Rules of Conduct for Public Hearings

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CITY OF MILLERSBURG
CITY COUNCIL MEETING

Millersburg City Hall
4222 NE Old Salem Road
Albany OR 97321
December 10, 2019 @ 6:30 p.m.

Agenda

A. CALL TO ORDER

B. ROLL CALL

C. PLEDGE OF ALLEGIANCE

D. SWEARING IN OF COUNCILOR

E. CHANGES AND ADDITIONS TO THE AGENDA

F. CONSENT AGENDA
1) Approval of November 12, 2019 City Council Meeting Minutes
2) Approval of November 21, 2019 Special City Council Meeting Minutes
3) Acceptance of Council Approval Report for City Bills
Action:_____

G. GUEST PRESENTATIONS
1) Linn County Sheriff's Office Report
2) Recognition of Service – Ed Perlenfein

H. PUBLIC HEARING
1) Sewer Rate Increase

I. PUBLIC COMMENT

J. COUNCIL MEMBER AND STAFF COMMENTS
1) Mayor – Manager's Compensation
2) Mayor – Council Committee Assignments
3) Mayor – COG/CSC Merger

K. CITY MANAGER'S REPORT
1) Project Updates

L. CITY ATTORNEY'S REPORT

M. UNFINISHED BUSINESS

N. NEW BUSINESS

1) Commission/Committee Appointments – Resolution 2019-21
   Action:_____
2) Stormwater Systems Development Charges Proposal - Galardi
   Action:_____
3) Sale of City Property
   Action:_____
4) Surface Water Code – Ordinance 166
   Action:_____
5) Engineering Standards – Resolution 2019-22
   Action:_____
6) Linn County Sheriff's Office IGA
   Action:_____

O. CLOSING PUBLIC COMMENT

P. CLOSING COUNCIL COMMENT

Q. ADJOURNMENT

Note: Council may adjourn to executive session in accordance with ORS 192.660.

Upcoming Meetings & Events:
December 17, 2019 @ 6:00 p.m. – Planning Commission Meeting

The location of the meeting is accessible to the disabled. If you have a disability that requires accommodation to attend or participate, please notify the Millersburg City Hall in advance by calling 541-928-4523.

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November 12, 2019 City Council Minutes

4222 NE Old Salem Road
Albany, OR 97321
6:30 p.m.

A. CALL TO ORDER: Called to order by Mayor Lepin at 6:32 p.m.

B. ROLL CALL

Councilors Present:	Mayor Jim Lepin, Councilors Scott Cowan, Dave Harms, Scott McPhee
Councilors Absent:	None
Staff Present:	Kevin Kreitman, City Manager; Janelle Booth, Assistant City Manager/City Engineer; Kimberly Wollenburg, City Recorder
Presenters:	Linn County Sheriff's Office – Captain Kevin Guilford

C. PLEDGE OF ALLEGIANCE

D. CHANGES AND ADDITIONS TO THE AGENDA

E. CONSENT AGENDA
1) Approval of October 8, 2019 City Council Meeting Minutes
2) Acceptance of Council Approval Report for City Bills
Action: **Motion to Accept Consent Agenda made by Councilor Scott Cowan; seconded by Councilor Scott McPhee.**

Mayor Jim Lepin:	**Aye**
Councilor Scott Cowan:	**Aye**
Councilor Dave Harms:	**Aye**
Councilor Scott McPhee:	**Aye**

Motion PASSED: 4/0

F. GUEST PRESENTATIONS
1) Linn County Sheriff's Office Report
Captain Kevin Guilford, Linn County Sheriff's Office, reviewed October's report with the Council. He asked for residents to remember not to keep valuables in vehicles. Even if the vehicle is locked and item is visible, thieves will smash windows to remove items.

G. PUBLIC COMMENT
1) Chrissy Clinton with the Senior All Night Drug and Alcohol-Free Graduation Party spoke about the party and the efforts so far to raise funds. A student from South Albany High School read a statement. The students and parents have raised $7,700 of the goal of $20,000. Mayor Lepin went over change to the process how the City handles requests for donations. While the Council encouraged the

group to fill out the donation request application, they do not believe the donation will be approved under the new process.

H. COUNCIL MEMBER AND STAFF COMMENTS

1) Mayor – City Manager's Appraisal
Went over past discussion on the process for the ongoing appraisal of City Manager Kreitman and asked for Council feedback. Council agreed that the current process is working well.

2) Mayor Lepin noted that Scott Stimpson resigned from Planning Commission; however, with recent change to move from 9 to 7 members through attrition, there is no plan to fill Mr. Stimpson's position.

3) Mayor Lepin asked the audience how many use the *Democrat-Herald* for notification of tonight's meeting or any meeting. No one in the audience indicated they read the paper to see meeting notices. He asked the Council to consider whether the City should continue to post announcements in the Events Calendar of the paper. This will be an agenda item during next month's meeting,

I. CITY MANAGER'S REPORT

1) Project Updates
City Manager Kreitman gave a brief update to status of fiber and upgrade to VOIP and phones with direct dial and conference room capability. Audio/visual is complete but still working on fine-tuning. Next, Assistant City Manager/City Engineer Booth gave an update on City projects. Council asked to see the potential contract amendment in December to add stormwater SDCs to Galardi Consulting's contract for the rates and SDC study.

J. CITY ATTORNEY'S REPORT

None

K. UNFINISHED BUSINESS

1) Scheduling Council Vacancy Interviews
Mayor Lepin spoke briefly about applicants for City Council replacement and shared the names: Mark Raum, John Sullivan, and Rob Yencopal. The interview process was briefly discussed. The Council determined the date for the interviews is November 21, 2019 starting at 4:00 p.m. This meeting is open to the public and will be noticed per usual procedures.

2) Republic Services – Resolution 2019-19
Major Lepin reminded of October's meeting when this was originally discussed. Julie Jackson, Republic Services, provided a handout and briefly reviewed the material. There was some additional discussion regarding recycling and the current process. When asked about communication regarding recycling, Ms. Jackson said she's hiring a dedicated employee to educate schools and they will soon be sending out material to all customers about what goes in and doesn't into each container. The Council asked staff to review costs for weekly yard waste pickup and leaf pickup and provide again to Council for review.
Action: **Motion to Approve 2.4% Increase in Rates from Republic Services made by Councilor Scott Cowan; seconded by Councilor Scott McPhee.** **Resolution 2019-19**

Mayor Jim Lepin: Aye
Councilor Scott Cowan: Aye
Councilor Dave Harms: Aye
Councilor Scott McPhee: Aye
Motion PASSED: 4/0

3) Water and Sewer Rates – Discussion
Assistant City Manager/City Engineer went over staff report and presented on the options and details. Discussion followed regarding doing sewer rate adjustment. The Council decided to hold a public hearing on sewer rate change at the meeting in December 2019.

L. NEW BUSINESS

1) Small City Allotment Grant Award
Assistant City Manager/City Engineer Booth went over staff report.
Action: **Motion to Accept Awarded Small City Allotments Program Funding and Authorize City Manager to Sign Grant Agreement made by Councilor Dave Harms; seconded by Councilor Scott Cowan.**
Mayor Jim Lepin: Aye
Councilor Scott Cowan: Aye
Councilor Dave Harms: Aye
Councilor Scott McPhee: Aye
Motion PASSED: 4/0

2) Modification of Land Use Development Fees – Resolution 2019-20
City Manager Kreitman reviewed staff report.
Action: **Motion to Adopt Resolution Amending Resolution 2019-17 Modifying Land Use Development Fees made by Councilor Scott Cowan; seconded by Councilor Dave Harms.** **Resolution 2019-20**
Mayor Jim Lepin: Aye
Councilor Scott Cowan: Aye
Councilor Dave Harms: Aye
Councilor Scott McPhee: Aye
Motion PASSED: 4/0

3) ADS Flow Monitoring Contract Amendment
Assistant City Manager/City Engineer Booth went over staff report
Action: **Motion to Approve Amendment 13 to Agreement for Technical Services with ADS Environmental Services and Authorize the City Manager to Sign made by Councilor Scott McPhee; seconded by Councilor Scott Cowan.**
Mayor Jim Lepin: Aye
Councilor Scott Cowan: Aye
Councilor Dave Harms: Aye
Councilor Scott McPhee: Aye
Motion PASSED: 4/0

4) Pac/West Communications Memorandum of Understanding
City Manager Kreitman reviewed staff report. Discussion followed regarding increase in services from past contract with Greg Smith and Associates.
Action: **Motion to Authorize City Manager to Sign Agreement with Pac/West made by Councilor Scott Cowan; seconded by Councilor Dave Harms.**

Mayor Jim Lepin: Aye
Councilor Scott Cowan: Aye
Councilor Dave Harms: Aye
Councilor Scott McPhee: Aye

Motion PASSED: 4/0

5) Surface Water Code – Discussion
Assistant City Manager/City Engineer Booth went over staff report and did a brief review of the policy document attached to the staff report. Council agreed to move forward without a work session. Staff will provide a version for approval at the December 2019 Council meeting.

M. CLOSING PUBLIC COMMENT
None

N. CLOSING COUNCIL COMMENT
1) Mayor Lepin brought up recruitment for positions on the Events Planning Committee.
2) Mayor Lepin asked for input on the meeting process.
Manon Whittenberg, 6103 NE Sedona Road, said they can't read the content. She said the words wasn't dark enough and fonts not big enough. Others commented that they could see the material better. One suggestion was to use a dark background with white lettering.

O. ADJOURNMENT
Meeting adjourned at 8:45 p.m.

Respectfully submitted:

Kimberly Wollenburg
City Recorder

Reviewed by:

Kevin Kreitman
City Manager

Upcoming Meetings & Events:
November 19, 2019 @ 6:00 p.m. – Planning Commission Meeting

CITY OF
Millersburg
A COMMUNITY LINKING AGRICULTURE AND INDUSTRY

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November 21, 2019 City Council Minutes

4222 NE Old Salem Road
Albany, OR 97321
5:30 p.m.

A. CALL TO ORDER: Called to order by Mayor Lepin at 5:30 p.m.

B. ROLL CALL

Councilors Present:	Mayor Jim Lepin, Councilors Scott Cowan, Dave Harms, Scott McPhee
Councilors Absent:	None
Staff Present:	Kevin Kreitman, City Manager; Janelle Booth, Assistant City Manager/City Engineer; Forrest Reid, City Attorney; Kimberly Wollenburg, City Recorder

C. PLEDGE OF ALLEGIANCE

D. CHANGES AND ADDITIONS TO THE AGENDA

E. COUNCIL MEMBER AND STAFF COMMENTS

F. UNFINISHED BUSINESS

Mayor Lepin introduced the process for the evening to interview then select a new City Councilor.

1) City Council Interview @ 5:30 – Mark Raum
Mayor Lepin began interview at 5:35 p.m. with Mark Raum. Using the interview questions, each Councilor asked questions and candidate responded.

Meeting recessed at 6:06 by Mayor Lepin.

Mayor Lepin opened meeting at 6:14 p.m. Council discussed the process with City Attorney Reid by which to select the replacement Councilor, and whether the decision should be by nomination or recommendation. The Council decided to use the nomination process.

2) City Council Interview @ 6:30 – John Sullivan
Mayor Lepin and Council began interview with John Sullivan at 6:21 p.m. following the same process as with the prior candidate.

Meeting recessed at 7:05 by Mayor Lepin.

3) City Council Interview @ 7:30 – Rob Yencopal (candidate was able to attend.)
Mayor Lepin called meeting back to order at 7:17 p.m., and Council began interview with Rob Yencopal, following the same process as with the prior candidates.

Mayor Lepin went over the process for the selection. Meeting recessed at 8:03 p.m. to contact all candidates to join Council for deliberations.

Meeting recalled at 8:13 p.m. by Mayor Lepin who opened the meeting to public comment. A couple of audience members thanked the candidates for their interest and participation. One audience member asked about future process for the election in 2020 which was explained. Mayor Lepin commented on the quality of the applicants then opened the meeting to Council deliberation.

Councilor Cowan thanked the candidates, noting he is confident in their abilities and said his selection was based on who could get up to speed as quickly as possible.

Councilor McPhee seconded Councilor Cowan and thanked the candidates. He noted his decision on selection is based on the amount of time in the remainder of the term to be filled and that because there is only one year there is a need to have someone who can step into the role without spending the year training.

Councilor Harms noted all of the candidates are great in their own way. He confirmed that having someone get up to speed quickly is important.

Mayor Lepin noted he is looking for someone to run with the role given everything happening within the City and considered leadership skills and volunteer experience.

Mayor Lepin opened for nominations. Councilor Cowan nominated John Sullivan. There were no other nominations. Mayor Lepin called for those in favor of John Sullivan.

Mayor Lepin: Aye
Councilor Cowan: Aye
Councilor Harms: Aye
Councilor McPhee: Aye

John Sullivan was selected as the new Council member to fill the seat left vacant by Councilor Don Miller. The Council discussed when to swear in Mr. Sullivan, and Council agreed to do the swearing in on the 10th of December.

G. CLOSING PUBLIC COMMENT
None

H. CLOSING COUNCIL COMMENT
None

I. ADJOURNMENT
Meeting adjourned at 8:21 p.m.

Respectfully submitted:

Kimberly Wollenburg
City Recorder

Reviewed by:

Kevin Kreitman
City Manager

Upcoming Meetings & Events:
November 28 & 29 – City Hall Closed in Observation of Thanksgiving
December 10, 2019 @ 6:30 p.m. – City Council Meeting
December 25, 2019 – City Hall Closed in Observation of Christmas

City of Millersburg

Council Approval Report

(Council Approval Report)

Vendor									
InvoiceNumber	Date	Description	Due Date	Invoice Amt	Approved Amt	Account Number	Account Description	Budgeted $	YTD Balance
222	**Albany Area Chamber of Commerce, PO Box 548, Albany, OR, 97321**								
81564	11/01/19	DUES & SUBSCRIPTIONS - Albany Area Chamber of Commerce, FY 19-20	12/01/19	$681.00	$681.00	01-1336	DUES & SUBSCRIPTIO	$9,000.00	$5,886.81
					$681.00				
		Total Bills To Pay:			**$681.00**				

Vendor									
InvoiceNumber	**Date**	**Description**	**Due Date**	**Invoice Amt**	**Approved Amt**	**Account Number**	**Account Description**	**Budgeted $**	**YTD Balance**
7	**4S Sign, LLC, 30255 HWY 34, Albany, OR, 97321**								
47017	11/07/19	SIGNS, 4S Sign - Sign post	11/07/19	$91.90	$91.90	02-1329	SIGNS	$5,000.00	$3,107.05
					$91.90				
43	**Aflac, 1932 Wynnton Road, Columbus, GA,**								
221590	11/11/19	Payroll Taxes Payable - Aflac through Nov 2019	12/01/19	$49.08	$49.08	01-9210	Payroll Taxes Payable	$0.00	($23,455.16)
					$49.08				
222	**Albany Area Chamber of Commerce, PO Box 548, Albany, OR, 97321**								
81564	11/01/19	DUES & SUBSCRIPTIONS - Albany Area Chamber of Commerce, FY 19-20	12/01/19	$756.00	$756.00	01-1336	DUES & SUBSCRIPTIO	$9,000.00	$5,886.81
					$756.00				
539	**Barrett Business Services Inc., 421 Water Avenue NE, Albany, OR, 97321**								
3131503	10/25/19	CONTRACTED SERVICES - Barrett Business Services, Astrid Hesberg	11/25/19	$637.65	$637.65	01-1332	CONTRACTED SERVIC	$162,625.00	$81,514.27
3132347	11/01/19	CONTRACTED SERVICES - Barrett Business Services, Astrid Hesberg	12/01/19	$590.86	$590.86	01-1332	CONTRACTED SERVIC	$162,625.00	$81,514.27
3131758	10/29/19	MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) SUPPOR, Barrett Business Services - Mark Yeager	11/29/19	$520.00	$520.00	03-1312	MUNICIPAL SEPARATE	$40,000.00	$33,638.75
					$1,748.51				
773	**CH2MHILL OMI, Department 1267, Denver, CO, 80291-1267**								
351259-018	10/28/19	OMI SERVICES FOR DIRECT RESPONSIBLE CHARGE (DRC) - CH2M Hill OMI, Out of Scope Letter for Nov 2019	11/28/19	$647.08	$647.08	05-1307	OMI SERVICES FOR DI	$10,000.00	$8,058.76
					$647.08				
514	**Cintas, PO Box 631025, Cincinnati, OH, 45263-1025**								
4033583394	10/31/19	CITY HALL MAINTENANCE & SUPPLIES, Cintas - City Hall through Oct 2019	11/10/19	$40.11	$40.11	01-1309	CITY HALL MAINTENAN	$22,000.00	$19,880.26
4031469860	10/31/19	PARK SUPPLIES & MAINTENANCE, Cintas - Parks through Oct 2019	11/10/19	$236.94	$236.94	01-2302	PARK SUPPLIES & MAI	$70,000.00	$39,476.58
4033583311	10/29/19	PARK SUPPLIES & MAINTENANCE, Cintas - Parks through Oct 2019	11/10/19	$62.14	$62.14	01-2302	PARK SUPPLIES & MAI	$70,000.00	$39,476.58
4033583340	10/31/19	PARK SUPPLIES & MAINTENANCE, Cintas - Parks through Oct 2019	11/10/19	$106.11	$106.11	01-2302	PARK SUPPLIES & MAI	$70,000.00	$39,476.58
					$445.30				
50	**City of Albany, PO Box 490, Albany, OR, 97321**								
523	06/30/19	CALL-A-RIDE, April, May, June 2019	09/15/19	$1,308.00	$1,308.00	01-1324	CALL-A-RIDE	$3,000.00	$3,000.00
910	11/01/19	CONTRACTED FIRE SERVICES, City of Albany - Fire Protection	12/01/19	$738,145.73	$738,145.73	01-4301	CONTRACTED FIRE SE	$1,410,000.00	$1,410,000.00
522	06/30/19	O&M SEWER PLANT, City of Albany - Sewer Fees Q4 FY18-19	09/15/19	$32,230.95	$32,230.95	04-1304	O&M SEWER PLANT	$256,000.00	$256,000.00

Vendor										
InvoiceNumber	Date	Description	Due Date	Invoice Amt	Approved Amt	Account Number	Account Description	Budgeted $	YTD Balance
522	06/30/19	O&M SEWER PLANT, City of Albany - Sewer Fees Q4 FY18-19	09/15/19	$8,792.70	$8,792.70	04-1304	O&M SEWER PLANT	$256,000.00	$256,000.00
522	06/30/19	O&M SEWER PLANT, City of Albany - Sewer Fees Q4 FY18-19	09/15/19	$4,163.70	$4,163.70	04-1304	O&M SEWER PLANT	$256,000.00	$256,000.00
525	06/30/19	ALBANY-MILLERSBURG WATER RECLAMATION FACILITY LEGA - City of Albany - CH2M Hill Litigation Costs	09/15/19	$9,227.70	$9,227.70	04-1315	ALBANY-MILLERSBURG	$50,000.00	$50,000.00
522	06/30/19	WETLANDS/WASTEWATER TREATMENT PLANT CAPITAL PROJEC, City of Albany - Sewer Fees Q4 FY18-19	09/15/19	$13,274.16	$13,274.16	04-1409	WETLANDS/WASTEWA	$60,000.00	$60,000.00
524	06/30/19	O&M TRANSMISSION LINES, City of Albany - Water Services, Q4 FY 18/19	09/15/19	$21,591.20	$21,591.20	05-1304	O&M TRANSMISSION LI	$104,000.00	$101,997.35
524	06/30/19	O&M Water Treatment Plant, City of Albany - Water Services, Q4 FY 18/19	09/15/19	$51,531.20	$51,531.20	05-1305	O&M Water Treatment Pl	$350,000.00	$350,000.00
524	06/30/19	WATER RECLAMATION PLANT CAPITAL PROJECTS, City of Albany - Water Services, Q4 FY 18/19	09/15/19	$5,196.11	$5,196.11	05-1408	WATER RECLAMATION	$175,000.00	$175,000.00
					$885,461.45				
722	**David Denos**								
83080035	11/13/19	PARKS & RECREATION - CITIZEN REIMBURSEMENT PROGRAM - David Denos	11/13/19	$68.00	$68.00	01-2301	PARKS & RECREATION	$15,000.00	$10,114.00
					$68.00				
272	**Earth2O, PO Box 70, Culver, OR, 97734**								
325407	11/13/19	MATERIALS & SUPPLIES, Earth2O on 11/13/19	12/13/19	$22.89	$22.89	01-1330	MATERIALS & SUPPLIE	$15,000.00	$6,591.32
099050	10/14/19	PARK SUPPLIES & MAINTENANCE, Earth2O on 10/14/19	10/14/19	$36.09	$36.09	01-2302	PARK SUPPLIES & MAI	$70,000.00	$39,476.58
					$58.98				
821	**Gregory Smith & Company, LLC, PO Box 219, Heppner, OR, 97836-0219**								
10.19	10/31/19	ECONOMIC DEVELOPMENT, Gregory Smith & Company, Admin Services through Oct 2019	11/30/19	$2,500.00	$2,500.00	01-1338	ECONOMIC DEVELOPM	$30,000.00	$20,000.00
					$2,500.00				
218	**Kathleen Williams**								
11/12/19	11/13/19	LIBRARY SERVICES - Kathleen Williams	11/13/19	$40.00	$40.00	01-1340	LIBRARY SERVICES	$3,000.00	$1,640.00
					$40.00				
330	**Kristi Smith**								
11/12/19	11/12/19	PARKS & RECREATION - CITIZEN REIMBURSEMENT PROGRAM - Kristi Smith	11/12/19	$144.00	$144.00	01-2301	PARKS & RECREATION	$15,000.00	$10,114.00
					$144.00				
19	**Linn County Planning and Building, PO Box 100, Albany, OR, 97321**								
OCT2019	10/31/19	PMNT TO LINN CO BUILDING DEPT - Oct 2019	11/30/19	$50,430.23	$50,430.23	01-5332	PMNT TO LINN CO BUIL	$340,000.00	$263,667.21

Vendor / InvoiceNumber	Date	Description	Due Date	Invoice Amt	Approved Amt	Account Number	Account Description	Budgeted $	YTD Balance
					$50,430.23				
153	**Linn County Surveyor, PO Box 100, Albany, OR, 97321**								
26703	11/01/19	MATERIALS & SUPPLIES, Linn County Surveyor through Oct 2019	12/01/19	$4.99	$4.99	01-1330	MATERIALS & SUPPLIE	$15,000.00	$6,591.32
					$4.99				
835	**Matt Straite Photography, 8495 SW Dakota Dr, Tualatin, OR, 97062**								
105	11/13/19	CONTRACTED SERVICES - Matt Straite Photography, City Photos	11/13/19	$550.00	$550.00	01-1332	CONTRACTED SERVIC	$162,625.00	$81,514.27
					$550.00				
385	**Michelle Burgess**								
10/19/19	11/13/19	PARKS & RECREATION - CITIZEN REIMBURSEMENT PROGRAM - Michelle Burgess	11/13/19	$56.00	$56.00	01-2301	PARKS & RECREATION	$15,000.00	$10,114.00
					$56.00				
761	**Mike's Heating and Air, PO BOX 748, Albany, OR, 97321**								
154181	11/06/19	CONTRACTED SERVICES, Mike's Heating and Air through Oct 2019	12/06/19	$105.00	$105.00	01-1332	CONTRACTED SERVIC	$162,625.00	$81,514.27
					$105.00				
585	**MorganCPS Group, 1308 Marigold Street NE, Keizer, OR, 97303-3553**								
8768	11/08/19	MorganCPS through Oct 2019	12/08/19	$7,680.00	$7,680.00	01-1353	CONSULTANTS - PLAN	$100,000.00	$70,520.00
					$7,680.00				
23	**Pacific Power, PO Box 26000, Portland, OR, 97256-0001**								
10/31/19	10/31/19	SEWER MISCELLANEOUS EXPENSES AND LIFT STATION UTIL - Pacific Power - Lift Station	11/19/19	$45.97	$45.97	04-1328	SEWER MISCELLANEO	$10,000.00	$3,982.30
					$45.97				
6	**Petro Card, PO Box 34243, Seattle, WA, 98124-1243**								
C510256	10/31/19	PARK SUPPLIES & MAINTENANCE - Petro Card through Oct 2019	11/18/19	$214.41	$214.41	01-2302	PARK SUPPLIES & MAI	$70,000.00	$39,476.58
					$214.41				
15	**Pitney Bowes Global Financial, PO Box 371887, Pittsburgh, PA, 15250-7887**								
12/1/19	11/13/19	POSTAGE AND SHIPPING, Pitney Bowes, purchase through Oct 2019	12/01/19	$352.00	$352.00	01-1327	POSTAGE AND SHIPPI	$1,100.00	($960.87)
					$352.00				
422	**Teresa Wilkinson**								
18689253	11/04/19	PARKS & RECREATION - CITIZEN REIMBURSEMENT PROGRAM - Teresa Wilkinson	11/04/19	$64.80	$64.80	01-2301	PARKS & RECREATION	$15,000.00	$10,114.00
					$64.80				

Vendor									
InvoiceNumber	**Date**	**Description**	**Due Date**	**Invoice Amt**	**Approved Amt**	**Account Number**	**Account Description**	**Budgeted $**	**YTD Balance**
664	**US Bank Equipment Finance, P.O. Box 790448, St Louis, MO, 63179-0448**								
398632364	10/28/19	CONTRACTED SERVICES, US Bank Equipment Finance - Printer Lease	11/22/19	$127.20	$127.20	01-1332	CONTRACTED SERVIC	$162,625.00	$81,514.27
399000546	11/01/19	Plotter, US Bank Equipment Finance - Printer Lease	11/26/19	$150.00	$150.00	01-1420	Plotter	$9,000.00	$8,579.00
					$277.20				
719	**Zions Bank, One South Main, Suite 1700, Salt Lake City, UT, 84133**								
12/01/19	11/02/19	LOAN PAYMENTS - Zion's Bank - Water Loan	12/01/19	$360,000.00	$360,000.00	05-1802	LOAN PAYMENTS	$360,000.00	$360,000.00
12/01/19	11/02/19	INTEREST PAYMENT - Zion's Bank - Water Loan	12/01/19	$33,625.50	$33,625.50	05-1806	INTEREST PAYMENT	$67,251.00	$67,251.00
					$393,625.50				
		Total Bills To Pay:			**$1,345,416.40**				

Vendor									
InvoiceNumber	Date	Description	Due Date	Invoice Amt	Approved Amt	Account Number	Account Description	Budgeted $	YTD Balance
7	**4S Sign, LLC, 30255 HWY 34, Albany, OR, 97321**								
47022	11/12/19	SIGNS, 4S Signs Round Pipe	12/12/19	$100.00	$100.00	02-1329	SIGNS	$5,000.00	$3,015.15
					$100.00				
781	**Adamosky Technical Solutions Corporation, 15511 NE 23rd St, Vancouver, WA, 98684**								
011005-19	11/20/19	CITY HALL IMPROVEMENTS, Adamosky Tech - final invoice for AV work	12/05/19	$2,546.00	$2,546.00	01-1401	CITY HALL IMPROVEM	$130,000.00	$36,056.11
					$2,546.00				
714	**Cable Huston LLP, 1455 SW Broadway, Suite 1500, Portland, OR, 97201**								
92717	11/15/19	MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) SUPPORT, Cable Huston through Sep 2019	12/15/19	$647.75	$647.75	03-1312	MUNICIPAL SEPARATE	$40,000.00	$33,118.75
					$647.75				
794	**Capital Valuation Group, Ltd, PO Box 2108, Salem, OR, 97308**								
190801.ACK	11/15/19	CONTRACTED SERVICES, Capital Valuation Group, Appraisal of 10S-3W-17DD-600	11/15/19	$2,250.00	$2,250.00	01-1332	CONTRACTED SERVIC	$162,625.00	$79,503.56
					$2,250.00				
659	**David Evans & Associates, Inc., Dept LA 24340, Pasadena, CA, 91185-4340**								
455895	11/19/19	PCPI EXPENSE, David Evans and Associates through Oct 2019	12/19/19	$2,910.55	$2,910.55	02-1303	PCPI EXPENSE	$30,000.00	$17,645.96
455895	11/19/19	PCPI EXPENSE, David Evans and Associates through Oct 2019	12/19/19	$2,425.45	$2,425.45	03-1303	PCPI	$25,000.00	$14,704.94
455895	11/19/19	PCPI EXPENSE, David Evans and Associates through Oct 2019	12/19/19	$1,940.36	$1,940.36	04-1303	SEWER PCPI	$20,000.00	$11,763.95
455895	11/19/19	PCPI EXPENSE, David Evans and Associates through Oct 2019	12/19/19	$1,455.27	$1,455.27	05-1303	PCPI EXPENSE	$15,000.00	$8,822.93
					$8,731.63				
327	**De Lage Landen Financial Services, Inc., PO Box 41602, Philadelphia, PA, 19101-1602**								
65819399	11/16/19	CONTRACTED SERVICES, De Lage Landen Financial through Nov 2019	12/09/19	$227.48	$227.48	01-1332	CONTRACTED SERVIC	$162,625.00	$79,503.56
					$227.48				
335	**EC Electrical Construction Co, PO Box 35146, #43035, Seattle, WA, 98124-5146**								
186774	11/12/19	CITY HALL IMPROVEMENTS, EC Electrical	11/12/19	$3,810.56	$3,810.56	01-1401	CITY HALL IMPROVEM	$130,000.00	$36,056.11
186915	11/13/19	CITY HALL IMPROVEMENTS, EC Electrical	11/13/19	$2,296.63	$2,296.63	01-1401	CITY HALL IMPROVEM	$130,000.00	$36,056.11
					$6,107.19				
765	**Handy Hands Landscape C&M LLC, 31410 HWY 34, Tangent, OR, 97389**								
OCT 2019 CH	10/31/19	CONTRACTED SERVICES, Handy Hands, Oct 2019 City Hall and Fire Station	11/22/19	$1,280.00	$1,280.00	01-1332	CONTRACTED SERVIC	$162,625.00	$79,503.56
OCT 2019 (2)	10/31/19	RENTAL PROPERTY, Handy Hands, Oct 2019 City Hall Rental Property	11/30/19	$480.00	$480.00	01-1357	RENTAL PROPERTY	$5,000.00	$3,461.98
					$1,760.00				

Vendor									
InvoiceNumber	**Date**	**Description**	**Due Date**	**Invoice Amt**	**Approved Amt**	**Account Number**	**Account Description**	**Budgeted $**	**YTD Balance**
439	**Kristen Champion**								
83208836	10/29/19	PARKS & RECREATION - CITIZEN REIMBURSEMENT PROGRAM, Kristen Champion	11/22/19	$52.00	$52.00	01-2301	PARKS & RECREATION	$15,000.00	$9,781.20
					$52.00				
837	**Leaf Nicholas**								
11/06/19	11/22/19	LIBRARY SERVICES - Leaf Nicholas	11/22/19	$40.00	$40.00	01-1340	LIBRARY SERVICES	$3,000.00	$1,600.00
					$40.00				
39	**LifeMap Billing, PO Box 6840, Portland, OR, 97228-6840**								
IN0511122	11/16/19	DISABILITY INSURANCE - Lifemap through Dec 2019	12/05/19	$156.54	$156.54	01-1212	DISABILITY INSURANC	$3,424.00	$2,797.84
					$156.54				
836	**LS Networks, 921 SW Washington ST Suite 370, Portland, OR, 97205-2824**								
INV42055	11/01/19	CITY HALL UTILITIES, LS Networks	12/01/19	$83.87	$83.87	01-1317	CITY HALL UTILITIES	$32,200.00	$24,920.30
INV42055	11/01/19	CITY HALL UTILITIES, LS Networks	12/01/19	$325.00	$325.00	01-1317	CITY HALL UTILITIES	$32,200.00	$24,920.30
INV42055	11/01/19	Fiber to City Hall, LS Networks	12/01/19	$4,549.09	$4,549.09	01-1419	Fiber to City Hall	$14,000.00	$14,000.00
					$4,957.96				
483	**MetLife - Group Benefits, PO Box 804466, Kansas City, MO, 64180-4466**								
NOV2019	11/13/19	DENTAL & VISION INSURANCE, Metlife through November 2019	12/01/19	$801.05	$801.05	01-1214	DENTAL & VISION INSU	$10,272.00	$7,067.80
					$801.05				
761	**Mike's Heating and Air, PO BOX 748, Albany, OR, 97321**								
NOV 2019	11/13/19	Maintenance and Supplies, Mike's Heating and Air - Fire Station service	11/13/19	$105.00	$105.00	01-4306	Maintenance and Supplie	$2,000.00	($43.10)
					$105.00				
41	**Providence Health Plan, PO Box 4167, Portland, OR, 97208-4167**								
12/01/2019	11/11/19	MEDICAL INSURANCE, Providence Health through Dec 2019	11/11/19	$6,938.35	$6,938.35	01-1211	MEDICAL INSURANCE	$89,250.00	$60,061.60
					$6,938.35				
550	**Roto-Rooter, P.O. Box 291, Albany, OR, 97321**								
5475 Old Salem	11/07/19	SEWER MISCELLANEOUS EXPENSES AND LIFT STATION UTIL, Roto-Rooter, Line Cleaning at 5475 Old Salem	11/07/19	$475.00	$475.00	04-1328	SEWER MISCELLANEO	$10,000.00	$3,936.33
					$475.00				
838	**Shred-it, 28883 Network Place, Chicago, IL, 60673-1288**								
8128588370	11/15/19	Shred-it through Nov 2019	12/15/19	$45.20	$45.20	01-1332	CONTRACTED SERVIC	$162,625.00	$79,503.56
					$45.20				

OREGON STATE TREASURY

Account Statement

For the Month Ending **November 30, 2019**

Consolidated Summary Statement

MILLERSBURG CITY OF

Portfolio Summary

Portfolio Holdings	Dividends	Closing Balance	Current Yield
Oregon LGIP	25,487.78	13,611,097.85	2.25 %
Total	**$25,487.78**	**$13,611,097.85**	

Investment Allocation

Investment Type	Closing Balance	Percent
Money Market Mutual Fund	13,611,097.85	100.00
Total	**$13,611,097.85**	**100.00%**

OREGON STATE TREASURY

Account Statement

Consolidated Summary Statement

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF

Account Number	Account Name	Opening Balance	Purchases	Redemptions	Closing Balance	Dividends
3049	MILLERSBURG CITY/PERLENFEIN W PARK ZUHL	95,368.53	183.68	0.00	95,552.21	183.68
3063	MILLERSBURG EAGLES NEST/MILLERSBURG DR	337,975.15	650.95	0.00	338,626.10	650.95
3064	CITY OF MILLERSBURG STREET SDCS	1,047,008.13	2,016.57	0.00	1,049,024.70	2,016.57
3065	CITY OF MILLERSBURG PARK SDCS	333,868.77	643.04	0.00	334,511.81	643.04
3839	MILLERSBURG CITY OF/WETLANDS PROJECT	27,422.80	52.82	0.00	27,475.62	52.82
5809	MILLERSBURG CITY OF	11,560,353.80	1,699,179.16	(1,493,625.55)	11,765,907.41	21,940.72
Total		**$13,401,997.18**	**$1,702,726.22**	**($1,493,625.55)**	**$13,611,097.85**	**$25,487.78**

OREGON STATE TREASURY

Account Statement - Transaction Summary

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - MILLERSBURG CITY/PERLENFEIN W PARK ZUHL - 3049

Oregon LGIP	
Opening Balance	95,368.53
Purchases	183.68
Redemptions	0.00
Closing Balance	**$95,552.21**
Dividends	183.68

Asset Summary

	November 30, 2019	October 31, 2019
Oregon LGIP	95,552.21	95,368.53
Total	**$95,552.21**	**$95,368.53**

OREGON STATE TREASURY

Account Statement

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - MILLERSBURG CITY/PERLENFEIN W PARK ZUHL - 3049

Trade Date	Settlement Date	Transaction Description	Share or Unit Price	Dollar Amount of Transaction	Balance
Oregon LGIP					
Opening Balance					**95,368.53**
11/29/19	12/02/19	Accrual Income Div Reinvestment - Distributions	1.00	183.68	95,552.21
Closing Balance					**95,552.21**

	Month of November	Fiscal YTD July-November
Opening Balance	95,368.53	44,537.15
Purchases	183.68	51,015.06
Redemptions	0.00	0.00
Closing Balance	**95,552.21**	**95,552.21**
Dividends	183.68	1,015.06

Closing Balance	95,552.21
Average Monthly Balance	95,380.78
Monthly Distribution Yield	2.34%

OREGON STATE TREASURY

Account Statement - Transaction Summary

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - MILLERSBURG EAGLES NEST/MILLERSBURG DR - 3063

Oregon LGIP	
Opening Balance	337,975.15
Purchases	650.95
Redemptions	0.00
Closing Balance	**$338,626.10**
Dividends	650.95

Asset Summary		
	November 30, 2019	**October 31, 2019**
Oregon LGIP	338,626.10	337,975.15
Total	**$338,626.10**	**$337,975.15**

OREGON STATE TREASURY

Account Statement

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - MILLERSBURG EAGLES NEST/MILLERSBURG DR - 3063

Trade Date	Settlement Date	Transaction Description	Share or Unit Price	Dollar Amount of Transaction	Balance
Oregon LGIP					
Opening Balance					**337,975.15**
11/29/19	12/02/19	Accrual Income Div Reinvestment - Distributions	1.00	650.95	338,626.10
Closing Balance					**338,626.10**

	Month of November	Fiscal YTD July-November
Opening Balance	337,975.15	335,028.81
Purchases	650.95	3,597.29
Redemptions	0.00	0.00
Closing Balance	**338,626.10**	**338,626.10**
Dividends	650.95	3,597.29

Closing Balance	338,626.10
Average Monthly Balance	338,018.55
Monthly Distribution Yield	2.34%

OREGON STATE TREASURY

Account Statement - Transaction Summary

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - CITY OF MILLERSBURG STREET SDCS - 3064

Oregon LGIP	
Opening Balance	1,047,008.13
Purchases	2,016.57
Redemptions	0.00
Closing Balance	**$1,049,024.70**
Dividends	2,016.57

Asset Summary		
	November 30, 2019	**October 31, 2019**
Oregon LGIP	1,049,024.70	1,047,008.13
Total	**$1,049,024.70**	**$1,047,008.13**

OREGON STATE TREASURY

Account Statement

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - CITY OF MILLERSBURG STREET SDCS - 3064

Trade Date	Settlement Date	Transaction Description	Share or Unit Price	Dollar Amount of Transaction	Balance
Oregon LGIP					
Opening Balance					**1,047,008.13**
11/29/19	12/02/19	Accrual Income Div Reinvestment - Distributions	1.00	2,016.57	1,049,024.70
Closing Balance					**1,049,024.70**

	Month of November	Fiscal YTD July-November
Opening Balance	1,047,008.13	1,037,880.74
Purchases	2,016.57	11,143.96
Redemptions	0.00	0.00
Closing Balance	**1,049,024.70**	**1,049,024.70**
Dividends	2,016.57	11,143.96

Closing Balance	1,049,024.70
Average Monthly Balance	1,047,142.57
Monthly Distribution Yield	2.34%

OREGON STATE TREASURY

Account Statement - Transaction Summary

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - CITY OF MILLERSBURG PARK SDCS - 3065

Oregon LGIP	
Opening Balance	333,868.77
Purchases	643.04
Redemptions	0.00
Closing Balance	**$334,511.81**
Dividends	643.04

Asset Summary		
	November 30, 2019	**October 31, 2019**
Oregon LGIP	334,511.81	333,868.77
Total	**$334,511.81**	**$333,868.77**

OREGON STATE TREASURY

Account Statement

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - CITY OF MILLERSBURG PARK SDCS - 3065

Trade Date	Settlement Date	Transaction Description	Share or Unit Price	Dollar Amount of Transaction	Balance
Oregon LGIP					
Opening Balance					**333,868.77**
11/29/19	12/02/19	Accrual Income Div Reinvestment - Distributions	1.00	643.04	334,511.81
Closing Balance					**334,511.81**

	Month of November	Fiscal YTD July-November
Opening Balance	333,868.77	330,958.24
Purchases	643.04	3,553.57
Redemptions	0.00	0.00
Closing Balance	**334,511.81**	**334,511.81**
Dividends	643.04	3,553.57

Closing Balance	334,511.81
Average Monthly Balance	333,911.64
Monthly Distribution Yield	2.34%

OREGON STATE TREASURY

Account Statement - Transaction Summary

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - MILLERSBURG CITY OF/WETLANDS PROJECT - 3839

Oregon LGIP	
Opening Balance	27,422.80
Purchases	52.82
Redemptions	0.00
Closing Balance	**$27,475.62**
Dividends	52.82

Asset Summary		
	November 30, 2019	**October 31, 2019**
Oregon LGIP	27,475.62	27,422.80
Total	**$27,475.62**	**$27,422.80**

OREGON STATE TREASURY

Account Statement

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - MILLERSBURG CITY OF/WETLANDS PROJECT - 3839

Trade Date	Settlement Date	Transaction Description	Share or Unit Price	Dollar Amount of Transaction	Balance
Oregon LGIP					
Opening Balance					**27,422.80**
11/29/19	12/02/19	Accrual Income Div Reinvestment - Distributions	1.00	52.82	27,475.62
Closing Balance					**27,475.62**

	Month of November	Fiscal YTD July-November
Opening Balance	27,422.80	27,183.75
Purchases	52.82	291.87
Redemptions	0.00	0.00
Closing Balance	**27,475.62**	**27,475.62**
Dividends	52.82	291.87

Closing Balance	27,475.62
Average Monthly Balance	27,426.32
Monthly Distribution Yield	2.34%

OREGON STATE TREASURY

Account Statement - Transaction Summary

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - MILLERSBURG CITY OF - 5809

Oregon LGIP	
Opening Balance	11,560,353.80
Purchases	1,699,179.16
Redemptions	(1,493,625.55)
Closing Balance	**$11,765,907.41**
Dividends	21,940.72

Asset Summary		
	November 30, 2019	**October 31, 2019**
Oregon LGIP	11,765,907.41	11,560,353.80
Total	**$11,765,907.41**	**$11,560,353.80**

OREGON STATE TREASURY

Account Statement

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - MILLERSBURG CITY OF - 5809

Trade Date	Settlement Date	Transaction Description	Share or Unit Price	Dollar Amount of Transaction	Balance
Oregon LGIP					
Opening Balance					**11,560,353.80**
11/01/19	11/01/19	LGIP Fees - ACH Purchase (1 @ $0.05 - From 5809) - October 2019	1.00	(0.05)	11,560,353.75
11/01/19	11/01/19	Transfer from Linn County Treasury - Linn Co Treasury	1.00	44,340.40	11,604,694.15
11/04/19	11/04/19	SFMS Fr:Liquor Control Commission,Oregon OLCC Tax (Liquor)	1.00	2,960.47	11,607,654.62
11/12/19	11/12/19	Transfer from Linn County Treasury - Linn Co Treasury	1.00	189,371.49	11,797,026.11
11/14/19	11/14/19	SFMS Fr:Administrative Services, Dept of Revenue Sharing Tax	1.00	9,966.63	11,806,992.74
11/18/19	11/18/19	Redemption - ACH Redemption	1.00	(1,100,000.00)	10,706,992.74
11/18/19	11/18/19	Transfer from Linn County Treasury - Linn Co Treasury	1.00	261,817.16	10,968,809.90
11/22/19	11/22/19	Redemption - ACH Redemption	1.00	(33,625.50)	10,935,184.40
11/22/19	11/22/19	Redemption - ACH Redemption	1.00	(360,000.00)	10,575,184.40
11/27/19	11/27/19	SFMS Fr:Administrative Services, Dept of City Cigarette Tax	1.00	195.33	10,575,379.73
11/27/19	11/27/19	Transfer from Linn County Treasury - Linn Co Treasury	1.00	772,251.86	11,347,631.59
11/29/19	11/29/19	ACH Returned - R23 - Receiver Refuses Payment	1.00	360,000.00	11,707,631.59
11/29/19	11/29/19	ACH Returned - R23 - Receiver Refuses Payment	1.00	33,625.50	11,741,257.09
11/29/19	11/29/19	SFMS Fr:Liquor Control Commission,Oregon OLCC Tax (Liquor)	1.00	2,709.60	11,743,966.69
11/29/19	12/02/19	Accrual Income Div Reinvestment - Distributions	1.00	21,940.72	11,765,907.41

OREGON STATE TREASURY

Account Statement

For the Month Ending **November 30, 2019**

MILLERSBURG CITY OF - MILLERSBURG CITY OF - 5809

Trade Date	Settlement Date	Transaction Description	Share or Unit Price	Dollar Amount of Transaction	Balance
Closing Balance					**11,765,907.41**

	Month of November	Fiscal YTD July-November
Opening Balance	11,560,353.80	11,512,293.55
Purchases	1,699,179.16	2,250,347.76
Redemptions	(1,493,625.55)	(1,996,733.90)
Closing Balance	**11,765,907.41**	**11,765,907.41**
Dividends	21,940.72	120,539.80

Closing Balance	11,765,907.41
Average Monthly Balance	11,382,519.41
Monthly Distribution Yield	2.34%

Public Hearing Notice (December 10, 2019)

Public notice is hereby given that the Millersburg City Council will conduct a public hearing on December 10, 2019, 6:30 p.m. at City Hall, 4222 NE Old Salem Road, Albany, Oregon.

The purpose of this public hearing is to consider a sewer rate increase of 7.5%.

Background

In 2014, the City of Millersburg recognized that revenue from sewer rates was falling behind annual operating costs due to the fact that no sewer rate increases had taken place since 2010. At that time, it was determined a 25% rate increase would be required to get the rates to where they need to be to meet operating costs. In December of 2014, City Council adopted a rate increase of 10%, effective January 1, 2015, followed by another 10% rate increase January 1, 2016. The first rate increase was implemented; the second was not.

In 2017, the City undertook a study of both water and sewer rates. The study is now nearing completion and both rate structure changes and rate increases are being recommended for each utility. The financial plan developed through the study outlines a path to insure utility revenues are sufficient to cover expenses of the utilities over the next five to ten years through rate structure changes as well as rate increases (4% for water and 7.5% for sewer) over the upcoming years.

It is proposed that the first sewer rate increase of 7.5% be adopted, effective February 1, 2020. An increase in the sewer rates is necessary at this time to fund operational costs as well as upcoming required projects and offset the need for even larger increases in the future.

Public testimony, both oral and written will be accepted at the public hearing. Written statements may be submitted to the City Recorder, 4222 NE Old Salem Road, Albany, OR 97370 or by email at kwollenb@cityofmillersburg.org

Assistive listening devices are available for persons with impaired hearing and can be scheduled for this meeting. To obtain such services call City Hall at 541-928-4523.

TO: Millersburg City Council

VIA: Kevin Kreitman, City Manager

FROM: Janelle Booth, Assistant City Manager/City Engineer

DATE: December 5, 2019 for the December 10, 2019 City Council Meeting

SUBJECT: Sewer Rate Increase – Public Hearing

Action Requested:
Council to conduct a public hearing to consider a sewer rate increase of 7.5% to become effective February 1, 2020.

Discussion:
In 2014, the City of Millersburg recognized that revenue from sewer rates was falling behind annual operating costs due to the fact that no sewer rate increases had taken place since 2010. At that time, it was determined a 25% rate increase would be required to get the rates to where they needed to be to meet operating costs. In December of 2014, City Council adopted a rate increase of 10%, effective January 1, 2015 followed by another 10% rate increase January 1, 2016. The first rate increase was implemented, however the second was not. A history of Millersburg's sewer rates is provided as an attachment to this memo.

In 2017, the City undertook a study of both water and sewer rates. The study is now nearing completion, and both rate structure changes and rate increases are being recommended for each utility.

The financial plan developed through the study and presented in previous work sessions outlines a path to insure utility revenues are sufficient to cover expenses over the next five to ten years. The timeline presented in the draft financial plan was intended to implement the rate structure changes beginning before July 2020, followed by rate increases (4% for water and 7.5% for sewer) over subsequent years.

Over the past few months, the timeline to implement a rate structure change has been reconsidered. It is now recommended that no rate structure changes take place during the initial implementation period of the new utility billing system (anticipated in April 2020). It is also recommended that a new rate structure not be implemented during the peak water use season (summer). If these modified recommendations are followed, the rate structure changes would take place in fall or winter of 2020-21 at the earliest.

If changes to the sewer utility rates are deferred this additional year, revenues in the sewer fund will continue to fall behind. It is proposed that the first sewer rate increase of 7.5% be adopted in the winter of 2019-20 instead of waiting until after the rate structure change is implemented.

Budget Impact:
An increase in the sewer rate charges is necessary at this time to fund operational costs as well as upcoming required projects and offset the need for even larger increases in the future.

Recommendation:
Staff recommends Council hold a public hearing in December, 2019 to consider adoption of a sewer rate increase in January 2020 in the amount of 7.5% to become effective February 1, 2020, followed by implementation of a rate structure change and additional increases at a later date, as recommended by the rate study.

Attachment(s):
- Millersburg Sewer Rates History

Millersburg Sewer Rates History

	residential				Commercial/Ind min rate			
	quarter	month	bi-month	%	quarter	month	bi-month	%
2019	147.50	49.17	98.33	0.0%	208.91	69.64	139.27	0.0%
2018	147.50	49.17	98.33	0.0%	208.91	69.64	139.27	0.0%
2017	147.50	49.17	98.33	0.0%	208.91	69.64	139.27	0.0%
2016	147.50	49.17	98.33	0.0%	208.91	69.64	139.27	0.0%
2015	147.50	49.17	98.33	10.0%	208.91	69.64	139.27	10.0%
2014	134.09	44.70	89.39	0.0%	189.92	63.31	126.61	0.0%
2013	134.09	44.70	89.39	0.0%	189.92	63.31	126.61	0.0%
2012	134.09	44.70	89.39	0.0%	189.92	63.31	126.61	0.0%
2011	134.09	44.70	89.39	0.0%	189.92	63.31	126.61	0.0%
2010	134.09	44.70	89.39	7.2%	189.92	63.31	126.61	7.2%
2009	125.08	41.69	83.39	7.2%	177.16	59.05	118.11	7.2%
2008	116.68	38.89	77.79	7.2%	165.26	55.09	110.17	7.2%
2007	108.85	36.28	72.56	7.2%	154.16	51.39	102.77	7.2%
2006	101.53	33.84	67.69	7.2%	143.81	47.94	95.87	7.2%
2005	94.72	31.57	63.14	7.2%	134.15	44.72	89.43	7.2%
2004	88.35	29.45	58.90	7.2%	125.14	41.71	83.43	7.2%
2003	82.42	27.47	54.95	7.2%	116.73	38.91	77.82	7.2%
2002	76.88	25.63	51.26	7.2%	108.89	36.30	72.60	7.2%
2001	71.72	23.91	47.81	7.2%	101.58	33.86	67.72	7.2%
2000	66.90	22.30	44.60	0.0%	94.76	31.59	63.17	-5.6%
1999	66.90	22.30	44.60	33.8%	100.35	33.45	66.90	33.8%
1998	50.00	16.67	33.33	11.1%	75.00	25.00	50.00	6.4%
1997	45.00	15.00	30.00	0.0%	70.47	23.49	46.98	4.0%
1996	45.00	15.00	30.00	0.0%	67.76	22.59	45.17	
1995	45.00	15.00	30.00	0.0%				
1994	45.00	15.00	30.00	9.8%				
1993	41.00	13.67	27.33	0.0%				
1992	41.00	13.67	27.33	0.0%				
1991	41.00	13.67	27.33	0.0%				
1990	41.00	13.67	27.33	7.9%				
1989	38.00	12.67	25.33	40.7%				
1988	27.00	9.00	18.00	0.0%				
1987	27.00	9.00	18.00					

most recent two sewer rate increases

MILLERSBURG CITY COUNCIL ASSIGNMENTS FOR EXTRA COMMITTEES

Joint Water / Waste Water Management Committee with Albany

Scott Cowan, Jim Lepin

Scott McPhee – alternate

Council of Governments Board of Directors

Jim Lepin

Scott McPhee – alternate

COG Consortium

Janelle Booth

Jim Lepin – alternate

AAMPO (Albany Area Metropolitan Planning Organization

Policy Committee

Open

Alternate – Janelle Booth

Technical Committee

Janelle Booth

Alternate – *Open*

CWAT (Cascades West Area Commission on Transportation)

Open

Janelle Booth – Alternate

AMEDC Board of Directors (Albany Millersburg Economic Development Corp.)

Jim Lepin, Dave Harms

Board Liaison for Annual Celebration

Jim Lepin, *Open*

Litigation Committee

Scott McPhee, Jim Lepin

Open Committee Assignment Opportunities

AAMPO Policy Committee

Meets the fourth Wednesday each month from 2:30 – 4:30 PM

AAMPO Technical Committee - Alternate

Meets second Thursday each month from 1:30 – 3:30 pm.

CWACT Commission on Transportation

Meets on the fourth Thursday every two months from 5:00 – 7:00 PM.

Annual Events (Celebration) Committee

Note: this position is one of support and liaison communications between the committee and the Council and City management. This is not a voting position on the committee.

Meets at least monthly and will probably set a common date for each month during the January 2020 meeting. These meetings are from 6:00 – 8:00 PM

As we get close to the celebration, they meet every two weeks, typically in August, and weekly the past couple weeks.

Ideally this person is available for set up the day before and the day of the celebration.

TO: Millersburg City Council

VIA: Kevin Kreitman, City Manager

FROM: City Staff

DATE: December 5, 2019 for Council Meeting December 10, 2019

SUBJECT: Project Updates Memo

Monthly Update on Projects:
Staff are currently in the process of implementing many projects and activities in the City to address objectives of the Strategic Plan, direction from Council, and needs staff have identified. In order to facilitate tracking these tasks, a Gantt chart has been developed. As staff continues to work on these tasks, the Gantt chart will be periodically updated and provided for Council and public information. The most recent version of the Gantt chart is attached to this memo. Tasks in blue are complete, tasks in yellow are in progress, and tasks that are not colored have not been started.

There are many tasks currently in progress. An overview of several specific tasks is provided below.

Parks Master Plan:
The draft Parks Master Plan was presented to the Parks Committee on November 5. The draft document has also been made available on the City website. The Parks Committee will meet on December 11 to discuss and provide comments on the draft document.

Park Reservations:
Based on previous direction to staff, reservations for Millersburg Park in 2020 were opened to Millersburg residents only beginning December 2, 2019. To date, five Millersburg residents have reserved the park. Park reservations will be open to the public at large on January 2, 2020.

Tree City Request:
A citizen submitted a request for consideration of working toward Millersburg becoming designated as a "Tree City USA." A copy of the request was provided to Councilors. The Tree City USA program is run by the Arbor Day Foundation. According to the Arbor Day Foundation's website, Tree City USA status is achieved by meeting four core standards of sound urban forestry management: maintaining a tree board or department, having a community tree ordinance, spending at least $2 per capita on urban forestry and celebrating Arbor Day. Before staff spends additional time on this item, it is requested that Council provide direction on whether this is something they would like to pursue.

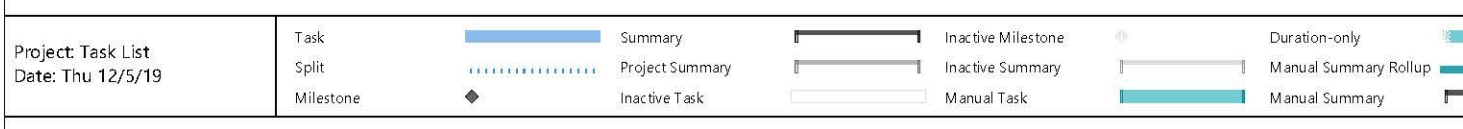
The citizen letter also requested consideration of labeling trees at Millersburg City Park. This is currently under consideration as an Eagle Scout project. If the

project is not chosen at this time, it will be provided as an option for future Eagle Scout projects.

Council Rules of Procedure:
At Council's request, staff have been working on an update to the Council Rules of Procedure, based on the League of Oregon Cities model rules. Staff would like to schedule a work session to review the changes with Council on January 28, 2020.

West Valley Estates:
Phase 1 of the West Valley Estates subdivision is nearing completion and is expected to record within the next week. Phase 1 will create 38 new single family home lots. Public infrastructure work in Phase 2 is now beginning. When complete, Phase 2 will create an additional 39 lots.

