Revised 1/21/99

# CSO Status Report To The Environmental Quality Commission

August 6, 1998

Environmental Services
City of Portland
**CLEAN RIVER WORKS**

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**Introduction**

The purpose of today's meeting is to provide you with:

- A history of the City of Portland's combined sewer overflow program;
- A status report on our progress; and
- Talk to you about the future of our program.

**1. Historic Overview**

**Bureau's Mission** - to protect public health and environment. We aim to accomplish this through wastewater collection and treatment, sewer installation, watershed restoration and oversight of solid waste collection and recycling services

**Accomplishing our Mission**

- Provide sanitary service to: 511,000 people, 12,000 commercial and industrial facilities;
- Own and operate 2 sewage treatment plants;
- Operate and maintain the sanitary and stormwater treatment and collection systems;
- 2,300 miles of pipes and 98 pump stations;
  - Successfully completed the Mid County Sewer project which connected 54,000 properties, laid 394 miles of main line and installed, 6 pump stations and 13 interceptors.
- Regulate industrial discharges - Almost 8,000 reports reviewed, 96% were in compliance;
- Implement Combined Sewer Overflow Program;
- Implement comprehensive stormwater quality program;
- Conduct watershed planning and restoration;
- Ensure that the rivers and streams in Portland meet water quality standards;
- Encourage citizen and neighborhood involvement in project decisions;
- Oversee contaminated sediment cleanup;
- Participate in Metro 2040 and other watershed planning efforts; and
- Develop a plan to deal with endangered species in Portland.

**Schedule**

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- Control all CSO discharges to the Slough by December 1, 2000. (13 outfalls);

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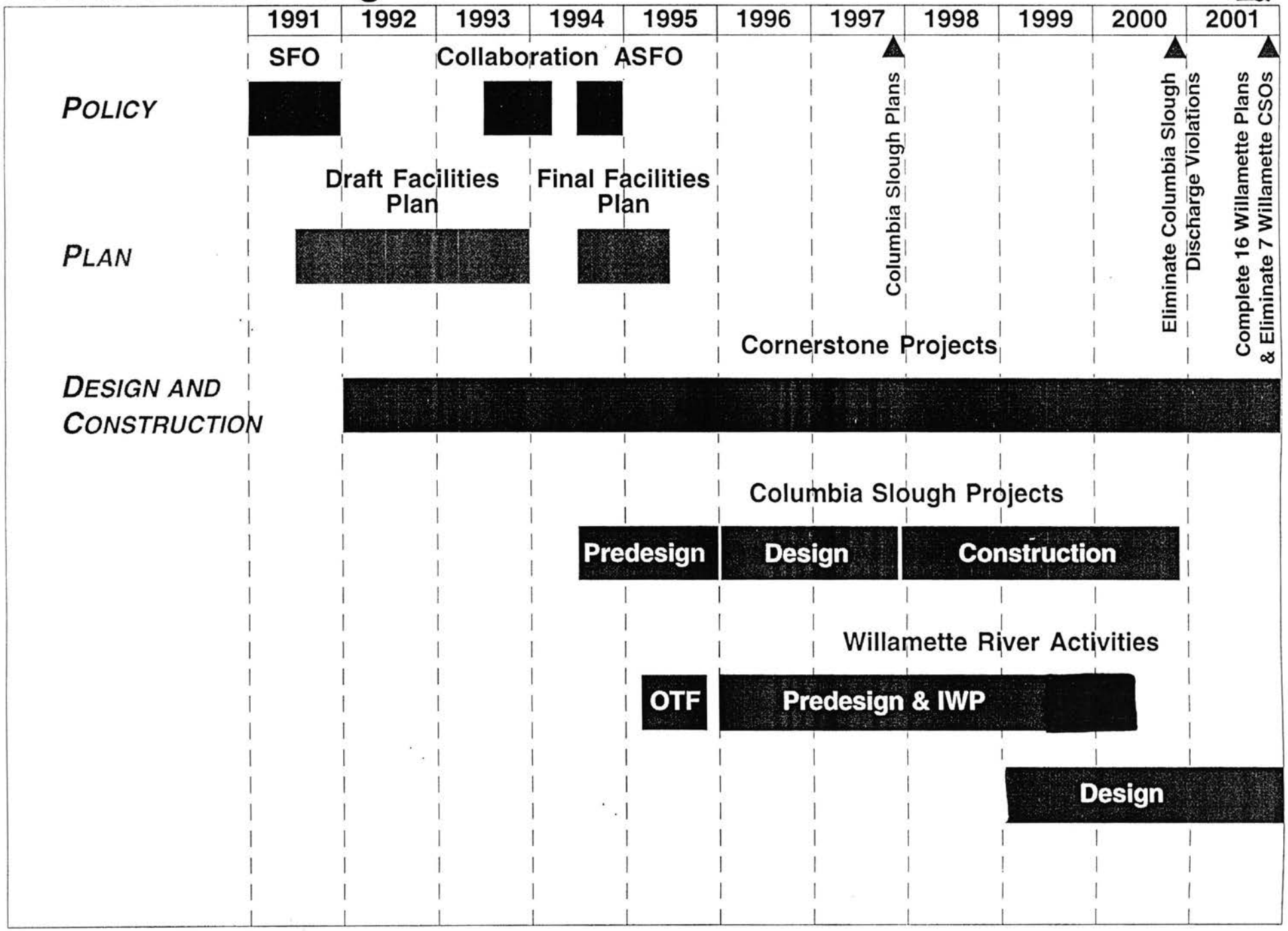

