CITY OF ROSEVILLE DESIGN STANDARDS January 2013

Section 1 Purpose and Definitions

1-1	Purpose	PD 1
1-2	Design Practice	PD 1
1-3	Definitions	PD 1

Section 2 General Requirements

2-1	Plans by an Appropriate Engineer	GR 1
2-2	Accepted Plans	GR 1
2-3	Reference to City Specifications and Standards	GR 1
2-4	Work in City Right of Way and Easements	GR 1
2-5	Submission of Public Improvement Plans	GR 2
	A. Development Projects	GR 2
	B. Subdivision	GR 2
	2-6 Submission of Development Plans	GR 2
2-7	Submission of Rough Grading Plans	GR 3
2-8	Submission of Landscaping and Irrigation Plans	GR 4
2-9	Submission of Final and parcel Maps	GR 5
2-10	Soils Reports	GR 5
2-11	Resubmittal Requirements	GR 5
2-12	Plan Check and Inspection Fees	GR 6
2-13	Plan Approval	GR 6
2-14	Expiration of Plans	GR 6
2-15	Improvement Plan Revision During Construction	GR 7
2-16	Record (As-Built) Plans	GR 8
2-17	Conflict, Errors, and Omissions	GR 8
2-18	Change In Consulting Engineer	GR 8
2-19	Other Agency Notification	GR 9
2-20	Inspection Requirements	GR 9
2-21	Final Inspection	GR 9
2-22	Acceptance of Improvements	GR 9
2-23	Special Notices and Permits	GR 10
2-24	Grading Permits, Encroachment Permits, and Subdivision Agreements	GR 10
	A. Grading Permits	GR 10
	B. Encroachment Permit	GR 11
	C. Subdivision Agreement	GR 13
2-25	Submission of Lot Line Adjustments	GR 14
2-26	Submission of Dedication By Separate Instrument	GR 14
2-27	Bridges and Other Structural Items	GR 15

	A. Private Improvements	GR 15
	B. Public Improvements	GR 15
2-28	Deviation from Standards	GR 16

Section 3
Plan Sheet Requirements

3-1	General	PS 1
3-2	Plan and Profile Sheets	PS 1
	A. Drafting Standards	PS 1
	B. Scale	PS 1
	C. Title Block	PS 1
	D. Orientation	PS 1
3-3	Title or General Information Sheet	PS 1
3-4	Street Plan and Profile Sheets	PS 3
3-5	Detail Sheets	PS 5
3-6	Parcel and Final Maps	PS 5
	A. Preparation and Form	PS 5
	B. Certificate Sheet	PS 7
	C. Information	PS 8
	D. Additional Data Required	PS 10
	E. Subdivision Agreement	PS 11
3-7	Property of City of Roseville	PS 11

Section 4
Traffic Impact Studies

4-1	General	TI 1
4-2	Purpose of Traffic Impact Studies	TI 1
4-3	Responsibility for Traffic Impact Studies	TI 1
4-4	Types of Traffic Impact Studies	TI 1
4-5	Traffic Study Format	TI 4
	A. Introduction	TI 4
	B. Project Trip Generation	TI 5
	C. Trip Distribution	TI 5
	D. Traffic Assignment	TI 5
	E. Level of Service	TI 6
	F. Site Access	TI 6
	G. Traffic Signals	TI 11
	H. Traffic Accidents	TI 12
	I. On-Site Circulation	TI 12
	J. Report Documentation	TI 12
4-6	Preparation and Submittal Requirements	TI 12

Section 5
Site Access

5-1	General	SA 1
5-2	Driveway Locations on Minor and Primary Residential Streets	SA 1
5-3	Driveway Location on Collector or Arterial Streets	SA 2
5-4	Number of Driveways Serving a Parcel or Site	SA 2
5-5	Right Turn Deceleration/Acceleration Lanes for Driveways	SA 2
5-6	Left Turn Deceleration/Acceleration Lanes for Driveways	SA 3
5-7	Minimum Offset for Opposing Driveways	SA 3
5-8	Restricted Turning Movements for Driveways	SA 4
5-9	Signalized Driveways	SA 4
5-10	Minimum Required Throat Depth	SA 5