ID		Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
1			**Millersburg Tasks**					
2								
3			**Charter and Council**	**260 days**	**Wed 1/2/19**	**Tue 12/31/19**		**Kevin,Forrest**
4			Update of charter					
5			Update Strategic Plan	54 days	Mon 1/21/19	Thu 4/4/19		
6								
7			**Ordinances and Code**	**390 days**	**Wed 1/2/19**	**Tue 6/30/20**		**Forrest,Kim,Kevin**
8			Update Code of Ordinances - change to Municipal Code	180 days	Wed 1/2/19	Tue 9/10/19		
9			Resolutions - need to update water resolution with new billing cycle CO 50.05	270 days	Wed 1/2/19	Tue 1/14/20		
10			Update ordinances to include water and storm utility systems	1 day	Tue 8/13/19	Tue 8/13/19		
11			Comprehensive Plan Update	390 days	Wed 1/2/19	Tue 6/30/20		
12								
13			**Policies, Procedures, and Standards**	**260 days**	**Wed 1/2/19**	**Tue 12/31/19**		
14			Ethics Policy	50 days	Wed 1/2/19	Tue 3/12/19		Kevin,Janelle
15			Fleet policy and best practices for vehicles					Kevin,Janelle
16			Computer/electronics use policy					Kevin,Janelle
17			Equipment use policy					Kevin,Janelle
18			Billing policies					Kim
19			**Safety procedures and training**	**325 days**	**Wed 1/2/19**	**Tue 3/31/20**		**Kevin,Janelle**
20			Safety manual					
21			Staff training plans			Tue 3/31/20		
22			Ergo evaluations			Tue 3/31/20		
23			PPE	1 day	Wed 1/2/19	Wed 1/2/19		
24								
25			**Budget**	**120 days**	**Mon 1/14/19**	**Fri 6/28/19**		
26			**2019-2020 Budget**	**75 days**	**Mon 3/18/19**	**Fri 6/28/19**		**Jake,Kevin,Janelle**
27			Revise budget layout	51 days	Mon 1/14/19	Mon 3/25/19		Jake
28			Develop proposed budget	60 days	Mon 1/28/19	Fri 4/19/19		
29			Adopt budget	55 days	Mon 4/15/19	Fri 6/28/19		
30			CIP update	105 days	Mon 2/4/19	Fri 6/28/19		Janelle
31								
32			**Equipment life/replacement costs tracking**	**260 days**	**Wed 1/2/19**	**Tue 12/31/19**		
33			City Hall Equipment					
34			Parks/Maintenance Equipment					
35			Fire Station					
36								
37			**City Hall work**	**260 days**	**Wed 1/2/19**	**Tue 12/31/19**		
38			**Council Chambers**	**1 day**	**Wed 1/2/19**	**Wed 1/2/19**		
39			Upgrade audio and video system	200 days	Wed 1/2/19	Tue 10/8/19		
40			Council dias	200 days	Wed 1/2/19	Tue 10/8/19		
41			Records Room reorganization - rolling files	158 days	Wed 1/2/19	Fri 8/9/19		Kim,Kevin
42			East Conference Room reorganization	260 days	Wed 1/2/19	Tue 12/31/19		Kevin,Kim
43			Upgrade phone system			Fri 1/31/20		Janelle,Kevin,Kim
44			Broadband	1 day	Wed 1/2/19	Wed 1/2/19		Kevin
45			Sidewalk around north end of City Hall					Janelle
46			Security cameras on City Hall exterior	1 day	Wed 1/2/19	Wed 1/2/19		Jake
47								
48			**Planning, Building, and Development**	**260 days**	**Wed 1/2/19**	**Tue 12/31/19**		
49			Complete Land Use Development Code Revision	302.25 day	Wed 1/2/19	Fri 2/28/20		John Morgan
50			**Consider UGB expansion**	**434 days**	**Wed 1/2/19**	**Mon 8/31/20**		**John,Kevin,Janelle**
51			Buildable Lands Inventory and Housing Needs Analysis					
52			Update planning fees	136 days	Tue 1/1/19	Tue 7/9/19		John,Matt
53			Ability to get on County online system for building permit	196 days	Tue 7/2/19	Tue 3/31/20		Kevin,Janelle
54			Engineering standards	222 days	Mon 2/4/19	Tue 12/10/19		Janelle
55			Connection Fees/Reimbursement Agreement	115 days	Wed 1/2/19	Tue 6/11/19		Janelle,Jeff
56								



ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors	Resource Names
57		**Economic Development**	**347 days**	**Wed 1/2/19**	**Thu 4/30/20**		
58		Consider business license					
59		Access to City property west of tracks					
60		Consider fuel tax					
61		Consider transient room tax					
62		Wetland delineation for city owned property	294 days	Mon 3/18/19	Thu 4/30/20		
63							
64		**Fire Station Permanent**	**725 days**	**Mon 1/21/19**	**Fri 10/29/21**		
65		Select Site	115 days	Mon 1/21/19	Fri 6/28/19		Kevin,Janelle
66		RFQ to Select Designer	152 days	Mon 6/3/19	Tue 12/31/19		Kevin,Janelle
67		Select Design Firm	177 days	Mon 7/29/19	Tue 3/31/20		Kevin,Janelle
68		Preliminary Design	173 days	Thu 1/2/20	Mon 8/31/20		Kevin,Janelle
69							
70		**Parks**	**283 days**	**Wed 1/2/19**	**Fri 1/31/20**		
71		Review reservation fees	128 days	Wed 1/2/19	Fri 6/28/19		Jake
72		Park safety inspection checklist	63 days	Wed 1/2/19	Fri 3/29/19		Janelle,Sean
73		Parks Master Plan	283 days	Wed 1/2/19	Fri 1/31/20		Janelle
74		Parks Maintenance Plan	63 days	Wed 1/2/19	Fri 3/29/19		Janelle
75		Remote control of irrigation system					
76							
77		**Utilities**	**260 days**	**Wed 1/2/19**	**Tue 12/31/19**		**Kevin,Janelle,consultant**
78		New utility billing and GL system selection	1 day	Fri 6/28/19	Fri 6/28/19		Kim
79		**Rates**	**325 days**	**Wed 1/2/19**	**Tue 3/31/20**		
80		Water	325 days	Wed 1/2/19	Tue 3/31/20		
81		Sewer	325 days	Wed 1/2/19	Tue 3/31/20		
82		Stormwater	347 days	Mon 3/4/19	Tue 6/30/20		
83		**SDCs**	**433 days**	**Wed 1/2/19**	**Fri 8/28/20**		
84		Water	325 days	Wed 1/2/19	Tue 3/31/20		
85		Sewer	325 days	Wed 1/2/19	Tue 3/31/20		
86		Streets	303 days	Fri 2/1/19	Tue 3/31/20		
87		Stormwater	303 days	Fri 2/1/19	Tue 3/31/20		
88		Parks	255 days	Mon 9/9/19	Fri 8/28/20		
89							
90		**Stormwater**	**260 days**	**Wed 1/2/19**	**Tue 12/31/19**		
91		Complete Stormwater Master Plan	15 days	Wed 1/2/19	Tue 1/22/19		
92		TMDL matrix revision	51 days	Mon 1/21/19	Mon 4/1/19		
93		Stormwater/drainage flyer	237 days	Mon 2/4/19	Tue 12/31/19		Janelle
94		Crooks Creek north trib project	433 days	Mon 2/4/19	Wed 9/30/20		
95		Stormfilter cartridges at Crooks Creek on Millersburg drive - regular checking/cleaning/replacement plan	260 days	Wed 1/2/19	Tue 12/31/19		Janelle
96		Have Millersburg storm drain facilities added to Albany GIS system	260 days	Wed 1/2/19	Tue 12/31/19		Janelle
97		Erosion Control Permit Program	245 days	Mon 2/4/19	Fri 1/10/20		Janelle
98		Develop inspection and maintenance program	245 days	Mon 2/4/19	Fri 1/10/20		Janelle
99							
100		**Water**	**260 days**	**Wed 1/2/19**	**Tue 12/31/19**		
101		Evaluate DRC contract	131 days	Mon 3/2/20	Mon 8/31/20		Janelle
102		Water master plan - submit finance component	260 days	Wed 1/2/19	Tue 12/31/19		Janelle
103		Annual water audit	257 days	Mon 1/7/19	Tue 12/31/19		Janelle,Kim
104		OHA requirements tracking	260 days	Wed 1/2/19	Tue 12/31/19		Janelle
105							
106		**Sewer**	**260 days**	**Wed 1/2/19**	**Tue 12/31/19**		
107		Manhole grouting	18 days	Wed 1/2/19	Fri 1/25/19		Janelle
108		Finish lift station project	128 days	Wed 1/2/19	Fri 6/28/19		Janelle
109							
110		**Tranportation/Streets**	**260 days**	**Wed 1/2/19**	**Tue 12/31/19**		
111		Bridge and pavement reporting to ODOT	23 days	Wed 1/2/19	Fri 2/1/19		Janelle
112		Street striping program	109 days	Wed 1/2/19	Mon 6/3/19		Janelle

1/21 1/28

Project: Task List
Date: Thu 12/5/19

Task — Summary — Inactive Milestone — Duration-only
Split — Project Summary — Inactive Summary — Manual Summary R
Milestone — Inactive Task — Manual Task — Manual Summary

ID		Task Mode	Task Name	Duration	Start	Finish	Pred	Resource Names
113	✓		Crack seal/slurry seal program	109 days	Wed 1/2/19	Mon 6/3/19		Janelle
114	✓		OSR/I-5 guardrail evaluation	1 day	Fri 8/30/19	Fri 8/30/19		Janelle
115								
116			**Miscellaneous**	**390 days**	**Wed 1/2/19**	**Tue 6/30/20**		
117	✓		Newsletter	260 days	Wed 1/2/19	Tue 12/31/19		Kim
118			Post utility rate and SDC info to website once changes are adopted	327 days	Mon 4/1/19	Tue 6/30/20		Janelle,Kim
119			Change city name for addressing			Tue 6/30/20		Kevin
120	✓		Complaint form	1 day	Wed 1/2/19	Wed 1/2/19		
121								
122			**HR**	**201 days**	**Wed 1/2/19**	**Wed 10/9/19**		
123	✓		Annual evaluation form	22 days	Wed 1/2/19	Thu 1/31/19		Kevin,Janelle
124			Update employee manual	270 days	Wed 1/2/19	Tue 1/14/20		Kevin,Forrest
125	✓		Update maintenance job descriptions	151 days	Wed 1/2/19	Wed 7/31/19		Janelle

February 1/21 1/28 2/4

Project: Task List
Date: Thu 12/5/19

Task — Summary — Inactive Milestone — Duration-only
Split — Project Summary — Inactive Summary — Manual Summary Rollup
Milestone — Inactive Task — Manual Task — Manual Summary

TO: Millersburg City Council

FROM: Kevin Kreitman

DATE: November 21, 2019, for the December 10, 2019 City Council Meeting

SUBJECT: Commission and Committee Re-Appointments

Action Requested:
Approval and appointment/re-appointment of Planning Commission and Events Committee Members.

Discussion:
In accordance with the Council's adopted Citizen Commission/Committee Member and Staff Manual, in November public notice of all current or anticipated vacancies were posted on the City's website.

Planning Commission
The City recognized last year that the terms for Planning Commission members could not be identified, and staff requested that all members be reappointed with lots drawn in January by the Planning Commission to establish new three year term cycles for the members. With the reestablishment of term cycles, it was agreed that members drawing lots for the one (1) year and two (2) year appointment would automatically be forwarded to Council for consideration of reappointment to new three (3) year terms at completion of the modified term.

In September the Council adopted Ordinance 162 pertaining to the Planning Commission which included reducing the number of members from the current nine (9) to seven (7) members through attrition. With the previous resignation of Planning Commission members Scott Stimpson and Ed Perlenfein, as well as the appointment of Planning Commission member John Sullivan to fill a vacant City Council position, the current membership level stands at six (6).

In accordance with the adopted Citizen Commission/Committee Member and Staff Manual, with the exception of those Planning Commission members who drew one and two year lots, when commission or committee members complete a term of service, they will be eligible to continue to be considered for reappointment to said position, but will need to complete a new/updated application for said position. We do not currently have commission or committee members in that situation, but when it does arise in subsequent years staff will send a notice to said member(s) asking if they wish to continue to be considered for reappointment with the required documentation to be completed.

Based on the information above current Planning Commission member Steve Vogler is eligible for Council consideration for reappointment to a new three year term on the Planning Commission. In addition, a new Planning Commission member will need to be appointed to bring the total number of commissioners to seven (7). Applications for this open position will be accepted through December 9 and provided to Council for consideration on December 10.

Council may choose to select an applicant to fill the vacant position at the Council meeting on December 10.

Events Planning Committee
Per Council Resolution, the Events Planning Committee currently has eight (8) filled positions and is eligible for up to fourteen (14) total members. Given the unique task presented to this committee, the Council did not set term limits. The current members of the Events Planning Committee reviewed applications and conducted interviews for new committee members on 12/4/19. Based on their work, the Events Planning Committee recommends appointment of the following additional members to the Committee:

Abagail Johnson
Tina Ferguson
Lorri Headrick

All applications received are provided as an attachment to this report. One applicant was not available to be interviewed on the 4th. The Events Planning Committee would like to interview this candidate and potentially recommend appointment at a future date.

Budget Impact:
None

Recommendation:
Council consideration of the following appointments to the Planning Commission and Events Planning Committee:

Planning Commission
Steve Vogler
Vacant Position – to be appointed

Events Planning Committee
Abagail Johnson
Tina Ferguson
Lorri Headrick

Attachment(s):
- Events Planning Committee Applications
- Resolution 2019-21 Appointing Planning Commission and Events Planning Committee Members

CITY OF
Millersburg

COMMISSION AND COMMITTEE APPLICATION

(Please print legibly or type)

CITY HALL
4222 NE Old Salem
Road Albany, OR 97321
www.cityofmillersburg.org
(541)928-4523

Commission and/or Committee Preference:

Volunteer Coordinator

(list all for which you are applying)

Name: Abagail Johnson Preferred First Name: Abby

Residential Information:

Home Address: [redacted]
Millersburg Or 97321

Phone: Cellular: [redacted]

E-mail: [redacted]

Fax: _____ *(Optional)*

Employment Information:

Employer's Name: _____

Work Address: _____

Phone: _____

Cellular: _____

E-mail: _____

Fax: _____ *(Optional)*

Please provide information as requested below to describe your qualifications to serve on this City of Millersburg Commission or Committee. Feel free to provide additional information you wish to share with the City.

- List current or most recent occupation, business, trade, or profession:

I am currently a stay at home mom of two kids, a husband and a dachshund. I previously worked for Kohls Department Store for 11 years. At Kohls, I worked in a management position that required me to manage around 20 employees at a time. I feel that being in a management position has prepared me to organize a team, whether it be managing employees or volunteers. I am organized, and pride myself in being prepared for various situations. Being in retail for so many years, has taught me to think quickly on my feet and to handle many different situations that I feel will come in handy when handling schedules, different tasks and communicating with everyone.

- List community/civic activities. Indicate activities in which you are or have been active:

I am currently involved with Clover and Timber Ridge schools. I volunteer with each school weekly and have done this going on four years. I spend an average of 6-10 hrs. a week between the two schools. I head up a P.T.C. yoga class with the school as well. I also volunteered with the Millersburg Celebration last year. I was there Friday to help set up for most of the day and volunteered in the kids zone the day of. I have also spent time volunteering with the Army national guard in Corvallis, making meals for the soldiers during drill weekends.

- Indicate why you are interested in serving on this commission or committee and what other qualifications apply to this position.

I am interested in this committee because I love what it is doing for our community. I enjoy meeting and being able to be apart of this event that brings so many friends and neighbors together. Being a stay at home mom allows me to make the time to commit to this committee. I am dedicated and will fully immerse myself into the role I am given. I enjoy meeting new people and working as a team to get a job done. I feel that my past experiences will help provide me with the skills I need to run a successful volunteer team. I have no problem delegating or asking for help when needed.

- What contributions do you hope to make?

I hope to be an asset to the events committee by being reliable and accountable. I hope that I can provide help where it is needed and support the other committee members. My husband is an electrician and all around handy guy that can and will also help when needed. I feel that overall, I am an organized and positive person that is happy to take on this responsibility and I am excited to get the chance to be apart of your team!

Please consult the *Guide for Public Officials* and the *Guide for Public Officials 2015 Supplement* that are posted on the state of Oregon's website at http://www.oregon.gov/ogec/Pages/index.aspx (see visual reference below).

Guide for Public Officials

The guide has been revised to include informational links to statutes and rules to give you a more complete reference tool.
Click here to access the guide. Click here for Guide for Public Officials 2015 Supplement.

Signature of Applicant

11/09/19
Date

Supplemental Application

Please share with the Committee why you think you would be a good fit for the position you are applying for. We are looking for some idea of how you will fit into a group whose current members have high energy, attention to detail, and the desire to put on the best event possible for residents, Millersburg businesses, and guests.

I feel that I would be a good fit for this position because I am an outgoing person, who believes in team work. I feel that I could contribute humor when needed, can help come up with ideas for the event and am motivated to help make things happen. In previous jobs, I'm constantly apart of groups of different people. I can get along with all different people and enjoy meeting new friends. I work with children at the elementary level and have a great deal of patience, which I feel is beneficial when dealing with a group of diverse people. Most of all, I love Millersburg and I really enjoy the people in this community. I genuinely look forward to meeting and working with you all if I get this position. Thank you for your time and consideration.

COMMISSION AND COMMITTEE APPLICATION

(Please print legibly or type)

CITY HALL
4222 NE Old Salem
Road Albany, OR 97321
www.cityofmillersburg.org
(541) 928-4523

Commission and/or Committee Preference:

SPONSORSHIP/BUSINESS RELATIONS

(list all for which you are applying)

Name: Tina Ferguson Preferred First Name: Tina

Residential Information:

Home Address: _____ Phone: _____

_____ Cellular: _____

Millersburg Oregon

E-mail: _____ Fax: _____ *(Optional)*

Employment Information:

Employer's Name: _____

Work Address: _____ Phone: _____

_____ Cellular: _____

_____

E-mail: _____ Fax: _____ *(Optional)*

Please provide information as requested below to describe your qualifications to serve on this City of Millersburg Commission or Committee. Feel free to provide additional information you wish to share with the City.

- List current or most recent occupation, business, trade, or profession:

Owner/Operator of Joyful Days Boutique, currently in liquidation
Owner/Operator of Joyful Days Rentals, event rentals
**See resume

- List community/civic activities. Indicate activities in which you are or have been active:

Sponsor of Boys & Girls Club of Greater Santiam event "Power of the Purse" 2016-2019
Lebanon Downtown Association, business member

**See Resume

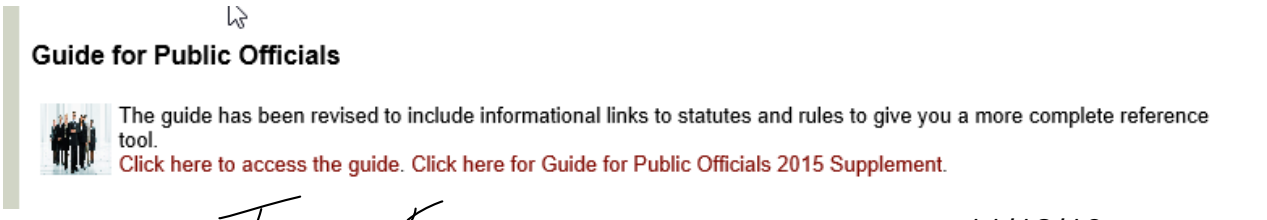
- Indicate why you are interested in serving on this commission or committee and what other qualifications apply to this position.

I am a business owner, involved in the community and I have a passion for organizing events, small and large.

- What contributions do you hope to make?

I can contribute strong planning and leadership skills, including my enjoyment of successfully planning events as a team. Furthermore, I currently have a very flexible schedule. I am professional and work well with timelines. I genuinely enjoy working with others, especially on community based projects.

Please consult the *Guide for Public Officials* and the *Guide for Public Officials 2015 Supplement* that are posted on the state of Oregon's website at http://www.oregon.gov/ogec/Pages/index.aspx (see visual reference below).



Tim Fenn
Signature of Applicant

11/12/19
Date

Supplemental Application

Please share with the Committee why you think you would be a good fit for the position you are applying for. We are looking for some idea of how you will fit into a group whose current members have high energy, attention to detail, and the desire to put on the best event possible for residents, Millersburg businesses, and guests.

As I am stepping away from running my business, I am looking to fill my time with a creative outlet that still allows me the opportunity to be involved with the community.

This position seems to fit my skill set well, and provides an area that I can add value.

In the event that I am not selected as a committee member, I am willing to discuss other opportunities to help with this event.

PROFESSIONAL OVERVIEW

PROFESSIONAL ATTRIBUTES

Vast knowledge of business in all senses: operations, management, administration, leadership, human resources, payroll, finance, budgeting, supply chain, vendor relations.

Strong time management and project management skills including the ability to multi-task and prioritize on an as needed basis. Ability to quickly change work pace depending on situations.

Unique ability to effectively take direction and delegate. Successful management of 1 to 100s employees over various industries.

PROFESSIONAL SKILLS

- Microsoft Office Suite
- Quickbooks
- Proprietary Accounting & Data Systems
- Social Media Platforms
- General Office Equipment

INDUSTRY EXPERIENCE

- Retail
- Service
- Wholesale Distributing
- Wildland Firefighting
- Successful Business Owner / Operator of:

6 years:	D&F Distributing
5 years:	Ferguson Management Systems
4 years:	Joyful Days Boutique & Rentals
4 years:	Coffee Jitters

VOLUNTEER EXPERIENCE

National Wildfire Suppression Association (2003 – 2010)
Served on the conference and organization committee and successfully ran annual auction benefiting the Wildland Firefighting Foundation - raising up to $65,000 each event.

North Albany Middle School Parent Teacher Association (2006 – 2010)
Held various board positions; elected as President, Vice President and Treasurer. Managed, lead and organized successful fundraising initiatives.

Albany Youth Soccer Organization (2004 – 2006)
Served as a Board Member and Team Parent Liaison

PROFESSIONAL REFERENCES

Laura L. Chartier
Senior Executive Assistant
Beacon Roofing Supply

Jamie Ronco
Office Manager
GFP Enterprises, LLC

Don Pollard
Owner
GFP Enterprises, LLC P

PROFESSIONAL EXPERIENCE

Owner / Operator, Joyful Days Boutique & Rental, Lebanon, OR
October 2015 to Current
Downtown boutique specializing in gifts such as women's apparel, accessories and jewelry. Unique products offered extend to candles, soaps and scents, signage, seasonal items, local artist pieces.

Responsibilities:
- Initiated the startup and implementation of boutique
- All-inclusive business operating functions such as
    - Create business plan including marketing strategies and sales initiatives
    - Arranging financing
    - Manage staff
    - Review and maintain sales
    - Oversee daily activities
    - Maintain payroll
    - Develop and maintain budget
    - Supply chain efforts
    - Manage storefront

Assistant Manager, The Plantation Inn, Jefferson, OR
2009 -2010
Downtown restaurant pub and grill in Jefferson serving the local town and surrounding areas specializing in American cuisine selections. This location was open for breakfast, lunch and dinner.

Responsibilities:
- Manage staff and payroll
- Develop, maintain and manage schedules
- Balance register and maintain accounts payable
- Oversee and maintain inventory
- Bartend and waitress as needed

Owner / Operator, Ferguson Management Company, Albany, OR
2004 – 2008 Owner / Operator | 2002 – 2008 Administrative Assistant
Wildland firefighting management business based out of Albany, Oregon.

Responsibilities:
- Manage annual budgets with revenues ranging between $1M - $10M
- Manage workforce of over 600+ permanent and seasonal employees (8 sites spanning over 5 states)
- Fleet management of 30+ vehicles
- Project management; adhere to government contracts
- Administrative and HR responsibilities including workers comprehension over multiple states

Owner / Operator, Coffee Jitters, Albany, OR
1999 - 2001
Local Coffee Shop

Owner / Operator, D&F Distributing, Albany, OR
1994 - 2001
Wholesaler of Novelty Impulse Items

Office Assistant, D. Pollard & Associates, Albany, OR
1999 - 2001
Accounting Firm

COMMISSION AND COMMITTEE APPLICATION

(Please print legibly or type)

CITY OF Millersburg

CITY HALL
4222 NE Old Salem Road Albany, OR 97321
www.cityofmillersburg.org
(541)928-4523

Commission and/or Committee Preference:

Millersburg Celebration Sub-Committee

(list all for which you are applying)

Name: Lorri Headrick

Preferred First Name: Lorri

Residential Information:

Home Address: _____

Millersburg, OR 97321

Phone: _____

Cellular: _____

E-mail: _____

Fax: _____ *(Optional)*

Employment Information:

Employer's Name: Retired

Work Address: _____

Phone: _____

Cellular: _____

E-mail: _____

Fax: _____ *(Optional)*

Please provide information as requested below to describe your qualifications to serve on this City of Millersburg Commission or Committee. Feel free to provide additional information you wish to share with the City.

- List current or most recent occupation, business, trade, or profession:

Administrative/Clerical support for Albany Fire Department (1991-2018)

- List community/civic activities. Indicate activities in which you are or have been active:

Active - Treasurer, Albany Firefighters Community Assistance Fund (AFFCAF)
Active - Board Member, Boys and Girls Club of Albany
Active - Reading Volunteer, SMART (Start Making a Reader Today)
Active - WeCount Volunteer - St. Mary's Church

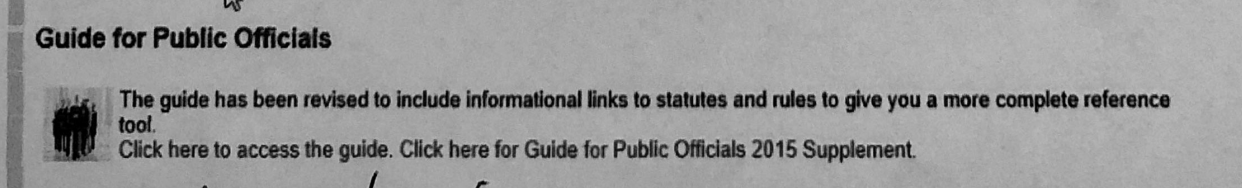
- Indicate why you are interested in serving on this commission or committee and what other qualifications apply to this position.

I live in Millersburg and want to increase my participation in the community and events.

- What contributions do you hope to make?

I would like to participate on a sub-committee for the Millersburg Celebration by assisting with clerical tasks and projects. I'm task-oriented and prefer to be the support person, as opposed to the lead person.

Please consult the *Guide for Public Officials* and the *Guide for Public Officials 2015 Supplement* that are posted on the state of Oregon's website at http://www.oregon.gov/ogec/Pages/index.aspx (see visual reference below).



Lorri J. Headrick
Signature of Applicant

11/07/19
Date

Supplemental Application

Please share with the Committee why you think you would be a good fit for the position you are applying for. We are looking for some idea of how you will fit into a group whose current members have high energy, attention to detail, and the desire to put on the best event possible for residents, Millersburg businesses, and guests.

During my 27-year career with Albany Fire Department, I participated in a clerical/administrative role as one member of multiple teams and workgroups. I participate! I won't commit to something if it's more than I know I can provide. It's important that I meet the expectations of those I'm working with and not let people down. Over time I've learned that while striving for perfection, sometimes good is good enough, but it's still important that I give my best effort.

My professional and volunteer roles required attention to detail, confidentiality, and a commitment to the goals of the group or organization. I believe I met these in everything I've done and continue to do. I value honesty, trust, and commitment. I won't participate in or support gossip, belittling, or harassment of others.

In addition to getting the work done, I like to have fun while doing it. Building relationships within a workgroup is key to accomplishing a goal together and enjoying it along the way. I like to laugh, with others and at myself, and I'm willing to do most things...nothing's 'beneath' me!

RESOLUTION NO. 2019-21

A RESOLUTION OF THE CITY OF MILLERSBURG, OREGON, APPOINTING PLANNING COMMISSION AND EVENTS PLANNING COMMITTEE MEMBERS

WHEREAS, the City of Millersburg is authorized to create a City Planning Commission and appoint seven members thereto, in addition to the Mayor and City Attorney who shall serve as ex-officio non-voting members; and,

WHEREAS, two current Planning Commissioner members' term will expire December 31, 2019; and,

WHEREAS, one current Planning Commissioner is eligible for reappointment to the Planning Commission; and,

WHEREAS, the City of Millersburg is authorized to create an Events Planning Committee consisting of a minimum of eight (8) and a maximum of fourteen (14) members, as well as two (2) Council liaisons; and,

WHEREAS, the Events Planning Committee currently consists of seven (7) members and one (1) Council liaison;

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF MILLERSBURG AS FOLLOWS:

The Council of the City of Millersburg hereby appoints the following as member(s) of the Millersburg Planning Commission:

Steve Vogler

FURTHERMORE, the newly appointed Planning Commission member(s) shall serve a three-year term beginning January, 2020.

FURTHERMORE, the Council of the City of Millersburg hereby appoints the following as members of the Events Planning Committee:

Abagail Johnson
Tina Ferguson
Lorri Headrick

Effective Date. This Resolution shall be effective upon its approval and adoption.

Duly passed by the City Council this 10th day of December, 2019.

_____
Jim Lepin, Mayor
City of Millersburg, Oregon

ATTEST:

_____
Kimberly Wollenburg
City Recorder

TO: Millersburg City Council

VIA: Kevin Kreitman, City Manager

FROM: Janelle Booth, Assistant City Manager/City Engineer

DATE: December 5, 2019, for the December 10, 2019 City Council Meeting

SUBJECT: Galardi Rothstein Group Storm Water SDC Agreement

Action Requested: Approval to amend current contract with Galardi Rothstein Group to include proposed Stormwater SDC study.

Discussion:
In May of 2018, the City of Millersburg entered into an agreement with Galardi Rothstein Group for a rate and SDC study. At that time the City had not completed our Storm Water Master Plan and did not include development of stormwater SDCs in the original agreement. With the completion of the Storm Water Master Plan and Galardi now preparing to start the SDC portion of the study, staff would request the inclusion of stormwater in the SDC study.

The attached proposal outlines the scope of work for the Stormwater SDC study and the proposed additional $6,500.00 budget to add this item to the work already contracted.

Budget Impact:
In anticipation of the completion of the Storm Water Master Plan, the FY 2019-20 stormwater budget included $10,000 for the development of the Stormwater SDC fee.

Recommendation:
It is requested that Council approve the attached Stormwater SDC study proposal with Galardi Rothstein Group, and authorize the City Manager to enter into a contract amendment with Galardi Rothstein Group for said services.

Attachment(s):
- Proposed Stormwater SDC Study

GALARDI ROTHSTEIN GROUP

PROPOSAL

City of Millersburg Stormwater SDC Study

Project Understanding

The City of Millersburg (the City) would like to develop system development charges (SDCs) and rates for the stormwater system to reflect capital needs identified in the Stormwater System Master Plan. The general approach to developing SDCs follows the same basic steps as the other infrastructure systems currently under review (water, sanitary sewer, and transportation). The proposed scope and budget for the stormwater system analysis is presented below.

Proposed Scope of Services

The overall goal of the study is to develop an SDC methodology and adoption process consistent with Oregon SDC law, and promote equitable cost recovery from new development.

The proposed scope of work for the study includes the following tasks:

Task 1 – Project Initiation and Management

Task 2 -- SDC Methodology

Task 3 – Presentations, Communications and Report

Each task is described in more detail below.

Task 1— Project Initiation and Management

We will review information from the Stormwater Master Plan, prior completed projects, and customer data.

Task 2— SDC Methodology

Within the framework of Oregon law, local governments have latitude in selecting specific methodological approaches related to the calculation and assessment of SDCs. The first set of options relates to the overall structure of the SDC – whether the fees are based on existing facility costs (reimbursement fee), future planned improvements (improvement fee), or a combination. Once a determination has been made as to the fee structure, the methodology may be further refined based on a number of additional considerations, including the following:

- Existing system valuation approach (e.g., book value, original cost, and replacement cost)
- Factors related to the time value of money (e.g. interest and inflation).

- Fee assessment units (e.g., equivalent dwelling units and meter size).

We will work with the City to evaluate alternative approaches and develop a methodology and fees consistent with the existing system available capacity costs, and future capital improvement needs. The cost basis for the improvements will be based on the improvements listed in the Master Plan, and we will develop defensible bases for allocating existing and future improvement costs between current and new system users. The costs attributable to growth will be divided by the total projected growth units for the system to determine system-wide unit costs of capacity.

Once the unit costs of capacity have been calculated, the fees for different types and sizes of development can be determined based on projected claims on system capacity. In the development of the fee schedule, we will work with the City to evaluate alternative scaling measures (e.g. impervious area and dwelling units). Finally, we will also estimate Oregon SDC statute compliance costs, which are also recoverable through the SDCs.

Task 3— Presentations, Communications and Documentation

3.1 Presentations. For budgeting purposes, we assume that presentations will be coordinated with the other SDC studies (so no additional stand-alone meetings are assumed). Budgeted hours reflect development of presentation information and communiciations with City staff specific to the stormwater SDCs. Conference calls with City staff throughout the course of the project are anticipated to discuss data, alternative approaches, and results.

*3.2 Documentation***.** We will prepare draft and final SDC study methodologies. The documentation will outline the data analyzed, methods used, and findings and recommendations.

Proposed Budget

A proposed budget is provided below, based on our current understanding of the project. It is assumed that work will be billed on a time and materials basis.

City of Millersburg Stormwater SDC Study
Budget Estimate

Task	Hours		Labor Costs (Rounded)	Expenses
	Galardi	Natanson		
Project Initiation and Management	4	0	$700	$0
Methodology	14	7	$3,400	$0
Presentations & Documentation	11	4	$2,400	$0
Total	**29**	**11**	**$6,500**	**$0**
Billing Rates	*$170*	*$140*		

TO: Millersburg City Council

FROM: Kevin Kreitman

DATE: November 30, 2019 for the December 10, 2019 City Council Meeting

SUBJECT: Property Sale to Pacific Power

Action Requested:
Review and final approval of sale of 4.66 acres of property to PacifiCorp for the construction of a power substation.

Discussion:
The City and PacifiCorp have entered into an agreement for the sale and purchase of 4.66 acres of City-owned property generally located west of Woods Road on the south side of Conser Road, commonly known as assessor's map 10S03W29 lot 200 for an agreed price of $3.00 a square foot.

With the completion of a survey of the property by PacifiCorp, the City is completing a lot line adjustment for the creation of the 4.66 acre parcel. Additionally, prior to, or in concurrence with, the issuance of building permits PacifiCorp will pay connection charges of $357/per lineal foot of the entire eastern property line (479.67 ft) for a planned future public road.

The City will also grant an access easement for the construction of a gravel road along the eastern property line 550 feet in length by 60 feet wide, to be constructed to City design standards. The easement shall remain in place until such time as the City has constructed a public road sufficient for ingress and egress to PacifiCorp's facility.

Budget Impact:
Revenue of $608,968.80 from sale of property. The City will also reimburse the current lessee, Paul Kuehne, for loss of his one year of harvest and expenses pertaining to the sold acreage and access easement (total of 5.42 acres) in the amount of $2,126.52 per acre, for a total reimbursement of $11,525.74.

Recommendation:
Staff requests Council for final approval of the sale and granting authority to the City Manager to sign necessary documents to conclude the sale of property and access easement.

Attachment(s):
- Agreement for Sale and Purchase of Real Property to PacifiCorp

AGREEMENT FOR SALE AND PURCHASE OF REAL PROPERTY

This Agreement for Sale and Purchase of Real Property, including all attached exhibits (the "Agreement"), is made by and between **PacifiCorp, an Oregon corporation** ("Buyer"), and **City of Millersburg, Oregon, an Oregon non-profit municipal corporation** ("Seller"). Buyer and Seller are sometimes referred to herein individually as a "Party" and collectively as the "Parties."

RECITALS

A. Seller is owner of fee title to certain real property located in Linn County, State of Oregon commonly known as assessor's map 10S03W29 and tax parcel number 200, more particularly described in **Exhibit A** and shown on **Exhibit B** (the "Parent Parcel").

B. Buyer desires to purchase from Seller and Seller desires to sell to Buyer, approximately 4 acres from the Parent Parcel as depicted in **Exhibit C,** collectively with all improvements, structures, appurtenances, rights (except water right permit S 55033 *IR), privileges and easements belonging thereto and subject to the terms and conditions of this Agreement, (the "Property").

NOW, THEREFORE, Buyer and Seller agree as follows:

1. Definitions. The following basic terms, conditions, and definitions are applicable to and an integral part of, and shall be deemed incorporated by reference in, this Agreement:

Access Easement. An instrument granted by Seller to Buyer that allows for all desired ingress and egress to the Property by Buyer, is located on the Parent Parcel, adjacent to the Property and that is substantially in the form of that instrument attached hereto as **Exhibit D**.

Business Day. Any day that is not a Saturday, Sunday, or federal or state holiday.

Closing. The recording of the Deed conveying the Property to Buyer in exchange for the release of the Purchase Price to Seller.

Closing Date. The date scheduled for the Closing, which shall be December 18, 2019, or such other date mutually agreed by the Parties.

Contracts. Any leases or occupancy agreements, management, service, operating, listing, brokerage, supply or maintenance, or construction agreements, equipment leases, or other contracts, agreements, or transactions with any third party with respect to or affecting the Property, which may remain in effect and to which Buyer or the Property may be subject after the Closing.

Deed. A Statutory Warranty Deed conveying the Property to Buyer, subject only to Permitted Title Exceptions, duly executed and acknowledged by Seller and in proper form for recording.

Due Diligence Documents. Such documents in Seller's possession, including but not limited to 1) any unrecorded instrument that may benefit or burden the Property 2) contracts, 3) licenses, leases, or permits, 4) surveys, 5) documents related to the environmental condition of the Property and the environmental condition of any adjoining lands to the extent held by Seller ("Environmental Documents"). Environmental Documents shall include but shall not be limited to any documents related to groundwater monitoring, groundwater quality and groundwater gradient.

Due Diligence Period. The period commencing on the Effective Date and expiring three (3) days before the Closing Date, subject to termination earlier upon termination of this Agreement.

Earnest Money Deposit. The earnest money in the amount of $4,000.00, to be deposited and held as described in Section 4.

Effective Date. The first date on which both Parties have fully executed and delivered their respective executed counter part of this Agreement to the other party.

Permitted Title Exceptions. Those items disclosed on the Title Commitment and/or Survey, to which Buyer does not object under Section 7.2

Planned Use. Buyer is acquiring the Property for the construction of an electric substation, power lines, and necessary or desirable appurtenances.

Preliminary Title Report. A Preliminary Title Commitment Report ("PTR").

Purchase Price. Buyer shall pay to Seller $3.00/square foot for the Property. For the purpose of calculating the Purchase Price, square footage shall be based on the survey results reflected from actions in Section 3, and subject to adjustments described in Section 5.

Title Commitment. The commitment for title insurance covering the Property on the standard form prescribed by the American Land Title Association ("ALTA"), issued by the Title Company and dated on or before the date of this Agreement.

Title Company/Escrow. AmeriTitle whose address is 320 Church Street NE, Salem, Oregon 97301. The phone number is 503-581-1431.

Title Policy. A standard ALTA Owner's Policy of Title Insurance, in an amount equal to the Purchase Price, insuring title to the Land and Improvements (if any) in Buyer in fee simple absolute, free and clear of all liens and encumbrances other than Permitted Exceptions, together with such endorsements as may be requested by Buyer.

Updated Preliminary Title Commitment Report. An updated PTR ("UPTR").

2. Agreement to Purchase and Sell. In recognition of consideration received and subject to the terms and conditions set forth in this Agreement, Seller agrees to convey to Buyer, and Buyer

agrees to purchase and take from Seller, all right, title and interest in and to the Property, together with all right, title, and interest held by Seller in and to the improvements, rights, privileges, easements, reversions, remainders, rents, royalties, issues, and profits which are appurtenant to or obtained from the Property, including, without limitation, all water, water rights, ditches, and ditch rights, oil, gas appurtenant to the Property. The sale will also include all right, title, and interest of Seller in the roads and travelways adjoining or passing through the Property. The sale excludes all permitted (S 55033 *IR) water rights associated with the Property. Buyer is solely responsible for construction and improvements to the Easement Area for the gravel access road in accordance with Seller's construction and design standards appropriate to support heavy industrial vehicles, as well as drainage facilities and an access control gate ("Buyer's Road Improvements"). Buyer will construct, to Seller's reasonable satisfaction, at Buyer's cost, a locked access control gate preventing unauthorized use of the gravel access road. During the pendency of the access easement, Buyer will provide to Seller a key or other appropriate instrument to allow opening of the gate. The access road may be used by emergency responders, by Seller, by Buyer, and any party receiving permission from Seller or Buyer.

3. Property Line Adjustment. Buyer may, at Buyer's sole cost and expense, but with cooperation of the Seller, conduct a property line adjustment between the Parent Parcel and Seller's other owned tax lot 10S03W2800108, (the "Property Line Adjustment") to facilitate the conveyance of the Property to Buyer. Buyer acknowledges that the Property Line Adjustment may not encroach upon Seller's planned north-south road east of the subject property. Seller's approval to the location of the Property Line Adjustment is a condition precedent to the Property Line Adjustment. Seller will fully cooperate with and support Buyer's efforts including the execution of applications and documents required to effect the isolation and conveyance of the Property, and all associated permits for Planned Use.

4. Earnest Money Deposit. Buyer will deposit the Earnest Money Deposit within seven (7) business days of the Effective Date to Escrow. Subject to the conditions of this Agreement, the Earnest Money Deposit will be released to Seller at Closing.

5. Purchase Price and Payment. Buyer shall pay Seller the Purchase Price through the Title Company at Closing. The Purchase Price shall be adjusted at Closing for the credits, prorations, and adjustments provided herein, including a credit for any Earnest Money as described in Section 4 and any other adjustments in accordance with this Agreement.

6. OWRD Notification. Buyer agrees to reasonably cooperate with Seller (or Seller's tenant) to submit any notification, modification or assignment that may be required with the Oregon Water Resources Department ("OWRD") to achieve the Parties' intent to not include water rights with the Property.

7. Title and Review.

7.1 Commitment of Title Insurance. Within seven (7) business days from the Effective Date, Seller shall deliver a PTR to Buyer. Buyer shall have the option, at its sole cost and expense to obtain an extended owner's coverage policy. Seller shall cooperate with Buyer in providing all instruments required by Title Company to issue such extended coverage and all Buyer's required endorsements.

7.2 Objection to Title.

(a) Within the Due Diligence Period Buyer may provide to Seller any written objections to any title matters on the PTR. If Buyer fails to deliver such objections within the above time period, then all title exceptions disclosed on the PTR shall constitute Permitted Exceptions.

(b) Seller shall have ten (10) days from receipt of notice of objection to title conditions to respond to Buyer that Seller shall cure such objectionable title conditions, at Seller's sole cost, prior to Closing. If Seller fails to provide Buyer notice that it will cure all objectionable title conditions then Buyer shall have the option to either: (a) terminate this Agreement, in which event Buyer shall receive a full refund of any Earnest Money and the Parties shall be relieved of any further obligations hereunder, or (b) elect to close notwithstanding Seller's failure to confirm cure of any objectionable title condition.

(c) Buyer may order an UPTR at any time and provide a copy thereof to Seller. To the extent such UPTR reflects any new title condition then such new title condition shall be deemed unacceptable to Buyer and Seller shall again be obligated to respond within ten (10) days of receipt of the UPTR as to Seller's willingness and ability to cure such new condition prior to Closing or Buyer shall have the same elections as designated in Section 7.2 (b) above.

7.3 Delivery of Title Insurance. On the Closing Date, Seller shall cause the Title Company to commit to issue in favor of Buyer a standard coverage owner's policy of title insurance with respect to the Property in the amount of the Purchase Price, effective as of the Closing Date, containing no exceptions other than the Permitted Title Exceptions and containing such title policy endorsements that may be obtained in Oregon as Buyer may require. Seller shall cause Title Company to deliver the Title Policy to Buyer within thirty (30) days after the Closing Date.

8. Other Due Diligence and Inspections.

8.1 Due Diligence. Buyer's due diligence may include, but not be limited to, determining if title or physical encumbrances on the Property would interfere with the Planned Use; pursuing acquisition of necessary permits for the Planned Use; and performing site studies to determine if Property is suitable for the Planned Use. Seller, as the underlying landowner, agrees to cooperate with Buyer as necessary for Buyer to acquire such permits.

8.2 Inspections. During the Due Diligence Period, Buyer shall have the license and right to enter onto the Property from time to time for the purpose of conducting such surveys, studies, tests, audits, examinations, investigations, and other inspections of the Property as it deems necessary or desirable ("Inspections"); provided, that Buyer shall give Seller reasonable advance notice of and opportunity to be present at such Inspections, and Buyer shall not perform any scraping, drilling, boring, or other forms of invasive testing at the Property without Seller's consent, which shall not be unreasonably withheld, conditioned or delayed. Buyer agrees to repair and restore any damage to the Property caused by such Inspections.

8.3 Due Diligence Documents. Within five (5) calendars days of the Effective Date, Seller shall deliver to Buyer true and correct copies of any Due Diligence Documents in Seller's possession.

8.4 Buyer's Termination. Buyer may elect to terminate this Agreement if, in Buyer's sole discretion, the Due Diligence, Inspections, or Due Diligence Documents are unsatisfactory to Buyer, extinguishing all obligations of the Parties to purchase and sell the Property, by delivering written notice to Seller.

9. Representations and Warranties.

9.1 Seller's Representations and Warranties. Seller makes the following representations and warranties to Buyer, as of the Effective Date and as of the Closing Date, each of which representations and warranties shall survive the Closing and delivery of the Deed.

(a) Seller is the owner of fee title to the Property, and the Property is, or will be as of the Closing Date, subject only to the Permitted Title Exceptions.

(b) The execution of this Agreement and performance of Seller's duties and obligation under this Agreement do not and will not violate any agreement to which Seller is a party or by which it is otherwise bound and, when executed and delivered by Seller, this Agreement will constitute the legal, valid and binding obligation of Seller, enforceable against Seller in accordance with its terms.

(c) Seller has provided copies of all Due Diligence Documents to Buyer, and no other contracts, leases, licenses, commitment or undertakings of which Seller is a party that exist relating to the Property.

(d) Seller has not received any notices, demands or deficiency statements from any mortgagee of the Property or from any state, municipal or county government or agency or any insurer relating to the Property and which have not been cured or remedied except property valuation and tax notices issued by Linn County.

(e) Seller has not received notice of and has no reason to believe that the Property is associated with any other violations of law or contractual dispute or violation.

(f) Other than those Due Diligence Documents delivered to Buyer, no other instruments exist that bear upon or burden or otherwise impact the Property or its owner.

(g) Seller acknowledges that Buyer is acquiring the Property in order to construct the Planned Use. Seller agrees not to object to or take any action inconsistent with Buyer's permitting efforts during the term of this Agreement and following conveyance of Property to Buyer in the event Buyer purchases the Property. This obligation shall survive Closing.

9.2 Buyer's Representations and Warranties. Buyer makes the following representations and warranties to Seller, as of the Effective Date and as of the Closing Date, each of which representations and warranties shall survive the Closing and delivery of the Deed.

(a) Buyer has the right, power and authority to execute, deliver and perform this Agreement, the execution of this Agreement, and performance of Buyer's duties and obligation hereunder do not and will not violate any agreement to which Buyer is a party or by which it is otherwise bound and. When executed and delivered by Buyer, this Agreement will constitute the legal, valid and binding obligation of Buyer, enforceable against Buyer in accordance with its terms.

9.3 Broker Indemnity.

(a) Seller shall indemnify, defend and hold Buyer harmless from and against any and all claims, loss or damage relating to or arising out of any claim for compensation by any broker, person or entity claiming by or through Seller.

(b) Buyer shall indemnify, defend and hold Seller harmless from and against any and all claims, loss or damage relating to or arising out of any claim for compensation by any broker, person or entity claiming by or through Buyer.

10. Seller's Use of the Property. From and after the Effective Date until Closing, or earlier termination of this Agreement, Seller shall not convey any right, title, or interest in or to the Property, or create or permit any new title exceptions with respect to the Property without Buyer's consent, other than exceptions to be cured by Closing. Further, except as otherwise provided for under this Agreement, Seller agrees to pay, when the same are due, all payments on any encumbrances presently affecting the Property and any and all taxes, assessments and levies in respect to the Property through the Closing.

11. Buyer's Contingencies.

11.1 Contingencies. The obligations of Buyer under this Agreement are conditioned upon the satisfaction or waiver of all requirements and contingencies set forth below:

(a) Buyer will receive title to the Property, in accordance with this Agreement at Closing;

(b) Seller's representations and warranties continue to be true and correct, in all material respects, prior to Closing;

(c) Buyer is satisfied with all its due diligence and inspections with respect to the Property pursuant to Section 8;

(d) Buyer is satisfied that no other facts or circumstances exist that may make its acquisition, ownership, occupancy, or use of the Property imprudent, all in its sole and absolute discretion, in each case by the end of the Due Diligence Period; and

(e) The Property Line Adjustment has occurred.

(f) Seller's removal of all liens prior to Closing including but not limited to the Nofziger Mortgage made February 12, 1985 and as that instrument may have been amended or modified.

If any contingency in Section 11.1 (a) through (f) is not satisfied or waived by the applicable deadline noted above, then Buyer may terminate this Agreement by written notice to Seller at any time prior to such deadline and Buyer shall receive a full refund of any Earnest Money.

11.2 Buyer's Approval Contingency. In addition, the obligations of Buyer under this Agreement are conditioned upon Buyer's approval, in its sole and absolute discretion, that the Property is suitable for the Planned Use no later than the Closing Date, and if such contingency is not satisfied by such date, then this Agreement shall automatically terminate as of such date without further action, and Seller shall retain the Earnest Money.

12. Closing.

12.1 Time and Place of Closing. The Closing shall occur in Escrow offered by the Title Company no later than the Closing Date, or at such other time and place as the Parties may mutually agree upon in writing, provided that this Agreement is not terminated as provided herein. A Party need not be present at Closing if that Party has delivered all of the items it is required to deliver at Closing to Escrow by the Closing Date with escrow instructions consistent with this Agreement.

12.2 Actions at Closing. At the Closing, the following events shall occur, each being declared to have occurred simultaneously with the other. The Parties shall deliver all documents to be recorded and funds to be delivered to the Title Company in escrow, to hold, deliver, record and disburse in accordance with any supplemental escrow instructions, the form and content of which the Parties shall agree to prior to Closing.

(a) Seller's Deliverables. At Closing, Seller shall deliver possession of the Property. Seller shall also deliver to Buyer:

i. the Deed conveying all right, title, and interest in and to the Property and Improvements;

ii. the Access Easement;

iii. two (2) executed copies of such Seller's statement of settlement setting forth all (1) prorations and credits, if any, provided for in this Agreement, (2) disbursements of the Purchase Price, and (3) expenses of the Closing; and

iv. any other funds, instruments or documents (including any assigned Contracts) as may be reasonably requested by Buyer or the escrow agent or reasonably necessary to effect or carry out the purposes of this Agreement (which funds, instruments or documents are subject to Seller's prior approval, which approval may not be unreasonably withheld or delayed).

(b) Buyer's Deliverables. Buyer shall deliver:

i. the Purchase Price, including the release of the Earnest Money Deposit.

ii. the Access Easement;

iii. any other funds, instruments or documents as may be reasonably requested by Seller or the Title Company or reasonably necessary to effect or carry out the purposes of this Agreement (which funds, instruments or documents are subject to Buyer's prior approval, which approval may not be unreasonably withheld or delayed).

iv. Buyer acknowledges that Buyer shall pay connection charges to Seller in the amount of $357/lineal foot of the entire eastern property line length provided by the surveyor prior or concurrent to issuance of building permits. These connection charges are in addition to the system development charges which will also be paid prior or concurrent to issuance of building permits. These connection charges and system development charges are in addition to the purchase price as defined in Section 1.

12.3 Payment of Costs. Buyer and Seller shall each pay one-half of all Closing costs and escrow charges of the Title Company. Seller shall pay the premium for standard owner's title policy. Buyer shall pay for any additional premium required for an extended owner's policy of title insurance and the cost of any endorsements requested by Buyer.

13. Default and Remedies.

13.1 Seller's Default. If Seller defaults in the performance of any of its covenants under this Agreement and fails to cure such default within five (5) days after notice thereof from Buyer to Seller, then Buyer may elect to: (a) terminate this Agreement, in which case any Earnest Money shall be paid to Buyer, or (b) obtain specific performance of Seller's obligations under this Agreement plus recovery of all Buyer's costs and expenses in connection with such default.

13.2 Buyer's Default. If Buyer fails or refuses to perform its obligations under this Agreement, and such failure or refusal is not cured within five (5) business days after Buyer's receipt of written notice of such failure from Seller, Seller may seek the remedy proscribed in Section 13.4 below.

13.3 Escrow Cancellation Charges. If the escrow established in connection with this Agreement fails to close because of Seller's default, Seller will be liable for any cancellation charges by the Title Company. If the escrow fails to close because of Buyer's default, Buyer will be liable for any cancellation charges by the Title Company. If the escrow fails to close for any other reason, Buyer and Seller must split any cancellation charges equally, except that Buyer must bear the entire cost of the Title Commitment and any amendments thereto. Buyer and Seller will mutually execute cancellation and Earnest Money Deposit disbursement instructions to escrow.

13.4 Liquidated Damages. BUYER AND SELLER HEREBY AGREE THAT IT WOULD BE DIFFICULT TO ASCERTAIN THE ACTUAL DAMAGES RESULTING FROM A MATERIAL BREACH OF THIS AGREEMENT BY BUYER. THEREFORE, BUYER AND SELLER AGREE THAT IN THE EVENT OF A MATERIAL BREACH BY BUYER, SELLER'S

SOLE AND EXCLUSIVE REMEDY SHALL BE RETENTION OF THE EARNEST MONEY AS LIQUIDATED DAMAGES. BUYER AND SELLER AGREE THAT THIS LIQUIDATED DAMAGES PROVISION REPRESENTS REASONABLE COMPENSATION FOR THE LOSS INCURRED BY BUYER'S MATERIAL BREACH HEREUNDER.

Initials of Buyer: Rick Vail Digitally signed by Rick Vail Date: 2019.11.26 09:38:49 -08'00'

Initials of Seller: _____

14. Real Property Taxes. Real property taxes and assessments on the Property for the tax year of Closing shall be prorated between Seller and Buyer based on the number of days each owned or will own the Property. In the event the Property constitutes some portion of a larger tract of land, (i) the proration of real property taxes and assessments shall be based upon the acreage of the Property divided by the acreage of the entire tract expressed as a percentage and (ii) the Parties shall enter into a mutually acceptable agreement regarding the Parties' responsibilities for timely paying such property taxes and assessments. If, as of the Closing Date, the actual tax bills for the year or years in question are not available and the amount of taxes to be prorated cannot be ascertained, then the most recent known rates, millages and assessed valuations (which amounts shall relate to the same tax year) shall be used, and such proration shall be repeated when the final tax bill is available and either Buyer and Seller, as the case may be, shall promptly pay to the other the net amount owing as a result of such redetermination.

15. Seller's Indemnity. To the fullest extent permitted by law, Seller shall indemnify, hold harmless and defend Buyer, its employees, officers, representatives and/or agents (collectively, the "Buyer Indemnified Parties") against any and all claims, demands, suits, losses, costs and damages of every kind and description, including attorneys' fees and/or litigation expenses, brought, made against or incurred by Buyer Indemnified Parties, relating to (1) the environmental condition of the Property; (2) otherwise arising from any incident occurring on the Property prior to the Closing Date; (3) a breach of any representations or warranties of Seller with regard to the Property or otherwise as set forth herein; or (4) any violation of applicable laws and regulations.

16. Miscellaneous

16.1 Entire Agreement. This Agreement contains the entire agreement between the Parties respecting the matters herein set forth and supersedes all prior agreements, whether written or oral, between the Parties respecting such matters. This Agreement may be amended or modified only by mutual written agreement.

16.2 Survival. All warranties, representations, covenants and agreements contained in this Agreement and all documents delivered in connection with this Agreement, in each case, that by their nature are intended to survive shall survive the Closing of the transaction contemplated hereby or, if applicable, the termination of this Agreement.

16.3 Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors, heirs, administrators, and assigns; provided, however, that notwithstanding the foregoing, neither Party's interest under this Agreement may be

SOLE AND EXCLUSIVE REMEDY SHALL BE RETENTION OF THE EARNEST MONEY AS LIQUIDATED DAMAGES. BUYER AND SELLER AGREE THAT THIS LIQUIDATED DAMAGES PROVISION REPRESENTS REASONABLE COMPENSATION FOR THE LOSS INCURRED BY BUYER'S MATERIAL BREACH HEREUNDER.

Initials of Buyer: _____ Initials of Seller: KK

14. Real Property Taxes. Real property taxes and assessments on the Property for the tax year of Closing shall be prorated between Seller and Buyer based on the number of days each owned or will own the Property. In the event the Property constitutes some portion of a larger tract of land, (i) the proration of real property taxes and assessments shall be based upon the acreage of the Property divided by the acreage of the entire tract expressed as a percentage and (ii) the Parties shall enter into a mutually acceptable agreement regarding the Parties' responsibilities for timely paying such property taxes and assessments. If, as of the Closing Date, the actual tax bills for the year or years in question are not available and the amount of taxes to be prorated cannot be ascertained, then the most recent known rates, millages and assessed valuations (which amounts shall relate to the same tax year) shall be used, and such proration shall be repeated when the final tax bill is available and either Buyer and Seller, as the case may be, shall promptly pay to the other the net amount owing as a result of such redetermination.

15. Seller's Indemnity. To the fullest extent permitted by law, Seller shall indemnify, hold harmless and defend Buyer, its employees, officers, representatives and/or agents (collectively, the "Buyer Indemnified Parties") against any and all claims, demands, suits, losses, costs and damages of every kind and description, including attorneys' fees and/or litigation expenses, brought, made against or incurred by Buyer Indemnified Parties, relating to (1) the environmental condition of the Property; (2) otherwise arising from any incident occurring on the Property prior to the Closing Date; (3) a breach of any representations or warranties of Seller with regard to the Property or otherwise as set forth herein; or (4) any violation of applicable laws and regulations.

16. Miscellaneous

16.1 Entire Agreement. This Agreement contains the entire agreement between the Parties respecting the matters herein set forth and supersedes all prior agreements, whether written or oral, between the Parties respecting such matters. This Agreement may be amended or modified only by mutual written agreement.

16.2 Survival. All warranties, representations, covenants and agreements contained in this Agreement and all documents delivered in connection with this Agreement, in each case, that by their nature are intended to survive shall survive the Closing of the transaction contemplated hereby or, if applicable, the termination of this Agreement.

16.3 Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors, heirs, administrators, and assigns; provided, however, that notwithstanding the foregoing, neither Party's interest under this Agreement may be

assigned, encumbered, or otherwise transferred, whether voluntarily, involuntarily, by operation of law or otherwise.

16.4 Notices. Any notice or other communication required or permitted under this Agreement must be in writing, and may be personally delivered or given or made by recognized overnight courier service or by United States registered or certified mail, return receipt requested, with postage prepaid, addressed to the Parties below. A Party may designate a different address for itself by notice similarly given. Any such communication shall be deemed given, delivered, and effective: when hand delivered; or three (3) business days after deposit with the U.S. Postal Service.

To Seller:
City Manager
City of Millersburg
4222 NE Old Salem Road
Albany, OR 97321

To Buyer:
PacifiCorp
Transaction Services
825 NE Multnomah, LCT 1700
Portland, OR 97232

With a copy to:
PacifiCorp
Legal Department
825 NE Multnomah, LCT 2000
Portland, OR 97232

16.5 Time of Essence. Time is of the essence in the performance of each and every term, condition and covenant of this Agreement.

16.6 Execution in Counterparts; Electronic Transmittal. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same instrument. Said counterparts may be transmitted by one Party to the other by electronic mail.

16.7 Paragraph Headings. The paragraph headings herein contained are for purposes of identification only and shall not be considered in construing this Agreement.

16.8 Waiver. Except as herein expressly provided, no waiver by a Party of any breach of this Agreement or any warranty or representation under this Agreement by the other Party shall be deemed to be a waiver of any other breach of any kind or nature (whether preceding or succeeding and whether or not of the same or similar nature) and no acceptance of payment or performance by a Party after any such breach by another Party shall be deemed to be a waiver of any further breach of this Agreement or of any representation or warranty by such other Party whether or not the first Party knows of such a breach at the time it accepts such payment or performance. No failure on the part of a Party to exercise any right it may have by the terms of this Agreement or by law upon the default of another Party, and no delay in the exercise of any such right by the first Party at any time when such other Party may be in default, shall operate as a waiver of any default, or as a modification in any respect of the provision of this Agreement.

16.9 Jury Trial Waiver. TO THE FULLEST EXTENT PERMITTED BY LAW, EACH OF THE PARTIES HERETO WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF LITIGATION DIRECTLY OR INDIRECTLY ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT. EACH PARTY FURTHER WAIVES ANY RIGHT TO CONSOLIDATE, OR TO REQUEST THE CONSOLIDATION OF, ANY ACTION IN WHICH A JURY TRIAL HAS BEEN WAIVED WITH ANY OTHER ACTION IN WHICH A JURY TRIAL CANNOT BE OR HAS NOT BEEN WAIVED.

