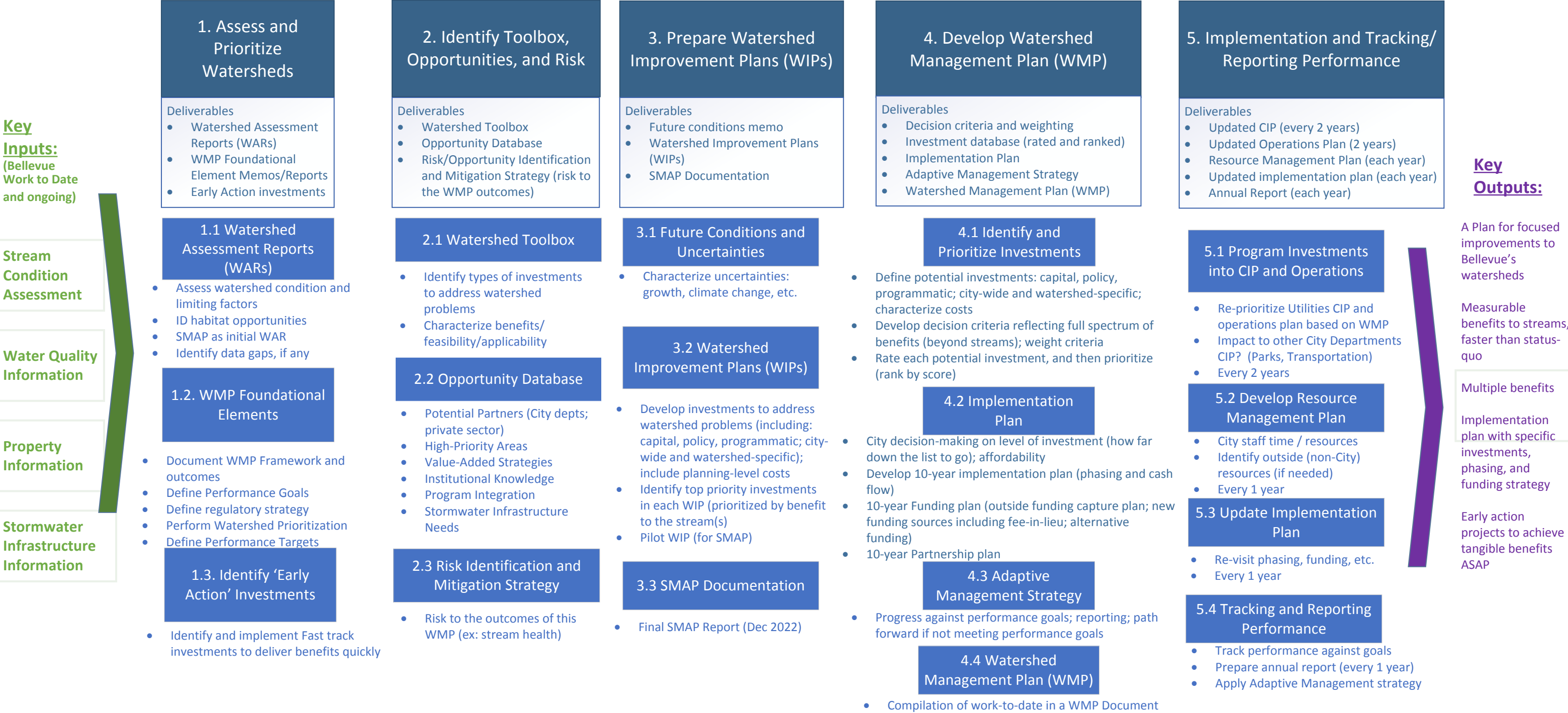
Watershed Management Plan Framework

City of Bellevue Watershed Management Plan - Framework

Last revised: 7/29/19

Watershed Management Plan Goal Statement: The goal of the Watershed Management Plan (WMP) is to direct improvements to the health of Bellevue’s streams using a toolbox of holistic storm and surface water management practices. The WMP will direct rehabilitation efforts to high priority watersheds providing measurable environmental benefits to stream health within shorter time frames compared to the status quo. The WMP will also help prevent further degradation in non-priority watersheds. The WMP will include an implementation plan with recommended projects, policies and operational plans to meet performance goals for Bellevue’s streams, and to provide multiple benefits that help advance City objectives across departments and programs.

Watershed Management Plan (WMP) Planning Elements:



6. Engagement, Outreach, Communications, and Endorsement

Activities occur during each WMP Planning Element: Input from, decisions by, coordination with, and/or communications to: The public, regulators, City leadership, other City Departments

Deliverables: WMP Engagement, Outreach, and Communications Plan and Schedule, Public Meetings/Communications, Coordination with Regulators, activities with City Leadership (including City Council)

DEFINITIONS

INVESTMENTS – term used to characterize all the types of things you might do, including capital projects, additional maintenance, operations changes, or programmatic efforts (like education); anything that takes resources

PERFORMANCE GOALS – the specific objectives for stream health in the watershed; for example: bring back Chinook Salmon, Improve BIBI, Reduce peak flows (*Might have the same performance goals for all watersheds, with different numerical performance targets (see definition below) based on the priority of the watershed (ex: restore, protect, or status quo)*)

PERFORMANCE TARGETS – the numerical targets for each of the performance goals; for example: bring back 200 chinook salmon; improve BIBI from Poor to Good; each watershed will have its own numerical performance targets

DECISION CRITERIA – a set of criteria reflecting stream objectives and multiple other benefits (regulatory requirements, public preferences, open space creation, social justice); Use these decision criteria to rate and rank investments for the implementation plan

WAR – Watershed Assessment Report

- **Purpose:** assess existing condition of the watershed (ex: presence/absence of LWD, land use, hydrology, water quality)
- identify data gaps, if any (what additional data is needed to assess condition?)
- characterize limiting factors (what is *keeping this watershed from being healthy?*) (ex: *not enough LWD or erosive peak flows*)
- Identify restoration sites/opportunities

WMPPrs – Watershed Management Policy Papers

- **Purpose:** prioritize watersheds; develop the performance goals and targets (aka LOS) from which to develop the WIP and WMP; ‘plate up’ these goals and targets for City decision-making about affordability and willingness to pay; develop regulatory strategy
- Document the process to identify sub-set of priority watersheds (transparent, objective process vetted by stakeholders)
- Identify regulatory requirements (current and potential future); SMAP guidance/requirements
- Develop watershed performance goals and performance targets for each watershed – city-wide performance goals? (ex: restore X watershed; maintain Y watershed; if restore, then want to improve BIBI from Fair to Good in X watershed)
- Review of draft watershed performance goals and targets by City leadership; decision made (iterative process)

