

City of Brier Summary of LID Related Municipal Code Updates

(NPDES Permit Section S5.4.f)

March 2017, (updated November 2017)

Section 1 Introduction

The Western Washington NPDES Phase II Stormwater Permit (2013 – 2018), Section S5.C.4.f (Low impact development code-related requirements), directs the City to review, revise, and make effective local development related codes, rules and standards to incorporate and require Low Impact Development (LID) principals and LID Best Management Practices (BMPs) by December 31, 2016. This section further requires the compilation of a summary of that review and revision process. The following summary includes a description of the review process and participants, as well as the codes, rules, and standards reviewed and the associated revisions made to those documents.

Section 2 Review Team

The City of Brier chose to complete the LID development code review and revision process internally with the assistance of engineers from PACE Engineering and attorneys from Inslee Best. The team was selected based upon their familiarity with the existing codes, city processes, and the Western Washington NPDES Phase II Stormwater Permit (2013 – 2018). Table 1 shows the staff and a brief description of their job responsibilities and roles related to implementation of the NPDES Permit.

Table 1 Internal Review Team

Reviewer Name	Job Title	Initials	Brief Job Description
Balisky, Lauren	City Planner	LB	Responsible for planning and development services for the city, including comprehensive land use planning, land use permitting and inspections, and regional coordination of planning and development policy. Also responsible for the development and implementation of the City's critical areas policy and codes. Jointly responsible for NPDES testing.
Beverly, Eric	Building Official / Code Enforcement Officer	EB	Responsible for the administration, code development, and enforcement of the Building and Fire Codes, including plan review and inspection. Also responsible for all nuisance and development regulation code enforcement activities. Jointly responsible for NPDES testing.
Gaudette, Nicole	Former City Planner	NG	See job description above for "City Planner."
Kaseguma, Rod	City Attorney (Inslee Best)	RK	Provides contracted legal assistance to the City, including reviewing policy, code and regulation development, implementation and enforcement.
Maag, Rich	Public Works Foreman	RM	Responsible for the administration of the city's facilities, including streets, sewers, stormwater system, grounds maintenance, sidewalks, local improvement districts, signage, parks maintenance, and the development of policy, code, regulations and guidance for the above. Also responsible for permit review and inspections. Jointly responsible for NPDES testing.

Nelson, Robin	City Engineer (PACE)	RN	Provides contracted technical engineering assistance to the City.
Swisher, Paula	City Clerk / Treasurer	PS	Responsible for the administration of the city's utilities, budgeting, development fees, and financial assurances related to development proposals.
Weller, Paul	Planning Manager (PACE)	PW	Provides contracted technical land use assistance to the City.

Section 3 Review Process

The LID review focused on the Brier Municipal Code (BMC). All sections directly related to development and stormwater were reviewed. City staff used resources including the process outlined in Integrating LID and Local Codes: A Guidebook for Local Government (Puget Sound Partnership, 2012) to conduct the review.

During the development of the 2015 Update to the City of Brier Stormwater Management Plan (2015 SMP), a review was conducted to identify gaps in the existing BMC with the 2013-2018 NPDES Permit and other related topics. The Gap Analysis included recommendations for changes to the BMC to comply with the LID requirements identified in section S5.4.f of the NPDES permit. A copy of the Gap Analysis is included in the 2015 SMP available on the City of Brier website.

The City did not have a dedicated Stormwater BMC. Stormwater related BMCs were scattered throughout the City's code. On January 12, 2016, the Brier City Council adopted Ordinance 430 which created Title 14 to house all of the city's stormwater regulations and consolidated existing regulations from various titles and chapters throughout the BMC, including LID related topics.

In July 2016 the team began a second review to implement the recommendations of the gap analysis and modify the BMC to incorporate and require LID principles and LID BMPs where practicable. Modifications to the BMC focused on the three references goals in the NPDES Permit S5.4.f; 1) Measures to minimize impervious surfaces, 2) Measures to minimize loss of native vegetation, 3) Other measures to minimize stormwater runoff.

The team used the templates provided in the Puget Sound Partnership as a guide for code modifications but did not adopt the language verbatim. The team proposed new code language to remove redundant language; strengthen the standards for LID and use of BMPs for grading activities, Land Clearing and Tree Cutting, Off Street Parking, and Planned Unit Development, and Site Assessments; ownership and maintenance responsibility; water quality, and adjustments for experimental BMPs. Language related to enforcement and inspection procedures, including records and reporting requirements, were also clarified. Proposed language was routed to internal reviewers for comments and updated based upon their comments.

The City encouraged public input throughout the LID code updates. The proposed changes were vetted in open public meetings, went through the State Environmental Policy Act (SEPA) review process, and were submitted to the Department of Commerce pursuant to RCW376.70A.106(3)(b) under the Growth Management Act. Workshops were held with the Planning Commission and the City Council in October of 2016. All workshops were open to the public with agendas posted on the city's website and at locations around the city. The Planning Commission held a Public Hearing on the proposed changes on

November 16, 2016. Brier City Council approved Ordinance 442 adopting the changes at a public meeting held on 12/13/2016 and prior to the mandated 12/31/2016 deadline.

Section 4 Summary of Revisions related to LID

Title 14, as adopted in January 2016 and amended on December 13, 2016, provided regulations to comply with NPDES permit to protect property and waters in the city from erosion, sedimentation, pollution, and flooding. A summary of the BMCs specific to LID are summarized below:

Encourage Use of LID Principles and Practices:

- Concurrent with the adoption of Title 14, provisions were also added to Section 1.32.020 to address enforcement of stormwater regulations. Additionally, Ordinance 430 amended Section 16.16.150 to remove language related to provisions of stormwater management in subdivisions and short subdivisions. These regulations permitted LID BMPS for use as an *alternative* to conventional stormwater management systems with requirements for their approval. Title 14 of the BMC adopted the LID Manual by reference and required the submittal of documents by a professional engineer for any project which required a flow control, treatment or LID facility.

Measures to Minimize Impervious Surfaces:

- Section 14.04.180 required stormwater management for “any increase or replacement of 2,000 square feet of the impervious surface areas of a property or disturbance of 7,000 square feet or more of land, or on any property adjacent to or containing a critical area or a property with known drainage or flooding issues.”
- Chapter 17.29.010 - The dimensional standards for Single-Family Residential 12,500 (the largest zone in the City of Brier) were amended to require compliance with parking and native vegetation/landscaping standards and establish a maximum, impervious surface requirement.
- Chapter 17.30.060, Chapter 17.31.010, 17.32.01, 17.33.010 – The other major zones in Brier were amended to require compliance with parking and native/landscaping standards.
- Chapter 17.48 Parking and Storage of vehicles. Amended from a minimum to a maximum amount of parking for single-family uses. New section BMC 17.48.048 was added to provide parking requirements for non-single-family residential uses. This section established market-driven parking with a maximum instead of minimum parking requirements. Required the use of LID in parking areas which meet the review threshold. Established stall and aisle specifications to ensure efficient use of space. A landscaping component was also added to encourage use of native vegetation.

Measures to Minimize Loss of Native Vegetation:

- Other changes included repealing Chapter 19.12 (Clearing, Grading, and Filling) and Chapter 19.16 (Tree Preservation Ordinance). The provisions in these codes are now expanded to further address retention of native landscape, impervious surfaces, and stormwater runoff in 17.50 Native Vegetation and Landscaping and 19.24 Land Disturbing Activity.
- Chapter 17.50 Native Vegetation and Landscaping. This section of the code clarified and strengthened protections for significant trees and added protections for native vegetation to

complement Title 18 BMC - Critical Areas. For new development and redevelopment, a minimum amount of landscape area is required to be planted with native vegetation. Enforcement provisions were also added.

- Chapter 19.24. Land Disturbing Activity - Rewritten to work in conjunction with Chapter 14.04 BMC and the DOE Manual. Clarified permit requirements and exemptions. The revised chapter included requirements for Stormwater Pollution Protection Plans (SWPPP) for certain proposals; enforcement and stop work measures; and requirements for liability insurance and site maintenance.