16.10 Governing Law. This Agreement shall be governed and construed in accordance with the laws of the State of Oregon.

16.11 No Recording. This Agreement shall not be recorded in the real property records.

16.12 Further Instruments. Each Party shall from time to time execute and deliver such further documents or instruments as the other Party, its counsel or the Title Company may reasonably request to effectuate the intent of this Agreement, including without limitation documents necessary for compliance with the laws, ordinances, rules and regulations of any applicable governmental authorities.

16.13 Seller Post-Closing Obligation. Seller acknowledges and understands that the Planned Use will require Buyer to obtain easements and permits to locate transmission poles, wires, and other distribution infrastructure along a right of way and other property owned by the City. Buyer agrees to consult with Seller in locating said easements. Buyer acknowledges that Seller has authority to deny any particular easement request of Buyer based upon Seller's property build-out plans, municipal infra-structure, and utility planning. Seller agrees to cooperate with Buyer in granting such easements.

IN WITNESS WHEREOF, the Parties have executed this Agreement effective as of the date and year last below written.

SELLER
City of Millersburg, an Oregon non-profit municipal corporation

Signed: _____

Printed Name: _____

Title: _____

Date: _____

BUYER
PACIFICORP, an Oregon corporation

Signed: Rick Vail Digitally signed by Rick Vail Date: 2019.11.26 08:48:20 -08'00'

Printed Name: Rick Vail

Title: VP, Transmission

Date: 11/26/19

16.9 Jury Trial Waiver. TO THE FULLEST EXTENT PERMITTED BY LAW, EACH OF THE PARTIES HERETO WAIVES ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT OF LITIGATION DIRECTLY OR INDIRECTLY ARISING OUT OF, UNDER OR IN CONNECTION WITH THIS AGREEMENT. EACH PARTY FURTHER WAIVES ANY RIGHT TO CONSOLIDATE, OR TO REQUEST THE CONSOLIDATION OF, ANY ACTION IN WHICH A JURY TRIAL HAS BEEN WAIVED WITH ANY OTHER ACTION IN WHICH A JURY TRIAL CANNOT BE OR HAS NOT BEEN WAIVED.

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IN WITNESS WHEREOF, the Parties have executed this Agreement effective as of the date and year last below written.

SELLER
City of Millersburg, an Oregon non-profit municipal corporation

Signed: _____

Printed Name: Kevin Kreitman

Title: City Manager

Date: 11/25/2019

BUYER
PACIFICORP, an Oregon corporation

Signed: _____

Printed Name: _____

Title: _____

Date: _____

EXHIBIT A

Legal description of Parent Parcel

Beginning at the Southeast corner of the George Miller Sr., Donation Land Claim No. 58 in Township 10 South, Range 3 West of the Willamette Meridian, Linn County, Oregon; and running thence East 14.79 chains to a point on the North line of and West 37.50 chains from the Northeast corner of the Isaac Miller, Sr., Donation Land Claim No. 46; thence South 1°15' East, 28.56 chains; thence West 2.50 chains; thence South 1°15' East 16.71 chains, more or less, to a point North 1°15' West 2402.9 feet from the South line of the said Isaac Miller Sr., Donation Land Claim No. 46; thence Westerly, parallel to said South line, 570.65 feet to the Easterly right of way line of the Oregon Electric Railroad; thence South 18°28' East, along said right of way, 1138.3 feet to a point North 1°15' West 1320.0 feet from the South line of said Isaac Miller, Sr., Donation Land Claim No. 46; thence Westerly, parallel to said South line 846.91 feet to the Southeast corner of that parcel conveyed to Western Kraft Corporation and recorded in Volume 281, page 254, Linn County Deed Records; thence North 24°13' West 936.69 feet to a 1/2" iron rod at an angle point in the Easterly line of said Western Kraft Corporation parcel; thence North 30°00' West 1721.52 feet to a 1/2" iron rod at the Northeast corner of said parcel, said 1/2" rod being on the Northerly line of said Isaac Miller, Sr., Donation Land Claim No. 46; thence North 52°50' East, along said Northerly line, 279.47 feet to a stone which bears South 52°50' West, 897.60 feet from the most Easterly corner of the Silas Haight Donation Land Claim No. 55; thence North 24°27' East (called North 23° East in old deeds) 1705.3 feet to the Southerly line of the aforementioned George Miller, Sr., Donation Land Claim No. 58; thence South 77°33' East, along said Claim line, 414.60 feet to the point of beginning.

EXCEPT: That portion of the above described tract of land lying within the boundaries of public roads and highways.

EXCEPT: The tract of land lying Southwesterly of the Northeasterly right of way of the Oregon Electric Railroad.

EXCEPT: Beginning at the Southeast corner of the George Miller, Sr., Donation Land Claim No. 58 in Township 10 South, Range 3 West of the Willamette Meridian, Linn County, Oregon; and running thence East, 967.14 feet to a point on the North line of and West 2,475 feet from the Northeast corner of the Isaac Miller, Sr., Donation Land Claim No. 46; thence South 1°15' East, 1,859.95 feet to a 5/8 inch iron rod being the true point of beginning; thence North 89°53'15" West 810.68 feet to a 5/8 inch iron rod; thence along a 528.339-foot radius curve to the right, the long chord of which bears North 79°28'04" West, 191.12 feet to a 5/8 inch iron rod on the Easterly right of way line of Burlington Northern Railroad; thence South 18°19'24" East along said right of way, 50 feet; thence along said right of way South 71°40'46" West, 100 feet; thence along said right of way South 18°19'24" East, 1,143.40 feet; thence East, 570.65 feet; thence North 1°15' West, 1,102.86 feet to a 1/2 inch iron rod; thence East, 164.78 feet to a 1/2 inch iron rod; thence North 1°07'49" West, 25.01 feet to the true point of beginning.

EXCEPT: Beginning at a 5/8 inch iron rod on the most Easterly line of that tract described in Linn County Deed Records, MF Volume 379, Page 278, said rod being South 1°08'13" East, 1,856.44 feet, South 88°51'17" West, 30.04 feet and North 89°53'15" West, 2,445.035 feet form the Northeast corner of the Isaac Miller Donation Land Claim No. 46 in Township 10 South, Range 3 West, Willamette Meridian, Linn County, Oregon. Thence North 89°53'15" West, 810.68 feet to a 5/8 inch iron rod; thence along a 528.339 foot radius curve to the right, the long chord of which bears North 79°28'04" West, 191.12 feet, to a 5/8 inch iron rod on the Easterly right of way line of the Burlington Northern Railroad; thence along said right of way line, North 18°19'24" West, 141.40 feet to a 5/8 inch iron rod; thence along a 428.339 foot radius curve to the left, the long chord of which bears South 73°26'07" East, 242.62 feet to a 5/8 inch iron rod; thence South 89°53'15" East 808.50 feet to a 5/8 inch iron rod; thence South 1°07'49" East, 100.03 feet to the point of beginning. All of the aforesaid property is located in Section 29, Township 10 South, Range 3 West, Willamette Meridian in Linn County, Oregon.

EXHIBIT B
Depiction of the Parent Parcel
(yellow colored polygon)

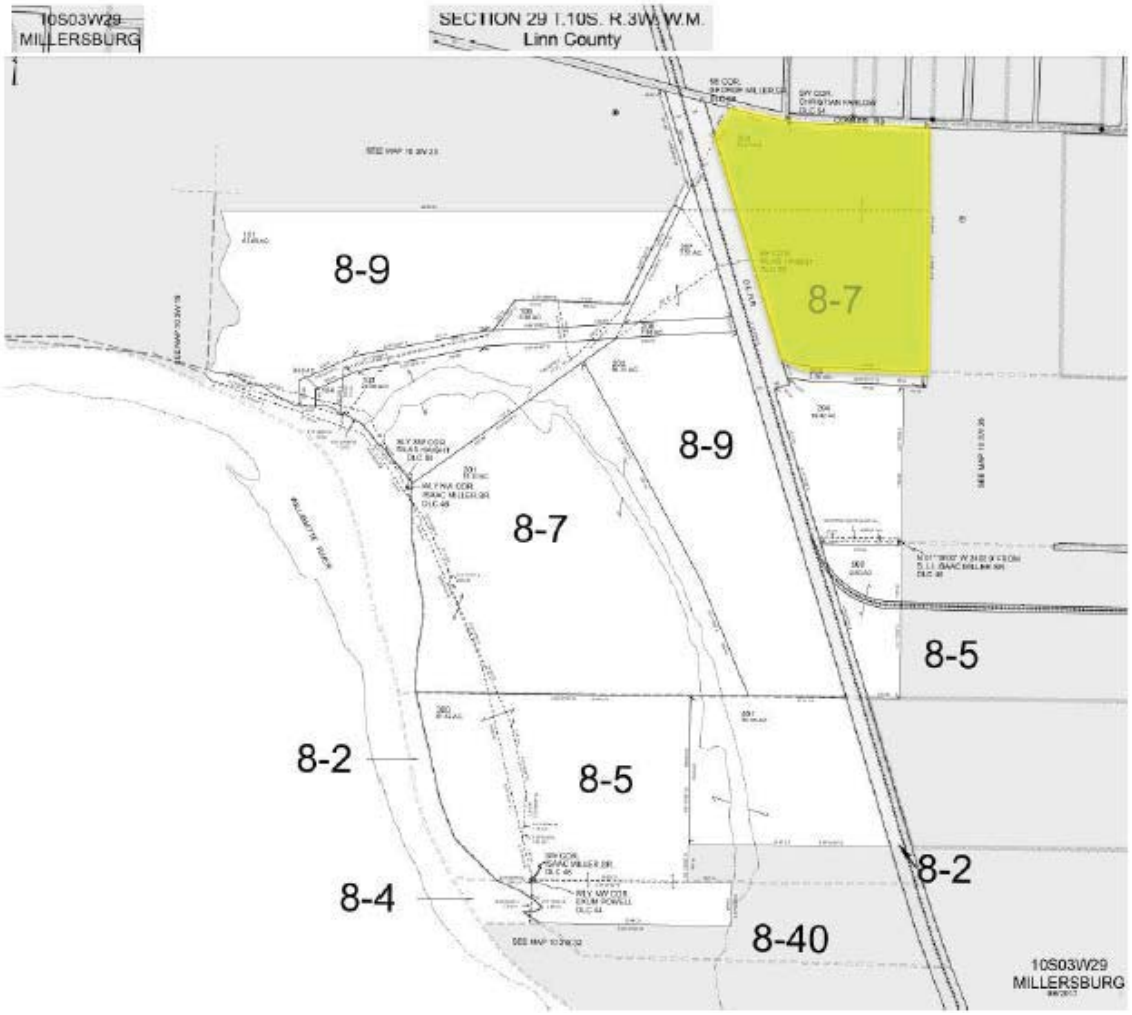


EXHIBIT C
Depiction of the Property

EXHIBIT D
Access Easement

{on following pages}

After Recording Return to:

PacifiCorp
Real Estate Management
Attn: Maggie Hodny
825 NE Multnomah St., LCT 1700
Portland, OR 97232

ACCESS EASEMENT

For value received, **City of Millersburg, Oregon, an Oregon non-profit mutual corporation** ("Grantor"), hereby grants to **PacifiCorp**, an Oregon corporation, its successors and assigns, ("Grantee"), a non-exclusive easement for access to and from the Grantee's property. Grantor and Grantee are, hereinafter, singularly a Party or, together, the "Parties".

Grantor's Burdened Property: This easement is located on Grantor's land described in **Exhibit A** attached hereto.

Grantee's Benefitted Property: The property to be served by this easement is described in **Exhibit B** attached hereto.

Easement Width, Course and Location: The Easement Area is located on Grantor's Burdened Property immediately adjacent to the eastern boundary of Grantee's Benefitted Property and shall be 60 feet wide and 550 feet in length, and shall run from the south side of Conser Road, southerly along the east side of Grantee's Benefitted Property and in accordance with the depiction in **Exhibit C** attached hereto ("Easement Area").

Purposes: The purpose of this grant is to provide ingress and egress to Grantee's Benefitted Property for any purpose Grantee may require related to the development, protection and maintenance of an electrical substation and associated utility facilities. During the term of this easement, Grantee is solely responsible for construction and improvements to the Easement Area for a gravel access road in accordance with Grantor's construction and design standards appropriate to support heavy industrial vehicles, as well as drainage facilities and an access control gate ("Grantee's Road Improvements").

Term: This easement shall be valid until the time that Grantor has completed a public road sufficient for Grantee's ingress and egress purposes described herein or Grantor has provided Grantee an alternative access that is acceptable to Grantee in Grantee's sole discretion. Grantee shall record a release of this easement interest once a public road is

constructed on the location of this easement; or, an alternative access has been established to Grantee's satisfaction.

Coordination: Grantor has planned a public road located to coincide, in part, with the location of this easement. Grantee and Grantor shall provide all reasonable notice to each other of intended uses of the Easement Area and coordinate uses so that during the period of construction of the public road the Grantee may maintain access rights to the Grantee's Benefitted Property and so that Grantor may reasonably advance work on the public road. Once Grantor has initiated construction of the public road all costs of maintenance of the Easement Area shall be the responsibility of Grantor and Grantor shall maintain the condition of the Easement Area, or provide Grantee with a temporary alternative route, either of which shall be maintained in a condition that is consistent with Grantee's Road Improvements.

Validation of Interest: Grantor represents and warrants to the Grantee that the Grantor is the true and lawful owner of the Grantor's Burdened Property and has full right and power to grant and convey the rights contained herein.

Jury Trial: To the fullest extent permitted by law, each of the Parties hereto waives any right it may have to a trial by jury in respect of litigation directly or indirectly arising out of, under or in connection with this easement. Each Party further waives any right to consolidate, or to request the consolidation of, any action in which a jury trial has been waived with any other action in which a jury trial cannot be or has not been waived.

Counterparts: This Easement may be executed in counterparts, each of which shall be deemed to be an original, but all of which when taken together shall constitute one and the same document.

EXECUTED as of the last date set forth below.

{SIGNATURES ON FOLLOWING PAGES}

Grantor

Signature: _____
Printed name:_____
Title:_____
Date:_____

STATE OF OREGON)
) ss.
County of _____)

This record was acknowledged before me on _____, 2019, by_____ as _____ of _____.

_____
Signature of Notarial Officer
Stamp (if required):
Title of Office: Notary Public

Grantee

Signature: _____
Printed name:_____
Title:_____
Date:_____

STATE OF OREGON)
) ss.
County of _____)

This record was acknowledged before me on _____, 2019, by_____ as _____ of _____.

_____
Signature of Notarial Officer
Stamp (if required):
Title of Office: Notary Public

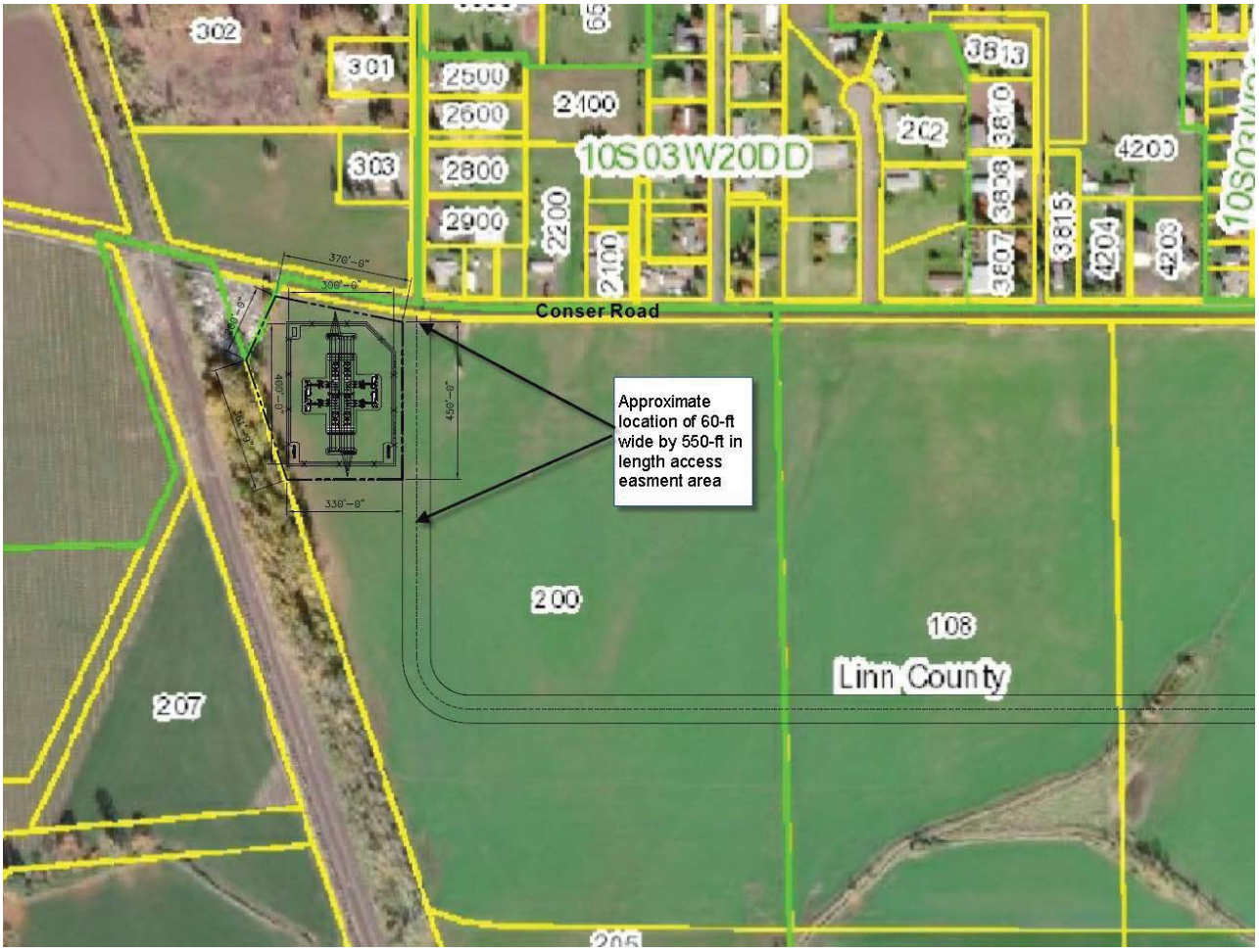
Exhibit A
Grantor's Burdened Property

{insert legal description once property line adjustment is complete}

Exhibit B
Grantee's Burdened Property

{insert legal description once property line adjustment is complete}

Exhibit C
Easement Area



TO: Millersburg City Council

VIA: Kevin Kreitman, City Manager

FROM: Janelle Booth, Assistant City Manager/City Engineer

DATE: December 5, 2019 for the December 10, 2019 City Council Meeting

SUBJECT: Surface Water Code

Action Requested:
Staff request Council adoption of a proposed addition to the Municipal Code for Surface Water within the City of Millersburg.

Discussion:
Over the past several months, staff have been working on a Surface Water section for the Municipal Code, which addresses protection of the surface water/storm drainage system, including erosion control and post-construction stormwater quality. The proposed code language is modeled after Albany's surface water code, with modifications specific to Millersburg. Adoption of this code is necessary to address parts of our compliance with current TMDL Implementation Plan requirements, as well as future MS4 Permit requirements.

The proposed code language requires associated engineering standards, an Erosion Prevention and Sediment Control (EPSC) manual, and permits for EPSC and post-construction stormwater quality. The engineering standards are now complete, and it is anticipated that the EPSC manual and permits will be ready for implementation in January.

As discussed at the November Council meeting, passage of this code language does not implement a stormwater utility fee. If Council wishes to consider adoption of a stormwater utility fee, it is recommended that take place at a later date.

Recommendation:
Adoption of attached Ordinance 166, Surface Water.

Attachment(s):
- Ordinance 166, Surface Water
- Title 12, Surface Water

ORDINANCE NO. 166

AN ORDINANCE AMENDING THE MILLERSBURG MUNICIPAL CODE BY ADOPTING TITLE 12, SURFACE WATER CODE

WHEREAS, the City of Millersburg desires to provide for the effective management of stormwater to protect the health, safety, and general welfare of the citizens of the City of Millersburg; and,

WHEREAS, the City of Millersburg desires to protect the health and safety of City employees working in the stormwater system; and,

WHEREAS, the City of Millersburg desires to protect and enhance the water quality and natural functions of watercourses and water bodies through the regulation of stormwater; and,

WHEREAS, the City of Millersburg desires to facilitate the orderly development and extension of the stormwater system and set forth uniform requirements for direct and indirect contributors to the stormwater system; and,

WHEREAS, the City of Millersburg intends to comply with applicable State and Federal laws;

NOW, THEREFORE, THE PEOPLE OF THE CITY OF MILLERSBURG DO ORDAIN AS FOLLOWS: Millersburg Municipal Code Title 12, Surface Water, is hereby adopted.

This Ordinance becomes effective thirty (30) days from the date of passage.

PASSED by the Council and approved by the Mayor this 10th day of December 2019.

_____

Jim Lepin
Mayor

ATTEST:

_____

Kimberly Wollenburg
City Recorder

Title 12
SURFACE WATER

Chapters:

Chapter 12.01
GENERAL PROVISIONS

Sections:

12.01.010 Intent and purpose.

The intent and purpose of this title is to enable the City of Millersburg to comply with applicable state and Federal laws; to provide for the effective management of stormwater to protect the health, safety, and general welfare of the citizens of the City of Millersburg; to protect the health and safety of City employees working in the stormwater system; to facilitate the orderly development and extension of the stormwater system; to protect and enhance the water quality and natural functions of watercourses and water bodies through the regulation of stormwater; to set forth uniform requirements for direct and indirect contributors to the stormwater system; and to help meet the City of Millersburg's environmental stewardship responsibilities.

Formation of a stormwater utility with appropriate resources, responsibility, and authority is the most effective way to manage, improve, and control the stormwater system and to address the purposes set forth herein.

Notwithstanding the foregoing, nothing herein shall be deemed to impose a duty on the City to protect the property, health, or safety of third parties.

12.01.020 Objectives.

The objectives of this title are:

(1) To prevent the introduction of pollutants onto public rights-of-way, or into the municipal stormwater system, receiving waters, Waters of the State, and the environment;

(2) To prohibit illicit connections and discharges to the stormwater system;

(3) To protect, maintain and restore the integrity of waterways for their natural functions;

(4) To prevent and control nonpoint source pollution, land surface erosion, sedimentation, and stream channel erosion;

(5) To limit the effect of land-disturbing activities on the municipal stormwater system and Waters of the State;

(6) To authorize the imposition of permit requirements and the collection of related fees to govern land-disturbing activities;

(7) To establish legal authority to carry out all inspection, surveillance, and monitoring procedures necessary to ensure compliance with this title;

(8) To authorize the collection of in-lieu-of-assessment fees for properties that have not participated in the cost of constructing public stormwater facilities;

(9) To authorize the imposition of a systems development charge fee and user charges for the construction, operation, and maintenance of stormwater system and facilities;

(10) To protect and maintain the functions and values of areas within floodplains.

12.01.030 Abbreviations.

(1) "ENR" means "Engineering News Record."

(2) "NPDES" means "National Pollutant Discharge Elimination System."

(3) "MS4" means "Municipal Separate Storm Sewer System."

(4) "BMP" means "Best Management Practice."

(5) "EPSC" means "Erosion Prevention and Sediment Control."

(6) "ORS" means "Oregon Revised Statute."

(7) "OAR" means "Oregon Administrative Rule."

(8) "TMDL" means "Total Maximum Daily Load."

12.01.040 Definitions.

(1) "Agricultural activity" means private or commercial activities directly engaged in the production of nursery stock, sod, fruits, vegetables, forages, cover crops, field crops (grain, corn, oats, beans, etc.), timber, and livestock, or other related activities determined by the City Engineer to conform to this definition; but shall not include construction or other activities for structures associated with agricultural activities.

(2) "Best management practices (BMPs)" means schedules of activities; prohibitions of deleterious practices; general good housekeeping practices; physical, structural, or chemical interventions; pollution prevention and educational activities; maintenance activities; and other management practices that prevent or minimize to the greatest extent practicable the discharge of pollutants directly or indirectly to public rights-of-way, the municipal stormwater system, receiving waters, or waters of the state.

(3) "City" means the City of Millersburg, a municipal corporation of the State of Oregon.

(4) "City Engineer" means the person designated by the Millersburg City Manager who is charged with certain duties and responsibilities by this chapter, or the duly authorized representative.

(5) "City Manager" means the person designated by the Millersburg City Council to act as the administrative head of the City government and who is charged with certain duties and responsibilities by this chapter, or the duly authorized representative.

(6) "Clean Water Act" means the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.) and any subsequent amendments thereto.

(7) "Construction activity" means activities related to any land development or construction project including but not limited to clearing and grubbing, grading, excavating, and demolition.

(8) "Discharger" means any person who discharges or causes to be discharged any pollutant onto public rights-of-way or into the municipal stormwater system, receiving waters, or waters of the state.

(9) "Floodplain" means the relatively flat or lowland area adjoining a river, stream, watercourse, lake, or other water body that has been, or may be, inundated temporarily by floodwater.

(10) "Hazardous materials" means any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause or significantly contribute to a substantial present or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed.

(11) "Illegal discharge" means any direct or indirect pollutant-bearing discharge to the municipal stormwater system, receiving waters, or waters of the state, except as exempted by MMC 12.10.010.

(12) "Illicit connection" is defined as either of the following:

(a) Any drain or conveyance, whether on the surface or subsurface, that allows an illegal discharge to enter the stormwater system including, but not limited to, any conveyances that allow any non-stormwater discharge including sewage, process wastewater, and wash water to enter the stormwater system and any connections to the stormwater system from indoor drains and sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by a government agency; or

(b) Any drain or conveyance connected from a commercial or industrial land use to the stormwater system that has not been documented in drawings, maps, or equivalent records and approved by the City.

(13) "Impervious surface" means an improved, altered, or constructed surface which generally prevents infiltration of surface water including, but not limited to, paved streets, graveled or paved areas such as parking lots and driveways, oiled, macadam or other treated surfaces, walkways, roof surfaces, and patios.

(14) "Land-disturbing activity" means any activity that exposes the soil to erosion.

(15) "National Pollutant Discharge Elimination System (NPDES) stormwater discharge permit" means a permit issued by the Environmental Protection Agency or the State of Oregon that authorizes the discharge of pollutants to

waters of the United States, whether the permit is applicable on an individual, group, or general area-wide basis.

(16) "New development" means a project that creates and/or expands the area of impervious surfaces, including, but not limited to:

(a) Structural development, including construction of a new building or other structure;

(b) Expansion or alterations of an existing structure that results in an increase in the area of impervious surfaces;

(c) Construction of new parking lots, roads, alleys, pathways, and other impervious surfaces; and

(d) Expansion or alterations of parking lots, roads, alleys, pathways, and other impervious surfaces that results in an increase in the area of impervious surfaces.

(17) "Nonpoint source" means any source of water pollution that is not associated with point sources. Generally, a nonpoint source is a diffuse or unconfined source of pollution that can either enter into or be conveyed by the movement of water into the municipal stormwater system, receiving waters, or waters of the state.

(18) "Non-stormwater discharge" means any discharge to the stormwater system that is not composed entirely of stormwater.

(19) "Person" means any individual, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or any other legal entity, or their legal representatives, agents, or assigns. The masculine gender shall include the feminine; the singular shall include the plural where indicated by the context.

(20) "Point source" means any discernible, confined, and discrete conveyance, including but not limited to pipes, ditches, channels, tunnels, or conduits, from which pollutants are or may be discharged to a receiving water(s).

(21) "Pollutant" means any material or substance which may alter the chemical, physical, biological, and/or radiological condition of the waters of the state.

(22) "Pollution" means the human-made or human-induced contribution of any pollutant into the municipal stormwater system, receiving waters, or waters of the state.

(23) "Post-construction stormwater quality" means the quality of stormwater runoff, after construction is complete, from a development or redevelopment project.

(24) "Post-construction stormwater quality facility" means permanent stormwater infrastructure incorporated into a development or redevelopment project designed to reduce pollutant loads and runoff velocity from impervious surfaces, and which may also include improvements constructed to reduce the quantity of stormwater runoff leaving the site.

(25) "Premises" means any building, lot, parcel of land, or portion of land whether improved or unimproved including adjacent sidewalks and parking strips.

(26) "Property owner (owner)" means the person(s) or entity(ies) holding legal title to the subject property.

(27) "Redevelopment" means a project that alters or improves the "footprint" of an existing site and/or building. Redevelopment includes the replacement, alteration, or upgrade of an impervious surface that is not part of a routine maintenance activity.

(28) "Stormwater fund" means an enterprise fund through which the cost of providing utility service will be primarily user-fee financed and is analogous in its structure and operation to other enterprise funds maintained by the City, such as the sewer and water funds.

(29) "Stormwater system" means any watercourse or facility by which stormwater is collected and/or conveyed, including but not limited to any roads with drainage systems or ditches, municipal streets, gutters, curbs, inlets, piped storm drains, pumping facilities, retention and detention basins, natural and human-made or altered drainage channels, reservoirs, and other drainage structures. The municipally owned portion of the stormwater system may also be referred to as a municipal separate storm sewer system (MS4).

(30) "Stormwater" means any surface flow, runoff, and drainage consisting entirely of water from precipitation events.

(31) "Toxic" means any substance or combination of substances listed as toxic in regulations promulgated by the Environmental Protection Agency in Section 307(a)(1) of the Clean Water Act or Title III Section 313 of the Superfund Amendments and Reauthorization Act.

(32) "Vegetated post-construction stormwater quality facility" means a post-construction stormwater quality facility wherein the primary means of stormwater treatment is by filtration through soil and plant material. This may also be referred to as a low-impact development (LID) facility.

(33) "Water or waters of the state" means all natural waterways, intermittent streams, constantly flowing streams, lakes, wetlands, and all other navigable and nonnavigable bodies of water which are wholly or partially within or bordering the state or within its jurisdiction.

(34) "Watercourse" means a channel in which a flow of water occurs, either continuously or intermittently, and, if the latter, with some degree of regularity. Watercourses may be either natural or artificial.

12.01.050 Applicability.

This title shall apply to all water entering the stormwater system generated on any developed and undeveloped lands unless explicitly exempted by MMC 12.10.010.

12.01.060 Responsibility for administration.

The City Engineer shall be authorized to administer, implement, and enforce the provisions of this title. Any powers granted or duties imposed upon the City Engineer are also conferred upon those persons tasked by the City Engineer to administer, implement, and enforce the provisions of this title. The City Engineer shall have the authority to develop and implement procedures, policies, standards, and forms necessary for the implementation of this title. The City Engineer is granted discretion to allocate resources or undertake enforcement of this title as he or she deems appropriate with consideration to time, resources, and conflicting obligations of the City and its staff.

12.01.070 Severability.

The provisions of this title are hereby declared to be severable. If any provision, clause, sentence, or paragraph of this title or the application thereof to any person, establishment, or circumstances shall be held invalid, such invalidity shall not affect the other provisions or application of this title.

12.01.080 Ultimate responsibility of the discharger.

The standards set forth herein and promulgated pursuant to this title are minimum standards; therefore this title does not intend or imply that compliance by any person will ensure that there will be no contamination, pollution, or unauthorized discharge of pollutants into the Waters of the State caused by said person. This title shall not create liability on the part of the City of Millersburg, or any agent or employee thereof, for any damages that result from any discharger's reliance on this title or any administrative decision lawfully made thereunder.

12.01.085 Relation to other laws.

Neither this title nor any administrative decision made under it exempts the permittee or any other person from procuring other required permits or complying with the requirements and conditions of such permit, or complying with any other applicable law or regulation, or limits the right of any person to maintain, at any time, any appropriate action, at law or in equity, for relief or damages against the permittee or any other person arising from the activity regulated by this title.

Where the provisions of this title impose restrictions different from those set forth in other regulations under the Millersburg Municipal Code, Land Development Code, or State or Federal regulations, whichever provision is more restrictive or imposes higher protective standards for human health or the environment shall control.

12.01.090 Requirement to prevent, control, and reduce stormwater pollutants by the use of best management practices.

The City Engineer may require best management practices (BMPs) for any activity, operation, or facility which may cause or contribute to the introduction

of pollutants to rights-of-way, wetlands, drainage ways, the municipal stormwater system, receiving waters, and/or areas that include or contribute directly to the Waters of the State. Where BMP requirements are promulgated by the City Engineer, the owner or operator of such activity, operation, or facility shall provide, at their own expense, reasonable protection from the discharge of pollutants, as described above, through the use of these structural and/or nonstructural BMPs.

Further, any person responsible for a property or premises that is, or which may reasonably be expected to be, the source of an illicit or prohibited discharge may be required to implement, at said person's expense, additional structural and nonstructural BMPs to prevent any further discharges of pollutants.

Chapter 12.10
PROHIBITED DISCHARGES

Sections:

12.10.010 Prohibited discharges.

No person shall cause any pollutant to be discharged to public rights-of-way, municipal stormwater system, or any Waters of the State or cause any pollutant to be placed in a location where such pollutant is likely to escape or be carried into the public rights-of-way, municipal stormwater system or into the Waters of the State.

(1) Prohibited discharges include, but are not limited to, the following:

(a) Septic, sewage, and dumping or disposal of liquids or materials other than stormwater.

(b) Discharges of washwater resulting from the hosing or cleaning of gas stations, auto repair garages, or other types of automotive service facilities.

(c) Discharges resulting from the cleaning, repair, or maintenance of any type of equipment, machinery, or facility, including motor vehicles, cement-related equipment, port-a-potty servicing, etc.

(d) Discharges of washwater from mobile operations, such as mobile automobile or truck washing, steam cleaning, power washing, carpet cleaning, etc.

(e) Discharges of washwater from the cleaning or hosing of impervious surfaces in municipal, industrial, commercial, or residential areas (including parking lots, streets, sidewalks, driveways, patios, plazas, work yards, outdoor eating or drinking areas, etc.) where detergents are used and spills or leaks of toxic or hazardous materials have occurred (unless all spilled materials has been removed).

(f) Discharges of runoff from material storage areas, which contain chemicals, fuels, grease, oil, or other hazardous materials without approved treatment.

(g) Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water.

(h) Discharges of sediment, unhardened concrete, pet waste, vegetation clippings, or other landscape or construction-related wastes.

(i) Discharges of trash, paints, stains, resins, or other household hazardous wastes.

(j) Discharges of food-related wastes (grease, restaurant kitchen mat and trash bin washwater, etc.)

(k) Any liquids, solids, or gases that by reason of their nature or quantity are, or may be, sufficient either alone or by interaction with other substances to cause fire or explosion or be injurious in any other way to the operation of the municipal stormwater system.

(l) Any solid or viscous substances that may cause obstruction to the flow in the stormwater system, such as but not limited to: grease, garbage, sand, straw, grass clippings, rags, plastics, or mud.

(m) Any discharge having a pH less than six or greater than 10, unless the divergence from these limits can be proven to occur from rainfall pH.

(n) Any discharge containing toxic pollutants.

(o) Pollutants that result in the presence of toxic gases, vapors, or fumes within the stormwater system that may cause acute worker health or safety problems.

(p) Any substance that may cause the City to violate its storm system permits, or that may cause the City to violate instream water quality standards set by the State of Oregon.

(q) Any substance that causes or may cause visible discoloration of the receiving waters such as but not limited to dyes and inks, except as described in subsection (2)(b) of this section.

(r) Any discharge having a temperature that may inhibit biological activity in the receiving waters or cause the City to violate instream water

quality standards set by the State of Oregon, or that could harm the stormwater system.

(s) Any discharge containing oxygen demanding pollutants that may elevate the oxygen demand within the municipal stormwater system or Waters of the State.

(t) Any hauled waste, septage, or discharge from cleaning tanks including those from mobile cleaning services.

(l) Any refuse, rubbish, garbage, litter, or other discarded or abandoned objects.

(2) The following are exempt from discharge prohibitions established by this chapter:

(a) Water line flushing with dechlorination.

(b) Landscape Irrigation.

(c) Diverted stream flows.

(d) Uncontaminated groundwater infiltration.

(e) Rising ground waters.

(f) Uncontaminated pumped groundwater.

(g) Potable water sources (including potable groundwater monitoring wells and draining and flushing of municipal potable water storage reservoirs.

(h) Start up flushing of groundwater wells.

(i) Foundation, footing, and crawl space drains (where flows are not contaminated).

(j) Uncontaminated air conditioning or compressor condensate.

(k) Irrigation water.

(l) Springs.

(m) Lawn watering.

(n) Individual residential car washing.

(o) Charity car washing (provided that chemicals, soaps, detergents, steam, or heated water are not used. Washing is restricted to the outside of the vehicle, no engines, transmissions, or undercarriages.

(p) Flows from riparian habitats or wetlands.

(q) Dechlorinated swimming pool discharges including hot tubs (heated water must be cooled for at least 12 hours prior to discharge).

(r) Fire hydrant flushing.

(s)Street and pavement washwaters (provided that chemicals, soaps, detergents, steam, or heated water are not used).

(t) Routine external building wash-down (provided that chemicals, soaps, detergents, steam, or heated water are not used).

(u) Water associated with dye testing, provided verbal notification is made to the City prior to the start of the test.

(v) Discharges of treated water from investigation, removal, and remedial actions selected or approved by DEQ pursuant to Oregon Revised Statute (ORS) Chapter 465.

(w) Discharges from firefighting or other emergency actions by a public utility, the City, or any other governmental agency necessary to protect public health and safety.

(3) The prohibition shall not apply to any non-stormwater discharge permitted under an NPDES permit, waiver, or waste discharge order issued to the discharger and administered by the State of Oregon under the authority of the Federal Environmental Protection Agency; provided, that the discharger is in full compliance with all requirements of the permit, waiver, or order and other applicable laws and regulations, and provided the written approval has been granted by the City of Millersburg for any discharge to the stormwater system.

12.10.050 Prohibition of illicit connections.

(1) No person shall construct, use, maintain, or allow the continued existence of an illicit connection to the stormwater system. Existing illicit connections are expressly prohibited, without limitation, regardless of whether the connection was permissible under law or practices applicable or prevailing at the time of connection.

(2) Examples of illicit connections include but are not limited to wastewater lines such as those from sanitary sewers, or drains carrying wash or industrial process water.

(3) A person is in violation of this title if the person connects a line conveying sewage to the municipal stormwater system or allows such a connection to continue. Improper connections in violation of this title must be disconnected and redirected, if necessary, to an approved on-site wastewater management system or to the sanitary sewer system upon approval of the City Engineer.

12.10.080 Watercourse protection.

Every person owning or occupying property through which a watercourse passes shall keep and maintain that part of the watercourse within the property free of trash, debris, and other obstacles that may reasonably be expected to contaminate or impede the flow of water through the watercourse. In addition, the owner or occupant shall remove or maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse. No person shall remove native vegetation in the vicinity of a watercourse except where it poses an imminent hazard to human health and safety or nearby structures. No person shall remove vegetation in such a manner as to increase the vulnerability of the watercourse to erosion. Within the limits established through any required State or Federal permits, the property owner or lessee shall maintain and stabilize the banks of the watercourse within their property lines in order to protect against erosion and degradation of the watercourse. Watercourse banks shall be stabilized using planted vegetation and natural materials instead of hard materials (e.g., concrete, asphalt, rock, logs, lumber, etc.) wherever practicable.

12.10.090 Discharges in violation of industrial or construction activity NPDES stormwater discharge permit.

Any person subject to an industrial or construction activity NPDES stormwater discharge permit shall comply with all provisions of such permit. Proof of compliance with said permit may be required in a form acceptable to the City Engineer at the following times: prior to the City Engineer allowing discharges to the stormwater system; or as a condition of a subdivision map, site plan, building permit, or development or improvement plan; upon inspection of the facility; during any enforcement proceeding or action; or for any other reasonable cause.

12.10.100 Notification of spills.

Notwithstanding other requirements of law, as soon as any person responsible for a facility or operation, or responsible for emergency response for a facility or operation, has information of any known or suspected release of materials that is resulting in or may result in illegal discharges of pollutants onto or into public rights-of-way, stormwater, the municipal stormwater system, or Waters of the State, said person shall take all necessary steps to ensure the discovery, immediate notification, containment, and cleanup of such release.

(1) In the event of such a release of hazardous materials, said person shall immediately notify emergency response agencies of the occurrence via emergency dispatch services. In the event of a release of nonhazardous materials, said person shall notify the City of Millersburg immediately in person or by telephone. Notification of the emergency response agencies or the City of Millersburg does not relieve the discharger of their responsibility to also notify appropriate State and Federal agencies.

(a) Notifications in person or by telephone shall be confirmed by written notice addressed and mailed to the City of Millersburg City Engineer within five business days of the original notice. The notice shall include a detailed written statement submitted by the discharger describing the causes of the discharge, measures taken to mitigate the spill, and the measures taken to prevent any future occurrence.

(b) If the discharge emanates from a commercial or industrial establishment, the owner or operator of such establishment shall also retain an on-site written record of the discharge and the actions taken to prevent its recurrence. Such records shall be retained for at least three years.

(2) The person responsible for the discharge of pollutants or hazardous materials to the environment shall be responsible for all cleanup costs. All related City expenses including, but not limited to, costs for identification, hazard assessment, and containment shall also be fully reimbursed.

(3) In general, reimbursement costs are those incident costs that are eligible, reasonable, necessary, and allocable to the incident. Costs allowable for reimbursement may include, but are not limited to:

(a) Disposable materials and supplies provided, consumed and expended specifically for the purpose of the incident for which reimbursement is being requested;

(b) Compensation of the employees for the time devoted specifically to the incident;

(c) Rental or leasing of equipment used specifically for the incident;

(d) Replacement costs for equipment or property owned by the City that is contaminated or damaged beyond reuse or repair;

(e) Decontamination of equipment that was used during the incident;

(f) Special technical services required for the incident; and

(g) Laboratory expenses for the purpose of analyzing samples taken during the incident.

12.10.120 Requirement to eliminate illegal discharges.

The City Engineer may require, by written notice, that a person responsible for an illegal discharge immediately, or by a specified date, discontinue the discharge and, if necessary, take measures to eliminate the source of the discharge to prevent the occurrence of future illegal discharges.

12.10.140 Requirement to eliminate illicit connections.

The City Engineer may require, by written notice, that a person responsible for an illicit connection to the stormwater system immediately, or by a specified date, comply with the requirements of this title to eliminate the connection, regardless of whether or not the connection or discharges to it had been established or approved prior to the effective date of the ordinance codified in this title.

If, subsequent to eliminating a connection found to be in violation of this title, the responsible person can demonstrate that an illegal discharge will no longer occur, said person may request City approval to reconnect. The reconnection or reinstallation of the connection shall be at the responsible person's expense.

12.10.143 Requirement to remediate.

Whenever the City Engineer finds that an illegal discharge is taking place or has occurred that will result in or has resulted in pollution of stormwater, the stormwater system, or Waters of the State, the City Engineer may require by written notice to the owner of the property and/or the responsible person or entity that the pollution be remediated and the affected property restored within a specified time pursuant to the provisions of Chapter 12.80 MMC.

12.10.147 Requirement to monitor and analyze.

The City Engineer may require, by written notice, that any person engaged in any activity and/or owning or operating any facility that may cause or contribute to stormwater pollution, illegal discharges, and/or non-stormwater discharges to the stormwater system or Waters of the State, to undertake at said

person's expense such monitoring and analyses and furnish such reports to the City of Millersburg as deemed necessary to determine compliance with this title.

12.10.150 Suspension of access.

The City of Millersburg may, without prior notice, suspend access to the stormwater system when such suspension is necessary to stop an actual or threatened discharge that presents or may present imminent and substantial danger to the environment, to the health or welfare of persons, to the stormwater system, or Waters of the State.

If the violator fails to comply with a suspension order, the City of Millersburg may take such steps as deemed necessary to prevent or minimize damage to the stormwater system, prevent or minimize danger to the environment, or to prevent or minimize danger to persons.

12.10.160 Damage to the stormwater system.

When a discharge causes obstruction, damage, or other impairment to the stormwater system, the City Engineer may assess a charge against the discharger for the work required to clean or repair the facility. If the discharger fails to pay said charge, the costs to clean or repair the facility may be assessed against the property pursuant to MMC 12.80.040.

12.10.170 Right of entry – Inspection and sampling.

The City Engineer shall be authorized and have the right to inspect all premises, sites, and/or activities covered under this title to determine compliance with this title and any rules or orders adopted by the Council or issued pursuant to this title.

(1) The City Engineer shall have the right to set up on the discharger's or permittee's property, or require installation of, such devices as are necessary to conduct sampling, inspection compliance, and/or monitoring operations.

(2) Where a discharger or permittee has security measures in force which require proper identification and clearance before entry into its premises, the dischargers shall make necessary arrangements so that, upon presentation of suitable identification, the City Engineer or authorized representatives shall be permitted to enter without delay for the purposes of performing specific responsibilities.

(3) Facility operators shall allow the City Engineer ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under conditions of an NPDES permit to discharge stormwater, and the performance of any additional duties as defined by State and Federal law.

(4) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly modified or removed by the discharger at the written or verbal request of the City Engineer and shall

not be replaced without the consent of the City Engineer. The costs of clearing such access shall be borne by the discharger.

(5) Unreasonable delay in allowing the City Engineer access to a permitted facility is a violation of this title. A person who is the operator of a facility with an NPDES permit to discharge stormwater associated with industrial activity commits an offense if the person denies the City Engineer reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this title.

Chapter 12.20
PERMITS FOR CONNECTION OR CONSTRUCTION

Sections:

12.20.010 Permits required.

Prior to commencing any work on a building storm drain or public stormwater system, all applicable permits from the City of Millersburg and other agencies must be secured and all associated permit fees paid in full. The permits necessary may include, but are not limited to, an EPSC permit, a plumbing permit, a permit to construct public facilities, and an encroachment permit. The permit shall set forth at what point the connection is to be made, the location, size of facility, type of construction, and other details as the City Engineer or his/her designee may reasonably require.

12.20.020 Approval of drawings.

Drawings for all public stormwater systems shall be approved by the City Engineer or his/her designee prior to construction. Unless otherwise approved by the City Engineer, such drawings shall conform to applicable stormwater system master plans as well as City of Albany Standard Construction Specifications, as adopted by the City of Millersburg. Such approval shall be required in addition to any other approval required by State law.

12.20.030 Construction to conform to standards.

All public stormwater systems, whether publicly or privately constructed, shall conform to City of Albany Standard Construction Specifications, as adopted by the City of Millersburg, and the City of Millersburg Design Standards with regard

to legal and design requirements, materials, and workmanship. Failure to meet tests for performance and workmanship shall be grounds for refusal of acceptance by the City. Permits to connect to stormwater systems that have not been accepted will not be issued until the system has been approved and accepted.

12.20.040 Inspection, approval of construction.

Reasonable notice and access shall be given to allow inspection of all work in connection with the construction or reconstruction of any public and private stormwater facilities. Use of the stormwater facilities will not be allowed until the building storm sewer and the public improvement receives final approval.

12.20.050 Connection to stormwater mains.

Piped storm drain connections shall be made only to the single wye branch designated for use by the connecting property. If no wye is available, connection shall be made by tapping the stormwater main line in accordance with City Standard Construction Specifications and only after securing all necessary permits and paying all required permit fees.

12.20.060 Extension of stormwater systems.

The following rules shall apply to all stormwater system extensions:

(1) The minimum size of stormwater mains or other stormwater system components to be installed shall be in conformance with the most recent version of the City of Millersburg Design Standards where a larger size is not needed to provide an adequate system, conform with the size of the existing system, meet future needs, or conform to the size specified by the City of Millersburg's Stormwater System Facility Plan.

(2) All stormwater system facilities serving more than one property shall be public, installed in public rights-of-way or public utility easements. The normal routing for stormwater system extensions shall be in a dedicated right-of-way.

(3) All stormwater system extensions shall extend to the extreme property line of the development or lot. If the property has excess frontage on the right-of-way and only partial development is to occur, then some consideration may be given to shortening the initial extension, provided sufficient assurance is given to ensure the completion of the extension at the time other development occurs. Where systems are being extended into the interior of a property or development, the systems shall be extended through to the boundaries of the property at all such points as shall be needed to provide current or future service to adjacent properties.

12.20.070 Tapping of manholes.

Tapping of building storm drains directly into manholes is prohibited except where shown in construction drawings that have been approved by the City Engineer or his/her designee.

Chapter 12.30
STORMWATER UTILITY

Sections:

12.30.010 Stormwater utility.

There is created and established a stormwater utility with the assets, authority, and responsibility for administration, planning, design, construction, maintenance, and operation of stormwater conveyances and facilities. Additional specific mandates, authority, and delegations may occur, from time to time, by appropriate City Council actions. All references to "the utility" in this title refer to the stormwater utility. The administration of the utility shall be as set forth herein.

12.30.020 Stormwater fund.

The stormwater fund is created and established.

(1) Service Charge Imposed. A stormwater service charge shall be imposed on all persons or premises that contribute to the stormwater system or that otherwise use or benefit from the stormwater system, and said persons shall be responsible for paying the stormwater service charge. All monies received from stormwater service charges shall be deposited into the stormwater fund.

(2) Service Charge Rates Set by Council Resolution. Stormwater service charge rates will be set by Council resolution. The stormwater service charge shall be developed and implemented such that it is not a tax subject to the property tax limitation of Article XI, Section 11b of the Oregon Constitution. The City Engineer shall recommend adjustments to the stormwater service charge rates to the City Council as it becomes necessary. The City Council shall consider such recommendations and may approve or further adjust the stormwater service charges as the Council deems necessary to meet policy objectives, to meet the utility's revenue requirements, or to meet the overall financial needs of the utility.

(3) Customer Classification. Customer account classification and other stormwater charge-related calculations shall be determined by the City Engineer or the duly authorized representative. Any appeal of the City Engineer's determination shall be made in writing to the City Engineer. Any request for review of the City Engineer's appeal determination shall be made in writing to the City Manager. The City Manager's determination will be final.

12.30.030 Adjustments, back-billing, and refunds.

The utility may make adjustments, back-bill, pay refunds, or waive fees and charges in accordance with City Council policy. If no Council policy exists, the utility may make adjustments where it is deemed necessary on a case-by-case basis as determined by the City Manager for the proper conduct of the business of the Utility. A full explanation of the reason for the adjustment or refund must be filed with the office records and, subject to Oregon public records law, will be made available upon request. Refunds are to be made to the party that made the payment.

12.30.040 System development charges.

When adopted in accordance with Chapter 15.16 MMC, all monies received from stormwater system development charges shall be deposited into the stormwater fund. Such funds shall be accounted for separately from those received from stormwater service charges.

Chapter 12.35
GRADING

Sections:

12.35.005 Grading – Relationship to floodplain.

Grading (including excavation and fill) proposed in the floodplain is regulated and permitted through the Millersburg Land Use Development Code and does not require an additional grading permit under this chapter.

12.35.010 Grading – When permits are required.

Grading permits are required by the City of Millersburg in the following circumstances:

(1) When any grading is proposed in any watercourse shown in the City of Millersburg Stormwater Master Plan, in any watercourse receiving drainage from a public roadway, or in any watercourse lying within a public easement or right-of-way. A watercourse is any natural or artificial stream, river, creek, ditch, drainageway, channel, canal, conduit, culvert, drain, waterway, gully, ravine, or wash in which water flows in a definite direction or course, either continuously or

intermittently, and has a definite channel, bed and banks, and includes any area adjacent thereto subject to inundation by reason of overflow or flood water.

(2) When placement of a structure is proposed in a watercourse shown in the City of Millersburg Stormwater Master Plan, or within a public easement or right-of-way.

(3) When grading involving more than 50 cubic yards is proposed.

(4) When grading is proposed over an existing public storm drain, sanitary sewer, or waterline. This does not include grading authorized under a public works contract awarded by the City of Millersburg, grading approved as part of a permit to construct public facilities as provided in Chapter 15.06 MMC, or grading conducted by City of Millersburg maintenance forces.

(5) Notwithstanding any of the foregoing, a grading permit is not required in any of the following circumstances:

(a) Routine farming activities on farm designated land;

(b) Cemetery grave sites;

(c) Grading incidental to a valid building permit and excavation below grade for basements, foundations, or footings for retaining walls or other structures authorized by a valid building permit;

(d) Construction of driveways or underground utilities;

(e) Grading or landscaping when less than 50 cubic yards of earth is moved;

(f) Grading or excavation associated with public works projects, roads, public ways, graves, or work controlled by other processes or regulations, such as wells, tunnels, utilities, or disposal sites;

(g) Minor adjustments in active grading permits or applications when necessary in order to adhere to City requirements or good engineering practices;

(h) Grading or excavation determined by the City Engineer or designee to be in substantial compliance with the intent of the grading ordinance. Such a determination shall be appealable to the City Council. In the event of such an appeal, the decision of the City Council shall be final.

12.35.020 Grading – General provisions.

The rules prescribed in this chapter shall apply to all lands within the City limits of the City of Millersburg.

(1) Compliance. No excavation or grading operation shall hereafter be performed, or existing graded lot altered, without full compliance with the terms of this chapter and other applicable regulations.

(2) Abrogation and Greater Restrictions. This chapter is not intended to repeal, abrogate or impair any existing easements, covenants or deed restrictions. However, where this chapter and other chapters conflict or overlap, whichever imposes the more stringent restrictions shall prevail.

(3) Relationship to Permits Required by State or Federal Agencies. Excavation, grading, and fill activities may require State and/or Federal permits. Such permits are likely to be required if hydric soils are present on the site or if the site contains other wetland characteristics. The issuance of a permit by the City of Millersburg under this chapter does not eliminate the need for compliance with other State, Federal, or local regulations.

(4) Warning and Disclaimer of Liability. The issuance of a permit by the City of Millersburg under this chapter constitutes a determination that the applicant has met the minimum requirements for the City's regulatory purposes. Issuance of a permit does not relieve the permit holder from any responsibilities or liabilities that grading, excavation or fill activities may create if third parties are damaged or injured by such actions.

12.35.030 Grading – Permit procedure.

Application for a grading permit shall be made to the City Engineer or designee. The City Engineer or designee shall provide the application forms.

12.35.050 Grading – Approval standards.

Grading permit applications will be approved if the applicant has shown that each of the following criteria which are applicable have been met:

(1) Provisions have been made to maintain adequate flood-carrying capacity of existing watercourses, including future maintenance of that capacity.

(2) No grading will be permitted over an existing public storm drain, sanitary sewer, or water line unless it can be demonstrated to the satisfaction of the City Engineer that the proposed grading will not be detrimental to the anticipated service life, operation and maintenance of the existing utility.

(3) The applicant shall notify the City of Millersburg, any adjacent community, and the Natural Hazards Mitigation Office of the Oregon Department of Land Conservation and Development of any proposed grading activity that will result in alteration or relocation of a watercourse.

(4) All drainage facilities shall be designed to carry waters to the nearest practicable watercourse approved by the designee as a safe place to deposit such waters. Erosion of ground in the area of discharge shall be prevented by installation of non-erosive downdrains or other devices.

(5) Building pads shall have a drainage gradient of two percent toward approved drainage facilities, unless waived by the City Engineer or designee; except the gradient from the building pad may be one percent if all of the following conditions exist throughout the permit area:

(a) No proposed fills are greater than 10 feet in maximum depth.

(b) No proposed finished cut or fill slope faces have a vertical height in excess of 10 feet.

(c) No existing slope faces, which have a slope face steeper than 10 horizontal to one vertical, have a vertical height in excess of 10 feet.

(6) In areas that have an average slope of 12 percent or greater, the following requirements also apply:

(a) Cut slopes shall not exceed a one and one-half (horizontal) to one (vertical) ratio and fill slopes shall not exceed a two (horizontal) to one (vertical) ratio. Slopes which are steeper (e.g., 1.5:1, or 1:1) may be approved by the City Engineer or designee, upon certification by a qualified soils engineer or geologist that the slope will remain stable under foreseeable conditions. The certification must delineate any specific stabilization measures deemed necessary by the soils engineer or geologist.

12.35.090 Grading – Fees.

Fees applied under this title shall be as adopted by resolution of the Millersburg City Council.

12.35.100 Removal of excavation, embankment or fill required when determined to be a hazard.

If the City Engineer or designee determines that any excavation, embankment, or fill on private property has become a hazard, he/she may order the hazard abated by the owner or responsible party. The owner of the property upon which the excavation or fill is located, or the responsible party, upon receipt of notice in writing, shall repair or eliminate such excavation or embankment so as to eliminate the hazard.

Chapter 12.40
EROSION PREVENTION AND SEDIMENT CONTROL

Sections:

12.40.010 EPSC manual.

The City Engineer is authorized to develop, implement, and maintain an erosion prevention and sediment control (EPSC) manual. This manual, and such other resources as the City Engineer may deem necessary, will provide technical

guidance for the design, installation, maintenance, and inspection of temporary and permanent erosion prevention and sediment control best management practices. In the event that any provision of the EPSC manual is in conflict with any section of this title, the provisions of this title will govern.

12.40.020 Applicability of EPSC requirements.

Persons or entities engaged in land-disturbing activities that require an EPSC permit as described in this chapter shall utilize best management practices as described in the City of Millersburg Erosion Prevention and Sediment Control Manual, or more effective measures, as necessary to satisfy the requirements of this title.

12.40.030 Permit required.

An erosion prevention and sediment control (EPSC) permit shall be obtained for land-disturbing activities affecting an area of 10,000 square feet or greater, cumulatively.

12.40.031 Permit exemptions.

(1) The following activities may be exempted from the requirements of MMC 12.40.030:

(a) Land-disturbing activities affecting an area less than 10,000 square feet, cumulatively;

(b) Replacement or re-establishment of an existing lawn on a single lot, not exceeding 10,000 square feet;

(c) Agricultural activities.

(2) Permit exempted activities must meet all requirements of this title, and are subject to the provisions of Chapter 12.80 MMC, as applicable.

12.40.032 Application for a permit.

To obtain a permit, the property owner shall apply to the City of Millersburg. Every such application shall:

(1) Identify and describe the work to be covered by the permit;

(2) Describe the land on which the proposed work is to be done by legal description, street address, or similar description that will readily identify and definitely locate the proposed work;

(3) Be accompanied by an EPSC plan conforming to the requirements of MMC 12.40.040;

(4) Identify the person or entity performing the land-disturbing activity;

(5) Provide a 24-hour emergency contact person and phone number;

(6) Be signed by the owner of the property upon which the land-disturbing activities will occur;

(7) Contain a statement of financial responsibility for damages resulting from noncompliance with EPSC requirements, should any such occur;

(8) Be accompanied by the applicable fees described in MMC 12.40.090.

12.40.033 Permit transfer.

EPSC permits shall be obtained by the person(s) or entity holding title for the property upon which the land-disturbing activities will occur.

(1) An EPSC permit may not be transferred to any person(s) or entity except upon transfer of title for the property.