WIP – Watershed Improvement Plan

- **Purpose:** identify what investments the watershed needs (for ecological function), regardless of other considerations/benefits
- characterize future conditions (growth, climate change, etc.)
- Obtain additional data/information needed to be able to define investments (ex: Modeling or monitoring) (key: be clear about what data is needed and why ahead of collecting)
- Develop specific investments to meet the performance targets (focused on watershed needs, independent from other ancillary benefits or needs) (include planning-level estimate of costs)
- one WIP for each priority basin
- Will want to include community desires/preferences at this stage
- Enough detail to develop costs
- Outline approx 3 levels of implementation (low, medium, high), with relative costs; use to inform City decision-making during implementation plan development

Watershed Management Plan

- **Purpose:** develop implementation plan to mesh watershed (ecological) needs with regulatory requirements and other benefits/needs (one implementation plan includes all investments across the City), including phasing and funding strategy; level of investment based on willingness to pay / affordability; specify adaptive management strategy (how will we know if we are successful and what to do if we aren’t); document work to date
- Develop prioritization criteria that reflect multiple benefits – ecological (watershed) benefit, regulatory requirements, nexus with other efforts – City Transportation, Parks, etc.), environmental and social justice, etc.; develop weighting of these criteria
- Rate each potential investment identified in WIPs (or WARs) against weighted criteria (result: A long list of potential investments ranked by benefit provided)
- City leadership decision – how far down the list do you go in Year 1, Year 2, or 6 year CIP?
- Develop implementation plan (for first X years – first 6 years? For 20 years?) with phasing, priorities, cash flow
- Identify financing and partnering options – traditional, alternative delivery, green municipal bonds (DC Water example for funding GSI), P3s, business community partnerships (ex: Amazon, REI), ERC
- Develop adaptive management strategy (re-sorting of the list (yearly?); what to do differently if this approach isn’t working? If surprise grant funding, what do you do first? Develop performance metrics and monitoring plan to understand if this WMP is working)
- *Questions to the City for this scoping effort: duration of first implementation plan? 5 years?*



Memorandum

Watershed Management Plan Framework,
Scope of Work, and Workplan

Attachment C

Watershed Management Plan Scope of Work

Bellevue Watershed Management Plan Scope of Work

Last revised: 8/23/19

Background and Introduction

The City of Bellevue (City) requested that Jacobs and Herrera develop a scope of work and workplan collaboratively with the City that will guide the development of a city-wide Watershed Management Plan (WMP). JACOBS and Herrera (as a subconsultant to JACOBS) performed this Consultant Task Order under the existing Utilities Large On-call Professional Services Storm (2016-2018) Agreement, No. 1650029.000.

The City's Goal Statement for this WMP: *"The goal of this WMP will be to direct improvements to the health of Bellevue's streams using a toolbox of holistic storm and surface water management practices. The WMP will direct rehabilitation efforts to high priority watersheds providing measurable environmental benefits to stream health within shorter time frames compared to the status quo. The WMP will also help prevent further degradation in non-priority watersheds. The WMP will include an implementation plan with recommended projects, policies and operational plans to meet performance goals for Bellevue's streams, and to provide multiple benefits that help advance City objectives across departments and programs."*

This Scope of Work follows the WMP framework, also developed as part of this Consultant Task Order. The WMP Framework described Planning Elements numbered 1-5 with a callout for Engagement, Outreach, Communications, and Endorsement as a separate element (Element #6) cross-cutting across the other elements. This Scope of Work is organized similarly, with each Element now numbered as a Task and with the addition of a Management Task:

- 1 Assess and Prioritize Watersheds
- 2 Identify Toolbox, Opportunities, and Risk
- 3 Prepare Watershed Improvement Plans
- 4 Develop Watershed Management Plan
- 5 Implement Watershed Management Plan
- 6 Engagement, Outreach, Communications, and Endorsement
- 7 Management (Project Management, Contract Management, Resource Management)

Individual **Tasks** (1., 2., etc.) are broken down into **Subtasks** (1.1, 1.2, etc.) which are then further broken down into **Activities** (1.1.1, 1.1.2). Deliverables for each Task and Subtask are identified.

Assumptions of this Scope of Work

- This Scope of Work describes the Tasks, Subtasks, and Activities necessary to prepare, review, and gain endorsement of the WMP regardless of which entity (City or other) performs all or part of the work. This Scope of Work, once completed, will be used along with the other deliverables of this Consultant Task Order to inform City decision-making as to which Tasks, Subtasks, and/or Activities are to be performed by which entity.
- The Workplan developed as part of this Task Order is a separate deliverable as a Microsoft Excel spreadsheet and includes characterization of phasing, schedule, and level of effort required by area of expertise for each task, sub-task, and activity.

- All deliverables will have the following submittals: outline, draft, revised draft, and final; further characterization of the deliverables for each sub-task and activity is included in the Workplan
- Coordination within the WMP team in the form of phone calls, meetings, etc. focused on the development of work products for a specific task, sub-task or activity are scoped within that task (for example, meetings between City Staff and their Consultant specific to task 1.1.2 are included in the scope of work for task 1.1.2); Meetings and coordination with the public, other city entities, regulatory entities, and/or city leadership, regardless of topic, are included in the scope for Task 6 (Engagement, Outreach, and Communications)

Scope of Work

1. Assess and Prioritize Watersheds

*(Milestone Deliverables from this Task: Watershed Assessment Reports (WARs), Foundational Elements Memoranda/Reports, Early Action Investment Opportunities)
(Engagement Outreach Communications and Endorsement Activities for this Task: High degree of engagement; See table below under Task 6 for specifics)*

1.1. Watershed Assessment Reports (WARs)

Purpose: To characterize existing conditions of watersheds. This information will be used to assess limiting factors, identify opportunities for improving watershed health, and to identify data gaps. (Assumption: coordination required considering SMAP requirements.)

