CITY OF PHILOMATH
Wastewater System Facilities Plan,
Philomath, Oregon

Flow Routing Calculation Summary Spreadsheet

Appendix H

Appendix H

Table H-1: Gravity Sewer Capacity Analysis at Buildout with A2 Overflow Structure & N8A Basin Transfer

Philmath Wastewater System Facilities Plan
960.3130.0

Refer to Figure 6-2 for Flow Routing and Abbreviations

UGB Area	2560	
City Limits Area	806	
Sewered Area	719	
Peaking Factor	3	
Population at buildout	15170	
Population at Buildout	15170	
Flow to PSA	4.611	31%
Flow to NCPS	9.475	64%
Flow to TEPS	0.102	1%
Total Flow to WWTP	14.766	100%

Sewer Capacities

Size	Slope	Capacity (MGD)
8"	0.40%	0.495
10"	0.28%	0.752
12"	0.22%	1.084
15"	0.15%	1.623
18"	0.12%	2.360
21"	0.10%	3.245
24"	0.09%	4.395

Basin		Existing Peak Contribution from Basin (MGD)	Additional Peak Contribution From Basin Associated with Growth at Buildout (MGD)	Total Flow Contribution From Buildout at 2027 (MGD)	Total Routed Discharge From Basin at Buildout (MGD)	Capacity of Outlet (MGD)	Adequate Capacity to Convey Buildout Peak Flow ?
A1		0.362	0.000	0.362	0.362	0.495	YES
A2		0.120	0.403	0.523	0.523	0.8	YES
A3		0.194	0.000	0.194	0.194	0.495	YES
A4A		0.700	0.122	0.822	4.055	1.084	NO
A4B		0.475	0.039	0.514	1.366	0.495	NO
A5A		0.150	0.228	0.378	0.645	0.495	NO
A5B		0.000	0.268	0.268	0.268		New Sewer
A5C		0.185	0.022	0.207	0.207	0.495	YES
A6		0.977	0.009	0.986	1.694	0.752	NO
A7A		0.000	0.224	0.224	0.224		New Sewer
A7B		0.000	0.108	0.108	0.108		New Sewer
N1A		0.000	0.360	0.360	0.660	0.752	YES
N1B		0.000	0.299	0.299	0.299		New Sewer
N2		0.000	0.208	0.208	0.208		New Sewer
N3AA		0.829	0.077	0.906	1.256	0.495	NO
N3AB		0.434	0.000	0.434	1.690	1.084	NO
N3B		0.432	0.011	0.443	1.370	0.495	NO
N3CA		0.549	0.017	0.566	0.927	0.752	NO
N3CB		0.082	0.000	0.082	0.082	0.495	YES
N3D		0.262	0.016	0.278	0.278	0.495	YES
N4		0.000	0.481	0.481	5.548	4.395	NO
N5		0.000	1.342	1.342	1.342		New Sewer
N6A		0.000	1.044	1.044	3.724		New Sewer
N6B		0.000	0.998	0.998	0.998		New Sewer
N7		0.000	0.213	0.213	0.213		New Sewer
N8A		0.297	0.284	0.581	1.468		New Sewer
N8B		0.000	0.740	0.740	0.740		New Sewer
N8C		0.000	0.147	0.147	0.147		New Sewer
P1A		0.088	0.013	0.102	0.102	0.495	YES
P1B		0.000	0.578	0.578	0.578		New Sewer
P2A		0.000	0.108	0.108	0.108		New Sewer
P2B		0.000	0.267	0.267	0.267		New Sewer
PSATS					4.611	1.084	NO
NCTS					8.815	6.649	NO
Totals		6.138	8.628	14.766			

Appendix H
Table H-1: Gravity Sewer Capacity Analysis at Buildout with A2 Overflow Structure & N8A Basin Transfer

Philmath Wastewater System Facilities Plan
960.3130.0

Refer to Figure 6-2 for Flow Routing and Abbreviations

UGB Area	2560	
City Limits Area	806	
Sewered Area	719	
Peaking Factor	3	
Population at buildout	15170	
Population at Buildout	15170	
Flow to PSA	4.611	31%
Flow to NCPS	9.475	64%
Flow to TEPS	0.102	1%
Total Flow to WWTP	14.766	100%