(2) The person(s) or entity obtaining title to a property with an active EPSC permit shall apply for transfer of the existing EPSC permit, or shall obtain a new EPSC permit.

(3) The person(s) or entity transferring title for a property with an active EPSC permit shall notify the new owner(s) of the requirements of subsection (2) of this section.

(4) The most recent EPSC permit for a property will supersede all other EPSC permits that apply to that property.

12.40.034 Permit duration.

(1) EPSC permits issued under this title will be valid for a period of one year, or until land-disturbing activities are completed, and surface conditions stabilized with permanent measures to prevent future erosion as verified by the City Engineer, whichever is shorter.

(2) Prior to the expiration of an EPSC permit, the permit holder may present a written request for an extension to the City Engineer. If, in the opinion of the City Engineer, an extension is warranted, up to a 12-month extension may be granted. Extensions will be subject to the applicable fees described in MMC 12.40.090.

12.40.040 EPSC plan required.

Applicants for an EPSC permit shall submit as a part of their permit application an EPSC plan. EPSC plans shall comply with the minimum standards outlined in the City of Millersburg Erosion Prevention and Sediment Control Manual and the provisions of this title.

(1) Major land-disturbing activities, as defined in the EPSC manual, must meet the submittal requirements for major land-disturbing activities and shall require submission of an EPSC plan prepared by a professional licensed in Oregon as a civil or environmental engineer, landscape architect, geologist, or certified professional in erosion and sediment control (CPESC).

(2) Minor land-disturbing activities, as defined in the EPSC manual, must meet the requirements for minor land-disturbing activities and do not require a professional to prepare the EPSC plan.

12.40.050 Commencement of land-disturbing activities restricted.

Land-disturbing activities shall not commence until an EPSC permit has been issued. An EPSC permit will not be issued until the following conditions have been met:

(1) An EPSC application has been submitted to the City with an attached EPSC plan;

(2) When required, the applicant's EPSC plan has been reviewed and received initial approval by the City Engineer;

(3) EPSC BMPs have been installed in accordance with the approved EPSC plan;

(4) When required, the City Engineer has verified condition (3) of this section in an inspection of the site;

(5) When required, the permit holder has modified BMPs or installed additional BMPs as required by the City Engineer following the initial site inspection.

12.40.090 EPSC fees required.

Fees applied under this title shall be as adopted by resolution of the Millersburg City Council.

Chapter 12.45
POST-CONSTRUCTION STORMWATER QUALITY

Sections:

12.45.010 Design and construction standards.

The engineering standards and construction standards adopted under MMC 15.20.050 provide the design and construction criteria for private and public post-construction stormwater quality facilities required under this chapter. In the event that any provisions of the engineering standards and/or construction standards are in conflict with any section of this chapter, the provisions of this chapter will govern.

12.45.020 Applicability of post-construction stormwater quality requirements.

Property owners engaged in development or redevelopment projects, or who have said projects occurring on their property, that require a post-construction stormwater permit in this chapter shall install permanent post-construction stormwater quality facilities.

12.45.030 Permit required.

A post-construction stormwater quality permit shall be obtained for all new development and/or redevelopment projects on a parcel(s) equal to or greater than one acre, including all phases of the development.

12.45.040 Permit exemptions.

(1) A development may be exempted from the requirement of MMC 12.45.030 when one or more of the following conditions exist:

(a) The development is for the construction of not more than three single-family or duplex dwelling(s) on an existing lot(s) of record.

(b) The development creates and/or replaces less than 10,000 square feet of impervious surface, cumulatively.

(c) The proposed development activity is being constructed under a valid land use approval where the application for said development activity was submitted prior to November 7, 2019.

12.45.050 Application for a permit.

To obtain a permit, the property owner shall apply to the City of Millersburg. Every such application shall:

(1) Identify and describe the work to be covered by the permit; and

(2) Describe the land on which the proposed work is to be done by legal description, street address, or similar description that will readily identify and definitively locate the proposed work; and

(3) Be accompanied by a post-construction stormwater quality plan conforming to the requirements of MMC 12.45.080; and

(4) Identify the person(s) or entity(ies) performing the development activity and constructing the post-construction stormwater quality facilities; and

(5) Provide a 24-hour emergency contact person and phone number; and

(6) Be signed by the owner of the property upon which the development activities will occur; and

(7) Contain a statement of financial responsibility for damages resulting from noncompliance with post-construction stormwater quality permit requirements, should any such occur; and

(8) Be accompanied by the applicable fees described in MMC 12.45.100.

12.45.060 Permit transfer.

Post-construction stormwater quality permits shall be obtained by the property owner for the property upon which the development activities will occur.

(1) A post-construction stormwater quality permit may not be transferred to any person(s) or entity except upon transfer of title for the property.

(2) The person(s) or entity obtaining title to a property with an active post-construction stormwater quality permit shall apply for transfer of the existing permit, or shall obtain a new post-construction stormwater quality permit.

(3) The property owner transferring title for a property with an active post-construction stormwater quality permit shall notify the new owner(s) of the requirements of subsection (2) of this section.

(4) The most recent post-construction stormwater quality permit for a property will supersede all other post-construction stormwater quality permits that apply to that property.

12.45.070 Permit duration.

(1) Post-construction stormwater quality permits issued under this title will be valid for a period of one year.

(2) Prior to the expiration of a post-construction stormwater quality permit, the permit holder may present a written request for an extension to the City Engineer. If the City Engineer determines an extension is warranted, up to a 12-month extension may be granted. Extensions will be subject to the applicable fees described in AMC 12.45.100.

12.45.080 Post-construction stormwater quality plan required.

Applicants for a post-construction stormwater quality permit shall submit as a part of their permit application a post-construction stormwater quality plan. Each plan shall comply with the minimum standards outlined in the engineering standards, construction standards, and the provisions of this chapter. Each post-construction stormwater quality plan shall be reviewed, approved, and stamped by a professional licensed in Oregon as a civil or environmental engineer or landscape architect.

12.45.090 Relationship to Chapter 15.20 MMC, Private construction of public improvements.

Permits issued under this chapter to construct post-construction stormwater quality facilities that will be public shall be subject to the requirements for private construction of public improvements as contained in MMC 15.20.090 through 15.20.180.

Where the privately constructed post-construction stormwater quality facilities will be public and constructed coincident with other privately constructed public improvements under Chapter 15.06 AMC, a separate post-construction stormwater quality facilities permit will not be required if the requirements of this chapter are incorporated into the Chapter 15.20 MMC permit.

12.45.100 Permit fees required.

Fees applied under this title shall be as adopted by resolution of the Millersburg City Council.

12.45.120 Authorization for private stormwater facilities operation and maintenance agreements.

(1) The City Engineer is authorized to develop standard private stormwater facilities operation and maintenance agreements and accompanying standard maintenance requirements for incorporation into the engineering standards.

(2) The City Engineer is authorized to enter into private stormwater facilities operation and maintenance agreements on the City's behalf.

12.45.130 Private stormwater facilities operation and maintenance agreements required.

(1) Private stormwater facilities operation and maintenance agreements are required for all private post-construction stormwater quality facilities that require a permit under this chapter.

(2) Private stormwater facilities operations and maintenance agreements shall be recorded at the applicable County Recorder's Office and shall run with the land.

(3) Redevelopment of a property already operating under a private stormwater facilities operation and maintenance agreement will require execution of a new agreement if the City Engineer determines, in the exercise of reasonable discretion, that the redevelopment is likely to have a material impact upon the operation, maintenance, or effectiveness of the previously approved facilities.

12.45.140 Completion of construction.

(1) A requirement to construct stormwater quality facilities shall not be satisfied until the facilities have been determined to be in compliance with all requirements and specifications and formally accepted by the City Engineer.

(2) Unless an exception is granted pursuant to subsection (3) of this section, plats, partitions, certificates of occupancy, or other City permits or approvals which are conditioned upon the completion of post-construction stormwater quality facilities will not be given prior to completion and acceptance by the City Engineer of said facilities.

(3) The City Engineer may, in the exercise of reasonable discretion, waive the requirement of subsection (2) of this section and execute plats, partitions,

certificates of occupancy, or other City permits or approvals prior to the completion of post-construction stormwater quality facilities if he/she determines that the public interest so requires. In such an event, the owner shall be required to provide an improvement assurance satisfactory to the City Engineer and the City Attorney guaranteeing timely completion of the aforesaid facilities. Nothing in this subsection shall excuse the requirement that the owner provide a duly executed private stormwater facilities operations and maintenance agreement per AMC 12.45.130 prior to the issuance of any of the approvals enumerated herein.

12.45.150 Right of entry – Inspection and testing.

The City Engineer shall be authorized and have the right to inspect all premises, sites, and/or activities covered under an approved post-construction stormwater permit or private stormwater facilities operation and maintenance agreements required under this chapter to determine compliance with this chapter and any rules or orders adopted by the Council or issued pursuant to this chapter.

(1) The City Engineer shall have the right to locate or install on the owner's property, or require installation of, such devices as are necessary to conduct sampling, inspection compliance, and/or monitoring operations.

(2) Where an owner has security measures in force that require proper identification and clearance before entry into its premises, the owner shall make necessary arrangements so, upon presentation of suitable identification, the City Engineer shall be permitted to enter without delay for the purposes of performing specific responsibilities.

(3) Owner shall allow the City Engineer ready access to all parts of the premises for the purposes of inspection, sampling, examination and copying of records that must be kept under conditions of post-construction stormwater quality permit or private stormwater facilities agreement, and the performance of any additional duties as defined by State and Federal law.

(4) Any temporary or permanent obstruction to safe and easy access to the facility to be inspected and/or sampled shall be promptly modified or removed by the owner at the written or verbal request of the City Engineer and shall not be replaced without the consent of the City Engineer. The costs of clearing such access shall be borne by the owner.

(5) Unreasonable delay in allowing the City Engineer access to a facility being developed under a post-construction stormwater quality permit or a facility operating under a private stormwater facilities operation and maintenance agreement is a violation of this title. Any person who denies the City Engineer reasonable access to the permitted facility for the purpose of conducting any activity authorized or required by this title commits an offense punishable under the general penalty.

12.45.160 Continuing obligations of owners and entities using, occupying, or controlling subject property.

It is unlawful for any entity which exercises control or authority over the maintenance of land, and/or improvements thereto, to fail to comply with the terms of a private stormwater facilities operation and maintenance agreement concerning the property over which they have such rights and/or responsibilities. Any provision of this chapter that creates a responsibility, duty, or obligation on the part of the owner also applies to any entity using, occupying, or in control of the subject property.

12.45.170 Unlawful conduct.

(1) It is unlawful to use land for any purpose for which development approval was conditioned, or permitted, upon the operation and maintenance of a private stormwater facilities operation and maintenance agreement without strict compliance with all terms of such agreement.

(2) It is unlawful to alter, damage, or interfere with any public or private post-construction stormwater quality facility without prior written approval from the City Engineer.

(3) Violation of this section is a misdemeanor punishable under the general penalty and a public nuisance which may be enjoined by the City.

Chapter 12.80
ENFORCEMENT

Sections:

12.80.010 Violations.

(1) It shall be unlawful for any person to violate any provision of, or fail to comply with, any of the requirements of this title. Any person who has violated, or continues to violate, the provisions of this title may be subject to any or all of the enforcement actions outlined in this chapter, or may be restrained by injunction or otherwise abated in a manner provided by law.

(2) Each day a violation occurs or continues shall be considered a separate violation.

12.80.015 Enforcement.

(1) The enforcement actions provided in this chapter are not exclusive; may be exercised singly, simultaneously, or cumulatively; may be combined with any other remedies authorized under law; and may be exercised in any order.

(2) To enforce any of the requirements of this title, the City Engineer may gain compliance by:

(a) Instituting any or all actions as set out in this chapter;

(b) Causing appropriate action to be instituted in a court of competent jurisdiction; and/or

(c) Taking other action as the City Engineer, in the exercise of the City Engineer's discretion, deems appropriate.

12.80.020 Notices deemed received.

Written notices required by this title shall be deemed received by an alleged violator under any of the following circumstances, whichever shall first occur:

(1) Upon personal service to the violator, or the violator's authorized agent, or any person apparently in charge of any office or place of business maintained by the alleged violator; or

(2) Upon execution of any return receipt or other proof of receipt of mail delivery by the alleged violator or any of the persons listed in subsection (1) of this section; or

(3) Three days following mailing by the City, via first-class U.S. Mail, to the alleged violator at the alleged violator's last known residence or place of business; or

(4) Upon proof of actual notice to the alleged violator of the general substance of the written notice.

12.80.025 Emergency suspension of municipal stormwater system access.

When the City Engineer finds that any discharger has violated any provision of this title, or any order issued hereunder, or that the discharger's past violations are likely to recur, and that said violations have caused or contributed to an actual or threatened discharge to the municipal separate storm sewer system or Waters of the State which reasonably appears to present an imminent or substantial endangerment to the health or welfare of people or the environment, the City Engineer may issue an order to the discharger directing an immediate cease and desist of all such violations.

(1) The order will direct the discharger to:

(a) Immediately comply with all title requirements; and

(b) Take such appropriate preventive action as may be needed to properly address a continuing or threatened violation, including immediately halting operations and/or terminating the discharge.

(2) Any person notified of an emergency order directed to him under this title shall immediately comply and stop or eliminate any endangering discharge. In the event of a discharger's failure to immediately comply voluntarily with the emergency order, the City Engineer may take such steps as deemed necessary to prevent or minimize harm to the municipal separate storm sewer system or Waters of the State, and/or endangerment to persons or the environment, including immediate termination of the facility's municipal stormwater connection or other municipal utility services.

(3) The City Engineer may require a person that is responsible, in whole or in part, for any discharge presenting imminent danger to submit a detailed written statement, describing the causes of the harmful discharge and the measures taken to prevent any future occurrence. Such written statement shall be submitted to the City Engineer within 30 days of receipt of the order.

(4) A person commits an offense if the person reinstates municipal separate storm sewer system access to premises terminated pursuant to this chapter without the prior approval of the City Engineer.

(5) The City Engineer may allow the discharger to recommence its discharge when it has demonstrated to the satisfaction of the City Engineer that the period of endangerment has passed, unless further termination proceedings are initiated against the discharger under this chapter.

(6) Issuance of an emergency cease and desist order shall not be a bar against, or a prerequisite for, taking any other action against the violator.

12.80.030 Warning notice.

When the City Engineer finds that any person has violated, or continues to violate, any provision of this title, or any order issued hereunder, the City Engineer may serve upon that person a written warning notice, specifying the particular violation believed to have occurred and requesting the discharger to immediately investigate the matter and to seek a resolution whereby any offending discharge will cease. Investigation and/or resolution of the matter in response to the warning notice in no way relieves the alleged violator of liability for any violations occurring before or after the receipt of the warning notice.

12.80.031 Notice of violation.

Whenever the City Engineer finds that a person has violated, or continues to violate, any provision of this title, or any order issued hereunder, the City Engineer may order compliance by written notice of violation to the responsible person stating the nature of the violation(s).

(1) Such notice may require without limitation any or all of the following:

(a) The performance of monitoring, analyses, and reporting;

(b) The elimination of illicit connections or illegal discharges;

(c) That violating discharges, practices, or operations cease and desist;

(d) The abatement or remediation of stormwater pollution or contamination hazards and the restoration of any affected property;

(e) The implementation of source controls or best management practices (BMPs); and

(f) The submittal of a compliance schedule.

(2) If abatement of a violation and/or restoration of affected property is required, the notice may set forth a deadline within which a compliance schedule for such remediation or restoration must be completed in accordance with MMC 12.80.036. Said notice may further advise that, should the violator fail to remediate or restore the affected property within the deadlines established by and agreed to in the compliance schedule, the work will be done by the City or a contractor designated by the City Engineer and the expense thereof shall be the responsibility of the violator pursuant to MMC 12.80.040.

12.80.032 Administrative order.

Whenever the City Engineer finds that a person has violated, or continues to violate, any provision of this title, or any order issued hereunder, the City Engineer may provide a written administrative order stating the nature of the violation(s) and imposing sanctions.

(1) This order will be served upon the discharger in accordance with MMC 12.80.020.

(2) These sanctions may include:

(a) An order requiring corrective action.

(b) An order setting penalties as described in MMC 12.80.060 in the event corrective action is not undertaken as ordered.

(c) An order imposing penalties as described in MMC 12.80.060 in lieu of, or in addition to, an order of corrective action.

(d) An order requiring payment of City costs incurred as a result of a violation.

(e) An order requiring a compliance schedule as described in MMC 12.80.036.

(f) Disconnection from the municipal stormwater system pursuant to the rights and procedures set forth concerning emergency suspension of service in MMC 12.80.025.

12.80.034 Permit suspension and revocation.

By written notification the City Engineer may suspend or revoke a permit issued under the provisions of this title. Such suspension or revocation may be issued whenever the permit is issued on the basis of incorrect information supplied, or if its issuance or activity thereunder is in violation of any term or condition of the permit, this title, or of other pertinent Federal, State, or local

statute, code, or regulation implemented through the enforcement of this title. Suspension or revocation of a permit will be subject to the provisions of MMC 12.80.035.

12.80.035 Stop work order.

When a person or entity engages in an activity in such a manner as to cause, or creates a condition which causes, a violation of the provisions of this title or of other pertinent Federal, State, or local statute, code, or regulation implemented through the enforcement of this title, the City Engineer may order all related activities stopped. The City Engineer's order will be served by notice, in writing, to persons engaged in the activity or causing such activity to be undertaken. Such persons shall forthwith stop all related activities until authorized by the City Engineer to proceed with the work.

12.80.036 Compliance schedule.

Following a release to the environment, the City Engineer may require the discharger to submit a compliance schedule. This schedule will be a detailed description of specific actions to be taken to correct, clean, remediate, or restore the environment, structures, or property harmed by the release within a time period acceptable to the City Engineer. The schedule will also address measures to prevent recurrence of the problem. Once approved by the City Engineer, any violation of the compliance schedule is considered a violation of this section.

12.80.040 Abatement.

(1) Immediate Abatement. The City Engineer is authorized to require immediate abatement of any violation of this title that constitutes an immediate threat to the environment or the health, safety or well-being of the public. If any such violation is not abated immediately as directed by the City Engineer, the City of Millersburg is authorized to enter onto private property and to take any and all measures required to remediate the violation. Any expense related to such remediation undertaken by the City of Millersburg shall be fully reimbursed by the property owner and/or responsible party. Any relief obtained under this section shall not prevent the City from seeking other and further relief authorized under this title.

(2) Abatement by the City. If the violation has not been corrected pursuant to the requirements set forth in any enforcement action issued by the City Engineer under this chapter, or in the event of a decision of an appeal under MMC 12.80.070, within 10 days of the decision of the City Council or Appeal Hearings Officer upholding the decision of the City Engineer, the City or a contractor designated by the City Engineer may enter upon the subject private property and is authorized to take any and all measures necessary to abate the violation and/or restore the property. It shall be unlawful for any person, owner, agent, or

person in possession of any premises to refuse to allow the City or designated contractor to enter upon the premises for the purposes set forth above.

(3) Recovery of Abatement Costs. Within 30 days after abatement of the nuisance by the City, the City Engineer or his/her designee may prepare a summary of all costs incurred to abate the nuisance, including administrative costs. This summary of costs may be delivered to the same person or persons to whom the enforcement action was sent per MMC 12.80.020, or their successors in title, and shall advise of the City's intent to assess said costs against the real property and shall further advise the owner/owners of their right to a hearing before the City Council prior to assessment upon receipt by the City Engineer, within 15 days of the date of receipt of notice, of a written request for a hearing.

(a) If the costs of abatement are not paid to the City within 30 days from the date of the receipt of the summary of costs, said summary shall be presented to the City Council and if the Council finds said costs to be reasonable, the Council shall pass an ordinance or resolution directing the amount of said costs be entered in the docket of City liens; and upon such entry being made, said costs shall constitute a lien upon the property in question. Prior to passing said ordinance or resolution, the Council will afford the property owner/owners a right to be heard by the Council if a written request for hearing has been received by the City Engineer within 30 days of the date of mailing of the aforesaid summary of costs.

(b) The lien shall be enforced and shall bear interest at a rate to be determined by the Council at the time of the ordinance or resolution referred to above. The interest shall commence from the date of entry of the lien in the lien docket and shall have priority over all other liens and assessments to the maximum extent permitted by law.

(c) An error in the name of the property owner/owners/agents shall not void the assessment nor will a failure to receive the notice of the proposed assessment render the assessment void, but it shall remain a valid lien against the property.

12.80.050 Violations deemed a public nuisance.

In addition to the enforcement processes and penalties herein provided, any condition caused or permitted to exist in violation of any of the provisions of this title is a threat to the environment, public health, safety, and welfare, and is declared and deemed a nuisance, and may be summarily abated or restored by the City at the violator's expense, and/or a civil action to abate, enjoin, or otherwise compel the cessation of such nuisance may be taken by the City.

12.80.060 Penalties.

(1) Administrative Fines. When the City Engineer finds that a discharger has violated, or continues to violate, any provision of this title or any order issued hereunder, and that said violations have caused or contributed to an actual or threatened discharge to the municipal stormwater system or Waters of the State

which reasonably appears to present an imminent or substantial endangerment to the health or welfare of people or the environment, the City Engineer may fine such discharger. The amount of such administrative fine shall not be less than $250.00 per violation nor more than $2,500 per violation. Each day upon which a violation occurs or continues shall constitute a separate violation.

(2) Recovery of Costs Incurred by the City. Any person violating any of the provisions of this title who discharges or causes a discharge producing an obstruction or causes damage to or impairs the City's stormwater system shall be liable to the City for any expense, loss, or damage caused by such violation or discharge. The City may require the discharger to pay for the costs incurred by the City for any cleaning, repair, or replacement work caused by the violation or discharge and for costs incurred by the City in investigating the violation and in enforcing this title against the user, including reasonable administrative costs, fees for testing, attorney fees, court costs, and all expenses of litigation. Refusal to pay the ordered costs shall constitute a violation of this title. The user shall also reimburse the City for any and all fines or penalties levied against the City as a result of a discharge by the user.

(3) Criminal Penalties. It shall be a misdemeanor punishable under the general penalty provisions of Chapter 1.20 MMC for any person to violate any provision or fail to comply with any of the requirements of this title. The maximum fine or penalty imposed by the municipal court shall be no less than $250.00 for each violation and no part of the fine shall be suspended. Each day upon which a violation occurs or continues shall constitute a separate violation. The City may commence an action for appropriate legal and/or equitable relief in the appropriate local court to enforce the penalty or remedy imposed by the City hereunder.

(4) Compensatory Action. In lieu of enforcement proceedings, penalties, and remedies authorized by this title, the City Engineer and alleged violator may agree upon alternative compensatory actions, such as storm drain stenciling, attendance at compliance workshops, creek cleanup, etc.

12.80.070 Appeal.

(1) Notwithstanding the provisions of MMC 12.80.025 and 12.80.040(1), any person or entity receiving a written notification of an enforcement action under this title may, within 10 days of the receipt of such notice, request in writing that the City Engineer review the enforcement action. The written request (letter of appeal) shall state all points of disagreement and objection to the enforcement action. Upon receipt of the letter of appeal, a meeting shall be scheduled with the City Engineer of the City of Millersburg, or authorized representative. The City Engineer or authorized representative shall affirm, modify, or dismiss the enforcement action, and shall give written notice of his or her decision to the alleged violator.

(2) Within 10 days of receipt of the City Engineer's written notice of decision outlined above, the alleged violator may appeal the City Engineer's decision by

serving a written notice of such appeal in the same manner as provided above. Thereafter, a hearing on such appeal shall be scheduled before City Council of the City of Millersburg, or such Appeal Hearings Officer as the City may appoint for such purpose, at the discretion of the City Manager, considering the nature of the issues presented on appeal and the time constraints, resources, and schedule of the public hearing bodies. Thereafter, the City Council or the Appeal Hearings Officer may render its decision based upon the record of the hearing on the enforcement action, grant an additional hearing to take additional evidence, or conduct a de novo hearing. The City Council or Appeal Hearings Officer, in consultation with the City Attorney, shall establish rules and procedures for the conduct of the appeal in order to accord the discharger lawful due process. The burden of proof, on appeal, shall remain with the City by a preponderance of the evidence. The City Council or Appeal Hearings Officer shall affirm, reverse, or modify the findings, conclusions, and requirements of the enforcement action and shall serve its decision, in writing, upon the discharger. The decision of the City Council or Appeal Hearings Officer shall be final.

12.80.080 Remedies not exclusive.

The remedies listed in this title are not exclusive of any other remedies available under any applicable Federal, State, or local law and it is within the discretion of the City Engineer to seek cumulative remedies. The City Engineer may recover all attorneys' fees, court costs, and other expenses associated with enforcement of this title, including sampling and monitoring expenses.

TO: Millersburg City Council

VIA: Kevin Kreitman, City Manager

FROM: Janelle Booth, Assistant City Manager/City Engineer

DATE: December 5, 2019 for the December 10, 2019 City Council Meeting

SUBJECT: Engineering Standards

Action Requested:
Staff request Council adoption Engineering Standards for the City of Millersburg.

Discussion:
Over the past year, staff have been working to develop engineering standards for design and construction of public infrastructure in Millersburg. In the past, in the absence of Millersburg having adopted its own engineering standards, Albany's engineering standards have been relied upon to guide the design of infrastructure.

The proposed Millersburg Engineering Standards are modeled after Albany's, with modifications specific to Millersburg. Because Millersburg has Intergovernmental Agreements (IGAs) with the City of Albany for operation and maintenance of water and sewer systems, the water and wastewater sections of the Engineering Standards are identical to Albany's and will be regularly updated to insure we remain in compliance with the IGAs. The streets and stormwater sections have been modified to be in alignment with Millersburg's adopted Transportation System Plan, Land Use Development Code, and stormwater regulatory requirements.

The proposed resolution has been written to adopt the proposed Engineering Standards and also gives staff the ability to update them in the future as determined necessary by the City Engineer, without requiring Council approval.

Recommendation:
Adoption of Resolution 2019-22, Engineering Standards.

Attachment(s):
- Resolution 2019-22 – Engineering Standards
- Engineering Standards

RESOLUTION NO. 2019-22

A RESOLUTION OF THE CITY OF MILLERSBURG, OREGON, ADOPTING ENGINEERING STANDARDS

WHEREAS, public facilities within the City of Millersburg are designed and constructed; and,

WHEREAS, the City of Millersburg desires to regulate standards for the design and construction of public facilities by adopting and maintaining appropriate Engineering Standards; and,

WHEREAS, it is in the public interest that all public improvement designs conform to these standards;

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF MILLERSBURG AS FOLLOWS:

1) The City of Millersburg Engineering Standards are hereby adopted.

2) The Council of the City of Millersburg delegates authority and directs the City Engineer to update, maintain currency, and administer these standards as necessary.

Effective Date. This Resolution shall be effective upon its approval and adoption.

Duly passed by the City Council this 10th day of December, 2019.

_____

Jim Lepin, Mayor
City of Millersburg, Oregon

ATTEST:

_____

Kimberly Wollenburg
City Recorder

DIVISION A - GENERAL

A 1.00 - INTRODUCTION

A 1.01 PURPOSE AND ORGANIZATION

The purpose of these Engineering Standards documents is to provide a consistent policy for implementing design of public improvements and related facilities. The elements contained herein are Public Works oriented and are related to public improvements.

These Engineering Standards cannot provide for all situations. They are intended to assist, but not to substitute for competent work by design professionals by providing basic information. Engineers are expected to bring the best of their skills and judgment from their respective disciplines to each project. If the Engineer anticipates challenges in meeting these Engineering Standards, they should contact the City prior to extensive design efforts.

These Engineering Standards are also not intended to limit unreasonably any innovative or creative effort, which could result in better quality, better cost savings, or both. Any proposed departure from the Engineering Standards will be judged, however, on the likelihood that such variance will produce a long- term compensating or comparable result, in every way adequate for the user and resident. Any departure from these standards shall only be allowed by the approval of the City Engineer.

A 1.02 APPLICABILITY AND AUTHORITY

This Engineering Standards document shall govern all design and upgrading of all public improvements and related facilities within the City of Millersburg. This document will be routinely referred to as the Engineering Standards. These standards are developed under the authority of the City Engineer or the City Engineer's designee. Modifications of or variations from these Engineering Standards shall be approved by the City Engineer or the City Engineer's designee.

Appeals to these Engineering Standards for specific project application shall be in writing. The appeal shall identify the standard section for which the appeal is being made, reasons for the appeal, and for which specific project/application the appeal is being made. The appeal shall be handled at the lowest level possible. Therefore, appeals shall be forwarded to the City in the following order:

A. The staff person reviewing the project plans and specifications.

B. City Engineer

A 1.03 ENGINEERING POLICY

The City of Millersburg requires strict compliance with Oregon Revised Statute 672 for professional engineers. All engineering plans, reports, or documents shall be prepared by a registered professional Civil Engineer or by a subordinate employee under his/her direction, and shall be signed by him/her and stamped with his/her seal to indicate responsibility for them. It shall be the project engineer's responsibility to review any proposed infrastructure extension, and/or existing system change with the City, prior to

engineering or proposed design work, to determine any special requirements or whether the proposal is permissible. An approval stamp of the City on the plans or other documents, for any job, does not in any way relieve the project engineer of his/her responsibility to meet all requirements of the City or obligation to protect the life, health, and property of the public. The plan for any project shall be revised or supplemented at any time it is determined the full requirements of the City have not been met.

A 1.04 REFERENCES

These Engineering Standards are intended to be consistent with the most current provisions of the documents and requirements as listed below. Periodic revisions to these Engineering Standards will be made as necessary to maintain consistency in that regard. Nevertheless, all projects are expected to be consistent with the:

A. *Millersburg Municipal Code*
B. *Millersburg Land Use Development Code*
C. Millersburg's adopted *Standard Construction Specifications*
D. State regulations
E. Federal regulations

Proper design of public improvements must follow and incorporate the City's *Standard Construction Specifications.*

A 2.00 - EASEMENTS

A 2.01 GENERAL REQUIREMENTS

Where an easement is needed to construct the public improvement, the following guidelines and requirements will govern the requirements for and the use of public easements:

A. Easements will only be permitted when it has been shown to be impractical or unfeasible to locate the needed public improvement within the public right-of-way. Utilities in the right-of-way shall be located as shown on figure A 3.1.

B. All public utilities located on private property shall be located at the center of a permanent easement. The easement for a single line shall be 15 feet in width for water lines and 20 feet in width for sewer and storm drain lines. If two or more lines are located within the same easement, the easement width shall be increased. Easement widths and configuration shall conform to figure A 3.2.

C. If a utility is deeper than 10 feet or has a diameter greater than 24 inches, a wider easement may be required. In such cases, a slope of one horizontal to one vertical will be used to determine the width of the easement, after taking into account the width of the pipe trench itself.

D. At the terminus of all public lines, the easement shall be extended a minimum of 10 feet past the end of the line, manhole, or cleanout.

E. All easements shall be granted to the City on a standard approved format. All private easements shall consist of two separate 8.5 by 11-inch exhibits. Exhibit A shall provide the easement's legal description, as prepared by a registered Oregon professional land surveyor. Exhibit B shall provide a site and vicinity survey drawing of the final easement configuration, also prepared by a registered Oregon professional land surveyor.

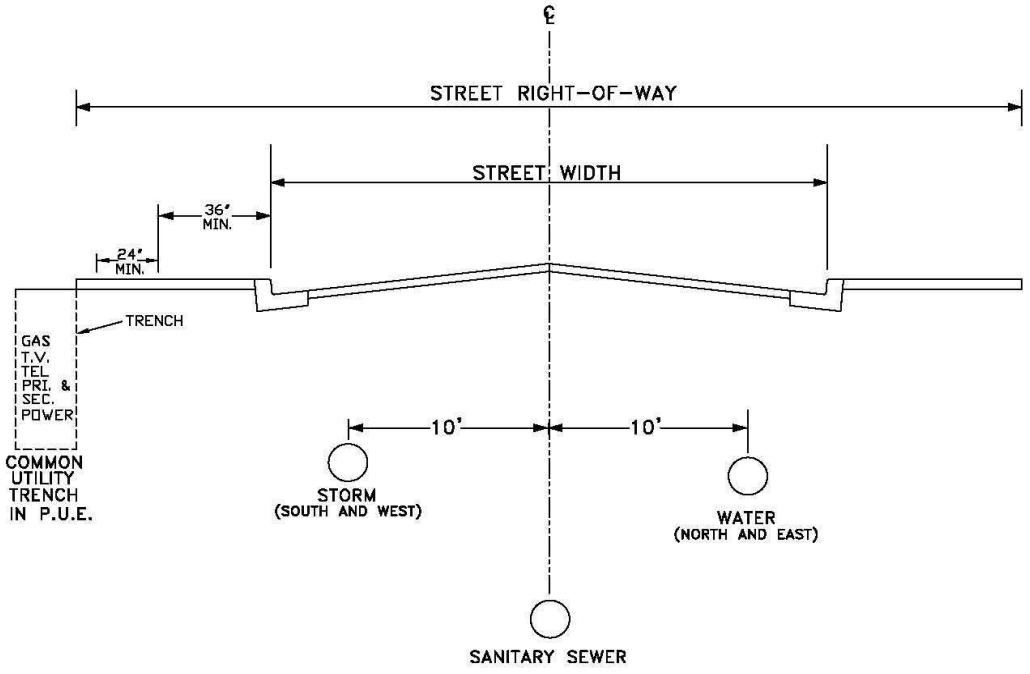
F. Any variation in easement widths shall vary in 5-foot increments.

G. All easements shall be shown on the City-approved project engineering drawings.

H. Public easements within Planned Developments, manufactured home parks, apartment complexes, or commercial/industrial developments shall be located in parking lots, private drives, or similar open areas that permit unobstructed vehicle access for maintenance and inspection purposes.

I. Easements along property lines shall be centered on the property line. For these locations, place the utility 18 inches off the property line.

J. Easements shall be in effect prior to construction. All easements must be furnished to the City for review and approval prior to recording.



NOTES:

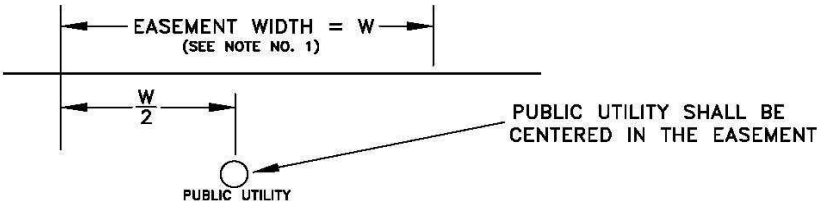
1. PRIVATE FRANCHISE UTILITIES SHALL BE LOCATED OUTSIDE OF THE STREET RIGHT OF WAY IN A PUBLIC UTILITY EASEMENT (P.U.E.).

FOR PROJECTS ON EXISTING STREETS WHERE ADDITIONAL RIGHT-OF-WAY OR EASEMENTS CAN NOT BE ACQUIRED:

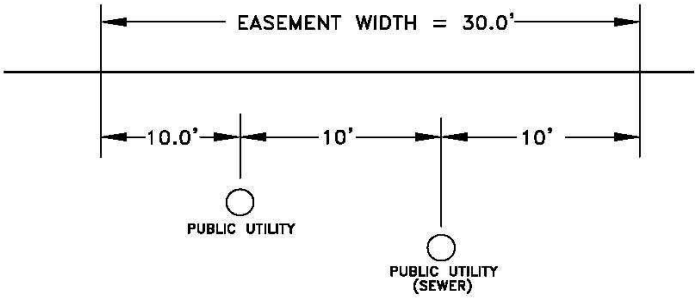
2. ALL PRIVATE AND FRANCHISE UTILITIES TO BE LOCATED A MINIMUM OF 3' BEHIND THE CURB.
3. MINIMUM COVER FOR PRIVATE UTILITIES IS 30".
4. CONTACT RESPECTIVE PRIVATE UTILITY COMPANY FOR SPACING REQUIREMENTS WITH OTHER PRIVATE UTILITIES.
5. MAINTAIN A MINIMUM LATERAL CLEARANCE OF 7.5' BETWEEN WATER AND POWER.
6. AN INCREASE IN UTILITY SEPARATION MAY BE REQUIRED IF ANY UTILITY IS OVER 10' DEEP OR OVER 24" IN DIAMETER.
7. ANY VARIATIONS FROM THIS DESIGN MUST BE APPROVED BY THE CITY ENGINEER.

FIGURE A3.1
UTILITY LOCATIONS WITHIN STREET RIGHT-OF-WAY

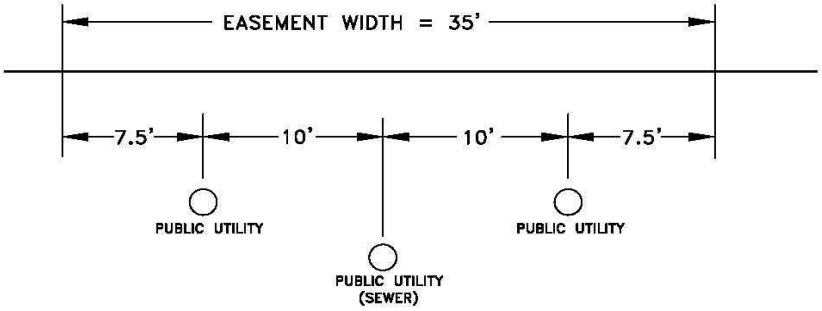
NO SCALE	AUGUST 2005	A3.1



EASEMENT FOR SINGLE PUBLIC UTILITY LINE



EASEMENT FOR TWO PUBLIC UTILITY LINES



EASEMENT FOR THREE PUBLIC UTILITY LINES

NOTES:

1. MINIMUM EASEMENT WIDTHS FOR VARIOUS UTILITIES ARE:

WATER	W = 15FT.
STORM DRAIN	W = 20FT.
SANITARY SEWER	W = 20FT.

2. AN INCREASE IN EASEMENT WIDTH MAY BE REQUIRED FOR ANY PUBLIC UTILITY THAT IS OVER 10' DEEP OR OVER 24" IN DIAMETER.
3. WITH THE EXCEPTION OF UTILITY CROSSINGS, PRIVATE UTILITY LINES MAY NOT BE LOCATED WITHIN THE PUBLIC UTILITY EASEMENT.
4. NO STRUCTURES, INCLUDING DECKS AND OVERHANG AREAS, MAY ENCROACH INTO THE EASEMENT AREA.

FIGURE A3.2
EASEMENT WIDTH REQUIREMENTS

NO SCALE	AUGUST 2005	A3.2

A 3.00 - DRAFTING STANDARDS

A 3.01 PURPOSE OF THESE STANDARDS

These Engineering Standards have been established to facilitate producing drawings that are consistent in appearance and presentation. These drafting standards are intended to provide consistent drawings and records of the City's infrastructure. Adherence to these Engineering Standards will aid the City in maintaining accurate and readily readable records. It will also aid in the efficient review and turnaround of construction plans.

These Engineering Standards are to be followed by all consultants and sub-consultants who are involved in producing drawings for City of Millersburg projects and Private Construction of Public Infrastructure (PCPI) projects. Exceptions will be made only after a request has been submitted and approved by the City Engineer. If any situation occurs that is not specifically addressed, application of good judgment on the part of the engineer is appropriate.

A 3.02 DRAWING CREATION AND LAYOUT

All drawings will be created in AutoCAD. AutoCAD drawings submitted to the City digitally shall be compatible with the AutoCAD release being used by the City at that time. Drawings shall be located and oriented within the horizontal Oregon State Plain Coordinate System (NAD 83-89). All elevations shall be in the National Geodetic Vertical Datum of 1929 (NGVD 1929).

Review drawings may be submitted on 11-inch x 17-inch paper. Bidding and construction documents may also be printed on 11-inch x 17-inch paper. Final as-built drawings must be submitted to scale on white, acid-free Engineering bond paper. Drawings shall be drawn such that reduction of plans from full size (24x36) to half size (11x17) can be done and maintain a true scale on the half-sized plans.

A 3.03 SHEET LAYOUT AND DESIGN INFORMATION

A. Title Sheets. All projects shall include a title sheet. This requirement may be waived if the project consists of only one plan sheet. If a title sheet is not used for a single sheet project, a vicinity map must be included on the single sheet. One title sheet may be used when constructing more than one facility (sewer, storm drain, etc.); however, all requirements for the title sheet must be met. The following information shall be included on all title sheets:

    1. A Site Plan of the entire project, showing street right-of-way and/or subdivision layout. The site plan shall be a composite plan showing all complete properties to be served by the improvements and properties adjacent to and within 100 feet of those served. A North arrow shall be included on the title sheet and shall be oriented to the top of the sheet.
    2. Index of Sheets.
    3. Complete legend of symbols used.
    4. Vicinity Map to a scale of not less than 1" = 800' showing the project location.

5. Permanent bench marks including their descriptions.
6. General and special notes relating to construction methods.
7. A statement referencing the *Standard Construction Specifications.*
8. Statement required by state law regarding utility locates.
9. Statement requiring compliance with federal, state and local erosion prevention and sediment control regulations.

B. Plan and Profile Sheets. Plan sheets shall be laid out and organized in a fashion that facilitates easy plan reading and interpretation. Proposed utility improvements shall be laid out on individual plan sheets. For example, street, sewer, water, and storm drain plans shall each be on their own designated plan sheet. Do not combine utilities and street plans on the same plan sheet. Storm drain improvements associated directly with street improvements can be combined on the street plan sheets.

1. Plan Sheets: Plan sheets shall show all existing improvements within the boundary of the project and within 250 feet of the terminus of the proposed improvements that can be extended. Items that should be included are:

a) Natural Features: Base sheets shall include at least 10-foot contour lines to show the existing topographical characteristics of the site and adjacent areas that impact the project or are immediately impacted by the project. Contour lines of 2-foot intervals may be required when grades are flat or additional information is required. Alternative contour intervals may be used with prior approval of the City Engineer. Identify all relevant features, including ditches, swales, channels, streams, and trees.

b) Transportation Improvements: Show all existing edge of pavement/curbs, bridges, alleys, driveways, and sidewalks that are adjacent to or abutting the project. Include the location of curb cuts and wheel chair ramps. Show all lights, signs, signals, signal loops, boxes, etc. Show all railroad tracks and crossings. Show existing slopes and grades of improvements.

c) Public Utilities: Show all water, sewer, and storm drain lines, including service laterals. Identify manholes, drainage inlets and outlets, valve and meter locations, hydrant locations, and all other appurtenances. Indicate elevations of each feature at match points with the appropriate slope, grade, or direction of flow indicated. Abandoned utilities shall also be shown where known.

d) Franchise Utilities: Show franchise utilities, including underground and overhead lines, vaults, poles, and all appurtenances, located within or adjacent to the project, or that would be affected by the project.

e) Private Improvements: Show all property and right-of-way lines, easements, and found survey monuments. Show all relevant existing improvements within or adjacent to the project, such as railroads, private streets and walks, landscaping, fences, walls, trees, buildings

or structures, wells, private utility lines and appurtenances, and any other existing feature that would impact or be impacted by the project.

f) Hydrology. Location of water courses, streams, ditches, and swales that will be impacted or affected by the project. All water course crossings must show the 100-year floodplain.

Special Note: The design engineer shall perform field investigations to determine an accurate picture of existing utilities. This shall be done to assure the project can be built as designed and to prevent conflicts that will significantly alter the construction of the improvements from the approved plans. For utility connection locations, the design engineer shall field locate and verify the alignment, depth, invert elevations, and connection requirements of all existing facilities shown on the plans. All other utilities that will be crossed by proposed facilities that may cause a conflict shall also be field located for the alignment, depth, and invert elevations. City as-built drawings are only to be used as aids to the design engineer when field verifying the existing facilities.

2. Profiles. Profiles for the improvements shall be to the same horizontal scale on the same sheet and drawn immediately below the corresponding plan view, and shall be required in the following instances:

   a) All street, sewer, and storm drain improvements.

   b) On water line projects at railroad and culvert crossings, ditch or stream crossings with elevations of the ditch or stream bed, and the 100-year flood elevation profile and casing details; utility crossings that conflict with the proposed water line installation; water lines installed in unimproved streets or easements across private property; or as otherwise directed by the City.

C. In addition to the standard information that must be provided on all plans, there are some specific information and guidelines required on plans for each type of improvement.

1. Water Improvements:

   a) Type and location of internal restraint where required. Pipe with internal restraint shall be shown as a heavier/different line type than pipe without internal restraint.

   b) Type and connection configuration of all proposed fittings, valves, and appurtenances.

   c) Detailed drawings shall be included for all water system appurtenances and connections to existing water lines. Where appropriate, references to the *Standard Construction Specifications* may be used in-lieu-of details actually shown on the plans.

   d) Type of material and class of pipe between fittings.

   e) Backfill material of the trench.

f) All water system components not specifically covered by Standard Detail Drawings, as found in the *Standard Construction Specifications*, shall be identified on the construction drawings. Components shall be identified as to type and connection configuration, i.e. flange, mechanical joint, etc.

NOTE: All connection and detail information shall be shown on the plan view (not profile view).

2. Sewer Improvements:

   a) Type of material and class of pipe between manholes.

   b) Backfill material of the trench.

   c) Invert elevations, direction, and diameter of all pipes at manholes.

   d) Rim elevations of all manholes (and ground elevation if different than rim elevation).

   e) Pipe slopes.

   f) All sewer system components not specifically covered by Standard Detail Drawings, as found in the *Standard Construction Specifications*, shall be identified on the construction drawings.

3. Storm Drain Improvements:

   a) Type of material and class of pipe between manholes and inlets.

   b) Backfill material of the trench.

   c) Invert elevations, direction, and diameter of all pipes at manholes.

   d) Rim elevations of all manholes (and ground elevation if different than rim elevation).

   e) Pipe slopes.

   f) All storm drain system components not specifically covered by Standard Detail Drawings, as found in the *Standard Construction Specifications*, shall be identified on the construction drawings.

   g) Inlet and outlet details, including grate details.

   h) Open channel invert and top of bank slopes. High and mean water surface elevations shall also be shown on the plans where appropriate.

   i) Cross sections shall be shown for each section of open channel. The cross sections shall have invert, top of bank, high, and mean water surface elevations labeled on them.

4. Street Improvements:

   a) Standard cross section with structural sections for each street. Cross sections shall extend a minimum of 25 feet beyond the existing or proposed right-of-way. In steeper areas, cross sections shall be shown to catch points. Cross sections shall be developed for all

areas where improvement dimensions are different and for all locations where the adjacent property's topography changes.

b) Dimensions shall be shown on each plan sheet indicating right-of-way width, street width, distance from centerline to face of curb, width of the landscape strip, and sidewalk width.

c) Horizontal Alignment: Show the construction centerline for each street, with stationing labeled at 50-foot intervals, beginning and ending points, centerline-centerline intersections, and changes in horizontal alignment. The future horizontal alignment of dead-end streets shall be shown 250 feet beyond the proposed termination point.

d) Horizontal Curves: For each horizontal curve, show stationing labels for Point of Curvature (PC), Point of Reverse Curvature (PRC), and Point of Tangency (PT). In a table on the plan sheet, show the centerline curve data including the tangent length, curve length, long chord distance, delta angle, and centerline radius distance.

e) Curb and Gutter Alignment: Show face of curb alignment throughout the project, labeling alignment changes with street stationing. The beginning or end of curb returns at intersections shall be labeled with the appropriate street station, with curb return data listed in a table on the plan sheet. The table shall show the total length of the return, delta angle, curb radius distance, and elevations of the beginning, ¼ delta, ½ delta, ¾ delta, and end of the return.

f) Profile Information: The profile information for each street design shall be to the same horizontal scale, on the same plan sheet, and drawn immediately below the corresponding plan view. The profile grid shall clearly show elevations along the left and right sides of the grid and label stations every 50 feet along either the top or bottom of the grid.

g) Vertical Grades: Show the existing ground and finish grade profiles at the top face of curb (or at edge of pavement if curb is not being constructed) and the finish grade profile at centerline. The proposed future vertical alignment of dead-end streets shall be shown 250 feet beyond the proposed termination point, and the vertical alignment of existing side streets shall be shown at least 40 feet beyond the curb return. This is to insure that the street grade is set low enough to enable the adjacent properties to drain to the street. On each plan sheet, the street and curb grades shall be labeled on the profile for each tangent section near grade breaks or vertical transitions.

h) Vertical Curves: For each vertical curve, label the station and elevation for the Vertical Point of Curvature and Vertical Point of Tangency on the profile. At a convenient location on the profile, list the station and elevation for the Vertical Point of Intersection, Turning Point, and length of the vertical curve.

5. Grading Plans:

    a) Show contours at a minimum of 2-foot intervals. Indicate whether land is cut or filled.

    b) Identify the direction of flow for all ditches and creeks and water surface elevations for lakes.

    c) Identify drainage direction and drainage basin boundaries.

    d) Provide cross sections or profile plans to show existing and final grading.

A 3.04 DRAWING TITLE BLOCK

Standard title blocks shall be used unless otherwise specified. The preferred location for the title block is vertically on the right-hand side of the drawing.

Upon creation or revision of a drawing, the information/attributes inserted into the title block of the drawing shall be revised. All information relevant to finding the file, plotting the file, and dating the plot shall be listed in the appropriate portion of the title block. Regardless of the title block location and or size, the title block shall contain the following at a minimum:

A. Project Name

B. City Project Number

C. Designer's name

D. Drafter's name

E. Date of last edit

F. Engineer's stamp

G. CADD file name

H. Other plotting codes

A 3.05 PROFESSIONAL STAMPS AND CITY APPROVAL STAMPS

Professional stamps shall be included on all drawings submitted for review for the discipline represented by the work. The preferred placement of the stamp is within the title block.

Drawings for privately-constructed site improvement projects shall provide a 3-inch square near the bottom right of each plan sheet for placement of the City plan approval stamp.

A 3.06 DRAWING SCALES

A. Scales for Maps, Graphics, and Construction Plans. A graphic scale is required on all maps and graphics. The graphic scale shall be two-inches long on 24x36- sized sheets and one-inch long on 11x17-sized sheets. It shall have a minimum of three labels, with the leftmost label being 0 and the middle and rightmost labels displaying the appropriate distances respectively, as shown in Figure A 3.06-A.

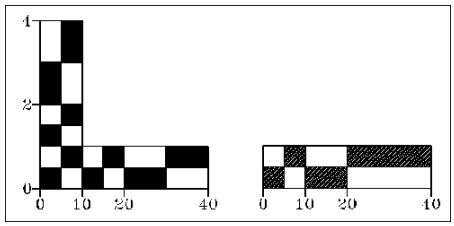


Figure A 3.06-A Drawing Scale

All construction drawings are to have the scale clearly indicated. When the drawing contains only one view, detail, or section, the scale is to be noted prominently on the drawing. When the drawing contains multiple views, and/or details, and/or sections, the scale is to be noted as part of each individual component's title. When all views and/or details and/or sections on a single drawing are the same scale, the scale should be noted in the appropriate space on the drawing.

The preferred scale for plan and profile drawings shall be 1" = 20'. However, scale must be selected with the following requirements in mind:

1. Maintain clarity when notes and dimensions are added to the drawings.
2. Maintain legibility when drawings are reduced to half size.

The use of distorted scales (different horizontal and vertical scales) is acceptable for profile map and graphical drawings. For example, for plan and profile views on map and graphical drawings, the vertical and horizontal scales should have a 1:10 ratio where possible. That is, if the vertical scale is 1 inch = 2 feet, then the horizontal scale should be 1 inch = 20 feet. Similarly, a 1 inch = 10 feet vertical scale would correspond to a 1 inch = 100 feet horizontal scale, and so on. However, distorted scales are not acceptable for mechanical drawings.

A 3.07 DRAWING ORIENTATION

A. North Orientation. General plans such as maps and site plans must always include a north arrow. If possible, the north arrow should point to the top on all drawings. However, the north arrow should be oriented to allow project stationing to increase from left to right and from bottom to top of page. However, North should not be oriented to the bottom of the page.

B. North Arrow Placement. North arrow locations on construction drawings are preferred in the upper right corner. Exceptions may be made, but consistency

should be maintained throughout the drawing set.

Figure A 3.07-A North Arrow

C. Sizing. For 11x17-size, the size of the North arrow should be 1.0" from top to bottom. For 24x36-size drawings, the size of the North arrow should be 2" from top to bottom.

A 3.08 TEXT

A. General. All text on a drawing shall be legible on full- and half-sized plans. Text should be laid out as shown in Figure A 3.08-A unless otherwise specified in this standard. Uppercase lettering shall be used for all text.

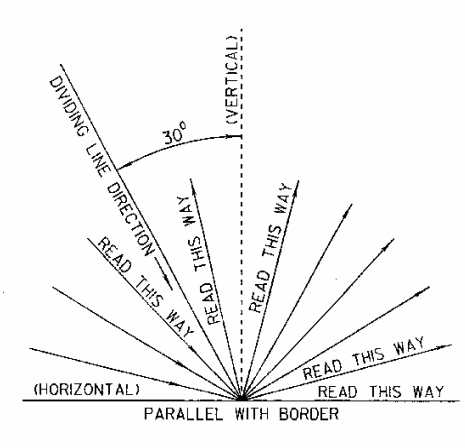


Figure A3.08-A Text

B. Text Over Linework. Whenever text and linework conflict, the text should be relocated if possible. If this is not possible, the linework can be broken at the drafter's discretion.

C. For Mapping Projects. The Engineering Standards shall be applied wherever possible unless specific presentation needs require the use of special fonts. The use of special fonts should be minimized and font sizes, placement, and location should be consistent throughout the project.

A 3.09 DIMENSIONS

A. General. Dimensions less than 12 inches shall be shown as inches with an inch label i.e., 11". Dimensions 12 inches and larger shall be shown in feet and tenths of feet. Decimal fractions shall be rounded off to the nearest hundredth. Horizontal dimensions shall be shown on plan views only unless used on other views when needed for clarity. Vertical dimensions shall be shown on sections, elevations, and details only unless used on other views when needed for clarity. Dimensional repetition shall be avoided.

Dimensions referring to structure size, wall thickness, wall penetrations, and the like

shall be shown on structural drawings only, unless required on other drawings for clarity. Dimensions locating equipment, clearance between equipment, or piping shall be shown on mechanical drawings only. Dimensions shall be set as follows:

1. All dimensions and leader lines shall use arrows 0.10" to 0.25" long (in paper space).
2. All text shall be centered above the dimension.
3. All dimensions shall force interior lines.
4. Text shall be parallel with the dimension line or the orientation of the plan sheet.

A 3.10 LEADER LINES

Avoid leader lines that are:

A. Horizontal or vertical

B. At the same angle as cross-hatching

C. At very small angles to the terminating surface

D. Parallel to extension or dimension lines

E. Curved

F. Crossed

G. Too long

Crossing dimensions and leaders are generally to be avoided. When necessary, the leader lines are to be broken so that the lines will not physically cross on the paper.

A 3.11 PLANS, SECTIONS, AND DETAILS

A. Plans. Plans that do not show entire structure, areas, or the like, shall be titled "Partial Plan." Do not abbreviate "Partial."

   Plans shown within a structure shall have the elevation as part of the title. Such a title would read: "PLAN AT ELEVATION 94.00." The elevation indicated shall be the high-point elevations of the bottom slab.

B. Sections. Sections shall be called out alphabetically within a series of drawings, with the section letter used only for one section in that series. When the sections are so numerous that the alphabet is used up, start with AA, AB, AC, etc. The letters I, O, or Q should not be used. Sections shall be titled in accordance with Figure A 3.14-A.

   Section cuts and the views they indicate may be shown either on the same sheet or on a different sheet. If a drawing shows only sections, details, and so on, sections take precedence, and are shown in sequential order from the drawings top left corner.

   Show a section cut on the drawing with a cutting-plane line terminating at both ends with arrowheads pointing perpendicular to the line. Label each end with the section letter.

C. Details. Details shall be called out numerically within a series of drawings, with the

detail number used only for one detail in that series. Details shall be titled with detail number and the plan sheet on which it appears. As with sections, details may be shown on the same sheet or a different sheet depending on their size.

A 3.12 CONTOURS

Inclusion of contours on drawings shall be included as outlined in A 3.03 B 1. a). Otherwise they shall be omitted to keep the drawing clear and uncluttered.

A. Recommended Contour Interval:

Contour Interval	Indexed Interval
1 foot	5 feet
2 feet	10 feet
10 feet	50 feet
20 feet	100 feet
40 feet	200 feet

B. Contour Cross Sections. Contour cross sections are generally to be created with the same vertical and horizontal scale factors. Grid spacing is to be developed such that grid lines appear every 0.25 inch in the horizontal direction with labels every 0.5 inch. Vertical grid spacing may be as often as necessary to convey the needed information.

A 3.13 ABBREVIATIONS

Abbreviations shall be used only when enough room is not available to spell out the word. Any abbreviations used on the drawing shall be defined on the cover sheet of the plans. If there is any question as to the meaning of an abbreviation, spell out the entire word.

Standard abbreviations to be used for different pipe types are as follows:

ABS - Acrylonitryle Butadiene Styrene
AC - Asbestos Cement
ACT - Transite
CI - Cast Iron
CMP - Corrugated Metal
CONC - Concrete
DI - Ductile Iron
GI - Galvanized Iron
HDPE - High Density Polyethylene
NCP - Non-Reinforced Concrete
ODDW - Steel, Outside Diameter, Dipped and Wrapped
PVC - Polyvinyl Chloride
RCP - Reinforced Concrete
STL - Steel
TEC - Techite
TRU - Truss
VCP - Vitrified Clay

A 3.14 SYMBOLS

Each set of plans shall have a symbol index on the cover sheet. The symbol index shall show all symbols used on the plans.

A 3.15 MODEL SPACE / PAPER SPACE

A. Model Space. All drawings shall be created at 1:1 in model space and scaled into paper space for plotting except where unavoidable or the scale of the drawing allows it to be drawn at 1:1 in paper space.

   Text, arrowheads, section callouts, north arrows, etc. used in model space shall be appropriately scaled such that they are the standard size in 1:1 paper space.

B. Paper Space. Paper space shall be 1:1 scale. All drawings except 1:1 drawings shall be scaled from model space into paper space by creating viewports and zooming to the appropriate scale factors.

DIVISION B - WATER DISTRIBUTION SYSTEM

B 1.00 – GENERAL

B 1.01 PURPOSE

The purpose of these *Water Distribution System Engineering Standards* is to provide a consistent policy under which certain physical aspects of water distribution design will be implemented. Most of the elements contained in this document are Public Works oriented. The intent is that these *Engineering Standards* apply to both City-initiated projects as well as private development of public infrastructure.

These *Engineering Standards* cannot provide for all situations. They are intended to assist, but not to serve as a substitute for competent work by design professionals. Engineers are expected to bring the best of skills from their respective disciplines to each project. If the Engineer anticipates challenges in meeting these *Engineering Standards*, they should contact the City prior to extensive design efforts.