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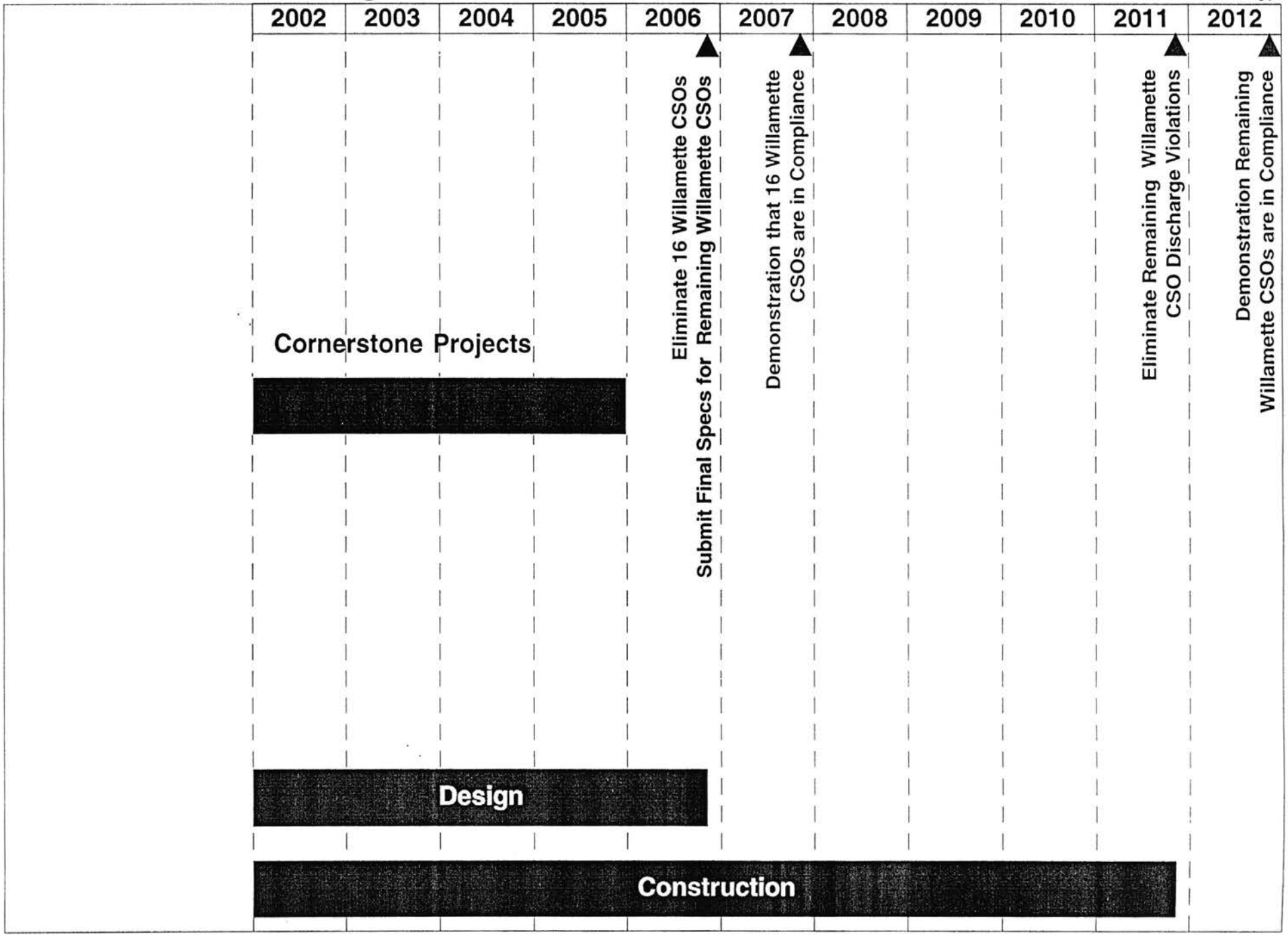
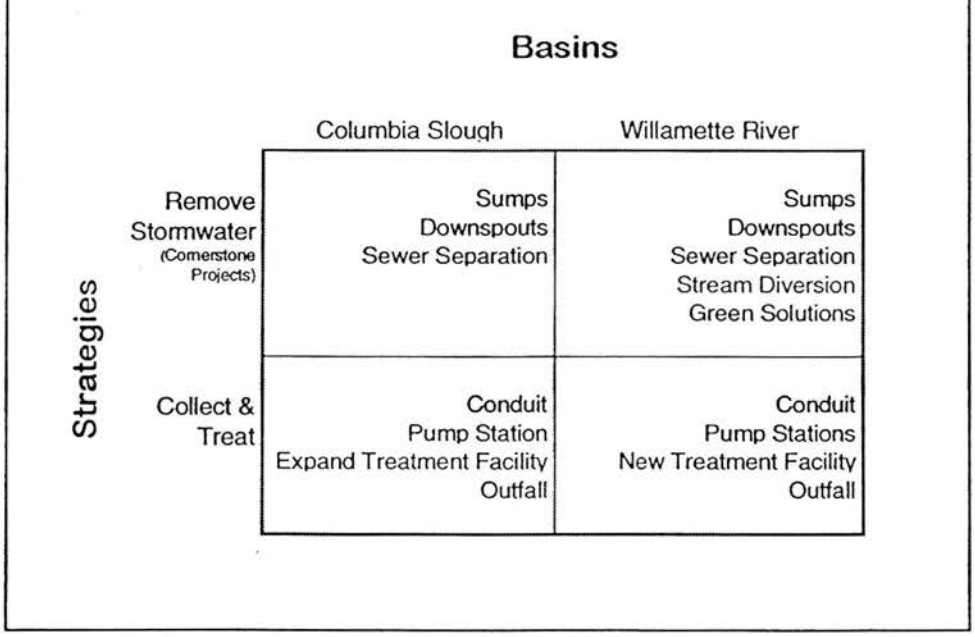


