

City of Redmond							Stormwater Management Influence and Prioritization Candidates		
Table 1. Delineate Basins and Identify Receiving Waters.									
Basin	Receiving Waters			Total Basin Area	Basin Jurisdiction Control		Stormwater Management Influence	2013 Watershed Prioritization	Candidate Watershed for SMAP Prioritization?
	Streams	Lakes	Marine	Area (acres)	Area In City (acres)	Area In City (%)			
Sammamish	1) Sammamish River	2) Lake Washington 3) Lake Union	4) Puget Sound	153,600	3174	2.1%	Medium	Restoration	Yes
Bear	1) Bear Creek 2) Sammamish River	3) Lake Washington 4) Lake Union	5) Puget Sound	32,100	691	2.2%	Medium	Highest Restoration	Yes
Evans	1) Evans Creek 2) Bear Creek 3) Sammamish River	4) Lake Washington 5) Lake Union	6) Puget Sound	9,800	520	5.3%	Medium	Highest Restoration	Yes
Lake Sammamish	1) Sammamish River	2) Lake Washington 3) Lake Union	4) Puget Sound	63,000	651	1.0%	Medium	Restoration Development	Yes*
Clise	1) Cise Creek 2) Sammamish River	3) Lake Washington 4) Lake Union	5) Puget Sound	78	73	93.6%	Medium	Highest Restoration	Yes
Colin	1) Colin Creek 3) Struve Creek 4) Bear Creek 5) Sammamish River	2) Welcome Lake 6) Lake Washington 7) Lake Union	8) Puget Sound	1,990	90	4.5%	Low	Protection	No
Country	1) Country Creek 2) Sammamish River	3) Lake Washington 4) Lake Union	5) Puget Sound	212	212	100.0%	Medium	Restoration Development	Yes*
High School	1) High School Creek 2) Sammamish River	3) Lake Washington 4) Lake Union	5) Puget Sound	1,686	642	38.1%	Medium	Highest Restoration	Yes
Idylwood	1) Idylwood Creek 3) Sammamish River	2) Lake Sammamish 4) Lake Washington 5) Lake Union	6) Puget Sound	426	152	35.7%	Medium	Restoration Development	Yes*
Mackey	1) Mackey Creek 2) Bear Creek 3) Sammamish River	4) Lake Washington 5) Lake Union	6) Puget Sound	1,118	172	15.4%	Low	Protection	No
Monticello	1) Monticello Creek 2) Bear Creek 3) Sammamish River	4) Lake Washington 5) Lake Union	6) Puget Sound	359	257	71.6%	Medium	Highest Restoration	Yes
Perrigo	1) Perrigo Creek 2) Bear Creek 3) Sammamish River	4) Lake Washington 5) Lake Union	6) Puget Sound	491	486	99.0%	Medium	Restoration	Yes
Peters	1) Peters Creek 2) Sammamish River	3) Lake Washington 4) Lake Union	5) Puget Sound	1,045	1007	96.4%	Medium	Restoration	Yes
Sears	1) Sears Creek 2) Valley Creek 3) Kelsey Creek	4) Lake Washington 5) Lake Union	6) Puget Sound	449	364	81.1%	Hi	Restoration Development	Yes*
Seidel	1) Seidel Creek 2) Bear Creek 3) Sammamish River	4) Lake Washington 5) Lake Union	6) Puget Sound	1,189	615	51.7%	Low	Protection	No
Tosh	1) Tosh Creek 2) Sammamish River	3) Lake Washington 4) Lake Union	5) Puget Sound	299	277	92.6%	Medium	Highest Restoration	Yes
Tyler's	1) Tyler's Creek 2) Bear Creek 3) Sammamish River	4) Lake Washington 5) Lake Union	6) Puget Sound	180	180	100.0%	Medium	Restoration	Yes
Valley Estates	1) Valley Estates Creek 2) Sammamish River	3) Lake Washington 4) Lake Union	5) Puget Sound	172	172	100.0%	Medium	Restoration Development	Yes*
Villa Marina	1) Villa Marina Creek 3) Sammamish River	2) Lake Sammamish 4) Lake Washington 5) Lake Union	6) Puget Sound	586	365	62.3%	Hi	Restoration Development	Yes*
Willows	1) Willows Creek 2) Sammamish River	3) Lake Washington 4) Lake Union	5) Puget Sound	557	484	86.9%	Medium	Restoration	Yes
Data Source	City for Redmond, Washington: Citywide Watershed Management Plan (Herera 2013)			City GIS	City GIS	City GIS	City GIS and document review	2013 Citywide Watershed Management Plan, Table 4.1. Management Strategies for Watersheds in the City of Redmond	
Notes	Receiving waters are progressively numbered from to low to high indicate drainage pattern sequence from upstream to downstream, respectively			The total contributing watershed area for that receiving water to the point where the receiving water flows into a flow control-exempt water body as defined in the Stormwater Management Manual for Western Washington, 2019, (SWMWW) and Permit Appendix 1.			Rating Stormwater Influence was assessed by: A) % EIS in developed areas = combined % of "landscaped" + % "other effective impervious areas"; B) % of high pollutant land uses = % commercial + % industrial + % highway; % of low pollutant land uses = % open space + % residential land uses; and D) % of forest land cover. 3 watersheds (Colin, Mackey, Seidel) are expected to have "low" stormwater influence based on: --Low percentages of developed areas and effective impervious area (<13%) --Low % of landuses associated with pollutant loading (Commercial, Industrial, Highway) --High % of land uses associated with low pollutant loading (100% parks/undeveloped land) --High percentage of forested land use (>87%) --Limited MS4 impacts (no MS4 outfalls) See Table 2 and Table 3 for additional metrics and detailed analysis of Watershed Conditions. Table 4 contains the stormwater management	The City of Redmond conducted a watershed characterization and prioritization process in the 2013 City of Redmond Watershed Management Plan (RWMP). This prioritization was conducted in two phases. Phase I used Puget Sound Watershed Management Characterization (PSWMC) (Stanley et al. 2011). Phase II use "coarse results" of the PSWMC modeling to conduct more specific examination of the City's 20 watersheds and also simplify the management strategy recommendations of classifications used in the PSWMC. The classifications above are the result of this 2013 process. Information on this process can be found in section 4.1.1 and 4.1.2 of the 2013 RWMP. https://www.redmond.gov/DocumentCenter/View/11707/Watershed-Management-Plan-2013-PDF	Watersheds with "Low" Stormwater Management Influence will not be moved forward as candidates for SMAP prioritization. These watersheds are the most pristine and are assigned to a Protection strategy. The City is currently undergoing a data review to evaluate changes to the watersheds since 2013 and will update prioritization (and strategies, if needed) accordingly in the next stage of this project. Watersheds assigned "Restoration Development" are severely impaired and less likely to be cost-effective for planning improvements. "Yes*" indicates that the City will further validate the condition and ranking of these watersheds during the prioritization update. However, given combined score for the stormwater management influence rating and the 2013 watershed prioritization process, it is not expected that they will be viable candidates for near-term watershed management planning.

