PARSONS BRINCKERHOFF

Memorandum

Date: December 9, 2013
To: Kristi Krueger, Principal Civil Engineer, Community Development Division, Development and Public Works Department, City of Springfield
From: Peter M. Geiger, Environmental Scientist, Parsons Brinckerhoff
Subject: Water Quality, Franklin Boulevard Design Refinement and Environmental Classification Project

HYDROLOGY AND FLOODPLAIN

The Franklin Boulevard Project Area (Figure 1) lies within the Upper Willamette River watershed and is within the Willamette River's 500-year floodplain (Zone X).[1, 2]

The City of Springfield's stormwater drainage system has three major drainages, one that flows to the Middle Fork Willamette River, one that flows to the main stem Willamette River, and one that flows to the McKenzie River.[3] The City is further broken down into 15 major basins and 96 subbasins. The Franklin Boulevard Project Area is contained within the Glenwood subbasin, which drains to the main stem Willamette River. The Glenwood subbasin is over 1,400 acres in size. Runoff from approximately one half (700 acres) of the subbasin is in the Laurel Hills Valley south and outside of the Project Area and drains to the Glenwood Slough. Runoff from another approximately 600 acres in the Glenwood subbasin, which includes the southern portion of the Project Area, joins the Laurel Hills Valley runoff in the Glenwood Slough before draining to the main stem Willamette River or infiltrates into the soil over time. Runoff from the remaining 100 acres, which includes the northern portion of the Project Area, discharges directly to the main stem Willamette River.

WATER QUALITY

The main stem of the Willamette River does not meet Oregon's Department of Environmental Quality (DEQ) water quality standards (303(d) list) for temperature, dioxin, dissolved oxygen, e-coli, iron, manganese, and mercury.[4]

In 2006 the U.S. Environmental Protection Agency approved the Total Maximum Daily Load (TMDL) limits for temperature, mercury, and fecal bacteria established by Oregon DEQ for the Upper Willamette Basin.[5] The Willamette River, including the portion in the City of Springfield at the OR 126 crossing over the Willamette River, is being monitored every other month by Oregon DEQ to determine if it exceeds the TMDL limits and to determine long-term trends.[6] The Oregon water quality index for the period 2003 to 2012 for ambient water samples collected at the OR 126 crossing of the Willamette River was listed as excellent condition.[7]

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[1] Federal Emergency Management Act (FEMA). 1999. Flood Insurance Rate Map. Panel 41039C1141F.

[2] Ibid. Panel 41039C1142F.

[3] City of Springfield. 2008. Stormwater Facilities Master Plan. p. 55.

[4] Oregon Department of Environmental Quality (DEQ). 2006. Willamette Basin TMDL Order. p. 1-8.

[5] Ibid. p. 1-9.

[6] Franklin Boulevard is OR 126 through the Project Area. The crossing of Franklin Boulevard over the Willamette River is at the east end of the Project Area, as shown in Figure 1.

[7] DEQ. 2013. Oregon Water Quality Index Summary Report. Water Years 2002 to 2011 and 2003 to 2012. p. 31.