# CSO Program Strategy




- Two basins managed on different time lines
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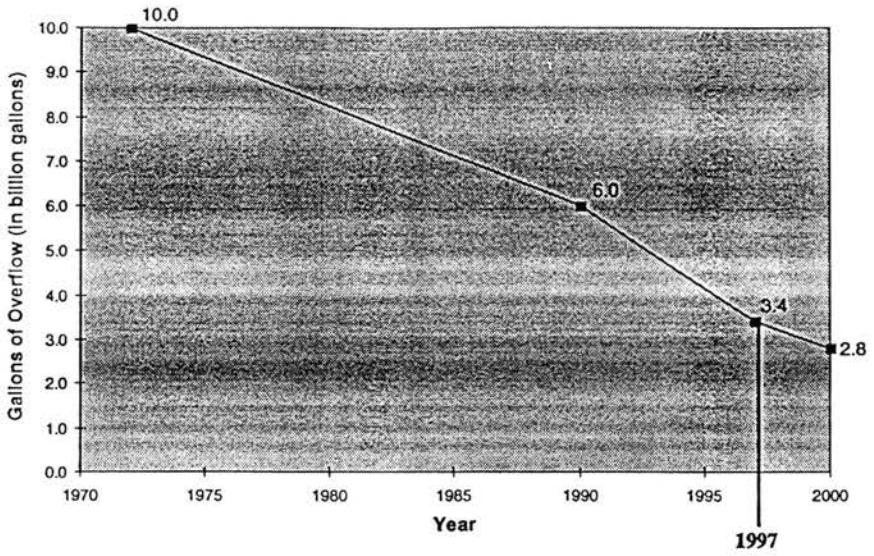
## Historic and Predicted Overflow Volumes




To date, through Cornerstone projects and changes in our existing sewer system we have reduced overflows from:

- 10 billion gallons per year in 1972 to a rate of
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We are projecting through a combination of Cornerstone and Columbia Slough projects we will further reduce overflow volume in 2000 to:

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This is a 72% reduction since 1972 and a 53% reduction since 1991. The cost per gallon for controlling CSOs rises dramatically as the total volume of CSO controlled increases.

