Tiered Proposal for Post-Construction Nutrient Stormwater Control

**Project-Level Objectives for Stormwater Rule**

* Provide conventional pollutant treatment of water quality volume
* No increase in nutrient loading from average undeveloped condition
* Protect physical integrity and biota of receiving streams
  + Reduce post-development runoff volume increase by requiring ET/I for some fraction of treatment volume
  + Avoid increases to duration of channel-forming discharge rate

**Some Observations**

* Disconnecting BUA provides greater opportunity for runoff reduction
* “Car habitat” BUA – parking, roads, driveways - yields greater unit nutrient loads than rooftop
* BUA impact on streams at watershed-scale:
  + Stream communities experience 50% reduction in diversity with 10% impervious cover in watershed
  + At 25% impervious cover streams become “non-supporting”

**Proposal**

* Stormwater management tiers based on % BUA, extent of runoff concentration (curb and gutter vs open), and cover type nutrient yield differences
* Strategies:
  + Starting at lower %BUA than most state stormwater, require some level of control/treatment. Increase treatment as increase BUA intensity.
  + In open drainage settings, take advantage of IC disconnection and flow dispersal opportunities in lieu of more rigorous, conventional treatment requirements
  + Add some level of infiltration/groundwater recharge to typical treatment (SWMM modeling results)
  + Also evaluate some form of control for channel-forming discharge events (1-2 yr) via SWMM modeling analysis

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| --- | --- | --- |
|  | **Open Drainage**  **(No curb & gutter)** | **Curb & gutter** |
| **< 6% BUA** | Exempt | Not allowed |
| **6% < BUA < 12%** | * Vegetated conveyances only * Disconnect IC from conveyances * Disperse IC-concentrated flows * Treat *“car habitat”* IC w/runoff-reducing 2⁰ SCM or 1⁰ SCM | Treat all IC w/1⁰ SCM per SWMM model rec’s |
| **12% < BUA < 24%** | * Vegetated conveyances only * Treat all IC w/runoff-reducing 1⁰ SCM or w/1⁰ SCM per SWMM model rec’s | * Treat all IC w/1⁰ SCM per SWMM model rec’s * Rate control for stream protection per SWMM model rec’s |
| **BUA > 24%** | N/A  (doesn’t happen) | Same as above \* |

\* For infill development where surrounding development > 60% BUA, option to utilize offsite offsets for both treatment and volume control

Runoff-reducing 2⁰ SCMs: DIS; LS-FS

Runoff-reducing 1⁰ SCMs: Bioretention; Infiltration; Permeable Pavement - Infiltrating; Silva Cell; Rainwater Harvesting

How is proposal same as current requirements?

* Curb and gutter is supposed to have 1⁰ SCM treatment regardless of BUA?
* Open drainage requirements are similar to current 2H Low Density (except for SCMs)
* Uses 6% BUA-increment thresholds used in current 2H

How is proposal different?

* Treatment required starting at 6% BUA; currently only WS-II CA this protective
* Tiered, increasingly stringent treatment as %BUA increases
  + Lesser requirements for open drainage development vs C&G at given BUA
  + Volume-reducing 2⁰SCM sufficient at low-BUA (open drainage development)
  + Car-BUA treatment required before other BUA (open drainage development)
  + Add rate control requirement at higher density
* Eased onsite requirements for high-density to accommodate downtown-type infill