Section 6
Traffic Signals, Signs, and Striping

6-1	Traffic Signal Needs Assessment	TS 1
6-2	Design Standards	TS 1
	A. Signal Standard Types	TS 2
	B. Vehicle and Pedestrian Signal Types	TS 2
	C. Vehicle Signal Alignment	TS 4
	D. Number of Vehicle Signal Indications	TS 4
	E. Signal Phasing	TS 5
	F. Permissive Left Turn Phasing	TS 5
	G. Vehicle Detector Layout and Inputs	TS 5
	H. Traffic Signal Conductors	TS 8
	I. Traffic Signal Interconnect (SIC)	TS 10
	J. Traffic Signal Conduit	TS 14
	K. Traffic Signal Pull Boxes	TS 15
	L. Pedestrian Push Button (PPB)	TS 16
	M. Intersection Safety Lighting	TS 16
	N. Controller/Service Pad	TS 16
	O. Traffic Signs	TS 17
	P. Striping	TS 19
	Q. Right Turn Lanes	TS 22
	R. City Supplied Equipment	TS 22
	S. Contractor Supplied Equipment	TS 23
	T. Salvaged Equipment	TS 23
	U. Traffic Control	TS 24
	V. Signal Activation	TS 26
	W. Roadway Improvements	TS 26
6-3	Preparation of Plans	TS 28
	A. Title Sheet	TS 28
	B. Signal and Lighting Sheet	TS 28

C. Interconnect Sheet TS 29
D. Signing and Striping Sheet TS 29

Section 7
Streets

7-1 Street Classes and Design Widths ST 1
A. 20-Foot Street (Alley) ST 1
B. Residential Streets ST 1
C. Collector/Industrial ST 2
D. Minor Arterial ST 2
E. Major Arterial ST 2
F. Cul-de-Sac ST 2
G. Partial Width Streets ST 3
H. Private Streets ST 3
I. Gated Entryways ST 3
7-2 Right-of-Way Width ST 5
7-3 Roadway Signage and Striping ST 5
7-4 Structural Section ST 5
A. Structural Street Sections at Signalized Intersections ST 6
7-5 Curb and Gutter Requirements ST 6
A. Type 1 Roll Curb and Gutter ST 6
B. Type 2 Vertical Curb and Gutter ST 6
C. Type 6 Modified V-Gutter ST 7
D. Cross Gutters ST 7
7-6 Sidewalk Requirements ST 7
A. Width ST 7
B. Slopes ST 7
C. Radius ST 7
D. Pedestrian Curb Ramps ST 8
E. Sidewalk Barricades ST 8
7-7 Pedestrian Walks and Bike Paths ST 8
7-8 Roadway Profile Standards ST 8
A. Grades ST 9
B. Cross Slopes ST 9
C. Vertical Curves ST 9
7-9 Intersections ST 9
7-10 Offset Intersections ST 9
7-11 Elbow Intersections ST 10
7-12 Design Sight Distances ST 10
A. Stopping Sight Distances ST 10
B. Sight Distances at Intersections and Driveways ST 10
7-13 Centerline Radii ST 13
7-14 Driveways ST 13
A. Types, Widths and Grades ST 13
B. Location ST 14
C. Sight Distance ST 14

7-15	Bus Stops and Turnouts	ST 14
7-16	Developer Responsibility for Improvements to Streets	ST 14
7-17	Trenching in Existing Paved Roadways	ST 16
7-18	Street Names and Street Name Signs	ST 16
	A. Location and Number Required	ST 16
7-19	Survey Monuments	ST 17
7-20	Benchmarks	ST 18