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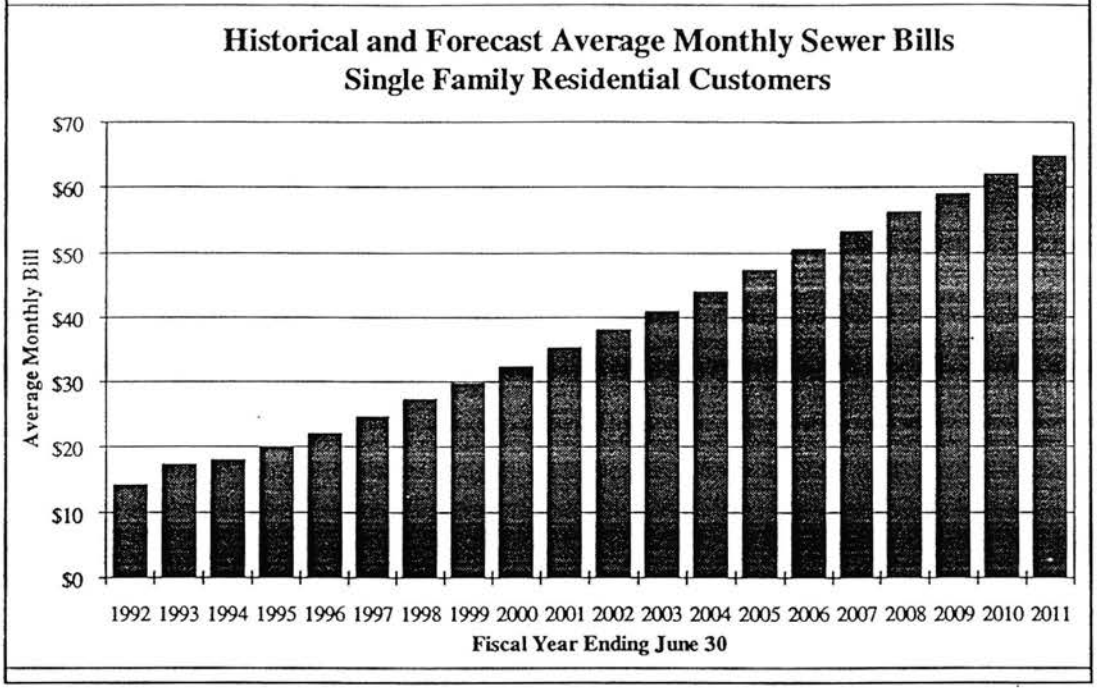


- From the beginning of the CSO program (roughly 1992) to its completion, we are anticipating rate increases from: $14.15 to ~~$64.82~~ 66.93 per month, this includes inflation This is a significant increase, we are spending significant dollars on many different projects and ratepayers throughout Portland are expecting to see improved water quality as a result.

- 60% of our CIP expenditures over the next ten years are attributed to CSO projects.

## Cornerstone Successes

- **Downspout Disconnection Program**
  - ~~4,500~~ 6,400 Residences Served (~~10,437~~ 15,060 downspouts)
  - ~~76.2~~ 107 Million gallons removed per year
- **Sump Installation Program**
  - 2,821 Sumps Installed (in the CSO area)
- **Sewer Separation Program**
  - ~~3~~ 5 of ~~7~~ 6 Sub Basins Separated
- **Stream Diversion Projects**
  - 4 Streams

**Cornerstone Program**

- Environmental Services has completed many of the Cornerstone projects (which remove more stormwater from entering the sewer system and reduces CSO's). The bureau is committed to continuing its efforts to control CSO's and reduce the amount of stormwater entering the sewer system.

- We analyzed the cost and feasibility of sewer separations for the entire CSO area. We determined that we would separate only ~~seven~~ six basins because they were the only basins that yielded multiple environmental benefits and made economic sense.

- The combined effect of these early action projects is to reduce the amount of overflow from the combined sewer system per event by at least half. These are gains the City is making now.

## Cornerstone Successes

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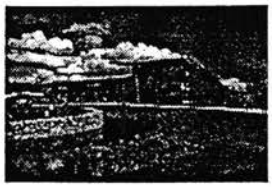
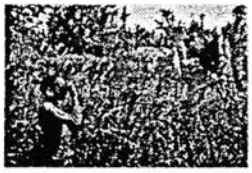


- **Cornerstone Budget**
  - Dollars spent to date: $ 77 Million
  - Total estimated cost: $155 Million



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- The Pollution Control Lab Pond drains 50 residential and industrial acres from the St. Johns B basin.

- Ramsey Lake drains 700 residential and 160 industrial acres from the St. Johns A, Oswego and Oregonian basins.

- These projects offered opportunities for school aged children and adults to learn about ecosystem management and to participate in monitoring.

- We've completed almost all of the Cornerstone projects in the Columbia Slough basins and have begun many in the Willamette River basins. Total spent to date on these projects is $77 Million and total estimated cost for all Cornerstone projects once completed is $155 Million.

