

# **New Requirements in the Municipal Regional Permit**

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**Where are the regulations going?**

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# Topics

- ◆ New requirements in the MRP
  - ◆ New thresholds for C.3 applicability
  - ◆ All treatment to be LID
  - ◆ Must evaluate feasibility of infiltration, evapotranspiration, harvesting and use
  - ◆ Limited exceptions to LID treatment
  - ◆ Soil specifications for bioretention facilities
  - ◆ Specifications for green roofs
- ◆ For each requirement
  - ◆ Analysis of the requirement
  - ◆ Issues currently in play
  - ◆ Contra Costa's compliance strategy



# New Thresholds

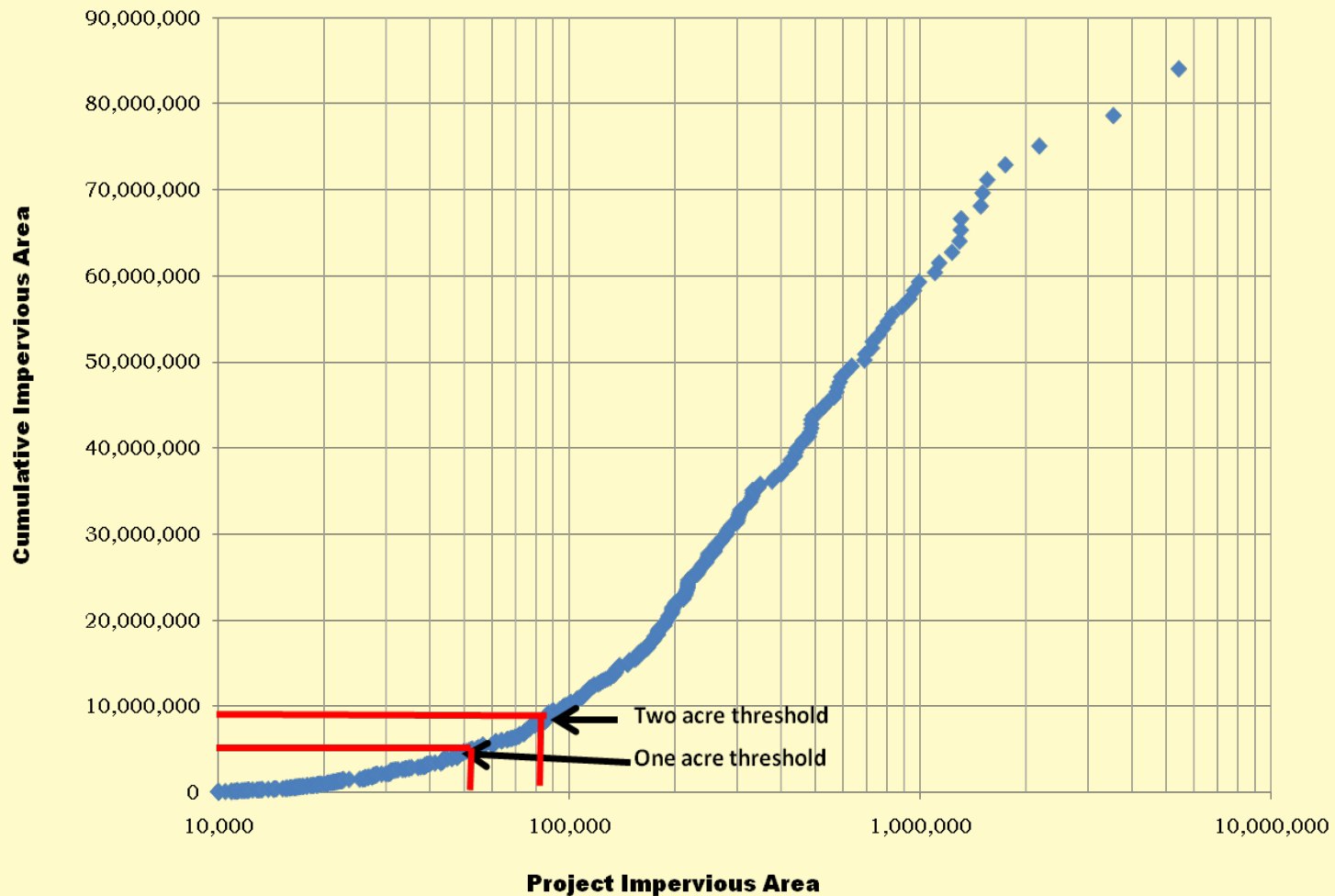
- ◆ Thresholds apply to amount of:
  - ◆ **Impervious area** that is
  - ◆ **Created or replaced**
- ◆ Most thresholds remain the same
  - ◆ C.3 applies to projects with 10,000 SF or more
  - ◆ Hydromodification management (flow-control) applies to projects with one acre or more
- ◆ New threshold of 5,000 SF specifically for:
  - ◆ Auto service facilities
  - ◆ Gas stations
  - ◆ Restaurants
  - ◆ Parking Lots
- ◆ Takes effect for projects receiving final discretionary approvals after 12/1/2011





