

Madison Valley Stormwater Project Update

Briefing to CDWAC

November 14, 2012

Seattle Public Utilities

Speaker:

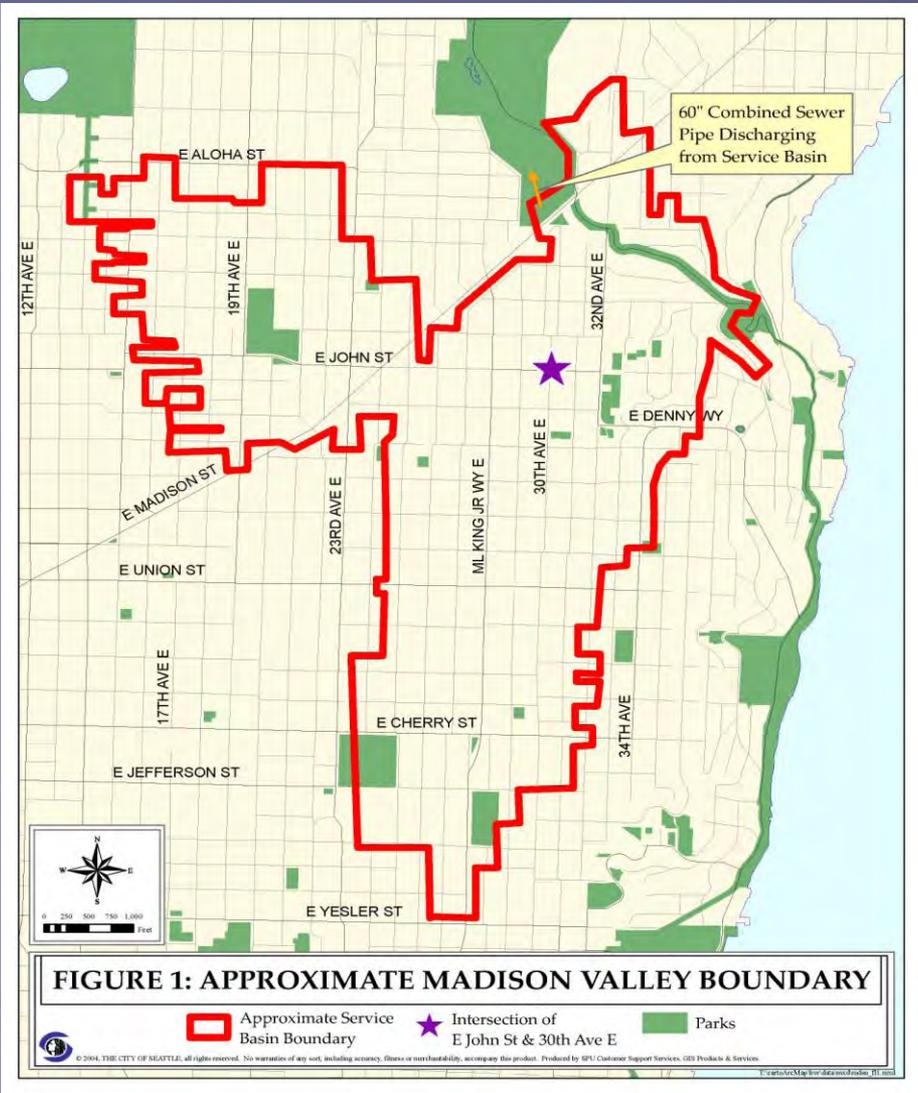
Celia S. Kennedy, MPA, Madison Valley Program
Manager

Worked with community and decision makers to:

- ✓ Greatly reduce potential for sewer backups & stormwater flooding, and
- ✓ Created new open space for community



Madison Valley Basin Map - Overview



- Located east of Capitol Hill, west and south of Washington Park, and north of Central District.

Sewer/flooding problems in Madison Valley continued in 1980s and 1990s.

