

**WATERSHED MANAGEMENT PLAN
CITYWIDE PUBLIC MEETING**

January 21, 2010

6:30 pm to 8:00 pm

North Berkeley Senior Center, Multipurpose Room
1901 Hearst Ave (at MLK, Jr. Way)**AGENDA**

- | | |
|--|---------------|
| 1) Introductions | 6:30 (10 min) |
| 2) Review Meeting Goals | 6:40 (5 min) |
| 3) Presentation: Watershed Management Plan (WMP) <ul style="list-style-type: none">• Watershed Drainage Processes• Urban Watershed Challenges• Current COB Watershed Management Activities• Planning Process Overview/Methodology | 6:45 (15 min) |
| 4) Questions and Answers | 7:00 (10 min) |
| 5) Review WMP Initial Goals & Opportunity Areas <ul style="list-style-type: none">• Initial Goals of WMP• Opportunity Areas | 7:10 (20 min) |
| 6) Additional Feedback Discussion/Q & A | 7:30 (10 min) |
| 7) Next Steps <ul style="list-style-type: none">• Opportunities for Further Feedback• Staff Activities | 7:40 (5 min) |
| 8) ADJOURN | 7:45 |

Watershed Management Planning Process

Public Meeting
January 21, 2010
North Berkeley Senior Center

Joshua Bradt
Watershed Resources Specialist
Presenter



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AGENDA

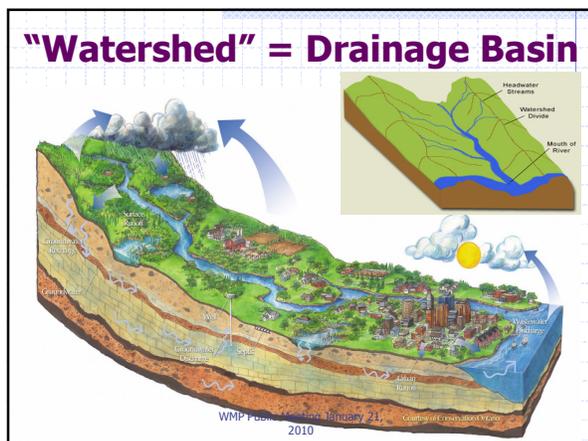
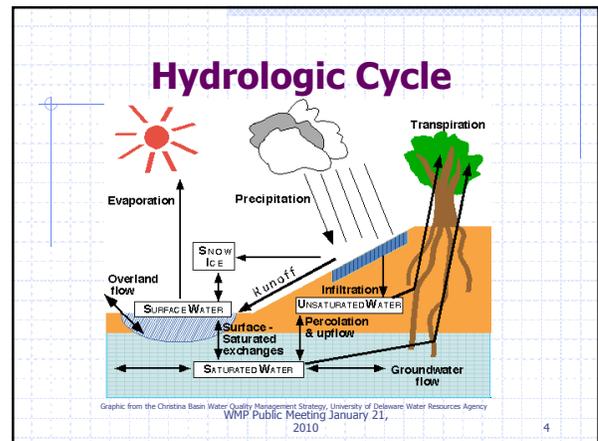
- ◆ Review Meeting Goals
- ◆ Overview of:
 - Watershed Drainage Processes
 - Urban Watershed Management Challenges
 - Current City of Berkeley Watershed Mgmt Activities
 - Watershed Management Planning Process
- ◆ Questions & Answers
- ◆ Initial Goals and Objectives of Plan
- ◆ Opportunity Areas Under Consideration by Staff
- ◆ Next Steps
- ◆ Feedback & Discussion

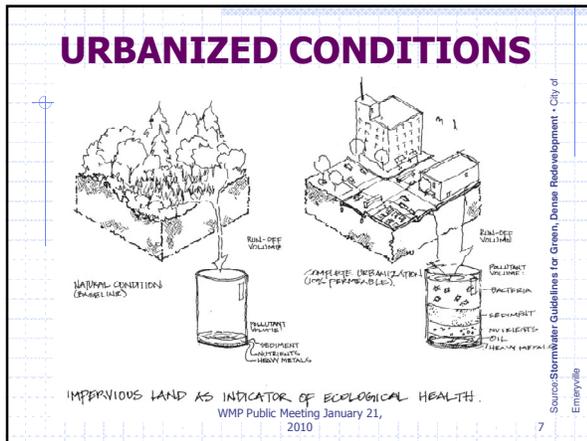
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MEETING GOALS

- ◆ Raise Awareness of Watershed Processes and Management Challenges
- ◆ Articulate Limits of City Responsibilities
- ◆ Collect Early Feedback

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City Watershed Management Activities