# New Thresholds—Analysis

**Effect of Project Size Thresholds on Cumulative Impervious Area Addressed by Regulation**



# The 50% Rule



Criterion in previous permit (2003-2009): Project results in an **increase of or replacement of** 50% or more of existing development

Existing Development

Two yellow arrows originate from the text 'Existing Development'. One arrow points to the 'OLD' box of the top diagram, and the other points to the 'NEW' box of the top diagram.



New criterion: Project results in **alteration of** more than 50% of the previously existing development



# New Thresholds: Strategy

- ◆ Incorporated into the Guidebook 5th Edition
- ◆ Implementable on *nearly all* projects as long as bioretention can be used
- ◆ We will continue to collect and analyze data on project size threshold and cumulative amount of impervious area





# All LID, All the Time

- 💧 Source Control Measures
- 💧 Site Design Measures
- 💧 Treat a specified amount of runoff with LID treatment measures onsite
  - 💧 LID treatment measures are harvesting and (re)use, infiltration, evapotranspiration, and *biotreatment*
  - 💧 *Biotreatment* may be considered only if it is infeasible to implement other LID measures
  - 💧 *Biotreatment* is not defined
  - 💧 *Biotreatment* surface loading rate  $\leq 5$ " /hour (equals 4% of tributary impervious area)



# Amount of Runoff

- Volume-based

  - WEF Method

  - CASQA Method

  - Both use continuous simulation. Given:

    - One acre tributary area

    - Specified drawdown time (48 hours is typical)

  - Find the volume of a basin that will capture 80% of the total runoff during the simulation