Section 8
Domestic Water Supply System Design

8-1	Introduction	W 1
8-2	Design Criteria	W 1
8-3	Current Standards	W 1
8-4	Water Supply Quality	W 1
8-5	Water Supply Pressure	W 2
8-6	Flow Determination	W 2
8-7	Peaking Factors	W 2
8-8	Required Fire Flows	W 2
	A. Residential Areas	W 3
	B. Multi Family	W 3
	C. Commercial Areas	W 3
8-9	Location in Existing Street	W 3
8-10	Location in Unpaved Areas	W 3
8-11	Transmission System Design	W 3
	A. Transmission Main Location	W 4
	B. Transmission Main Appurtenances	W 4
	C. Corrosion Protection	W 4
8-12	Distribution System Design	W 4
	A. Hydraulic Analysis	W 4
	B. Pipe Sizes	W 6
	C. Stubs	W 6
8-13	Water Main Location	W 6
	A. Location	W 6
	B. Vertical Elevation Change	W 7
	C. Cover	W 7
	D. Dead-End Mains	W 7
	E. Warranty Inspection of Water Main Stubs	W 7
	F. Public Lines in Commercial Development	W 8
8-14	Valves	W 8
	A. Locations	W 8
	B. Removal and Abandonment	W 8
	C. Valve Extension Stems	W 9
	D. Air Relief Valves	W 9
8-15	Hydrants and Blow-offs	W 9
	A. Locations	W 9
	B. Spacing	W 9
	C. Cul-de Sac and Dead-end Streets	W 10

	D. Valves	W 10
8-16	Water Services	W 10
	A. Location	W 10
	B. Curb Stamp	W 10
	C. Sizing	W 10
	D. Spacing	W 10
	E. Service Taps	W 10
	F. Water Meters	W 10
8-17	Restraint	W 11
8-18	Work Near Existing Water Mains	W 11
	A. Water Mains 16” and Larger	W 11
8-19	Water Improvement Plan Requirements	W 12
	A. Water Study	W 12
	B. General Requirements	W 12
	C. Layout Sheet	W 12
	D. Plan and Profile Sheets	W 12
	E. Detail Drawings	W 13

Section 9
Sanitary Sewer Design

9-1	Design Criteria	SS 1
9-2	Average Flow Determination	SS 1
9-3	Design Flow	SS 2
9-4	Pipe Capacity, Slope, Velocity, Size, Depth and Material	SS 4
	A. Main Sizes	SS 4
	B. Slope and Velocity	SS 4
	C. Capacity	SS 5
	D. Hydraulic Grade Line	SS 5
	E. Depth	SS 5
9-5	Sewer Location and Alignment Requirements	SS 5
	A. General	SS 5
	B. Location in New Subdivisions	SS 5
	C. Location in Existing Streets	SS 5
	D. Location in Unpaved Areas	SS 6
	E. Easements Sewer Lines	SS 6
	F. Public Lines in Commercial Developments	SS 6
	G. Water Well Clearance	SS 6
	H. Lines in Drainage Swales	SS 6
	I. Alignment	SS 6
	J. Sewer Main Stub	SS 7
9-6	Trench Loading Conditions and Pipe Design	SS 7
	A. Rigid Conduit Loading	SS 7
	B. Safety Factor	SS 7
	C. Bedding and Initial Backfill	SS 7
	D. Special Pipe Strength Requirements	SS 7
9-7	Manhole Criteria	SS 8
	A. General	SS 8