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## Columbia Slough

- **Projects**
  - Consolidation Conduit
  - Pump Station
  - Outfall
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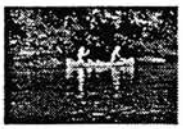
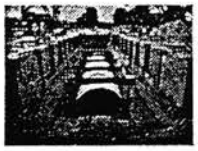
- **Budget**
  - Dollars spent to date: $ ~~41~~ 54 Million
  - Total estimated cost: $177 Million





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## Accomplishments to Date:

- On Schedule
- Within Budget
- CSO Volumes Reduced by 2.6 billion gallons per year (1991-1997)
- Developed Innovative Solutions
  - Ramsey Lake Wetlands
  - Downspout Disconnection
  - Stream Diversion
- Total dollars spent to date on CSO: ~~$123~~ 137 Million

# Willamette River Facilities Plan

- **The 1994 Facilities Plan:**
  - 2 Large Conduits
  - Storage Tank
  - Pump Station
  - Treatment Facility
  - Handle 2.2 Billion Gallons

- **Budget**
  - Total estimated cost: $404 Million

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## Refining the 1994 Facilities Plan

- **Began in 1997 and ends in 1999**
- **Develop a Predesign Plan that:**
  - Incorporates New River Information
  - Considers New and Better Technologies
  - Controls Willamette River CSO's
  - Improves Overall Water Quality
  - Reflects Community Values and Uses
  - Is Cost Effective
- **ASFO provides opportunities for re-evaluation**

The predesign project is a two year, technical and policy review of the City's existing CSO facilities plan to improve Willamette River water quality.

We have spent ~~$5.8~~ 6.1 Million dollars to date including the land acquisition for a Willamette wet weather treatment facility.

## Predesign Results

- Identified "green solutions"
- Analyzed system optimization
- Identified projects which provide CSO relief
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- Completed water quality assessment
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**Public Information**

- Clean River Works Program that serves as umbrella for all of our projects.
- CSO media and citizen notification program.
- Work with upstream communities on public service announcements

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Chaired by Bill Hutchison, the Willamette River Stakeholders Task Force was created in September of 1996. Members represent rate payer, environmental, neighborhood, and agency interests and are appointed by Commissioner Sten

**The charge, accepted by members of the Task Force is to:**

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- Public expectations for cleaner waterways
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**Integrated Watershed Approach**

- Since February of 1998 we have been working on developing an approach that allows us to integrate our water quality programs:

- The purpose of using this approach is to achieve the best water quality, environmental improvements and community benefits.

- Allows the bureau to:
  - Achieve multiple objectives;
  - Leverage its resources;
  - Prioritize our investments to achieve earliest and best results; and
  - Implement, monitor and adjust projects to ensure that we are getting maximum results.

- We will be back in mid 1999 to discuss the results of this watershed planning effort, our findings and the next steps for our program.

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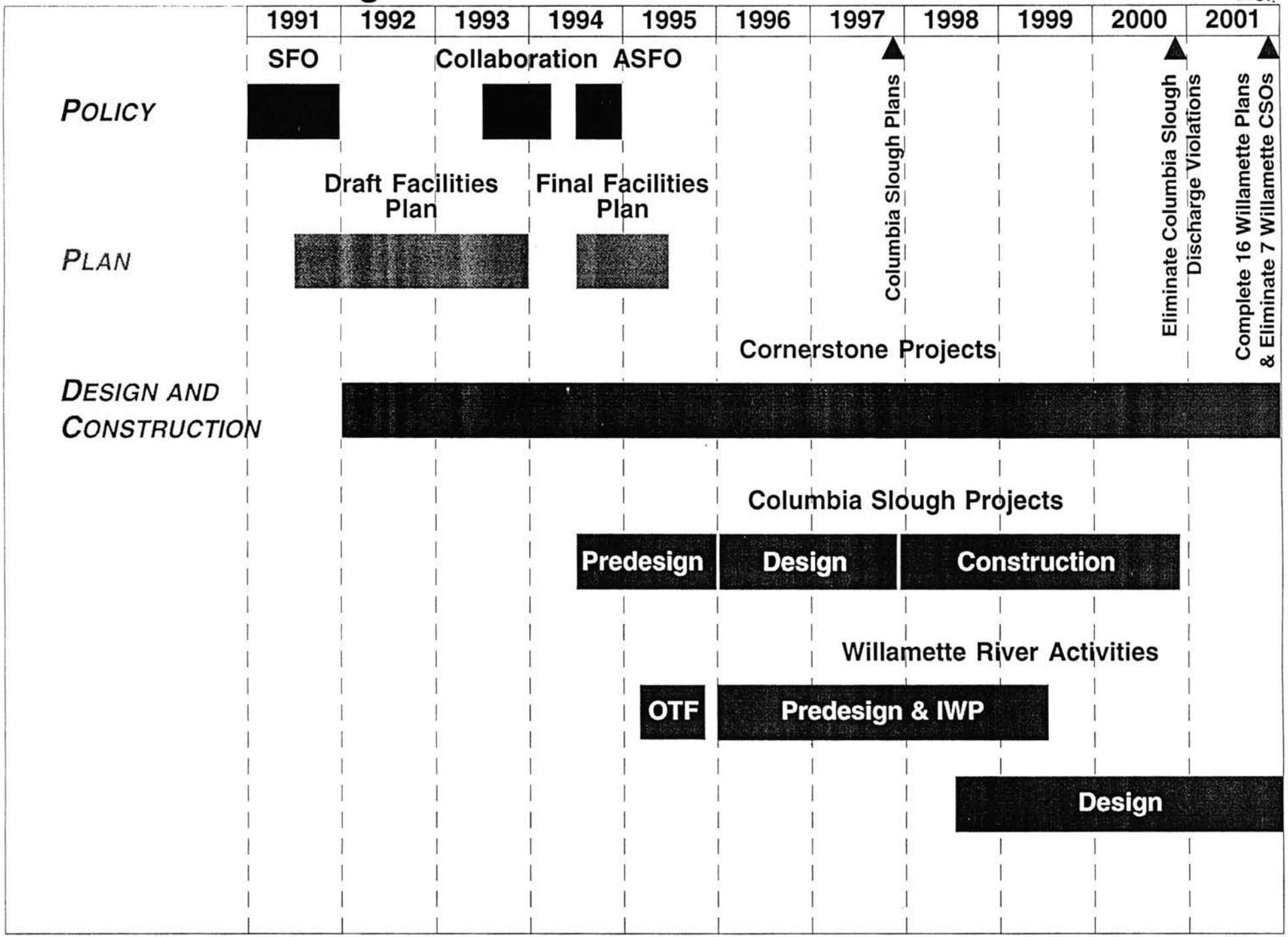