Deliverables: One (1) Report for each of four (4) watersheds: Kelsey Creek, Coal Creek, Small Lake Washington Tributaries and Subbasins, Small Lake Sammamish Tributaries and Subbasins; each WAR has 'brochure'/Executive Summary for external audience; Assumption: WARs are based on existing conditions and status quo behaviors/actions (future conditions will be reflected in WIPs) The activities that are planned as part of this Sub-Task include:

- 1.1.1. Inventory Available data
- 1.1.2. Assess watershed condition and limiting factors (assumption: the foundation element memo on performance goals will influence how condition and limiting factors are assessed – for example: flow statistics, habitat measures, BIBI, etc.)
- 1.1.3. Identify habitat restoration or other opportunities observed during the assessment (characterization of opportunities to invest only; no specific investments identified at this point)
- 1.1.4. Identify data gaps (if any)
- 1.1.5. Watershed Assessment Reports (WARs)

1.2. Foundational Element Memoranda/Reports

Purpose: The process of developing Foundational Elements on key topics related to WMP development will provide more discrete opportunities for gaining input on these topics from decision makers and will coincidentally build support for critical decisions from decision makers.

Deliverables: The order of the deliverables is reflected in the numbering below. Some of these elements can be completed as stand-alone documents and some will be initially drafted then finalized later in the WMP development process:

- 1.2.1. Document WMP Framework (memo)
- 1.2.2. Define Performance Goals (memo)
- 1.2.3. Define regulatory requirements and compliance strategy (including Stormwater Management Action Plan [SMAP – Municipal Stormwater Permit requirement] (memo)
- 1.2.4. Develop Criteria and Perform Watershed Prioritization (report)
- 1.2.5. Define Performance Targets (report)

1.2.6. Yet to be identified needed ‘foundational element’ report(s) included as placeholder

1.3. Identify ‘Early Action’ Investment Opportunities

Purpose: Identify specific investments to allow the City to make more immediate progress on delivering benefits while the WMP planning process is underway.

Deliverables: Excel spreadsheet database of potential ‘early action’ investment opportunities; 1-page fact sheet for each ‘early action’ investment opportunity that the City wants to move forward on with a summary memo for the fact sheets (Fact sheets have a location map, description, picture, identification of challenges/opportunities, potential benefits, and planning-level cost; updated CIP and/or operations plan, reflecting ‘early action’ investments). Available for use by the City in late 2nd quarter 2021 to incorporate into the 2023-2027 Capital Improvement Planning process.

- 1.3.1. Identify and characterize ‘early action’ investment opportunities to deliver benefits quickly (assumption: Will need to screen/prioritize these opportunities and/or have a repeatable process, and document)
- 1.3.2. Incorporate ‘early action’ investment opportunities into the CIP list or operations/resource plans.

2. Identify Toolbox, Opportunities, and Risk

(Milestone Deliverables from this Task: Watershed toolbox, Opportunity database, Risk identification and mitigation strategy)

(Engagement Outreach Communications and Endorsement Activities for this Task: Basic level of engagement; See table below under Task 6 for specifics)

2.1. Watershed Management Toolbox

Purpose: To identify and document the different tools (or strategies) that could be used to meet watershed management goals. These could include stormwater management Best Management Practices (BMP), policy/regulatory changes, operational strategies, engineered solutions, management strategies, etc.

Deliverables: Excel spreadsheet characterizing BMPs, strategies, policies, programs, etc. that could be implemented, with assessment of potential benefits/costs

2.2. Opportunity Database

Purpose: The geodatabase of public property, planned projects and development characteristics that will help staff with identification of opportunities that may have geospatial linkages that should be considered. The geodatabase will include early action opportunities as well as any others identified and will therefore also be useful in considering the distribution of opportunities throughout the City and relationships with prioritized watersheds, environmental justice and other spatial considerations. This will include opportunities solicited from the Stakeholder engagement process.

Deliverables: Map and geodatabase showing all opportunities, including areas that will soon be redeveloped, current city-owned property, planned parks projects, planned transportation projects, etc.; identify opportunities/linkages between the WMP and planning documents for other City departments

2.3. Watershed Performance Opportunity/Risk Identification and Mitigation Strategy

Purpose: To identify and mitigate/capture potential risks/opportunities regarding watershed health (for example – is there enough left to save? Did we choose the right investments to move the needle towards the watershed goals identified? Can the Public/stakeholders’ “wants” be met? What if we are off target in assessing future conditions?). A risk register for the implementation of this Scope of Work is included under Task 7 , Management.

Deliverables: Excel spreadsheet Risk/Opportunities Register with risks/opportunities identified with probability and consequence and mitigation strategy for each, ID risks/opportunities for each performance goals; working version to be updated (Quarterly) throughout WMP development

3. Prepare Watershed Improvement Plans

(Milestone Deliverables from This Task: Future Conditions Memorandum, Data/Information Documentation, Watershed Improvement Plans (WIPs), SMAP Documentation)

(Engagement Outreach Communications and Endorsement Activities for this Task: Fairly high degree of engagement; See table below under Task 6 for specifics)

3.1. Future Conditions and Uncertainties

Purpose: To characterize the potential condition of the City and its watersheds in 30 years based on local and regional patterns of growth and climate change with due recognition of the uncertainties associated with the predictions.

Deliverables: Technical memorandum characterizing potential future conditions (growth, climate) that applies to entire City)

3.2. Watershed Improvement Plans (WIPs)

Purpose: To layout a detailed, watershed specific plan for each priority watershed that lists and describes each of the solutions recommended for watershed improvement based on watershed-specific targets with associated costs and a schedule for implementation. These plans will be developed assuming the only desired benefit is improving watershed health. Additional criteria/lenses such as meeting regulatory requirements, environmental/social justice, and utility rate impact will be considered when the Watershed Management Plans are developed.

The plans will provide details on the tools and opportunities considered for watershed improvement, provide information on how the opportunities were evaluated and the results of those evaluations.