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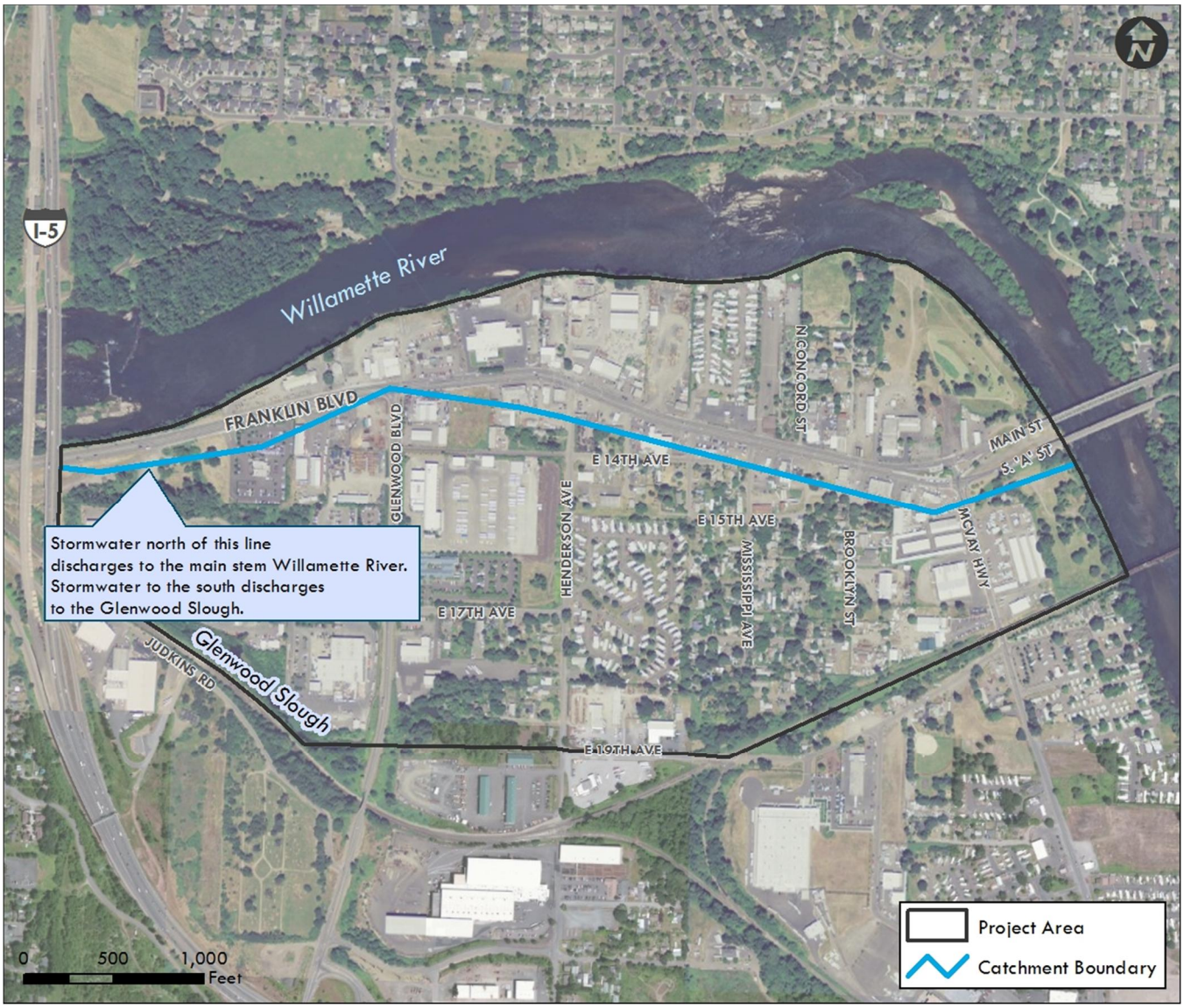
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND STORMWATER MANAGEMENT

The City of Springfield operates under a Phase II NPDES Municipal Separate Storm Sewer System (MS4) permit, issued by Oregon DEQ, which requires the City to implement programs in order to address six minimum measures.[8] The six minimum measures are as follows:

- Public education and outreach on stormwater impacts – requires the City to distribute educational materials to the community or conduct outreach activities about the impacts of stormwater discharge on receiving waters and the actions that the public can take to reduce pollutants in stormwater runoff.
- Public participation and involvement – requires compliance with State, Tribal, and local public notice requirements when implementing a public involvement/participation program.

Figure 1 Project Area



[8] City of Springfield. 2010. Stormwater Management Plan. p. 40.

- Illicit discharge detection and elimination – requires the City to implement an illicit discharge detection and elimination program, including education and a process to respond and document complaints related to illicit discharges.
- Construction site runoff control – requires the development, implementation, and enforcement of a program to reduce pollutants in stormwater runoff associated with land disturbance equal or exceeding 1 acre.
- Post construction runoff control – requires the City to develop, implement, and enforce a program to ensure reduction of pollutants to the maximum extent practicable from new and redevelopment projects. Such program must also include strategies for operations and maintenance and regulatory enforcement.
- Pollution prevention/good housekeeping –requires development and implementation of an operations and maintenance program (including training) with the ultimate goal of reducing pollutant runoff from municipal operations.

The City of Springfield Stormwater Management Plan includes best management practices (BMPs) to address each of the six minimum measures.[9] In accordance with its NPDES Phase II permit, in 2011 the City submitted benchmarks, or total pollutant load reduction estimates, for each parameter with an established TMDL and wasteload allocation with its permit renewal application. To establish the benchmarks the City had to estimate pollutant load generation for the TMDL parameters using existing land use within BMP drainage areas.

EXISTING STORMWATER NETWORK

In the Franklin Boulevard Project Area stormwater drains in two different areas.

