- **Parking Lot and Site Drainage Impacts**

PARKING LOTS AND SITE DRAINAGE IMPACTS

SUMMARY				
Ramirez Canyon				
		Peak Flowrate, cfs		
Location	**Rainfall Event**	**Pre-Project**	**Post-Project**	**Increase**
Meadow Area	Water Quality	0.02	0.02	0.00
	10-year	2.57	2.57	0.00
Kanan Dume Parking Area	Water Quality	0.00	0.05	0.05
	10-year	0.47	0.54	0.07
Entry Area	Water Quality	0.48	0.48	0.00
	10-year	27.83	28.24	0.41
Escondido Canyon				
		Peak Flowrate, cfs		
Location	**Rainfall Event**	**Pre-Project**	**Post-Project**	**Increase**
Parking and Upper Camp Area	Water Quality	0.25	0.29	0.04
	10-year	20.48	20.48	0.00
Lower Camp Area	Water Quality	0.04	0.04	0.00
	10-year	5.10	5.10	0.00
Latigo Canyon				
		Peak Flowrate, cfs		
Location	**Rainfall Event**	**Pre-Project**	**Post-Project**	**Increase**
Camping and Parking Area	Water Quality	0.01	0.03	0.02
	10-year	1.46	1.55	0.09
Corral Canyon				
		Peak Flowrate, cfs		
Location	**Rainfall Event**	**Pre-Project**	**Post-Project**	**Increase**
Parking Areas	Water Quality	0.21	0.21	0.00
	10-year	6.57	6.57	0.00
South Camp Area	Water Quality	0.19	0.19	0.00
	10-year	13.63	13.63	0.00
North Camp Area	Water Quality	0.11	0.11	0.00
	10-year	8.56	8.56	0.00

Malibu Bluffs				
		Peak Flowrate, cfs		
Location	**Rainfall Event**	**Pre-Project**	**Post-Project**	**Increase**
Camping and Parking Area 1	Water Quality	0.06	0.17	0.11
	10-year	4.51	4.51	0.00
Camping and Parking Area 2	Water Quality	0.09	0.13	0.04
	10-year	6.63	6.63	0.00
Camping and Pakring Area 3	Water Quality	0.13	0.16	0.03
	10-year	8.32	8.32	0.00
Camping Areas 4 and 5	Water Quality	0.25	0.25	0.00
	10-year	17.42	17.42	0.00
Parking Area 4	Water Quality	0.01	0.02	0.01
	10-year	0.92	0.92	0.00

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date: 10/21/2009

Location: Ramirez Canyon, Meadow Area

Referenced Sheets: 7, 34, 35

Approach: Analyze water quality and 10-year peak flowrates for pre- and post-project conditions using TC-Calculator provided by LA County Public Works

Analysis:

	Area	Impervious	Soil Type	10-yr Rainfall	Flowpath	Flowpath Slope	Q_{wq}*	Q_{10}	
	ac	%		in	ft	ft/ft	cfs	cfs	
Pre-Proj	1.09	0.02	32	5.07	683	0.55	0.02	2.57	
Post-Proj	1.09	0.027	32	5.07	683	0.55	0.02	2.57	
Difference							0.00	0.00	Less than significant

Anticipated Pollutants:

- x Sediment
- Hydrocarbons
- Metals
- x Non-stormwater from hose bib

BMPs Proposed:

- x Vegetation
- Energy Dissipation
- Bioswale
- x Vegetated Filter Strip
- Pervious Paving Materials
- x Drainage Sump

Comments: 100 percent of flow will be filtered. Peak flowrate does not increase.