Deliverables: One (1) Report for each priority watershed, basin, or sub-basin (scale to be determined by the City))

- 3.2.1. Additional Data/Information (To fill data gaps associated with preparation of WIPs; Activities might include: Modeling, Water Quality Sampling, Collection of Hydrologic data, Geospatial Analysis, Additional Stream Characterization)
- 3.2.2. Basin-specific future conditions/uncertainties (referencing city-wide future conditions Tech Memo developed earlier)
- 3.2.3. Assessment of Applicable Toolbox items and Opportunities (as identified in earlier Tasks) (including Evaluation of potential effectiveness of identified tool(s) toward achieving watershed goals)
- 3.2.4. Solution Development and Evaluation, including planning-level cost estimates
- 3.2.5. Recommended Solution(s), including 1-page fact sheets for specific capital projects, assume 10 per watershed
- 3.2.6. Watershed Improvement Plans (WIPs) (what potential investments should be made when, and at what cost, if only goal(s) were improved watershed health)

3.3. SMAP Documentation

Purpose: To provide the documentation necessary to meet the needs of the NPDES permit.

Deliverables: SMAP Report

4. Develop Watershed Management Plan

(Milestone Deliverables from this Task: Decision criteria and weighting, Investment Database, Implementation Plan, Adaptive Management Strategy, Watershed Management Plan (WMP))

(Engagement Outreach Communications and Endorsement Activities for this Task: Fairly high degree of engagement; See table below under Task 6 for specifics)

4.1. Identify and Prioritize Potential Investments

Purpose: Provide one comprehensive list of all investments identified during Tasks 1 through 3 and to categorize, rate and score them using agreed upon criteria and weighting process. This will provide consistency and transparency to the selection of investments for the WMP.

Deliverables: Excel spreadsheet with list of investments; Set of criteria and weighting summarized in a memorandum; Excel spreadsheet with each investment rated against criteria, showing scoring and rank

- 4.1.1. Define potential investments (capital, policy, programmatic, operational, city-wide, location-specific) and costs
- 4.1.2. Develop decision criteria reflecting full spectrum of benefits/lenses (ideas for criteria: investment is in priority watershed, desirability by stakeholders, degree of benefit provided to stream; environmental/social justice criteria; aids in meeting regulatory requirement); weight criteria
- 4.1.3. Rate each potential investment against criteria; rank by score

4.2. Implementation Plan

Purpose: To layout a plan for implementation of the WMP that reflects the City's decisions on the appropriate level of investment and includes a schedule for implementation and a funding plan to support the schedule (and that is in sync with identified revenue sources).

Deliverables: Implementation Plan (phasing, schedule, etc.), Funding Plan, Partnership Plan; WMP chapter(s) outlining: implementation plan, funding plan, and partnership plan; 1-page fact sheets for each investment planned in next 10 years (update Fact Sheets from Task 3 WIPs)

- 4.2.1. Determine level of investment (decide how far down to fund in first funding cycle)
- 4.2.2. Develop implementation plan (phasing, schedule, and cash flow required to fund investments; how costs are spread over time – 10 years); 1-page fact sheets for each investment planned in next 10 years
- 4.2.3. Develop partnership plan (cost sharing; private partnerships; partnerships with other City departments; linkages between the WMP and planning documents for other City Departments and other entities (ex: Sound Transit) (10-year outlook)
- 4.2.4. Develop funding plan (outside funding capture plan, new funding sources, etc.) (10-year outlook)

4.3. Adaptive Management Strategy

Purpose: To lay out a strategy for adapting the WMP or City activities to reflect the changing environment or new information or if performance targets are not being met; Strategy could include a pathway for additional data collection or planning, or an increase in watershed investments.

Deliverables: WMP chapter on Adaptive Management

4.4. Watershed Management Plan (WMP)

Purpose: To provide a report that details the process followed to develop the WMP, describes the recommended actions needed to achieve watershed goals, and the plan for its implementation.

Deliverables: WMP report (assumed to be 100 pages in length plus attachments developed in earlier tasks; outline, draft, and final submittals; electronic submittals only)

5. Implementation and Tracking/Reporting Performance

(Milestone Deliverables from this Task: Updated CIP, Updated Operations Plan, Resource Management Plan, Updated Implementation Plan, Annual Reports tracking performance against goals)

(Engagement Outreach Communications and Endorsement Activities for this Task: Basic level of engagement; See table below under Task 6 for specifics)

5.1. Program Investments into CIP and Operations

Purpose: Provide an updated list of recommended investments in CIPs and operations with supporting documentation.

Deliverables: updated CIP; updated Operations Plan; each with memorandum describing changes (prepared every 2 years)

5.2. Develop/Update Resource Management Plan

Purpose: Provide a detailed plan on the resources (staff and cash flow) that will be required to implement the WMP and the timing of those needs.

Deliverables: memorandum with updated Resource management Plan; this takes the schedule and cash flow and assigns who is performing what elements, including City staff and other City departments (prepared every 1 year)

5.3. Update Implementation Plan

Purpose: Update the implementation plan prepared in Task 4, including updates to funding, phasing, and partnership plans

Deliverables: Memorandum with updated Implementation plan (prepared every 1 year)

5.4. Tracking and Reporting Performance

Purpose: Track and report performance against WMP goals

Deliverables: Annual progress reports documenting plan effectiveness and adaptive management actions, Summary of CIP project implementation and cumulative water quality benefit provided (prepared every 1 year)

6. Engagement, Outreach, Communications, and Endorsement

(Milestone Deliverables from this Task: Engagement Outreach and Communications Plan and Schedule, Public Meetings/Communications, Regulatory Entity Meetings Communications, City Leadership Meetings/Communications)

(Engagement Outreach Communications and Endorsement Activities for this Task: See Table 1 below for specific activities planned for Tasks 6.2, 6.3, 6.4, and 6.5)

6.1. WMP Engagement, Outreach, and Communications Plan

Purpose: Develop a plan that details how and when engagement, outreach, communications, and endorsement activities occur throughout the WMP development process, with entities including (partial list): regulators (WDFW, USACE, Ecology, City Critical Areas), Tribes, the public, Utilities leadership, City Environmental Services Commission, City Council

Deliverables: memorandum describing specific activities and schedule for those activities, draft and final submittal

6.2. Public/Stakeholder Meetings/Communications

Purpose: Document public meeting content, input received, and attendance.

Deliverables: Identify/document desired outcomes, meeting materials, meeting facilitation and/or attendance, meeting summaries

6.3. Other City Entity Meetings/Communications

Purpose: Document coordination with other City entities. This includes coordination with other City departments including Transportation, Parks, etc.

Deliverables: Identify/document desired outcomes, meeting materials, meeting facilitation and/or attendance, meeting summaries

6.4. Regulatory Entity Meetings/Communications

Purpose: Document content and input received from meetings and communications with regulatory entities.