	B. Spacing	SS 8
	C. Invert Elevations	SS 8
	D. Manhole Sizing	SS 8
	E. Manhole Coating	SS 8
	F. Manhole Access	SS 9
	G. Connection City Mains	SS 9
9-8	Drop Connection Criteria	SS 9
9-9	Mainline and Dip Transitions	SS 9
9-10	Sewer Service Design	SS 9
	A. General	SS 9
	B. Sizing	SS 10
	C. Depth	SS 11
	D. Special Requirements in Developed Areas	SS 11
	E. Warranty Inspection of Sewer Main Stubs	SS 11
	F. Abandoning Existing Sewer Stubs	SS 12
	G. Grease Interceptor	SS 12
	H. Oil/Sand Interceptor	SS 12
	I. Automatic Car Wash	SS 12
9-11	Creek Crossing Design	SS 12
	A. General	SS 12
	B. Construction and Material	SS 13
	C. Design	SS 13
9-12	Boring and Jacking Requirements	SS 13
9-13	Pump Station and Force Main Requirements	SS 13
	A. Location	SS 13
	B. Capacity	SS 13
	C. Wet Well	SS 14
	D. Pumps	SS 14
	E. Station Piping	SS 14
	F. Odor Control	SS 14
	G. Force Mains	SS 15
	H. S.C.A.D.A.	SS 15
9-14	Sewer Improvement Plan Requirements	SS 15
	A. Sewer Study	SS 15
	B. General Requirements	SS 15
	C. Layout Sheet	SS 15
	D. Plan and Profile Sheets	SS 16
	E. Detail Drawings	SS 17
	F. Connection to Existing Facilities Where Bypassing Or Stoppage of Existing Flow Will be Required	SS 17
9-15	Multi-Parcel Commercial and Industrial Developments	SS 17

Section 10
Drainage

10-1	General	DR 1
10-2	City Policies and Requirements	DR 1
10-3	Development In or Adjacent to a Regulatory Floodplain	DR2

10-4	Federal Flood Program	DR 3
10-5	Drainage Diversions	DR 3
10-6	Drainage Easements	DR 3
10-7	Drainage Capacity/Design	DR 4
10-8	Design Peak Discharge Methods	DR 5
10-9	Hydraulic Standards for Drainage Systems	DR 12
10-10	Street Inundation Requirements	DR 12
10-11	Closed Conduits	DR 14
	A. Size and Material	DR 14
	B. Cover Requirements	DR 14
	C. Alignment	DR 14
10-12	Manholes	DR 15
	A. Saddle Manholes	DR 15
	B. Covers	DR 15
10-13	Inlets	DR 15
10-14	Junction Boxes	DR 16
10-15	Inlet and Outlet Structures	DR 16
	A. Headwalls, Wingwalls, and Endwalls	DR 16
	B. Trash Racks and Access Control Racks	DR 16
10-16	Drainage Pumps	DR 16
	A. Design Requirements	DR 17
	B. Maintenance Requirements	DR 17
10-17	Channels and Outfall Design	DR 17
	A. Open Channel Design	DR 17
	B. Interceptor Ditches	DR 18
	C. Outfall Profiles	DR 18
	D. Fencing	DR 19
	E. Access Roads	DR 19
10-18	Cross Culverts and Bridges	DR 19
	A. Design Storm	DR 19
	B. Computation of Flow	DR 20
10-19	Detention and Retention Basins	DR 20
10-20	Access for Maintenance	DR 21
	Standard Hydraulic Calculation Sheet	DR 22
	Submittal Requirements – HEC-1 Studies	DR 23
	Submittal Requirements – HEC-2 Studies or HEC RAS	DR 27

Section 11
Grading

11-1	Introduction	GR 1
11-2	Fees and Bonds	GR 2
11-3	Preparation	GR 2
11-4	Finished Grading Plan Requirements	GR 2
11-5	Rough Grading Plan Requirements	GR 4
	A. Improvements	GR 4
	B. Drainage	GR 4
11-6	Design Requirements	GR 4

A. Rolling Terrain Grading GR 4
B. Boundary Grading GR 4
C. Interior Grading GR 5
D. Retaining Walls GR 6
E. Grading Near Trees GR 7
F. Stormwater Pollution Prevention plan (SWPPP) GR 10
G. Mitigation Monitoring Requirement GR 15
H. Certifying Pad Elevations GR 15
I. Maintenance of Access to Utility Facilities GR 16

