

10 PALOS VERDES ESTATES NORTH

10.1 Watershed Hydrology Analysis

The Palos Verdes Estates North drainage area is part of the Santa Monica Bay watershed defined by County of Los Angeles DPW (Exhibit L). The area includes the Malaga Canyon. This canyon receives runoff waters from most subwatersheds within this drainage area. An 84-inch CSPP culvert located under Montemalaga Drive joins the upstream portion of the Malaga Canyon to the downstream.

The hydrology results for the 10-, 25- and 50-year storm events are provided in Appendix K-1.

10.1.1 Hydrology Results Summary 10-, 25-, 50-year storm events

Palos Verdes North drainage area was divided into 27 subwatersheds and Table 10-1 summarizes the maximum 10-, 25-, and 50- year storm event discharge flow draining into each node.

Hydrology ID	Structure ID	Subarea (acres)	10-Year Flow (cfs)	25-Year Flow (cfs)	50-Year Flow (cfs)
1A	IS45325	20.1	16.2	29.3	29.3
2B	CB1570	37.1	27.7	40	49.7
3C	CB1567	2.1	2.7	3.6	4.6
5C	CB1569	9.2	8.2	11.6	14
8B	CB1588	25.7	18.6	28.1	35.6
9C	CB1591	6.9	6.2	9	11
11C	CB1593	5.1	3.6	5.3	6.7
14C	CB2767	5.2	3.8	5.6	7.2
15D	CB1562	31.5	21.5	31	38.5
17D	CB2751	7.2	7	10.4	12.8
18E	CB1560	41.8	44.3	59.8	74.9
20F	CB2754	12.6	12.3	17.2	22.4
22E	CB2756	3.5	3.6	5	6.2
26G	CB2758	21.8	15.3	22.1	27.9
29E	CB1577	43.4	31.5	44.4	54.6
32E	CB3278	4.5	4.6	6.6	8.2
33G	CB3282	2.1	2.7	4	4.6
34H	CB3281	11.4	10.2	14.9	18.2
37E	IS3333	59.9	38.5	57	71.5
40D	CB1614	17.7	12.1	17.4	21.6
42D	CB1613	7.3	5.6	8.4	10
43D	OS1611	54.8	36.8	54.4	71.8
45C	PVN-01	1.6	1.1	1.8	2.2
46C	PVN-01	18	17.9	27.8	34.7
47J	CB1609	5.3	5.4	8	9.8
48D	CB1605	19.6	15.7	23.8	29.8
49D	CB1607	7.9	7	10.7	12.8

10.2 Hydraulic Analysis

10.2.1 Existing Condition

No significant modeling assumptions were made for the hydraulic analysis. Appendix K-2 provides the existing condition hydraulic analysis for the 10-, 25- and 50-year storm events.

10.2.1.1 Results

The storm drain system SD0953, SD2437, and SD2436 collects runoff from Woodfern Drive. There are 9.2 acres tributary to CB1569 (the inlet structure). This area has had flooding issues according to the City. It was found that for the existing condition CB1569 floods. The storm drain pipe will need to be upsized to alleviate flooding issues. Table 10-2 provides a list of the storm drain structures that were flooded in the 10- and 50-year hydraulic analysis.

Table 10-2 PVN: Flooded Storm Drain Structures		
Storm Drain Structure ID	Floods in 50-Year Storm Event	Floods in 10-Year Storm Event
MH1553	X	
CB1560	X	X
CB1569	X	
CB1570	X	
CB1588	X	X
TS2673	X	
TS3560	X	
GB48129	X	
CB1562	X	

10.2.2 Recommended Improvements

Table 10-3 provides the storm drain systems within this drainage area that were found to be deficient following Section 2.4.4 criteria, and improvements are recommended. The recommended improvement maps (atlas map) are attached at the end of this chapter (Figure 10-1). The proposed condition hydraulic analysis results are included in Appendix K-3.

Table 10-3: PVN Pipes to be Improved								
System	Owner	Upstream Structure ID	Downstream Structure ID	Pipe ID	Atlas Map	Existing Size (in)	Proposed Size (in)	Street
1	RPV	CB1569	GB2093	SD0953	4B	18	24	Woodfern Drive
		GB2093	MC3436	SD2437		18	24	
		MC3436	MH1568	SD2436		18	24	
2	RPV	CB1570	MH1566	SD0024	4B	24	36	Lightfoot Place
3	RPV	CB1591	MH1592	SD0014	2D	18	24	Montemalaga Drive
4	RPV	GB48129	JS2089	SD46742	4B	21	30	Montemalaga Drive Ironwood Street
		JS2089	CB1588	SD3365		21	30	
		CB1588	CB1589	SD2666		24	36	
		CB1589	MH1590	SD0018	2D	30	42	
		MH1590	MH1592	SD0016		30	42	
		MH1592	JS3559	SD0015		36	42	