The first area is central Glenwood, which is generally south of Franklin Boulevard and west of McVay Highway. In this area stormwater flows away from the Willamette River toward the Union Pacific Railroad.[10] This stormwater passes over very permeable soils which absorb the majority of rainfall not collected on impervious surfaces. There is a limited network of stormwater collection and conveyance facilities along Glenwood Boulevard and 17th Avenue that discharge to Glenwood Slough (Figure 2, Sheet C10).[11] Flow that does make it toward the Union Pacific Railroad enters the Glenwood Slough, which flows to the west-northwest and eventually discharges to the Willamette River near the Interstate 5 (I-5) bridge. Parts of the residential core area, in particular, have developed without a connected stormwater conveyance system and have problems with 'localized ponding' in streets and yards.

The second area is along the Willamette River. This area also contains very permeable soils and, in general, stormwater only comes from the developed areas. The stormwater facilities are very localized, serving individual parcels. Stormwater facilities include a variety of private systems that are not managed by either the City of Springfield or Lane County or inventoried as part of the public stormwater system, with one exception. A parcel to the north and east of the intersection of Glenwood Boulevard and Franklin Boulevard has private stormwater drains and an overflow line from the sanitary sewer pump station to the Willamette River that are privately maintained but owned by the City of Springfield (Figure 2, Sheet C09).[12]

ODOT is the current owner of Franklin Boulevard and its associated stormwater system. Stormwater is collected on Franklin Boulevard through the existing curb, gutter, curb inlet, and catch basin system

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[9] Ibid.

[10] City of Springfield. 2009. Glenwood Refinement Plan Update Project, Existing Conditions Report. August 2009. p. 134.

[11] City of Springfield. 2011. Sewer Infrastructure Maps.

[12] Ibid.

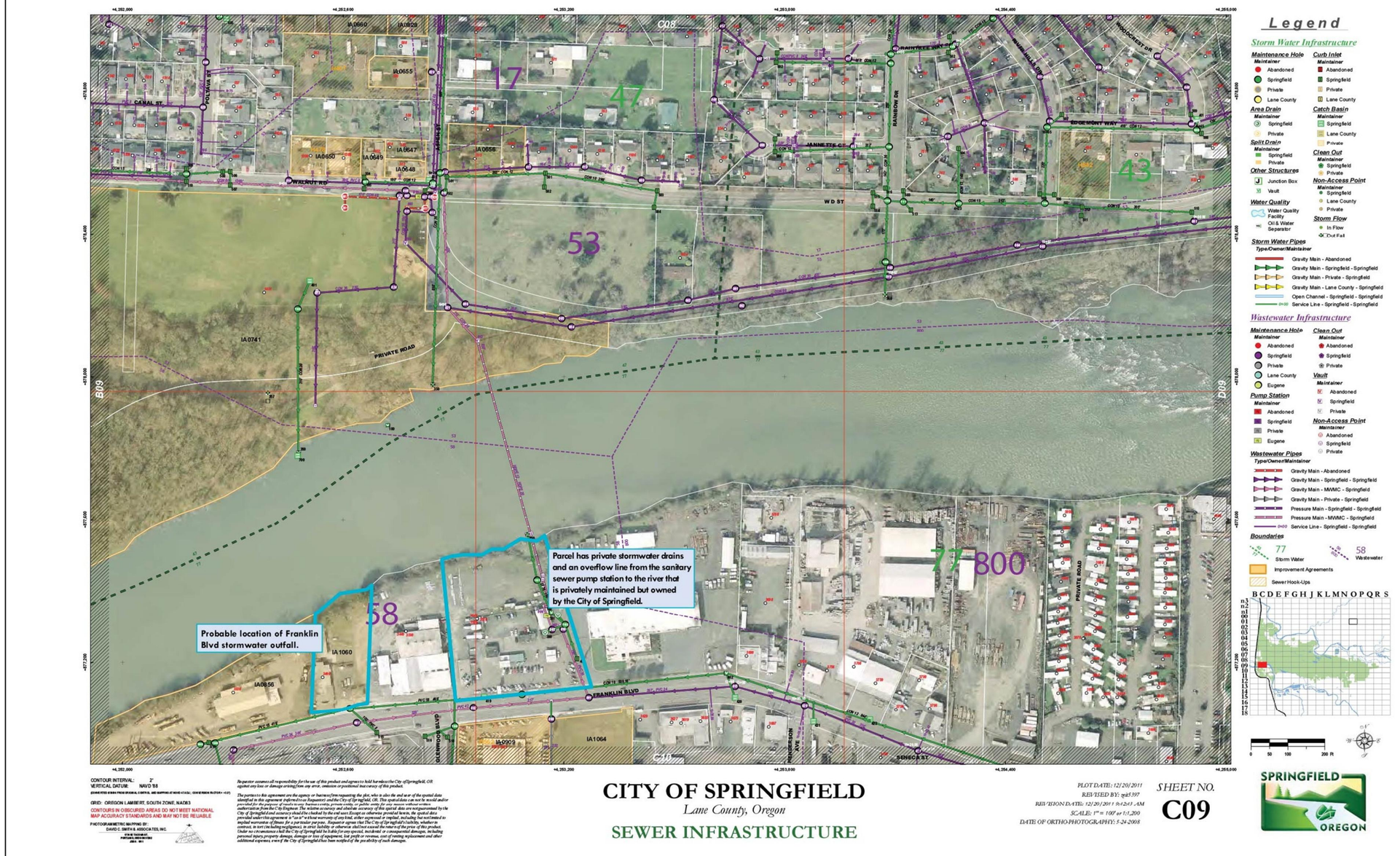
(Figure 2, Sheets C09, C10, and D10).[13] Stormwater from Franklin Boulevard is conveyed to the west through subsurface pipes and discharges to an unmapped outfall to the Willamette River located west of the intersection of Glenwood Boulevard and Franklin Boulevard.[14, 15]