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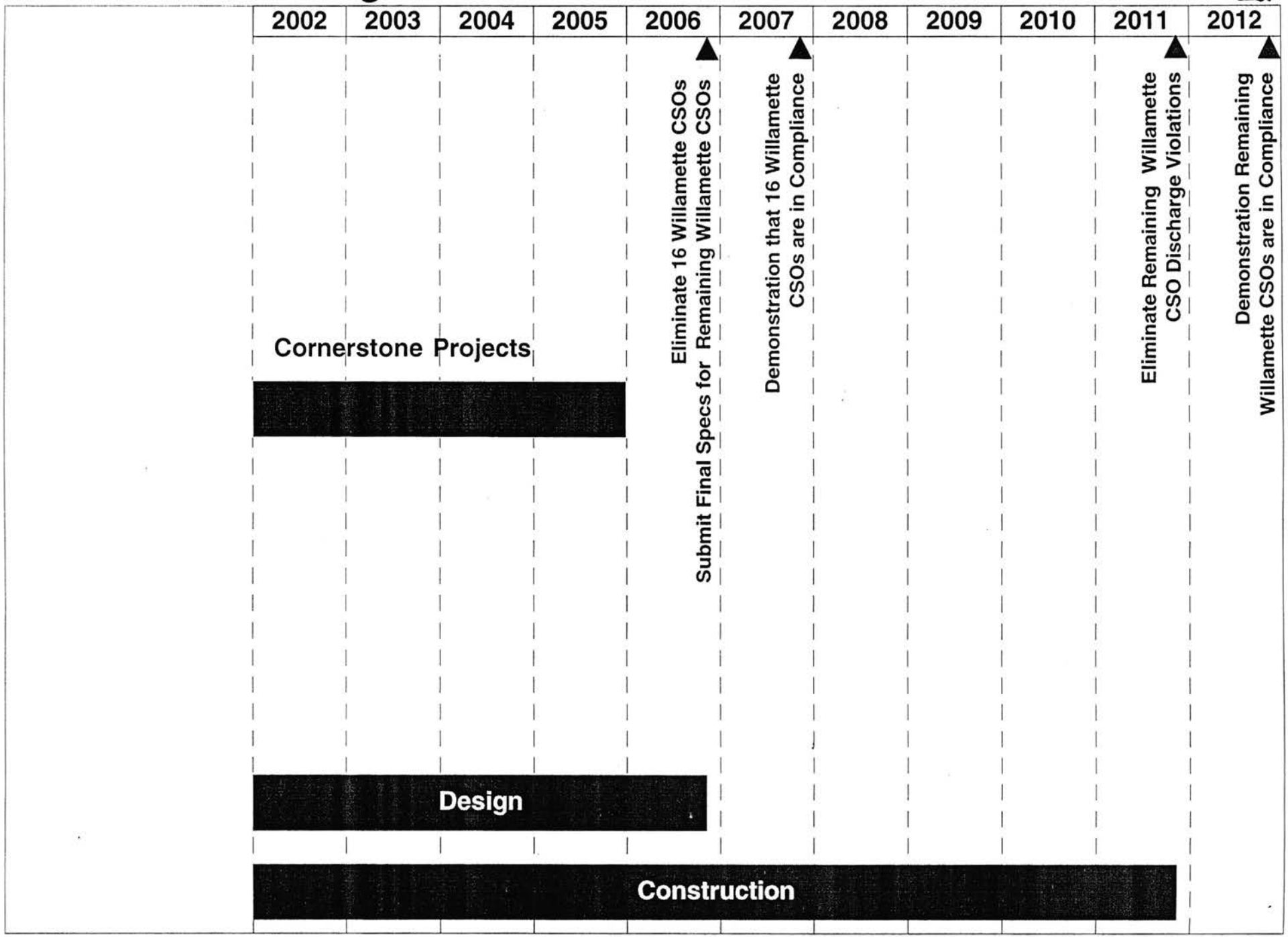