Other Measures to Minimize Stormwater Runoff:

- Chapter 14 – This chapter was repealed and replaced to add to and strengthen the standards for LID, Bmps, ownership and maintenance responsibility, water quality, and adjustments for experimental Bmps. Enforcement and inspection procedures, including records and reporting requirements, were also clarified.
- Section 14.04.190c - “all site developments will be required to meet the stormwater treatment, flow control, and LID facility requirements of the Department of Ecology’s most current version of the Stormwater Management Manual For Western Washington.”
- Section 14.04.190d - “LID facilities are encouraged to improve water quality and aesthetics, as well as to reduce the size and cost of flow control and treatment facilities. LID facilities proposed in any site development shall be designed in accordance with the Low Impact Development Technical Guidance Manual for Puget Sound (most current edition).”
- Sect 14.04.190f - “Prior to final sign off of the stormwater project, all newly installed LID features shall be equipped with an educational sign providing information about the importance of the LID feature on the property and how to properly maintain it.”

Table 2 provides a detailed summary of the changes to the BMC related to LID adopted in Ordinance 442. Table 3 provides a summary of other changes adopted in 2016 by the City of Brier to comply with the NPDES Permit. The tables are arranged by BMC Code Chapter with discussion to indicate how they were revised to address LID requirements including measures to minimize impervious surface, native vegetation loss, and stormwater runoff. Table 4 summarizes the permit thresholds established by the new and revised codes.

Table No. 2 Summary of LID Changes adopted by the City of Brier

**Table No. 2
Summary of Brier Municipal Code LID Updates**

	A	B	C	D	E	F	G	H	I	J
1	Document Name Code Chapter or Other Enforceable Document	Section Reference / Page No. / Date Last Updated, etc.	Action Taken to meet NPDES Permit requirements	Describe How Revision(s) meet NPDES Permit Requirements OR if NO Revision Made, Explain Why	Code language or summary of intent/major provisions of code (italics)	Measures to Minimize			Initial(s) of Reviewers	
2						Impervious Surfaces	Native Vegetation Loss	Stormwater Runoff		
3	BMC 14 Stormwater	Chapter 14.04 BMC - Stormwater Management and Regulations Adopted January 2016, Updated December 2016, Effective December 31, 2016	Repeal and replace	This chapter was repealed and replaced. The revision adds and strengthens the standards for LID, Best Management Practices (BMPs), ownership and maintenance responsibility, water quality, and adjustments for experimental BMPs. Enforcement and inspection procedures, including records and reporting requirements, are also clarified. This chapter works in conjunction with the new BMC Chapters 17.50 Native Vegetation and Landscaping and 19.24 Land Disturbing Activity. The rows below provide the code section and title for the portions of the code revised to address LID.						LB, EB, RK, RM, RN, PW
4				BMC 14.04.010 Purpose.	G. Promote site planning and construction practices that are consistent with natural topographical, vegetation and hydrological conditions, utilizing low impact development (LID) to the maximum practical extent.	X	X	X		
5				BMC 14.04.040 Adoption and incorporation by reference.	2. Puget Sound Partnership and Washington State University Extension Program's Low Impact Development, Technical Guidance Manual for Puget Sound (LID Manual).	X	X	X		
6				BMC 14.04.180 Application – Stormwater permit – Minimum design requirements.	D. Low impact development (LID) techniques shall be employed to the maximum extent feasible. LID facilities are required to improve water quality and aesthetics, as well as to reduce the size and cost of flow control and treatment facilities.	X	X	X		
7	BMC 17 Zoning	BMC 17.29.010 - Single-Family Residential RS 12,500; Dimensional Standards Adopted 1991, Updated 1992, 1996, 2001, 2016, Effective December 31, 2016	Amend existing code	Requires development within this zone comply parking and native vegetation / landscaping standards to minimize impervious surface and retain native vegetation. Establishes maximum impervious surface requirement. Effective date December 31, 2016. The rows below provide the code section and title for the portions of the code revised to address LID.						LB, EB, RK, RM, RN, PW
8				BMC 17.29.010 Dimensional standards.	D. Maximum lot coverage: forty-five percent. See 17.48 for parking requirements and 17.50 for vegetation/landscaping requirements in this zone.	X	X			
9	BMC 17 Zoning	BMC 17.30.060 - Neighborhood Business Zone; Dimensional Standards and Parking Adopted 1991, Updated 1992, 1996, 2001, 2016, Effective December 31, 2016	Amend existing code	Requires development within this zone comply with parking and native vegetation / landscaping standards to minimize impervious surfaces and retain native vegetation. Effective date December 31, 2016						LB, EB, RK, RM, RN, PW
10				BMC 17.30.060 Dimensional standards and parking.	E. Maximum lot coverage: seventy-five percent. See 17.48 for parking requirements for this zone. See 17.50 for landscaping requirements in this zone.	X	X			

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11	BMC 17 Zoning	BMC 17.31.010 - Public Use District PI; Type of Use Adopted 1991, Updated 2016, Effective December 31, 2016	Amend existing code	Requires compliance with parking and native vegetation / landscaping standards to minimize impervious surface and retain native vegetation.						LB, EB, RK, RM, RN, PW
12				BMC 17.31.010	Type of use.	See 17.48 for parking requirements and 17.50 for vegetation/landscaping requirements in this zone.	X	X		
13	BMC 17 Zoning	BMC 17.32.010 - Cemetery Use District UC; Type of Use	Amend existing code	Requires development with this zone comply with parking and native vegetation / landscaping standards to minimize impervious surfaces and retain native vegetation. Effective date December 31, 2016						LB, EB, RK, RM, RN, PW
14				BMC 17.32.010	Type of use.	See 17.48 for parking requirements and 17.50 for vegetation/landscaping requirements in this zone.	X	X		
15	BMC 17 Zoning	BMC 17.33.010 - Open Space OS; Type of Use	Amend existing code	Requires development with this zone comply with parking and native vegetation / landscaping standards to minimize impervious surfaces and retain native vegetation. Effective date December 31, 2016						LB, EB, RK, RM, RN, PW
16				BMC 17.33.010	Type of use.	See 17.48 for parking requirements and 17.50 for vegetation/landscaping requirements in this zone.	X	X		
17	BMC 17 Zoning	Chapter 17.48 BMC - Parking and Storage of Vehicles Adopted 2012, Updated 2016, Effective December 31, 2016	Amend existing code	Amended existing code from a minimum to a maximum amount of parking for single-family uses to minimize driveways/impervious surfaces. New section BMC 17.48.048 added for non-single-family residential uses. Establishes market-driven parking with a maximum instead of minimum parking requirements to minimize impervious surfaces. Requires the use of LID in parking areas which meet the review threshold. Establishes stall and aisle specifications to ensure efficient use of space. Adds landscaping component to encourage use of native vegetation. The rows below provide the code section and title for the portions of the code revised to address LID.						LB, EB, RK, RM, RN, PW
18				BMC 17.48.040	Off-street vehicle parking for single-family residential uses.	A. A maximum of one off-street parking space per bedroom shall be on an improved surface. The area included in a garage may satisfy the requirement for required off-street parking spaces. The requirement for an improved surface shall be enforced in conjunction with property improvements and nonconformance requirements under BMC 17.08.040.	X	X	X	
19				BMC 17.48.045	Off-street vehicle parking for non-single-family residential uses.	1. All non-single-family residential uses shall provide parking based on anticipated parking demand. For sites with over two thousand square feet of parking area or five thousand square feet of total impervious surface, the study shall be completed by a professional engineer or equally qualified individual with expertise in parking analyses. Parking shall be shared between properties to the extent feasible. The parking requirement may be reduced for sites where the peak parking requirements occur at different times of the day, week, or year. A maximum of one parking space per one hundred square feet of gross floor area shall be provided. 2. Low Impact Development (LID) techniques shall be employed to the maximum extent feasible.	X	X	X	
20				BMC 17.48.060	Plan review.	No building, grading or tenant improvement permit shall be issued until plans showing provisions for the required off-street parking have been submitted to and approved by the director as conforming to the standards of this chapter	X	X	X	