* Q_{WQ} = water quality flow based on 0.75" of rainfall

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date: 10/21/2009

Location: Ramirez Canyon, Kanan Dume Road Parking (Site 1 Typical)

Referenced Sheets: 8, 34, 35

Approach: Analyze water quality and 10-year peak flowrates for pre- and post-project conditions using TC-Calculator provided by LA County Public Works

Analysis:

	Area	Impervious	Soil Type	10-yr Rainfall	Flowpath	Flowpath Slope	Q_{wq}*	Q_{10}	
	ac	%		in	ft	ft/ft	cfs	cfs	
Pre-Proj	0.20	2	32	5.07	187	0.082	0.00	0.47	
Post-Proj	0.20	0.95	32	5.07	187	0.082	0.05	0.54	
Difference							0.05	0.07	Needs mitigation

Anticipated Pollutants:

- x Sediment
- x Hydrocarbons
- x Metals
- x Non-stormwater from hose bib

BMPs Proposed:

- x Vegetation
- Energy Dissipation
- Bioswale
- Vegetated Filter Strip
- x Pervious Paving Materials
- x Drainage Sump

Comments: Peak flowrate increases. May wish to try a permeable paving material.
100 percent of flow will be filtered.

* Q_{WQ} = water quality flow based on 0.75" of rainfall

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date:	10/27/2009										
Location:	Ramirez Canyon, Entry Area										
P&S Plan Sheets:		9, 34, 35									
Approach:	Analyze water quality and 10-year peak flowrates for pre- and post-project conditions										
	using TC-Calculator provided by LA County Public Works										
Analysis:											
		Area	**Impervious**	**Soil Type**	**10-yr Rainfall**	**Flowpath**	**Flowpath Slope**	**Q_{wq}***	**Q_{10}**		
		ac	**%**		**in**	**ft**	**ft/ft**	**cfs**	**cfs**		
	Pre-Proj	20.90	0.025	32	5.07	2222	0.31	0.48	27.83		
	Post-Proj	20.90	0.027	32	5.07	2222	0.31	0.48	28.24		
	Difference							0.00	0.41	Needs mitigation	
Anticipated Pollutants:											
	x	Sediment									
	x	Hydrocarbons									
	x	Metals									
	x	Non-stormwater from hose bib									
BMPs Proposed:											
	x	Vegetation									
		Energy Dissipation									
		Bioswale									
		Vegetated Filter Strip									
		Pervious Paving Materials									
	x	Drainage Sump									
Comments:		100 percent of flow will be filtered.									
		Peak flowrate increases. May wish to try infiltration or permeable paving material.									
	*	Q_{WQ} = water quality flow based on 0.75" of rainfall									

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date:	10/27/2009									
Location:	Escondido Canyon - Parking and Upper Camping Area									
P&S Plan Sheets:		13, 34, 35								
Approach:	Analyze water quality and 10-year peak flowrates for pre- and post-project conditions									
	using TC-Calculator provided by LA County Public Works									
Analysis:										
		Area	**Impervious**	**Soil Type**	**10-yr Rainfall**	**Flowpath**	**Flowpath Slope**	**Q_{wq}***	**Q_{10}**	
		ac	**%**		**in**	**ft**	**ft/ft**	**cfs**	**cfs**	
	Pre-Proj	7.26	0.10	32	6.28	943	0.19	0.25	20.48	
	Post-Proj	7.26	0.137	32	6.28	943	0.19	0.29	20.48	
	Difference							0.04	0.00	Needs mitigation
Anticipated Pollutants:										
	x	Sediment								
	x	Hydrocarbons								
	x	Metals								
	x	Non-stormwater from hose bib								
BMPs Proposed:										
	x	Vegetation								
	x	Energy Dissipation								
		Bioswale								
	x	Vegetated Filter Strip								
		Pervious Paving Materials								
	x	Drainage Sump								
Comments:		100 percent of flow will be filtered.								
		Peak flowrate increases. May consider infiltration bmps.								
	*	Q_{WQ} = water quality flow based on 0.75" of rainfall								

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date: 10/27/2009

Location: Escondido Canyon - Lower Camping Area

P&S Plan Sheets: 14, 34, 35

Approach: Analyze water quality and 10-year peak flowrates for pre- and post-project conditions using TC-Calculator provided by LA County Public Works

Analysis:

	Area	Impervious	Soil Type	10-yr Rainfall	Flowpath	Flowpath Slope	Q_{wq}*	Q_{10}	
	ac	%		in	ft	ft/ft	cfs	cfs	
Pre-Proj	1.66	0.02	32	6.28	429	0.51	0.04	5.10	
Post-Proj	1.66	0.023	32	6.28	429	0.51	0.04	5.10	
Difference							0.00	0.00	Less than significant

Anticipated Pollutants:

- x Sediment
- Hydrocarbons
- Metals
- x Non-stormwater from hose bib

BMPs Proposed:

- x Vegetation
- Energy Dissipation
- Bioswale
- Vegetated Filter Strip
- Pervious Paving Materials
- x Drainage Sump

Comments: 100 percent of flow will be filtered. Peak flowrate does not increase.