These *Engineering Standards* are not intended to limit any innovative or creative effort that could result in better quality, better cost savings, or both. Any proposed departure from the *Engineering Standards* will be judged, however, on the likelihood that such variance will produce a long-term compensating or comparable result, in every way adequate for the user and resident. Any departure from these standards shall only be allowed by the approval of the City Engineer.

These *Engineering Standards* have the objective of developing a water distribution system that will:

A. Be consistent with the adopted water master plan.

B. Be of materials strong enough to resist all expected loads, both internal and external, and able to preserve the potability of the water supply.

C. Provide a water distribution system that is consistent and predictable.

D. Be economical and safe to build and maintain.

B 1.02 REVISIONS TO THESE ENGINEERING STANDARDS

Revisions to these *Engineering Standards* will likely be made from time to time. The date appearing on the title page is the date of the latest revision. Users should apply the latest version to the contemplated work.

B 1.03 SHORTENED DESIGNATION

These City of Millersburg Water Distribution System Engineering Standards will be referred to in the text as the "*Engineering Standards*."

B 1.04 APPLICABILITY

These *Engineering Standards* shall govern construction and upgrading of all public water system facilities in the City of Millersburg including applicable work within its service areas.

B 1.05 REFERENCES

These Engineering Standards are intended to be consistent with the most currently

adopted provisions of:

A. *Millersburg Municipal Code*

B. *Millersburg Comprehensive Plan*

C. Master Facility Plans

D. *Oregon Administrative Rules* Chapter 333

B 1.06 CITY OF MILLERSBURG STANDARD CONSTRUCTION SPECIFICATIONS

The City of Millersburg has adopted the City of Albany's *Standard Construction Specifications*. Except where the *Engineering Standards* provide otherwise, design detail, workmanship, and materials will be in accordance with the current edition of the City of Albany's *Standard Construction Specifications.*

B 1.07 DEFINITIONS AND TERMS

A. Approved Backflow Prevention Assembly: An assembly that has been investigated and approved by the State of Oregon Department of Human Resources Health Division for preventing backflow.

B. As-Built Drawings: Final project drawings that have been revised by the Engineer to reflect as-built construction conditions.

C. City: The City of Millersburg, Oregon.

D. City Engineer: The City Engineer of the City of Millersburg or his/her authorized representative.

E. Cross Connection: Any connection or arrangement, physical or otherwise, between a potable water supply system and any plumbing fixture or any tank, receptacle, equipment, or device, through which it may be possible for non-potable water, or other substances, to enter into any part of the potable water system under any condition.

F. Definition of Words: Wherever, in these *Engineering Standards*, the words directed, required, permitted, ordered, designated, or words of like importance are used, they will be understood to mean the direction, requirement, permission, or order of designation of the City Engineer. Similarly, the words approved, acceptable, and satisfactory will mean approved by, acceptable to, or satisfactory to the City Engineer.

G. Distribution System: Distribution main pipelines, pumping stations, valves, and associated equipment used to transmit water from the supply source to the service line.

H. Double-check Valve Assembly: An assembly composed of two single, independently acting, internally-loaded check valves, four properly located test cocks, and two tightly closing isolation valves.

I. Double-Detector Check Valve Assembly: A line-sized approved, double-check valve assembly with a parallel meter and meter-sized approved, double-check valve assembly. The purpose of this assembly is to provide double-check valve protection for the distribution system and at the same time provide partial

metering of the fire system showing any system leakage or unauthorized use of water.

J. Dwelling Unit: A facility designed for permanent or semi-permanent occupancy and provided with minimum kitchen, sleeping, and sanitary facilities for one family. This definition is specific to these Engineering Standards and is not intended to be used as a definition for billing purposes.

K. Easement: Land upon which the City has obtained the right, from a private property owner or other public entity, to construct, own, and maintain the public water system.

L. Engineer: The Engineer, including the City's Engineer, shall be a professional engineer licensed in the State of Oregon, under whose direction the plans, profiles, details, and specifications for the project work are prepared and submitted for City review and approval.

M. Fire Protection Service: A connection to the public water main intended only for extinguishing fires and for flushing the system as necessary for its proper maintenance.

N. Irrigation Service: A metered connection, with an approved backflow prevention device, intended for seasonal use and delivering water that is not discharged to the sanitary sewer.

O. Multiple Family Dwelling: A building or portion thereof designed for occupancy by two or more families, living independently of each other. This definition is specific to these Engineering Standards and is not intended to be used as a definition for billing purposes.

P. Plans: Engineering design construction drawings, which depict the location, character, dimensions, and details of the water distribution system to be constructed or rehabilitated.

Q. Potable Water: Water that is satisfactory for drinking, culinary, and domestic purposes and meets the requirements of the health authority having jurisdiction.

R. Private Distribution System: A privately-owned and maintained water distribution system serving an industrial or commercial subdivision or a multi-building development on a single lot served through a master meter and backflow prevention assembly installed at an approved location.

S. Residential User: The owner, lessee, or occupant of a single dwelling unit in one structure.

T. Right-of-Way (ROW): Land or interest therein that by deed, conveyance, agreement, easement, dedication, usage, or process of law is reserved for or dedicated to the use of the general public, within which the City shall have the right to install and maintain water mains and related appurtenances.

U. Roadway: That portion of the right-of-way used, or to be used, for vehicle movement, which exists between the curbs or proposed curb lines.

V. Service Line: The public portion of the water service line connecting the City water main to the water meter.

W. Single Family Dwelling: Any residential building designed to house one family. This definition is specific to these Engineering Standards and is not intended to be used as a definition for billing purposes.

X. Standard Drawings: The drawings of structures or devices commonly used on City work and referred to on the plans. The Standard Drawings are contained within and considered a part of the *Standard Construction Specifications*.

Y. Uniform Plumbing Code: Uniform Plumbing Code adopted by the International Association of Plumbing and Mechanical Officials, current edition as revised by the State of Oregon, called the *Oregon State Plumbing Specialty Code*.

B 1.08 SPECIALTY ITEMS

The design of the following items is considered non-standard and unique. They are not covered in detail in this Section:

A. Water Distribution Pump Stations

B. Reservoirs

C. Relining of Existing Water Mains

D. Treatment Plants

E. Pressure Regulating Devices

F. Flow Measurement Devices

Review and approval of the above special projects by the City Engineer will be required. When requested by the City, full design calculations will be submitted for review prior to approval. Items A, B, and D also require approval by the Health Division of the Oregon Department of Human Resources.

B 2.00 – SYSTEM DESIGN AND SIZING CRITERIA

B 2.01 GENERAL DESIGN CONSIDERATIONS

Water distribution systems shall be designed to accommodate maximum development of the service area with recognition of possible industrial expansion, etc. Systems shall be designed to provide for future extension with minimal disruption of existing service.

As a condition of water service, developments will be required to provide public water mains of sufficient size for consumption and fire protection to adjacent parcels. This will include the extension of water mains in easements across the property to adjoining properties and across the street frontages of the property to adjoining properties when the main is located in the street right-of-way. Property with multiple frontages will be required to extend water along all frontages. Service lines or laterals, as required, will be extended to vacant lots if street overlays or reconstruction is contemplated.

Design capacities will meet requirements of the current master plan and will be determined by consideration of the following factors and assumptions:

A. Area to be served, both immediate and adjacent.
B. Current and projected population within the areas to be served.
C. Current and projected land use within the areas to be served.
D. Commercial, industrial, or institutional users to be served.
E. Changes in any of the above factors that are likely to occur within a foreseeable time period.

B 2.02 WATER SYSTEM CAPACITY

The system will have sufficient capacity to maintain 40 PSI at the building side of the meter for one- and two-family dwellings. For other developments a minimum pressure of 35 PSI will be provided at the building side of the meter during periods of maximum day demand, and to provide the required volumes of water at adequate pressures to satisfy the expected maximum daily demand plus fire flows, as defined hereinafter. Normal working pressure in the distribution system should be approximately 60 PSI with a r0ange of 40 PSI to 80 PSI. Any isolated locations with pressure above 80 PSI require a Pressure Reducing Valve (PRV) on the customer side of the meter.

NOTE: A pump will not be used on a service line to provide adequate pressure to a subdivision lot or property located above the pressure level of the supply main.

Head loss will be determined by the Hazen-Williams equation. Table B 2.02-A provides the "C" values that are to be used on various pipe diameters for in-service mains.

Table B 2.02-A

Pipe Diameter	C Value
8 Inches and Less	100
10 to 12 Inches	110
Greater than 12 Inches	120

Velocities and head loss will meet the requirements outlined in Table B 2.02-B.

Table B 2.02-B

Line Type	**Max. Velocity** (ft./sec)	**Max. Head Loss** (ft./1000 ft.)
Distribution	10	10
Transmission	5	3

A 20 PSI residual pressure under fire flow conditions will be maintained in the distribution system.

In the absence of consumption data or other reliable information, the following factors are assumptions that should be used to calculate demands:

A. Peak hour demands are as follows:

Single Family Residence	0.75 gpm
Residential	0.25 gpm per person
Commercial Development:	
Light	4,500 gal/ac/day
General	7,500 gal/ac/day
Industrial Development:	
Park	3,000 gal/ac/day
Light	3,250 gal/ac/day
Heavy	6,300 gal/ac/day

B. Demand for unique commercial installations, industrial users, Planned Unit Developments (PUDs), multiple, and institutional facilities will be calculated on an individual basis.

C. Fire flows are to be as follows:

Table B 2.02-B

Land Use	**Fire Flows (GPM)**	**Duration (Hr.)**
Industrial	5,000	4
Commercial	3,500	3
Multiple Family	3,500	3
Residential	1,500	2
Mixed Use	3,500	3
Schools	5,000	4
Institutional	3,500	3

B 2.03 MAIN CLASSIFICATION

A. Transmission Mains (16-inches and larger). Mains used for transporting water from the source of supply and storage reservoirs to the distribution system and distribution reservoirs. Some transmission lines serve a dual purpose as distribution lines also to avoid the need for multiple lines in one location.

B. Distribution Mains (12-inches and smaller). Mains that are used for supplying the individual consumer.

B 2.04 SIZE OF PIPE

Standard pipe sizes for distribution and transmission mains will be 4-inch, 6-inch, 8-inch, 12-inch, 16- inch, 20-inch, 24-inch, and 30-inch. Approval of the City Engineer is required for use of 4-inch and 6- inch diameter lines. Designs requiring pipe sizes larger than 30-inch will be reviewed on a case-by-case basis.

Table B 2.04-A

Minimum Pipe Size	Use
1-inch & 2-inch Copper or HDPE	For services only. 1-inch is minimum size for domestic services and is used for ¾-inch and 1-inch meters. 2-inch services are minimum size for 1½-inch and 2-inch meters.
4-inch & 6-inch Ductile Iron	• Fire Sprinkler Service Lines • Dead-end streets • No contemplated extension of the water main • Serving 12 or less residential properties • No requirement for fire hydrants
6-inch Ductile Iron	Fire hydrant lines off of minimum 8-inch distribution lines.
8-inch Ductile Iron	Residential zoning distribution water mains for a looped system, not to exceed an unsupported length of 600 feet and will not be *permanently* dead-ended. Looping of the distribution grid will be at least every 600 feet.
12-inch Ductile Iron	Commercial, multi-family, and industrial zoning.
16-inch Ductile Iron and larger	As required for specific development demands or transmission mains.

B 3.00 - PHYSICAL DESIGN REQUIREMENTS

B 3.01 MATERIALS

New water main pipe will be ductile iron with push-on joint end configuration. Design details, including pipe specifications, for bridge crossings, stream crossings, pipe installed in casings, and other special situations will be developed on a case-by-case basis.

Bends will be limited to 11.25, 22.5, and 45 degrees. Ninety-degree bends are not permitted. Wherever possible, fittings will utilize mechanical joint and flange end configuration.

B 3.02 THRUST RESTRAINT

In applications requiring thrust restraint, new water mains shall be constructed of ductile iron with an internal, push-on joint restraint system. New water mains will not be restrained externally with concrete reaction blocking without specific approval of the City Engineer (see *Standard Construction Specifications*).

Calculations for determining restrained lengths of pipe to protect specified bends and other assemblies will be based on the following general parameters: 1) minimum 2:1 safety margin, 2) minimum 150 PSI test pressure, 3) three (3) feet of cover, and 4) marginal trench and backfill conditions.

Table B 3.02-A Minimum Restrained Pipe Lengths (feet)

	FITTING TYPE							
PIPE	11.25°		22.5°		45°		90°	DEAD END
SIZE	HORIZ	VERT	HORIZ	VERT	HORIZ	VERT	HORIZ	HORIZ
4"	2	3	4	7	9	14	21	35
6"	3	5	6	10	12	20	30	49
8"	4	6	8	13	16	27	39	64
10"	5	8	9	15	20	32	47	77
12"	5	9	11	18	23	37	56	90
16"	7	11	14	23	30	48	72	115
20"	9	14	17	28	36	58	87	140
24"	10	16	20	32	42	67	101	162

Source: EBAA restraint design calculation software

Notes: 1. Dead end also is used for branch runs of tees
2. Vertical value should be used for upper fitting, horizontal value can be used for lower fitting
3. Restraint length required for reducers shall be calculated on a case-by-case basis.

B 3.03 WATER MAIN CONFIGURATION

The distribution system mains will be looped at all possible locations. The installation of permanent dead-end mains providing fire protection and/or serving large areas will not be permitted.

Developments will be required to extend mains across existing or proposed streets for

future extensions by the City or other developments. Property with multiple frontages will be required to extend water along all frontages. Terminations will be planned and located such that new or existing pavement will not have to be cut in the future when the main is extended.

Tie-ins to existing, non-standard water mains (as to size and material) will be configured for future extension with minimal impact on local water service (see *Standard Construction Specifications*). Tie-ins to existing water mains not contemplated for replacement will be made with 22.5 or 45 degree bends. The City does not allow the use of 90 degree bends.

B 3.04 MINIMUM DEPTH

The minimum cover will be 36 inches as measured from finish surface grade to the top of the water line. However, potential final finish grades for unimproved areas may require the water line to be designed at a greater depth than 36 inches. Consideration also must be given to construction loads that may affect system integrity for projects involving street construction over new and existing water mains.

B 3.05 LOCATION

A. Relation to Other Utilities. Water lines will be separated from other utilities in accordance with OAR 333. If during design conflicts with existing utilities are identified when trying to achieve the minimum depth requirement listed in B 3.04 MINIMUM DEPTH, deflection will be allowed, within the manufacturer's specifications, up to a maximum trench depth of five feet. Beyond five feet, deflection will be evaluated on a case-by-case basis. Vertical bends may be required in lieu of deflection. Neither deflections nor bends will be accepted as a means of avoiding other utilities proposed with the new construction.

B. Water Mains Within Street Right-of-Way. The standard location for water mains will be within public right-of-way on the north and east sides of streets, 10 feet from the street center line (see *Standard Construction Specifications)*. Exceptions to these requirements may be made in order to avoid conflicts with other existing underground facilities, and to permit sanitary sewers to be installed on the low sides of streets.

   Generally, mains shall not be installed in alleys. Wherever possible, mains will be installed on a particular street at a constant distance from the curb. On curved streets, mains may be laid on a curve concentric with the street centerline with deflections no greater than the manufacturer's specifications, or mains may be laid in straight lines along the tangent between selected angle points to avoid conflicts with other utilities. The angle point and tangent section will not be less than 3 feet in front of the curb face.

B 3.06 SURFACE WATER CROSSING

Surface water crossings of mains will be in accordance with OAR 333 and the following:

A. Mains crossing streams or drainage channels will be designed to cross as nearly perpendicular to the channel as possible.

B. Surface water crossings will be reviewed on a case-by-case basis. Some crossing may require the installation of a casing.

C. The minimum cover from the bottom of the stream bed or drainage channel to the top of pipe will be thirty-six (36) inches. However, this cover requirement may be increased for surface crossings in which channel erosion is a concern.

D. Specifications for scour pads (scour protection for the stream bed over the pipe) will be site specific and will be determined by the City Engineer.

E. Valves will be installed on either side of the crossing and a service will be installed between the valves to facilitate testing and sampling.

B 3.07 VALVES

A. Sizes. Valves will be the same size as the mains in which they are installed. Gate valves will be used for applications 8-inch and smaller and butterfly valves for 12-inch and larger.

B. Location. Distribution system valves will be located at the tee or cross fitting. There will be a sufficient number of valves located such that not more than four (4) and preferably three (3) valves need to be operated to effect any one particular shutdown. The spacing of valves will be such that the length of any one shutdown does not exceed 500 feet.

Tee intersection will be valved on the branch and one run, and a cross-intersection will be valved on both branches and one run as a minimum. Transmission water mains will have valves at not more than 2,000-foot spacing. Crossings, such as creek, railroad, and freeway crossings, will be valved on each side. The valves shall be restrained and located far enough away from the casing such that the pipe in the casing can be removed and replaced between the valves.

C. Phased Construction. Water mains installed by phased construction, which will be extended in the future, will terminate with a permanent blowoff assembly.

B 3.08 BACKFLOW PREVENTION

Where required, privately maintained backflow prevention devices will be installed to meet *Oregon Health Division Standards*.

B 3.09 FIRE HYDRANTS

A. Spacing. Hydrant spacing will be 500 feet or less in residential areas, 300 feet in commercial districts and industrial subdivisions and, in all cases, no further than 250 feet from any dwelling, business, garage, or building. Heavy industrial areas may require closer spacing of hydrants as determined by the Fire Department.

B. Location. Fire hydrant assemblies will be installed on 8-inch or larger mains. Hydrants will be located as nearly as possible to the corner of street intersections and at least 200 feet from any cul-de-sac radius point. No hydrant will be installed within five (5) feet of an existing utility pole or guy wire.

B 3.10 AIR/VACUUM RELEASE VALVES

Water lines will be designed to minimize the need for air/vacuum release valves. When required, an air/vacuum release valve will be permanently installed at high points on water mains where air can accumulate (see *Standard Construction Specifications*).

B 3.11 SERVICE LINES

A. Sizes. The sizes of service lines that may be used are 1-inch and 2-inch copper or HDPE, and 4-inch, 6- inch, 8-inch, 10-inch, and 12-inch ductile iron. Service lines will be reviewed for effects on the distribution system and, notwithstanding existing system configuration, will not be greater in size than the distribution main.

   Service piping will be equal to or greater than the meter size; however, 3-inch meters require a 4- inch tap and 4-inch minimum piping and fittings.

B. Location:

   1. Domestic: The service lines will extend from the main to the property line, with the curb stop, meter, and meter box being located at the termination of the service. In general, individual service lines will be perpendicular to the main and will terminate in front of the property served. Domestic service lines will not be connected to the private side of fire protection services. Combined services, with the domestic service connected to the public side of the fire service, is encouraged in some instances.

   2. Fire Service: The fire service line will extend perpendicular from the main to the property line with the backflow prevention assembly and vault being the termination of the service. The backflow assembly shall be located outside of the public right-of-way. Additional valving is required to delineate the public and private portions of the fire service lines.

C. Abandonment. Services and lines to be abandoned will be removed completely back to the line that will remain in service.

B 3.12 METERS

A. Installation:

   1. For new water systems in undeveloped areas, the meters will be installed by the City through the water meter permit process as development occurs.

   2. For water system reconstruction or replacement, existing meters will be removed and replaced by the contractor as directed by the City.

B. Location:

   1. Three-quarter (¾)-inch through 2-inch meters will be located at the termination of the City service line. Meter boxes will be located in the sidewalk. Meters will not be located in the same vault with a backflow prevention device.

   2. Three (3)-inch and larger meters will be installed in vaults and will be located in the public right-of-way to allow easy reading and maintenance without entering private property. The vault will be accessible by a crane truck to within ten feet of the installation with a ten-foot vertical clearance over the vault. Provision will be made for a minimum 3-foot clear space around the vault to provide ample working space for maintenance. The vault will be located such that storm water will not pond or flow into the installation.

B 3.13 MANUFACTURED HOME PARKS AND PLANNED UNIT DEVELOPMENTS (PUD)

The review of plans and the inspection of mobile home parks and planned unit

developments are under the jurisdiction of the City of Millersburg Building Department. Private distribution systems will be designed in accordance with the Oregon Plumbing Specialty Code.

Public water mains within manufactured home parks and planned unit developments will be in exclusive easements to the City of Millersburg.

DIVISION C - WASTEWATER COLLECTION SYSTEM

C 1.00 GENERAL

C 1.01 PURPOSE

The purpose of this *Wastewater Collection System Engineering Standards* document is to provide a consistent policy under which Millersburg's wastewater collection system will be designed and constructed. The elements contained in this document are for both public improvements as part of City of Millersburg contracted projects and private projects, which design and construct new public wastewater collection infrastructure as part of private development projects.

The overall goal of the *Wastewater Collection System Engineering Standards* presented herein shall be as follows:

A. The system shall provide sanitary sewer infrastructure to all legal tax lots of record within the city of Millersburg.

B. Collection system components shall have the necessary hydraulic capacity to safely convey all design flows.

C. System shall be sufficiently deep to adequately serve the basin for which they are constructed. The use of individual sanitary sewer sump-pump systems for specific properties shall not be used unless approved by the City Engineer.

D. Collection system components shall have adequate structural strength to safely withstand all expected external design loads.

E. System shall be designed and configured to prevent infiltration and inflow of ground and surface waters.

F. System shall be designed to be economical and safe to construct.

G. System shall be designed to minimize maintenance and operational requirements.

It is important to emphasize that this document is not intended to inappropriately restrict or constrain the originality or innovativeness of the Engineer and his or her ability to exercise and apply professional judgement to each situation and project. The City recognizes that all wastewater systems have their unique characteristics and situations. It is expected that the Engineer will bring to each project the best of skills from the Engineer's respective discipline. If the Engineer anticipates challenges in meeting these Engineering Standards, they should contact the City prior to extensive design efforts. The City shall seek to work with each designer to achieve a satisfactory design and construction project that is in the best long-term interests of the City of Millersburg and one that complies with all applicable rules and regulations.

C 1.02 REVISIONS TO THESE ENGINEERING STANDARDS

Revisions to these Engineering Standards will likely be made from time to time. The date appearing on the title page is the date of the latest revision. Users should apply the latest version to the contemplated work.

C 1.03 SHORTENED DESIGNATION

These City of Millersburg *Wastewater Collection System Engineering Standards* shall be referred to in the text as the "*Engineering Standards*."

C 1.04 APPLICABILITY

This Engineering Standards document shall govern all design, construction, or rehabilitation of wastewater collection systems and related facilities, both public and private, within the City of Millersburg. This document shall be routinely referred to as the Engineering Standards. Professional engineering services provided to fulfill the requirements of these Engineering Standards shall be in full compliance with Oregon Revised Statute 672 for professional engineers.

Complete plans and specifications for proposed sanitary sewer projects, including any necessary public dedications and easements, will be submitted to the City for approval. Such plans and specifications must receive City approval prior to construction permit issuance and prior to beginning of construction. Engineering documents will be prepared by a professional engineer registered and licensed in the State of Oregon.

C 1.05 REFERENCES

These Engineering Standards are intended to be consistent with the most current provisions of the documents and requirements as listed below. Periodic revisions to these Engineering Standards shall be necessary to maintain consistency in that regard. Nevertheless, all projects are expected to be consistent with the following:

A. All conveyance system components shall use engineering design criteria and concepts consistent with the most recent *Wastewater Master Plan* adopted by the Millersburg City Council unless more restrictive criteria are identified herein. Where additional detailed information and background is required for a particular project, the *Wastewater Master Plan* shall be referred and adhered to, as applicable.

B. Construction requirements and details shall follow the City of Millersburg's *Standard Construction Specifications*

C. All conveyance system components will be designed in accordance with the rules and regulations of the Oregon Department of Environmental Quality

D. Projects will adhere to Oregon Administrative Rules, Chapter 340, Division 52

E. Uniform Plumbing Code with Oregon Amendments

F. Millersburg Municipal Code and Ordinances

G. Projects shall be consistent with:

1. Manual of Practice, FD-5 from the Water Environment Federation
2. Applicable design guidelines published by the American Society of Civil Engineers

C 1.06 CITY OF MILLERSBURG STANDARD CONSTRUCTION SPECIFICATIONS

The City of Millersburg has adopted the City of Albany's *Standard Construction Specifications*. Except where the *Engineering Standards* provide otherwise, design

detail, workmanship, and materials will be in accordance with the current edition of the City of Albany's *Standard Construction Specifications.*

C 1.07 DEFINITIONS AND TERMS

The following definitions will be used and apply throughout this document:

A. As-Built Drawings: Final project drawings that have been revised by the Engineer to reflect as-built construction conditions.

B. Building Drain: The building drain is that part of the lowest piping of building's drainage system that receives the wastewater from inside the building and conveys it to the private service, which begins 5 feet outside the building's foundation wall or footing.

C. City: The City of Millersburg, Oregon.

D. City Engineer: City Engineer shall mean the City Engineer of the City of Millersburg or her/his authorized representative.

E. Collector Sanitary Sewer: Any public sanitary sewer to which a private service lateral connects or may connect in the future. Collector sewers shall be 8-inches in diameter or greater.

F. Commercial User: Any user of the sanitary sewer who is neither a residential nor an industrial user. This definition is specific to these Engineering Standards and is not intended to be used for billing purposes.

G. Cooling Water: Water other than sewage or industrial waste that is used as a medium for carrying away excess heat and that is not co-mingled with any other liquid waste or solids carrying stream.

H. Definition of Words: Wherever, in these *Engineering Standards*, the words directed, required, permitted, ordered, designated, or words of like importance are used, they will be understood to mean the direction, requirement, permission, or order of designation of the City Engineer. Similarly, the words approved, acceptable, and satisfactory will mean approved by, acceptable to, or satisfactory to the City Engineer.

I. Domestic Sewage: Liquid and water borne waste derived from residential properties, free of industrial wastes, and of such character that it may be safely discharged to the collection system without the need for special prior treatment.

J. Drainage Basin: One of the sanitary sewer drainage basins and service areas for the City of Millersburg, as defined in the *Sanitary Sewer System Master Plan*.

K. Easement: Land upon which the City has obtained the right, from a private property owner or other public entity, to construct, own, and maintain the public sanitary sewer system.

L. Engineer: The Engineer, including the City's Engineer, shall be a professional engineer licensed in the State of Oregon, under whose direction the plans, profiles, details, and specifications for the project work are prepared and submitted for City review and approval.

M. Industrial User: A business establishment that uses water in a variety of chemical,

manufacturing, refining, or other material processing operations, which results in wastewater that is significantly altered in strength, composition, and character from that of domestic sewage. This definition is specific to these Engineering Standards and is not intended to be used for billing purposes.

N. Industrial Wastewater: Wastewater from an industrial user.

O. Interceptor Sewer: Any public sanitary sewer 10-inches in diameter or greater constructed to accommodate more than one collector sanitary sewer.

P. Plans: Engineering design construction drawings, which depict the location, character, dimensions, and details of the collection system to be constructed or rehabilitated.

Q. Private Collection System: A privately-owned and maintained sewer system installed to serve multi-unit structures, such as apartments, manufactured home parks, or schools, or those private systems that will serve commercial or industrial properties.

R. Public Sewer: Any sewer in a public right-of-way or easement operated and maintained by the City.

S. Public Service Lateral: That part of each property's sanitary sewer service line which extends from the public main to the limit of the public ROW. For sanitary sewer mainlines located within easements, the limit of the public service lateral will be the edge of a sanitary sewer easement.

T. Private Service: That part of each property's sanitary sewer service line that is on private property outside of any sewer easements.

U. Residential User: The owner, lessee, or occupant of a single dwelling unit in one structure.

V. Right-of-Way (ROW): Land or interest therein that by deed, conveyance, agreement, easement, dedication, usage, or process of law is reserved for or dedicated to the use of the general public, within which the City shall have the right to install and maintain sanitary sewers and related appurtenances.

W. Roadway: That portion of the right-of-way used, or to be used, for vehicle movement, which exists between the curbs or proposed curb lines.

X. Sewage: Wastewater derived from human habitation and use of buildings for residential, institutional, or commercial purposes, not including storm water and industrial waste.

Y. Standard Drawings: The drawings of structures or devices commonly used on City work and referred to on the plans. The Standard Drawings are contained within and considered a part of the *Standard Construction Specifications*.

Z. Uniform Plumbing Code: Uniform Plumbing Code adopted by the International Association of Plumbing and Mechanical Officials, current edition as revised by the State of Oregon, called the *Oregon State Plumbing Specialty Code*.

AA. Wastewater Collection System: The wastewater collection system, also referred to as the conveyance system or the collection system, shall include all interceptors,

mainlines, service laterals, force mains, pump stations, manholes, cleanouts, and related facilities, all of which are located within dedicated public ROW or easements and all of which are owned, operated, and maintained by the City of Millersburg. Overall, that public infrastructure maintained and operated by the City of Millersburg for collecting, pumping, and conveying sanitary sewage.

C 1.08 SPECIALTY ITEMS

The design of the following items is considered non-standard and unique. They are not covered in this document. Some of these items are covered in other standards-related City documents that can be provided to the Engineer upon request, as indicated below:

A. Sewage Lift Stations
B. Force Mains
C. Energy Dissipaters
D. Regulating Devices
E. Flow Measurement Devices

Whenever these special situations are encountered, the Engineer shall provide appropriate design drawings, details, and calculations for review and approval by the City Engineer.

C 2.00 – SYSTEM DESIGN AND SIZING CRITERIA

C 2.01 GENERAL DESIGN CONSIDERATIONS

Sanitary sewers shall be designed to remove the domestic sewage and industrial wastes from all residences, commercial, or industrial buildings, and all public and private establishments. All sanitary sewers shall be laid at a depth sufficient to drain private services, to protect them against damage by frost or traffic, and to drain basement sewers. Sewer systems shall be designed to accommodate all anticipated future flows from the drainage basin in which they are located. Separate pumping for individual properties shall be avoided wherever possible. Individual pumps for properties shall be under the ownership of and maintenance responsibility of the property owner.

Under no circumstance should stormwater, including street, roof, or footing drainage, be discharged into the sanitary sewer system. Similarly, unpolluted cooling waters shall not be discharged into any sanitary sewer. However, overflow drains and filter backwash lines of swimming pools and "hot tubs" shall be discharged into the sanitary sewer system.

As a condition of sewer service, all developments will be required to provide public sewers to adjacent or upstream parcels in order to provide for an orderly development of the drainage area. This shall include the extension of sewer mains, within the ROW of streets or within easements, as anticipated to meet future development needs. Property with multiple frontages will be required to extend sewer along all frontages. This requirement will include both mainline and interceptor sewers. Interceptor sewers may need to be oversized in order to provide capacity for upstream development.

C 2.02 SYSTEM SIZING REQUIREMENTS & CRITERIA

All conveyance system components will use and be consistent with the engineering design criteria and concepts presented in the most recent *Sanitary Sewer System Master Plan* and updated environmental regulations and/ or monitoring/modeling information the City has. Where additional detailed information and background is required for a particular project, the *Sanitary Sewer System Master Plan* shall be referred and adhered to. Each system will be designed to serve its respective drainage basin, as shown in the most current *Sanitary Sewer System Master Plan*. The engineer will provide a drawing of the exact area proposed to be served.

In sizing the collection system, the general design criteria to be followed is shown in Table C 2.02-A (refer also to the *Sanitary Sewer System Master Plan*). The criteria in Table C 2.02-A may be modified if more current or other relevant information is available to support the change. Population calculations used to forecast service area flows will be consistent with the *Sanitary Sewer System Master Plan*. The engineer should also refer to and coordinate with the most recent version of *Millersburg's Comprehensive Development Plan* and the latest projected population densities as appropriate for each project. Note that in the absence of more specific project design data, the Alternative Peak-Hour Design Flow of 400 gal/cap/day may be used with concurrence of the City Engineer.

In addition to the criteria in Table C 2.02-A, all sewers will normally be designed with reserve capacity to allow for unforeseen increases in flow due to land-use changes. The engineer will be prepared to submit for review pipe-sizing design calculations. These

calculations will include the maximum and minimum daily flows based upon population estimates, land-use assumptions, and all other assumed factors relative to criteria listed in Table C 2.02-A. For unique or special situations, a separate study may be required to justify a proposed project or development. The study shall provide detailed information on all engineering design aspects and considerations for City review and approval.

Table C 2.02-A
Collection System Sizing Criteria

Persons per Residential Residence	2.46
Residential Average Flow	75 gal/capita/day
Commercial Flow Allowance Light	1,500 gal/gross-acre/day
Industrial Flow Allowance Heavy	1,300 gal/gross-acre/day
Industrial Flow Allowance	6,000 gal/gross-acre/day
Residential Flow Peaking Factor – serving < 500 homes	3.35
Residential Flow Peaking Factor – serving > 1200 homes	3.0
Professional/Commercial Peaking Factor	3.0
Industrial Flow Peaking Factor Initial	Project specific
Minimum Flow Factor Ultimate	Project specific
Minimum Flow Factor	Project specific
Service Area Infiltration/Inflow Allowance	3500 gal/gross-acre/day
Alternative Peak-Hour Design Flow	400 gal/cap/day

Regardless of the size of the area being served, the standard minimum pipeline diameter for all mainline sanitary sewers will be 8 inches. All pipelines will be designed to be self-cleansing with a minimum pipeline velocity of 2.0 ft./sec. when flowing either full or half full. Proposed sewers that are larger than required, but which are solely recommended in order to meet grade requirements, are not allowed. Surcharging will also not be designed into the conveyance system.

For special situations, a 6-inch diameter sewer may be approved if the total length of the line is less than 200 feet and if it has no possibility of being extended.

B 3.00 - PHYSICAL DESIGN REQUIREMENTS

C 3.01 HORIZONTAL ALIGNMENT & CONFIGURATION

A. Location within Public Streets. All sanitary sewer shall be located at the centerline of public streets. If alternative locations or skewed alignments are proposed, these locations and alignments must be approved by the City Engineer. All changes in horizontal alignment of the sanitary sewer will be accomplished through the use of manholes. Between manholes, sewers will be laid on a straight and true alignment without horizontal curves or pipe slope deviations.

B. Proximity to Water Lines and Water Wells. A 10-foot horizontal separation between any sanitary sewer and an adjacent water line shall be provided at all times. This applies regardless of whether the sewer is below or above the adjacent water line. Parallel water and sewer lines in the same trench will not be allowed. Wherever a water line and sanitary sewer must cross, the crossing angle shall be approximately 90 degrees. All requirements of OAR Chapter 333 will be strictly adhered to.

   All sewer lines shall also be at least 50 horizontal feet from any potable water source well, unless express approval of the Oregon State Health Division is obtained. Where this requirement is waived, pressure sanitary sewer piping shall be used to protect the potable water source.

   The City may require greater than 10 feet of separation between sewer and water lines. This might be the case when the relative depth between the water and sewer line exceeds 10 feet or if the sewer line has a diameter greater than 24 inches. In these and other similar situations, increased separation between the lines may be needed to protect the water line and insure a stable utility trench if the sewer must be excavated for maintenance needs.

C. Flood Plain Location and Stream Crossings. Manholes shall not be located within established 100-year flood plains without permission of the City Engineer. Sewers located along streams shall be located outside of the streambed and shall be sufficiently removed from the streambed to accommodate possible future stream widening or riparian improvements.

   If crossing of streams and watercourses is required, the crossing shall be as nearly perpendicular to the stream as practical. Pipe cover at the crossing shall be a minimum of 36 inches. Appropriate protection will be required over the top of the pipe for protection from water erosion and channel excavation. Trench dams shall be used on either side of the crossing to prevent migration of stream water along trench lines. The entire crossing shall also satisfy the requirements and provisions of a permit issued by the Oregon Division of State Lands and other permitting agencies when applicable.

   If an inverted siphon is to be installed, it shall be designed per the most recent Water Environment Federation guidelines. In general, dual pipelines shall be used, based on maintaining a minimum velocity in each line of 3.0 ft/sec. Control manholes are required at each end of the siphons such that either pipeline can be taken out of service under average flow conditions.

D. Railroad Crossings. Wherever a sanitary sewer crosses underneath a railroad, the

piping shall be installed within a steel pipe casing per the *Standard Construction Specifications*. The casing shall extend to the limits of the railroad ROW, plus an additional horizontal distance on each end of the casing equal to approximately the casing depth at the ROW limits. Casing design shall be based on all applicable and anticipated dead and live loads, based on the requirements of the railroad involved.

C 3.02 VERTICAL ALIGNMENT AND CONFIGURATION

A. General Requirements. All sewers shall be laid on a consistent and uniform grade. Changes in piping size and grade shall only occur at manholes. The minimum grade for all pipelines will be one that results in a minimum flow velocity of 2.0 ft./sec. when the pipe is flowing full or half-full. This slope shall be based on calculations using the Manning pipe friction formula with a coefficient of n=0.013. In all cases, the minimum slope for all pipelines will be as shown in Table C 3.02-A. The slopes of lines will typically be calculated based on the average depth at the center of each manhole.

Table C 3.02-A
Minimum Collection System Slopes

Pipe Diameter (Inches)	Grade (Feet per 100 Feet)
6	0.50
8	0.40
10	0.28
12	0.22
15 and larger	0.20

Note that new PVC sewers likely have a manufacturer's "n" value of about 0.009. However, regardless of pipe material, sand, grit, and slime build up on pipe walls. This results in true "n" values over time of about 0.013. As a consequence, a Manning coefficient of 0.013 shall be used for design of PVC piping systems. This same value shall also be used for concrete piping. If an alternative piping material is approved, either the pipe manufacturer's recommended coefficient shall be used or an "n" value of 0.013, whichever is greater.

B. Maximum Grade. The maximum grade for sanitary sewers shall generally be limited such that pipeline velocities when flowing full do not exceed 15 ft/sec. Outside drop manholes with flatter pipe slopes should be used in steep slope locations.

C. End of Line Segments. For the last piping segment at the upstream-end of collection system areas, the slope of the piping shall be steepened as much as reasonable and practical. The greater pipe slope shall help achieve better cleansing velocities due to the relatively low flow at these locations. Engineer will strive for minimum velocities of 2.5 – 3.0 ft./sec. in these reaches of the collection system.

Conversely, where piping shall be extended in the future, the proposed design may need to use flatter pipeline slopes than those that would only serve the present project. This would be the situation where available elevation must be preserved in order to extend future service to upstream properties. Engineer will review the upstream service areas' elevational needs, and will adjust the sewer grades as necessary to insure future service can be adequately provided and extended as required.

D. Minimum Pipe Depths. At all locations, sewer main lines shall be at a depth of 4.5 feet or greater below the finish grade elevation. Minimum pipe depth shall be measured between the finished surface grade at the center line of the sewer and the top of sewer pipe. Sewers at depths less than this create problems with water line crossings, lateral tee orientation, service to properties with deep lot depths, and proper cover over the pipe per manufacture's recommendations. Fill may be required on development sites to maintain adequate cover over sewer lines.

E. Proximity to Water Lines. At all locations, sewer lines must be at least 18 inches or more below the water line. If less separation is required, AWWA C-900 or C-905 pressure pipe shall be used, positioned so that a full pipe section is centered under the water line. Any sanitary sewer piping installed under this criteria shall be pressure tested at a minimum of 15 psig for gravity flow, or at higher pressures as required and as applicable for the specific force main involved.

C 3.03 PIPELINE MATERIALS

All piping shall have sufficient structural strength to withstand all external dead and live loads, which can be reasonably anticipated. Piping shall be corrosion and erosion resistant with a minimum life expectancy of 75 years and meet the material requirements in the *Standard Construction Specifications*.

All sanitary sewer piping shall have flexible, watertight gaskets, and piping that is as specified in the *Standard Construction Specifications*. To prevent extraneous infiltration into the collection system, gasketed watertight plugs shall be provided at the ends of all pipelines, at manhole pipe stubs, and at any and all capped lateral fittings.

C 3.04 MANHOLES & ACCESSORIES

A. Locations & Requirements. Manholes shall be provided at all of the following locations and shall meet the requirements indicated:

1. At all changes in horizontal alignment, vertical grade, and pipe sizes.
2. All sanitary sewer-piping connections to manholes shall be made with watertight, flexible manhole/pipe rubber connectors.
3. Spacing between manholes shall not exceed 450 feet. Deviation from this standard will be considered based on whether or not flushing, cleaning, and TV inspection equipment can adequately service the proposed spacing.
4. Manholes shall be placed at the upstream end of each mainline.
5. Manholes shall not be placed in curbs or gutters or behind curbs.

6. Provide two manholes for locations where the horizontal angle between the outgoing sanitary sewer and the incoming line will be less than 75 degrees. This is intended to prevent wastewater from discharging into the oncoming flow of an opposing sewer.
7. All non-standard locations will need to be reviewed and approved by the City on a case-by- case basis.

All manholes shall have a minimum diameter of 48 inches and shall be in compliance with the *Standard Construction Specifications*. For pipelines 36 inches in diameter or less, the manhole opening shall have a nominal 24-inch diameter.

B. Hydraulic Design. Manholes will typically be provided with a 0.1-foot hydraulic drop through the manhole whenever the inlet and outlet piping are in a relatively straight in-out configuration, having about 180 degrees of separation between the lines. Where the inlet and outlet piping form approximately a 90-degree angle, a 0.2-foot drop shall be provided. The maximum hydraulic drop through a manhole will be limited to current DEQ requirements. New piping, which is to be connected to existing manholes, shall generally adhere to these same hydraulic considerations. Existing concrete channels within the manhole shall be modified accordingly.

   For incoming and outgoing sewers of different sizes, either the pipe crowns or their respective 0.8- diameter elevations shall be matched. Manhole channels shall meet the requirements of the *Standard Construction Specifications*.

C. Interior and Exterior Drop Manholes. Under normal circumstances, the maximum vertical drop through a manhole will be limited to current DEQ requirements. Appropriate concrete channelization shall be provided in the manhole.

   Exterior drop manholes shall be constructed in accordance with the *Standard Construction Specifications* whenever more than 2 feet of vertical separation exists between the inlet and outlet piping. Outside drop assemblies shall only be used for pipelines 12 inches in diameter and smaller. Larger pipelines shall be introduced into the manhole at the manhole invert. Overall, drop manholes will only be allowed in cases of significant elevation differences between incoming and outgoing lines, or when special conditions exist such as a conflict with existing facilities or utilities that cannot be resolved.

D. Manhole Access. For ease of maintenance and inspection, all manholes shall be installed within the ROW of paved public streets. If a manhole must be located outside of the public street ROW, access to the manhole shall be provided by means of an easement having a width consistent with Division A of these Engineering Standards. The easement shall be complete with an all-weather driveable surface from the adjacent public street to the manhole. The driveable surface shall extend to a point at least 5 feet beyond the manhole for equipment access.

   For manholes located in unimproved areas, they shall have their lids positioned approximately one foot above the surrounding grade.

E. Manhole Connections and Future Extensions. For manholes located at the ends of

lines and for which future extensions will be required, provisions shall be made to facilitate the future work. If the alignment and grade of the future piping is well established, and the piping is expected to be constructed in the foreseeable future, a 1.5-foot long pipe stub with a removable watertight plug shall be provided consistent with the future alignment. The manhole base shall be channelized accordingly. If the future connection is not imminent and its alignment is uncertain, then the pipe stub can be omitted.

F. Special Manhole Covers. For all manholes located in backyards, side lots, or are otherwise substantially outside of the traveled ROW, the City may require tamperproof, locking lids. For public lines in easements within parking lots or other similar traveled areas, locking lids will generally not be required. In all areas prone to ponding, flooding, or along stream corridors, and in all areas below the 100-year flood plain, waterproof covers shall be installed. Alternatively, manholes may be constructed with extra barrel sections to achieve a rim elevation one foot above the 100-year floodplain elevation if approved by the City Engineer. These types of manhole locations should be avoided whenever feasible and practical.

   Where internal system overflows may occur and covers are intended to prevent such overflows, the manhole cone and cover shall be provided with vent piping. The manhole and cover shall be designed to resist the resulting hydrostatic forces. Vent piping configuration and cover restraint shall be approved by the City.

G. Cleanouts. Temporary cleanouts on sewer mains may be installed within the public ROW at the end of a stub-street, which is expected to be extended during the next phase of construction or within the foreseeable future, and where the design of the system does not warrant that a manhole be constructed at this location. All cleanout standpipes shall be 8 inches in size. Installation of permanent cleanouts will be considered on a case-by-case basis.

C 3.05 SERVICE LATERALS

A. General Requirements. All public service laterals shall extend from the sanitary sewer mainline to the private property line. The entire length of the lateral shall be within the public ROW. Each property shall have its own, separate lateral.

   Each property shall have its own private sanitary sewer service lateral from the public ROW or easement to the building being served. This private piping shall conform to State and local plumbing codes and restrictions. No roof runoff, foundation drain, or stormwater line of any kind shall be connected to service laterals.

   Laterals which serve individual single-family residences or equivalent dwellings shall be 4 inches in diameter. Multi-family dwellings or commercial buildings shall have 6-inch laterals.

B. Alignment and Grade. All public service laterals within the ROW shall be oriented perpendicularly to the mainline without intermediate horizontal bends between the mainline and the private property. Within cul-de-sacs, or in other areas where irregular tax lot configurations exist, a mainline 60-degree wye connection may be used, with straight piping thereafter to the right-of-way line. In all situations where

the public service lateral is not perpendicular to the sewer main, a continuous tracer wire shall be installed from the main to the clean-out of the service lateral at the ROW.

Public service laterals shall be sloped from the main at a slope varying from 2 to 45 percent. At the ROW, service lines shall be sufficiently deep such that they can be extended at a minimum slope of 2 percent to the structure. Depth of public service laterals at the ROW shall be 4 to 6 feet below street gutters. In areas where sewer depth is a challenge, a minimum depth at street gutter line of 3.5 feet will be accepted. For deep sanitary sewers, the riser pipe at the main may be installed at an angle varying from 45 degrees to 80 degrees, with the lateral slope flattened out thereafter in order to meet the overall grade requirements.

No 4-inch or 6-inch service lateral from adjacent private property will be allowed to be connected directly to a manhole.

C. Other Requirements. The following additional requirements apply to public service laterals:

1. For existing homes without sanitary sewer service or for vacant lots, new public service laterals shall be provided as part of new development projects or other street rehabilitation/utility projects.
2. The length of service laterals shall generally be limited to 100 feet. Where one or more service laterals will exceed 100 feet in length in order to serve the adjacent private property, a public main and manhole may be required, located in an easement, as determined by the City.
3. All service laterals shall be provided with a two-way cleanout at the private property line in accordance with the *Standard Construction Specifications*. The cleanout shall be located within the sidewalk.
4. Backwater check valves and isolation gate valves are required for all homes where potential flooding exists if the public sanitary sewer system were to backup. These valves shall be private valves installed as part of the private service piping.

C 3.06 PRIVATE COLLECTION SYSTEMS

Typically, as indicated in the *Millersburg Land Use Development Code*, sanitary sewer mainlines that are proposed to extend 100 feet or more onto private property, shall be public lines. However, the City may approve these as private collection systems on a case-by-case basis. Systems for manufactured home parks, apartment complexes, or commercial and industrial complexes may qualify.

All private systems shall connect to the public system at a standard manhole within the public ROW or easement. Immediately upstream of the connecting manhole at the property line, a separate manhole or mainline cleanout will typically be required. The manhole or mainline cleanout shall meet the requirements of the City Engineer.

DIVISION D – STREETS AND ALLEYS

D 1.00 GENERAL

D 1.01 PURPOSE

The purpose of these Street and Alley Engineering Standards is to provide a consistent policy under which certain physical aspects of street and alley design will be implemented. Most of the elements contained in this document are Public Works oriented. The intent is that these Engineering Standards apply to both City-initiated projects as well as private development of public infrastructure.

These Engineering Standards cannot provide for all situations. They are intended to assist but not to serve as a substitute for competent work by design professionals. Engineers are expected to bring the best of skills from their respective disciplines to each project. If the Engineer anticipates challenges in meeting these Engineering Standards, they should contact the City prior to extensive design efforts.

These Engineering Standards are not intended to limit any innovative or creative effort which could result in better quality, better cost savings, or both. Any proposed departure from the Engineering Standards will be judged, however, on the likelihood that such variance will produce a long-term compensating or comparable result, in every way adequate for the user and resident.

Note that the presentation, layout, and general configuration of all engineering design drawings shall be in conformance with Millersburg's drafting design criteria as outlined in Division A of these Engineering Standards. Engineer shall prepare the project design drawings in conformance with the requirements contained therein.

These Engineering Standards have the objective of developing a street system that will:

A. Be consistent with the Millersburg Municipal Code (MMC), Millersburg Land Use Development Code, Millersburg's Adopted Standard Construction Specifications, and all applicable state and federal regulations and requirements.

B. Be of adequate design to safely manage the volumes of vehicles anticipated using the improvements.

C. Provide points of connection for streets by adjacent future development.

D. Prevent the capacity of transportation facilities from being exceeded.

E. Provide transportation improvements that meet the long-term needs for quality streets.

F. Maintain or improve overall transportation quality.

G. Be designed in a manner to allow economical future maintenance.

H. Be designed using materials to insure a minimum practical design life of 20 years.

D 1.02 SHORTENED DESIGNATION

These City of Millersburg Street and Alley Engineering Standards shall be cited routinely in the text as the "Engineering Standards."

D 1.03 APPLICABILITY

These Engineering Standards shall govern all construction and upgrading of all public street and alley improvements in the City of Millersburg and applicable work within its service areas.

Street improvements shall be provided for all property improvements within the City of Millersburg per these Engineering Standards for the following types of development:

A. All partitions and subdivisions.

B. Construction or reconstruction of public roadways and temporary detours.

D 1.04 REFERENCES

The Engineering Standards are intended to be consistent with the most currently adopted provisions of all street-related guidelines including, but not limited to:

A. Millersburg's Transportation System Plan

B. Oregon Statewide Planning Goals and Guidelines

C. Millersburg Municipal Code (MMC)

D. Millersburg Comprehensive Plan

E. Millersburg Land Use Development Code (LUDC)

F. Millersburg's Facility Plans

D 1.05 STANDARD CONSTRUCTION SPECIFICATIONS

Except where the Engineering Standards provide otherwise, design detail, workmanship and materials shall be in accordance with the current edition of the Standard Construction Specifications adopted by the City of Millersburg. The City of Millersburg has adopted the City of Albany's Standard Construction Specifications and Details.

D 1.06 DEFINITIONS AND TERMS

A. Definition of Words. Wherever in these Engineering Standards the words directed, required, permitted, ordered, designated, or words of like importance are used, they shall be understood to mean the direction, requirement, permission, or order of designation of the City Engineer. Similarly, the words approved, acceptable, satisfactory, shall mean approved by, acceptable to, or satisfactory to the City Engineer.

B. ODOT. The Oregon Department of Transportation.

C. City. The City of Millersburg, Oregon.

D. City Engineer. This means the City Engineer of the City of Millersburg or his/her authorized representative.

E. Roadway: That portion of the right-of-way used, or to be used, for vehicle movement, which exists between the curbs or proposed curb lines.

F. MUTCD: The Manual of Uniform Traffic Control Devices as published by the Federal Highway Administration.

G. Owner. Any individual, partnership, firm, or corporation by whom the design engineer has been retained or who, as a property owner, is making arrangements with the City.

H. Plans. Construction plans, including system site plans, storm drain plans and profiles, cross sections, detailed drawings, etc., or reproductions thereof, approved or to be approved by the City Engineer, which show the location, character, dimensions, and details for the work to be done, in which constitute a supplement to these Engineering Standards.

I. Design Engineer. The developer's consulting engineer, including the City's engineer, licensed by the State of Oregon as a Civil Engineer under whose direction plans, profiles, and details for the work are prepared and submitted to the City for review and approval.

J. Right-of-Way. All land or interest therein that by deed, conveyance, agreement, easement, dedication, usage, or process of law is reserved for or dedicated to the use of the general public within which the City shall have the right to install and maintain streets and other public infrastructure.

D 1.07 APPROVAL OF ALTERNATE MATERIALS OR METHODS

Any alternate material or method not explicitly approved herein will be considered for approval on the basis of the objectives set forth in D 1.01 PURPOSE. Persons seeking such approvals shall make application in writing. Approval of any major deviation from these Engineering Standards will (normally) be in written form. Approval of minor matters will be made in writing if requested.

Any alternate must meet or exceed the minimum requirements set in these Engineering Standards.

The written application is to include, but is not limited to, the manufacturer's specifications and testing results, design drawings, calculations, and other pertinent information.

Any deviations or special problems shall be reviewed on a case-by-case basis and approved by the City Engineer. When requested by the City, full design calculations shall be submitted for review with the request for approval.

D 2.00 - NEW STREET DESIGN

D 2.01 GENERAL REQUIREMENTS

All designs shall conform to City of Millersburg's Transportation System Plan (TSP), Development Code, Site Plan Review Notice of Decision, Fire Department requirements, Standard Construction Specifications, Manual of Uniform Traffic Control Devices (MUTCD), and all other applicable laws and regulations.

D 2.02 DESIGN SPEEDS

Design considerations for all street geometrics shall be based on the minimum design speeds shown below for each street classification. Variance from these design speeds may be required based upon topography or other considerations. Variance from these design speeds must be approved by the City Engineer. A consultation with the City may be beneficial before design is initiated.

Local Residential	20 mph
Local Non-Residential	25 mph
Collector	Determined by the City Engineer
Arterial	Determined by the City Engineer

D 2.03 STREET TERMINATION

Streets that will not be extended in the future must terminate with a cul-de-sac or hammerhead. Street terminations shall meet current Development Code requirements.

A. Cul-de-sac: The standard residential cul-de-sac shall have a minimum 48-foot radius to the face of curb.

B. Hammerhead: For "mini subdivisions" the City Engineer may allow the use of a hammerhead turn-around as described in the Development Code. The hammerhead shall consist of two rectangular turnouts directly opposite each other and oriented perpendicular to the street centerline.

A street that will be extended in the future may be terminated with proper signing and installation of Type III barricades as required in the MUTCD. Dead-end streets over 150-feet long are required to end with a temporary cul-de-sac or hammerhead turn-around for emergency vehicles until the street extension occurs. In addition a sign reading "THIS STREET MAY BE EXTENDED IN THE FUTURE" will be mounted at the end of the street.

D 2.04 HORIZONTAL DESIGN

The horizontal design of streets shall produce a safe street network while also considering the need for creating livable neighborhoods. Consideration should be given to minimizing long tangent sections and other elements that might induce high speeds or other problems that might require traffic calming mitigation in the future. Traffic calming measures shall be considered in the design of new streets and should be incorporated as

required by the City Engineer.

Sharp horizontal curvature should not be introduced at or near the top of a pronounced crest vertical curve. Similarly, sharp horizontal curvature shall not be introduced at or near the low point of a pronounced sag vertical curve.

A. Minimum Curb Radii Required at Intersections. The minimum curb radii required at intersections shall be as shown below in Table D 2.04-A.

Table D 2.04-A Minimum Curb Radii Required at Intersections

Intersection	Curb Radius
Residential – Residential	15 feet
Residential – Collector or Arterial	20 feet
Collector – Collector or Arterial	30 feet
Arterial – Arterial	30 feet

B. Taper and Transition Rates: Use the criteria listed below to determine the minimum taper length to increase lane width, create a new lane, or transition traffic lanes laterally. The City Engineer may require a longer taper length. Tapers in chicanes or other traffic calming improvements may be shorter in order to meet traffic calming goals.

Table D 2.04-B Taper Length Criteria

Type of Taper	40 mph or less	45 mph or greater
Merging Taper	$\frac{WS^2}{60}$	WS
Shifting Taper	$\frac{WS^2}{120}$	$\frac{WS}{2}$

W = Width of offset in feet
S = Posted speed limit or anticipated speed in mph

C. Partial Street Improvements: Designs for partial street improvements shall consider the entire future street improvement so that related facilities, grades, slopes, utility stub-outs, future curb inlets, future service lines, potential conflicts, and other issues will be identified. The partial street shall be designed so that future completion of the street and related facilities can be easily coordinated with the initial partial street improvement and minimize damage to the street structure. Construction plans shall clearly show the paving limitLas for the partial street and identify all items that are to be constructed by others in the future.

D. Sidewalks and Driveways: Dimensions and spacing of sidewalks, sidewalk ramps, and driveway approaches will be within the parameters of the Land Use Development Code, the Standard Construction Specifications, and the Americans with Disabilities Act (ADA). Show sidewalk ramps on the plans at each intersection curb return and other required locations to verify adequate landing and passage area. Identify sidewalk obstructions on the plans and verify adequate clear space

for passage.

1. Setback Sidewalk: The standard configuration for new sidewalk construction is setback, with the sidewalk and landscape strip width as required in the Land Use Development Code.

2. Curbside Sidewalk: A curbside sidewalk may be used only when the setback configuration is not feasible and is approved by the City Engineer. Curbside sidewalk located adjacent to a mountable curb shall be a minimum of 6-inches thick.

3. Driveway Approaches: All driveway approaches to be constructed shall be shown on the plans to verify that the design meets minimum ADA requirements. Design elements to be considered are adequate clear space for passage behind the approach ramp and/or proper slope of the depressed curb transition with curbside sidewalk. Commercial driveways with a standard curb return shall not be used without prior approval of the City Engineer.

E. Cut and Fill Slopes: Catch points for cut and fill shall be shown on the plans so that slope limits outside the right-of-way are identified. The plans shall show the direction of natural drainage and address the routing of runoff to prevent erosion of newly constructed slopes or blockage of the natural drainage.

The plans shall show existing slope easements, along with proposed slope easements and temporary construction access agreements that must be acquired to facilitate construction. All easement dimensions shall be shown on the plans.

F. Streetscape and Utility Appurtenances: Show all public and private items that currently exist or will be placed in the right-of-way that will impact the sidewalk and/or the landscape strip. Such items include but are not limited to fire hydrants, street lights, bus shelters, street signs, street trees, mail boxes, poles, vaults, and various utility appurtenances. Identify obstructions that would encroach into sidewalks and verify a minimum 4-foot width of clear space for passage exists or show how the impact will be mitigated.

D 2.05 VERTICAL DESIGN

The minimum street grade is 0.5 percent, and the maximum street grade shall not exceed 6 percent on arterial streets, 10 percent on collector streets, and 12 percent on local residential streets. The minimum street grade may be reduced to as low as 0.3 percent in specific circumstances with the approval of the City Engineer. Beginning, ending, centerline-centerline intersections, and sharp grade breaks not exceeding a total of 1 percent will be identified on the profile with street stations and elevations. Grade breaks over 1 percent shall utilize a vertical curve. The maximum superelevation rate permitted shall be 4 percent on residential and collector streets, and 6 percent on arterial streets. The use of superelevation will be approved on a case-by-case basis by the City Engineer.

These requirements are for standard conditions anticipated within the city. Areas in which topography may dictate, the City Engineer will entertain variance from these Engineering Standards.