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21	BMC 17 Zoning	Chapter 17.50 BMC - Native Vegetation and Landscaping Adopted 2016, Effective December 31, 2016	Adoption of new chapter	Clarified and strengthened protections for significant trees. Added protections for native vegetation to complement existing Title 18 BMC - Critical Areas. For new development and redevelopment, requires a minimum amount of landscape area to be planted with native vegetation. Adds enforcement provisions. This chapter works in conjunction with the Chapters 14.04 and 19.24 BMC.						LB, EB, RK, RM, RN, PW
22				BMC 17.50.010	Purpose.	F. Promote site planning and landscaping practices that are consistent with natural topographical, vegetation and hydrological conditions, utilizing low impact development (LID) to the maximum practical extent.	X	X		
23				BMC 17.50.040	Adoption and incorporation by reference.	7. Washington State Department of Ecology Stormwater Management Manual for Western Washington (SWMMWW). 8. Puget Sound Partnership and Washington State University Extension Program's Low Impact Development Technical Guidance Manual for Puget Sound (LID Manual).	X	X		
24				BMC 17.50.080	Applicability.	The provisions of this chapter shall be a minimum standard and shall apply to all vegetated areas and landscaping activities not exempt from this chapter.	X	X		
25				BMC 17.50.090	Landscape plan required.	No individual, firm, or corporation shall install, disturb, or remove landscaping without first obtaining a permit issued by the city. All applicants shall file a written application pursuant to this chapter.	X	X		
26				BMC 17.50.100	Tree removal and replacement permit required.	A tree removal and replacement permit is required for removal of any protected, required, or significant tree.	X	X		
27				BMC 17.50.150	Protection of rare, threatened, and endangered plants.	The landscape plan shall delineate, protect and preserve threatened and endangered plants, including species of special concern, to the maximum extent practicable. The following areas shall count towards the minimum landscaping requirement:	X	X		
28				BMC 17.50.200	Landscaping area credit.	A. Critical areas delineated and protected per the requirements of BMC Title 18; B. LID stormwater facilities constructed per the requirements of Chapter 14.04 BMC; and C. The area under the drip line of an appropriate tree once mature.	X	X		
29				BMC 17.50.230	Landscape plan.	A. All proposals required to submit a landscape plan under this chapter shall be reviewed by the director and shall comply with the standards, specifications and requirements contained in the BMC.	X	X		
30				BMC 17.50.240	Landscape plan – Minimum appropriate native vegetation required.	A. All landscaped areas for publicly owned properties and privately owned properties that are not a single-family use requiring a landscape plan shall be made up of a minimum of ninety percent appropriate native plants. A minimum of seventy-five percent of the landscaped areas shall be made up of evergreen varieties. B. All landscaped areas for privately owned single-family residential use properties requiring a landscape plan shall be made up of a minimum of seventy-five percent appropriate native plants. A minimum of fifty percent of the landscaped areas shall be made up of evergreen varieties. (Ord. 442 § 10 (Exh. J) (part), 2016)	X	X		
31				BMC 17.50.250	Landscape plan – Minimum landscaping area required.	<i>Establishes minimum turf grass area, minimum landscape area, minimum landscape area for parking lots, buffer, street frontage</i>	X	X		
32				BMC 17.50.300	Tree replacement requirements.	A. Any significant or required tree to be removed shall be replaced by a minimum two-to-one ratio of replacement trees to removed trees	X	X		

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33				BMC 17.50.310	Native vegetation replacement.	The applicant shall demonstrate that native plant installation will meet the minimum standards of this section. A. Any native plants removed shall be replaced at a minimum one-to-one ratio. B. Native plants shall be planted on the site from which the vegetation was removed.	X	X		
34				BMC 17.50.320	Tree and vegetation protection.	A. To ensure long-term viability of trees, tree stands and vegetation identified for protection, permit plans and construction activities shall comply with the following: 1. All construction activities, including staging and traffic areas, shall be prohibited within five feet of the vegetation and/or the drip line of protected trees. Except for the use of roads and constructed pathways, land clearing machinery shall be kept outside of the protection area. 2. Protective barriers shall be installed five feet beyond the protected area prior to any land disturbance. 3. Protective barriers shall be a minimum of four feet high, constructed of chain link, or polyethylene laminar safety fencing or similar material, subject to approval by the director. Signs clearly indicating the protected status shall be posted visibly on all sides of the fence. On large or multiple-project sites, the director may also require that signs requesting subcontractor cooperation and compliance with protection standards be posted at site entrances.	X	X		
35				BMC 17.50.160	Soil disturbance and amendments.	Property owners shall limit disturbance of existing healthy soil to protect and maintain soil structure, existing hydrology, organic matter, and nutrients stored in soils. Any soil additions shall be similar to the existing soil in pH, texture, permeability and other characteristics. Shredded yard clippings and leaves from healthy plant material may be composted for use as soil amendments.	X	X		
36				BMC 17.50.170	Mulches and ground cover.	Mulches may be applied and shall be maintained at an appropriate depth in planting beds to assist soils in retaining moisture, reducing weed growth, and preventing erosion. Gravel, river rock, shell and similar material shall not be used as a major landscape ground cover or mulch. The use of certified clean mulch, which has been tested to be free of metals and other chemicals, is strongly encouraged for use in all landscape areas. Shredded yard clippings and leaves from healthy plant material may be used for mulch.	X	X		
37	BMC 19 Environment	Chapter 19.24 BMC - Land Disturbing Activity Adopted 2016, Effective December 31, 2016	Adoption of new chapter	Code rewritten to work in conjunction with Chapter 14.04 BMC and the DOE Manual to promote retention of trees and native vegetation. Clarified permit requirements and exemptions. Added requirement for SWPPP for certain proposals, enforcement and stop work measures, and requirements for liability insurance and site maintenance. This chapter works in conjunction with BMC Chapters 14.04 Stormwater and 17.50 Native Vegetation and Landscaping. The rows below provide the code section and title for the portions of the code revised to address LID.						LB, EB, RK, RM, RN, PW
38				BMC 19.24.010	Purpose.	G. Promote site planning and construction practices that are consistent with natural topographical, vegetation and hydrological conditions, utilizing low impact development (LID) to the maximum practical extent, while recognizing that certain factors such as condition of plants, proximity to existing and proposed structures and improvements, interference with utility services, and reasonable use of property may require removal of certain trees and ground cover.		X	X	
39				BMC 19.24.040	Adoption and incorporation by reference.	2. Puget Sound Partnership and Washington State University Extension Program's Low Impact Development Technical Guidance Manual for Puget Sound (LID Manual).		X	X	
40				BMC 19.24.100	SWPPP required.	A SWPPP is required for all projects which require a permit under this chapter and: A. Are located within one hundred feet of a critical area with its associated buffer; and/or B. Involve seven thousand square feet or more of land disturbing activity; and/or C. Involve two thousand square feet or more of new impervious surface, replaced impervious surface or new plus replaced impervious surface.		X	X	
41				BMC 19.24.110	Additional requirements.	The director may require additional measures as appropriate for the project		X	X	

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42				BMC 19.24.120	Land disturbing activity permit.	<i>Requires a permit for land disturbing work. Describes permit requirements including area proposed for clearing and revegetation; location of erosion control devices or structures; existing soil types, location of all trees; proposed grade changes that may adversely affect or endanger trees; location of critical area.</i>		X	X	
43				BMC 19.24.130	Land disturbing activity permit review criteria.	<i>The proposed plan shall not allow the unnecessary removal of vegetation. Removal is unnecessary if it is not required for the proposed use(s). Considerations for approval: clearing, grading or filling in a sensitive area or its buffer is not allowed; fill using materials other than natural earth shall not be allowed; season of work; replacement of vegetation; protection measures for vegetation to be retained.</i>		X	X	
44	BMC 19 Environment	Chapter 19.12 BMC - Clearing, Grading and Filling Adopted 1996, Updated 2011	Repealed	This chapter was repealed and replaced by Chapter 19.24 BMC.						LB, EB, RK, RM, RN, PW
45	BMC 19 Environment	Chapter 19.16 BMC - Tree Preservation Ordinance Adopted 2006, Updated 2011	Repealed	This chapter was repealed and replaced by Chapter 17.50 BMC.						LB, EB, RK, RM, RN, PW

Table No. 3 Summary of Non-LID Code Changes Adopted to Comply with the NPDES Permit