* Q_{WQ} = water quality flow based on 0.75" of rainfall

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date: 10/27/2009

Location: Latigo Canyon, Camping and Parking Area

P&S Plan Sheets: 16, 34, 35

Approach: Analyze water quality and 10-year peak flowrates for pre- and post-project conditions using TC-Calculator provided by LA County Public Works

Analysis:

	Area	Impervious	Soil Type	10-yr Rainfall	Flowpath	Flowpath Slope	Q_{wq}*	Q_{10}	
	ac	%		in	ft	ft/ft	cfs	cfs	
Pre-Proj	0.59	0.02	31	6.28	354	0.14	0.01	1.46	
Post-Proj	0.59	0.201	31	6.28	354	0.14	0.03	1.55	
Difference							0.02	0.09	Needs mitigation

Anticipated Pollutants:

- x Sediment
- x Hydrocarbons
- x Metals
- x Non-stormwater from hose bib

BMPs Proposed:

- x Vegetation
- x Energy Dissipation
- Bioswale
- x Vegetated Filter Strip
- Pervious Paving Materials
- x Drainage Sump

Comments: 100 percent of flow will be filtered.

Peak flowrate increases. May consider infiltration bmps or in-lot detention.

* Q_{WQ} = water quality flow based on 0.75" of rainfall

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date:	10/27/2009										
Location:	Corral Canyon, Parking Areas										
P&S Plan Sheets:		25, 34, 35									
Approach:	Analyze water quality and 10-year peak flowrates for pre- and post-project conditions										
	using TC-Calculator provided by LA County Public Works										
Analysis:											
		Area	**Impervious**	**Soil Type**	**10-yr Rainfall**	**Flowpath**	**Flowpath Slope**	**Q_{wq}***	**Q_{10}**		
		ac	**%**		**in**	**ft**	**ft/ft**	**cfs**	**cfs**		
	Pre-Proj	2.96	34.1	32	5.00	709	0.23	0.21	6.57		
	Post-Proj	2.96	34.8	32	5.00	709	0.23	0.21	6.57		
	Difference							0.00	0.00	Less than significant	
Anticipated Pollutants:											
	x	Sediment									
	x	Hydrocarbons									
	x	Metals									
		Non-stormwater from hose bib									
BMPs Proposed:											
	x	Vegetation									
	x	Energy Dissipation									
		Bioswale									
	x	Vegetated Filter Strip									
		Pervious Paving Materials									
		Drainage Sump									
Comments:		Existing parking lot configuration does not change.									
		Peak flowrate does not increase.									
	*	Q_{WQ} = water quality flow based on 0.75" of rainfall									

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date:	10/27/2009										
Location:	Corral Canyon, South Corral Camp										
Referenced Sheets:		26, 34, 35									
Approach:	Analyze water quality and 10-year peak flowrates for pre- and post-project conditions										
	using TC-Calculator provided by LA County Public Works										
Analysis:											
		Area	**Impervious**	**Soil Type**	**10-yr Rainfall**	**Flowpath**	**Flowpath Slope**	**Q_{wq}***	**Q_{10}**		
		ac	**%**		**in**	**ft**	**ft/ft**	**cfs**	**cfs**		
	Pre-Proj	8.26	2	32	5.00	1290	0.28	0.19	13.63		
	Post-Proj	8.26	2.1	32	5.00	1290	0.28	0.19	13.63		
	Difference							0.00	0.00	Less than significant	
Anticipated Pollutants:											
	x	Sediment									
		Hydrocarbons									
		Metals									
	x	Non-stormwater from hose bib									
BMPs Proposed:											
	x	Vegetation									
		Energy Dissipation									
		Bioswale									
		Vegetated Filter Strip									
		Pervious Paving Materials									
	x	Drainage Sump									
Comments:		Peak flowrate does not increase.									
		100 percent of area will be filtered.									
	*	Q_{WQ} = water quality flow based on 0.75" of rainfall									