Deliverables: Identify/document desired outcomes, meeting materials, meeting facilitation and/or attendance, meeting summaries

6.5. City Leadership Meetings/Communications

Purpose: Document content and input received from meetings and communications with City leadership.

Deliverables: Identify/document desired outcomes, meeting materials, meeting facilitation and/or attendance, meeting summaries

7. Management

(Milestone Deliverables from this Task: Project Management Plan (including a project risk register), Quality Management Plan, Issues Log, Decision Tracking Log, others as identified) (note that this management Task 7 is to include all types of management costs – City project management, contract management (for work performed by Consultants, if applicable), resource management, etc.)

7.1. City Management

Purpose: To provide for appropriate management of resources, coordination of activities, and oversight of budgets, schedules and deliverables. To ensure goals of the project are attained.

Deliverables: To be determined

7.2. Consultant Contract Management (if applicable)

Purpose: To provide for appropriate management of resources, coordination of activities, and oversight of budgets, schedules and deliverables. To ensure goals of the project are attained.

Deliverables: To be determined

Table 1 – Specific Engagement, Outreach, and Communications Activities by Task

Task (also known as planning element)	Task 1 Assess and Prioritize Watersheds	Task 2 Identify Toolbox, Opportunities, and Risk	Task 3 Prepare WIPs	Task 4 Develop WMP	Task 5 Implement WMP
Degree of Engagement, Outreach, and Communications	High (extensive, several iterations of feedback/input, does not proceed without input/feedback)	Basic (communicative, with opportunities to provide input)	Fairly High (at least one iteration of feedback/input)	Fairly High (at least one iteration of feedback/input)	Basic (communicative, with opportunities to provide input)
Summary of Activities	Review/inform Foundational Element Memos/Reports and policies Review/endorse ‘early action’ investment opportunities	Review benefits of tools in toolbox Identify opportunities Inform/review/endorse risks/opportunities	Review/inform future conditions/uncertainties Review of WIPs Review of SMAP	Review/inform investments Review/inform decision criteria, ratings, weighting Review/inform adaptive management strategy Review/Endorse WMP	Review/Inform/Endorse CIP/Operations and Resource Management Plan
Description of Activities by Category (state assumptions on type/number of workshops, meetings, etc.)					
The Public/Stakeholders (total meetings for sub-task: 6)	Develop and support City website for the WMP process. Plan for one (1) public meeting to discuss draft performance goals and targets and watershed prioritization results	Update website	Update website. Plan for four (4) public workshops; one in each of the priority watersheds to review draft WIPs.	Update website. Plan for one (1) public meeting to review progress/process and to provide an overview of criteria and weighting process and to discuss draft list of prioritized investments.	Update website annually on progress including reporting on performance/targets.
Other City Entities (total meetings for sub-task: 11)	Plan one (1) internal lunch and learn to introduce WMP, summarize policy papers, and prioritization results. Conduct informal briefings with key entities.	Meet with any City entity that may have a stake in or be impacted by listed opportunities. Assume four (4) meetings – ex: Transportation, Planning/Economic Development, Parks, etc.	Plan one (1) internal lunch and learn to provide an overview of WIPs	Plan one (1) internal lunch and learn to review progress/process and to discuss draft list of prioritized investments. Meet with any City entity that may have a stake in or be impacted by listed opportunities.	Continued meetings with impacted City entities as projects move forward. (Project specific engagement) (assume four (4) meetings)
Regulators (total meetings for sub-task: 4)	Plan for one meeting with ECY to discuss performance goals and targets and watershed prioritization results and compliance approach/strategy. Assume 3 meetings	Not needed	Invite to public workshops. Submit SMAP report to ECY. Assume 1 meeting with regulators	Invite to public meeting.	Include summary of activities in annual NPDES reporting
City Leadership (assumed to be outside of project team) (total meetings for sub-task: 10)	Assume series of three (3) meetings plus one (1) presentation to Council/BUD/Utilities Leadership	Informal update via electronic submittal of opportunities list; assist with building of partnerships with other entities and groups	One (1) presentation to Council/BUD/Utilities Leadership	One (1) presentation to Council/BUD/Utilities Leadership	Plan for periodic briefings (assume four (4) meetings)