Sewer Capacities

Size	Slope	Capacity (MGD)
8"	0.40%	0.495
10"	0.28%	0.752
12"	0.22%	1.084
15"	0.15%	1.623
18"	0.12%	2.360
21"	0.10%	3.245
24"	0.09%	4.395

Basin		Existing Peak Contribution from Basin (MGD)	Additional Peak Contribution From Basin Associated with Growth at Buildout (MGD)	Total Flow Contribution From Buildout at 2027 (MGD)	Total Routed Discharge From Basin at Buildout (MGD) (1)	Capacity of Outlet (MGD)	Adequate Capacity to Convey Buildout Peak Flow ?	Recommended Trunk Sewer Size and Slope (2)
A1		0.362	0.000	0.362	0.362	0.495	YES	NA
A2		0.120	0.403	0.523	0.523	0.8	YES	NA
A3		0.194	0.000	0.194	0.194	0.495	YES	NA
A4A		0.700	0.122	0.822	4.055	1.084	NO	21" @ 0.22 %
A4B		0.475	0.039	0.514	1.366	0.495	NO	12" @ 0.40%
A5A		0.150	0.228	0.378	0.645	0.495	NO	10" @ 0.40 %
A5B		0.000	0.268	0.268	0.268		New Sewer	8" @ 0.40 %
A5C		0.185	0.022	0.207	0.207	0.495	YES	NA
A6		0.977	0.009	0.986	1.694	0.752	NO	15" @ 0.28%
A7A		0.000	0.224	0.224	0.224		New Sewer	8" @ 0.40 %
A7B		0.000	0.108	0.108	0.108		New Sewer	8" @ 0.40 %
N1A		0.000	0.360	0.360	0.660	0.752	YES	NA
N1B		0.000	0.299	0.299	0.299		New Sewer	8" @ 0.40 %
N2		0.000	0.208	0.208	0.208		New Sewer	8" @ 0.40 %
N3AA		0.829	0.077	0.906	1.256	0.495	NO	12" @ 0.40%
N3AB		0.434	0.000	0.434	1.690	1.084	NO	15" @ 0.22%
N3B		0.432	0.011	0.443	1.370	0.495	NO	15" @ 0.18%
N3CA		0.549	0.017	0.566	0.927	0.752	NO	12" @ 0.18%
N3CB		0.082	0.000	0.082	0.082	0.495	YES	NA
N3D		0.262	0.016	0.278	0.278	0.495	YES	NA
N4		0.000	0.481	0.481	5.548	4.395	NO	24" @ 0.12%
N5		0.000	1.342	1.342	1.342		New Sewer	15" @ 0.15%
N6A		0.000	1.044	1.044	3.724		New Sewer	24" @ 0.12%
N6B		0.000	0.998	0.998	0.998		New Sewer	12" @ 0.22%
N7		0.000	0.213	0.213	0.213		New Sewer	8" @ 0.40%
N8A		0.297	0.284	0.581	1.468		New Sewer	15" @ 0.15%
N8B		0.000	0.740	0.740	0.740		New Sewer	10" @ 0.28%
N8C		0.000	0.147	0.147	0.147		New Sewer	8" @ 0.40 %
P1A		0.088	0.013	0.102	0.102	0.495	YES	NA
P1B		0.000	0.578	0.578	0.578		New Sewer	10" @ 0.28%
P2A		0.000	0.108	0.108	0.108		New Sewer	8" @ 0.40 %
P2B		0.000	0.267	0.267	0.267		New Sewer	8" @ 0.40 %
PSATS					4.611	1.084	NO	21" @ 0.22%
NCTS					8.815	6.649	NO	24" @ 0.42%
Totals		6.138	8.628	14.766				

(1) See Figure 6-2 for schematic representation of recommended flow routing.
(2) See Figure 6-1 for layout of sewer lines. Where new trunk sewers are to replace existing sewers, the recommended slope is that of the existing line. Where new trunk sewers are installed to serve undeveloped areas, the recommended slope is the minimum slope required to provide adequate scouring velocity for the recommended pipe size.