Length of Vertical Curve: Vertical curves shall be parabolic and of a minimum length computed from the formula: L = KA

L = Length of vertical curve in feet
K = Design constant (rate of vertical curvature)
A = Algebraic difference in grades in percent

Selection of K values for crest vertical curves are based on sight distance requirements, and for sag vertical curves on headlight sight distance. K is a constant for each design speed and the values to be used are listed in the table below:

Table D 2.05-A K Values for Vertical Curve

Design Speed	K Values			
Mph	Crest Vertical Curve		Sag Vertical Curve	
	Minimum	Desirable	Minimum	Desirable
20	10		20	
25	20		30	
30	30	30	40	40
35	40	50	50	50
40	60	80	60	70
45	80	120	70	90

A. Curb and Gutter Grades: The minimum gutter grade, including curb returns, shall be 0.5 percent. The minimum street grade may be reduced to as low as 0.3 percent in specific circumstances with the approval of the City Engineer. All curb return data shall be summarized in a table on the plan sheet. The table shall show the total length of the return, delta angle, curb radius distance, and elevations of the beginning, ¼ delta, ½ delta, ¾ delta, and end of the return.

B. Partial Street Improvements: If the curb and gutter on the side of the street not being constructed is anticipated to be at different grade than the curb and gutter that will be constructed, the construction plans will clearly show the future curb and identify all items that are to be constructed by others in the future.

The profile view will include the bottom of the ditch or swale constructed on the side without curb and gutter, and shall show all culverts, drain pipes, drainage inlets, and drainage outlets.

C. Cut and Fill Slopes: The catch points for cut and fill slopes shall be shown on the plan. The design shall address the collection of natural drainage and routing of runoff to prevent erosion of newly constructed slopes or blockage of the natural drainage.

D. Utility Appurtenances: The profile will show all utility appurtenances such as manholes, curb inlets, culverts, and drainage inlets and outlets. Each item shall be labeled with the station and the finish grade elevation for the rim,

top of curb, and all inverts. Pipelines along the street shall be shown in profile as well as the cross section of pipes that cross the construction area.

D 3.00 – ALLEY DESIGN

D 3.01 GENERAL REQUIREMENTS

All alleys shall be constructed of Portland Cement Concrete (PCC) with an inverted crown to collect drainage at centerline. The minimum pavement structure shall be 8 inches of PCC over 2 inches of base rock, placed over geotextile fabric. For alleys subject to industrial or special loading considerations, or if required by the City Engineer, a structural pavement design will be calculated to determine if additional PCC thickness is required for the anticipated loading.

Show all private improvements that will be impacted including garages or other structures, stairs, vaults, fences, walls, driveways, parking lots, walkways, or other items. Indicate existing drainage patterns and show private drainage inlets, outlets, and pipes beyond the alley right-of-way that will be impacted by the alley construction.

A. Joint Pattern: The PCC pavement shall be placed full width in one pour, with no longitudinal joints. The alley design shall include a transverse joint pattern, shown on the plans, so that the joints are spaced to create panel lengths that are 0.75 to 1.25 times the alley width. The joint pattern will be coordinated to intersect with utility features such as poles, manholes, and catch basins.

B. Alley Approaches: Alley approaches shall be constructed as commercial driveways in all respects, except that the structural section will be increased to 10 inches or match the alley pavement structure for which it provides access, whichever is greater. Alley approaches with a standard curb return shall not be used without approval of the City Engineer.

D 4.00 – STRUCTURAL PAVEMENT DESIGN

Standard pavement structures for Asphalt Concrete (A.C.) and Portland Cement Concrete (PCC) pavements are defined in the City of Millersburg Standard Construction Specifications. It is the City's policy to only allow PCC pavements on streets on a case-by-case basis, provided all utilities have been installed or replaced prior to street construction. Design requirements and procedures are summarized in the appropriate sections below.

D 4.01 GENERAL REQUIREMENTS

The City has a standard structural section for residential local streets. Collector, arterial and nonresidential local streets shall undergo a full structural section design.

Design inputs shall consider soil characteristics, traffic loading data, and structural strength coefficients of the pavement materials. The PCC structural pavement design shall apply to both street and alley pavements. In any case, the City Engineer may require a structural pavement design to be generated when it is suspected that unsuitable soil conditions, high percentage of trucks, or any other condition may require

the pavement structure to be increased.

The design shall be based on a geotechnical investigation to determine soil characteristics, structural strength coefficients for the soil, and traffic loading data approved by the City. The design will be submitted for review with all supporting documentation and calculations for the structural design of the pavement. Any modification to the standard minimum pavement structure must be approved by the City Engineer.

D 4.02 SOIL CHARACTERISTICS

The structural characteristics of the soils underlying the proposed street will be assumed as fair, or may be specifically established by a geotechnical engineer. The classification of soil and corresponding ability to support the proposed street structure and anticipated loading is common to both A.C. and PCC pavement designs.

The structural characteristics for treated or reprocessed materials used in the pavement design shall be established by a geotechnical engineer and documented in the design calculations provided by the design engineer.

A. Native Materials: If a geotechnical study is not undertaken, the native material classification shall be assumed to be fair. A soil classified as fair is typified as having values for the resilient modulus (MR) of 5,000 psi or other equivalent designation. For designs that assume fair soils, this value will be used.

B. Subgrade Stabilization: Any part of the subgrade that is found to be inadequate will be stabilized to establish a new subgrade structure equivalent to the native subgrade under dry summer conditions. Rock used to replace all or a portion of the subgrade shall not be used to reduce the pavement or aggregate base thickness.

C. Existing Street Structure: Whenever a street is to be constructed to a new grade or alignment such that the new street section is built over an existing street structure, any existing pavements shall be removed.

D 4.03 TRAFFIC DATA

Traffic loading data for the pavement design shall be determined for all arterial, collector, and non- residential local streets using current and 20-year future traffic volumes. The data will include a vehicle classification breakdown for passenger cars, buses, and 2, 3, 4, and 5-axle trucks. The volumes shall be provided in the form of Average Daily Traffic (ADT) so that loading factors can be determined by converting to standard 18,000 pound equivalent axle loads (EAL) for each vehicle class, and summing to determine the total traffic load.

Traffic data shall be submitted by a licensed engineer for the City's approval, or may be provided by the City if data is available. Traffic data from the City is limited to information that is readily available from existing traffic counts or based on the City of Millersburg's Transportation System Plan.

D 4.04 ASPHALT CONCRETE (A.C.)

Design of the A.C. pavement structural section shall follow the latest edition of Asphalt Pavement Association of Oregon (APAO) Asphalt Pavement Design Guide. All pavement structures shall be based on a 20-year design traffic-loading period with 90 percent reliability.

A. Crushed Aggregate Base: Regardless of street classification, all streets shall be constructed with 12-inches of 100% fractured-face crushed aggregate base placed on a geotextile subgrade fabric. Geotextile fabric protects the crushed aggregate base from contamination with soil particles, preserving the structural integrity of the aggregate during the service life of the pavement. The geotextile fabric has no strength coefficient for purposes of determining the pavement structure.

B. Minimum Pavement Structure: The following minimum pavement thicknesses have been developed with the intent of constructing a street system with long-life or "perpetual" pavement. This provides the City with a sustainable, long-term street maintenance strategy. Therefore these minimum pavement thicknesses shall not be reduced.

Table 4 .04-A Minimum Asphalt Pavement Criteria

PAVEMENT CRITERIA	STREET CLASSIFICATION		
	LOCAL	COLLECTOR	ARTERIAL
Minimum A.C. Thickness	5-inches	7-inches	8-inches
Wearing Course Binder	PG 64-22	PG 70-22	PG 70-22
Base Course Binder	PG 64-22	PG 64-22	PG 64-22

Wearing course A.C. shall be 2-inches of ½-inch dense-graded hot-mix asphalt and base courses shall be ¾-inch dense graded hot-mix asphalt. Additional wearing course thickness may be required on streets with very high truck traffic. Warm mix asphalt may be used with approval of the City Engineer.

C. Structural Strength Coefficients: When calculating the structural strength of each layer of the pavement structure, use the following values. The City Engineer must approve alternate structural materials and their strength coefficients for use.

0.42 per inch for hot mix A.C.
0.06 per inch for clean, crushed aggregate base

The above structural layer coefficients assume that construction will take place during dry summer conditions. If construction takes place outside of dry summer conditions, measures must be taken to stabilize all poor performing subgrade soils.

Arterial, collector and non-residential local streets will require pavement design calculations to check if the minimum asphalt thickness specified is sufficient for the anticipated traffic loading. For streets with more than one million EALs the pavement thickness will need to be evaluated based on a full structural design

calculation using the 1993 AASHTO Pavement Design Guide. The pavement thickness will be increased in increments of 0.5-inches if the minimum required pavement thickness above is shown to be insufficient. Increasing the thickness of the crushed aggregate base will not be allowed.

D. Structural Overlay: A structural overlay may be considered to extend the useful life of the existing pavement structure by increasing the composite pavement Structural Number. The total structural number required for traffic loading during the design period shall be determined as described above.

Overlays shall not be feathered to match existing street pavement surfaces at paving limit lines. Taper grinding, butt grinding, or removal and reconstruction of the existing pavement will be required so the finished overlay surface will match the existing gutter or pavement grade.

1. Existing Structure: The Structural Number of the existing pavement structure may be determined by non-destructive testing, sample pits, or both. All testing methods must be approved by the City Engineer prior to performing the tests. All existing areas with soft subgrade or broken pavement shall be repaired prior to paving of the overlay.

   When taper or butt grinding are employed in the design, the Structural Number of the existing pavement at those locations will be determined for the pavement thickness remaining after grinding.

2. Overlay Thickness: The required overlay thickness is determined by calculating the additional A.C. layer necessary to meet the value of the desired Structural Number. The minimum nominal overlay thickness will be 2 inches.

3. Paving Fabric: An approved paving fabric may be placed over the existing pavement immediately prior to the overlay if approved by the City Engineer, with the edge of the roll no more than 6 inches from the gutter or paving limit line. Required crack filling to support the fabric, and the fabric installation, shall be according to the manufacturer's recommendations. At no point will the pavement thickness over the fabric be less than 2 inches. The purpose of incorporating paving fabric is to create a waterproof membrane within the pavement structure to further protect the structure from water intrusion. While paving fabric may delay reflective cracking, it is not presumed to prevent it.

4. Limitations: The street must be evaluated for limiting factors that would make an overlay undesirable. The maximum cross slope after the overlay is placed must be determined and may not exceed 5 percent without approval of the City Engineer. Check driveway approach grades to verify that vehicles will not scrape and that vehicles pulling trailers will reasonably be able to access the driveways without scraping or dragging.

D 4.05 PORTLAND CEMENT CONCRETE (PCC)

Design of the PCC pavement structural section shall follow the Portland Cement

Association (PCA) or American Concrete Pavement Association (ACPA) design guides. The design will have a 90 percent statistical reliability of adequately supporting the design traffic loading without requiring any major maintenance or repair.

A. Minimum Structure: The minimum slab thickness shall be 8 inches for residential streets, 9 inches for collector streets, and 10 inches for arterial streets. A leveling course of no less than 2 inches of crushed aggregate base shall be placed under all concrete street sections.

B. Joints: A typical joint pattern shall be specified and shown on the plans so that the joints are spaced to create panel length to width ratios that are 1.00 to 1.35.

1. Transverse Joints: The transverse joint pattern shall be perpendicular or slightly skewed in relation to the direction of traffic and be coordinated to match with all curb joints. The spacing of transverse joints will generally not be greater than 15 feet.

2. Longitudinal Joints: A longitudinal joint shall be sawcut along the street centerline. Supplemental longitudinal joints shall be specified if the resulting half-street panel width exceeds 15 feet.

D 5.00 – STRIPING AND PAVEMENT MARKING PLANS

A striping plan shall be provided for review and approval by the City Engineer prior to the application of any permanent pavement markings. All striping and pavement marking design shall comply with the standards contained in the current version of the Manual on Uniform Traffic Control Devices.

D 5.01 STRIPING MATERIALS

Materials shall be as described in the Standard Construction Specifications. All striping shall be installed on the same day as paving of the top lift of asphalt regardless of materials specified.

A. Extruded Thermoplastic: Extruded thermoplastic shall be used for all longitudinal lane markings. Profiled markings shall be used except for lines adjacent to a bicycle lane, where non-profiled markings shall be used.

B. Preformed Thermoplastic Film: Preformed thermoplastic film material shall be used for all crosswalks and legends.

C. Raised Pavement Markers: Raised pavement markers shall be reflectorized and match the color of the stripe they are complementing. Markers shall be placed every 40 feet along skip stripes (centered in each skip) and every 20 feet along solid stripes.

D. Hot Inlay Tape: Hot inlay materials may be used for longitudinal lane lines when approved by the City Engineer.

E. Paint: Paint shall only be used if approved by the City Engineer. Painted pavement

markings shall consist of a minimum of two coats of paint that conforms to the current Oregon State Highway Division's Standard Specifications for White and Yellow Traffic Line Bead Binder Paint.

D 6.00 – ILLUMINATION

D 6.01 GENERAL

A. Improvement Plans. The Engineer shall show the proposed illumination system on the project improvement plans. All illumination systems shall be designed in accordance with this standard, accepted engineering practices, and electric utility guidelines. Street illumination shall be owned and maintained by the electric utility with a City service contract unless otherwise approved by the City Engineer. Fiberglass poles shall be specified unless otherwise approved by the City Engineer.

B. Coordination. For all projects that include the installation of luminaires, the electric utility must be contacted early in the design process to coordinate providing service to the modified street network. The City and the electric utility shall approve luminaire and service point locations prior to approval of the improvement plans and issuance of a Construction Permit. Luminaires must be installed and operational prior to City acceptance of public improvements.

D 6.02 AVERAGE MAINTAINED HORIZONTAL ILLUMINATION

A. Minimum Average Foot-Candle Requirements.

Table D 6.02-A ROADWAY SEGMENTS

STREET CLASSIFICATION	Residential	Commercial or Industrial
Local	----	0.9 fc
Collector	0.6 fc	1.2 fc
Arterial	0.9 fc	1.6 fc

Source: IES RP-8, American National Standard Practice for Roadway Lighting, Illuminating Engineering Society of North America.
Notes: Collector and arterial streets shall have a minimum weak point foot candle measurement of 0.2 fc.

Table D 6.02-B ROADWAY INTERSECTIONS

STREET CLASSIFICATION		Residential			Commercial or Industrial		
		Local	Collector	Arterial	Local	Collector	Arterial
Residential	Collector	1.0 fc	1.2 fc				
	Arterial	1.3 fc	1.5 fc	1.8 fc			
Commercial or Industrial	Local	1.3 fc	1.5 fc	1.8 fc	1.8 fc		
	Collector	1.6 fc	1.8 fc	2.1 fc	2.1 fc	2.4 fc	
	Arterial	2.0 fc	2.2 fc	2.5 fc	2.5 fc	2.8 fc	3.2 fc

Source: IES RP-8, American National Standard Practice for Roadway Lighting, Illuminating Engineering Society of North America.

Notes: 1. Intersection Lighting Level = Sum of Intersecting Street Lighting Levels.
2. Collector and Arterial streets shall have a minimum weak point foot candle measurement of 0.2 fc.

Table D 6.02-C AVERAGE/MINIMUM UNIFORMITY RATIO

STREET CLASSIFICATION	AVERAGE/MINIMUM UNIFORMITY RATIO
Local	6:1
Collector	4:1
Arterial	3:1

Source: IES RP-8, American National Standard Practice for Roadway Lighting, Illuminating Engineering Society of North America.

Table D 6.02-D LUMINAIRE TYPES

BRAND	MODEL	WATTAGE	LIGHT SOURCE	LENS TYPE	DISTRIBUTION	IES FILE
American Electric Lighting (Acuity Brands, Inc.)	115	100W	HPS	Glass, Flat	TYPE II	LTL14275
		150W			TYPE III	AE3579
	125	250W	HPS	Glass, Flat	TYPE III	LTL10823-250
		400W			TYPE III	AE3874

Source: Pacific Power and Light Company. See http://www.americanelectriclighting.com/ for IES files.

Table D 6.02-E AVERAGE MAINTAINED LUMENS

LUMINAIRE TYPE	INITIAL LUMEN VALUE	DEPRECIATION FACTOR	MAINTAINED LUMEN VALUE
100W HPS	9,500	0.84	7,980
150W HPS	16,000	0.84	13,440
250W HPS	27,000	0.84	22,680
400W HPS	50,000	0.84	42,000

Source: Pacific Power and Light Company.
Notes: 1. Maintained Lumen Value = Initial Lumen Value x Depreciation Factor.

D 6.03 LOCATION

A. Requirements:

1. Location. Luminaire locations shall be subject to the approval of the City Engineer. Luminaires shall be located at property lines and curb returns where possible. A minimum of one luminaire shall be located at each residential local street intersection, each 3-legged intersection (all classifications), and at the end of each cul-de-sac or permanent dead-end street. Additional luminaires may be required at other street intersections. Luminaire locations shall be as follows (those not specified shall be determined by the City Engineer):

Table D 6.03-A MAXIMUM LUMINAIRE SPACING TABLE

MAXIMUM LUMINAIRE SPACING TABLE							
Street Width	Sidewalk Location	Pole Config.	[1] Pole Location	Pole Height	Mast Arm Length	Luminaire Type	Max. Spacing
Residential Local Streets:							
Varies	Setback	Staggered	3.0' FC	25'	6'	100W HPS	600'
Commercial or Industrial Local Streets:							
36'	Setback	Staggered	3.0' FC	30'	8'	250W HPS	200'
48'	Setback	Staggered	3.0' FC	30'	8'	250W HPS	215'
Residential Collector Streets:							
36'	Setback	Staggered	3.0' FC	30'	8'	100W HPS	150'
48'	Setback	Staggered	3.0' FC	30'	8'	150W HPS	170'
Commercial or Industrial Collector Streets:							
36'	Setback	Staggered	3.0' FC	30'	8'	250W HPS	185'
48'	Setback	Staggered	3.0' FC	30'	8'	250W HPS	200'
Residential, Commercial, or Industrial Arterial Streets:							
40'-70'	Setback	Opposite Across	3.0' FC	30'	6'-14'	City Calc.	City Calc.

Source of Calculations: Visual Roadway Lighting Tool. http://www.3d-visual.com/Tools/Roadway/Launchpage.asp

Notes: 1. Distances are to the center of the pole as measured from the face of curb (FC).

2. Street widths that vary from those listed above can either use maximum luminaire spacing of next higher width street, or require separate City calculation.

D 7.00 – SPECIALTY PAVEMENT TREATMENTS AND TRAFFIC CALMING

All specialty pavement treatments proposed to alter color, surface texture, or surface material shall be submitted by the design engineer and are subject to review and approval by the City Engineer. These materials and treatments may include colored concrete, stamped patterns, inlayed materials, interlocking pavers, or any other alternative treatments or materials.

D 8.00 – STREETSCAPE APPURTENANCES

Items that will be modified or placed in the right-of-way shall be identified and specified. Such items include but are not limited to street signs, bus shelters, street trees, and mail boxes. Obstructions that will encroach into sidewalk areas will be identified. Adequate clear space for passage or how the impact will be mitigated will be shown on the plans.

D 8.01 STREET SIGNS

Street signs shall meet MUTCD, Standard Highway Sign and City of Millersburg requirements. The type and location of the signs will be shown or described on the plans.

A. Regulatory/Informational Signs: Street sign sizes and placement locations shall be reviewed and approved by the City Engineer. Except for street name plates or other signs as approved, all signs will utilize high intensity reflective sheeting as specified in the Standard Construction Specifications. Standard STOP and warning sign sizes are 30 inch x 30 inch, but larger sizes may be required at specific locations. Other regulatory and informational signs will follow standard size and content as described in the MUTCD or as directed by the City Engineer.

B. Street Name Signs: Street name signs shall be as specified in the *Standard Construction Specifications.*

D 8.02 BUS SHELTERS

At required locations, bus shelters shall be installed as directed by the City Engineer. The shelters may be located in the landscape strip if adequate room exists or behind the sidewalk within the right-of-way or in an easement for that purpose. In no case shall the shelter be placed within the designated sidewalk area as an obstruction that would require a pedestrian to maneuver around the shelter.

D 8.03 STREET TREES

Current specifications for furnishing, planting, and establishing trees are available from the City. The design engineer may initially coordinate with the City for recommendations of appropriate tree species, location, and spacing. New trees will not be planted in clear vision areas or otherwise interfere with required sight distances, including intersections and railroad crossings. Final plans and specifications for street trees and related vegetation or appurtenances shall be reviewed for approval by the City Engineer.

D 8.04 MAILBOXES

Final locations for mailboxes shall be coordinated with the U.S. Postal Service (USPS). The engineer shall work with the USPS to ensure that mailboxes are installed according to the Standard Construction Specifications, meet ADA requirements, and shall be acceptable to the United States Postal Service.

To the extent possible, mailbox locations shall also be coordinated with streetlight locations in order to provide adequate lighting at mailbox locations. Mailbox locations shall be identified on plans for the construction of public improvements.

D 9.00 – PEDESTRIAN AND MULTI-USE PATHS

Pedestrian paths providing connectivity within residential areas shall be constructed to sidewalk standards, to the width specified in the land use decision or by the City Engineer. Multi-use paths shall be assumed as shared use pedestrian/bike paths with a minimum width of 10 feet and a minimum vertical clearance of 8 feet to overhead obstructions for bicyclists. Proposed modifications due to physical constraints or other circumstances must be approved by the City Engineer.

D 9.01 MATERIAL

All paths shall be constructed with PCC or A.C. pavement. The minimum structural PCC pavement section will be 4 inches of PCC pavement over 3 inches of crushed aggregate base. If the path is intended to support utility maintenance vehicles, the PCC thickness shall be increased to 6 inches.

The minimum structural A.C. pavement sections will be 3 inches of ½-inch dense-graded hot-mix asphalt over 6 inches of 100% fractured-face crushed aggregate base. Geotextile subgrade fabric may be required. If the path is intended to support utility maintenance vehicles, the A.C. pavement thickness shall be increased to 4 inches and the aggregate base thickness shall be increased to 8 inches. The use of pervious pavements may be allowed, but require approval by the City Engineer.

D 9.02 DRAINAGE

Where a path is constructed on a hillside or along an unimproved hillside roadway, a ditch of suitable dimensions shall be placed on the uphill side to intercept the hillside runoff. This ditch shall be a minimum of 3 feet from the edge of pavement. There shall be a minimum 1-foot shoulder between the edge of the path and the top of ditch. Where possible, field inlets shall be installed to intercept the runoff water and carry it under the bike path. Drainage grates and manholes shall be located outside the traveled way of the bicyclists with the slits of the drainage grates placed perpendicular to the bike path. Where possible, natural ground cover should be included in the design to prevent erosion on cut and fill slopes.

D 10.00 – TRAFFIC SIGNALS

A licensed traffic engineer registered in the State of Oregon shall design traffic signals. All documentation of traffic studies, field data, and recommendations will be coordinated with the City Engineer. All plans and specifications shall be in accordance with Oregon Department of Transportation (ODOT) and MUTCD requirements or as modified by the City Engineer. The final design of the traffic signal must be approved and accepted by the City Engineer.

D 11.00 – BRIDGES

Bridges shall be designed by a licensed professional engineer, registered in the State of Oregon. All documentation of hydrological and soil studies, field data, and recommendations shall be

coordinated with the City Engineer. All plans and specifications will be in accordance with Oregon Department of Transportation (ODOT) and MUTCD requirements, or as modified by the professional engineer. The final bridge design must be approved and accepted by the City Engineer.

DIVISION E – STORMWATER MANAGEMENT

E 1.00 – GENERAL

E 1.01 PURPOSE

The purpose of these Stormwater Management Engineering Standards is to provide a consistent policy under which certain physical aspects of stormwater management will be implemented. Most of the elements contained in this document are Public Works oriented and most are related to the development or platting process; however, it is intended that they apply to both public and private work designated herein.

These Engineering Standards cannot provide for all situations. They are intended to assist, but not to serve as a substitute for competent work by design professionals. Engineers are expected to bring the best skills from their respective disciplines to each project. If the Engineer anticipates challenges in meeting these standards, they should contact the City prior to extensive design efforts.

These Engineering Standards are not intended to limit unreasonably any innovative or creative effort that could result in better quality, better cost savings, or both. Any proposed departure from the Engineering Standards will be judged on the likelihood that such variance will produce a compensating or comparable result, in every way adequate for the user and City over the life cycle of the improvement.

Note that the presentation, layout, and general configuration of all engineering design drawings shall be in conformance with Millersburg's drafting design criteria as outlined in Division A of the Engineering Standards. Engineers shall prepare project design drawings in conformance with the requirements contained therein.

The standards have the objective of developing a stormwater management system that will:

A. Be of adequate design to safely manage stormwater generated upstream and on the site from given storm intervals to an approved point of disposal.

B. Provide points of connection for stormwater generated by future development upstream.

C. Prevent the uncontrolled or irresponsible discharge of stormwater onto adjoining public or private property.

D. Prevent the capacity of downstream channels and storm drainage facilities from being exceeded.

E. Have sufficient structural strength to resist erosion and all external loads that may be imposed.

F. Maintain the runoff characteristics of the original undeveloped drainage basin, where feasible, as determined by the City Engineer.

G. Protect Millersburg's natural drainage system of streams, lakes, and wetlands.

H. Maintain or improve overall stormwater quality.

I. Be designed in a manner to allow economical future maintenance.

J. Be designed using materials to insure a minimum practical design life of 75 years.

K. Be consistent with the *Millersburg Municipal Code* (MMC), *Millersburg Land Use Development Code*, *Millersburg Standard Construction Specifications* and all applicable state and federal regulations and requirements for stormwater quantity and quality.

E 1.02 SHORTENED DESIGNATION

These City of Millersburg *Stormwater Management Engineering Standards* shall be cited routinely in the text as the "Engineering Standards."

E 1.03 APPLICABILITY

These Engineering Standards shall govern construction and upgrading of all public stormwater management facilities in the City of Millersburg and applicable work within its service areas. These Engineering Standards shall also govern the construction of private stormwater management facilities that require Public Works review.

Permanent stormwater management facilities shall be provided on all property improvements within the City of Millersburg per these Engineering Standards for the following types of development:

A. All major partitions and subdivisions.

B. All public and private development that requires stormwater reviews and/or approvals from the City of Millersburg. These Engineering Standards are intended to fulfill the requirements of the "Special Storm Sewers" section of the Uniform Plumbing Code for private storm drains.

C. Developments entailing construction that would change the point of discharge of surface waters, the quantity of discharge, or discharge surface waters at a higher velocity or flow than that of the preconstruction discharge rate, or could contribute to pollution of surface waters.

D. Construction or reconstruction of public roadways and temporary detours.

E. Developments entailing construction in or adjacent to any existing stream or surface watercourse including intermittent streams.

F. Developments requiring construction in or adjacent to the 100-year floodplain of any stream.

E 1.04 REFERENCES

The Engineering Standards are intended to be consistent with the most currently adopted provisions of all stormwater-related guidelines including but not limited to:

A. Millersburg Stormwater Master Plan

B. Oregon Statewide Planning Goals and Guidelines

C. *Millersburg Transportation System Plan* (TSP)

D. *Millersburg Municipal Code* (MMC)

E. *Millersburg Comprehensive Plan*

F. *Millersburg Land Use Development Code* (LUDC)

G. *Millersburg Facility Plans*

E 1.05 *STANDARD CONSTRUCTION SPECIFICATIONS*

Except where the standards provide otherwise, design detail, workmanship, and materials shall be in accordance with the current edition of the *Standard Construction Specifications* prepared by the City of Albany, as adopted by the City of Millersburg.

E 1.06 DEFINITIONS AND TERMS

A. City Engineer. The City Engineer of the City of Millersburg or his/her authorized representative.

B. Creek. Any and all surface water routes generally consisting of a channel having a bed, banks, and/or sides in which surface waters flow in draining from higher to lower land, both perennial and intermittent; the channel, banks, and intervening artificial components, excluding flows that do not persist for more than 24 hours after cessation of one-half (1/2) inch of rainfall in a 24-hour period from October through March.

C. Definition of Words. Wherever in these standards the words directed, required, permitted, ordered, designated, or words of like importance are used, they shall be understood to mean the direction, requirement, permission, or order of designation of the City Engineer. Similarly, the words approved, acceptable, and satisfactory shall mean approved by, acceptable to, or satisfactory to the City Engineer.

D. Detention. The holding of runoff for a short period of time and then releasing it to the natural water course where it returns to the hydrologic cycle.

E. Drainage Facilities. Pipes, ditches, detention basins, creeks, culvert bridges, etc., used singularly or in combination with each other for the purpose of conveying or storing runoff.

F. Stormwater Master Plan. A document adopted by Millersburg's City Council that describes Millersburg's existing and planned Drainage System. The planned drainage system is based on runoff projected for Millersburg based on Millersburg's full development under the adopted Comprehensive Plan.

G. Easement. Easements are rights of use over property of another. New stormwater easements granting rights to the City shall be prepared on City forms.

H. F.I.R.M. Flood Insurance Rate Maps, which have been developed by the Federal Emergency Management Agency, showing 100-year, base flood elevations for various creeks and rivers.

I. Flow-Through Facility. A Post-Construction Stormwater Quality Facility that is designed to remove pollutants from stormwater by filtering through vegetation and soil media, with subsequent discharge to an approved drainage facility. A Flow-Through Facility may or may not allow incidental infiltration into underlying native soils, but design and sizing is based on treating and conveying all design

flows to a piped or other approved drainage facility.

J. Impervious Areas / Impervious Surfaces. Those hard surface areas located upon real property that either prevent or retard saturation of water into the land surface, as existed under natural conditions pre-existent to development, and cause water to run off the land surface in greater quantities or at an increased rate of flow from that present under natural conditions pre-existent to development. Common impervious surfaces include, but are not limited to rooftops, concrete or asphalt sidewalks, walkways, patio areas, driveways, parking lots or storage areas and graveled, oiled, macadam or other surfaces that similarly impact the natural saturation or runoff patterns that existed prior to development.

K. Natural Location. The location of those channels, swales, and other non-manmade conveyance systems as defined by the first documented topographic contours existing for the subject property either from maps or photographs.

L. Peak Discharge. The maximum water runoff rate (cfs) determined for the design storm.

M. Plans. Construction plans, including system site plans, storm drain plans and profiles, cross sections, detailed drawings, etc., or reproductions thereof, approved or to be approved by the City Engineer, which show the location, character, dimensions, and details for the work to be done, in which constitute a supplement to these Engineering Standards.

N. Post-Construction Stormwater Quality Facility. Permanent stormwater infrastructure incorporated into a development or redevelopment project designed to reduce pollutant loads and runoff velocity from impervious surfaces, and which may also include improvements constructed to reduce the quantity of stormwater runoff leaving the site. May also be referred to as a "Stormwater Quality Facility" in this document.

O. Private Storm Drain. A storm drain facility located on private property and/or one that is not considered a public storm drain facility.

P. Public Storm Drain. Any storm drain facility in the public right-of-way or easement operated and maintained by the City.

Q. Receiving Bodies of Water. Creeks, streams, lakes, and other bodies of water into which waters are artificially or naturally directed.

R. Release Rate. The controlled rate of release of drainage, storm, and runoff water from property, storage pond, runoff detention pond, or other facility during and following a storm event.

S. Right-of-Way. All land or interest therein which by deed, conveyance, agreement, easement, dedication, usage, or process of law is reserved for or dedicated to the use of the general public within which the City has the right to install and maintain storm drains.

T. Sedimentation. Deposition of erosional debris-soil sediment displaced by erosion and transported by water from a high elevation to an area of lower gradient where sediments are deposited as a result of slack water.

U. Stormwater Management Facilities. Include drainage facilities and post-construction stormwater quality facilities as defined above.

E 2.00 –STORMWATER PLAN

E 2.01 STORMWATER REPORT AND SITE PLANS

Stormwater site plans, drawn to scale, showing the existing and proposed stormwater systems and other required information shall be submitted with the stormwater report for a development. The existing and proposed stormwater site plan shall be on separate plan sheets. The proposed plan shall show profile and plan view of the proposed improvements. The stormwater report shall include post-construction stormwater quality facility sizing forms and calculations, and sizing calculations for stormwater conveyance and detention facilities.

E 2.02 EXISTING STORMWATER SITE PLAN

A topographical contour map, drawn to scale, and clearly defining existing conditions:

A. The plan shall clearly show the drainage basins within, and/or contributing to, the improvement limits. Existing routing and discharge locations of the basins shall be shown.

B. Existing contours of the land at one (1)-foot intervals, or as otherwise required or approved by the City Engineer, with the location of existing buildings, structures, and public and private utilities on the property. Location of any existing building or structure on adjacent property that is within 15 feet of a proposed stormwater facility.

C. All areas improved or unimproved, lying upstream and draining to or through the proposed development.

D. All areas improved or unimproved, lying downstream, to a trunk line, that will receive the runoff developed from the site.

E. Location of existing stormwater facilities that transport surface water onto, across, or from the site, including natural watercourses, artificial channels, drain pipes, or culverts.

F. Location of any existing post-construction stormwater quality facilities.

G. Location of any septic drain fields and areas of known contaminated soil or groundwater.

H. Locations of springs, wells, or other subsurface water sources.

I. Arrows indicating drainage direction in all public and private property and for all stormwater conveyance systems.

J. The route used in determining the pre-developed time of concentration.

K. Existing structures and impervious surfaces.

L. Floodplains, Natural Resource Overlay Districts, and wetlands.

E 2.03 PROPOSED STORMWATER SITE PLAN

The proposed stormwater plan sheets shall clearly define the proposed improvements and include necessary construction details. (The requirements of this section, as applicable, satisfy the requirements for a post-construction stormwater quality plan as

identified in Title 12 of the Millersburg Municipal Code.)

A. The plan shall clearly show the drainage basins within, and/or contributing to, the improvement limits. Proposed routing of all piping and other drainage improvements and discharge locations of the basins shall be shown.

B. Proposed contours of the land after completion of the project at one (1)-foot intervals, or as otherwise required or approved by the City Engineer. This shall include elevations, dimensions and location, extent, and slopes of all grading work proposed to be done.

C. Identify cut and fill areas, soil types, topography, and vegetation.

D. Location of proposed stormwater facilities that transport surface water across or from the site, including, but not limited to, natural watercourses, artificial channels, under drain pipes, and culverts.

E. Location, type, size, capacity, and details of proposed post-construction stormwater quality facilities, detention facilities, impervious area reduction measures, and excess flow escape routing. Clearly identify all impervious surfaces contributing to each facility.

F. Planting plans for vegetated post-construction stormwater quality facilities.

G. Boundaries and total square footage of all impervious surfaces and areas that will be otherwise altered in a manner that will increase surface water runoff and boundaries of all areas to remain in an existing or natural condition.

H. The route used in determining the post-developed time of concentration.

E 3.00 – STORMWATER QUALITY MANAGEMENT DESIGN AND CACULATIONS

E 3.01 GENERAL REQUIREMENTS

Post-construction stormwater quality facilities are encouraged on all development and redevelopment projects and are required in most situations per Title12 of the Millersburg Municipal Code. In most instances, facilities not located in the public right-of-way will be required to be privately maintained consistent with the requirements of Title 12 of the Millersburg Municipal Code and the Private Stormwater Facilities Operations and Maintenance Agreement and checklists provided in Appendix E 10.04 Operations & Maintenance Agreement and Checklists.

A. These requirements are established to comply with state and federal water quality and stormwater regulations, and the Albany Municipal Code. The purpose of the stormwater quality facilities standards are to:
   - reduce pollutant loads,
   - reduce the velocity and quantity of stormwater runoff, and
   - provide for the capture and treatment of stormwater runoff on or as close as possible to the site where it is generated.

B. Additionally, the goal of these standards is to encourage design and construction of stormwater quality facilities that are visually attractive and integrated into site designs and landscaping. Generally, vegetated stormwater quality facilities may be located in required site landscaping (such as parking lot islands, open space, and street-side planter strips). Locating post-construction stormwater quality facilities in required on-site landscaped areas is allowed when approved in the Millersburg Land Use Development Code.

E 3.02 FACILITY SELECTION AND LOCATION

A. Most residential subdivisions, partitions, and small site developments should be able to locate post-construction stormwater quality facilities on site. Private facilities shall be incorporated into the site design. Private facilities will require that a Private Stormwater Facilities Operations and Maintenance Agreement (See Appendix E 10.04 Operations & Maintenance Agreement and Checklists) be recorded with the property.

   The City recognizes that there will be instances where stormwater quality ponds may be appropriate. The City Engineer will consider water quality ponds on a case-by-case basis. Private pond systems that would be maintained by a Home Owners Association (HOA) are allowed. Private pond systems that would be maintained by individual home owners are not allowed.

B. There are two categories of stormwater quality facilities that may be designed to meet post-construction stormwater quality requirements, although restrictions apply for various site types and conditions:

   - Vegetated Stormwater Quality Facilities that provide filtration of stormwater through soil and plant material. These facilities are encouraged for use on all projects on private property. They may be sized using a simplified sizing factor method, and may be located as approved within site landscaping, designated open space, and floodplains.

- Manufactured Facilities, such as underground vault type treatment systems may be approved on a case-by-case basis when vegetated stormwater facilities are not a feasible option due to site constraints. These facilities are not allowed as publicly owned, operated, or maintained facilities.

C. Stormwater quality facilities are sized based on the amount of impervious surface in the contributing drainage area. Impervious area reduction measures may be used, as specified in these standards, to reduce the required size of the stormwater quality facilities.

D. Tables 3.02-A and 3.02-B list approved impervious area reduction measures and stormwater quality facilities and their applicability for various land use and site conditions to assist in selection of the most appropriate measures and facilities for a project site.

TABLE 3.02-A: Stormwater Quality Facility Selection by Land Use			
FACILITY TYPE	RESIDENTIAL SUBDIVISION	COMMERCIAL INDUSTRIAL MULTI-FAMILY (ONSITE)	INSTITUTIONAL (ONSITE)
Impervious Reduction Measures			
Pervious Pavement		✓	✓
Green Roof		✓	✓
Vegetated Stormwater Quality Facilities (Filtration)			
Onsite Planter	✓	✓	✓
Onsite Swale	✓	✓	✓
Manufactured Stormwater Quality Facilities			
Manufactured Facility		✓	✓

TABLE 3.02-B: Stormwater Quality Facility Selection by Site Conditions							
FACILITY TYPE	ON OR NEXT TO BUILDING	PARKING LOT	LANDSCAPED AREA	FLOODPLAIN	STEEP SLOPE (>12%) or LANDSLIDE AREA	ON FILL (5FT DEEP)	CONTAMINATED SOILS
Impervious Reduction Measures							
Pervious Pavement		✓		✓		✓**	
Green Roof	✓*			✓	✓	✓	✓
Vegetated Stormwater Quality Facilities (Filtration)							
Onsite Planter	✓*	✓	✓	✓	✓*	✓*	✓*
Onsite Swale	✓*	✓	✓	✓	✓*	✓*	✓*
Manufactured Stormwater Quality Facilities							
Manufactured Facility		✓			✓	✓	✓

**Impermeable liner required. May have additional building code requirements for facilities on or adjacent to buildings. Even with liners, the presence of certain contaminants may prohibit installation of post-construction stormwater quality facilities.*

***Geotechnical report required*

E 3.03 STORMWATER QUALITY FACILITY SIZING

A. The City's stormwater quality design criteria are as follows:

- Capture and treatment of 80% of the average annual runoff volume (corresponds to a one (1)-inch in 24 hours rain event).
- Treatment system design goal of removing 70% of the total suspended solids from the captured volume. Removal of suspended solids is a design surrogate for water quality treatment for various pollutants including the City's regulatory requirements to address mercury and bacteria Total Maximum Daily Loads for the Willamette Basin, per the Oregon Department of Environmental Quality.
- Vegetated stormwater quality facilities listed in this chapter and designed according to City standards have been established to meet the stormwater quality design criteria.

B. Stormwater Quality Facility Sizing by Facility Type:

1. Vegetated Facilities (Filtration). The facility sizing method for filtration-based vegetated stormwater quality facilities uses a simple surface area ratio calculation. The impervious area requiring treatment is multiplied by the applicable sizing factor (See Table 3.03) to produce the minimum required surface treatment area of the facility. The facilities that may be designed using this simplified sizing method are onsite planters, and onsite swales. The sizing factor analyses were based on the Santa Barbara Urban Hydrograph (SBUH) method.

   The development site should be divided into subcatchment drainage areas, and the required facility sizing determined separately for each area. For onsite planters and onsite swales, the impervious surface area within individual sub-catchment areas shall be less than 20,000 square feet, unless otherwise approved by the City Engineer. Multiple facilities and facility types may be used to meet the treatment requirements. The treatment area calculated using the sizing factors is the surface area required at the maximum stormwater quality treatment ponding depth (listed in the Facility Design Criteria section) for the flow-through facility dimensions identified in these standards. Variations in facility dimensions and ponding depths will require more detailed evaluations to determine appropriate sizing factors for the respective design. Any proposed non-flow-through facility would also require detailed evaluation of appropriate sizing factors. Table 3.03 provides stormwater quality facility sizing factors by facility type.

TABLE 3.03-A: Stormwater Quality Facility Sizing Factors		
FACILITY TYPE	**SIZING FACTOR**	**NOTES**
Onsite Planter	0.018	Size = surface area of vegetated facility with vertical walls. Design treatment ponding depth = 8 inches above soil surface.
Onsite Swale	0.025	Size = surface area of facility at design treatment ponding depth of 8 inches, not total surface area of facility.

2. Manufactured Treatment Technologies. The use of, and type of, manufactured treatment devices must be approved by the City Engineer. The treatment device shall be sized according to the manufacturer's recommendations and designed to meet the City's stormwater quality design criteria.

C. Determination of Impervious Area Requiring Treatment. Sizing of stormwater quality facilities is based on the amount of impervious area draining to the facility. The impervious area requiring treatment is calculated by subtracting impervious area reduction credits from the gross impervious area.

1. Calculating Gross Impervious Area.
    a. For single-family residential development, the gross impervious area shall be determined by multiplying the number of single-family residential lots (all phases and parcels) by 5,000 square feet and adding it to the measured actual impervious area of streets and sidewalks from engineering site plans.
    b. For all other development, gross impervious area shall be calculated by measuring actual impervious area from engineering site plans. The gross impervious area is the total of: new impervious area, plus replaced and/or re- surfaced impervious area, plus any additional pre-existing impervious area that will drain across the new or replaced/re-surfaced impervious area.
2. Impervious Area Reduction Credits. Reduction credits may be given for pervious pavements and green roofs.
    a. Pervious pavements include pervious asphalt, pervious concrete, permeable pavers, and grid systems. Pervious pavement is not considered a stormwater quality facility to provide treatment for runoff from other impervious surfaces. However, pervious pavement area may be considered to be 100% pervious in stormwater quality facility-sizing calculations. Pervious pavement may be allowed and considered for impervious reduction credit on private property in the following locations: parking lots, walkways, patios/courtyards, and other locations as approved. When considering pervious pavement options, it is important to remember Americans with Disabilities Act (ADA) requirements and how they may impact different design options. Pervious pavement shall only be considered for impervious

area reduction credit when it is designed without any impermeable liner.

b. A green roof is a lightweight vegetated roof system with waterproofing material, drainage, growing medium, and specially-selected plants. Green roofs may be considered to be 100% pervious in stormwater quality facility sizing calculations.

E 3.04 FACILITY DESIGN CRITERIA

This section provides design criteria for the City's approved post-construction stormwater quality facilities. The approved facilities were developed with the intent of providing flexibility to the design engineer to select the most appropriate facility for each unique situation. However, it should be noted that the City reserves the right to require design modifications for public facilities in order to minimize long-term operation and maintenance costs and to accommodate other public needs such as preservation of on-street parking.

A. Post-Construction Stormwater Quality Criteria by Facility Type. Post-construction stormwater quality facilities shall be designed as flow-through facilities. The use of non-flow-through facilities would require approval of the City Engineer and would be subject to additional requirements and, most likely, larger sizing factors. Each facility shall be sized appropriately to treat the contributing drainage area. The City's *Standard Construction Specifications* identify construction requirements and provide standard drawings for each facility type.

Impervious Area Reduction Measures

Pervious Pavement. These systems provide paving solutions that do not contribute to a site's total impervious area. Pervious pavement solutions include pervious asphalt and concrete, permeable paver systems including various modular pre-cast units, and concrete or plastic grid systems that are filled with soil/vegetation or permeable aggregate. Pervious paving is an impervious reduction measure only, and not a stormwater quality facility designed to receive runoff from adjacent areas. Design site grading to slope adjacent impervious and pervious areas away from pervious pavement to the maximum extent practicable.

Pervious pavements shall be designed to provide a minimum initial infiltration rate through the pavement or pavers of 20-inches per hour. The design shall include a perforated pipe underdrain system, centered vertically in the reservoir course (drain rock) layer. Minimum perforated pipe size shall be 4-inch diameter. Pipe sizing and lateral spacing shall be based on pervious pavement size and individual site conditions. Provide emergency overflow or inlets to avoid flooding in case surface becomes plugged.

Minimum design criteria for pervious pavements for parking lots and vehicular travel ways are listed below. It is the responsibility of the design engineer to propose materials and sections that are appropriate for anticipated loadings and turning movements, and to locate pervious pavement in appropriate locations given individual site conditions.

Permeable pavers are not approved for use within vehicular travel ways.

a. Pervious Asphalt. The pervious asphalt shall have a minimum1.5-inch thick 3/8-inch open-graded asphalt wearing surface, and a minimum 2.5-inch thick asphalt treated permeable base (ATPB) layer. Additional ATPB can count towards crushed aggregate reservoir course depth. Use PG70-22 asphalt binder for wearing surface and ATPB. Mix design shall require approval from the City Engineer.
   - 10-inches minimum crushed aggregate reservoir course. AASHTO No. 2 open-graded crushed rock (2.5"-1.5") or approved equal with 40% void space. (Reservoir course depth may be increased and used for stormwater detention with approval of the City Engineer.)
   - Place non-woven geotextile over uncompacted subgrade.

b. Pervious Concrete. The pervious concrete pavement shall be a minimum of 6- inches of open-graded concrete. Mix design shall require approval from the City Engineer.
   - 12-inches minimum crushed aggregate reservoir course, AASHTO No. 2 open-graded crushed rock (2.5"-1.5") or approved equal with 40% void space. (Reservoir course depth may be increased and used for stormwater detention with approval of the City Engineer.)
   - Place non-woven geotextile over uncompacted subgrade.

c. Permeable Pavers. Pavers shall meet standards for ASTM C936, Standard Specifications for Interlocking Concrete. Paver systems shall be installed per manufacturer's recommendations with open surface spaces between half (½) inch and one (1) inch.
   - 10-inches minimum crushed aggregate reservoir course, AASHTO No. 2 open-graded crushed rock (2.5"-1.5") or approved equal with 40% void space. (Reservoir course depth may be increased and used for stormwater detention with approval of the City Engineer.)
   - Place non-woven geotextile over uncompacted subgrade.

See Appendix E 10.05 *Design Guide Drawings* for additional design requirements for pervious pavement.

Green Roof. Depending on the configuration and structure of the roof, a vegetated green roof can be constructed to reduce a site's total impervious area. A vegetated green roof is an impervious area reduction measure only and shall not receive runoff from adjacent areas. The structural roof support must be designed to accommodate the weight of the vegetated green roof. The green roof design must be low maintenance. Use of irrigation is allowed only to sustain the health of the vegetation. Design of the vegetated green roof shall be according to most current standards of the City of Portland, Bureau of Environmental Services' Stormwater Management Manual. Green roofs will also require review and

approvals from the Planning and Building Departments.

Vegetated Stormwater Quality Facilities (Filtration)

1. Onsite Planter. Onsite planters are structural, vertical-walled, landscaped facilities that could be located in parking lots, adjacent to buildings and pathways, courtyards or other site landscaping areas. They are designed to collect stormwater runoff onsite from private property. Onsite planters shall have a level soil surface to promote infiltration of stormwater throughout the entire surface of the facility. The elevation of the soil surface shall be shown on the construction plans. Check dams may be used to maintain soil surface elevations while also maintaining facility length on steeper sites. The onsite planter has a standard 6-inch ponding depth in the vegetation zone plus 2-inches of minimum freeboard that provides for overflows over check dams and flows to outlet structures (creating an 8-inch design treatment depth), and is underlain by soil media and drain rock layers. A perforated pipe in the drain rock and the surface overflow system collect stormwater and direct it to the storm drain system. See Appendix E 10.05 Design Guide Drawings for additional design requirements for onsite planters.

   When walkways are proposed adjacent to onsite planters, care shall be taken to minimize the vertical distance between the walkway and the designed soil surface. Structural protective measures, such as curbing, shall be incorporated into the design to physically separate pedestrians from the facility.

   Onsite planters shall be designed such that the vertical height of walls and vegetation above ground do not interfere with required lines of sight.

   Planter walls exceeding 40 feet in length require special design consideration for a keyed joint.

   In general, street-side planter design requirements will be used as a guide for reviewing similar components of proposed onsite planter designs.

   The maximum amount of impervious surface draining to each onsite planter shall be 20,000 square feet. Multiple facilities can be used to meet treatment requirements.

   Careful consideration shall be given to the overflow design. These facilities are only intended to handle the water quality storm. It is the design engineers responsibility to ensure that larger storm events are also appropriately considered in the site design.

   Since these facilities will be constructed on private property, land use approvals and building permits may be required from the Community Development Department.

   All vehicular and pedestrian safety (including ADA) requirements shall be incorporated into onsite designs. It is the property owner and design engineers responsibility to ensure that these requirements are met. Public Works review of private facility design is limited to stormwater quality functions.

2. Onsite Swale. Onsite swales are shallow, vegetated depressions with side slopes (maximum 3 horizontal:1 vertical) and a 2-foot-wide bottom that is flat, with no grade. The elevation of the soil surface shall be shown on the construction plans. Check dams may be used to maintain soil surface elevations while also maintaining facility length on steeper sites. Swales may be located in parking lots and other site landscaping areas. They are designed to collect stormwater runoff onsite from private property. The onsite swale has a standard 6-inch-ponding depth in the vegetation zone plus 2 inches of minimum freeboard that provides for overflows over check dams and flows to outlet structures (creating an 8-inch design treatment depth), underlain by soil media and drain rock layers. A perforated pipe in the drain rock and the surface overflow system collect stormwater and direct it to the storm drain system. See Appendix E 10.05 Design Guide Drawings for additional design requirements for onsite swales. Sizing factors for onsite swales are based on 3:1 side slopes and the identified bottom width, and an 8-inch treatment depth. Any variation from these standards will require calculation of a facility-specific sizing factor.

   If walkways are proposed adjacent to these facilities, the design engineer will need to consider whether additional measures are required, such as curbing, to separate the walkway from the side slope on the stormwater quality facility. When parking is proposed adjacent to these facilities, curbing or wheel stops are required to prevent vehicles from accidently driving into the facility.

   The maximum amount of impervious surface draining to each onsite swale shall be 20,000 square feet. Multiple facilities can be used to meet treatment requirements.

   Careful consideration shall be given to the overflow design. These facilities are only intended to handle the water quality storm. It is the design engineer's responsibility to ensure that larger storm events are also appropriately considered in the site design.

   Since these facilities will be constructed on private property, land use approvals and building permits may be required. All vehicular and pedestrian safety (including ADA) requirements shall be incorporated into onsite designs. It is the property owner and design engineers responsibility to ensure that these requirements are met. City review of private facility design is limited to stormwater quality functions.

Manufactured Stormwater Quality Facilities

1. Manufactured Facilities. If manufactured treatment facilities are approved for use, the type of facility to be installed must be approved by the City Engineer. The treatment device shall be designed and installed according to the manufacturer's recommendations.

   Since these facilities may be constructed on private property, land use approvals and building permits may be required.

B. Inlets, Outlets, and Overflows:

Facility Inlets

1. Curb Notches. The station and invert elevation of each curb notch shall be identified on the construction plans. Curb notches shall be spaced to assure that flow along the gutter line can be intercepted by post-construction stormwater quality facilities during the water quality design storm. Curb notches are typically located at the upstream end of each facility, or cell, within a multi-cell facility that is divided by check dams. However, the maximum length between curb notches is 30 feet on a single cell facility, or within the same cell on a multi-cell facility. If a facility or cell has more than one curb notch serving it, the elevations of each notch must be set such that the anticipated treatment (ponding) depth within the facility will not short-circuit. Deviations in the maximum elevation between the curb/sidewalk and the soil surface to accommodate additional curb notches requires the approval of the City Engineer.

2. Sidewalk Drainage Notch. Four (4)-inch sidewalk drainage notches shall be placed in the exposure of planter walls adjacent to the sidewalk to assure that the flow from sidewalk can be intercepted and ponding on the sidewalk does not occur during the design storm event. Notches shall typically be centered on sidewalk panel joints every 10 to 15 feet, or one per cell of a multi-cell facility, but in no case shall the spacing exceed 20 feet.

   Sediment Traps. Some locations have higher sediment loads than others. High sediment load areas can be problematic for post-construction stormwater quality facilities by "clogging" the soils and reducing overall infiltration. This results in increased maintenance costs and a reduced service life for the facility. To avoid this situation, sediment traps can be incorporated into the inlet design. Sediment traps may be required by the City Engineer in the following locations:

   a. Facilities adjacent to, or immediately downstream of, unimproved roads or lots.

   b. Other locations identified by the City Engineer as having a potential for high sediment loads.

3. Roof Drains. Roof drains should connect to the street at the standard curb and gutter location. Locations of connections shall be shown on the construction plans. Direct connection of roof drains to post-construction vegetated stormwater quality facilities is discouraged and requires approval from the City Engineer.

Facility Outlets and Overflows

1. Underdrain System. The primary outlet for post-construction stormwater quality facilities is through the underdrain system. Flow is collected in the underdrain system and routed to the standard stormwater collection system. Methods of connection include:

   a. Connection to an adjacent curb inlet.

b. Stormwater lateral connection to standard piped stormwater system.

c. Connection to the underdrain system on an adjacent facility. This option may be considered when two facilities are located on the same side of the street and separated by a short distance, such as a driveway width. The purpose of such a connection would be to reduce, or eliminate, the use of stormwater laterals. When connecting to adjacent facilities the ability of the underdrain system to accept the additional flow will need to be verified.

**Invert elevations and stationing shall be shown for all points of connection.

2. Overflows. All post-construction stormwater quality facility designs shall incorporate an overflow system in the event the stormwater facility temporarily fails or rainfall exceeds the stormwater quality design storm. The overflow system shall be designed to maintain public safety and avoid property damage. Overflow elevations shall be identified on the construction plans. Flow routing shall be identified on the construction plans to illustrate where flood conditions or ponding is expected to occur during larger rain events.

3. Cleanouts & Laterals. Stormwater cleanouts and laterals shall conform with all requirements outlined in the City of Millersburg adopted Engineering Standards, Division C as applicable.

C. Liners.

1. Unless required by this section or otherwise required by the City, vegetated stormwater quality facilities and pervious pavement shall be designed and constructed to allow incidental infiltration into underlying native soils. As such, the use of liners is not allowed except as required below.

2. Impermeable liners are required for the following site conditions:

a. Steep Slopes. Facilities located on slopes > 12% and facilities located closer to the top of the slope than the vertical height of the slope area that is >12%.

b. Landslide Areas. Facilities located 200 feet or closer to known landslide-prone areas.

c. Set-backs. Facilities located within 10 feet of habitable structures. Facilities within 5 feet of a property line when the invert of the underdrain piping is at a higher elevation than the ground surface on the adjacent property.

d. Contaminated Soils. Facilities located on or within 50 feet of contaminated soils as defined or identified by Oregon Department of Environmental Quality in the Environmental Cleanup Site Information (ECSI) database. Note: presence of certain contaminants may prohibit the construction of post-construction stormwater quality facilities, even with liners.

e. Contamination Risk Areas. Post-construction stormwater quality facilities are not designed to replace required containment or other source control measures. Regardless, impermeable liners are required for post-construction stormwater quality facilities that will receive drainage from or are adjacent to loading docks, refueling areas, areas of hazardous and toxic material storage or handling, and/or materials storage or handling areas.

f. Fill Areas. Facilities located on fill soils deeper than 5 feet as measured from the highest finish grade adjacent to the proposed facility and the lowest existing grade under the proposed facility. Note: liner may not be required if a stamped geotechnical report for site fill conditions is submitted and indicates suitable stability for unlined facilities.

3. When required, impermeable liners shall be shown on the construction plans and be constructed to underlay all areas of the facility that are at or below the overflow elevation for the water quality design storm.

4. Perforated underdrain pipes shall be located at the bottom of the drain rock and above the impermeable liner, in facilities with impermeable liners.

D. Check Dams. Check dams shall be used to create multi-cell facilities when slopes and facility lengths prevent having one continuous facility with a flat soil surface in all directions. Check dams may be used for onsite planters and swales as needed to accommodate site slope and grading conditions.

1. General:

a. Provide elevations and stationing and/or dimensioning for check dam locations.

b. In a standard installation, each cell will have a curb-notch inlet at the upper end of each cell and a check dam at the lower end of the cell (except for the final cell). The check dam elevation for each cell shall be set at the same elevation as the lowest elevation of the depressed opening for the curb-notch inlet contributing to that cell. The City's *Standard Construction Specifications* provide a drawing depicting the vertical relationship between inlets and check dams for multi-cell facilities.

c. Check dam elevations shall not cause stormwater to overflow to sidewalk.

d. Table 3.04-B provides check dam spacing requirements by slope. Spacing is based on providing 4 inches of clearance between top of each check dam and the top face of curb.

TABLE 3.04B: Check Dam Spacing	
SLOPE	**ON CENTER SPACING**
1%	35 feet
2%	19 feet
3%	13 feet
4%	11 feet
5%	9 feet
6%	8 feet
>6%	Too steep for post- construction stormwater quality facilities

E 3.05 LANDSCAPE REQUIREMENTS

A. Applicability. The main purpose of vegetation in stormwater quality facilities is to provide the maximum amount of water quality benefit for stormwater management. This section addresses the landscape requirements that apply to the design (planting plans) of vegetated post- construction stormwater quality facilities in the City of Millersburg. Planting plans are an important mechanism to ensure the proper selection and installation of vegetation in these facilities. The objectives of these standards are:

1. Provide adequate plant coverage.
2. Provide information on placing plants in the proper location per varying context factors.
3. Encouraging plant diversity.
4. Maintaining some year-round foliage.