[13] Ibid.

[14] Vogeney, Ken. 2013. City Engineer. City of Springfield. Personal communication. October 28, 2013.

[15] Washburn, Sunny. 2013. Water Resources Program Coordinator. City of Springfield. Personal communication. October 29, 2013.

Figure 2 Existing Stormwater Network in Project Area, Sewer Infrastructure Sheets C09, C10, and D10



CONTOUR INTERVAL: 2'
VERTICAL DATUM: NAVD '88

GRID: OREGON LAMBERT, SOUTH ZONE, NAD83

CONTOURS IN OBSCURED AREAS DO NOT MEET NATIONAL MAP ACCURACY STANDARDS AND MAY NOT BE RELIABLE

PHOTOGRAMMETRIC MAPPING BY:
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CITY OF SPRINGFIELD

Lane County, Oregon

SEWER INFRASTRUCTURE

PLOT DATE: 12/20/2011
REVISED BY: sp45397
REVISION DATE: 12/20/2011 9:42:43 AM
SCALE: 1" = 100' or 1:1,200
DATE OF ORTHO-PHOTOGRAPHY: 5-24-2008

SHEET NO.
C09

SPRINGFIELD OREGON

Legend

Storm Water Infrastructure

Maintenance Hole — Maintainer: Abandoned, Springfield, Private, Lane County
Curb Inlet — Maintainer: Abandoned, Springfield, Private, Lane County
Area Drain — Maintainer: Springfield, Private
Catch Basin — Maintainer: Springfield, Lane County, Private
Split Drain — Maintainer: Springfield, Private
Clean Out — Maintainer: Springfield, Private
Other Structures: Junction Box, Vault
Non-Access Point — Maintainer: Springfield, Lane County, Private
Water Quality: Water Quality Facility, Oil & Water Separator
Storm Flow: In Flow, Out Fall

Storm Water Pipes — Type/Owner/Maintainer
Gravity Main - Abandoned
Gravity Main - Springfield - Springfield
Gravity Main - Private - Springfield
Gravity Main - Lane County - Springfield
Open Channel - Springfield - Springfield
Service Line - Springfield - Springfield

Wastewater Infrastructure

Maintenance Hole — Maintainer: Abandoned, Springfield, Private, Lane County, Eugene
Clean Out — Maintainer: Abandoned, Springfield, Private
Vault — Maintainer: Abandoned, Springfield, Private
Pump Station — Maintainer: Abandoned, Springfield, Private, Eugene
Non-Access Point — Maintainer: Abandoned, Springfield, Private