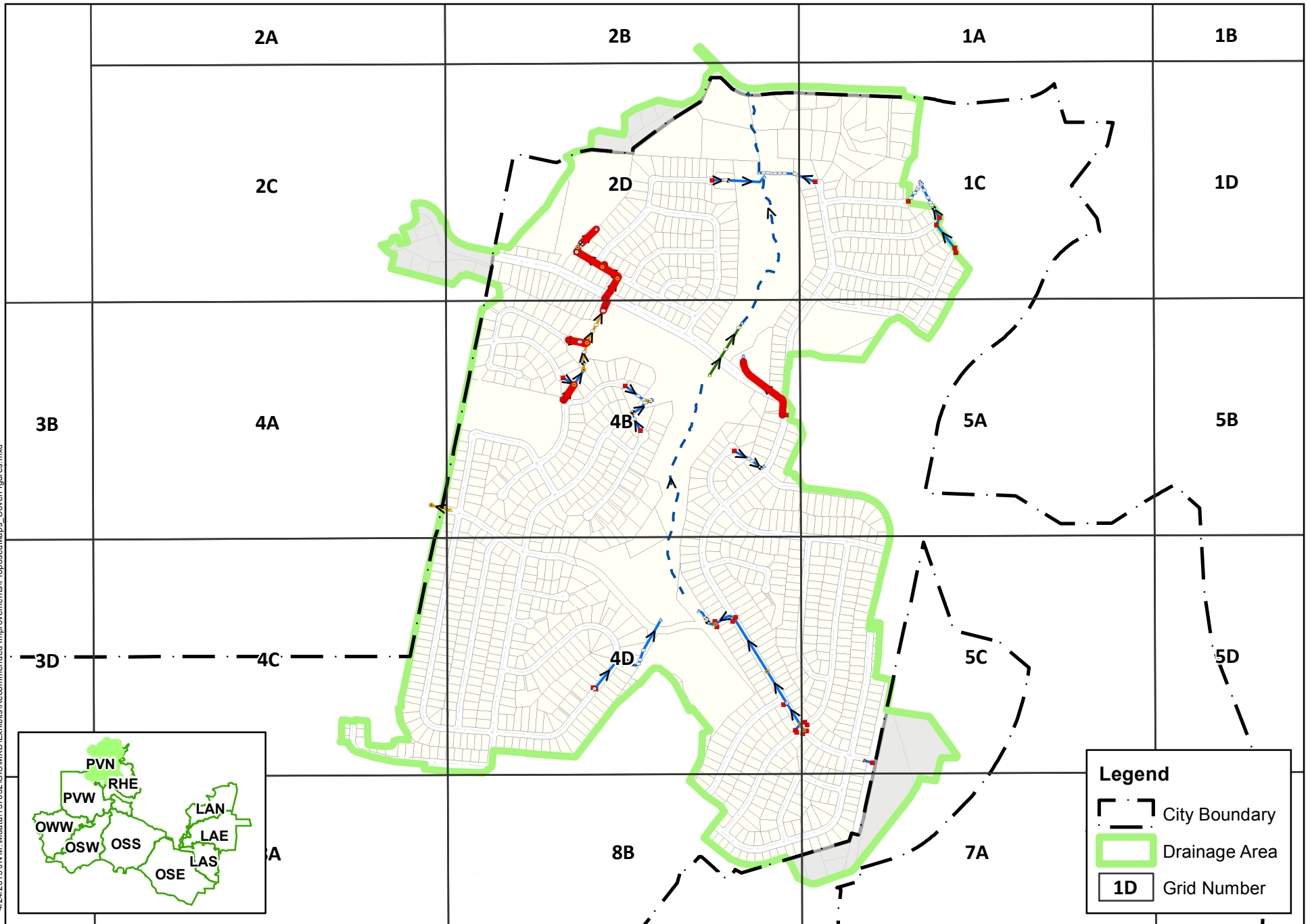
Table 10-3: PVN Pipes to be Improved								
System	Owner	Upstream Structure ID	Downstream Structure ID	Pipe ID	Atlas Map	Existing Size (in)	Proposed Size (in)	Street
5	RPV	TS3560	OS1596	SD0007	2D	30	42	Ironwood Street
6	RPV	CB1563	CB48134	SD3329	4B	24	30	Montemalaga Drive

10.2.3 Cost Estimates

Table 10-4 provides an estimate of the construction cost of recommended improvements for this drainage area. Appendix B-7 includes the cost estimates for each recommended improvement map.

Table 10-4: PVN Total Cost Estimate	
Atlas Map	Total Project Cost
2D & 4B	\$681,000
4B	\$392,000
Total	\$1,073,000

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Source:

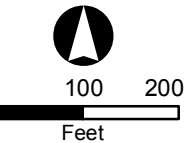


Michael Baker
INTERNATIONAL

Storm Water
Recommended
Improvements

- Catch Basin
- Inlet
- Outlet
- Parkway Outlet
- Manhole
- Junction
- Transition
- Grade Break
- Storm Filter and Storm Gate
- Proposed Pipe
- Proposed Size
- Open Watercourse
- Rancho Palos Verdes
- Rolling Hills Estates
- Palos Verdes Estates
- Private
- City of LA
- County of LA
- Unknown

City Boundary



2A	2B	1A
2C	2D	1C
4A	4B	5A

PALOS VERDES
ESTATES

BARKSTONE DR

WILDBRIAR DR

CAPESWOOD DR

ASHFORK PL

MALAGA CANYON

MONTEMALAGA DR

IRONWOOD ST

TS1579
MH1595
CB1593

TS3560
CB1594
JS3559

MH1592
CB1591

MH1590

CB1589
CB1588

CB1614

TS1597

OS1611

OS1612

JS1598

30-CMP

36-CMP

18-CMP

30-CMP

30-CMP

24-CMP

30"-RCP

42"-RCP

42"-RCP

36"-RCP

36-CMP

18-CMP

18-CMP

18-CMP

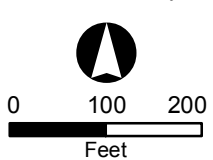
PALOS VERDES
ESTATES

City of Rancho Palos Verdes



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**Storm Water
Recommended
Improvements**

- Catch Basin
- Inlet
- Outlet
- Parkway Outlet
- Manhole
- Junction
- Transition
- Grade Break
- Storm Filter and Storm Gate
- Proposed Pipe
- Proposed Size 30"
- Open Watercourse
- Rancho Palos Verdes
- Rolling Hills Estates
- Palos Verdes Estates
- Private
- City of LA
- County of LA
- Unknown
- City Boundary



2C	2D	1C
4A	4B	5A
4C	4D	5C