B. Moisture Zones. Careful consideration of the soil moisture conditions within a stormwater facility will help to ensure the success of a planting design. Planting conditions for vegetated stormwater quality facilities with side slopes (e.g. swales) have a variety of moisture levels from dry to wet. Soil conditions at and near the bottom of the facility can be wet due to frequent or constant inundation, and side slopes vary from wet at the bottom to relatively dry near the top. The moisture gradient varies with the designed maximum water depth, the time it takes for a facility to drain after a storm event, and the steepness of the side slopes. The zone from the bottom of the facility to the designed high water line (the designed treatment area) should be planted with plants that tolerate occasional standing water and wet-to-moist conditions. Above the designed high water line vegetation is not affected by stormwater entering the facility and should be planted with species well-suited to the local climate and site-specific conditions (i.e., solar aspect, micro climate, etc.). Planting conditions are more uniform for vertical-walled planters because of the relatively uniform and flat surface.

Vegetation for post-construction vegetated stormwater facilities is categorized according to the degree of soil moisture that will be encountered in the facility

during the growing season. Consideration of these zones will enhance the success of a facility's planting design. See Figure E 3.05-A. The figure depicts two different zones:

- Moist (Zone A): periodically saturated; anaerobic and/or aerobic soils
- Dry (Zones B): infrequent inundation/saturation, if any; aerobic soils

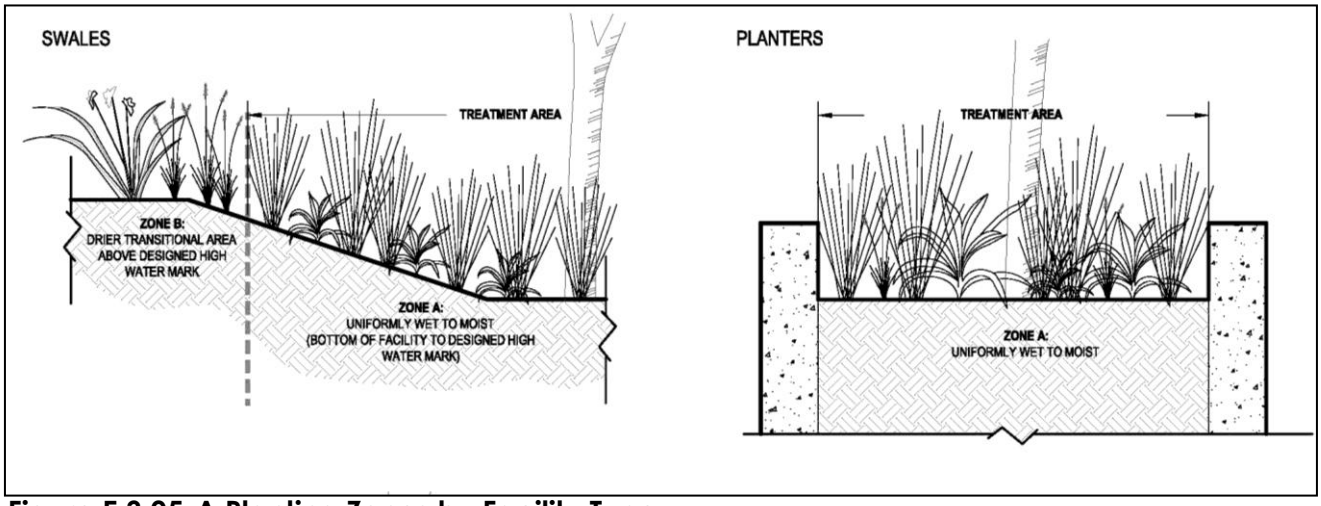


Figure E 3.05-A Planting Zones by Facility Type

C. Planting Plan Requirements. Planting plans are required for design and construction of post- construction stormwater quality facilities. At a minimum, planting plans shall provide the following:

- Scaled planting plan sheets identifying the location of the facilities within the project limits with call-outs to applicable planting diagrams and tables.
- A dimensioned planting diagram for each facility with each plant type assigned its own symbol. See Appendix E 10.03 Planting Matrix & Example Planting Diagrams for guidance.
- Planting table that identifies quantities and documents the common name, scientific name, category (herbaceous, small shrub, etc.), distribution (zone and spacing), condition (container, B&B, etc.) and size of planting for each facility. Quantities shall be based on the typical on-center spacing (which is the maximum spacing) listed on the plant matrices.
- Planting legend.
- Installation methods for plant materials.
- Recommended long-term irrigation plan, including identification of water source and maintenance of the system, if applicable.
- Any additional recommendations from what is already required in the City's *Standard Construction Specifications* for irrigation, weeding, and pruning during the establishment/warranty period.
- References to applicable portions of the City's *Standard Construction*

Specifications for growing medium, surface treatments, timing for plantings, and installation requirements.

D. Plant Selection. The City's approved plant lists are provided in Appendix E 10.03 Planting Matrix & Example Planting Diagrams by facility type. Each planting list includes a suitability matrix for limiting contextual factors (such as location and width of facility) as well as a listing of specific characteristics for each species, such as an indication of the appropriate moisture zone, if it is native to the area, if it is evergreen, its average height and a recommended on-center spacing. These plant matrices provide a short list of plants that are appropriate for the stormwater facilities in a variety of conditions. Other plants may be approved if they meet the criteria for type/width of facility, condition, location, size of plant material at maturity, etc.

E. Landscape Design Requirements:

1. Quantities. Plant quantities shall be as follows. All quantities are listed on a per 100 square feet of facility area.

   a. Onsite Facilities:

      - 3 large shrubs, 4 small shrubs / 100 square feet*
      - The remainder of the area must be planted with groundcover/herbaceous plants in swales and herbaceous plants only in planters. The plants must be spaced to cover the area within 3 years. Plant spacing guidance is provided in planting matrices in Appendix E 10.03 Planting Matrix & Example Planting Diagrams.

      * Onsite facilities located in areas where sustained lines of sight are required shall have ONLY small shrubs with the remaining area planted with groundcover/herbaceous plants, as applicable. In these locations, instead of 3 large shrubs and 4 small shrubs, 6 small shrubs per 100 square feet shall be required.

2. Tree Requirements:

   a. Onsite Facilities:

      - In Moisture Zone A, one (1) tree per 100 square feet of facility area is required, or the number of the trees per applicable Development Code requirements, whichever is of greater quantity.
      - Trees are not allowed in lined facilities.
      - Planters less than or equal to 3-feet wide require special consideration to tree selection. See planting matrices in Appendix E 10.03 Planting Matrix & Example Planting Diagrams for trees identified as appropriate for this application.

3. Size. Minimum plant size at installation:

Herbaceous Plants:	4-inch pot container
Small Shrubs/Groundcover:	1-gallon container
Large Shrubs:	30-inch height

Deciduous Trees:	1-inch caliper
Evergreen Trees:	7-feet height

4. Each facility shall have a minimum of 50% evergreen plants, by number.
5. Each facility shall have at least two species from the Herbaceous plant community.
6. Deep rooting trees and shrubs shall not be planted in lined facilities, on top of public utilities, or within 10 feet of retaining walls, inlet/outlet structures or other culverts. See planting matrices in Appendix E 10.03 Planting Matrix & Example Planting Diagrams for suitable plants in these locations.

E 3.06 OPERATION & MAINTENANCE

A. Maintenance Required. In order to function for their intended purpose over the long term, post-construction stormwater quality facilities must be periodically maintained. Public facilities will be maintained by the City of Millersburg. Private facility maintenance shall be the responsibility of the property owner.

Per Title 12 of the Millersburg Municipal Code, private post-construction stormwater quality facilities require that the owner sign a Private Stormwater Facilities Operation and Maintenance (O&M) Agreement with the City, committing the owner, and future owners, to certain operation and maintenance activities. The standard Operations and Maintenance Agreement and required operations and maintenance activities are located in Appendix E 10.04 Operations & Maintenance Agreement and Checklists. The operations and maintenance practices have been adapted from the ***Clean Water Services – Low Impact Development Approaches Handbook.***

Appendix E 10.04 Operations & Maintenance Agreement and Checklists does not provide maintenance checklists for manufactured facilities. Manufactured facilities shall be maintained according to manufacturer's recommendations.

E 4.00 – STORMWATER QUANTITY MANAGEMENT DESIGN & CALCULATIONS

E 4.01 GENERAL REQUIREMENTS

Storm drainage design within a development area must include provisions to adequately control runoff from all public and private streets and the roof, footing, and area drains of residential, multifamily, commercial, or industrial buildings, and to insure future extension of the drainage system to the entire drainage basin in conformance with the MMC and adopted Stormwater Management Plans. Control of both water quantity and quality shall be included as part of the design considerations. Provisions that must be met are:

A. Surface or subsurface drainage, caused or affected by the changing of the natural grade of the existing ground or removal of natural ground cover or placement of impervious surfaces, shall not be allowed to flow over adjacent public or private property in a volume and/or rate or location materially different from that which existed before development occurred, but shall be collected and conveyed in an approved manner to an approved point of disposal. Requirements of the Linn County Building Department shall also be met regarding alteration of drainage patterns.

B. Surface water entering the subject property shall be received at the naturally occurring locations and surface water exiting the subject property shall be discharged at the natural locations with adequate energy dissipators within the subject property to minimize downstream damage and with no diversion at any of these points.

C. The approved point of discharge for all stormwater may be a storm drain, existing open channel, creek, detention, or retention pond approved by the City Engineer. Acceptance of suggested systems will depend upon the prevailing site conditions, capacity of existing downstream facilities, and feasibility/maintainability of the alternate design.

D. When private property must be crossed in order to reach an approved point of discharge, it shall be the developer's responsibility to acquire a recorded drainage easement (dedicated to the City) from the private property owner meeting the approval of the City Engineer. The developer must secure all signed easement documents from private property owners prior to final plan approval.

E. The peak discharge from the subject property may not be increased from conditions existing prior to the proposed development except where it can be satisfactorily demonstrated by the applicant that there is no adverse impact.

F. Retention/detention facilities must be provided in order to maintain surface water discharge rates at or below the existing design storm peak discharge except where it can be demonstrated by the applicant that no adverse impact will result from not providing said facilities. A basin analysis may be required to assure that the detention system does not adversely impact the operation of the storm drain system it is discharging to.

G. All storm drain system designs (conveyance, flow restrictions, detention) shall make adequate provisions for collecting all stormwater runoff. The system shall

accommodate all runoff from upstream tributary areas whether or not such areas are within the proposed development. The amount of runoff to be accommodated shall be based upon ultimate development of all upstream tributary areas.

Proposed storm drain systems shall not discharge flows into inadequate downstream systems unless approved by the City Engineer.

H. An erosion control plan shall be developed for all phases of the project construction to protect downstream waters and minimize erosion.

I. Stormwater quality enhancements are encouraged and stormwater quality Best Management Practices (BMPs) shall be incorporated into the design.

J. All other State and Federal permitting requirements must be met. The Developer shall produce copies of approved permits for the City prior to final plan approval.

E 4.02 RUNOFF CALCULATIONS AND SYSTEM CAPACITY

Calculations for storm drain design shall be submitted with all storm drain improvement projects. Calculations shall clearly show how flows were calculated and also how the proposed storm system is capable of conveying these flows. For projects that require detention, full pre-development and post- development calculations shall be submitted.

Basin maps shall be submitted with all calculations and shall show clearly how stormwater is being routed through the improvements.

A. Rational Method. The rational method is an acceptable way to calculate peak discharge for the sizing of storm drainage conveyance systems for laterals and collector systems in which detention is NOT required. It may NOT be used to size detention systems or trunk lines or for projects that are greater than 100 acres in size. Refer to Section E 4.02.D Drainage System Capacity to determine which design storm the improvement must convey.

Equation $Q = C * i * A$

Where:

- **Q** *is peak flow in cubic feet per second.*
- **C** *is a runoff coefficient determined by ground cover. The engineer must document the methodology used in determining the value proposed.*
- **i** *is rainfall intensity in inches per hour. Rainfall intensity found on the ODOT Zone 7, I-D-F curve (*see Section E 10.02-B - Appendix*) shall be used. For the rational method, the basin time of concentration is used as the storm duration. The time of concentration must first be calculated (*see Section E 4.02.C Time of Concentration*), then the rainfall intensity can be read from the I-D-F curve.*
- **A** *is the basin area in acres.*

B. Basin Hydrographs. Trunk lines and all improvements that require detention shall be designed only after a full analysis of the basins contributing to the improvements is completed. Hydrographs for all basins shall be developed.

The City standard for hydrograph development is the Soil Conservation Service

(SCS) TR-20 methodology. Analysis can be done using computer software that uses the TR-20 methodology for developing hydrographs or it can be done manually using the TR-55 methodology. If a software package is used, documentation of the software's processing and methodology shall be submitted with the results. All input and assumptions shall be clearly documented.

The input information needed for the TR-20 methodology is:

- Time of Concentration (see E 4.02.C Time of Concentration)
- Curve Number (CN) – The CN takes into account the ground cover and the soil type. County soil surveys shall be used to determine the soil type. The SCS "Urban Hydrology for Small Watersheds" handbook shall be used in determining the hydrologic classification for soils. Most soils in Albany are group "C" or "D."
- Rainfall distribution – Millersburg has a Type IA rainfall distribution.
- Total 24-hour Rainfall – See Section E 10.01 – 24-Hour Rainfall for Millersburg
- Basin Area

C. Time of Concentration. Time of concentration is a very important variable in determining runoff volumes and peak flows. Time of concentration calculations shall be submitted for review.

There are three components that shall be considered when determining time of concentration: sheet flow, shallow concentrated flow, and channel/pipe flow. Each of these should be calculated separately and then added together to determine the basin time of concentration.

1. Sheet Flow. This is the first leg of runoff. It is generally accepted that sheet flow only occurs for a maximum of 300 feet before the flow regime turns to shallow concentrated flow. Sheet flow shall be calculated using the Manning's kinematic solution:

$$T_t = 0.007(nL)^{0.8} / (P_2)^{0.5}S^{0.4}$$

Where: T_t = Travel Time (hours)
n = Manning's n
L = Length of flow (feet)
P_2 = 2-year, 24-hour rainfall (inches)
S = Slope (feet/foot)

2. Shallow-Concentrated Flow. To determine the flow time of runoff in the shallow-concentrated flow regime, you need to estimate the flow velocity. Use the figure in Section E 10.02 – Appendix in determining the flow velocity of the shallow concentrated flow. Once the velocity is estimated, divide the distance of flow by velocity to get flow time.
3. Channel/Pipe Flow. Use Manning's equation to calculate velocities in the channels and pipes, then divide flow length by velocity to get flow time.

The three runoff flow components shall be added together to determine the total time of concentration. A map showing the assumed flow path shall be provided

with the time of concentration calculations.

D. Drainage System Capacity. For design purposes, it is necessary to define the various parts of the storm drainage system and to specify the magnitude of flow that each part must be capable of carrying.

Pipes, culverts, and ditches shall be designed to convey the peak discharge of the storm shown in the table below.

TABLE E 4.02-A

Element	Definition	24-Hour Design Storm
Catch Basins/Inlets	Catch basins and inlets located within roadways.	10 year
Feeder	Pipe/ditch of any size that serves a private development or single subdivision of 5 acres or less.	10 year
Collector	Pipe/ditch of any size that serves multiple private developments/subdivisions or a single private development or subdivision equal to or greater than 5 acres within the same drainage sub-basin.	25 year
Trunk	Drainage improvements that serve more than 100 acres and/or multiple drainage sub-basins as defined in the City's Stormwater Master Plan(s) or as otherwise required by the City Engineer.	50 year

E 4.03 SUPPORTING DATA

A. Background computations for sizing drainage facilities shall include:

1. Peak discharge rate and volume of surface water for the design storm currently entering and leaving the subject property; or if the City Engineer determines that the property is in an interim flood hazard area, then a 50-year storm shall be used.

   Discharge volumes shall be computed for both the current land use conditions and full development of the tributary basin area.

2. Peak discharge and rate of runoff that will be generated within the subject property due to the design storm after development occurs.

3. Peak discharge and rate of runoff that will be generated by the design storm at all naturally occurring points of discharge from the property (cubic feet per second, predevelopment, and post-development). For projects that require detention, 2-year, 5-year, 10-year, and 25-year storms must be analyzed.

4. The proposed methods of handling, storing, and discharging of peak loads:
   a. Proposed improvement for handling the computed runoff, including

the location and capacity of all natural or proposed drainage facilities and easements. The method of discharging storm drainage offsite at the naturally occurring location and provisions needed to control the velocity, volume, and direction of the discharge in order to minimize damage to other properties, stream banks, and overall water quality.

b. Drawings of proposed open channel and closed conduit system to be shown on construction drawings.

    i. Proposed cross-section of the channel with stable side slopes shown on the plan.

    ii. For open channel improvements, the water surface elevation (backwater curve) of the flow for the design storm shall be indicated on the cross-section.

    iii. For closed conduit improvements, the hydraulic grade line (HGL) of the flow for the design storms shall be indicated on the cross-section.

E 5.00 – PIPES AND CLOSED CONDUIT

E 5.01 GENERAL

All storm drains shall be laid on a consistent and uniform grade as specified in the latest edition of Albany's *Standard Construction Specifications,* as adopted by the City of Millersburg**.** Changes in piping size and grade shall only occur at manholes. All pipes and closed conduit materials shall conform to the *Standard Construction Specifications*. Joints shall have gaskets and be water tight.

E 5.02 PIPE SIZE

The minimum size for storm drains shall not be less than 10 inches inside diameter and shall begin at a structure and shall terminate at an approved point of disposal. Proposed exceptions to the above will be reviewed and considered for approval on a case-by-case basis by the City Engineer. When 2 parallel pipes are installed in-lieu-of one large pipe or a box culvert, the minimum separation between the pipes shall be one (1) foot or one-third the diameter of the largest diameter pipe, whichever is greater. This requirement may be waived if the void between the pipes below the spring line is filled by grouting or other approved method/substance.

E 5.03 GRADE

All storm drains shall be laid on a grade that will produce a mean velocity (when flowing full) of at least 3 feet per second, based upon Manning's pipe friction formula using a roughness coefficient valued at not less than 0.01, or the pipe manufacturer's recommendations, whichever is greater.

The minimum grade may be reduced to produce an absolute minimum velocity of 2.0 fps upon approval of the City Engineer. But the grade of any pipe, regardless of diameter, shall not be less than .002 feet per foot unless otherwise authorized by the City Engineer. Other cases requiring a flatter grade than permitted above shall also be reviewed on a case-by-case basis for approval by the City Engineer.

Engineers are cautioned not to specify storm drains of sizes that are obviously larger than is necessary for satisfactory carrying capacity, but which are specified solely in order to meet grade requirements, i.e., a 12-inch pipe for a 10-inch pipe to acquire a decrease in slope.

The maximum grade for storm drains will generally be limited such that pipeline velocities when flowing full do not exceed 15 feet/second. If, out of necessity, velocities greater than this will result, ductile iron piping shall be used. Outside drop manholes with flatter pipe slopes can also be used.

E 5.04 ALIGNMENT

Generally, storm drains shall be laid on a straight alignment between catch basins and between manholes:

A. Where storm drains are being designed for installation parallel to other utility pipe or conduit lines, the vertical location shall be in such a manner that will permit future side connections of main or lateral storm drains and avoid conflicts with parallel utilities without abrupt changes in vertical grade of main or lateral storm drains. Location within easements or right-of-ways shall be in accordance with the

Standard Construction Specifications. A minimum separation of 10 feet shall be maintained between storm drain lines and all other public utilities.

B. Under normal conditions, storm drains shall be located in the street right-of-way 10 feet from the centerline and preferably on the low side and on the south and west sides of the street, except when curb inlet locations warrant otherwise. Piping between curb inlets and storm drain lines shall be at near right angles to the street and other utility lines. All exceptions shall be reviewed on a case-by-case basis for approval.

C. Easement locations for public storm drains serving a public utility district (PUD), apartment complex, or commercial/industrial development shall be in parking lots, private drives, or similar open areas that will permit an unobstructed vehicle access for maintenance by City forces.

D. Easements must be furnished to the City for review and approval prior to recording. The City will record the easements after City Council acceptance. Each easement shall be according to the City's standards.

E 5.05 COVER REQUIREMENTS

Storm drains shall be at a minimum depth of 3 feet or greater below the finish grade elevation. Minimum pipe depth shall be measured between the finished surface grade at the centerline of the storm drain and the top of storm drain pipe. Storm drains at depths less than this create problems with water line crossings, sewer lateral crossings, and proper cover over the pipe per manufacture's recommendations. Fill may be required on development sites to maintain adequate cover over sewer lines.

In some extreme locations where flat terrain limits the extension of storm drains, the City Engineer may allow some pipeline configuration changes as well as alternate pipe cover depths in conjunction with site filling. Storm drain pipes with depths less than 3 feet, where allowed by the City Engineer, shall be connected from catch basin to catch basin in lieu of the use of manholes. Special pipe material such as ductile iron pipe (down to 18-inches of cover).

In areas of flat terrain, the design engineer must show that sufficient depth is provided at the boundary of the development to properly drain the remainder of the upstream basin area tributary to the site or that other drainage options are available to the upstream property.

E 6.00 – INLETS, OUTLETS, CONNECTIONS

E 6.01 CURB INLETS

A. Curb inlet basins may be connected together (maximum of 4) at intersections to minimize the number of pipe crossings of the streets and number of manhole penetrations required. Curb inlet piping shall be connected to the storm drain system at manholes.

B. Inlets shall be spaced to assure that the flow in the streets can be intercepted and no ponding in the street occurs during the design storm. However, the maximum total length of curb and gutter that may be drained by a curb inlet is 400 feet. Curb inlets shall be located on the upstream side of curb returns. In addition, catch basins shall be installed where street improvements end on a descending grade and shall be piped to an approved point of disposal.

C. The width of gutter flow on local streets shall not exceed 8 feet from face of curb or top the curb for a 10-year design storm at any point along the street. Width of flow on other street classifications shall not extend into the travel lanes or overtop the curbs for a 25-year design storm at any point along the street.

D. Curb inlets on local streets shall be designed to completely intercept the 10-year design storm gutter flow. Curb inlets on all other street classifications shall be designed to completely intercept the 25-year design storm gutter flow.

E. Curb inlets shall be located so as not to interfere with other construction elements (e.g., driveways, pedestrian ramps, etc.). Exceptions will be considered on a case-by-case basis.

E 6.02 SURFACE DRAINAGE INTERCEPTION

Inlet structures shall be built wherever a surface drainage (creek/ditch/swale) is intercepted and placed into a piped system. The inlet structure shall be concrete. All inlet structures for pipes shall have grating covering the inlet. The grate shall have the bars oriented in the vertical direction. The inlet grate shall be removable.

The invert of the inlet structure shall be at or below the invert of the drainage being intercepted. The inlet shall be designed to accommodate the anticipated peak flows of the surface drainage at the design storm outlined in Table E 4.02-A.

Special attention shall be paid to where water will accumulate and flow should the inlet become clogged or blocked. In sensitive areas, accommodations for overflows caused by inlet clogging shall be made such that the overflow does not damage downstream areas.

E 6.03 SLOPE INTERCEPT INLETS

Slope intercept drains shall be provided at the following locations:

A. Along the upper boundaries of a development where the natural ground slope exceeds 10% to intercept drainage from the tributary area above the site.

B. Along the lower boundary of a development where the natural ground slope exceeds 10% to prevent drainage onto a lower tributary area other than by means of an approved point of disposal.

C. Along the top of all cuts that exceed 4 feet with cut slopes that exceed 2:1 where the tributary drainage area above the cut slopes towards the cut and has a drainage path greater than 40 feet, measured horizontally.

E 6.04 SUBSURFACE DRAINAGE INTERCEPTION

Subsurface drains (underdrains) shall be provided at the following locations:

A. On all cut and fill slopes in excess of 4 feet for stability except when a soils report submitted by a registered professional engineer experienced in soils certifies they are not required.

B. For all existing springs or springs intercepted during construction activity for other facilities, i.e., sewer, water mains, or street excavations.

C. Where high ground water exists or when it is necessary to reduce the piezometric surface to an acceptable level to prevent land slippage or underfloor flooding of buildings.

The drainage line installed shall begin at a cleanout and terminate at an approved point of discharge. Open-jointed storm drain lines will not be considered as an acceptable solution.

E 6.05 OUTLETS INTO SURFACE DRAINAGE CHANNELS

Storm drain lines shall enter a creek or drainage channel at 90° or less to the direction of flow. The outlet shall have a head wall and scour pad or riprap to prevent erosion of the existing bank or channel bottom. All outlet structures for pipes of 24 inches in diameter or greater shall have grating covering the outlet. The grate shall have the bars oriented in the vertical direction. Outlet grates shall be attached to the outlet structure with a hinged connection at the top of the grate.

The outlet shall not intrude into the channel and reduce flow capacity of the channel. Pipe ends shall be beveled to match the side slope of the channel. Energy dissipation measures and armament of the opposite channel bank are required at the outlet. The size of the receiving facility will govern what protective measures are required

Backflow valves may be required on outlet structures to prevent backwater from surcharging and flooding the new storm drain improvements.

Permits from outside agencies such as the Oregon Department of State Lands (DSL), the US Army Corps of Engineers (Corps), and the Oregon Department of Environmental Quality (DEQ) may also be required.

E 6.06 MANHOLES

Changes in piping size and grade shall only occur at manholes. In general, storm drains shall be designed to have access for cleaning no further than 450 feet apart. Manhole rims in unimproved areas shall be a minimum of 12 inches above the surrounding ground and be marked with a metal marker post.

A. All connections, junctions, changes of grade, changes in size and alignment shall be made at manholes. Tee connections in storm lines shall not be allowed (with the exception of 4- and 6-inch service laterals). All private connections to the public system shall be reviewed on a case- by-case basis. Private connections to

the public system might be allowed using a tee connection under specific conditions.

B. Where the pipe size decreases upstream through the manhole, the upstream pipe crown shall match the elevation of the crown of the downstream pipe. Where grade is limited, matching 0.8 of the pipe diameters may be used.

C. In some extreme locations where flat terrain limits the extension of storm drains, the City Engineer may allow some pipeline configuration changes in conjunction with site filling. Storm drain pipes with depths less than 3 feet, where allowed by the City Engineer, shall be connected from catch basin to catch basin in lieu of the use of manholes.

E 7.00 – SURFACE DRAINAGE

E 7.01 SURFACE DRAINAGE

For purposes of these Engineering Standards, surface drainage routes will be classified according to two general categories: constructed watercourses and natural creeks.

A. Plan requirements for surface drainage courses shall include the requirements previously specified in Section E 2.00 Stormwater Plan and the following supporting data and calculations:

1. Profile of the channel showing the existing flowline and top of bank, proposed flowline and top of bank, and design water surface profile (backwater curve).
2. A minimum of three (3) cross sections of the existing channel adjoining or crossing the property taken at the upstream, midsection, and downstream boundaries of the property. More sections may be required depending on the length of the reach and existing channel alignment.
3. Calculations for arriving at the design flow rate: the City will furnish the flow rate when records are available. Analyze the proposed system and show that the channel cross section after improvement will pass the design storm with one (1) foot of freeboard to the top of bank. For channels shown on the F.I.R.M. maps, show that the channel cross section after improvement will pass the base flood at or below the 100-year flood elevation shown on the F.I.R.M.
4. Open channels shall have easements sufficient in width to cover the 100-year Floodplain Line when a 100-year design storm is required or 15 feet from the top of the recognized bank, whichever is greater.

E 7.02 CONSTRUCTED WATERCOURSE REQUIREMENTS

A. Constructed watercourses shall be designed with a "natural" curved alignment with a variable side slope not to exceed four to one (4:1), except that in tight spots created by existing natural features (e.g., boulders, large trees, etc.) where the slope can be three to one (3:1) until the natural feature is bypassed or where steeper slopes are needed and do not impair the hydraulic efficiency of the waterway. The watercourse shall include a low flow channel as described below and will be reviewed on a case-by-case basis for approval.

   The bank shall be designed with one (1) foot of freeboard above the design storm with a minimum top of bank width of 6 feet. A larger width shall be provided when required by the City Engineer for maintenance purposes. The backslope of the bank shall not exceed two (2) horizontal to one (1) vertical. The existing ground adjacent to the toe of the bank backslope shall be graded to slope away at 2% to prevent water ponding at the backslope toe.

B. Design shall be curvilinear with a 100-foot minimum radius. Tighter curves may be used if the City Engineer determines that sufficient erosion control has been incorporated into the design to maintain stable bank conditions following

development.

C. A low flow channel shall be designed to carry a 2-year design storm or the normal low water flow of a year-round creek, whichever is greater. Low flow channel slopes shall not exceed two to one (2:1) and shall be stabilized to the satisfaction of the City Engineer. In general, bank stabilization will be required in any channel with a design flow velocity in excess of 3 feet per second.

D. Capacity of channels shall be determined by the Manning Formula. The value for "n" shall be 0.033 for maintained grass-lined swales. The value for "n" shall be 0.035 for channels with rock-lined bottoms.

E. Existing ditches approved for the point of discharge for storm drains and culverts shall be provided with rock-lined bottoms and side slopes at the discharge point of storm drain or culvert. The rock shall extend for a minimum distance of 8 feet downstream from the end of the storm drain or culvert.

F. All channel sides and bottoms shall be seeded, sodded, or rock lined immediately following construction. Bank stabilization measures shall be designed and included in the construction plans.

G. Points of discharge from culverts and storm drains into ditches and swales 15% or greater in grade shall be rock lined with boulders with one face a minimum of 24 inches in dimension. Said rock lining shall extend for a distance of 10-feet minimum from the point of culvert or storm drain discharge and shall have a width 3 feet in excess of the diameter of the culvert or storm drain. Special energy dissipators may be substituted for boulders at the discretion of the City Engineer.

E 7.03 NATURAL CREEK REQUIREMENTS

A permit must be obtained from the Division of State Lands and the Department of Fish and Wildlife for all work between the creek banks.

A. Natural creeks shall be preserved and all work in and adjacent to creeks shall incorporate both temporary and permanent erosion control measures to protect disturbed areas from erosion and damage. No alteration will be permitted that reduces the overall creek capacity.

B. Creek channel design and construction practices shall be such that the cumulative incremental effects of creek work considered alone or together with existing or similar projects in the vicinity will not result in substantial damage to existing waterways and surface waters by erosion, siltation or sedimentation, significant changes in water quality, increased downstream water velocity, significant harmful deterioration of groundwater drainage, or significant deterioration of aquatic wildlife habitat as determined by the City Engineer.

C. Creek construction, relocation, and/or reconstruction may be approved if the City Engineer determines that such a proposal will result in an overall benefit to or maintenance of a surface water system of equal quality in terms of water quantity and quality control and the Developer can obtain the appropriate State and Federal permits.

D. Any and all stream work shall be consistent with the floodplain management policies and regulations and as set forth in MMC or any amendments thereto.

E. Any and all stream work shall be consistent with the *Stormwater Management Plan*.

E 8.00 – STORMWATER DETENTION

E 8.01 GENERAL REQUIREMENTS

A. All storm drainage runoff originating from and/or draining to any proposed development shall be controlled and/or conveyed in accordance with all City standards and policies as described in these Engineering Standards. When existing conditions make storm drainage detention impossible for a portion of a site, the City Engineer may permit compensatory storage volume to be provided on another portion of the site, provided the total site area is tributary to one drainage basin both prior to and after development. In no case shall the runoff rate from the total site exceed the allowable release rate.

B. Detention basins will be required to detain post-developed runoff from the 2-year, 5-year, 10-year, and 25-year, twenty-four (24)-hour storm to pre-developed quantities. If the project area is greater than 100 acres or covers multiple drainage sub-basins, then the 50-year, twenty-four (24)-hour storm must also be detained to pre-developed peak volumes. Potential downstream damage due to detention system failure/overflow may require greater detention requirements or improvements downstream. In no case shall the release rates increase the flooding conditions downstream. An emergency overflow must be designed to accommodate 100-year storm flows.

C. The minimum allowable diameter for an orifice in a flow control structure shall be 2 inches due to the possibility of clogging or plugging.

D. Detention requirements may be waived by the City Engineer when discharge will be released directly into the Willamette River. Direct discharge shall not exclude the use of erosion control or other water quality control techniques within the development. Waiver of the detention requirement may also be allowed along a channel that has been fully improved to accommodate the 100-year design storm.

E. Detention facilities shall be open basins or ponds or underground storage (pipe/chamber), or combinations of the above.

F. Stormwater plans shall include a plan and profile of the facilities. The profile requirement for private drainage systems may be waived at the discretion of the City Engineer when sufficient data is provided on the plan in a clear and concise manner including the following minimum hydraulic and physical data: 1) grades, bottom elevations of ditches, channels, ponds and swales, parking lots and recharge trenches; 2) inverts of pipes; 3) inverts and tops of all structures such as manholes, catch basins, chambers, or similar structures; and 4) size, length, and slope of all pipes or other detention or conveyance facilities, including the invert elevations of the existing or any other storm drainage system the subject drainage proposes to discharge into. The design volume of all detention ponds shall also be shown on the plan as well as a note indicating that ponds shall be inspected prior to landscaping.

G. All aspects of the on-site drainage system must be properly designed to handle all flows developed on-site and all flows that flow through the site from upstream.

Designers should conceptualize how water will move into, through, and out of the system, looking for such potential problems as flow impediments, construction difficulties, future maintenance problems, and soil erosion potential.

H. All aspects of public health, safety, maintenance, nuisance abatement, and vector control must be carefully reviewed in every drainage control system plan. Protective measures are often necessary and shall be required whenever appropriate. The protective measures themselves shall be designed so as not to constitute hazards or nuisances.

I. The impact of a system failure should be analyzed both in terms of on-site and off-site effects. The impacts may be to adjacent properties, or to elements of the public drainage system or other private systems. The downstream consequences of failure of a detention pond shall be included in determining location and design parameters.

J. The frequency and difficulty of future maintenance can be minimized by thorough consideration during design of what could possibly go wrong in the system and what would be required to correct the problem. Facility design must incorporate maintenance considerations to ease such problems.

K. The use of the site should be evaluated to determine if hazardous materials or other pollutants are likely to be present, and if extraordinary design considerations are necessary.

L. The visual impact and other potential problems (mosquito breeding, smell, etc.) must be minimized. Concerns will vary with the site environment, but aesthetics should always be of concern to the designer.

M. It is important that runoff from rooftops pass through the detention system; the design should clearly indicate how roof runoff moves through the system.

N. Access, passable by a maintenance vehicle, to all control structures by appropriate equipment shall be provided with easements dedicated to the City.

O. All detention facilities shall have emergency overflow structures incorporated into their design. Flow capacity of the overflow shall be calculated and shown as supporting information. The overflow shall accommodate peak flows from a 100-year storm.

E 8.02 SURFACE PONDS

A. Slopes on all interiors of surface ponds shall not exceed four (4)-feet horizontal to one (1)-foot vertical for all detention ponds in PUDs, subdivisions, and land partitions. Ponds in commercial, industrial, and multifamily developments that are to remain under private ownership and maintenance shall have at least one interior slope not exceeding four (4)-feet horizontal to one (1)-foot vertical with all other interiors exceeding four to one (4:1) to be either retaining walls designed by a licensed structural engineer or a design submitted by a licensed engineer experienced in soils mechanics. Slopes on pond exteriors shall not exceed two (2) horizontal to one (1) vertical.

B. All ponds 3-feet deep or less shall have a minimum bottom dimension of 6 feet or as approved by the City Engineer. All ponds over 3-feet deep shall have a

minimum bottom dimension of 15 feet. Maximum water depth in all ponds shall be 4 feet.

C. Ponds suited to multiple use are encouraged. Examples of multiple uses are sport courts, play areas, neighborhood parks, and picnic areas. Such ponds that will provide public access shall be designed with special attention to safety of the public during inundation of the pond. Side-slopes shall be very gradual to avoid the risk of someone slipping into the pond and not being able to walk out.

D. All ponds shall be landscaped so as to provide slope stability and pleasant appearance by utilizing sodding, seeding, and planting of trees and shrubbery. Under no circumstances shall use of easily floatable or erodible materials (such as "bark dust") be permitted in pond interiors.

E. Maintenance of surface ponds in commercial, industrial, and multifamily developments shall be the responsibility of the property owner or owner's association. Maintenance of surface pond landscaping in single-family residential areas and PUD developments shall be the responsibility of an owner's association or community club and shall be so stated on the face of the plat unless accepted for maintenance by the City. Failure to maintain a weed abatement program will be cause for the City to perform the work and bill the owner or owners.

F. All surface ponds shall be cleaned of sediment and debris at completion of construction or, for residential developments after a period of one year from acceptance or when 75% of home construction is complete. A bond for cleaning shall be provided in an amount to be determined by the City Engineer.

G. Where berms are to be constructed as banks of detention ponds, they shall be designed by a certified and experienced independent geotechnical engineer. The geotechnical engineer shall stamp the plans for berm construction and certify that the pond and earth berm are safe for the intended use. Notes to the effect of the above shall be shown on the plans submitted for approval.

H. All City-maintained detention pond control structures not abutting a public right-of-way shall be accessible to the City of Millersburg for maintenance and operation. Access easements shall be provided, which shall be a minimum 15-feet wide and shall be improved to accommodate vehicular traffic year-round. Control structures shall be designed to operate automatically as much as possible.

I. A vehicular access must be provided to the bottom of the detention pond when the bottom width of the pond is 20 feet or greater and/or when the height of the pond interior wall exceeds 5 feet.

J. The access grade into the proposed retention/detention pond shall be no steeper than five (5)-feet horizontal to one (1)-foot vertical.

K. All detention ponds shall have a minimum of one (1)-foot of freeboard above the maximum design water surface.

L. Any embankment for a detention pond in excess of 3 feet in height must be designed by a qualified geotechnical engineer and approved by the City Engineer. The minimum top width of this berm shall be 15 feet, unless designed by a qualified, licensed engineer and approved by the City Engineer. The

geotechnical engineer, experienced in soils mechanics, shall inspect and certify the construction of any such berm.

M. Any embankment less than 3 feet, including one (1) foot of freeboard, in depth forming one or more sides of a retention/detention pond shall have a minimum 10-foot wide top of berm with a back slope not to exceed two (2) horizontal to one (1) vertical unless otherwise approved by the City Engineer and designed by and with construction being certified by a licensed engineer experienced in soils mechanics.

N. The bottom of all constructed and graded retention/detention ponds shall be sloped no flatter than 0.01 foot/foot (1%) towards the outlets for drainage.

EXCEPTION: This requirement need not apply to natural ponds, which exist and are utilized for stormwater detention.

O. All detention ponds shall have a well-defined low flow channel to contain runoff of lesser storms. Any low flow channel shall be designed so as to enhance the pond landscaping and overall pond appearance.

P. Outlets of all detention ponds shall be provided with suitable debris barriers designed to protect the outlet from blockage or plugging. Properly-sized overflow structures shall be designed into the pond.

Q. The maximum design water depth in all detention ponds shall be 4 feet.

R. The design volume of the detention pond shall be shown on the plan and the pond volume inspected prior to landscaping (a note to this effect shall be shown on the plans).

E 8.03 CLOSED DETENTION SYSTEM

A. A minimum grade of 0.003 feet per foot shall be used in any pipes or vaults used for closed detention systems.

B. The outfall control structure shall meet the standards set forth in the *Standard Construction Specifications* or as approved by the City Engineer.

C. Access to closed detention systems shall be provided at the upstream and downstream terminus of the system. The maximum distance between access points shall be 400 feet. Improvements shall be made to facilitate maintenance equipment access to the maintenance access points year-round. Maintenance access point shall not be in areas that can be fenced off by private property owners.

E 8.04 DETENTION POND EASEMENTS

A. All detention ponds in platted subdivisions may be required to be located in separate tracts dedicated to the City with access easements for maintenance where required.

B. Where a detention pond is located within the boundaries of a commercial lot and not in a separate dedicated tract, the peak design discharge water surface plain shall be shown as an easement on the final plat hard copy. Restrictions shall be added to the final plat hard copy and appear on the face of the plat.

C. A written restriction shall be added to the final plat hard copy to the affect that approval shall be obtained from the City Engineer before any structures, fill, or obstructions (including fences) are located within any drainage easement or delineated 100-year flood plain area.

D. A drainage easement shall be required for all public, closed storm drainage detention systems. The City Engineer may require wider easements where pipe diameter or vault widths exceed 4 feet.

E. All publicly maintained storm drainage systems including collection, conveyance, and flow restrictors not located in right-of-way shall be located in drainage easement or tract dedicated to the City of Millersburg.

F. Permanent access and drainage easements shall be granted to the City of Millersburg for any storm drainage detention facility which is located in a development, and for an access road to that facility where said facility and access road are located on property other than the development but serve the development. Access roads shall provide all-weather access. The owner in fee simple and contract purchaser of the property upon which the access road and facility are to be located shall execute the said easement. The minimum access easement width shall be 15 feet.

E 9.00 – EROSION PREVENTION AND SEDIMENT CONTROL

E 9.01 EROSION PREVENTION AND SEDIMENT CONTROL

Local EPSC requirements are in addition to any state or federal permitting requirements. Title 12 of the Millersburg Municipal Code defines the City of Millersburg's Erosion Prevention and Sediment Control program. Erosion prevention and sediment control measures shown on the plans shall comply with the requirements of this program. Millersburg's Erosion Prevention and Sediment Control Manual can be found on the City's website.

E 10.00 – APPENDIX

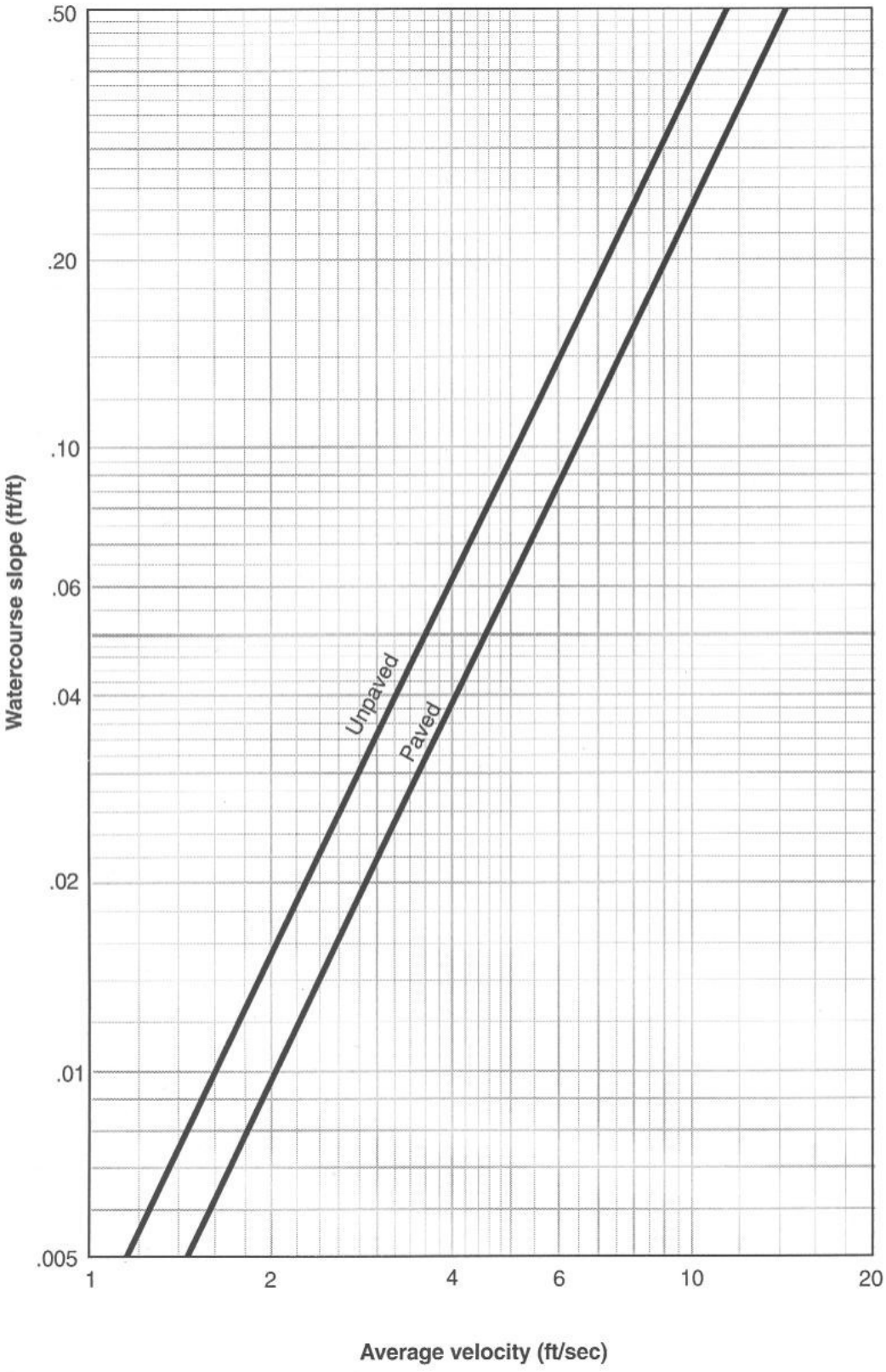
E 10.01 24-HOUR RAINFALL FOR MILLERSBURG

The following list of 24-hour rainfall totals for the given return intervals were determined from the Regional Precipitation for Oregon data, issued January 2008, as provided by George Taylor of Applied Climate Service. The water quality storm was determined from rainfall data obtained between 1948 and 2011 at two nearby rain gauges (Jefferson and Hyslop Experiment station located between Albany and Corvallis). The one (1)-inch water quality storm meets the capture and treatment criteria of 80% of the average annual runoff volume.

TABLE E 10.01-A

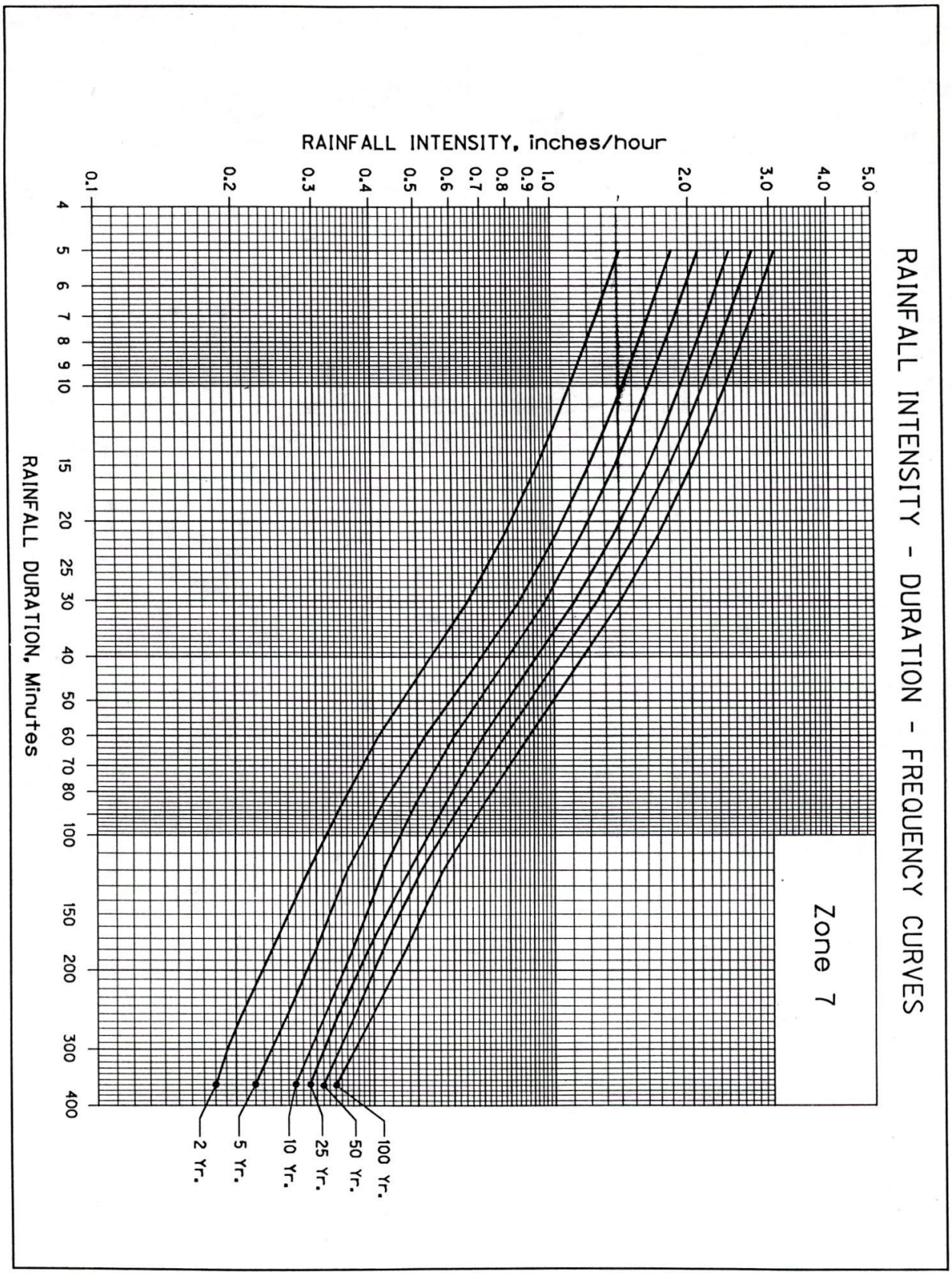
Return Interval	Peak 24-Hour Rainfall
Water Quality Storm	1.00 inch
2 year	2.47 inches
5 year	2.86 inches
10 year	3.37 inches
25 year	3.94 inches
50 year	4.38 inches
100 year	4.83 inches

E 10.02-A SHALLOW CONCENTRATED FLOW VELOCITY



Average velocities for estimating travel time for shallow concentrated flow.

E 10.02-B RAINFALL INTENSITY-DURATION FREQUENCY CURVES



E 10.03 PLANTING MATRIX AND EXAMPLE PLANTING DIAGRAMS

This appendix provides planting matrices with important information on plants approved for installation in post-construction stormwater quality facilities. All plants included in these matrices are drought tolerant and do not require irrigation after their establishment period. The matrices are intended to guide plant selection for each facility's planting plan. A description of the type of information provided for each plant is provided below.

- **Plant Name:** Plants are listed by their botanical name first, in italics, followed by a generally accepted common name. Note that common names vary, so use of the botanical name is recommended to ensure proper plant selection

- **Zone:** Denotes the planting moisture zone as noted in the facility Figure E 3.05A in which it is appropriate to locate each respective plant. Some plants work in multiple moisture zones, and others only in a particular dry, moist, or wet condition

- **Origin:** Plants approved for stormwater facilities can be grouped into three categories:
  NW Natives, *NW Native Cultivars*, and *Non-Native Adaptive* plants.
  - *NW Native*: These are plants that are indigenous to our specific region. They typically require minimal care once they are planted because they have evolved and adapted to the growing conditions and climate of the region. Because of their place in the local ecology, native plants also provide habitat value for birds and other local species. For these reasons, native plants are strongly recommended for stormwater facilities and should be used whenever suitable.
  - *NW Native Cultivar:* These species are cultivated varieties of native plants produced by horticultural techniques and are not normally found in wild populations. Cultivars are bred for certain desired characteristics that make them different from their native counterparts. Native cultivars may be selected over a native plant if it is more suitable for certain conditions, such as densely urbanized applications. For example Kelsey Dogwood (Cornus sericea 'Kelseyi) is a cultivar of the native Red Twig Dogwood (Cornus sericea). Kelsey Dogwood has been selectively bred to be much smaller at maturity than red twig dogwood, which can be advantageous in small scaled urban stormwater planters. In such instances, the native cultivar is preferred because it will not outgrow the facility or require frequent pruning maintenance, while still offering the same vegetative advantages as its native counterpart.
  - *Non-Native Adaptive*: These plants are not native to our region, but have certain characteristics that make them very useful and well adapted to stormwater facilities. The non-native adapted plants included on the stormwater facility plant lists are plants that have

proven to be non-invasive.

- **Type/Size**: A range of factors to aid in plant selection showing individual plant characteristics:

- *(E)vergreen/(D)ecidious:* Identifies the characteristic of a plant to keep foliage during winter months. Planting placement and selection should maintain a balance of evergreen and deciduous materials.
- *Potential Height:* Identifies maximum size at maturity to use as a design guideline.
- *Typical On-Center Spacing:* Identifies the optimum spacing for new plantings. This is to be used as a guideline and may vary slightly depending on site conditions.

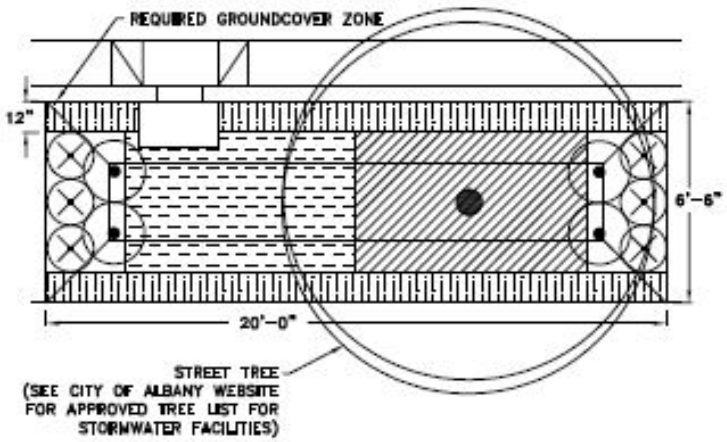
- **Context Factors**

- *Sun/Shade :* When developing planting plans, it is important to consider if plants are going to be in full sun or shade. This column identifies which plants are appropriate for full sun or shade.
- *Facility width:* Narrow conditions require plants that are not too large and will outgrow, or have potential for roots to damage, narrow planters. This column identifies which plants are appropriate for various planter widths.
- *Lined Facility/ On Top of Utilities:* In lined facilities it is important to limit larger material or plants with aggressive and deep roots. This column identifies which plants are appropriate for this application.
- *Parking Areas:* This column identifies plants that are appropriate for facilities in most parking areas. Large shrubs selected for parking areas should have form and habit that are open and transparent. Note: For portions of parking areas that have line of sight requirements, plants should be selected from the "Streets/Line of Sight" column.
- *Adjacent to Buildings:* When planting adjacent to buildings, limit plant sizes for compatibility with building footings, windows or other systems. This column identifies which plants are appropriate to use adjacent to buildings.