City of Redmond

Table 3. Assess Stormwater Management Influence.

Basin	Existing Basin Condition																	Future Development				
	Land Cover				Land Use						Habitat		Stormwater Influence					Buildable Lands Projection		Areas with Higher Projected Population Growth		
	Forest (%)	Pasture (%)	Landscaped	Other Effective Impervious Surface (%)	Commercial (%)	Industrial (%)	Single Family Residential (%)	Multifamily Residential (%)	Highway (%)	Parks and Undeveloped Land (%)	Fish Passage Barriers #	Tree Canopy Cover in Class 1-4 Buffers (acres)	Watershed Area Needing Flow Control Retrofit (% of Basin)	Watershed Area Needing (at least) Basic WQ Treatment Retrofit (% of Basin)	Total Number of Outfalls and Ditches (#)	Number of Outfalls and Ditches per Length of Stream Channel (#/1000 linear feet)	Total Number of Stream Channel Culvert Crossings (#)	Number of Stream Channel Culvert Crossings per Length of Stream Channel (#/1000 linear feet)	Redevelopable Land (% of Basin)	Vacant Land (% of Basin)	% of Basin Area with Projected Population Growth Greater Than 1.5%	
Sammamah	13.4%	5.8%	48.9%	33.8%	31.7%	15.8%	23.5%	10.4%	6.8%	11.6%	NA	83.6	22.5%	48.4%	83	1.08	6	0.08	9.0%	2.8%	47.45%	
Rear	14.6%	5.6%	47.2%	32.6%	28.9%	14.2%	17.3%	9.6%	6.6%	11.9%	NA	34.3	74.9%	38.7%	20	0.13	4	0.03	14.5%	2.8%	2.98%	
Evans	10.7%	12.5%	40.0%	36.8%	5.3%	50.3%	11.8%	7.2%	0.5%	25.0%	NA	12.4	57.0%	44.7%	6	0.11	2	0.04	4.4%	4.3%	19.98%	
Lake Sammamah	6.4%	2.7%	36.9%	54.0%	3.7%	0.9%	67.1%	14.4%	1.1%	12.6%	NA	10.5	48.8%	83.1%	28	4.96	0	0.00	3.2%	0.7%	13.14%	
Clise	34.2%	0.0%	27.9%	37.8%	0.0%	0.0%	62.0%	2.6%	0.0%	35.6%	1	15.3	65.7%	65.8%	4	0.58	1	0.15	4.3%	1.0%	4.95%	
Colin	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	0	16.0	0.0%	0.0%	0	0.00	0	0.00	0.0%	0.0%	15.52%	
Country	30.3%	6.6%	30.2%	32.9%	1.2%	0.0%	57.2%	9.8%	0.0%	31.1%	12	26.3	61.8%	55.5%	3	0.28	8	0.74	4.2%	1.5%	1.90%	
High School	18.7%	4.9%	30.4%	46.3%	8.4%	0.0%	69.4%	3.9%	1.0%	17.5%	7	46.9	60.0%	28.4%	13	0.31	12	0.29	2.1%	1.5%	46.89%	
Hollywood	17.6%	1.0%	24.3%	57.1%	3.4%	0.0%	78.4%	0.6%	0.0%	17.6%	3	14.5	80.3%	80.8%	6	0.69	8	0.92	4.6%	0.0%	23.26%	
Mackey	87.1%	0.0%	0.0%	12.9%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	1	39.8	12.9%	12.9%	1	0.03	1	0.03	0.0%	0.0%	9.76%	
Monticello	20.7%	4.0%	30.4%	44.8%	6.0%	0.0%	67.1%	1.6%	0.0%	24.8%	4	16.9	51.3%	22.4%	13	1.27	2	0.20	1.2%	2.0%	95.83%	
Ferrigo	29.8%	20.8%	27.6%	21.8%	2.1%	0.0%	28.3%	26.7%	0.0%	42.6%	7	17.9	63.7%	33.1%	16	3.15	11	2.17	2.0%	1.9%	32.42%	
Peters	9.4%	1.2%	41.4%	47.9%	5.6%	10.1%	59.9%	15.8%	0.0%	8.5%	14	62.6	62.0%	66.3%	54	2.27	22	0.93	2.9%	1.0%	5.05%	
Sears	0.0%	0.0%	17.9%	82.1%	81.3%	0.0%	1.8%	5.6%	11.2%	0.0%	0	0.0	90.3%	11.7%	0	0.00	0	0.00	29.7%	10.5%	87.59%	
Seidel	99.9%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%	4	96.1	0.1%	0.1%	0	0.00	2	0.06	0.0%	0.0%	11.44%	
Tooh	17.3%	5.7%	40.6%	36.4%	15.1%	0.0%	46.7%	23.4%	0.0%	13.1%	0	34.0	78.0%	60.1%	16	1.45	3	0.27	4.3%	0.9%	4.25%	
Tyler's	20.1%	6.0%	37.6%	36.3%	8.5%	0.2%	55.3%	10.6%	0.0%	25.4%	1	8.3	68.1%	7.6%	2	0.58	3	0.87	0.0%	0.0%	12.31%	
Valley Estates	9.0%	6.8%	24.0%	60.2%	7.7%	0.0%	79.0%	0.0%	1.6%	11.8%	2	7.8	83.1%	80.6%	6	1.83	3	0.91	1.1%	3.3%	4.12%	