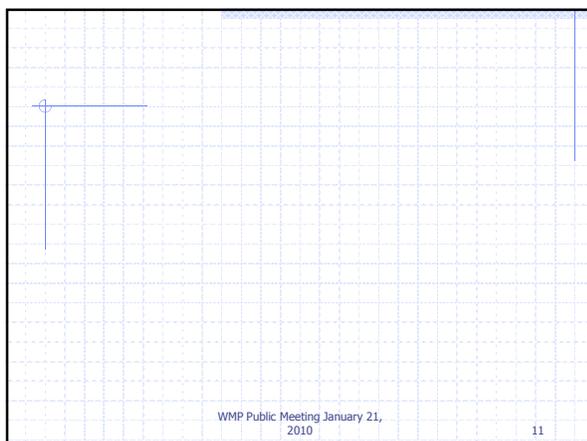



| | |
|------------------------------|-----------------------------|
| Water Quality | Capital Improvements |
| Regulatory Compliance | Customer Service |
| Flood Management | Creeks |

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- ### Planning Process Overview
- ◆ Compile Existing City Programs, Policies, and Regulations
 - ◆ Conduct Interdepartmental Meetings
 - ◆ Develop Hydraulic Models
 - ◆ Conduct Condition Assessment
 - ◆ Encourage Public Participation
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- ### General Public & Key Stakeholder Groups
- ◆ Community at-large
 - ◆ Business Owners & Property Owners
 - ◆ Environmental Organizations
 - ◆ UC-Berkeley & Berkeley Unified School District
 - ◆ City Commissioners & Other COB Departments
 - ◆ City of Oakland & City of Albany
 - ◆ EBMUD & Caltrans
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- ### Initial WMP Goals and Objectives
- Develop and Implement multi-objective, sustainable approaches to:*
- ◆ Improve water quality
 - ◆ Reduce Peak Run-off Volumes and Rates
 - ◆ Protect Open Channels and Aquatic Habitat
 - ◆ Improve Urban Livability
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Green Infrastructure/Low Impact Development

- ◆ BioSwales
- ◆ Rain Gardens
- ◆ Green Roofs
- ◆ Flow-Through Planters
- ◆ Cisterns/Rain Barrels
- ◆ Permeable Surfaces

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Bio-swales

Source: Sherwood Design Engineers

Source: Abby Hall - EPA

Source: Kevin Robert Perry, City of Portland

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Rain Gardens

source: nevus ngan associates

Source: san mateo county sustainable green streets and parking lots guidebook

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Green Roofs

Source: Stormwater Guidelines for Green, Dense Redevelopment - City of Emeryville

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Flow-Through Planters

Source: Kevin Robert Perry, City of Portland

Source: City of Portland Stormwater Manual, 2004

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Rain Barrels/Cisterns

Source: Santa Monica Watershed Management Plan, 2006

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Permeable Surfaces: Pavers, Concrete, and Asphalt

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Opportunity Areas for WMP

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Retrofit Existing City Right-of-Way

CITY OF BERKELEY
TYPICAL BIO-INFILTRATION PILOT PROJECT STREET

PROPOSED BIO-INFILTRATION DETAILS:

- 1. PERMEABLE PAVEMENT
- 2. 12" TO 18" DEEP BIOINFILTRATION STORAGE
- 3. PERMEABLE FILTERS & TRAPING LAYER (i.e. 1/4" SIFT FROM FACE OF CURB)
- 4. PERMEABLE CURBS AND SUTURE GRASS STRIP LOCATED. CURB CURBS MUST ALLOW INFILTRATION AND INFILTRATION
- 5. INFILTRATION TRENCH/UNDERPASS IN PLASTER STOPS AND DRAIN-GUTS ESTABLISHED NEED TO BE PERMEABLE WHEN POSSIBLE
- 6. INFILTRATION TRENCH NEEDS TO BE PERMEABLE WHEN POSSIBLE
- 7. PERMEABLE CURBS TO EXIST ON OTHER SIDE OF ROAD
- 8. PERMEABLE CURBS TO EXIST ON OTHER SIDE OF ROAD
- 9. INFILTRATION TRENCH/UNDERPASS TO EXIST ON OTHER SIDE OF ROAD

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Area-Wide Downspout Disconnection Program

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Reduction in the C3 Impervious Surface Threshold

Source: Emeryville Stormwater Guidelines, January 21, 2010 3

Feedback & Discussion

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Next Steps/Estimated 2010 Timeline

| | |
|------------------|--|
| January: | Public Meeting; Potter Model Complete |
| February: | Develop Rain Barrel Program Structure; Analyze Potter Model |
| March: | Model Potter Alternative Scenarios, Codornices Model Complete |
| April: | Draft Standards for Rain Barrel Installation, Analyze Codornices Model |
| May: | Draft Standards for LID/Green Infrastructure Retrofits, Draft Potter WMP |
| June: | Potter WMP Public Meeting; Revise Draft Potter WMP |
| July: | Potter WMP Complete |

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Additional Feedback/Concerns?