Section 12
Sound Barrier Design

12-1 General SB 1
12-2 Sound Studies SB 1
12-3 Location Requirements SB 1
12-4 Design Requirements SB 1

Section 13
Bikeways

13-1 General BK 1
13-2 Design Criteria BK 1
13-3 Plan Acceptance BK 1
13-4 Class I Bikeways (Bike Paths) BK 1
A. Width BK 2
B. Clearance to Obstructions BK 2
C. Signing and Delineation BK 2
D. Intersections with Roadways BK 3
E. Separation Between Bike Paths and Roadways BK 3
F. Design Speed BK 4
G. Grades BK 4
H. Horizontal Alignment and Superelevation BK 4
I. Stopping Sight Distance BK 4
J. Lateral Clearance on Horizontal Curves BK 4
K. Vertical Curves BK 5
L. Structural Section BK 5
M. Drainage BK 5
N. Access Points BK 6
O. Temporary Bike Path Closures BK 6
P. Bike Bridges BK 6
Q. Lighting BK 6
13-5 Bike Paths in Floodplains BK 7
13-6 Bike Bridges in Floodplains BK 7
13-7 Class IA Sidewalk Bikeways BK 7
13-8 Class II Bikeways BK 8
A. Signing and Pavement Markings BK 8
B. At-grade Intersection Design BK 8

13-9 Class III Bikeways BK 8

Section 14
Recycled Water Infrastructure Design

14-1 Determination of Use RW 1
14-2 Design Information RW 1
14-3 Current Standards RW 1
14-4 Recycled Water Supply Quality RW 2
14-5 Off-Site Recycled Water Facilities RW 2
14-6 Private On-Site Recycled Water Facilities RW 2
14-7 Water Supply Pressure RW 2
14-8 Transmission System Design RW 2
A. Hydraulic Analysis RW 2
B. Specifications RW 3
C. Transmission Main Size RW 3
D. Transmission Main Location RW 3
E. Main Line Fittings and Connections RW 5
F. Valves RW 5
G. Booster Pump Stations RW 5
H. Air and Vacuum Valves and blow-Offs RW 5
I. Corrosion Protection RW 6
J. Warranty Inspection of Recycled Water Stubs RW 6
14-9 Service Lines RW 6
14-10 On-Site Recycled Water Facilities Design RW 7
14-11 Determination to Use Recycled Water or Potable Water RW 11
14-12 Design of Recycled Water Facilities With Temporary Potable Water Service RW 11
14-13 Backflow Prevention Devices RW 12
14-14 Prohibition and Limitations RW 12
14-15 Control of Runoff and Application Areas RW 13
14-16 Minimum Depth to Top of On-Site Recycled Water Piping RW 13
14-17 Data Required on Plans RW 14
A. Meter Data RW 14
B. Drinking Fountains RW 14
C. Irrigation Equipment Legend RW 14
D. Recycled Water Warning/Information Sign RW 15
14-18 Location RW 15
14-19 Plan Submittal and Approval RW 15
14-20 Inspection RW 15
14-21 Record Drawings RW 15
14-22 Controller Access RW 16
14-23 Blow-off Hydrants and Other Points of Public Access RW 16

Section 15
Solid Waste Design

15-1	Introduction	SW 1
15-2	Current Standards	SW 1
15-3	Design Criteria	SW 1
	A. General	SW 1
	B. Walls	SW 1
	C. Gates	SW 1
	D. Vehicle Approach and Floor	SW 1
	E. Signs and Striping	SW 2
	F. Location	SW 2
	G. Path of Travel	SW 2
	H. Back-up Lengths	SW 2
	I. Frontloading Compactors	SW 2

THIS PAGE INTENTIONALLY LEFT BLANK