- Flow-based

  - 10% of 50-year flow rate

  - 2 x 85th percentile hourly rainfall intensity

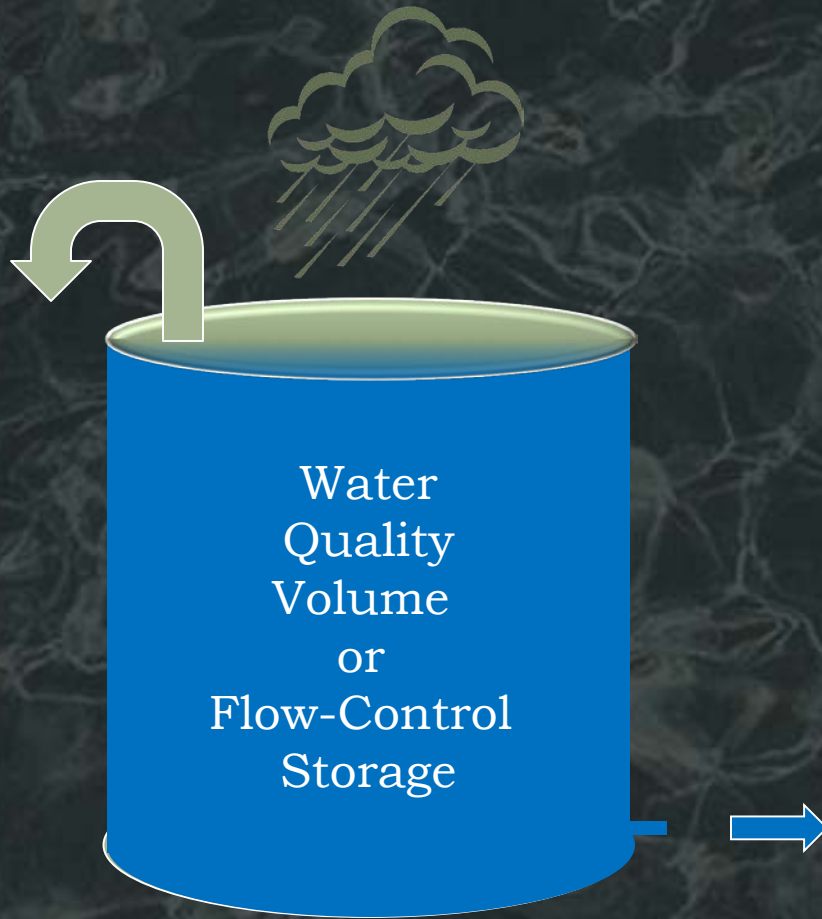
  - 0.2 inches per hour

- Combination volume- and flow-based to treat at least 80% of total runoff





# Amount of Runoff: Analysis



# LID Treatment Issues

- Reuse of stored runoff must be consistent and timely
  - Toilet flushing is typically insufficient use
  - Irrigation is seasonal
- Need to consider the trade-off of treating and discharging runoff to avoid discharge of untreated overflows
- Bioretention facilities infiltrate and evapotranspirate some runoff
- “Biotreatment” is a new, ambiguous term



# Bioretention

evapotranspiration



“Biotreatment” occurs only to the extent that infiltration and evapotranspiration are “infeasible”

“biotreatment” = underdrain discharge

Infiltration—rate dependent on soil permeability



# LID Treatment—Status

- ◆ May 1 BASMAA submittal to Water Board
- ◆ Comment period lasts until June 10
- ◆ Any change to Water Board requirements requires public hearing and permit amendment
- ◆ If accepted or no action, then Contra Costa municipalities will continue to implement Guidebook 5th Edition
  - ◆ Possible update to methods for determining feasibility of (re)use for toilet flushing and irrigation consistent with BASMAA submittal



# LID Treatment: Exceptions

- Alternative Compliance

- Treatment of an equivalent quantity of runoff and pollutant loading at an offsite location
- In-lieu fees to fund a “Regional Project”

- Special Projects

- Incentives for “smart growth.”
- Proposal submitted to Water Board 12/1/2010
  - A. Projects an acre or less and near-total lot coverage
  - B. Projects two acres or less, 30 DU/acre or FAR  $\geq 2$
  - C. Transit-oriented development with  $\leq 10\%$  parking
  - D. Portions of sites to be retrofit under the 50% rule
  - E. Street widening with additional lanes