SPU took following actions:

- 1) In 1980 constructed a stormwater detention pipe (400,000 gallons) under 30th Ave. E. to attenuate peak flows
- 2) After large 1996 storm, weir modification to pipe (mentioned above) was constructed and flow gauges were installed to monitor performance.

- August 2004, extreme storm caused sewer back ups, stormwater also entered homes.
 - 41 claims filed.

SPU actions to improve system:

- ✓ Modified infrastructure in stormwater detention system (orifice plates), and
- ✓ Purchased 5 parcels in 100 block of 30th Ave. E. from willing sellers for interim stormwater storage area.

Example of Why Project Was Needed...



One of Flooded Basements After August 2004 Storm

SPU Actions (cont.):

- Created interim 1 MG stormwater storage area

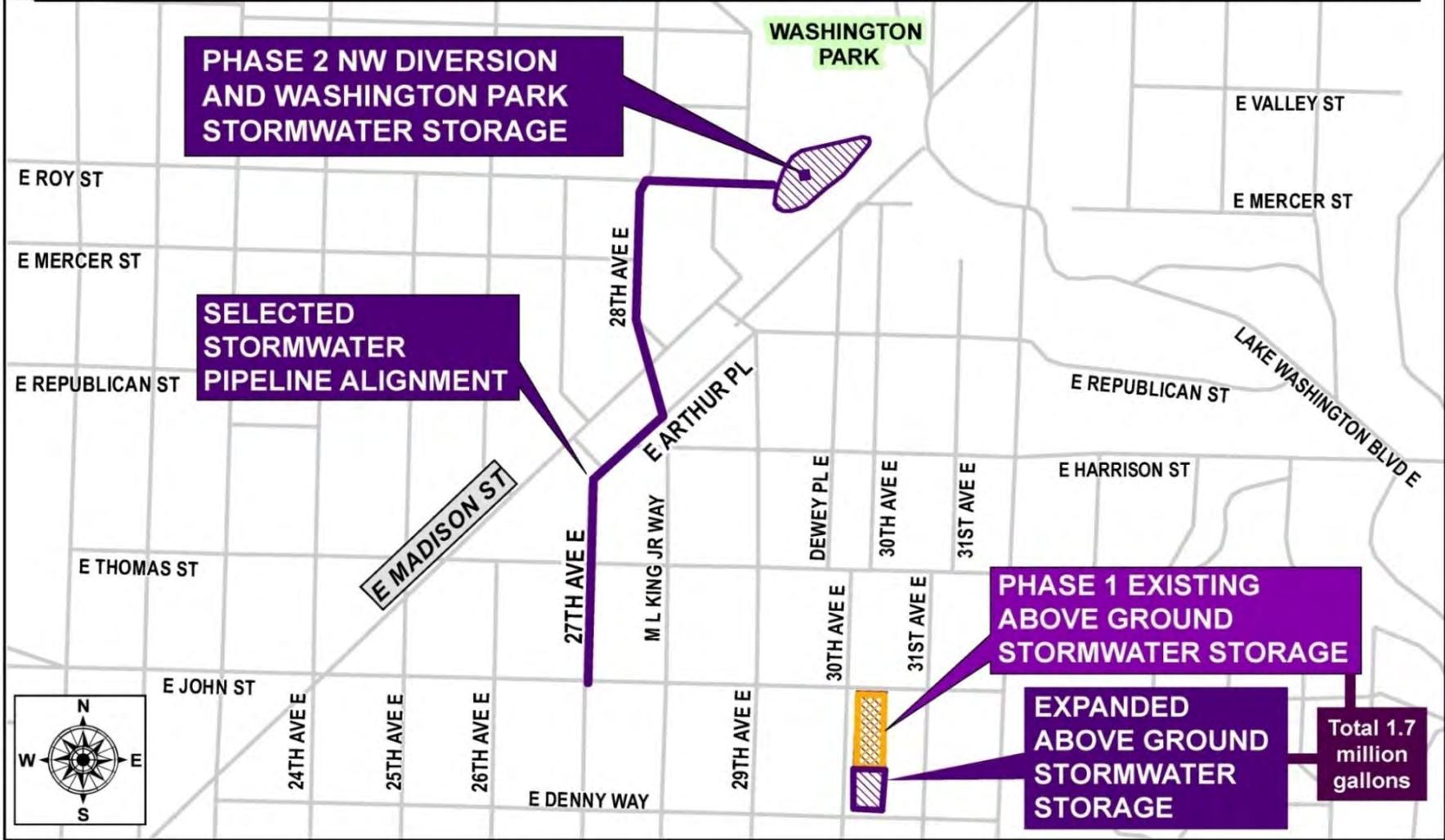
Then Dec. 2006 storm hit

- Largest storm on record
- Filled and overtopped interim storage area
- Many homes flooded in vicinity of 30th Ave. E. and E. John St.
- 55 claims filed

Madison Valley Interim Project at 30th & John St.