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date:	10/27/2009										
Location:	Corral Canyon, North Corral Camp										
Referenced Sheets:		27, 34, 35									
Approach:	Analyze water quality and 10-year peak flowrates for pre- and post-project conditions										
	using TC-Calculator provided by LA County Public Works										
Analysis:											
		Area	**Impervious**	**Soil Type**	**10-yr Rainfall**	**Flowpath**	**Flowpath Slope**	**Q_{wq}***	**Q_{10}**		
		ac	**%**		**in**	**ft**	**ft/ft**	**cfs**	**cfs**		
	Pre-Proj	4.84	2	32	5.00	1207	0.34	0.11	8.56		
	Post-Proj	4.84	2	32	5.00	1207	0.34	0.11	8.56		
	Difference							0.00	0.00	Less than significant	
Anticipated Pollutants:											
	x	Sediment									
		Hydrocarbons									
		Metals									
	x	Non-stormwater from hose bib									
BMPs Proposed:											
	x	Vegetation									
		Energy Dissipation									
		Bioswale									
		Vegetated Filter Strip									
		Pervious Paving Materials									
	x	Drainage Sump									
Comments:		Peak flowrate does not increase.									
		100 percent of area will be filtered.									
	*	Q_{WQ} = water quality flow based on 0.75" of rainfall									

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date: 10/27/2009

Location: Malibu Bluffs, Camping and Parking Area 2

Referenced Sheets: 29, 34, 35

Approach: Analyze water quality and 10-year peak flowrates for pre- and post-project conditions using TC-Calculator provided by LA County Public Works

Analysis:

	Area	Impervious	Soil Type	10-yr Rainfall	Flowpath	Flowpath Slope	Q_{wq}*	Q_{10}	
	ac	%		in	ft	ft/ft	cfs	cfs	
Pre-Proj	2.78	2	29	5.00	537	0.08	0.09	6.63	
Post-Proj	2.78	13.4	29	5.00	537	0.08	0.13	6.63	
Difference							0.04	0.00	Needs mitigation

Anticipated Pollutants:

- x Sediment
- x Hydrocarbons
- x Metals
- x Non-stormwater from hose bib

BMPs Proposed:

- x Vegetation
- x Energy Dissipation
- Bioswale
- x Vegetated Filter Strip
- x Pervious Paving Materials
- x Drainage Sump

Comments: Peak flowrate increases. May consider infiltration bmps or in-lot detention.

100 percent of area will be filtered.

* Q_{WQ} = water quality flow based on 0.75" of rainfall

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date: 10/21/2009

Location: Ramirez Canyon, Kanan Dume Road Parking (Site 1 Typical)

Referenced Sheets: 8, 34, 35

Approach: Analyze water quality and 10-year peak flowrates for pre- and post-project conditions using TC-Calculator provided by LA County Public Works

Analysis:

	Area	Impervious	Soil Type	10-yr Rainfall	Flowpath	Flowpath Slope	Q_{wq}*	Q_{10}	
	ac	%		in	ft	ft/ft	cfs	cfs	
Pre-Proj	0.20	2	32	5.07	187	0.082	0.00	0.47	
Post-Proj	0.20	0.95	32	5.07	187	0.082	0.05	0.54	
Difference							0.05	0.07	Needs mitigation

Anticipated Pollutants:

- x Sediment
- x Hydrocarbons
- x Metals
- x Non-stormwater from hose bib

BMPs Proposed:

- x Vegetation
- Energy Dissipation
- Bioswale
- Vegetated Filter Strip
- x Pervious Paving Materials
- x Drainage Sump

Comments: Peak flowrate increases. May wish to try a permeable paving material.
100 percent of flow will be filtered.