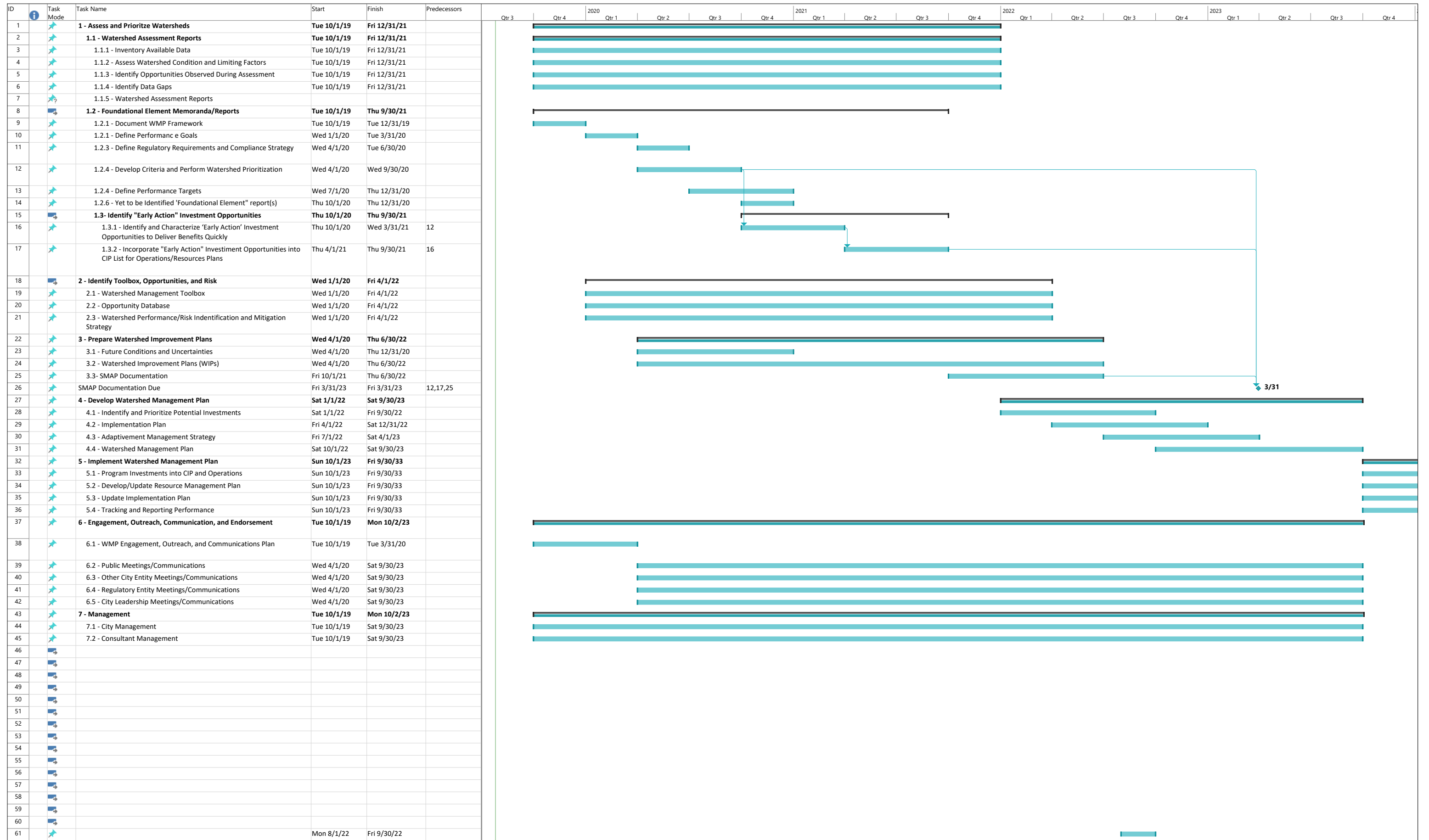


Memorandum

Watershed Management Plan Framework,
Scope of Work, and Workplan

Attachment D

Watershed Management Plan Detailed Schedule





Memorandum

Watershed Management Plan Framework,
Scope of Work, and Workplan

Attachment E

Watershed Management Plan Workplan Tool

Task	SubTask	Activity	Assumptions			Notes - related to assumptions	
			Deliverable(s)	Description of deliverable (1, 10, 100, or 1000 pages; lines on a spreadsheet)	Workshops/Meetings ^{1,2}		
Task 1 Assess and Prioritize Watersheds	1.1 Watershed Assessment Reports (WARs)	1.1.1 Inventory Available Data	One (1) WAR (in report form) for each of four (4) watersheds: Kelsey, Coal, Small Lake Wa, small Lake Sammamish; each WAR has 'brochure'/Executive Summary for external audience	Each WAR is 100 pages plus appendices; each 'brochure' is 4 pages long (with graphics)	Two (2) Workshops: define/refine outline, determine level of detail and approach to presenting data/information in the WARs ahead of WAR development; Two (2) meetings for each WAR (so 2x4 WARs, total of 8) to review internal draft and	Focus of activities is in initial development of the WAR approach. It is then assumed that the outline and approach of the WARs will be similar and that the review focus is on findings and recommendations in the internal draft. It is also assumed that the WARs will generally discuss problems but not present recommendations, so these require fewer meetings than WIP development. Assume data collection is not included in this LOE	
		1.1.2 Assess watershed condition and limiting factors (list out bullets from the 1.1.3 Identify opportunities observed during assessment 1.1.4 ID data gaps (if any) 1.1.5 Watershed Assessment Reports (WARs)	One (1) memorandum	10 pages in length plus attachments	Two (2) workshops (note: Engagement/outreach to	Subtasks 1.2.2-1.2.5 are highly inter-related. More than one of these topics are likely to be	
		1.2 Foundational Element Memoranda/Reports	One (1) memorandum	10 pages in length plus attachments	Three (3) workshops (note: Engagement/outreach to	Subtasks 1.2.2-1.2.5 are highly inter-related. More than one of these topics are likely to be	
		1.2.2 Define Performance Goals	One (1) memorandum	10 pages in length plus attachments	Three (3) workshops (note: Engagement/outreach to	Subtasks 1.2.2-1.2.5 are highly inter-related. More than one of these topics are likely to be	
		1.2.3 Define Regulatory requirements and compliance strategy	One (1) memorandum	10 pages in length plus attachments	Three (3) workshops (note: Engagement/outreach to	Subtasks 1.2.2-1.2.5 are highly inter-related. More than one of these topics are likely to be	
Task 2 Identify Toolboxes, Opportunities, and Risk	2.1 Watershed Management Toolbox	2.1.1 Identify 'early action' investments	Excel spreadsheet with potential 'early action' investments	anticipated <100 line items plus photo log in electronic form	One (1) meeting to discuss template of spreadsheet;	Subtasks 1.2.2-1.2.5 are highly inter-related. More than one of these topics are likely to be	
		2.1.2 Incorporate 'early action' opps into CIP list	1 page fact sheet for each 'early action' that the City wants to move forward with; summary memo	length plus attachments; <100 fact sheets, each 1 page	One (1) meeting to discuss template of fact sheets; One (1) meeting to present draft and receive comments	Subtasks 1.2.2-1.2.5 are highly inter-related. More than one of these topics are likely to be	
		2.2 Opportunity Geodatabase	Map and geodatabase showing Watershed Management Toolbox and Opportunities	1 map; plus geodatabase	Three (3) meetings to populate toolbox and identify types of opportunities within	Reviewed/updated monthly over 3 year period	
		2.3 Watershed Performance Opportunity/Risk Identification and Mitigation Strategy	Excel spreadsheet Risk/Opportunities Register with	Excel database with <20 risk/opportunities	Include these in WAR workshops in SubTask 1.1;		
		2.4 Watershed Performance Opportunity/Risk Identification and Mitigation Strategy	Excel spreadsheet Risk/Opportunities Register with	Excel database with <20 risk/opportunities	Include these in WAR workshops in SubTask 1.1;		
Task 3 Prepare WIPs	3.1 Future Conditions and Uncertainties	3.1.1 Future Conditions and Uncertainties	One (1) Technical memorandum characterizing potential future conditions (growth, climate) that	10 pages in length plus attachments	Three (3) meetings to discuss approach, review initial findings and then to	This lays out the framework for the entire project area (city, e.g., zoning and predicted impervious, predicted greesp patterns etc. but	
		3.1.2 Watershed Improvement Plans (WIPs)	One (1) Watershed Improvement Plan (in report form) for each watershed (assume four (4) watersheds); each WIP has 'brochure'/Executive Summary for external audience	Each WIP is 100 pages plus appendices; each 'brochure' is 4 pages long (with graphics)	Two (2) Workshops: define/refine outline, determine level of detail and approach to presenting data/information in the WIPs ahead of WIP development; Three (3) meetings for each WIP (so 3x4 WIPs, total of 12) to review initial findings and discuss possible solutions/recommendations	Additional data collection could involve hydrologic or water quality monitoring, modeling, GIS analysis. Watershed reconnaissance by stormwater engineers will also be needed.	
		3.1.3 Assessment of applicable toolbox items/opportunities	10 pages in length plus attachments	Three (3) meetings to discuss approach, review initial findings and then to			
		3.1.4 Solution Development and Evaluation	10 pages in length plus attachments	Three (3) meetings to discuss approach, review initial findings and then to			