Table No. 3 Summary of Brier Municipal Code NPDES Permit Compliance

Code Chapter or Other Enforceable Section Document	Reference / Page No. / Date Last Updated, etc.	Action Taken to meet NPDES Permit requirements	Describe How Revision(s) meet NPDES Permit Requirements OR if NO Revision Made, Explain Why	Measures to Minimize			Initial(s) of Reviewers
				Impervious Surfaces	Native Vegetation Loss	Stormwater Runoff	
BMC 12 Streets, Sidewalks and Public Places	Chapter 12.24 BMC - Stormwater Detention Facilities Effective 1987	Repealed	This chapter is repealed without replacement. Chapter 12.24 BMC references back to the stormwater standards of the city, and has an additional requirement stating that the facility will not flood more than one hundred (100) sq. ft. of open space. After conferring with staff, the City Engineer, and the City Attorney, all agreed that the provisions of this chapter were already addressed in full by Chapter 14.04 BMC.				LB, EB, RK, RM, RN, PW
BMC 14 Stormwater	Chapter 14.04 BMC - Stormwater Management and Regulations Adopted January 2016, Updated December 2016, Effective December 31, 2016	Repeal and replace	This chapter was repealed and replaced. The revision adds and strengthens the standards for LID, Best Management Practices (BMPs), ownership and maintenance responsibility, water quality, and adjustments for experimental BMPs. Enforcement and inspection procedures, including records and reporting requirements, are also clarified. This chapter works in conjunction with the new Chapters 17.50 and 19.24 BMC.	X	X	X	LB, EB, RK, RM, RN, PW
			S5.C.3.b – Prohibits non-stormwater illicit discharges				
			BMC 14.04.070 Standing water prohibited.				
			BMC 14.04.080 Nonstormwater, illegal discharges, and dumping prohibited.				
			BMC 14.04.090 Illicit connections and uses.				
			BMC 14.04.100 Stormwater discharge into sanitary sewer system prohibited.				
			BMC 14.04.110 Unpolluted stormwater discharge shall have approved outlet.				
			S5.C.3.b.i – Specific categories of discharges allowed.				
			BMC 14.04.080(D) Nonstormwater, illegal discharges, and dumping prohibited.				
			S5.C.3.b.ii – Allows conditional non-stormwater discharges under certain criteria				
			BMC 14.04.120 Conditional discharges.				
			S5.C.3.b.iv – Escalating enforcement procedures				
			BMC 14.04.340 Enforcement.				
			BMC 14.04.350 Stop work orders.				
			BMC 14.04.360 Order to maintain or repair.				
			BMC 14.04.370 Water quality test procedures				
			BMC 14.04.380 Liability for costs of investigation.				
			BMC 1.28 General penalty.				
			S5.C.3.b.v – Source control BMPs				
			BMC 14.04.140 Adjustments.				
			BMC 14.04.180(C) Application – Stormwater permit – Minimum design requirements.				
			S5.C.3.b.v – Maintenance of stormwater facilities				
			BMC 14.04.260 Inspection – Privately maintained stormwater facilities.				
			BMC 14.04.280 Ownership of stormwater facilities.				
			BMC 14.04.290 Maintenance – Responsibility and standards.				
			BMC 14.04.300 Maintenance – Disposal of waste.				
			S5.C.3.b.vi – Regulatory mechanism shall be in effect by February 2, 2018				
			Effective date December 31, 2016				
			S5.C.4.a – Addresses runoff from new development, redevelopment, and construction sites.				
			BMC 14.04.055 Applicability.				
			BMC 14.04.060 Permit required.				
			BMC 14.04.150 Application – Stormwater discharge permit.				

Table No. 3 Summary of Brier Municipal Code NPDES Permit Compliance

Code Chapter or Other Enforceable Section Document	Reference / Page No. / Date Last Updated, etc.	Action Taken to meet NPDES Permit requirements	Describe How Revision(s) meet NPDES Permit Requirements OR if NO Revision Made, Explain Why	Impervious Surfaces	Native Vegetation Loss	Stormwater Runoff	Initial(s) of Reviewers
			BMC 14.04.160 Application – Stormwater permit – Requirements.				
			S5.C.4.a – Regulatory mechanism shall be in effect by December 31, 2016				
			Effective date December 31, 2016				
			S5.C.4.a.i – Meet the minimum requirements, thresholds and definitions of current NPDES Permit				
			BMC 14.04.040 Adoption and incorporation by reference.				
			BMC 14.04.180 Application – Stormwater permit – Minimum design requirements.				
			S5.C.4.a.ii – Complies with Appendix I of the SWMMWW for site planning, BMP selection, design, infeasibility, and limitations, and LID competing needs				
			BMC 14.04.040 Adoption and incorporation by reference.				
			BMC 14.04.180 Application – Stormwater permit – Minimum design requirements.				
			S5.C.4.a.iii – Legal authority to inspect and enforce maintenance standards				
			BMC 14.04.020 Jurisdiction.				
			BMC 14.04.030 Authority.				
			BMC 14.04.240 Inspection – Procedures.				
			BMC 14.04.260 Inspection – Privately maintained stormwater facilities.				
			BMC 14.04.290 Maintenance – Responsibility and standards.				
			S5.C.4.b – Process uses qualified personnel				
			BMC 14.04.050 Definitions.				
			BMC 14.04.160 Application – Stormwater permit – Requirements.				
			S5.C.4.b.i – Requires review of all stormwater site plans for proposed development activities				
			BMC 14.04.055 Applicability.				
			BMC 14.04.060 Permit required.				
			BMC 14.04.150 Application – Stormwater discharge permit.				
			BMC 14.04.160 Application – Stormwater permit – Requirements.				
			S5.C.4.b.ii – Authority to inspect prior to construction				
			BMC 14.04.160 Application – Stormwater permit – Requirements.				
			S5.C.4.b.iii – Inspect all sites during construction				
			BMC 14.04.220 Inspection.				
			BMC 14.04.240 Inspection – Procedures.				
			BMC 14.04.340 Enforcement.				
			BMC 14.04.350 Stop work orders.				
			BMC 14.04.360 Order to maintain or repair.				
			S5.C.4.b.iv – Inspect all sites at completion to ensure maintenance plan in place and proper installation				
			BMC 14.04.190 Application – Stormwater permit – Additional submittal requirements.				
			BMC 14.04.220 Inspection.				
			BMC 14.04.240 Inspection – Procedures.				
			BMC 14.04.260 Inspection – Privately maintained stormwater facilities.				
			BMC 14.04.340 Enforcement.				
			BMC 14.04.350 Stop work orders.				

Table No. 3 Summary of Brier Municipal Code NPDES Permit Compliance

Code Chapter or Other Enforceable Section Document	Reference / Page No. / Date Last Updated, etc.	Action Taken to meet NPDES Permit requirements	Describe How Revision(s) meet NPDES Permit Requirements OR if NO Revision Made, Explain Why	Impervious Surfaces	Native Vegetation Loss	Stormwater Runoff	Initial(s) of Reviewers
			BMC 14.04.360 Order to maintain or repair. S5.C.4.b.v – Maintain inspection records BMC 14.04.270 Inspection – Records and reporting. S5.C.4.b.vi – Have an enforcement strategy BMC 14.04.340 Enforcement. BMC 14.04.350 Stop work orders. BMC 14.04.360 Order to maintain or repair. BMC 14.04.370 Water quality test procedures BMC 14.04.380 Liability for costs of investigation. BMC 1.28 General penalty. S5.C.4.c.i – Identifies party responsible for maintenance BMC 14.04.280 Ownership of stormwater facilities. S5.C.4.c.i – Requires ongoing inspection of stormwater facilities BMC 14.04.190 Application – Stormwater permit – Additional submittal requirements. BMC 14.04.260 Inspection – Privately maintained stormwater facilities. BMC 14.04.290 Maintenance – Responsibility and standards. S5.C.4.c.ii – Requires maintenance standards in compliance with Chapter 4 of Volume V of SWMMWW BMC 14.04.290 Maintenance – Responsibility and standards. S5.C.4.c.iii – Requires annual inspections, unless maintenance records indicate another frequency is acceptable BMC 14.04.190 Application – Stormwater permit – Additional submittal requirements. BMC 14.04.260 Inspection – Privately maintained stormwater facilities. S5.C.4.c.v – Maintain inspection records BMC 14.04.270 Inspection – Records and reporting. S5.C.4.c.vi – Maximum time period for maintenance when maintenance standard exceeded BMC 14.04.190 Application – Stormwater permit – Additional submittal requirements. BMC 14.04.290 Maintenance – Responsibility and standards.				
BMC 17 Zoning	Chapter 17.50 BMC - Native Vegetation and Landscaping Adopted 2016, Effective December 31, 2016	Adoption of new chapter	Clarified and strengthened protections for significant trees. Added protections for native vegetation to complement Title 18 BMC - Critical Areas. For new development and redevelopment, requires a minimum amount of landscape area to be planted with native vegetation. Adds enforcement provisions. This chapter works in conjunction with the Chapters 14.04	X	X		LB, EB, RK, RM, RN, PW
			S5.C.4.a – Addresses runoff from new development, redevelopment, and construction sites. BMC 17.50.080 Applicability. BMC 17.50.090 Landscape plan required. BMC 17.50.100 Tree removal and replacement permit required. S5.C.4.a – Regulatory mechanism shall be in effect by December 31, 2016 Effective date December 31, 2016 S5.C.4.b – Process uses qualified personnel BMC 17.50.060 Definitions. BMC 17.50.230 Landscape plan. BMC 17.50.280 Tree removal and replacement permit – Major.				

