Stormwater Review of Example Regulated Project

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SMCWPPP C.3 Workshop
June 11, 2014

Presentation Overview

- Elements of a C.3 Review
- Example Project
  - Description
  - Impervious Area Data
  - Stormwater Control Plan
  - Treatment Measure Selection/Sizing
- Review of C.3 Regulated Project Checklist
- Results of Review

Elements of C.3 Review

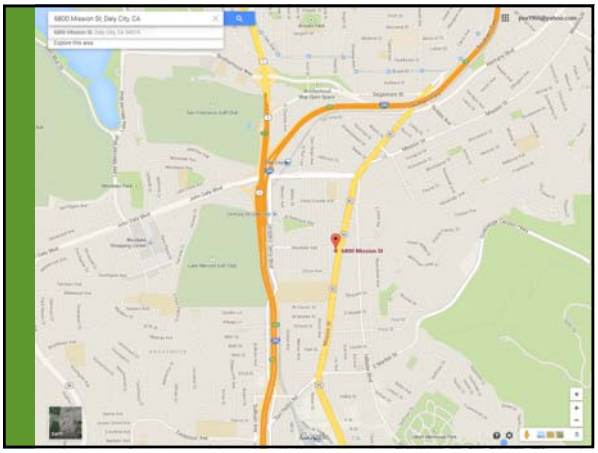
- C.3 Regulated Projects Checklist
  - Impervious surface data
  - Applicability
  - Site design measures
  - Source control measures
  - Treatment measure feasibility/selection
  - Hydromodification measures
  - Maintenance responsibility

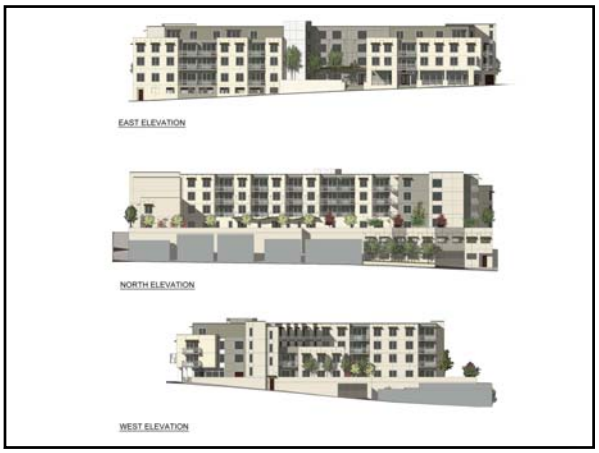
Elements of C.3 Review, cont.

- Site Layout/Grading/Utilities
- Stormwater Control Plan
  - Drainage management areas (one for each treatment measure)
  - How runoff drains to and enters each treatment measure (curb cut, bubbler, etc.)
  - Outlets, underdrains, connection to storm drains onsite and offsite
- Treatment Sizing Calculations
- Treatment Measure Details
- Landscaping Design

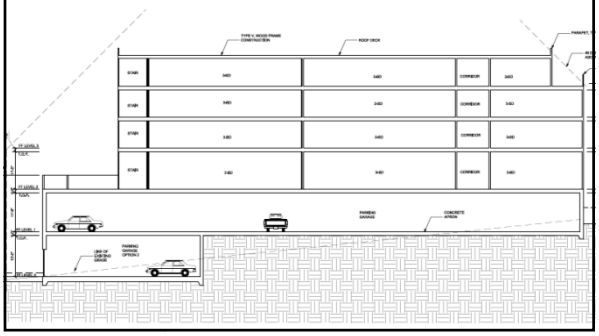
Example Project Data – 6800 Mission St., Daly City

- Existing site – vacant auto dealership warehouse & associated surface parking
- Proposed project – new 52-unit residential building with 2,700 SF retail
- Density – 65 DU/ac; FAR = 3.6
- Site size – .787 ac. (.787 ac. disturbed)
- Lot coverage – 100%
- Site soil type – Soil groups C and D