Villa Marina	13.4%	0.0%	28.9%	57.8%	67.6%	0.0%	8.7%	15.1%	2.5%	2.5%	6	17.6	13.3%	43.9%	8	1.20	4	0.60	5.0%	3.2%	60.23%	
Willows	26.9%	11.3%	36.3%	25.6%	17.4%	11.5%	37.4%	0.0%	0.0%	33.6%	25	51.1	59.3%	26.3%	17	0.74	21	0.91	1.5%	0.6%	14.26%	
Data Sources	City GIS				City GIS						CDR Culvert Database	City GIS	City GIS	City GIS	City GIS	City GIS	City GIS	City GIS	King County Buildable Lands Data, provided by City of Redmond in February 2022	King County Buildable Lands Data, provided by City of Redmond in February 2023	ESRI 2021-2026 USA Population Growth, accessed via hostad online service in February 2022 (Block group scale)	
Data Gaps	Data available only inside the City of Redmond				Data available only inside the City of Redmond						Data available only inside the City of Redmond	Data available only inside the City of Redmond	Data available only inside the City of Redmond	Data available only inside the City of Redmond	Data available only inside the City of Redmond	Data available only inside the City of Redmond	Data available only inside the City of Redmond	Data available only inside the City of Redmond	Data available only inside the City of Redmond	Data available only inside the City of Redmond	Data available only inside the City of Redmond	
Notes/Comments	Percentage only reflect the area in each basin that is located within the City's jurisdictional boundaries. Landscaped is the area in developed watersheds that is not effective impervious. Developed areas (all areas not pasture or forest) were identified as effective impervious or landscaped based on literature values (Sutherland 2008) for each land use. Effective impervious is the area in developed watersheds that is impervious and directly connected to the storm drain system. Developed areas (all areas not pasture or forest) were identified as effective impervious or landscaped based on literature values for each land use.				Percentage only reflect the area in each basin that is located within the City's jurisdictional boundaries.															Summary of parcel acres in watershed (within City limits) that are classified as "R10" (residential), identifies lands likely to be developed in the future, which will have to meet more stringent stormwater code.	Summary of parcel acres in watershed (within City limits) that are classified as "VAC" (vacant), identifies lands likely to be developed in the future, which will have to meet more stringent stormwater code.	Calculation covers entire watershed, not clipped to City limits. Block group polygons were assigned a growth percentage based on ESRI data. Reported percentages indicate the block group area within the growth category (1.9%) in portion of total watershed area. Note - 0% in this column does NOT indicate zero growth. Watershed may still have projected growth in the lower range (e.g., 1.25%) from 2021 to 2026. Population growth indicates future development or redevelopment pressure. All new impervious development will be constructed under current codes, but may still have negative influence on watersheds.