Table No. 3 Summary of Brier Municipal Code NPDES Permit Compliance

Code Chapter or Other Enforceable Section Document	Reference / Page No. / Date Last Updated, etc.	Action Taken to meet NPDES Permit requirements	Describe How Revision(s) meet NPDES Permit Requirements OR if NO Revision Made, Explain Why	Impervious Surfaces	Native Vegetation Loss	Stormwater Runoff	Initial(s) of Reviewers
			S5.C.4.b.ii – Authority to inspect prior to construction BMC 17.50.020 Jurisdiction. BMC 17.50.030 Authority. BMC 17.50.350 Inspection.				
BMC 19 Environment	Chapter 19.24 BMC - Land Disturbing Activity Adopted 2016, Effective December 31, 2016	Adoption of new chapter	Rewritten to work in conjunction with Chapter 14.04 BMC and the DOE Manual. Clarified permit requirements and exemptions. Added requirement for SWPPP for certain proposals, enforcement and stop work measures, and requirements for liability insurance and site maintenance. This chapter works in conjunction with Chapters 14.04 and		X	X	LB, EB, RK, RM, RN, PW
			S5.C.3.b.v – Source control BMPs BMC 19.24.040 Adoption and incorporation by reference. BMC 19.24.100 SWPPP required. BMC 19.24.110 Additional requirements. S5.C.4.a – Addresses runoff from new development, redevelopment, and construction sites. BMC 19.24.060 Applicability. BMC 19.24.070 Permit required. S5.C.4.a – Regulatory mechanism shall be in effect by December 31, 2016 Effective date December 31, 2016 S5.C.4.a.i – Meet the minimum requirements, thresholds and definitions of current NPDES Permit BMC 19.24.040 Adoption and incorporation by reference. BMC 19.24.110 Additional requirements. BMC 19.24.120 Land disturbing activity permit. S5.C.4.a.ii – Complies with Appendix I of the SWMMWW for site planning, BMP selection, design, infeasibility, and limitations, and LID competing needs BMC 19.24.040 Adoption and incorporation by reference. BMC 19.24.100 SWPPP required. BMC 19.24.110 Additional requirements. S5.C.4.b – Process uses qualified personnel BMC 19.24.050 Definitions. BMC 19.24.100 SWPPP required. BMC 19.24.120 Land disturbing activity permit. S5.C.4.b.i – Requires review of all stormwater site plans for proposed development activities BMC 19.24.060 Applicability. BMC 19.24.070 Permit required. S5.C.4.b.ii – Authority to inspect prior to construction BMC 19.24.160 Inspection. S5.C.4.b.iii – Inspect all sites during construction BMC 19.24.160 Inspection. S5.C.4.b.vi – Have an enforcement strategy BMC 19.24.200 Enforcement. BMC 19.24.210 Stop work orders. S5.C.4.c.i – Identifies party responsible for maintenance				

Table No. 3 Summary of Brier Municipal Code NPDES Permit Compliance

Code Chapter or Other Enforceable Section Document Reference / Page No. / Date Last Updated, etc.	Action Taken to meet NPDES Permit requirements	Describe How Revision(s) meet NPDES Permit Requirements OR if NO Revision Made, Explain Why	Impervious Surfaces	Native Vegetation Loss	Stormwater Runoff	Initial(s) of Reviewers
		BMC 19.24.190 Maintenance.				
		S5.C.4.c.ii – Requires maintenance standards in compliance with Chapter 4 of Volume V of SWMMWW				
		BMC 19.24.040 Adoption and incorporation by reference.				
		BMC 19.24.050 Definitions.				
		BMC 19.24.190 Maintenance.				

Table 4 Permit Thresholds

Permit Thresholds (Summarized for Clarity)	Land Disturbing Activity Permit	Landscape Plan	Parking	Stormwater Permit	SWPPP	Stormwater Discharge Permit	Tree Removal Permit - Minor	Tree Removal Permit - Major
Approval or issuance of a land use or development permit	X	X		X				
≥ 2,000 sq. ft. of new, replaced, or new plus replaced impervious surface	X			X	X			
≥ 2,000 sq. ft. of new, replaced, or new plus replaced impervious surface for non-single-family residential uses	X	X		X	X			
≥ 2,000 sq. ft. of new, replaced, or new plus replaced parking area	X	X	X	X	X			
≥ 2,000 sq. ft. of collection and concentration of surface and stormwater runoff				X				
≥ 2,000 sq. ft. of land disturbing activity	X							
≥ 5,000 sq. ft. of land disturbing activity	X	X						
≥ 7,000 sq. ft. of land disturbing activity	X	X		X	X			
≥ 50% modification of pre-existing landscape or native growth area		X						
≥ 50% of assessed or appraised value, whichever is higher, of improvements on site			X	X				
Located ≤ 100 ft. of a critical area	X				X			
Located within or adjacent to a critical area or a receiving water with a documented water quality, drainage or flooding problem	X	X		X				
Maintenance, repair, alteration, replacement or improvements that are located in a critical area OR adversely affect neighboring properties or the MS4	X			X				
Located on a publicly owned property	X							
Excavation ≥ 4 ft. in vertical depth, or fill ≥ 3 ft. in vertical depth, of > 50 CY on a single site	X							
Excavation ≥ 4 ft. in vertical depth, or fill ≥ 3 ft. in vertical depth, of > 100 CY on a single site	X			X				
Change in use that could release a new pollutant to the MS4				X				

Construction or modification of a utility pipe or ditch that is ≥ 12 in. or connected to a utility pipe ≥ 12 in. in size or depth				X				
Installation or expansion of a stormwater facility or regional stormwater facility				X				
Projects that will exceed the designed capacity of an existing stormwater facility				X				
Discharge to MS4 AND no land use or development permit OR critical area OR construction or expansion of a stormwater facility							X	
Located outside a critical area AND remove significant or required trees								X
Approval or issuance of a land use or development permit OR located wholly or partially in a critical area AND remove significant, protected or required trees								X

Abbreviations

Abbreviation / Acronym	Meaning
Appraisal Guide	Council of Tree & Land Appraisers' Guide for Plant Appraisal
APWA Manual	American Public Works Association/Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction
BMC	Brier Municipal Code
Bmp	Best Management Practices
City	City of Brier, Snohomish County, Washington
DFW PHSL	Washington State Department of Fish and Wildlife's Priority Habitats and Species List
DNR NWNHP	Washington State Department of Natural Resources Natural Washington Natural Heritage Program's List of Rare Plants in Snohomish County
KCNP Guide	King County Native Plant Guide
LID	Low Impact Development
LID Manual	Puget Sound Partnership and Washington State University Extension Program's Low Impact Development, Technical Guidance Manual for Puget Sound
SEPA	State Environmental Policy Act
SWMMWW	Washington State Department of Ecology Stormwater Management Manual for Western Washington
USFW List	United States Fish & Wildlife Endangered and Threatened Species List for Washington State
WNPS Guide	Washington Native Plant Society's Native Plants for Western Washington Gardens and Restoration Projects

References

2012 Integrating LID into Local Codes: A Guidebook for Local Governments. Prepared by AHBL for the Puget Sound Partnership.

2015 Stormwater Management Plan Update. City of Brier. Prepared by PACE Engineers.

<http://ci.brier.wa.us/pdf/2015SWMP.pdf>. Accessed November 09, 2107.

Brier Municipal Code. <http://www.codepublishing.com/WA/Brier/>. Accessed November 09, 2017.

Washington Department of Ecology's NPDES Phase II Permit for Western Washington.

<http://www.ecy.wa.gov/programs/wq/stormwater/municipal/phaseIIww/wwphiipermit.html>. Accessed November 09, 2017.



S.5.C.1.a.i and ii

According to S.5.C.1.a.i of the city's NPDES permit, we were required to build general awareness of a target audience of a particular subject. The city teamed up with the Snohomish Conservation District (SCD) to meet this requirement. The city chose to provide classroom lessons to the local schools that focused on surface water. The SCD is under contract to manage the program for the city.

SCD reported that in 2016 none of the schools in Brier opted into the program. The City and SCD are evaluating alternative options for 2017 to better meet this requirement.