NW Diversion and Washington Park Storage Project



Phase 1 Project Milestones

- ✓ Design – Started June 2008
- ✓ Construction – Started June 2009

Phase 1, Landscape Design, Site Holds 1.7 MG



Phase 1 – Construction

Construction began
June 2009



October 2009 photo

Madison Valley Phase 1 Site – Dec 2009

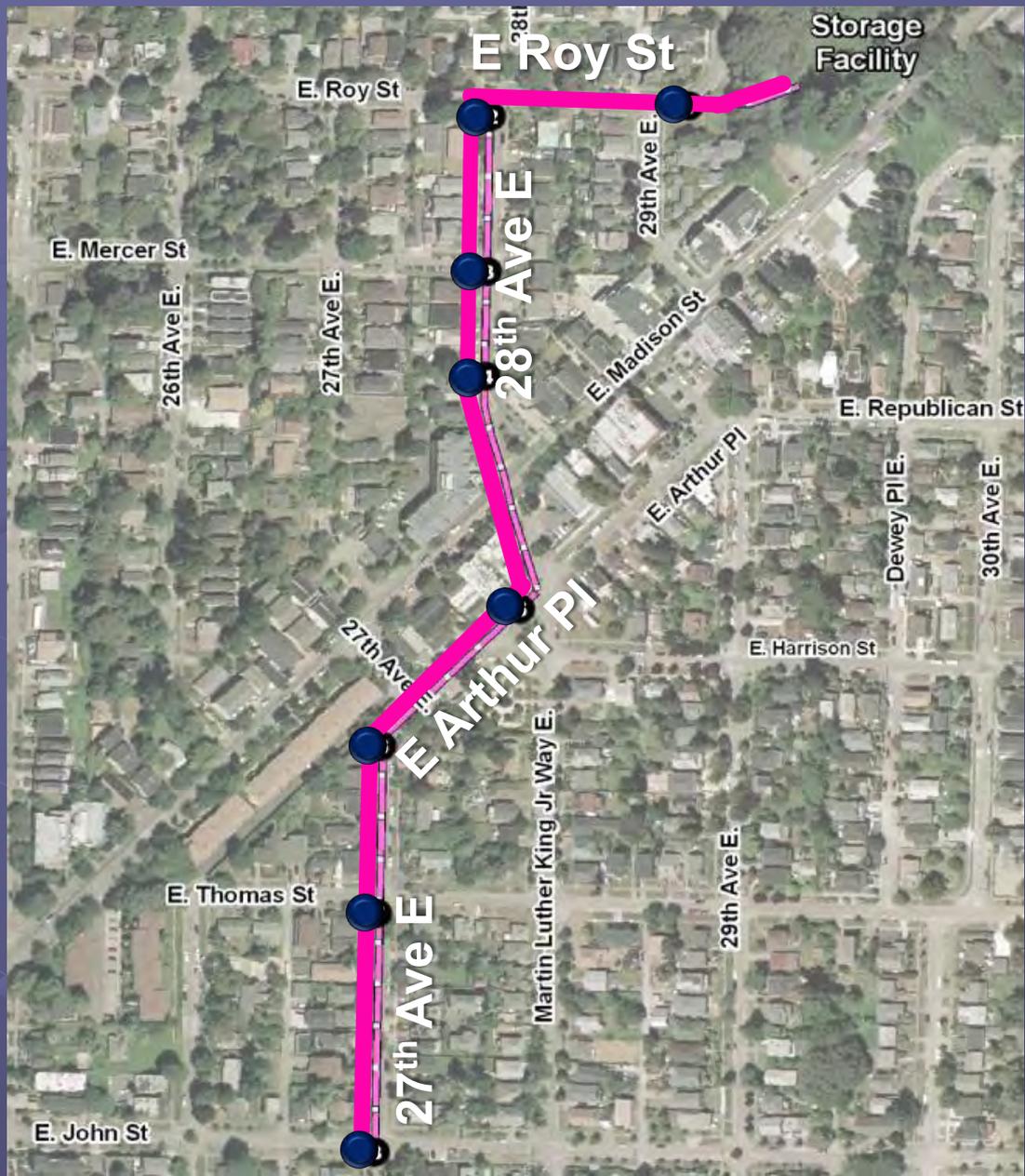
Location:
30th Ave E & E John St



Phase 2 Project Milestones

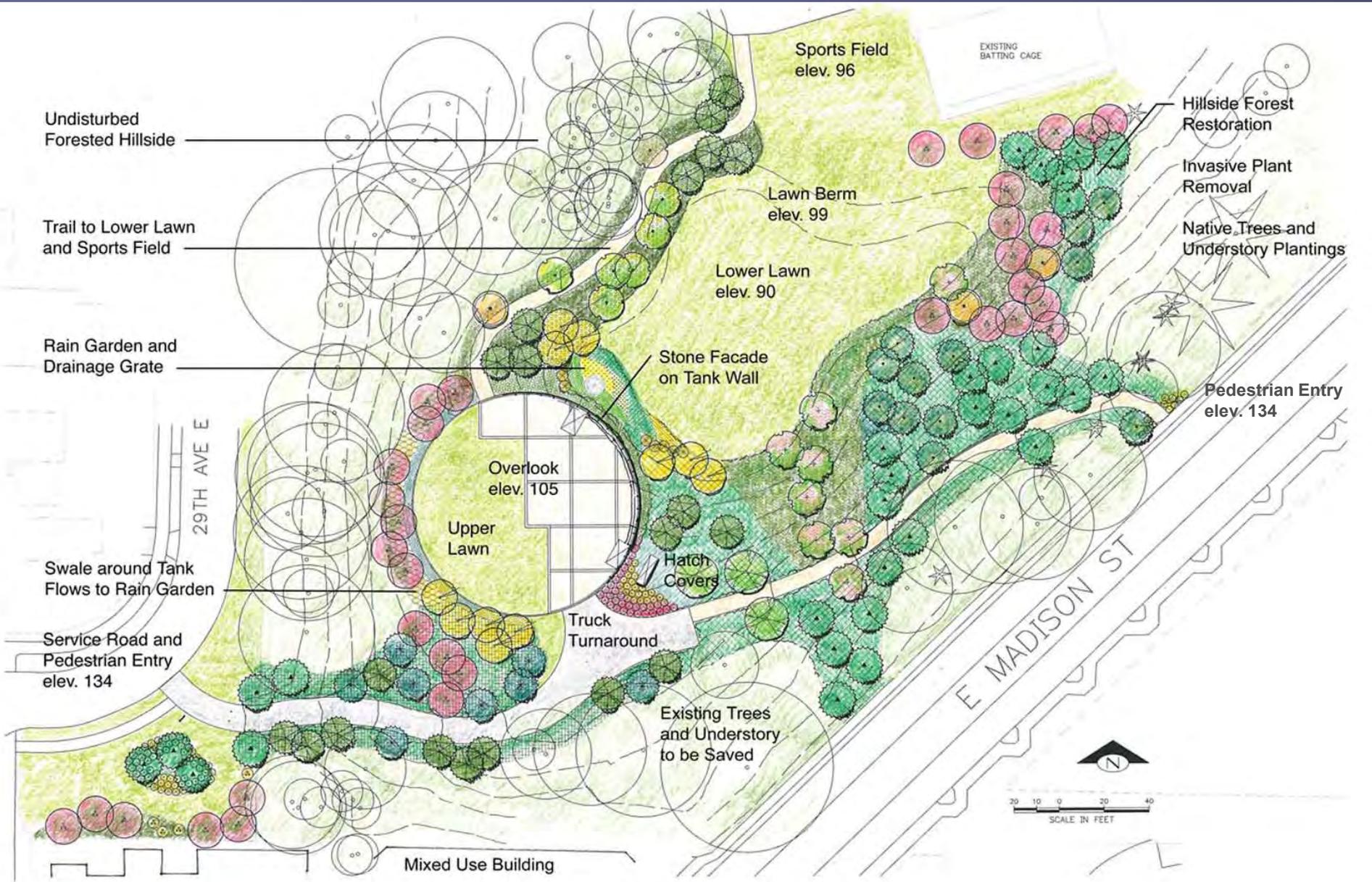
- ✓ Phase 2 Design – Started Jan. 2009
- ✓ Phase 2 Construction – Started June 2010