		3.1.5 Recommend Solutions	10 pages in length plus attachments	Three (3) meetings to discuss approach, review initial findings and then to			
Task 4 Prepare WMP	4.1 Identify and Prioritize Potential Investments	4.1.1 define potential investments (capital, policy, etc.)	Excel database of all potential investments (capital, policy, etc.)	Excel database with <250 line items	Four (4) meetings/workshops to develop and weight decision criteria		
		4.1.2 develop decision criteria	set of decision criteria that include both stream-focused criteria as well as other benefits.	in memo 10 pages in length plus attachments	Two (2) workshops to develop and weight decision criteria		
		4.1.3 Rate and Rank each Investment	Score each potential investment (in excel spreadsheet)	Additional field on excel database mentioned in 4.1.1	Two (2) workshops to perform/review scoring of each investment		
		4.2 Implementation Plan	4.2.1 determine level of investment available (based on willingness to pay / affordability), determine	Expenditure amount (\$) available (based on willingness to pay / affordability), determine	Additional field on excel database mentioned in 4.1.1	Assume meetings with City leadership to set investment amount; Assume two (2)	
		4.2.2 develop implementation plan	Chapter for WMP: investment phasing, schedule, and cash flow; 1 page fact sheets for each investment planned in next 10	20-page chapter for WMP; 1-page fact sheets for each investment planned in next 10	Three (3) workshops to develop and refine implementation plan		
Task 5 Implementation and Tracking/Reporting Performance	5.1 Program Investments into CP and Operations	5.1.1 Program Investments into CP and Operations	Memorandum with Updated CIP, updated Operations Plan (every 2 years)	10-page memorandum (with updates every 2 years) for each of: CIP and Operations Plan	Three (3) meetings to develop recommended changes to CIP and Operations Plan (assume every 2 years)	for LOE, only year 1 is included	
		5.2 Develop Resource Management Plan	Memorandum with Resource Management Plan (every 1 year)	10-page memorandum (with updates every 1 year)	Three (3) meetings to develop and/or update	for LOE, only year 1 is included	
		5.3 Update Implementation Plan	Memorandum with Implementation Plan (1 each)	10-page memorandum (with updates every 1 year)	Three (3) meetings to develop and/or update	for LOE, only year 1 is included	
		5.4 Tracking and Reporting Performance	Tracking performance against watershed goals; documented in a memorandum; update every 1	10-page memorandum (with updates every 1 year)	Three (3) meetings to define performance measures and scoring and interpret	for LOE, only year 1 is included	
		5.5 City Leadership Meetings/Communications	Identify/document desired outcomes, meeting materials, meeting summaries <10 pages in length	10-page memorandum	Assume (2) meetings to discuss approach and review		
Task 6 Engagement, Outreach, and Communications	6.1 WMP Engagement, Outreach, and Communications Plan	6.1.1 WMP Engagement, Outreach, and Communications Plan	Memorandum outlining the plan specific activities and schedule	10-page memorandum	Assume (2) meetings to discuss approach and review		
		6.2 Public Meetings/Communication	Identify/document desired outcomes, meeting materials, meeting summaries <10 pages in length	10-page memorandum	Assume (2) meetings to discuss approach and review		
		6.3 Other City Entity (including other City Depts) Meetings/Communications	Identify/document desired outcomes, meeting materials, meeting summaries <10 pages in length	10-page memorandum	Assume (2) meetings to discuss approach and review		
		6.4 Regulatory Entity and Tribal Meetings/Communications	Identify/document desired outcomes, meeting materials, meeting summaries <10 pages in length	10-page memorandum	Assume (2) meetings to discuss approach and review		
		6.5 City Leadership Meetings/Communications	Identify/document desired outcomes, meeting materials, meeting summaries <10 pages in length	10-page memorandum	Assume (2) meetings to discuss approach and review		
Task 7 Management	7.1 City Management	7.1.1 City Management	TBD, but could include: Project Management Plan, Quality	TBD	WMP Team meetings (every other month) (attendees)		
		7.2 Consultant Contract Management	TBD, but could include: Project Management Plan, Quality	TBD	WMP Team meetings (every other month) (attendees)		

NOTES
¹ Coordination/Meetings within the WMP preparation team pertaining to a specific technical topic are included in the specific sub-task/activity for that topic; meetings with the public, other city entity, regulatory entity, or with City leadership are included in Task 6, regardless of topic.
² For planning purposes, assumptions that pertain to all workshops/meetings are:
 1 attendees at workshop/meeting (includes City Staff and/or Consultants)
 2 hours in length
 3 hours of prep time for each person for each meeting
 4 hours to prepare meeting summary (1 person for 1 hour)
 5 for each meeting/workshop, the total LOE across all staff, based on the above assumptions
³ Disciplines are listed for planning purposes only; one person could perform the duties of one or several of the disciplines listed; TBD by the City in future phases
⁴ In order to streamline LOE development and resource planning, the LOE for all meetings/workshops, calculated as described in these notes, is grouped under the 'meeting attendance' category and given a general billing rate
⁵ Assume 8 hours for Technical Writer for memos, 16 hours for reports, 10 minutes for the 8000 words 2 hours for development for memos, 4 hours for reports
⁶ Billing rates by discipline are an estimate for planning purposes only; Budgets and LOEs will be developed for individual tasks at the discretion of the City of Bellevue