City of Redmond																									
Table 2. Assess Receiving Water Conditions.																									
Basin	Stream Classification and Length					Water Conditions													Supported Water Resource Uses						
	Stream Classification	Total Stream Length (feet)	Class II Stream Length (feet)	Stream Length in City (feet)	Class II Stream Length in City (feet)	303(d) Listed Water						Exceedance of Water Standards				Hydrology	Benthic Index of Biotic Integrity (B-IBI)			Salmonids and Resident Fish				Groundwater: % of watershed area located inside CARA I	
						Dissolved Oxygen	Temperature	Bacteria	pH	Tissue - Polychlorinated Biphenyls (PCBs)	Bioassessment	Temperature	Fecal Coliform Bacteria	Dissolved Copper	Dissolved Zinc		Score	Aquatic Habitat Condition	Significant Salmonid Use (yes/no)	Chinook Salmon Use (yes/no)	Coho Salmon Use (yes/no)	Other Salmonid Use (yes/no)			
Sammamish	Class I	77,015	3,697	Unknown	311	Sammamish River	Sammamish River	Sammamish River	Sammamish River	None	None	No data	No data	No data	No data	No data	No data	No data	No data	Yes	Yes	Yes	Yes	16.0%	
Bear	Class I	154,550	27,069	Unknown	1,055	None	None	None	None	None	Bear Creek	No data	No data	No data	No data	No data	46.6 (40.8 - 52.4)	Fair	Yes	Yes	Yes	Yes	14.0%		
Evans	Class I	54,523	15,933	Unknown	705	None	None	None	None	None	Evans Creek	No data	No data	No data	No data	No data	No data	No data	Yes	Yes	Yes	Yes	7.1%		
Lake Sammamish	Class I	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Lake Sammamish	None	Lake Sammamish	None	Lake Sammamish	None	No data	No data	No data	No data	No data	No data	No data	Yes	Yes	Yes	Yes	0.0%		
Clise	Class II	6,858	1,823	5,005	1,271	None	None	Clise Creek (previously named Birdcrest Creek)	None	None	None	No data	No data	No data	No data	No data	46.6 (38.0 - 55.5)	Poor to Fair	Yes	No	Yes	Yes	0.0%		
Colin	Class II	29,967	25,806	2,899	2,747	None	None	None	None	None	None	None	WY2016 WY2017 WY2018 WY2019 WY2020	WY2016 WY2017 WY2018 WY2019 WY2020	WY2018	None	0.32	44.3 (22.3 - 67.6)	Poor to Good	Yes	NS	NS	Yes	0.2%	
Country	Class II	10,865	5,351	10,850	5,351	None	None	Country Creek	None	None	None	WY2016 WY2017 WY2018 WY2019 WY2020	WY2016 WY2017 WY2018 WY2019 WY2020	None	WY2018 WY2020	0.30	21.5 (0 - 46.6)	Very Poor to Fair	No	No	No	No	0.0%		
High School	Class II	41,474	24,875	15,579	9,478	None	None	High School Creek	None	None	None	No data	No data	No data	No data	No data	51.1 (41.7 - 60.9)	Fair to Good	Yes	No	No	Yes	0.0%		
Idylwood	Class II	8,686	5,089	4,644	4,176	Idylwood Creek	Idylwood Creek	Idylwood Creek	None	None	Idylwood Creek	No data	No data	No data	No data	No data	8.7 (0.9 - 13.8)	Very Poor	No	No	No	Yes	0.0%		
Mackey	Class II	29,187	18,403	11,443	5,206	None	None	None	None	None	None	No data	No data	No data	No data	No data	63.3 (25.0 - 83.6)	Poor to Excellent	Yes	NS	NS	Yes	3.0%		
Monticello	Class II	10,205	6,308	6,589	3,580	None	None	None	None	None	None	WY2016 WY2017 WY2018 WY2019 WY2020	WY2016 WY2017 WY2018 WY2019 WY2020	WY2018 WY2020	WY2020	0.32	36.0 (5.9 - 74.0)	Very Poor to Good	Yes	No	Yes	Yes	5.5%		
Perrigo	Class II	5,077	3,879	5,077	3,879	None	None	None	None	None	None	No data	No data	No data	No data	No data	44.7 (24.1 - 64.1)	Poor to Good	No	No	No	Yes	61.4%		