Joshua Bradt
Watershed Resources Specialist
510.981.6418
jbradt@ci.berkeley.ca.us

www.ci.berkeley.ca.us

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On January 21, 2010, the City hosted a public meeting about its Watershed Management Planning (WMP) process. The meeting lasted almost two hours and was attended by about 50 people.

During the meeting, there were opportunities for attendees to offer comment, ask questions, and provide suggestions as the planning process ramps up in earnest. Below is a compilation of all comments and questions. These items are batched by topic where possible. There is no significance to the order of the list. These ideas and concerns will be explored through the planning process:

APPROACH/STRATEGY/SCOPE

- When will WMP consider economic impact of failing creek culverts on low-income property owners?
- Data collection good start.
- Will the project include full modeling of all water (surface and groundwater) or just be surface hydraulic modeling?
- Need inventory of public property for capture/storage, include medians, school yards.
- With competing budgets and schedules, plan may be reactive--driven by hot spots.
- Interdepartmental coordination is important.
- Modeling needs to identify hydraulic constrictions and surcharging locations.
- Expand creek side open areas, establish trust fund, buy out poor families, harvest water, use West Campus parking lot, need cooling stations for heat of summer, look at drought side as well as flood side.
- Will plan consider recharge of Perched aquifers?

OUTREACH/PARTICIPATION

- Add Berkeley City College, East Bay Regional Park District, Department of Energy, Regional Water Quality Control Board, BART, Department of Fish and Game (add resource agencies).
- Will there be more outreach to creek property owners?
- Conduct property owner issues survey through neighborhood associations.
- Target the Council of Neighborhoods to get information.
- Host a lot of design workshops.
- EBMUD chloramines strategic considerations, 1. Codornices Creek is anadromous habitat, locate curb cuts to capture any water, 2. Work with watershed council to have volunteers distribute de-chlorination BMPs for water main breaks.
- Watershed groups seeking protection for de-chlorination/BMP deployment.

BUDGET/FUNDING

- What is the WMP budget?
- Can costs be allocated across appropriate City Departments?

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- Include analysis of funding sources. Start to track where funds may come from to be prepared for opportunities as they arise
- Link WMP efforts to climate change to broaden available funding sources.
- Any discussion on local funding models? Year 2011 will have new state funding available. Ocean Protection Council reviewed LID policies, identified attractive LIDs.

GREEN INFRASTRUCTURE/LID/RAIN WATER HARVESTING

- Visit to Seattle changed mind about the Short-Term v. Long-Term strategy of implementing LID. Studies have favorably quantified the cost of green infrastructure approaches v. traditionally engineered infrastructure replacement.
- Strategically locate Green Infrastructure to address water quality & flow capacities.
- Look at Los Angeles for a good example of LID usage, including permeable pavers
- Consider city-wide program for cisterns, similar to green-waste.
- Can Traffic circles be retrofitted to retain run-off?
- What is relationship between water flow in street and cistern use?
- My simple computation for rain water harvesting in Cerrito Watershed showed to discernable peak run-off reduction effect.
- Some roofing materials not conducive to rain water harvesting due to contaminants-- check impacts of roofing materials.
- Consider not only Direct Benefit of peak flow reduction from rain water harvesting, but also value of education, engagement, water saving, and other synergistic effects.

CREEKS

- Identify early on the interconnections (locations) between storm drains and creeks.
- Army Corps of Engineers permit (404 Permit, comment from another) is an impediment to creek work.
- Estimate percent of watersheds' impervious cover—there is debate over success of restoration in fully built out urban areas, some say creeks cannot be restored in highly urbanized watersheds.
- What has been the impact of the revised creek ordinance on home owners? There were statements during the creek ordinance update process about severe impact on property owners; so far these impacts seem to have not been realized.

MAPS

- Improve maps.
- City maps are notoriously bad—we need to know where storm drain, creeks, and creek culverts are located. There is concern that creek locations are not accurately mapped.

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- Consider consulting with Contra Costa County to learn about its mapping activities.

EXISTING DRAINAGE INFRASTRUCTURE

- What is price structure of alternate pipe materials? (plastic, clay, concrete, steel)
- Retention techniques will not solve replacement problems. The City should engage in long-term infrastructure coordination with Albany.