* Q_{WQ} = water quality flow based on 0.75" of rainfall

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date:	10/27/2009										
Location:	Ramirez Canyon, Entry Area										
P&S Plan Sheets:		9, 34, 35									
Approach:	Analyze water quality and 10-year peak flowrates for pre- and post-project conditions										
	using TC-Calculator provided by LA County Public Works										
Analysis:											
		Area	**Impervious**	**Soil Type**	**10-yr Rainfall**	**Flowpath**	**Flowpath Slope**	**Q_{wq}***	**Q_{10}**		
		ac	**%**		**in**	**ft**	**ft/ft**	**cfs**	**cfs**		
	Pre-Proj	20.90	0.025	32	5.07	2222	0.31	0.48	27.83		
	Post-Proj	20.90	0.027	32	5.07	2222	0.31	0.48	28.24		
	Difference							0.00	0.41	Needs mitigation	
Anticipated Pollutants:											
	x	Sediment									
	x	Hydrocarbons									
	x	Metals									
	x	Non-stormwater from hose bib									
BMPs Proposed:											
	x	Vegetation									
		Energy Dissipation									
		Bioswale									
		Vegetated Filter Strip									
		Pervious Paving Materials									
	x	Drainage Sump									
Comments:		100 percent of flow will be filtered.									
		Peak flowrate increases. May wish to try infiltration or permeable paving material.									
	*	Q_{WQ} = water quality flow based on 0.75" of rainfall									

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date:	10/27/2009									
Location:	Escondido Canyon - Parking and Upper Camping Area									
P&S Plan Sheets:		13, 34, 35								
Approach:	Analyze water quality and 10-year peak flowrates for pre- and post-project conditions									
	using TC-Calculator provided by LA County Public Works									
Analysis:										
		Area	**Impervious**	**Soil Type**	**10-yr Rainfall**	**Flowpath**	**Flowpath Slope**	**Q_{wq}***	**Q_{10}**	
		ac	**%**		**in**	**ft**	**ft/ft**	**cfs**	**cfs**	
	Pre-Proj	7.26	0.10	32	6.28	943	0.19	0.25	20.48	
	Post-Proj	7.26	0.137	32	6.28	943	0.19	0.29	20.48	
	Difference							0.04	0.00	Needs mitigation
Anticipated Pollutants:										
	x	Sediment								
	x	Hydrocarbons								
	x	Metals								
	x	Non-stormwater from hose bib								
BMPs Proposed:										
	x	Vegetation								
	x	Energy Dissipation								
		Bioswale								
	x	Vegetated Filter Strip								
		Pervious Paving Materials								
	x	Drainage Sump								
Comments:		100 percent of flow will be filtered.								
		Peak flowrate increases. May consider infiltration bmps.								
	*	Q_{WQ} = water quality flow based on 0.75" of rainfall								

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date: 10/27/2009

Location: Escondido Canyon - Lower Camping Area

P&S Plan Sheets: 14, 34, 35

Approach: Analyze water quality and 10-year peak flowrates for pre- and post-project conditions using TC-Calculator provided by LA County Public Works

Analysis:

	Area	Impervious	Soil Type	10-yr Rainfall	Flowpath	Flowpath Slope	Q_{wq}*	Q_{10}	
	ac	%		in	ft	ft/ft	cfs	cfs	
Pre-Proj	1.66	0.02	32	6.28	429	0.51	0.04	5.10	
Post-Proj	1.66	0.023	32	6.28	429	0.51	0.04	5.10	
Difference							0.00	0.00	Less than significant

Anticipated Pollutants:

- x Sediment
- Hydrocarbons
- Metals
- x Non-stormwater from hose bib

BMPs Proposed:

- x Vegetation
- Energy Dissipation
- Bioswale
- Vegetated Filter Strip
- Pervious Paving Materials
- x Drainage Sump

Comments: 100 percent of flow will be filtered. Peak flowrate does not increase.