New Stormwater Pipeline



-  = Shaft location
-  = New stormwater pipeline

Phase 2 Site - Landscape Plan



Phase 2 Site - Landscape Design Details

EXISTING

STORAGE TANK FAÇADE OPTIONS



Stone Work in Washington Park Arboretum



Stone Veneer
Stone Veneer



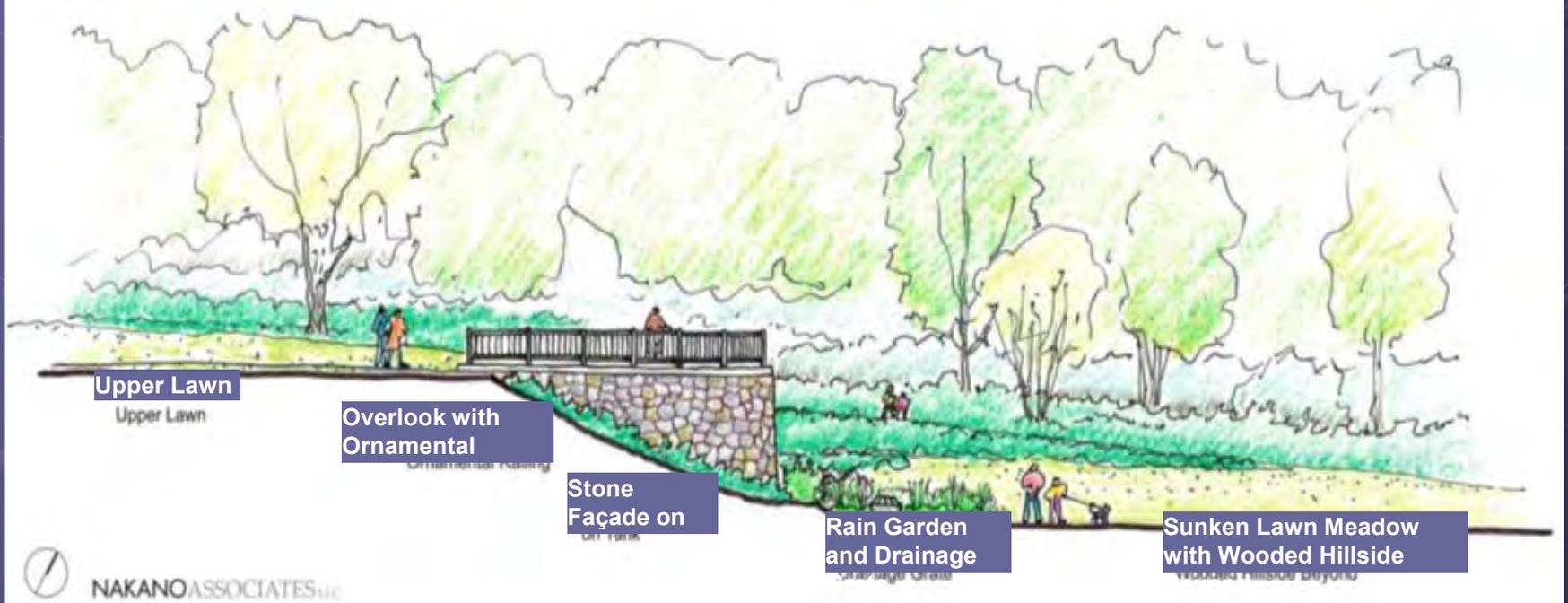
Synthetic
Synthetic Stone



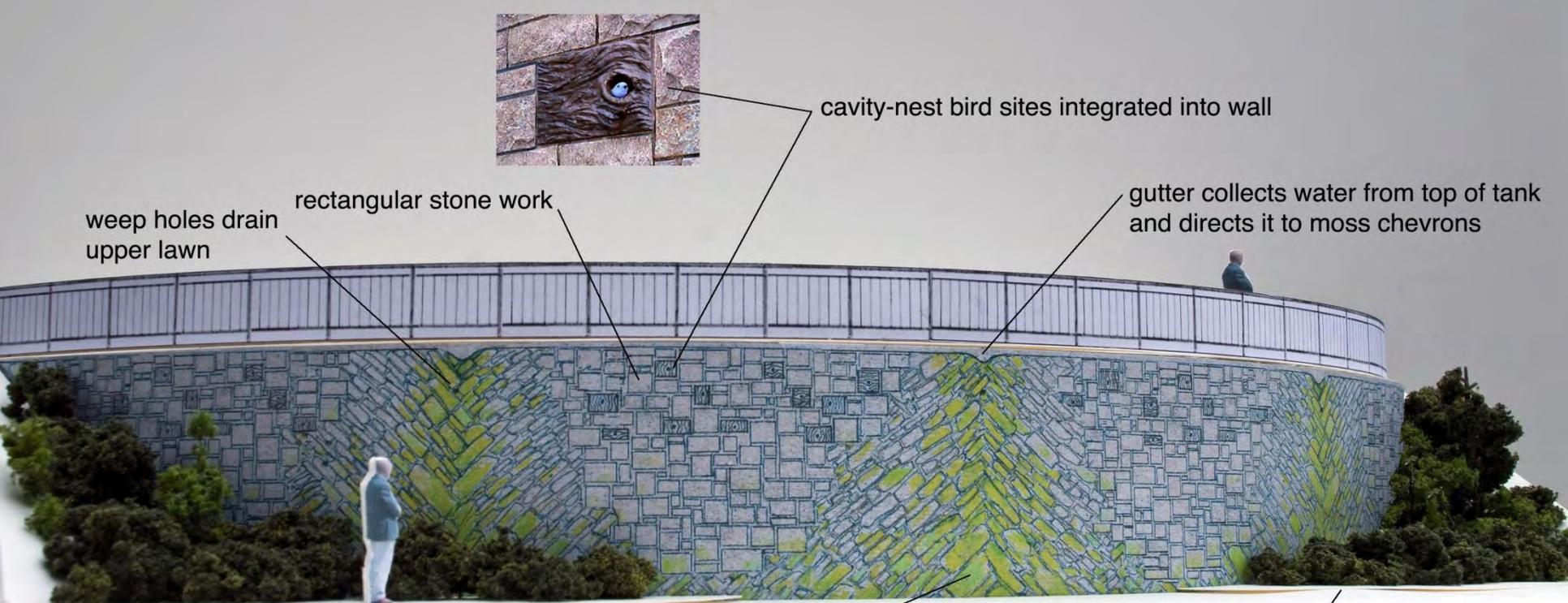
Natural Stone
Natural Stone



Shotcrete
Shotcrete



Phase 2 Stormwater Tank, Art Wall Design



cavity-nest bird sites integrated into wall

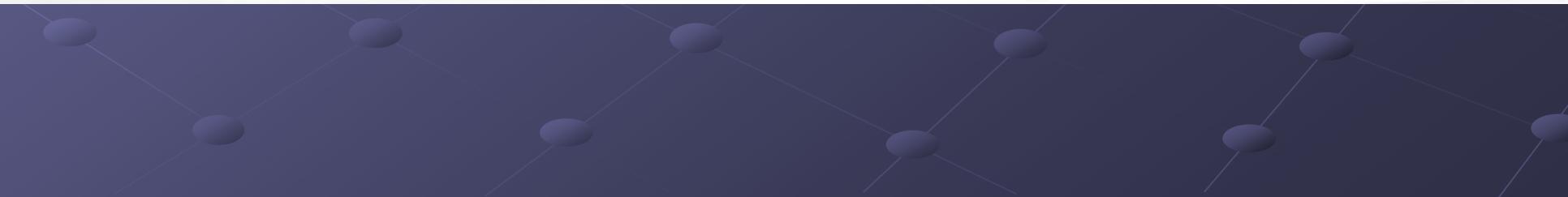
weep holes drain upper lawn

rectangular stone work

gutter collects water from top of tank and directs it to moss chevrons

rough cut angled stone work under gutter spouts

rain garden below moss



Phase 2 - Construction

Open Shield Pipe Jacking Machine



- ✓ October 2010
- ✓ Construction of new stormwater pipeline



- 1.3 MG stormwater tank being built.
- 0.9 MG above-ground stormwater storage in landscaped area to be created near tank.

Construction at Phase 2 Site - April 2011



Phase 2 - Tank Completed in October 2011



Milestones:

- ✓ Design complete – March 2010