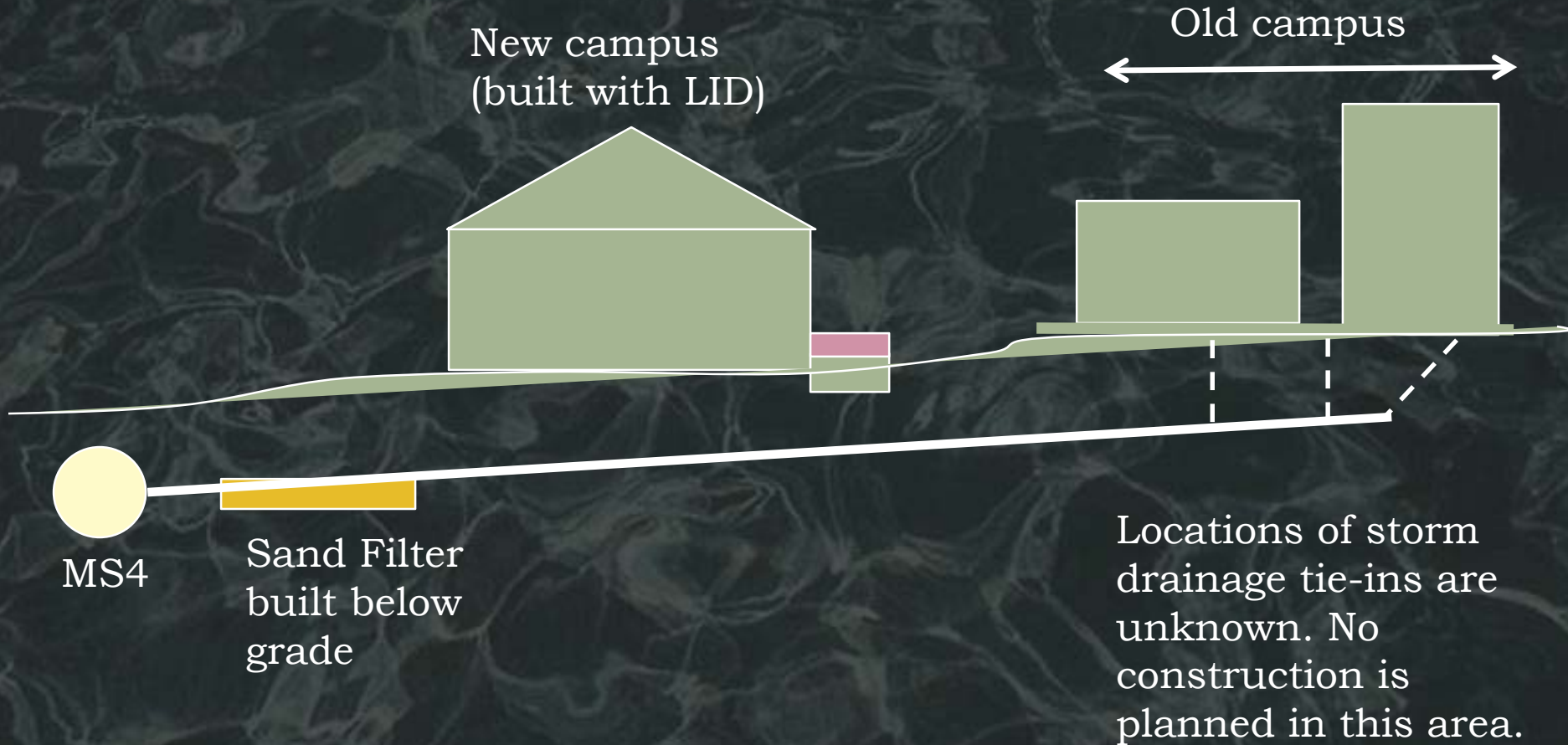
# Special Projects: Analysis

- Contra Costa municipalities have required LID, with few exceptions, since 2005
- Some rare exceptions (included in Guidebook) are necessary
- Retrospective analysis shows these projects would account for less than 1% of impervious area subject to C.3