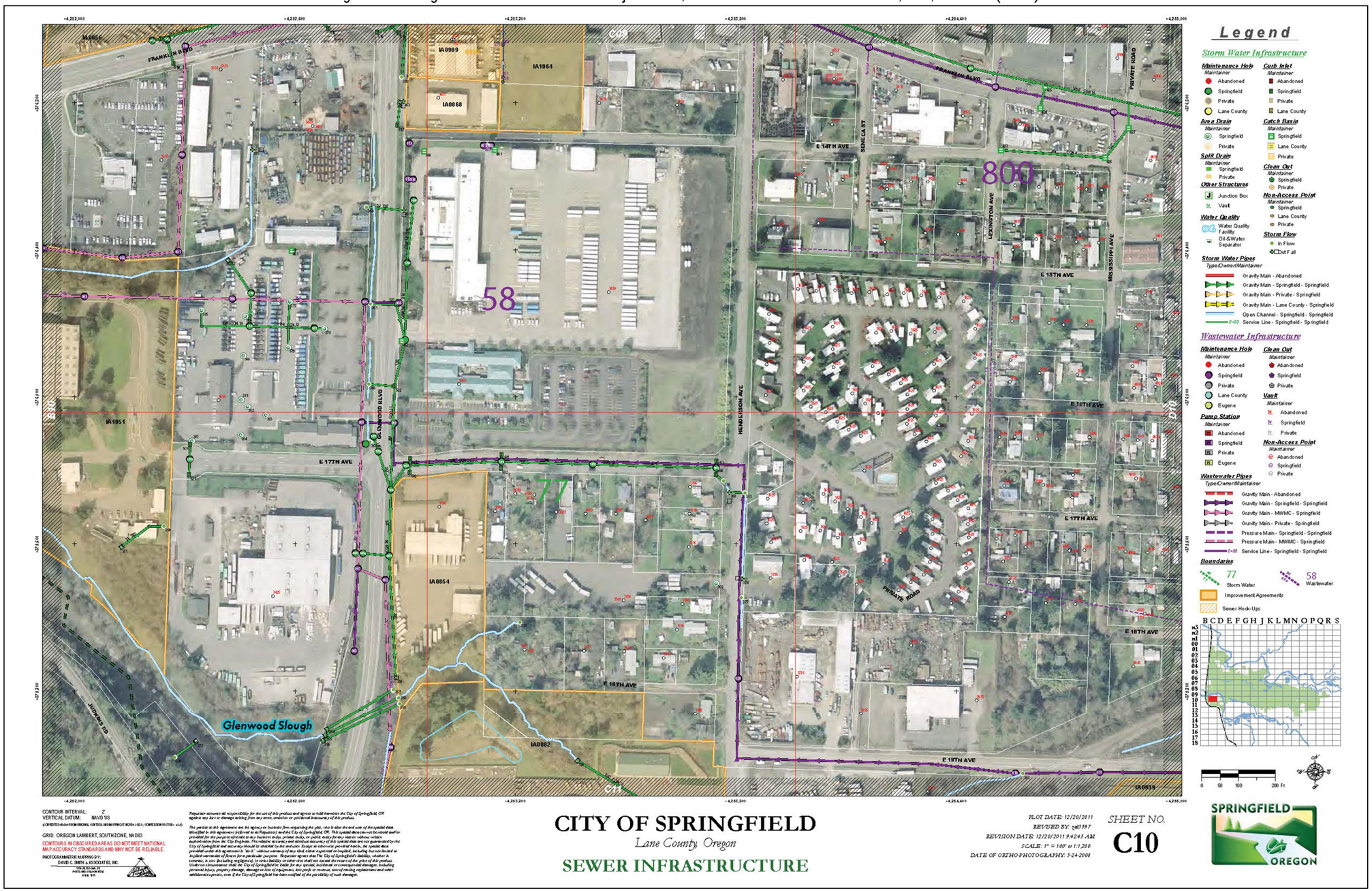
Wastewater Pipes — Type/Owner/Maintainer
Gravity Main - Abandoned
Gravity Main - Springfield - Springfield
Gravity Main - MWMC - Springfield
Gravity Main - Private - Springfield
Pressure Main - Springfield - Springfield
Pressure Main - MWMC - Springfield
Service Line - Springfield - Springfield

Boundaries: 77 Storm Water, 58 Wastewater
Improvement Agreements
Sewer Hook-Ups

B C D E F G H J K L M N O P Q R S
n3 n2 n1 00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18

0 50 100 200 Ft

Figure 2 Existing Stormwater Network in Project Area, Sewer Infrastructure Sheets C09, C10, and D10 (cont.)



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VERTICAL DATUM: NAVD 88

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Lane County, Oregon

SEWER INFRASTRUCTURE

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DATE OF ORTHO-PHOTOGRAPHY: 3-24-2008

SHEET NO.
C10

SPRINGFIELD OREGON

Figure 2 Existing Stormwater Network in Project Area, Sewer Infrastructure Sheets C09, C10, and D10 (cont.)

CONTOUR INTERVAL: 2'
VERTICAL DATUM: NAVD '88

GRID: OREGON LAMBERT, SOUTH ZONE, NAD83

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CITY OF SPRINGFIELD

Lane County, Oregon

SEWER INFRASTRUCTURE

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REVISION DATE: 12/20/2011 9:42:43 AM
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SHEET NO.

D10

SPRINGFIELD OREGON