S.5.C.1.a.ii of the city's NPDES permit required the city to measure the understanding and adoption of the targeted behaviors of a target audience in a subject area. To do this we teamed up with Snohomish County and provided trainings for natural yard care and then measured the adoption and understanding of natural yard care techniques. The Natural Yard Care program implemented two methods of educating the target audience. At the conclusion of the program, the two methods were compared for their effectiveness. A detailed report of the program is an attachment to this annual report.



CITY HALL
2901-228th STREET S.W.
BRIER, WASHINGTON 98036

PHONE: 425-775-5440
FAX: 425-672-9025

Link to Stormwater Management Program Plan

<http://ci.brier.wa.us/publicworks/stormwater.htm>



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S5.C.1.b

Natural Yard Care Outreach and Education Report

<http://pugetsoundstorm.weebly.com/natural-yard-care-gross.html>



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The city made all associated documents available to the public at City Hall and on the City's website. An email address and phone number are available on the City's website to contact the Public Works Department. There was also an opportunity for comment in front of the City Council.



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The City uses the methodology described in "Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments."



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The City informs public employees, businesses, and the public of hazards associated with illicit discharges in a few ways. City employees are provided information regarding illicit discharges during monthly safety meetings. They also receive training specific to illicit discharges where hazards are discussed. The general public and businesses are informed through articles in the city's regular newsletter. These topics are also discussed with the public at National Night Out. Handouts are provided at National Night Out and at City Hall.



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All actions taken in response to illicit discharges were for the same project (226th St SW / Arcadia).

1. Dirt tracked onto public road; contractor required to clean road (timeline 2 hours for cleanup).
2. Contractor pumped dirty water into City MS4. City stopped the pumping and contractor required to clean MS4 of silt (timeline 4 hours).
3. Contractor discharged dirty water off-site. City required proper BMP to control runoff (timeline 1 hour).
4. Contractor washed concrete off an aggregate driveway. City sandbagged the runoff. Contractor hired vector truck to clean affected MS4 and gutter (timeline 4 hours).



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Chapters 14.04 (Stormwater Management and Regulations), 19.24 (Land Disturbing Activity), and 17.50 (Native Vegetation and Landscaping) of the Brier Municipal Code (BMC).



S7.A

Public Education and Outreach

The city staffs a booth at its annual National Night Out event. Staff hangs posters, provides pamphlets and speaks to citizens about many facets of stormwater impacts including bacterial pollution. The City also provides pamphlets about bacterial pollution in its lobby, encloses pamphlets in utility billings from time to time and writes a column in its quarterly newsletter to provide information to the public. The city contracts with the Snohomish Conservation District to provide classroom lesson in the local schools.

Operations & Maintenance

Animal waste collection stations have been installed at all city parks including a collection station at the horse arena.

IDDE

IDDE screening occurs routinely as crews inspect and maintain the city's MS4.

Targeted Source Identification & Elimination

Targeted source identification and elimination efforts began during August 2014. The city continues testing stormwater sources and adjusts testing locations according to bacteria levels. The city is testing all outfalls to Scriber Creek, a significant tributary to Swamp Creek. The city has not found any significant source of fecal coliform to Scriber Creek. A summary of this testing is being provided as part of the 2016 annual report.

Surface Water Monitoring

A revised QAPP was approved by Ecology in 2015. The city has been monitoring Scriber Creek since November 2014 to supplement information gathered as part of the targeted source identification and elimination program and to comply with TMDL requirements. Testing methods were revised in 2015 to comply with testing protocols in the revised QAPP. A summary of this testing is being provided as part of the 2016 annual report.

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com



Professional
Analytical
Services

ANALYSIS REPORT

2016

CITY OF BRIER
2901 228TH ST SW
BRIER, WA 98036
Attention: RICH MAAG
Project Name: TMDL
All results reported on an as received basis.

Date Received: 12/21/16
Date Reported: 12/29/16

AMTEST Identification Number 16-A030824
Client Identification CONTROL SAMPLE #1
Sampling Date 12/21/16

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
Fecal Coliform	38.	CFU/100 ml		1	SM 9222D	NG	12/21/16 15:00

AMTEST Identification Number 16-A030825
Client Identification CONTROL SOURCE #1
Sampling Date 12/21/16

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
Fecal Coliform	4.	CFU/100 ml		1	SM 9222D	NG	12/21/16 15:00

AMTEST Identification Number 16-A030826
Client Identification CONTROL SOURCE #2
Sampling Date 12/21/16

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
Fecal Coliform	28.	CFU/100 ml		1	SM 9222D	NG	12/21/16 15:00

AMTEST Identification Number 16-A030827
Client Identification CONTROL SOURCE #3
Sampling Date 12/21/16

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
Fecal Coliform	13.	CFU/100 ml		1	SM 9222D	NG	12/21/16 15:00

AMTEST Identification Number 16-A030828
Client Identification CONTROL SOURCE #4
Sampling Date 12/21/16

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
Fecal Coliform	10.	CFU/100 ml		1	SM 9222D	NG	12/21/16 15:00

AMTEST Identification Number 16-A030829
Client Identification CONTROL SOURCE #5
Sampling Date 12/21/16

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
Fecal Coliform	5.	CFU/100 ml		1	SM 9222D	NG	12/21/16 15:00

AMTEST Identification Number 16-A030830
Client Identification CONTROL SOURCE #6
Sampling Date 12/21/16

AMTEST Identification Number 16-A030831
Client Identification CONTROL SOURCE #7
Sampling Date 12/21/16

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
Fecal Coliform	5.	CFU/100 ml		1	SM 9222D	NG	12/21/16 15:00

AMTEST Identification Number 16-A030832
Client Identification CONTROL SOURCE #8
Sampling Date 12/21/16

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
Fecal Coliform	6.	CFU/100 ml		1	SM 9222D	NG	12/21/16 15:00

AMTEST Identification Number 16-A030833
Client Identification CONTROL SAMPLE #2
Sampling Date 12/21/16

Microbiological

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE / TIME
Fecal Coliform	43.	CFU/100 ml		1	SM 9222D	NG	12/21/16 15:00



Kathy Fugiel
President



QC Summary for sample numbers: 16-A030824 to 16-A030833

BLANKS

ANALYTE	UNITS	RESULT
Fecal Coliform	CFU/100 ml	< 1
Fecal Coliform	CFU/100 ml	< 1

SM 9222D G1c1 - Fecal Coliform/ E.coli - CFU

Job Number: 160988

SEA

Client: City of Brier

Project Name: Unavailable at Login

Report Number: 160988R01
 Date Received: 11/16/2016

Lab/Cor Sample No.	Client Sample	Analyte Type	Analysis Result	UOM	95% Confidence Interval	Sample Date	Sample Time	Analyst
S1	1 - Control Sample #1, WA Water ID#: 11919425	FECAL COLIFORM	626	CFU/100ml	601 - 651	11/16/2016		SH
S2	2 - Outfall Source #1, WA Water ID#: 11919426	FECAL COLIFORM	883	CFU/100ml	853 - 913	11/16/2016		SH
S3	3 - Outfall Source #2, WA Water ID#: 11919427	FECAL COLIFORM	258	CFU/100ml	242 - 274	11/16/2016		SH
S4	4 - Outfall Source #3, WA Water ID#: 11919428	FECAL COLIFORM	700	CFU/100ml	674 - 726	11/16/2016		SH
S5	5 - Outfall Source #4, WA Water ID#: 11919429	FECAL COLIFORM	283	CFU/100ml	266 - 300	11/16/2016		SH
S6	6 - Outfall Source #5, WA Water ID#: 11919430	FECAL COLIFORM	419	CFU/100ml	399 - 439	11/16/2016		SH
S7	7 - Outfall Source #6, WA Water ID#: 11919431	FECAL COLIFORM	924	CFU/100ml	894 - 954	11/16/2016		SH
S8	8 - Outfall Source #7, WA Water ID#: 11919432	FECAL COLIFORM	80	CFU/100ml	71 - 89	11/16/2016		SH
S9	9 - Outfall Source #8, WA Water ID#: 11919433	FECAL COLIFORM	920	CFU/100ml	890 - 950	11/16/2016		SH
S10	10 - Outfall Sample #2, WA Water ID#: 11919434	FECAL COLIFORM	736	CFU/100ml	709 - 763	11/16/2016		SH
S11	NEGCTRL - Negative Control - P.aeruginosa, WA Water ID#: 11919435	FECAL COLIFORM	<1	CFU/100ml	0 - 3.7	11/16/2016		SH
S12	POSCTRL - Positive Control - K.pneumonia, WA Water ID#: 11919436	FECAL COLIFORM	TNTC	CFU/100ml		11/16/2016		SH
S13	POSCTRL - Positive Control - E.coli, WA Water ID#: 11919437	FECAL COLIFORM	66	CFU/100ml	58 - 74	11/16/2016		SH