Peters	Class II	23,758	13,137	23,758	13,137	Peters Creek	Peters Creek	Peters Creek	None	None	Peters Creek	No data	No data	No data	No data	No data	6.1 (1.5 - 12.5)	Very Poor	No	No	Yes	Yes	0.0%		
Sears	Class II	0	0	0	0	None	None	Overlake Sears Trunkline	None	None	None	No data	No data	No data	No data	No data	No data	No data	NS	NS	NS	No	0.0%		
Seidel	Class II	32,754	20,617	23,653	14,069	None	None	None	None	None	None	None	WY2016 WY2017 WY2018 WY2019 WY2020	WY2016 WY2017 WY2018 WY2019 WY2020	WY2018 WY2020	None	0.38	47.7 (18.2 - 60.4)	Very Poor to Good	Yes	No	Yes	Yes	1.8%	
Tosh	Class II	11,070	7,914	10,560	7,404	None	None	None	None	None	None	WY2017 WY2018 WY2019	WY2016 WY2017 WY2018 WY2019 WY2020	WY2016 WY2017	WY2016 WY2017 WY2018 WY2019 WY2020	0.27	23.1 (9.1 - 39.8)	Very Poor to Poor	Yes	No	Yes	Yes	0.0%		
Tyler's	Class II	3,443	2,140	3,323	2,020	None	None	None	None	None	None	WY2016 WY2017 WY2018 WY2019	WY2016 WY2017 WY2018 WY2019 WY2020	WY2016 WY2017 WY2018 WY2019	WY2017 WY2018 WY2019	0.27	16.3 (3.1 - 40.6)	Very Poor to Fair	No	No	Yes	Yes	18.8%		
Valley Estates	Class II	3,280	2,145	3,280	2,145	None	None	Valley Estates Creek	None	None	Valley Estates Creek	No data	No data	No data	No data	No data	10.1 (0.2 - 22.8)	Very Poor to Poor	No	No	No	Yes	0.0%		
Villa Marina	Class II	6,664	2,312	5,450	2,312	Villa Marina Creek	Villa Marina Creek	Villa Marina Creek	None	None	None	No data	No data	No data	No data	No data	No data	No data	No	No	No	Yes	0.0%		
Willows	Class II	22,977	10,183	22,977	10,183	Willows Creek	None	Willows Creek	None	None	None	No data	No data	No data	No data	No data	21.8 (11.3 - 36.5)	Very Poor to Poor	Wash	No	Yes	Yes	0.0%		
Data source	City of Redmond Shoreline Master Program; Washington Department of Natural Resources stream typing system	City GIS				Ecology WQA Database; listings are based upon 2016 Assessment						Redmond Paired Watershed Study: WY2016 - WY2020 (Herrera 2017, 2018, 2019, 2020, 2021)				Redmond Paired Watershed Study: WY2016 - WY2019 (Herrera 2017, 2018, 2021)			City of Redmond miscellaneous benthic invertebrate monitoring (Bhitton laboratory analysis): 2013 - 2021 Redmond Paired Watershed Study: WY2016 - WY2020 (Herrera 2017, 2018, 2019, 2020, 2021)				Washington Trout Surveys (2004 and 2005) Staff observations		City of Redmond provided CARA I shapefile in March 2022
Notes						Category 5 waterbodies on the 303(d) list due to impairment from the indicated parameter						Applicable water quality standard from WAC 173-201A-240 exceeded in each identified water year (WY) at one or more monitoring stations.				TQmean is the aggregate fraction of time during a water year that a hydrograph lies above the mean discharge for that water year. Lower values for TQmean suggested increased hydrologic impacts from urbanization. The average TQmean is presented for each creek from monitoring at one or more stations over water years 2016, 2017, 2018, and 2019.			B-IBI scores are computed on a scale that ranges from 0 to 100 to indicate relative stream health as follows: 80 to 100 for "excellent", 60 to 79 for "good", 40 to 59 for "fair", 20 to 39 for "poor", and 0 to 19 for "very poor". Average and range (in parentheses) of B-IBI scores is presented for each basin.						Calculation based on CARA I mapped area present within each watershed; applies to entire watershed area, not clipped at City limits.