Appendix H
Table H-1: Gravity Sewer Capacity Analysis at Buildout with A2 Overflow Structure & N8A Basin Transfer

Philomath Wastewater System Facilities Plan
960.3130.0

Refer to Figure 6-2 for Flow Routing and Abbreviations

UGB Area	2560	
City Limits Area	806	
Sewered Area	719	
Peaking Factor	3	
Population at buildout	15170	
Population at Buildout	15170	
Flow to PSA	4.611	31%
Flow to NCPS	9.475	64%
Flow to TEPS	0.102	1%
Total Flow to WWTP	14.766	100%

Sewer Capacities

Size	Slope	Capacity (MGD)
8"	0.40%	0.495
10"	0.28%	0.752
12"	0.22%	1.084
15"	0.15%	1.623
18"	0.12%	2.360
21"	0.10%	3.245
24"	0.09%	4.395

Basin		Existing Peak Contribution from Basin (MGD)	Additional Peak Contribution From Basin Associated with Growth at Buildout (MGD)	Total Flow Contribution From Buildout at 2027 (MGD)	Total Routed Discharge From Basin at Buildout (MGD) (1)	Capacity of Outlet (MGD)	Adequate Capacity to Convey Buildout Peak Flow ?	Recommended Trunk Sewer Size and Slope (2)
A1		0.362	0.000	0.362	0.362	0.495	YES	NA
A2		0.120	0.403	0.523	0.523	0.8	YES	NA
A3		0.194	0.000	0.194	0.194	0.495	YES	NA
A4A		0.700	0.122	0.822	4.055	1.084	NO	21" @ 0.22 %
A4B		0.475	0.039	0.514	1.366	0.495	NO	12" @ 0.40%
A5A		0.150	0.228	0.378	0.645	0.495	NO	10" @ 0.40 %
A5B		0.000	0.268	0.268	0.268		New Sewer	8" @ 0.40 %
A5C		0.185	0.022	0.207	0.207	0.495	YES	NA
A6		0.977	0.009	0.986	1.694	0.752	NO	15" @ 0.28%
A7A		0.000	0.224	0.224	0.224		New Sewer	8" @ 0.40 %
A7B		0.000	0.108	0.108	0.108		New Sewer	8" @ 0.40 %
N1A		0.000	0.360	0.360	0.660	0.752	YES	NA
N1B		0.000	0.299	0.299	0.299		New Sewer	8" @ 0.40 %
N2		0.000	0.208	0.208	0.208		New Sewer	8" @ 0.40 %
N3AA		0.829	0.077	0.906	1.256	0.495	NO	12" @ 0.40%
N3AB		0.434	0.000	0.434	1.690	1.084	NO	15" @ 0.22%
N3B		0.432	0.011	0.443	1.370	0.495	NO	15" @ 0.18%
N3CA		0.549	0.017	0.566	0.927	0.752	NO	12" @ 0.18%
N3CB		0.082	0.000	0.082	0.082	0.495	YES	NA
N3D		0.262	0.016	0.278	0.278	0.495	YES	NA
N4		0.000	0.481	0.481	5.548	4.395	NO	24" @ 0.12%
N5		0.000	1.342	1.342	1.342		New Sewer	15" @ 0.15%
N6A		0.000	1.044	1.044	3.724		New Sewer	24" @ 0.12%
N6B		0.000	0.998	0.998	0.998		New Sewer	12" @ 0.22%
N7		0.000	0.213	0.213	0.213		New Sewer	8" @ 0.40%
N8A		0.297	0.284	0.581	1.468		New Sewer	15" @ 0.15%
N8B		0.000	0.740	0.740	0.740		New Sewer	10" @ 0.28%
N8C		0.000	0.147	0.147	0.147		New Sewer	8" @ 0.40 %
P1A		0.088	0.013	0.102	0.102	0.495	YES	NA
P1B		0.000	0.578	0.578	0.578		New Sewer	10" @ 0.28%
P2A		0.000	0.108	0.108	0.108		New Sewer	8" @ 0.40 %
P2B		0.000	0.267	0.267	0.267		New Sewer	8" @ 0.40 %
PSATS					4.611	1.084	NO	21" @ 0.22%
NCTS					8.815	6.649	NO	24" @ 0.42%
Totals		6.138	8.628	14.766				

(1) See Figure 6-2 for schematic representation of recommended flow routing.
(2) See Figure 6-1 for layout of sewer lines. Where new trunk sewers are to replace existing sewers, the recommended slope is that of the existing line. Where new trunk sewers are installed to serve undeveloped areas, the recommended slope is the minimum slope required to provide adequate scouring velocity for the recommended pipe size.