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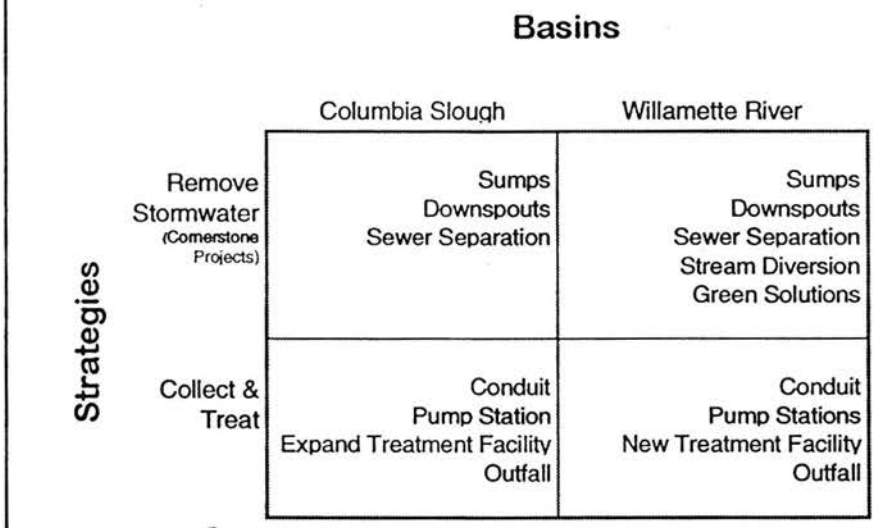


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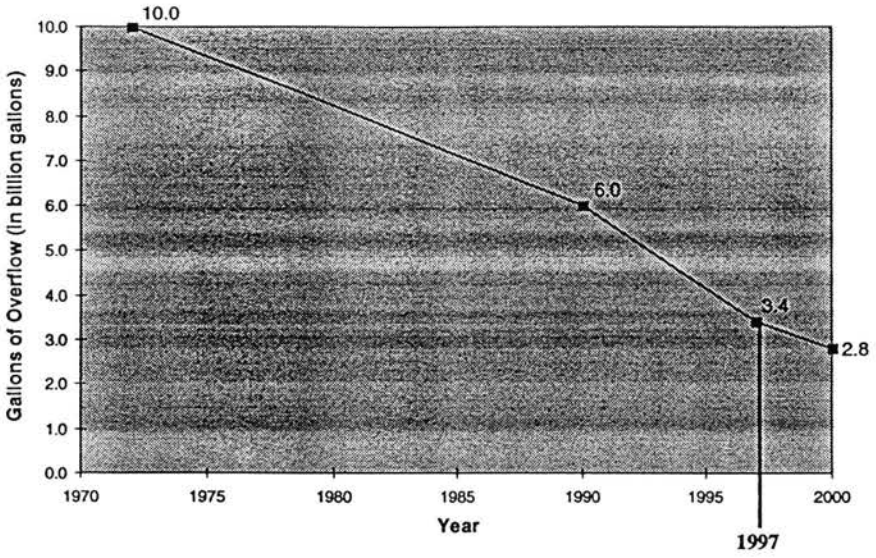