City of Redmond

	Developed Area	combined High-pollutant landuse	Low-pollutant landuse	%Forest Cover	
Sammamish	78%	38%	54%	11%	Medium
Bear	80%	53%	35%	15%	Medium
Evans	77%	56%	37%	11%	Medium
Lake Sammamish	91%	6%	80%	6%	Medium
Clise	66%	0%	98%	34%	Medium
Colin	0%	0%	100%	100%	Low
Country	63%	1%	88%	30%	Medium
High School	77%	9%	87%	19%	Medium
Idylwood	81%	3%	96%	18%	Medium
Mackey	13%	0%	100%	87%	Low
Monticello	74%	5%	93%	22%	Medium
Perrigo	49%	2%	71%	30%	Medium
Peters	89%	16%	68%	9%	Medium
Sears	100%	93%	2%	0%	Hi
Seidel	0%	0%	100%	100%	Low
Tosh	77%	15%	60%	17%	Medium
Tyler's	74%	9%	81%	20%	Medium
Valley Estates	84%	9%	91%	9%	Medium
Villa Marina	87%	70%	11%	13%	Hi
Willows	62%	29%	71%	27%	Medium

Low	<20%	0%	100%	<20%
Medium				
High	>80%	>30%	<30%	>80%

Develop Area= % of "landscape" + % "other effective impervious areas"

Combined Hi pollutant landuse= % commercial + %industrial+ % highway

Low pollutant landuse=% open space + %residential

% Forest cover based on COR GIS analysis

3 or more green= low stormwater influence

2 or less red= Medium stormwater influence

3 or more red=High influence