TABLE 1: *Stormwater Facility Plant Lists: Planters*												
Plant Name	**Zone**	**Origin**			**Type/Size**			**Context Factors**				
Botanical Name **, Common Name**	Moisture Zone (A) Uniformly Wet to Moist	NW Native	NW Native Cultivar	Non-Native Adapted	(E)vergreen /(D)eciduous	Potential Height	Typical On-Center	(S)un / (Sh)ade	Facility Width (Mininum)	Lined Facility/ On Top of Utilities	Parking Areas	Adjacent to Buildings
Herbaceous Plants												
Carex densa, Dense sedge	•	•			E	24"	12"	S	N/A	•	•	•
Carex morrowii 'Variegata', Variegated Japanese sedge	•			•	E	18"	12"	S	N/A	•	•	•
Carex obnupta, Slough sedge	•	•			E	24"	12"	S	N/A	•	•	•
Carex rupestris, Curly sedge	•			•	D	14"	12"	S	N/A	•	•	•
Carex testacea, New Zealand orange sedge	•			•	E	24"	12"	S	N/A	•	•	•
Deschampsia caespitosa, Tufted hair grass	•			•	D	36"	12"	S/Sh	N/A	•	•	•
Eleocharis ovata, Ovate spike rush	•	•			D	30"	12"	S	N/A	•	•	•
Juncus ensifolius, Dagger-leaf rush	•			•	D	10"	12"	S	N/A	•	•	•
Juncus patens 'Elk Blue', Elk Blue gray rush	•		•		E	18"	12"	S/Sh	N/A	•	•	•
Small Shrubs												
Cornus sericea 'Kelseyi' , Kelsey dogwood	•		•		D	24"	24"	S	N/A	•	•	•
Mahonia repens, Creeping Oregon grape	•	•			E	18"	18"	S/Sh	N/A	•	•	•
Polystichum munitum, Sword fern	•	•			E	24"	24"	Sh	N/A	•	•	•
Rosa gymnocarpa , Dwarf Wood rose	•	•			D	36"	24"	S/Sh	N/A	•	•	•
Spirea densiflora, Subapline spiraea	•			•	D	24"	24"	S/Sh	N/A	•	•	•
Spirea japonica 'Goldmound, Goldmound spiraea	•			•	D	24"	18"	S/Sh	N/A	•	•	•
Large Shrubs												
Cornus sericea , Red twig dogwood	•	•			D	6'	4'	S/Sh	N/A	•		•
Physocarpus capitatus , Pacific ninebark	•	•			D	6'	36"	S/Sh	N/A	•		•
Rubus spectabilis , Salmonberry	•	•			D	10'	4'	Sh	N/A	•		•
Rosa pisocarpa , Swamp rose	•	•			D	8'	36"	S	N/A	•		•
Salix lucida var. 'Lasiandra', Pacific willow	•		•		D	13'	6'	S	N/A			
Salix purpurea nana , Blue arctic willow	•			•	D	8'	6'	S	N/A		•	
Salix sitchensis , Sitka willow	•	•			D	20'	6'	S	N/A			•
Spirea douglasii , Douglas spiraea	•	•			D	7'	4'	S/Sh	N/A	•		•
Viburnum edule , Highbush cranberry	•	•			D	6'	4'	S/Sh	N/A	•	•	•
Onsite Trees *(No Trees in Lined Facilities)***												
Acer circinatum , Vine maple	•	•			D	15'	8'	N/A	3'	•	•	•
Acer rubrum, Red maple	•			•	D	40'	25'	N/A	6'		•	
Alnus rubra , Red alder	•	•			D	60'	15'	N/A	6'			
Carpinus caroliniana, American Hornbeam	•			•	D	25'	20'	N/A	6'		•	
Crataegus douglasii, Black hawthorn	•	•			D	40'	10'	N/A	6'		•	
Fraxinus latifolia, Oregon ash	•	•			D	30'	20'	N/A	6'		•	
Malus fusca, Pacific crabapple	•	•			D	30'	10'	N/A	6'	•		•
Nyssa sylvatica, Black tupelo	•			•	D	25'	20'	N/A	6'		•	
Salix hookeriana, Hooker's willow	•	•			D	15'	10'	N/A	3'		•	
Thuja plicata 'Hogan', Hogan cedar	•	•			E	40'	20'	N/A	6'			•

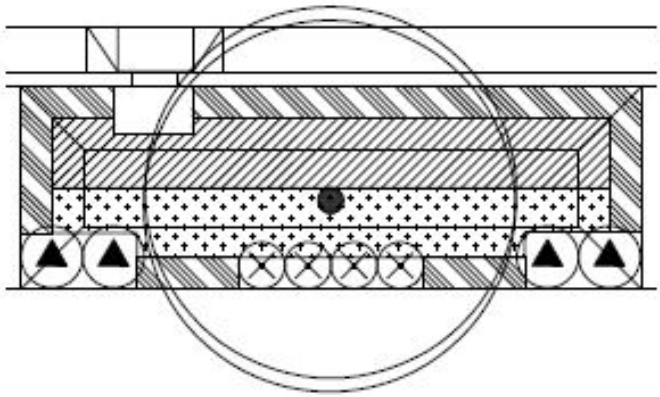
TABLE 2: *Stormwater Facility Plant Lists: Swales*													
Plant Name	**Zone**		**Origin**			**Type/Size**			**Context Factors**				
Botanical Name **, Common Name**	Moisture Zone (A) Uniformly Wet to Moist	Moisture Zone (B) Drier Transitional Area	NW Native	NW Native Cultivar	Non-Native Adapted	(E)vergreen/(D)eciduous	Potential Height	Typical On-Center Spacing	(S)un /(Sh)ade	Lined Facility/ On Top of Utilities	Parking Areas	Streets/Line of Sight	Adjacent to Buildings
Herbaceous Plants													
Carex morrowii 'Variegata', Variegated Japanese sedge	•				•	E	18"	12"	S	•	•	•	•
Carex obnupta, Slough sedge	•		•			E	24"	12"	S	•	•	•	•
Carex testacea, New Zealand orange sedge	•				•	E	24"	12"	S	•	•	•	•
Deschampsia caespitosa, Tufted hair grass	•	•	•			D	36"	12"	S/Sh	•	•	•	•
Elymus glaucus, Blue wild rye		•	•			E	24"	12"	S	•	•	•	•
Juncus ensifolius, Dagger-leaf rush	•				•	D	10"	12"	S	•	•	•	•
Juncus patens 'Elk Blue', Elk Blue gray Rush	•	•		•		E	18"	12"	S/Sh	•	•	•	•
Scirpus microcarpus, Small fruited bulrush	•		•			E	24"	12"	S	•	•	•	•
Groundcover													
Arctostaphylos uva-ursi, Kinnickinnick		•	•			E	6"	12"	S	•	•	•	•
Fragaria chiloensis, Coastal strawberry		•	•			E	6"	12"	S	•	•	•	•
Rubus calycinoides, Creeping Raspberry		•			•	E	6"	18"	S	•	•	•	•
Small Shrubs													
Cornus sericea 'Kelseyi', Kelsey dogwood	•	•		•		D	24"	24"	S/Sh	•	•	•	•
Mahonia repens, Creeping Oregon grape	•	•	•			E	18"	18"	S/Sh	•	•	•	•
Polystichum munitum, Sword fern	•	•	•			E	24"	24"	Sh	•	•	•	•
Rosa gymnocarpa , Dwarf Wood rose	•	•	•			D	36"	24"	S/Sh	•	•	•	•
Spirea betulifolia, Birchleaf spiraea	•	•	•			D	24"	24"	S/Sh	•	•	•	•
Spirea densiflora, Subapline spiraea	•	•			•	D	24"	24"	S/Sh	•	•	•	•
Spirea japonica 'Goldmound, Goldmound spiraea	•	•			•	D	24"	18"	S/Sh	•	•	•	•
Spirea japonica 'Magic Carpet', Magic Carpet spiraea	•	•			•	D	18"	24"	S/Sh	•	•	•	•
Symphoricarpus alba, Snowberry	•	•	•			D	36"	36"	S/Sh	•	•	•	•
Large Shrubs													
Cornus sericea, Red-Twig dogwood	•	•	•			D	6'	4'	S/Sh	•			
Holodiscus discolor, Western serviceberry	•	•	•			D	6'	4'	S/Sh	•	•		
Rosa nutkana, Nootka rose	•	•	•			D	8'	4'	S/Sh	•			
Omleria cerasiformis, Indian plum	•		•			D	6'	4'	S/Sh	•	•		
Physocarpus capitatus, Pacific ninebark	•		•			D	6'	36"	S/Sh	•			
Ribes sanguimeum, Red flowering currant	•	•	•			D	8'	4'	S/Sh	•	•		•
Salix sitchensis, Sitka willow	•		•			D	20'	6'	S				
Spirea douglasii, Douglas spiraea	•	•	•			D	7'	4'	S/Sh	•	•		•
Onsite Trees *(No Trees in Lined Facilities)***													
Acer circinatum , Vine maple	•	•	•			D	15'	8'	N/A	•	•		•
Alnus rubra , Red alder	•	•	•			D	60'	15'	N/A				•
Carpinus caroliniana, American Hornbeam	•				•	D	25'	20'	N/A		•		
Cornus nuttalii, Pacific dogwood	•	•	•			D	20'	10'	N/A	•	•		•
Fraxinus latifolia, Oregon ash	•		•			D	30'	20'	N/A		•		
Malus fusca, Pacific crabapple	•		•			D	30'	10'	N/A	•			•
Thuja plicata 'Hogan', Hogan cedar	•	•	•			E	40'	20'	N/A		•		

PLANT DIAGRAM AND LEGEND 1



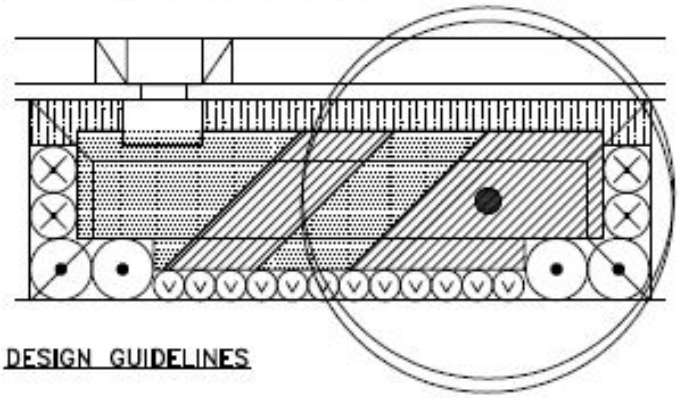
Symbol	Botanical name COMMON NAME	E/D	O.C.	QTY
ZONE A				
	Carex obnupta SLOUGH SEDGE	E	12"	32
	Juncus patens 'Elk Blue' ELK BLUE GRAY RUSH	E	12"	33
	Spirea japonica 'Magic Carpet' MAGIC CARPET SPIRAEA	D	24"	4
ZONE B				
	Fragaria chiloensis COASTAL STRAWBERRY	E	12"	37
	Mahonia repens CREEPING OREGON GRAPE	E	18"	6

PLANT DIAGRAM AND LEGEND 2



Symbol	Botanical name COMMON NAME	E/D	O.C.	QTY
ZONE A				
	Carex morrowii 'Variegata' VARIEGATED JAPANESE SEDGE	E	12"	36
	Juncus patens 'Elk Blue' ELK BLUE GRAY RUSH	E	12"	39
ZONE B				
	Rubus calycinoides CREEPING RASPBERRY	E	18"	31
	Mahonia repens CREEPING OREGON GRAPE	E	18"	4
	Rosa gymnocarpa DWARF WOOD ROSE	D	24"	4

PLANT DIAGRAM AND LEGEND 3



Symbol	Botanical name COMMON NAME	E/D	O.C.	QTY
ZONE A				
	Deschampsia caespitosa TUFTED HAIR GRASS	D	12"	34
	Juncus patens 'Elk Blue' ELK BLUE GRAY RUSH	E	12"	38
ZONE B				
	Fragaria chiloensis COASTAL STRAWBERRY	E	12"	19
	Elymus glaucus BLUE WILD RYE	E	12"	12
	Mahonia repens CREEPING OREGON GRAPE	E	18"	4
	Spirea japonica 'Magic Carpet' MAGIC CARPET SPIRAEA	D	24"	4

DESIGN GUIDELINES

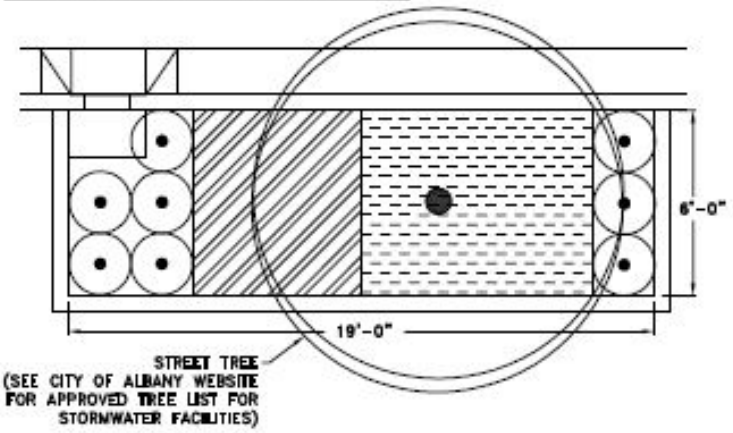
1. These are example planting diagrams approved by the City of Albany. Choose a planting diagram and alter it to your design. Other planting designs may be approved.
2. See Engineering Design Standards text for landscape requirements.
3. See Plant Matrix for typical plant spacing.
4. Planting table required per Engineering Design Standards text. Planting legends shown here do not include all required information for planting tables.

CITY OF ALBANY, OREGON
PUBLIC WORKS DEPARTMENT

SHALLOW SWALE
EXAMPLE PLANTING DIAGRAMS

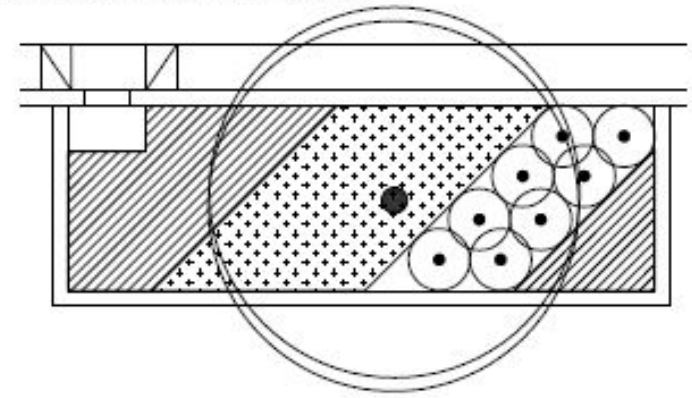
NO SCALE | JANUARY 2015

PLANT DIAGRAM AND LEGEND 1



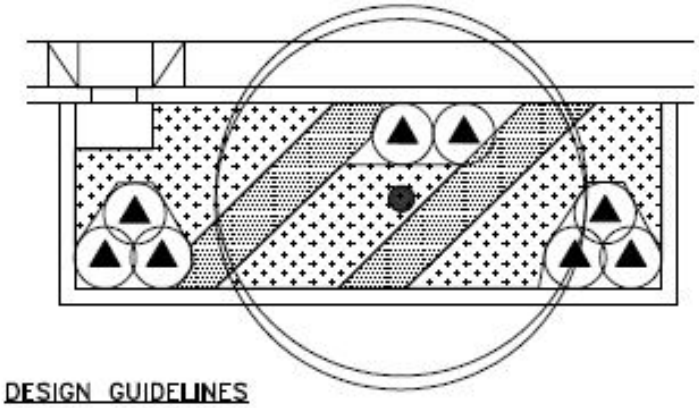
Symbol	Botanical name COMMON NAME	E/D	O.C.	QTY
	Carex obnupta SLOUGH SEDGE	E	12"	45
	Juncus ensifolius DAGGER-LEAF RUSH	D	12"	33
	Cornus sericea 'Kelseyi' KELSEY DOGWOOD	D	24"	8

PLANT DIAGRAM AND LEGEND 2



Symbol	Botanical name COMMON NAME	E/D	O.C.	QTY
	Carex morrowii 'Variegata' VARIEGATED JAPANESE SEDGE	E	12"	43
	Juncus patens 'Elk Blue' ELK BLUE GRAY RUSH	D	12"	40
	Cornus sericea 'Kelseyi' KELSEY DOGWOOD	D	24"	8

PLANT DIAGRAM AND LEGEND 3



Symbol	Botanical name COMMON NAME	E/D	O.C.	QTY
	Carex morrowii 'Variegata' VARIEGATED JAPANESE SEDGE	E	12"	56
	Deschampsia caespitosa TUFTED HAIR GRASS	D	12"	26
	Rosa gymnocarpa DWARF WOOD ROSE	D	24"	8

DESIGN GUIDELINES

1. These are example planting diagrams approved by the City of Albany. Choose a planting diagram and alter it to your design. Other planting designs may be approved.
2. See Engineering Design Standards text for landscape requirements.
3. See Plant Matrix for typical plant spacing.
4. Planting table required per Engineering Design Standards text. Planting legends shown here do not include all required information for planting tables.

CITY OF ALBANY, OREGON
PUBLIC WORKS DEPARTMENT

6' PLANTER
EXAMPLE PLANTING DIAGRAMS

NO SCALE | JANUARY 2015

APPENDIX E.10.04

OPERATION & MAINTENANCE AGREEMENT AND CHECKLISTS

CITY OF MILLERSBURG
PRIVATE STORMWATER FACILITIES OPERATIONS AND MAINTENANCE AGREEMENT

This Agreement is made and entered into this_____day of_20____, by and between City of Millersburg (City) and_____(Owner).

RECITALS

A. Owner has developed or will develop the private stormwater facilities (Facilities) listed below and shown on attached, and/or referenced, as-built construction drawings in order to satisfy the requirements of Chapter 12.45 of the Millersburg Municipal Code:

_____

B. The Facilities enable development of property while mitigating the impacts of additional surface water and pollutants associated with stormwater runoff prior to discharge from the property to the public stormwater system or waters of the state. The consideration for this Agreement is connection to the public stormwater system or waters of the state.

C. The property benefited by the Facilities and subject to the obligation of this Agreement is described with the legal description below or in Exhibit A (Property) attached hereto and incorporated by reference.

D. The Facilities have been designed by a registered design professional and constructed to accommodate the anticipated volume of runoff and to detain and treat runoff in accordance with Millersburg's Municipal Code, Development Code, Engineering standards, and Standard Construction Specifications, as applicable.

E. For the Facilities to function properly over time they must be maintained in accordance with the attached Operations and Maintenance (O & M) Plan.

F. The O & M Plan represents current best management practices for operation and maintenance activities. It is acknowledged that best management practices for O & M activities may change over time.

G. Even with routine maintenance conducted through the O & M Plan, over time, there is potential for the Facilities to lose treatment capacity through extended filtration and absorption of pollutants.

H. Failure to inspect and maintain the Facilities can result in an unacceptable impact to the public stormwater system and/or waters of the state.

NOW, THEREFORE, it is agreed by and between the parties as follows:

1. INCORPORATION OF RECITALS The recitals above are acknowledged and agreed to by all parties.

2. CONSIDERATION Owner undertakes the obligations set forth herein in consideration of development approval granted by the City of Millersburg and acknowledges that said consideration is adequate to support these obligations.

3. PARTIES The terms of this agreement apply to the named parties, their agents, contractors, successors, and assigns.

4. O & M PLAN As best management practices for O & M activities change over time the

owner will be bound to the most current standard operation and maintenance requirements set forth in the most current version of the City's Engineering Standards or like requirements. It is the City's responsibility to notify the owner of any required modifications to current practices.

5. TERM Owners obligations hereunder are perpetual and may only be modified or eliminated by amendment as described herein.

6. OWNER INSPECTIONS Owner agrees to operate, inspect and maintain each Facility in accordance with design parameters and the O&M Plan, attached hereto as Exhibit B and incorporated by reference. Owner shall retain a copy of this agreement, the O & M plan, and applicable as-built drawings on site. The owner shall also maintain a log of all inspection activities on site. The agreements, O & M plan, as-builts, and maintenance log shall be available to the City upon request or during City inspections.

7. OWNER NOTICE OF FACILITY FAILURE Owner shall provide notice to the City if Facilities fail to function as designed. Notice shall be provided within ten (10) days of identifying the failure. Additionally, Owner shall provide immediate notice to the City of any potentially damaging discharge or spill to the Facilities, public storm drain system, or water of the state.

8. DEFICIENCIES All aspects in which the Facilities fail to satisfy the O&M Plan, and/or provide the level of treatment intended with their design, shall be noted as "Deficiencies".

9. OWNER CORRECTIONS All Deficiencies shall be corrected at Owner's expense within thirty (30) days after completion of the inspection. In addition to the maintenance practices identified in the O & M Plan, corrections may include replacement of treatment soil, vegetation, drain rock, and/or other system components as applicable if the City determines that the Facility no longer provides the designed level of treatment. If more than 30 days is reasonably needed to correct a Deficiency, Owner shall have a reasonable period to correct the Deficiency so long as the correction is commenced within the 30-day period and is diligently prosecuted to completion.

10. CITY INSPECTIONS Owner grants City right of entry to inspect the Facilities. City will endeavor to give ten (10) days prior notice to Owner, except that no notice shall be required in case of an emergency. Inspections are not limited to the activities identified in the O & M plan and may include testing as necessary to determine if the Facilities are retaining their designed treatment capacity. City shall determine whether Deficiencies need to be corrected. Owner will be notified in writing of the Deficiencies and shall make corrections within 30 days of the date of the notice.

11. RIGHT OF ENTRY Owner herby authorizes and consents to the exercise of all entry authority granted to the City pursuant to MMC 12.45.150 as it now exists, or may hereafter be amended, to permit inspections and testing of the private post-construction stormwater quality facilities. The same rights of entry shall apply to City Corrections.

12. CITY CORRECTIONS If correction of all Owner or City identified Deficiencies is not completed within thirty (30) days after Owner's inspection or City notice, City shall have the right to have any Deficiencies corrected. City shall have access to the Facilities for the purpose of correcting such Deficiencies. Owner shall pay all costs reasonably incurred by City for work performed to correct the Deficiencies (City Correction Costs) following Owner's failure to correct any Deficiencies in the Facilities. Owner shall pay City the City Correction Costs within thirty (30) days of the date of the invoice. Owner understands and agrees that upon non-payment, City Correction Costs shall be secured by a lien on the Property for the City Correction Cost plus interest and penalties which lien, shall take priority over all other liens and encumbrances to the maximum extent permitted by law. City Correction Costs are defined as all City expenses incurred in taking the corrective actions authorized herein. These costs include, but are not limited to, all amounts paid, or to be paid, to third party contractors as well as all direct and indirect City costs including, but not limited

to, labor, benefits, equipment, engineering, administrative, and legal costs. Costs will be determined using the City's current cost accounting methodology.

13. EMERGENCY MEASURES If at any time City reasonably determines that the Facilities create any imminent threat to public health, safety or welfare, City is hereby granted immediate right of access and may immediately and without prior notice to Owner take measures reasonably designed to remedy the threat. City shall provide notice of the threat and the measures taken to Owner as soon as reasonably practicable, and charge Owner for the cost of these corrective measures.

14. COVENANT RUNNING WITH THE LAND The terms of this agreement shall be recorded with the appropriate records department of the County in which the property is located and shall be a covenant running with the land and binding on all owners of the Property present and future, and their heirs, successors and assigns. Owner shall notify City of any change in property ownership and/or change in the owner representative designated to receive notices in Section 21 below.

15. AMENDMENTS The terms of this Agreement may be amended only by mutual agreement of the parties. Any amendments shall be in writing, shall refer specifically to this Agreement, and shall be valid only when executed by the owners of the Property, City and recorded in the Official Records of the county where the Property is located.

16. REMEDIES CUMULATIVE Remedies provided herein for breach of this agreement are cumulative and in addition to any and all other civil and criminal remedies.

17. VENUE AND ATTORNEY FEES Any litigation concerning this Agreement shall be brought in the Circuit Court of the State of Oregon for Linn County and the prevailing party shall be entitled to recover all costs, including reasonable attorney's fees as may be determined by the court, including those on appeal.

18. SEVERABILITY The invalidity of any section, clause, sentence, or provision of this Agreement shall not affect the validity of any other part of this Agreement, which can be given effect without such invalid part or parts.

19. AMBIGUITIES Ambiguities in this agreement, if any, shall not be resolved against the drafter.

20. COMPLETE INTEGRATION This Agreement is a complete integration of all of the parties' understandings and expectations of the other with regard to the subject of this Agreement. Prior discussions or representations which are not included in this Agreement are of no effect.

21. NOTICES Any notice required or permitted under this Agreement shall be given when actually delivered within three (3) business days following deposit in the United States Mail, certified mail, and addressed as follows:

A. To the Owner: _____
_____
_____

B. To the City: City of Millersburg
Attn: City Engineer
4222 NE Old Salem Road
Albany, OR 97321

IN WITNESS WHEREOF, Owner has signed this

Agreement. OWNER

Signature:_____

Name:_____

Title:_____

Address:_____

NOTARIZE DOCUMENT BELOW
[Use this notary block if Owner is an individual.]

STATE OF _____
County of _____
This instrument was acknowledged before me this
_____day of_____, 20___,
By

_____
Notary Public
.
(Use this notary block if Owner is an
entity.) STATE OF _____
County of _____
This instrument was acknowledged before me on
_____(date)
by_____(name of
person) as_____(title)
of_____(name of entity).

_____
Notary Public

CITY OF MILLERSBURG

_____
City Engineer, or designee Date

Planter/Swale – Operation & Maintenance Checklist

These vegetated post-construction stormwater quality facilities are designed to accept stormwater runoff from adjacent impervious surfaces. They remove pollutants by filtering runoff through vegetation and soil media. Water should drain through the facility within 24 hours after a storm event. This checklist describes required and recommended inspection and maintenance activities to provide for proper facility function.

Inspection Timing	Facility Feature	Problem	Conditions to Check For	Maintenance Practices
Required: Annually *Recommended: Monthly from November through April*	General	Sediment Accumulation in Treatment Area	Sediment depth exceeds 2 inches	Remove sediment from vegetated treatment area. Rake to ensure facility is level across bottom and water drains freely through soil media. Replace soil media or vegetation as needed
Required: Annually *Recommended: Monthly from November through April*	General	Erosion Scouring	Eroded or scoured facility bottom due to flow channelization, or higher flows	Repair ruts or bare areas by filling with facility soil media; repair or add splash blocks or rock energy dissipaters at curb and pipe inlets; regrade and replant large bare areas; use erosion control measures as needed
Required: Annually *Recommended: Monthly from November through April and after any large storm (1-inch in 24 hours)*	General	Standing Water	Standing water in the facility between storms that does not drain freely; no standing water should exist within 24 hours after any large storm (1-inch in 24 hours or larger)	Remove sediment or trash blockages and rake soil to clear of debris; remove sediment from clean-outs and clear perforated underdrains as needed
Required: Annually *Recommended: Monthly*	General	Rodents	Evidence of rodents or water piping through facility via rodent holes	Repair facility, fill rodent holes, and remove rodents
Required: Annually *Recommended: Monthly during growing season*	General	Insects	Insects such as wasps and hornets interfere with maintenance activities	Remove harmful insects and insect nests as needed
Required: Annually *Recommended: Monthly and after any large storm (1-inch in 24 hours)*	General	Trash and Debris	Visual evidence of trash, debris or dumping	Remove trash and debris from facility

Planter/Swale – Operation & Maintenance Checklist (continued)

Inspection Timing	Facility Feature	Problem	Conditions to Check For	Maintenance Practices
Required: Annually *Recommended: Monthly from November through April*	General	Contamination and Pollution	Any evidence of spills or excess oil, gasoline, contaminants, or other pollutants;	Remove/cleanup contaminants. Coordinate removal/cleanup with City of Millersburg
Required: Annually *Recommended: Annually and after any large storm (1-inch in 24 hours)*	General	Facility malfunction; lack of drainage even after maintenance for sediment or standing water	Facility is not receiving flow and/or draining properly; structural malfunction or broken, misaligned or missing parts have created a safety, drainage, and/or other design problem	Repair or replace entire facility or broken/non-functioning elements to meet design standards and plans
Required: Annually *Recommended: Monthly and after any large storm (1-inch in 24 hours)*	Inlets/Outlets	Obstructed or non-working Inlet/Outlet	Inlet/outlet areas clogged with sediment, vegetation or debris; sediment trap, if present, is ½ or more full; overflow or clean-out pipes are damaged or parts are missing	Remove material to clear inlet and outlet areas, inflow pipes or downspouts, and sediment traps. Clear perforated drain pipe as needed. Repair or replace drain pipe, cap, grate structure or other elements as needed
Required: Annually *Recommended: Monthly from November through June*	Inlets/Outlets	Vegetation blockages	Vegetation blocking more than 10% of the inlet or outlet opening	Trim or remove excess vegetation and soil. No vegetation should block flow at inlets/outlets or overflows. If removing excess vegetation, protect area from erosion.
Required: Annually *Recommended: Monthly and after any large storm (1-inch in 24 hours)*	Check Dams	Erosion, Scouring, Flow Undermining	Scoured flow paths around sides or from underneath check dams; wood rot or holes; check dam is properly attached, aligned and secure; ballast rock on downstream side is in place	Repair ruts and scour areas with compost or facility soil media; Replace ballast rock; Repair or replace check dam as needed
Required: Annually *Recommended: Monthly*	Vegetation	Dead or Stressed Vegetation and/or Poor Vegetation Coverage	Vegetation is dead, stressed, sparse, bare or soil eroded in more than 10% of the facility	Determine cause of poor growth and correct the condition; replant with containerized plants as needed to meet design density standards
Required: Annually *Recommended: Monthly during growing season*	Vegetation	Invasive Vegetation and weeds	Nuisance weeds present. Invasive vegetation is present, including but not limited to the following: Himalayan Blackberry; Reed Canary Grass; Teasel English Ivy; Nightshade; Clematis; Cattail Thistle; Scotch Broom	Remove excessive weeds and invasive vegetation

Planter/Swale – Operation & Maintenance Checklist (continued)

Inspection Timing	Facility Feature	Problem	Conditions to Check For	Maintenance Practices
Required: Annually *Recommended: Monthly during growing season*	Vegetation	Excessive Shading	Vegetation growth is poor because sunlight does not reach facility	Remove brushy vegetation as needed; re-plant with shade tolerant plants from City facility plant lists as needed
Required: Annually *Recommended: Monthly from November through April*	Liner (If Applicable)	Exposed or Damaged Liner, Leaks from Lined Facility	Liner is visible; more than three 1/4-inch holes in liner	Repair or replace liner and restore cover material
Required: Annually *Recommended: Annually*	Signage	No Parking signs or paint striping is not present or visually clear (only where required on project plans)	Signs are missing, bent or vandalized. Paint striping on street-side curb is faded or missing	Repair/replace signs and re-paint striping as needed

****No chemical control measures such as herbicides, insecticides, pesticides, fertilizers and rodenticides shall be used in post- construction stormwater quality facilities without prior approval from the City.**

Pervious Pavement – Operation & Maintenance Checklist

These facilities are impervious area reduction measures designed with a porous surface and an underlying stone layer that temporarily stores rainwater that percolates through the surface before infiltrating into the subsoil or being collected in underlying drain pipes and being discharged to the stormwater system. This checklist describes required and recommended inspection and maintenance activities to provide for proper facility function. For manufactured paver systems, the manufacturer's maintenance recommendations shall also be followed.

Inspection Timing	Facility Feature	Problem	Conditions to Check For	Maintenance Practices
Required: Bi-annually *Recommended: Twice per year and after large storms (1- inch in 24 hours)*	Pavement Surface	Sediment and debris deposits, potentially reducing infiltration capacity	Sediment and debris deposits across surface	Sweep with regenerative air sweeper at least twice per year as a preventive measure against clogging
Required: Annually *Recommended: Monthly for areas near landscaping, adjacent to impervious areas, or in pathways of dirty vehicles*	Pavement Surface	Sediment and debris deposits, water infiltrates unevenly across surface or ponds in low areas	Clogged surface, water ponding, and/or water infiltrating unevenly across surface	Concrete or asphalt pervious pavement: Power wash; paver systems: unclog with vacuum sweeper truck or method per manufacturer's recommendations do not use surfactants; use inlet protection measures to collect debris and filter power wash runoff
Required: Annually *Recommended: Annually*	Structural components	Cracked or moving edge constraints; cracked or settled pavement	Cracked or moving edge constraints, or cracked or settled pavement that affects overall performance	Repair all cracks, settlement or other defects that affect performance of facility per design professional's or manufacturers' specifications
Required: Annually during fall *Recommended: Monthly during the Fall*	General	Leaf litter deposition on surface	Leaf litter that could affect stormwater infiltration through pavement	Sweep leaf litter and sediment to prevent surface clogging and ponding
Required: Annually *Recommended: Monthly during growing season*	Vegetation	Weeds	Weeds that cover 10% of the surface area	Remove weeds by hand, power washing, or other approved method; use inlet protection measures if power washing.
Required: Annually *Recommended: Annually and after power washing, vacuum sweeping, and weeding)*	Filter medium between pavers	Aggregate loss in pavers	Settling of pavers or lack of aggregate around pavers	Reset pavers and replace pore space with aggregate from original design

****No chemical control measures such as herbicides, insecticides, pesticides, fertilizers and rodenticides shall be used in post- construction stormwater quality facilities without prior approval from the City.**

Green Roof Operation & Maintenance Checklist

These facilities are impervious area reduction measures and are lined and vegetated rooftop systems designed to intercept rainfall and reduce runoff - with excess flows directed to downspout drains. This checklist describes required and recommended inspection and maintenance activities to provide for proper facility function. System suppliers and manufacturer's recommendations shall also be followed for proper maintenance.

Inspection Timing	Facility Feature	Problem	Conditions to Check For	Maintenance Practices
Required: Two times per year *Recommended: Monthly Nov - April and after large storms (1-inch in 24 hours).*	Green Roof structural components	Standing water, super saturated soil	Clogged drain or compacted soil	Clear drains; remove organics and other debris from drain; loosen compacted soil and amend
Required: Annually *Recommended: Annually and after large storms (1-inch in 24 hours).*	Structural components	Leaks in roof	Tears or perforation of membrane	Repair immediately. Contact manufacturer for repair or replacement
Required: Annually *Recommended: During Fall and Spring.*	Vegetation	Dead or stressed vegetation	Healthy vegetation should cover 90% of facility	Replant per original planting plan; irrigate as needed
Required: Annually *Recommended: During Fall and Spring.*	Vegetation	Dry grass or plants that may present a fire hazard	Overgrown areas, dry grasses, dead branches and leaves	Prune grass and plantings; remove clippings & debris
Required: Quarterly *Recommended: Monthly during growing season*	Vegetation	Weeds	Weeds on more than 20% of the site	Remove weeds manually
Required: Annually *Recommended: Monthly*	Growing medium	Exposed soil	Vegetation should cover 90% of facility	Cover exposed soil with plants and mulch consistent with original design
Required: Annually *Recommended: Monthly from Nov - April and after large storms (1-inch in 24 hours).*	Growing medium	Erosion	Rill or gully formation	Fill eroded areas with approved soil and lightly compact and replant consistent with original design

****No chemical control measures such as herbicides, insecticides, pesticides, fertilizers and rodenticides shall be used in post- construction stormwater quality facilities without prior approval from the City.**

Green Roof Checklist

Water Quality Manhole – Operation & Maintenance Checklist

These facilities provide pre-treatment by settling sediment and large debris. This checklist describes required and recommended inspection and maintenance activities to provide for proper facility function.

Inspection Timing	Facility Feature	Problem	Conditions to Check For	Maintenance Practices
Required: Annually *Recommended: Monthly from November through April*	General	Trash, Debris and Sediment	Material exceeds 50% of sump depth or one foot below the Tee or Snout	Remove trash, debris, and sediment
Required: Annually *Recommended: Annually*	General	Structural Damage	Tee or Snout is not securely attached to manhole wall	Securely attach snout or tee to wall and outlet pipe
Required: Annually *Recommended: Annually*	General	Structural Damage	Structure is not upright (allow up to 10% from plumb)	Ensure structure is in correct position
Required: Annually *Recommended: Annually*	General	Structural Damage	Connections to outlet pipe are not watertight	Repair or replace structure to work as designed.
Required: Annually *Recommended: Annually*	General	Structural Damage	Any holes in the structure(other than designed)	Repair/replace structure as needed so no holes exist, except as designed
Required: Annually *Recommended: Annually*	Manhole	Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools; bolts into frame have less than 1/2 inch of thread (may not apply to self-locking lids)	Replace/repair as necessary to ensure mechanism opens appropriately
Required: Annually *Recommended: Annually*	Manhole	Cover Not in Place	Cover is missing or only partially in place	Replace cover and/or secure cover in place
Required: Annually *Recommended: Annually*	Manhole	Cover Difficult to Remove	One maintenance person cannot remove lid using normal lifting pressure; cover makes access for maintenance difficult	Ensure cover can be removed by one maintenance person
Required: Annually *Recommended: Annually*	Manhole	Ladder Rungs Unsafe	Ladder is unsafe (missing rungs, loose rungs, misalignment, rust, cracks)	Repair or secure ladder immediately. Ladder must meet design standards and allow safe access for maintenance

****WATER QUALITY MANHOLES ARE CONSIDERED CONFINED SPACES AND ARE NOT DESIGNED FOR PROLONGED OCCUPANCY. FOLLOW INDUSTRY SAFETY STANDARDS WHEN MAINTAINING FACILITIES.**

Water Quality Manhole Checklist

APPENDIX E 10.05

DESIGN GUIDE DRAWINGS

DESIGN GUIDE DRAWINGS

PRIVATE POST-CONSTRUCTION STORMWATER QUALITY FACILITIES

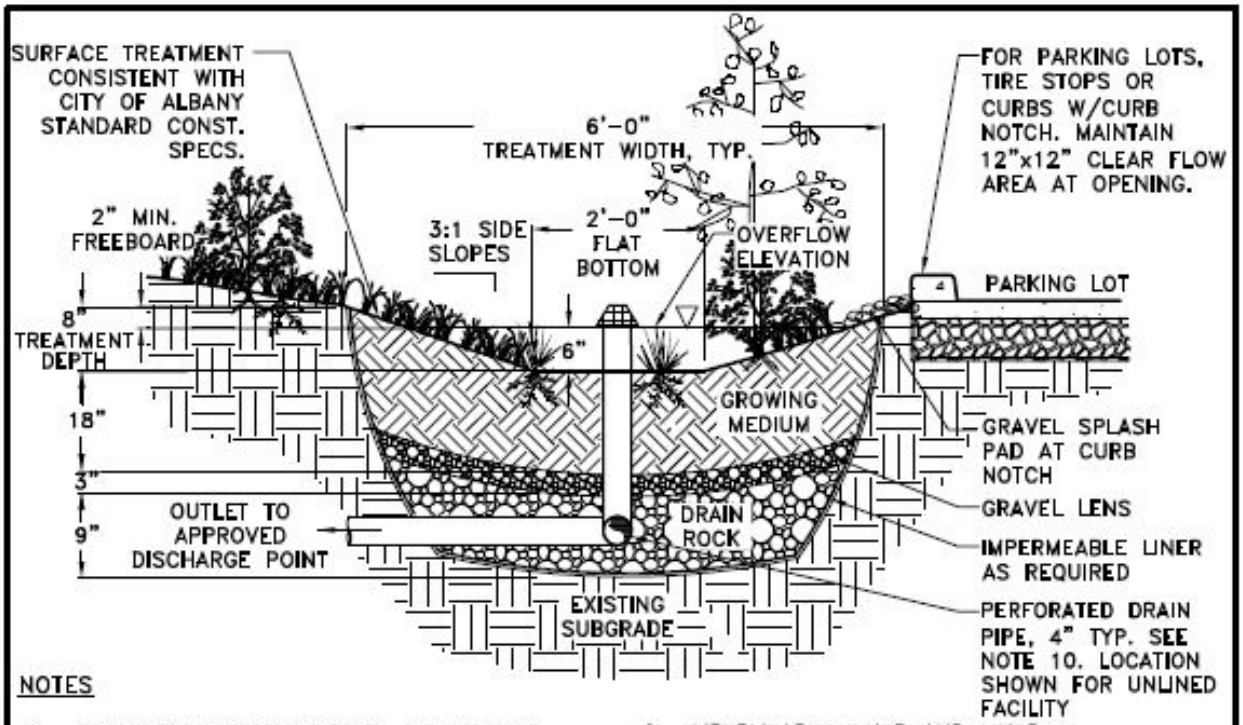
ONSITE SWALE

ONSITE PLANTER

ONSITE PLANTER (BUILDING PLANTER)

PERVIOUS PAVEMENT

NOTE: THESE DRAWINGS PROVIDE GUIDANCE FOR DESIGNING PRIVATE POST-CONSTRUCTION STORMWATER QUALITY FACILITIES LOCATED OUTSIDE THE RIGHT-OF-WAY ON PRIVATE PROPERTY. THE ENGINEERING STANDARDS AND STANDARD CONSTRUCTION SPECIFICATIONS FOR PUBLIC FACILITIES WILL ALSO BE USED AS A BASIS FOR THE DESIGN AND REVIEW OF PRIVATE FACILITIES.



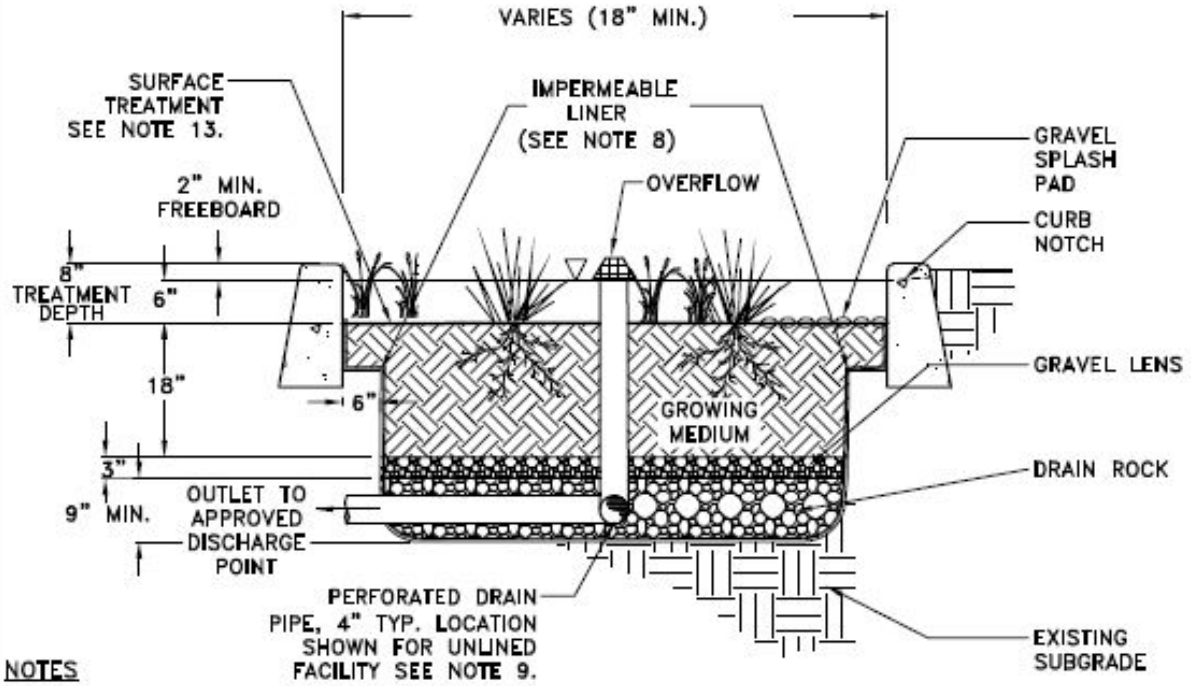
NOTES

1. PROVIDE PROTECTION FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING, AND FOOT TRAFFIC IN PROPOSED FACILITY AREAS PRIOR TO, DURING, AND AFTER CONSTRUCTION.
2. THIS SWALE SECTION IS AN EXAMPLE. OTHER DIMENSIONS CAN BE PROPOSED FOR CONSIDERATION.
3. SETBACKS (FROM EDGE OF FACILITY):
   A. UNLINED SWALES MUST BE 10' FROM FOUNDATIONS AND 5' FROM PROPERTY LINES WHEN INVERT OF UNDER DRAIN IS HIGHER THAN GROUND SURFACE OF ADJACENT PROPERTY.
   B. MEET ANY CITY OF ALBANY DEVELOPMENT CODE REQUIREMENTS.
4. OVERFLOW:
   A. OVERFLOW REQUIRED.
   B. INLET ELEVATION MUST ALLOW FOR 2' OF FREEBOARD, MINIMUM.
   C. PROTECT FROM DEBRIS AND SEDIMENT WITH STRAINER OR GRATE.
   D. SIZE TO PASS LARGER STORM FLOWS, AS NECESSARY.
5. DRAIN ROCK: SHALL BE CONSISTENT WITH CITY OF ALBANY STANDARD CONSTRUCTION SPECIFICATIONS.
6. GRAVEL LENS: 3" SEPARATION BETWEEN DRAIN ROCK AND GROWING MEDIUM. SHALL BE CONSISTENT WITH CITY OF ALBANY STANDARD CONSTRUCTION SPECIFICATIONS.
7. GROWING MEDIUM: SHALL BE CONSISTENT WITH CITY OF ALBANY STANDARD CONSTRUCTION SPECIFICATIONS.
8. VEGETATION: DEVELOP PLANTING PLAN PER ENGINEERING STANDARDS.
9. IMPERMEABLE LINER AND LINER PENETRATIONS: IF REQUIRED, SHALL BE CONSISTENT WITH CITY OF ALBANY STANDARD CONSTRUCTION SPECIFICATIONS.
10. IN UNLINED FACILITIES, BOTTOM OF PERFORATED DRAIN PIPE SHALL BE SET AT 2 1/2" ABOVE EXISTING SUBGRADE. IN LINED FACILITIES, BOTTOM PERFORATED DRAIN PIPE SHALL BE SET AT BASE OF DRAIN ROCK LAYER.
11. GRAVEL SPLASH PAD: INSTALL 4" WASHED RIVER ROCK TO TRANSITION FROM CURB NOTCH TO GROWING MEDIUM.
11. CHECK DAMS: USE AS NEEDED TO MAINTAIN FLAT PLANTER SURFACE AND REQUIRED FREEBOARD ON SLOPED SITES. INDIVIDUAL DESIGNS WILL VARY. SEE ALBANY STANDARD CONSTRUCTION SPECIFICATIONS FOR PUBLIC FACILITY EXAMPLE.
12. PLUMBING SHALL CONFORM TO THE OREGON PLUMBING SPECIALTY CODE. OBTAIN PERMITS AS NEEDED FROM CITY OF ALBANY BUILDING DIVISION.
13. SEE ENGINEERING STANDARD TEXT FOR ADDITIONAL STORMWATER QUALITY DESIGN REQUIREMENTS.

CITY OF ALBANY, OREGON
PUBLIC WORKS DEPARTMENT

ONSITE SWALE
DESIGN GUIDE

NO SCALE | JANUARY 2015



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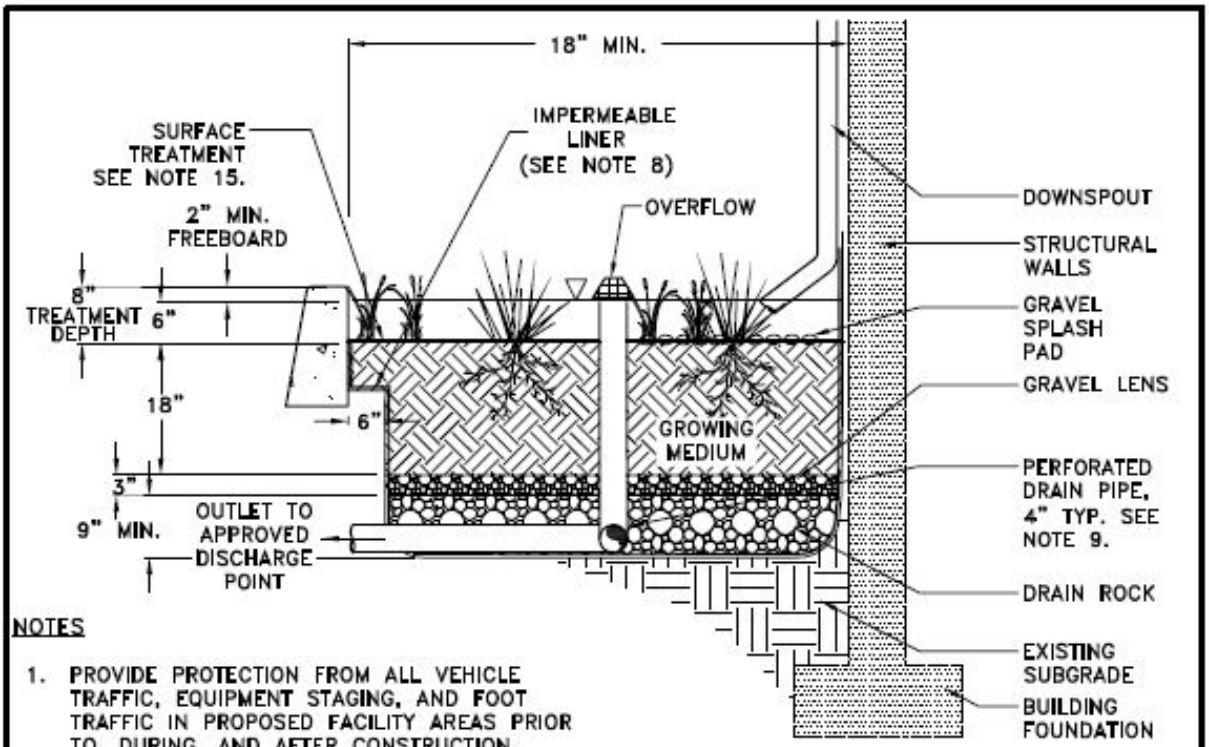
12. SEE ENGINEERING STANDARDS FOR ADDITIONAL DESIGN REQUIREMENTS.
13. SURFACE TREATMENT SHALL BE CONSISTENT WITH CITY OF ALBANY STANDARD CONSTRUCTION SPECIFICATIONS.

CITY OF ALBANY, OREGON
PUBLIC WORKS DEPARTMENT

ONSITE PLANTER DESIGN GUIDE

NO SCALE | JANUARY 2015



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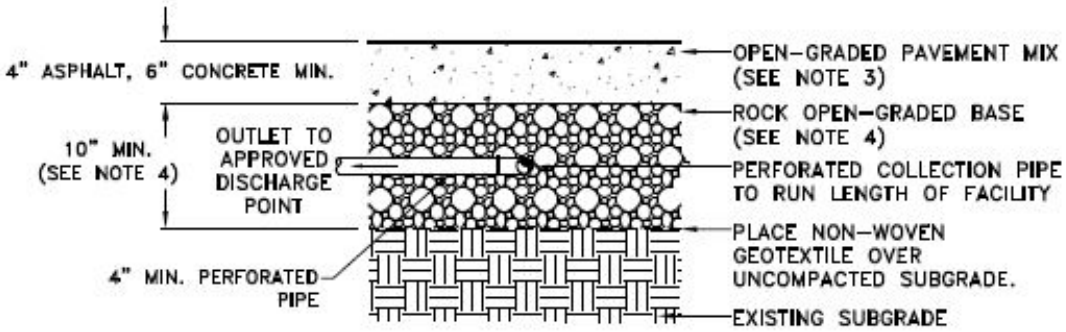
12. PLUMBING SHALL CONFORM TO THE OREGON PLUMBING SPECIALTY CODE. OBTAIN PERMITS AS NEEDED FROM CITY OF ALBANY BUILDING DIVISION.
13. SEE BUILDING DIVISION STANDARDS FOR ADDITIONAL REQUIREMENTS FOR PLANTERS ADJACENT TO A BUILDING.
14. SEE ENGINEERING STANDARD TEXT FOR ADDITIONAL STORMWATER QUALITY DESIGN REQUIREMENTS.
15. SURFACE TREATMENTS SHALL BE CONSISTENT WITH CITY OF ALBANY STANDARD CONSTRUCTION SPECIFICATIONS.

CITY OF ALBANY, OREGON
PUBLIC WORKS DEPARTMENT

ONSITE PLANTER
DESIGN GUIDE
(BUILDING PLANTER)

NO SCALE | JANUARY 2015



NOTES

1. PROVIDE PROTECTION FROM ALL VEHICLE TRAFFIC, EQUIPMENT STAGING IN PROPOSED FACILITY AREAS PRIOR TO AND DURING CONSTRUCTION.
2. PERVIOUS PAVEMENT SHALL ONLY BE CONSIDERED FOR IMPERVIOUS AREA REDUCTION CREDIT WHEN IT IS DESIGNED WITHOUT ANY IMPERMEABLE LINER.
3. OPEN-GRADED PAVEMENT MIX: SHALL BE CONSISTENT WITH CITY OF ALBANY ENGINEERING STANDARDS. MIX DESIGN REQUIRES APPROVAL OF THE CITY ENGINEER.
4. ROCK OPEN-GRADED BASE: SHALL BE CONSISTENT WITH CITY OF ALBANY ENGINEERING STANDARDS.
5. PLUMBING SHALL CONFORM TO THE OREGON PLUMBING SPECIALTY CODE. OBTAIN PERMITS AS NEEDED FROM CITY OF ALBANY BUILDING DIVISION.
6. SEE ENGINEERING STANDARDS FOR ADDITIONAL STORMWATER QUALITY DESIGN REQUIREMENTS.

CITY OF ALBANY, OREGON PUBLIC WORKS DEPARTMENT	
PERVIOUS PAVEMENT DESIGN GUIDE	
NO SCALE	JANUARY 2015

TO: Millersburg City Council

FROM Kevin Kreitman, City Manager

DATE: December 5, 2019, for the December 10, 2019 City Council Meeting

SUBJECT: Intergovernmental Agreement with Linn County Sheriff's Office for Law Enforcement Functions

Action Requested: Approval of the attached three (3) year Intergovernmental Agreement (IGA) with Linn County Sheriff's Office (LCSO) for Law Enforcement Functions.

Discussion:
It appears the City began contracting for enhanced law enforcement functions with LCSO in June of 1990. In June of 2017 the cities of Harrisburg, Mill City, Brownsville, Millersburg, Halsey, and Scio, moved from previous individual city IGA's to the establishment of a joint IGA among the seven cities who contract with LCSO for enhanced law enforcement functions.

The establishment of the joint IGA resulted in hourly rates for the enhanced functions consistent for all signatories to the agreement and established a forum to meet as a group with the LCSO staff quarterly to review service levels and discuss needs and/or issues which may have arisen; the cities also receive monthly reports from LCSO based on the enhanced law enforcement functions received.

The joint agreement further resulted in LCSO identifying a command staff position as a primary point of contact/liaison for the cities (in addition to the primary deputy assignments for each community). This position responds when needs or issues arise within the individual cities, addresses requests for enhanced enforcement/patrol, and provides assistance when required with code enforcement or other needs as may be requested. The joint agreement also established policy on how annual contract increases will be calculated for all contract cities ongoing.

Budget Impact:
During our budget review, the City was made aware of the potential for additional contract hours becoming available. Those additional hours (40 hours per month) were reviewed and approved by the Budget Committee and City Council, with the adoption of our fiscal year 2019-2020 Budget. Those added hours became effective July 1st of this year. Additionally, LCSO provided an estimated hourly contract rate last year based on anticipated contract negotiations to be completed with Sheriff's office employees. Based on those estimates, funding for the additional hours and rate was included in our current fiscal year budget.

Recommendation:
It is requested that Council approve the attached IGA for Law Enforcement Functions and authorize the City Manager to sign the agreement.

Attachment(s):
- IGA for Law Enforcement Functions

INTERGOVERNMENTAL AGREEMENT BETWEEN
CITY OF MILLERSBURG AND LINN COUNTY SHERIFF'S OFFICE

PARTIES TO THE AGREEMENT

This agreement is made and entered into this 1st day of July, 2019, by and between the City of Millersburg, a municipal corporation of the State of Oregon, hereinafter called CITY, and Linn County, Oregon, a political subdivision, of the State of Oregon, and the Sheriff of Linn County, hereinafter called COUNTY.

PURPOSE

The CITY is desirous of contracting with COUNTY for the performance of the hereinafter described law enforcement functions within its boundaries by the COUNTY, through the Sheriff thereof. The COUNTY is agreeable, with approval of the Sheriff, to rendering such services on the terms and conditions hereinafter set forth herein. This agreement is authorized and provided for by the provisions of ORS 190.010 and ORS 206.345.

IN CONSIDERATION OF THE MUTUAL CONVENANTS CONTAINED HEREIN, THE PARTIES AGREE TO THE FOLLOWING TERMS, PROVISIONS AND CONDITIONS:

1. **Payment by CITY.** CITY shall pay COUNTY in cash equivalent the annual sum set forth below (other cities listed for information only):

CITY	HRS	CONTRACT AMOUNT		
		2019-2020	2020-2021	2021-2022
Brownsville	2400	$170,040	$175,176	$181,224
Halsey	864	$61,214	$63,063	$65,241
Harrisburg	3300	$233,805	$240,867	$249,183
Millersburg	1836	$130,081	$134,010	$138,636
Scio	864	$61,214	$63,063	$65,241

Said amounts shall be paid in quarterly installments during the course of each fiscal year, July 1st through June 30th.

2. **Service to be Performed by COUNTY.** COUNTY shall perform the services described on EXHIBIT A, which by this reference is incorporated into this agreement herein.

3. **Term.** The term of this agreement shall run concurrent to the term of the COUNTY Collective Bargaining Agreement and shall be from July 1, 2019 through and including June 30, 2022. However, the service of the COUNTY shall continue to be performed and the authority granted to the COUNTY to enforce the ordinances of the CITY shall continue until thirty days after notice is given by either party that such services or authority is discontinued. By December 31st of each year, the CITY and COUNTY shall review the terms of the agreement and determine if any amendments are desired. In order for any modification to be effective, any amendment, modification or otherwise shall be in writing and approved by all parties.

4. **Indemnification.** To the fullest extent permitted by law, and in accordance with the Oregon Constitution and the Oregon Tort Claims Act, each party to this Agreement shall indemnify, defend, save, and hold harmless the other party and its officers, employees and agents from and against all claims, actions, liabilities, damages, losses, or expenses, arising from:

   I. Injury to any person or damage to property caused by the negligence or other wrongful acts or omissions of the party, its officers, employees or agents; or

   II. Failure or refusal of one party to perform or fulfill its responsibilities under this Contract or any law, through no fault of the other party. The obligations or rights under this section may not be delegated or assigned without the express consent of the other party.

   The terms of this provision are neither intended to nor shall they create a right for any third party. The obligations contained in this section shall survive the termination of this Agreement.

5. **COUNTY** shall be exclusively responsible for all its employees, for providing their wages, benefits, insurance, taxes and all the like whether required by federal, state or local law or any Collective Bargaining Agreement, including but not limited to workers compensation and contributions to Public Employees Retirement system.

6. **Entire Agreement.** This Agreement signed by all parties is the parties' final and entire Agreement and supersedes all prior and contemporaneous oral or written communications between the parties, their agent and representatives. There are no representations, promises, terms, conditions or obligations other than those contained herein.

7. **Venue.** Resolution of any disputes arising out of the performance of this contract shall be maintained in the Circuit Court of Linn County.

IN WITNESS WHEREOF, the CITY by resolution duly adopted by its respective City Council cause this agreement to be signed by its Mayor and attested by the City Recorder, and the COUNTY by order of its County Commission and attested by the Clerk and the said COUNTY, and subscribed by the Sheriff of Linn County, all on the day and year first above written.

CITY OF_____

By:_____
Mayor Date

ATTEST:

_____
City Recorder

APPROVED AS TO FORM:

_____
Linn County Legal Counsel

_____
City Legal Counsel

LINN COUNTY, a political subdivision of the State of Oregon

By: _____ 11-26-2019
Chairman Date

_____ 11-26-2019
Commissioner Date

_____ 11-26-2019
Commissioner Date

_____ 11.18.19
Sheriff Date

ATTEST:

_____
Linn County Clerk

EXHIBIT A

1. The COUNTY agrees to provide law enforcement services within the corporate limits of the CITY, to the extent and in the manner hereinafter set forth. The law enforcement services shall encompass duties and functions of the type within the jurisdiction of and customarily rendered by the COUNTY, pursuant to the statutes of the State of Oregon, and those duties associated with the enforcement and compliance with the Ordinances duly authorized and enacted by the CITY. Such services shall include the enforcement of State statutes and municipal Ordinances of the CITY.

2. CITY grants to COUNTY full municipal police authority.

3. The rendition of such service, the standards of performance, the discipline of officers, and other matters incident to the performance of such services and the control of the personnel so employed, shall remain with the COUNTY.

4. For the purpose of performing all functions of this agreement, COUNTY shall furnish and supply all necessary labor, supervision, equipment, radio communication facilities and supplies necessary to render said services.

5. COUNTY shall set the rate for services, per the table below:

Hourly Rate		
2019-2020	**2020-2021**	**2021-2022**
$70.85 / hour	$72.99 / hour	$75.51 / hour

6. COUNTY shall provide a minimum amount of hours per month to be dedicated in the CITY as listed below:

CITY	MONTHLY CONTRACTED HOURS		
	2019-2020	**2020-2021**	**2021-2022**
Millersburg	153	153	153

7. Annual contract increases to the CITY shall be directly related to the COUNTY Collective Bargaining Agreement and related to the percentage of increase in the total cost of COUNTY personnel, to include COLA's, fringe benefits, payroll costs and other COUNTY related expenses. CITY agrees to the hourly rate increases in paragraph five (5) of Exhibit A, based on the minimum hours provided by COUNTY in paragraph six (6) of Exhibit A for each fiscal year.

8. CITY shall have the ability to request and receive targeted services and enhanced patrol, e.g. traffic, and municipal code enforcement.

9. COUNTY acknowledges and agrees that all municipal and criminal offenses within the CITY'S corporate limits, whether initiated by citation, complaint, affidavit, warrant, order, or other instrument shall be prosecuted in the Linn County Circuit Court, Justice Court, or applicable CITY court, as directed by the CITY. Offenses include but are not limited to, CITY Municipal Code Offenses, Violations, and Crimes, and all applicable provisions of the Oregon Criminal Code.

10. COUNTY acknowledges and agrees that all traffic offenses within the CITY'S corporate limits, whether initiated by citation, complaints, affidavit, warrant, order, or other instrument, with the exception of felonies, shall be prosecuted in the Linn County Circuit Court, Justice Court, or applicable CITY court, as directed by the CITY. Offenses include, but are not limited to, all applicable provisions of the Oregon Motor Vehicle Code.

11. The COUNTY agrees to provide a monthly report of all law enforcement activities within the corporate limits of the CITY. The monthly report shall demonstrate compliance with paragraphs 6-9. COUNTY will make a reasonable attempt to assign a liaison with the rank of Sergeant or higher to attend designated individual CITY Council meetings.

12. COUNTY and CITY, including all contracted cities, shall implement a quarterly joint meeting with the Sheriff or Undersheriff to ensure relationships are adequate to jointly achieve the goals of each party. Meetings will be attended by CITY designee including but not limited to the Mayor, Councilor or high-ranking CITY official such as a City Administrator/Manager/Recorder. All joint meetings shall be held at the COUNTY. The location of such meeting will be determined by the COUNTY, with a time and date agreed upon by the contracted cities.

13. CITY, where applicable, will provide the COUNTY with a substation as an in-kind contribution.