* Q_{WQ} = water quality flow based on 0.75" of rainfall

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date:	10/27/2009										
Location:	Corral Canyon, South Corral Camp										
Referenced Sheets:		26, 34, 35									
Approach:	Analyze water quality and 10-year peak flowrates for pre- and post-project conditions										
	using TC-Calculator provided by LA County Public Works										
Analysis:											
		Area	**Impervious**	**Soil Type**	**10-yr Rainfall**	**Flowpath**	**Flowpath Slope**	**Q_{wq}***	**Q_{10}**		
		ac	**%**		**in**	**ft**	**ft/ft**	**cfs**	**cfs**		
	Pre-Proj	8.26	2	32	5.00	1290	0.28	0.19	13.63		
	Post-Proj	8.26	2.1	32	5.00	1290	0.28	0.19	13.63		
	Difference							0.00	0.00	Less than significant	
Anticipated Pollutants:											
	x	Sediment									
		Hydrocarbons									
		Metals									
	x	Non-stormwater from hose bib									
BMPs Proposed:											
	x	Vegetation									
		Energy Dissipation									
		Bioswale									
		Vegetated Filter Strip									
		Pervious Paving Materials									
	x	Drainage Sump									
Comments:		Peak flowrate does not increase.									
		100 percent of area will be filtered.									
	*	Q_{WQ} = water quality flow based on 0.75" of rainfall									

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date:	10/27/2009										
Location:	Corral Canyon, North Corral Camp										
Referenced Sheets:		27, 34, 35									
Approach:	Analyze water quality and 10-year peak flowrates for pre- and post-project conditions										
	using TC-Calculator provided by LA County Public Works										
Analysis:											
		Area	**Impervious**	**Soil Type**	**10-yr Rainfall**	**Flowpath**	**Flowpath Slope**	**Q_{wq}***	**Q_{10}**		
		ac	**%**		**in**	**ft**	**ft/ft**	**cfs**	**cfs**		
	Pre-Proj	4.84	2	32	5.00	1207	0.34	0.11	8.56		
	Post-Proj	4.84	2	32	5.00	1207	0.34	0.11	8.56		
	Difference							0.00	0.00	Less than significant	
Anticipated Pollutants:											
	x	Sediment									
		Hydrocarbons									
		Metals									
	x	Non-stormwater from hose bib									
BMPs Proposed:											
	x	Vegetation									
		Energy Dissipation									
		Bioswale									
		Vegetated Filter Strip									
		Pervious Paving Materials									
	x	Drainage Sump									
Comments:		Peak flowrate does not increase.									
		100 percent of area will be filtered.									
	*	Q_{WQ} = water quality flow based on 0.75" of rainfall									

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date: 10/27/2009

Location: Malibu Bluffs, Camping and Parking Area 2

Referenced Sheets: 29, 34, 35

Approach: Analyze water quality and 10-year peak flowrates for pre- and post-project conditions using TC-Calculator provided by LA County Public Works

Analysis:

	Area	Impervious	Soil Type	10-yr Rainfall	Flowpath	Flowpath Slope	Q_{wq}*	Q_{10}	
	ac	%		in	ft	ft/ft	cfs	cfs	
Pre-Proj	2.78	2	29	5.00	537	0.08	0.09	6.63	
Post-Proj	2.78	13.4	29	5.00	537	0.08	0.13	6.63	
Difference							0.04	0.00	Needs mitigation

Anticipated Pollutants:

- x Sediment
- x Hydrocarbons
- x Metals
- x Non-stormwater from hose bib

BMPs Proposed:

- x Vegetation
- x Energy Dissipation
- Bioswale
- x Vegetated Filter Strip
- x Pervious Paving Materials
- x Drainage Sump

Comments: Peak flowrate increases. May consider infiltration bmps or in-lot detention.

100 percent of area will be filtered.

* Q_{WQ} = water quality flow based on 0.75" of rainfall

PARKING LOTS AND CAMP SITES
DRAINAGE ANALYSIS

Date: 10/27/2009

Location: Malibu Bluffs, Camping and Parking Area 1

Referenced Sheets: 30, 34, 35

Approach: Analyze water quality and 10-year peak flowrates for pre- and post-project conditions using TC-Calculator provided by LA County Public Works

Analysis:

	Area	Impervious	Soil Type	10-yr Rainfall	Flowpath	Flowpath Slope	Q_{wq}*	Q_{10}	
	ac	%		in	ft	ft/ft	cfs	cfs	
Pre-Proj	1.72	2	29	5.00	223	0.12	0.06	4.51	
Post-Proj	1.72	20.3	29	5.00	223	0.12	0.17	4.51	
Difference							0.11	0.00	Needs mitigation

Anticipated Pollutants:

- x Sediment
- x Hydrocarbons
- x Metals
- x Non-stormwater from hose bib

BMPs Proposed:

- x Vegetation
- x Energy Dissipation
- Bioswale
- x Vegetated Filter Strip
- Pervious Paving Materials
- x Drainage Sump

Comments: Peak flowrate does increase. May need to investigate infiltration devices. No room for detention.