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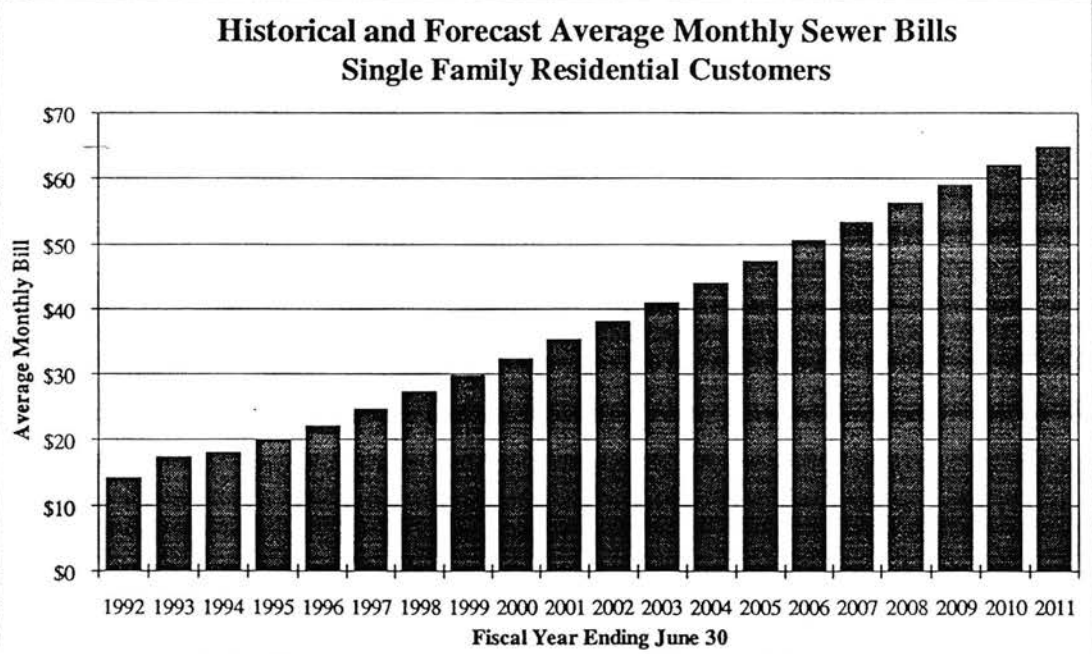


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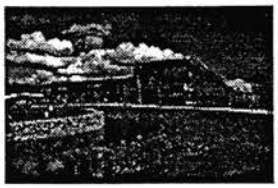

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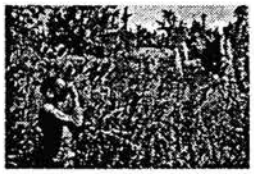

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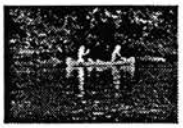

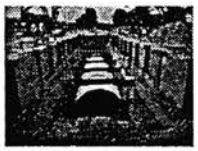

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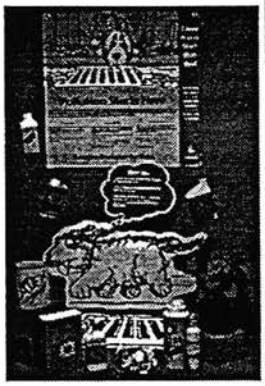


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- Since February of 1998 we have been working on developing an approach that allows us to integrate our water quality programs:

- The purpose of using this approach is to achieve the best water quality, environmental improvements and community benefits.

- Allows the bureau to:
  - Achieve multiple objectives;
  - Leverage its resources;
  - Prioritize our investments to achieve earliest and best results; and
  - Implement, monitor and adjust projects to ensure that we are getting maximum results.

- We will be back in mid 1999 to discuss the results of this watershed planning effort, our findings and the next steps for our program.

# Portland's Clean River Performance Record
# Quick Facts

Portland's CSO program is on schedule and has met all regulatory deadlines.

Since 1972 overflows have been reduced from 10 billion gallons to 3.4 billion gallons in 1997. By the year 2000, overflows will be reduced an additional 18 percent.

Estimated cost of the CSO program is $1 billion to be paid by Portland sewer ratepayers. **Dollars spent to date: $123 million.**

Projects underway:

- 10,437 downspouts disconnected to remove rainwater from sewers
- sumps installed to reduce overflows
- out of 7 sub-basin sewer separations completed (new stormwater pipes installed and stormwater treatment facilities built)
- Tanner Creek removal from the sewer system
- Construction of the Big Pipe to handle Columbia Slough overflows (3.5 miles of pipe, 6-12 feet in diameter)
- Full evaluation and refinement of the Willamette River CSO program.

Improved reliability and effluent quality from treatment facilities resulting in 54 consecutive months of treatment plant permit compliance.

No pump station bypasses in 4 years.

In the Johnson Creek watershed the City constructed a wetland at a cost of $3.4 million to provide 60 acre feet of passive flood storage, stormwater treatment, improved fish and wildlife habitat including 6 acres of wetlands and a half mile of riparian restoration.

Improved flood plain management with $2.5 million in land acquisition, removal of 15 frequently flooded structures and floodplain development limitations in the Johnson Creek watershed.

Completed the Mid County Sewer Project to protect groundwater in Mid Multnomah County. Sewer installation to connect 54,000 properties. Installed 394 miles of main line, 6 pump stations and 13 interceptors. **Project cost: $255 million.**

Revegetated 155 acres of riparian and watershed areas in cooperation with 40 private businesses in the Columbia Slough watershed.

Restored more than 400 feet of stream bank on Balch Creek.

Worked in partnership with other agencies to clean up a 12 acre former junk yard in the Columbia Slough watershed to develop the Whitaker Ponds Learning Center.

August 1998