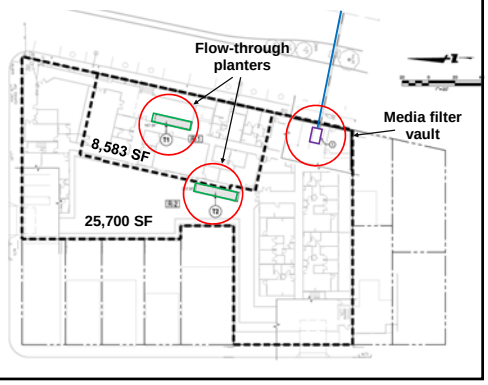
Building Section



Impervious Area Data

	Impervious Area			Pervious Area
	Roof (SF)	Pavement (SF)	Total (SF)	Total (SF)
Existing	15,276	16,484	31,760	2,523
Proposed	34,283	0	34,283	0

Stormwater Control Plan

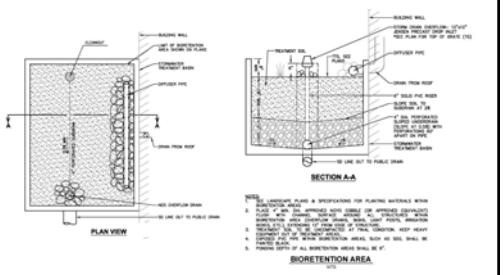


Treatment Measure Sizing Table

DA #	Drainage Area (SF)	% of Total Area	Req'd 4% Treatment Area (SF)	TA #	Provided Treatment Area (SF)	Total Treatment Area (SF)
R-1	8,583	25%	343	T-1	167	382
				T-2	215	
R-2	25,700	75%		Vault	Not sized	Not sized

Notes:
1. T-1 and T-2 are flow-through planters (i.e., biotreatment).
2. T-1 and T-2 are sizing using the 4% method (a flow-based method assuming a rainfall intensity of 0.2 in/hr and a surface loading rate of 5 in/hr).

Flow-through Planter Details



Review of C.3 Checklist

Table of Impervious and Pervious Surfaces

Type of Impervious Surface	a Pre-Project Impervious Surface (sq.ft.)	b Existing Impervious Surface to be Replaced[2] (sq.ft.)	c New Impervious Surface to be Created[2] (sq.ft.)	d Post-project landscaping (sq.ft.), if applicable
Roof area(s) – excluding any portion of the roof that is vegetated ("green roof")	15,274	15,274	18,487	
Impervious[1] sidewalks, patios, paths, driveways	1,270	127	0	
Impervious[1] uncovered parking[3]	15,216	0	0	N/A
Streets (public)	0	0	0	
Streets (private)	0	0	0	
Totals:	31,760	~~15,274~~	~~18,614~~	0
Area of Existing Impervious Surface NOT replaced	0	15,401	N/A 18,487	
Total New Impervious Surface (*sum of totals for columns b and c*):			33,888	

Roadway projects that replace existing impervious surface are subject to C.3 requirements only if one or more lanes of travel are added.
See Standard Industrial Classification (SIC) codes here
Project description examples: 5-story office building, industrial warehouse, residential with five 4-story buildings for 200 condominiums, etc.
Per the MRP, pavement that meets the following definition of pervious pavement is NOT an impervious surface. Pervious pavement is defined as pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in Provision C.3.d.
Uncovered parking includes top level of a parking structure.
"Replace" means to install new impervious surface where existing impervious surface is removed. "Construct" means to install new impervious surface where there is currently no impervious surface.

Total Impervious Area = 34,283 SF ??

1 *Update approved December 4, 2012*

Review of C.3 Checklist

Continue review of C.3 checklist and plan sheets for 6800 Mission Street project

Results of Review

- The C.3 Checklist was generally completed correctly, with some missing data.
- The impervious area quantities need to be made consistent with the plans.
- The drainage management areas for each treatment measure need to be identified.
- The project qualifies as a Special Project and is eligible for up to 75% credit, but could have provided more LID treatment.
- More details are needed on how flow enters and exits treatment measures and selection and sizing of media filter vault.
- Landscape plan is not consistent with stormwater control plan.

Questions?

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Thanks to Mike Van Lonkhuysen from Daly City for providing information for this example project!