100 percent of area will be filtered.

* Q_{WQ} = water quality flow based on 0.75" of rainfall

PARKING LOTS AND CAMP SITES
DRAINAGE ANALYSIS

Date:	10/27/2009									
Location:	Malibu Bluffs, Camping and Parking Area 3									
Referenced Sheets:		31, 34, 35								
Approach:	Analyze water quality and 10-year peak flowrates for pre- and post-project conditions									
	using TC-Calculator provided by LA County Public Works									
Analysis:										
		Area	**Impervious**	**Soil Type**	**10-yr Rainfall**	**Flowpath**	**Flowpath Slope**	**Q_{wq}***	**Q_{10}**	
		ac	**%**		**in**	**ft**	**ft/ft**	**cfs**	**cfs**	
	Pre-Proj	4.05	2	29	5.00	731	0.05	0.13	8.32	
	Post-Proj	4.05	7.6	29	5.00	731	0.05	0.16	8.32	
	Difference							0.03	0.00	Needs mitigation
Anticipated Pollutants:										
	x	Sediment								
	x	Hydrocarbons								
	x	Metals								
	x	Non-stormwater from hose bib								
BMPs Proposed:										
	x	Vegetation								
	x	Energy Dissipation								
	x	Bioswale								
		Vegetated Filter Strip								
		Pervious Paving Materials								
	x	Drainage Sump								
Comments:		Peak flowrate increases. May consider infiltration bmps or in-lot detention.								
		100 percent of area will be filtered.								
	*	Q_{WQ} = water quality flow based on 0.75" of rainfall								

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date: 10/27/2009

Location: Malibu Bluffs, Camping and Parking Area 4

Referenced Sheets: 32, 34, 35

Approach: Analyze water quality and 10-year peak flowrates for pre- and post-project conditions using TC-Calculator provided by LA County Public Works

Analysis:

	Area	Impervious	Soil Type	10-yr Rainfall	Flowpath	Flowpath Slope	Q_{wq}*	Q_{10}	
	ac	%		in	ft	ft/ft	cfs	cfs	
Pre-Proj	7.85	2	29	5.00	637	0.05	0.25	17.42	
Post-Proj	7.85	2	29	5.00	637	0.05	0.25	17.42	
Difference							0.00	0.00	Less than significant

Anticipated Pollutants:

- x Sediment
- Hydrocarbons
- Metals
- x Non-stormwater from hose bib

BMPs Proposed:

- x Vegetation
- Energy Dissipation
- Bioswale
- Vegetated Filter Strip
- Pervious Paving Materials
- x Drainage Sump

Comments: Peak flowrate does not increase.
100 percent of area will be filtered.

* Q_{WQ} = water quality flow based on 0.75" of rainfall

PARKING LOTS AND CAMP SITES DRAINAGE ANALYSIS

Date: 10/27/2009

Location: Malibu Bluffs, Parking Area 4

Referenced Sheets: 33, 34, 35

Approach: Analyze water quality and 10-year peak flowrates for pre- and post-project conditions using TC-Calculator provided by LA County Public Works

Analysis:

	Area	Impervious	Soil Type	10-yr Rainfall	Flowpath	Flowpath Slope	Q_{wq}*	Q_{10}	
	ac	%		in	ft	ft/ft	cfs	cfs	
Pre-Proj	0.35	2	29	5.00	319	0.25	0.01	0.92	
Post-Proj	0.35	11.7	29	5.00	319	0.25	0.02	0.92	
Difference							0.01	0.00	Needs mitigation

Anticipated Pollutants:

- x Sediment
- x Hydrocarbons
- x Metals
- x Non-stormwater from hose bib

BMPs Proposed:

- x Vegetation
- Energy Dissipation
- Bioswale
- Vegetated Filter Strip
- Pervious Paving Materials
- x Drainage Sump

Comments: Peak flowrate increases. May consider infiltration bmps or in-lot detention.

100 percent of area will be filtered.

* Q_{WQ} = water quality flow based on 0.75" of rainfall