# Non-LID and the 50% rule

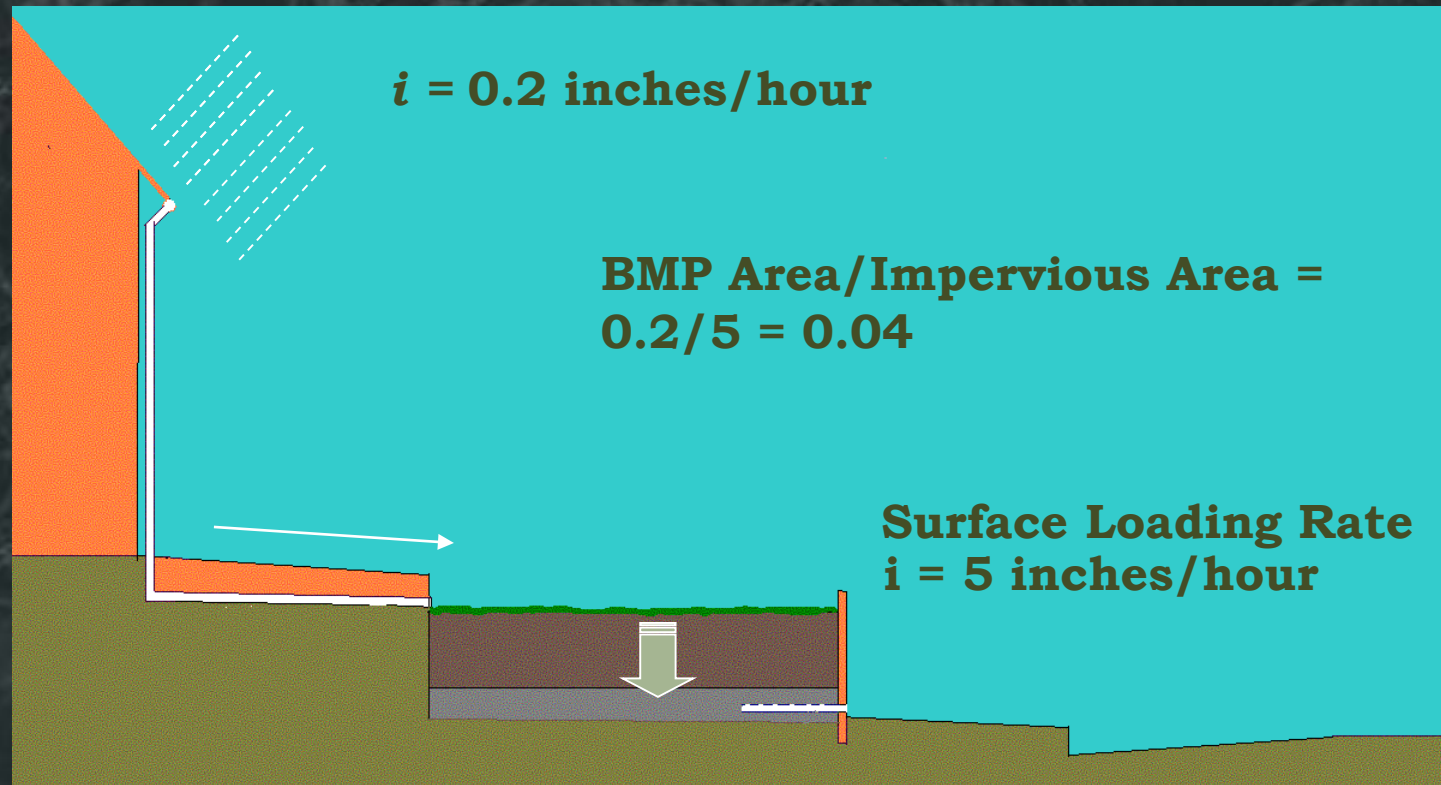


# Special Projects: Status

- Categories in the Guidebook 5th Edition
  - Projects an acre or less and near-total lot coverage
  - Portions of sites to be retrofit under the 50% rule
- If Water Board does not act on BASMAA proposal, current exceptions expire 12/1/2011
  - Only option may be treatment of an equivalent amount of runoff at an offsite location
- If Water Board accepts BASMAA proposal, scope of exceptions would expand from current



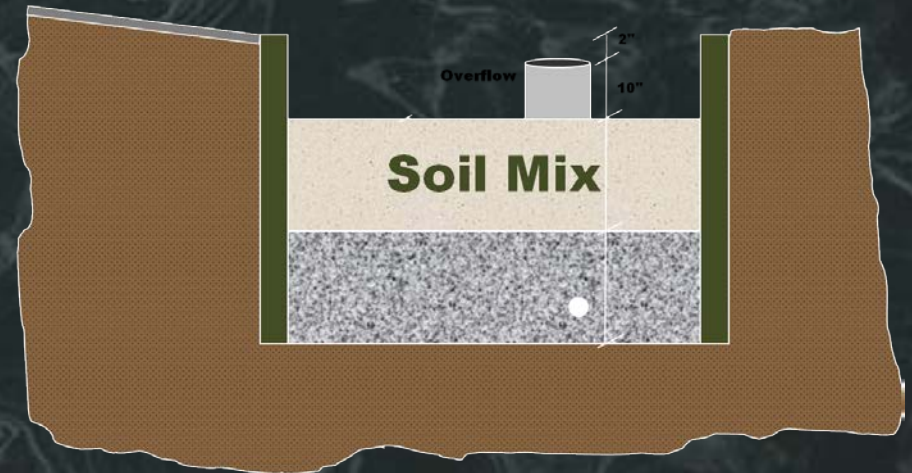
# Max. Surface Loading Rate





# Soils for Bioretention

- “...propose a set of model biotreatment soil media specifications and soil infiltration testing methods to verify a long-term infiltration rate of 5" to 10" inches per hour.”
- BASMAA submitted proposal on 12/1/2010



# Background on Soil Spec

- Some early bioretention facilities failed to drain
- Typical mode of failure is after a few wetting cycles
- Clay content is the problem
- Loamy sand soils generally not available
- Specify mix of sand and compost
- CCCWP identified proportions and specs for sand and compost
- BASMAA adapted CCCWP specs





# Green Roofs

- ◆ Must meet “certain minimum specifications” to be “biotreatment” systems
- ◆ BASMAA submitted required report 5/1/2011
- ◆ Green roofs evapotranspire 40% to 80% of runoff—but no local data
- ◆ Concluded current green roof practices are more than adequate to treat the specified “amount of runoff”
- ◆ Green roofs are considered self-treating or self-retaining areas





# Summary and Conclusions

- CCCWP developed and implemented LID methodology and standards before the MRP was drafted.
- CCCWP's sustained, intense effort to keep and continuously improve this methodology has been successful.
  - MRP requirements do not conflict with current practice
  - Some additional documentation is required
  - Four submittals made to the Water Board are consistent with Guidebook 5<sup>th</sup> Edition
- Main changes:
  - Need to evaluate harvesting and (re)use
  - Potential loss of exception for “special projects”
  - More consistent implementation