Schedule			
Start Date	End Date	Duration (working days)	Notes - related to schedule
10/1/2019	12/31/2021	589	Receiving Water Assessment for SMAP must be provided to Ecology by March 31, 2022
10/1/2019	12/31/2019	66	
1/1/2020	3/31/2020	65	
4/1/2020	4/30/2020	65	
4/1/2020	9/30/2020	131	Receiving Water Prioritization for SMAP must be provided to Ecology by June 30, 2022
7/1/2020	12/31/2020	132	
10/1/2020	12/31/2020	66	
10/1/2020	7/31/2021	130	
4/1/2021	9/30/2021	131	Task end date timed to conform with schedule for Capital Plan Program Update
4/1/2020	4/1/2022	588	
4/1/2020	12/31/2020	197	
4/1/2020	4/30/2022	587	
10/1/2021	6/30/2022	195	SMAP documentation must be provided to Ecology by March 31, 2023
4/1/2022	9/30/2022	195	
4/1/2022	12/31/2022	196	
7/1/2022	4/1/2023	196	
10/1/2022	9/30/2023	260	WMP must be completed in time to inform development of an updated Storm and Surface Water System Plan in 2023/2024
10/1/2023	9/30/2033	2610	
10/1/2019	9/31/2020	131	
4/1/2020	9/30/2023	913	
4/1/2020	9/30/2023	913	
4/1/2020	9/30/2023	913	
4/1/2020	9/30/2023	913	
10/1/2019	9/30/2023	1044	
10/1/2019	9/30/2023	1044	

Level of Effort (hours by discipline) ^{3,6}																				LEVEL OF EFFORT			COST			DURATION (WORKING DAYS)		FTEs needed for this LOE at this DURATION	
manager	engineer	GIS analyst/suppor	fish biologist	water quality scientist	fluvial geomorphology	land use planner	data analyst/statist	policy analyst	decision scientist	financial analyst	HH modeler	cost estimator	graphic artist	Technical Writer ⁵	Word Processor	engagement specialist	ESJ specialist	meeting hours ⁴	HOURS - activity total	HOURS - subtask total	HOURS - Task Total	COST - activity total	COST - subtask total	COST - Task Total	DURATION	FTEs			
5200	5200	5160	5160	5160	5160	5160	5160	5200	5200	5200	5190	5200	5120	580	580	5175	5175	5175.00	634	634	1440	\$ 97,990	\$ 97,990	\$ 245,700	588	0.1			
48	0	64	64	64	64	0	128	0	0	0	0	0	32	64	16	0	0	90	634	634	1440	\$ 97,990	\$ 97,990	\$ 245,700	588	0.1			
12	0	8	0	0	0	0	0	8	0	0	0	0	0	4	4	0	0	18	74	518		\$ 13,710	\$ 95,970		46	0.1			
32	0	8	0	0	0	0	0	8	0	0	0	0	0	4	4	0	0	27	83			\$ 15,285			65	0.2			
12	0	8	0	0	0	0	0	8	0	0	0	0	0	4	4	0	0	27	83			\$ 15,285			65	0.2			
64	0	16	0	0	0	0	0	16	0	0	0	0	0	8	8	0	0	27	139			\$ 25,845			131	0.1			
64	0	16	0	0	0	0	0	16	0	0	0	0	0	8	8	0	0	27	139			\$ 25,845			131	0.1			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			\$ -			66	0.0			
24	32	16	0	0	16	0	0	0	0	0	0	12	0	0	0	0	0	18	118	288		\$ 22,350	\$ 51,740		130	0.1			
24	32	16	0	0	16	0	0	4	0	0	0	24	24	8	4	0	0	18	170			\$ 29,390			131	0.2			
24	24	0	24	24	0	24	0	24	0	0	0	24	0	0	0	0	0	27	195	195	414	\$ 35,225	\$ 35,225	\$ 74,410	588	0.1			
24	24	80	4	4	0	16	0	4	0	0	0	0	16	0	0	0	0	27	199	199		\$ 34,165	\$ 34,165						
16	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	20	20		\$ 4,320	\$ 4,320						
16	0	24	0	4	0	4	8	8	0	0	0	0	0	8	4	0	0	27	103	103	2000	\$ 17,205	\$ 17,205	\$ 352,380	197	0.1			
160	568	100	24	88	176	48	0	48	0	0	88	80	56	72	48	0	0	126	1682	1682		\$ 299,250	\$ 299,250		587	0.1			
16	24	48	8	8	8	8	16	8	0	0	16	8	16	8	4	0	0	27	215	215		\$ 35,925	\$ 35,925		195	0.1			
32	56	0	16	16	16	16	0	16	0	0	24	0	0	0	16	16	36	260	524	1306	\$ 48,380	\$ 98,960	\$ 231,970	195	0.3				
40	12	0	0	0	12	0	12	12	0	0	0	8	8	4	0	8	18	134				\$ 24,390							
64	24	0	0	0	0	0	0	16	0	0	0	8	0	0	0	0	0	18	130			\$ 26,190							
24	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	18	58	532		\$ 11,830	\$ 94,440		196	0.3			
64	32	24	32	16	0	8	0	24	0	24	0	24	8	16	8	0	0	27	307			\$ 55,285							
24	0	0	0	0	0	0	0	8	0	0	0	4	16	8	0	0	0	27	87			\$ 14,005							
36	0	0	0	0	0	0	0	16	0	0	4	16	8	0	0	0	0	0	80			\$ 13,520							
24	0	16	0	0	0	0	0	8	0	0	4	16	8	0	0	0	0	27	103	103		\$ 16,565	\$ 16,565		196	0.1			
48	0	0	0	0	0	0	0	0	0	0	0	24	32	16	0	0	0	27	147	147		\$ 22,005	\$ 22,005		260	0.1			
40	0	0	0	0	0	0	0	0	0	0	0	8	4	0	0	0	0	27	79	79	288	\$ 14,485	\$ 14,485	\$ 52,080	2610	0.014			
40	0	0	0	0	0	0	0	0	0	0	0	0	0	8	4	0	0	27	79	79		\$ 14,485	\$ 14,485						
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	27	27		\$ 4,725	\$ 4,725						
40	0	8	4	4	4	0	0	0	0	0	0	0	8	4	0	4	27	103	103			\$ 18,385							
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	0	18	74	74	881	\$ 13,310	\$ 13,310	\$ 142,535	131	0.07			