SM 9222D G1c1 - Fecal Coliform/ E.coli - CFU

Job Number: 160924 SEA
Client: City of Brier
Project Name: TMDL

Report Number: 160924R01
Date Received: 10/28/2016

Lab/Cor Sample No.	Client Sample	Analyte Type	Analysis Result	UOM	95% Confidence Interval	Sample Date	Sample Time	Analyst
S1	1 - Control Sample #1, WA Water ID#: 11919331	FECAL COLIFORM	24	CFU/ 100ml	19.1 - 28.9	10/28/2016		AT
S2	2 - Outfall Source 1, WA Water ID#: 11919332	FECAL COLIFORM	25	CFU/ 100ml	20 - 30	10/28/2016		AT
S3	3 - Outfall Source 2, WA Water ID#: 11919333	FECAL COLIFORM	14	CFU/ 100ml	7.7 - 23.5	10/28/2016		AT
S4	4 - Outfall Source 3, WA Water ID#: 11919334	FECAL COLIFORM	21	CFU/ 100ml	16.4 - 25.6	10/28/2016		AT
S5	5 - Outfall Source 4, WA Water ID#: 11919335	FECAL COLIFORM	43	CFU/ 100ml	36.4 - 49.6	10/28/2016		AT
S6	6 - Outfall Source 7, WA Water ID#: 11919336	FECAL COLIFORM	9	CFU/ 100ml	4 - 17.1	10/28/2016		AT
S7	7 - Outfall Source 8, WA Water ID#: 11919337	FECAL COLIFORM	31	CFU/ 100ml	25.4 - 36.6	10/28/2016		AT
S8	8 - Control Sample #2, WA Water ID#: 11919338	FECAL COLIFORM	71	CFU/ 100ml	62.6 - 79.4	10/28/2016		AT
S9	NEGCTRL - Negative Control, WA Water ID#: 11919339	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	10/28/2016		AT
S10	POSTCTRL - Positive Control, WA Water ID#: 11919340	FECAL COLIFORM	294	CFU/ 100ml	276.9 - 311.1	10/28/2016		AT
S11	Blank - Run #1 Blank, WA Water ID#: 11919341	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	10/28/2016		AT
S12	Blank - Final Run Blank, WA Water ID#: 11919342	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	10/28/2016		AT

Reviewed by:

x 

Ashley Tonge
Technician/Analyst

Job Number: 160813 SEA

Client: City of Brier


Project Name: Unavailable at Login

SM 9222D G1c1 - Fecal Coliform/ E.coli - CFU

Report Number: 160813R01
Date Received: 9/22/2016

Lab/Cor Sample No.	Client Sample	Analyte Type	Analysis Result	UOM	95% Confidence Interval	Sample Date	Sample Time	Analyst
S1	#2 - Control Sample, WA Water ID#: 11919244	FECAL COLIFORM	86	CFU/100ml	77 - 95	9/22/2016		SH 9/23/2016
S2	#1 - Control Sample, WA Water ID#: 11919245	FECAL COLIFORM	76	CFU/100ml	67 - 85	9/22/2016		SH 9/23/2016
S3	#2 - Outfall, WA Water ID#: 11919246	FECAL COLIFORM	77	CFU/100ml	68 - 86	9/22/2016		SH 9/23/2016
S4	#8 - Outfall, WA Water ID#: 11919247	FECAL COLIFORM	62	CFU/100ml	54 - 70	9/22/2016		SH 9/23/2016
S5	#3 - Outfall, WA Water ID#: 11919248	FECAL COLIFORM	60	CFU/100ml	52 - 68	9/22/2016		SH 9/23/2016
S6	NEGCTRL - Negative Control, WA Water ID#: 11919249	FECAL COLIFORM	<1	CFU/100ml	0 - 3.7	9/22/2016	1:45 PM	SH 9/23/2016
S7	POSTCTRL - Positive Control, WA Water ID#: 11919250	FECAL COLIFORM	24	CFU/100ml	19 - 29	9/22/2016	1:45 PM	SH 9/23/2016
S8	Blank - Run #1, WA Water ID#: 11919251	FECAL COLIFORM	<1	CFU/100ml	0 - 3.7	9/22/2016	1:45 PM	SH 9/23/2016
S9	Blank - Final Run, WA Water ID#: 11919252	FECAL COLIFORM	<1	CFU/100ml	0 - 3.7	9/22/2016	1:45 PM	SH 9/23/2016

Reviewed by:


Sierra Hinkle
Technician/Analyst

A Professional Service Corporation in the Northwest

SM 9222D G1c1 - Fecal Coliform/ E.coli - CFU

Job Number: 160662 SEA
 Client: City of Brier
 Project Name: Unavailable at Login

Report Number: 160662R01
 Date Received: 7/26/2016

Lab/Cor Sample No.	Client Sample	Analyte Type	Analysis Result	UOM	95% Confidence Interval	Sample Date	Sample Time	Analyst
S1	1 - TMDL # 1, WA Water ID#: 11919119	FECAL COLIFORM	55	CFU/ 100ml	47.6 - 62.4	7/26/2016		AT
S2	2 - TMDL # 2, WA Water ID#: 11919120	FECAL COLIFORM	57	CFU/ 100ml	49.5 - 64.5	7/26/2016		AT
S3	3 - TMDL # 3, WA Water ID#: 11919121	FECAL COLIFORM	28	CFU/ 100ml	22.7 - 33.3	7/26/2016		AT
S4	4 - TMDL # 4, WA Water ID#: 11919122	FECAL COLIFORM	37	CFU/ 100ml	30.9 - 43.1	7/26/2016		AT
S5	NEGCTRL - Negative Control, WA Water ID#: 11919123	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	7/26/2016	1:00 PM	AT
S6	POSCTRL - Positive Control, WA Water ID#: 11919124	FECAL COLIFORM	46	CFU/ 100ml	39.2 - 52.8	7/26/2016	1:00 PM	AT
S7	Blank - Run # 1 Blank, WA Water ID#: 11919125	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	7/26/2016	1:00 PM	AT
S8	Blank - Final Run Blank, WA Water ID#: 11919126	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	7/26/2016	1:00 PM	AT

Reviewed by:

X 

Ashley Tonge
 Technician/Analyst

A Professional Service Corporation in the Northwest

SM 9222D G1c1 - Fecal Coliform/ E.coli - CFU

Job Number: 160556 SEA
 Client: City of Brier
 Project Name: TMDL

Report Number: 160556R01
 Date Received: 6/16/2016

Lab/Cor Sample No.	Client Sample	Analyte Type	Analysis Result	UOM	95% Confidence Interval	Sample Date	Sample Time	Analyst
S1	1 - TMDL #1, WA Water ID#: 11918995	FECAL COLIFORM	75	CFU/ 100ml	66.3 - 83.7	6/16/2016	10:45 AM	AT
S2	2 - TMDL #2, WA Water ID#: 11918996	FECAL COLIFORM	106	CFU/ 100ml	95.7 - 116.3	6/16/2016	10:45 AM	AT
S3	3 - TMDL #3, WA Water ID#: 11918997	FECAL COLIFORM	168	CFU/ 100ml	155 - 181	6/16/2016	10:45 AM	AT
S4	4 - TMDL #4, WA Water ID#: 11918998	FECAL COLIFORM	134	CFU/ 100ml	122.4 - 145.6	6/16/2016	10:45 AM	AT
S5	NEGCTRL - Negative Control, WA Water ID#: 11918999	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	6/16/2016	11:45 PM	AT
S6	POSCTRL - Positive Control, WA Water ID#: 11919000	FECAL COLIFORM	62	CFU/ 100ml	54.1 - 69.9	6/16/2016	11:45 PM	AT
S7	Blank - Run #1, WA Water ID#: 11919001	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	6/16/2016	11:45 PM	AT
S8	Blank - Final Run, WA Water ID#: 11919002	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	6/16/2016	11:45 PM	AT

Reviewed by:

X 

Ashley Tonge
 Technician/Analyst

A Professional Service Corporation in the Northwest

SM 9222D G1c1 - Fecal Coliform/ E.coli - CFU

Job Number: 160495 SEA

Client: City of Brier

Project Name: Unavailable at Login

Report Number: 160495R01
Date Received: 5/26/2016

Lab/Cor Sample No.	Client Sample	Analyte Type	Analysis Result	UOM	95% Confidence Interval	Sample Date	Sample Time	Analyst
S1	1 - TMDL #1, WA Water ID#: 11918866	FECAL COLIFORM	32	CFU/ 100ml	26.3 - 37.7	5/26/2016		AT
S2	2 - TMDL #2, WA Water ID#: 11918867	FECAL COLIFORM	35	CFU/ 100ml	29.1 - 40.9	5/26/2016		AT
S3	3 - TMDL #3, WA Water ID#: 11918868	FECAL COLIFORM	19	CFU/ 100ml	11.5 - 29.6	5/26/2016		AT
S4	4 - TMDL #4, WA Water ID#: 11918869	FECAL COLIFORM	23	CFU/ 100ml	18.2 - 27.8	5/26/2016		AT
S5	5 - Source #2, WA Water ID#: 11918870	FECAL COLIFORM	12	CFU/ 100ml	6.2 - 21	5/26/2016		AT
S6	6 - Source #3, WA Water ID#: 11918871	FECAL COLIFORM	39	CFU/ 100ml	32.8 - 45.2	5/26/2016		AT
S7	Neg Ctrl - Negative Control, WA Water ID#: 11918872	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	5/26/2016	12:00 PM	AT
S8	Pos Ctrl - Positive Control, WA Water ID#: 11918873	FECAL COLIFORM	162	CFU/ 100ml	149.3 - 174.7	5/26/2016	12:00 PM	AT
S9	Blank - Run # 1 Blank, WA Water ID#: 11918874	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	5/26/2016	12:00 PM	AT
S10	Blank - Final Run Blank, WA Water ID#: 11918875	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	5/26/2016	12:00 PM	AT

Reviewed by:

x 

Ashley Tonge
Technician/Analyst



7619 6th Ave NW
Seattle, WA 98117

Final Report

A Professional Service Corporation in the Northwest

Phone: (206) 781-0155
Fax: (206) 789-8424
<http://www.labcor.net>

SM 9222D G1c1 - Fecal Coliform/ E.coli - CFU

Job Number: 160271 SEA

Client: City of Brier

Project Name: Unavailable at Login

Report Number: 160271R01
Date Received: 3/17/2016

Lab/Cor Sample No.	Client Sample	Analyte Type	Analysis Result	UOM	95% Confidence Interval	Sample Date	Sample Time	Analyst
S1	1 - TMDL #1, WA Water ID#: 11918620	FECAL COLIFORM	49	CFU/ 100ml	42 - 56	3/17/2016		AT
S2	2 - TMDL #2, WA Water ID#: 11918621	FECAL COLIFORM	41	CFU/ 100ml	34.6 - 47.4	3/17/2016		AT
S3	3 - TMDL #3, WA Water ID#: 11918622	FECAL COLIFORM	4	CFU/ 100ml	1 - 10.2	3/17/2016		AT
S4	4 - TMDL #4, WA Water ID#: 11918623	FECAL COLIFORM	5	CFU/ 100ml	1.6 - 11.7	3/17/2016		AT
S5	5 - Souce #3, WA Water ID#: 11918624	FECAL COLIFORM	2	CFU/ 100ml	0.2 - 7.2	3/17/2016		AT
S6	6 - Souce #4, WA Water ID#: 11918625	FECAL COLIFORM	1	CFU/ 100ml	0.1 - 5.6	3/17/2016		AT
S7	7 - Souce #7, WA Water ID#: 11918626	FECAL COLIFORM	217	CFU/ 100ml	202.3 - 231.7	3/17/2016		AT
S8	NEGCTRL - Negative Control, WA Water ID#: 11918627	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	3/17/2016		AT
S9	POSCTRL - Positive Control, WA Water ID#: 11918628	FECAL COLIFORM	90	CFU/ 100ml	80.5 - 99.5	3/17/2016		AT
S10	Blank - Run #1, WA Water ID#: 11918629	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	3/17/2016		AT
S11	Blank - Final Run, WA Water ID#: 11918630	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	3/17/2016		AT

Reviewed by:

x

Ashley Tonge
Technician/Analyst

SM 9222D G1c1 - Fecal Coliform/ E.coli - CFU

Job Number: 160168 SEA

Client: City of Brier

Project Name: Unavailable at Login

Report Number: 160168R01
 Date Received: 2/18/2016

Lab/Cor Sample No.	Client Sample	Analyte Type	Analysis Result	UOM	95% Confidence Interval	Sample Date	Sample Time	Analyst
S1	1 - Scriber Creek, WA Water ID#: 11918478	FECAL COLIFORM	156	CFU/ 100ml	144 - 168	2/18/2016		SH
S2	2 - Scriber Creek, WA Water ID#: 11918479	FECAL COLIFORM	182	CFU/ 100ml	169 - 195	2/18/2016		SH
S3	3 - Scriber Creek, WA Water ID#: 11918480	FECAL COLIFORM	120	CFU/ 100ml	109 - 131	2/18/2016		SH
S4	4 - Scriber Creek, WA Water ID#: 11918481	FECAL COLIFORM	98	CFU/ 100ml	88 - 108	2/18/2016		SH
S5	NEGCTRL - Negative Control, WA Water ID#: 11918482	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	2/18/2016		SH
S6	POSCFPL - Positive Control - e.coli, WA Water ID#: 11918483	FECAL COLIFORM	82	CFU/ 100ml	73 - 91	2/18/2016		SH
S7	Blank Run 1 - , WA Water ID#: 11918484	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	2/18/2016		SH
S8	Blank Final Run - , WA Water ID#: 11918485	FECAL COLIFORM	<1	CFU/ 100ml	0 - 3.7	2/18/2016		SH

Reviewed by:



Derk Wipprecht
 Laboratory Supervisor

A Professional Service Corporation in the Northwest

SM 9222D G1c1 - Fecal Coliform/ E.coli - CFU

Job Number: 160043 SEA

Client: City of Brier

Project Name: Unavailable at Login

Report Number: 160043R01
 Date Received: 1/20/2016

Lab/Cor Sample No.	Client Sample	Analyte Type	Analysis Result	UOM	95% Confidence Interval	Sample Date	Sample Time	Analyst
S1	TDML #1 - Fecal, WA Water ID#: 11918344	FECAL COLIFORM	47	CFU/100ml	40.1 - 53.9	1/20/2016		AT
S2	TDML #2 - Fecal, WA Water ID#: 11918345	FECAL COLIFORM	42	CFU/100ml	35.5 - 48.5	1/20/2016		AT
S3	TDML #3 - Fecal, WA Water ID#: 11918346	FECAL COLIFORM	27	CFU/100ml	21.8 - 32.2	1/20/2016		AT
S4	TDML #4 - Fecal, WA Water ID#: 11918347	FECAL COLIFORM	30	CFU/100ml	24.5 - 35.5	1/20/2016		AT
S5	Source # 4 - Fecal, WA Water ID#: 11918348	FECAL COLIFORM	5	CFU/100ml	1.6 - 11.7	1/20/2016		AT
S6	Source # 6 - Fecal, WA Water ID#: 11918349	FECAL COLIFORM	3	CFU/100ml	0.6 - 8.8	1/20/2016		AT
S7	Source # 7 - Fecal, WA Water ID#: 11918350	FECAL COLIFORM	3	CFU/100ml	0.6 - 8.8	1/20/2016		AT
S8	NEGCTRL - Negative Control, WA Water ID#: 11918351	FECAL COLIFORM	<1	CFU/100ml	0 - 3.7	1/20/2016		AT
S9	POSCTRL - Positive Control, WA Water ID#: 11918352	FECAL COLIFORM	112	CFU/100ml	101.4 - 122.6	1/20/2016		AT
S10	Blank - Run # 1 Blank, WA Water ID#: 11918353	FECAL COLIFORM	<1	CFU/100ml	0 - 3.7	1/20/2016		AT
S11	Blank - Final Run Blank, WA Water ID#: 11918354	FECAL COLIFORM	<1	CFU/100ml	0 - 3.7	1/20/2016		AT

Reviewed by:

x 

Ashley Tonge
 Technician/Analyst