- ✓ Construction started – June 2010
- ✓ Operational – November 2011

Final Steps to be completed by end of 2012:

- ✓ Final landscaping in WA Park, some street resurfacing, paving & electrical work

Questions?

Extra Slides

Madison Valley History

1880s: E. Madison St. Railway Trestle Constructed

1900s: Trestle filled in – drainage routed to sewer culvert

1968: Forward Thrust Program begins separating stormwater from sewage

1979: Sewer separation program ended

1850

1900

1950

1975

2000

2012

1980: Stormwater detention pipe constructed @ 30th Ave E

1996: Weir modification & flow gauges installed

Aug 2004: Extreme storm event

SPU initiates Madison Valley Stormwater Project

Interim Facility Almost Complete

Dec 2006: Largest storm event on record

Dec 2009: Phase 1 facility operational

2011: Phase 2 facilities begin operation

❖ June 2008 Mayor and City Council approved Madison Valley Project to:

✓ Greatly reduce potential for stormwater flooding and sewer backups in the vicinity of 30th Ave. E. and E. John St.

✓ And substantially reduce potential for stormwater flooding in the vicinity of 29th and E. Madison St.

❖ **Phase 1 & 2 Budget = \$32 million**

Forward Thrust Program (voters approved in 1968) - City spent \$70 million on construction of sanitary sewers and separation of sanitary and storm sewers.

481 acres were separated out of a total planned 1,000 acres in Madison Valley.

Separated storm drains from two areas in Madison Valley were recombined into combined sewer at 30th Ave. E. and E. John St.

History

1977 studies by City and Metro under federal Clean Water Act – found that sewer separation was not cost effective for solving many remaining combined sewer problems.

Analyses showed increasing system capabilities for storing and transporting combined flows was more cost effective than further sewer separation.

May 1977, City placed moratorium on further expenditure of Forward Thrust Sewer Improvement Funds for sewer separation pending exploration of more cost-effective approaches.

1979 City Council determined sewer separation had become impractical due to:

Costs of remaining projects substantially exceeded remaining bond proceeds

Changes in state and federal water pollution control regulations (NPDES requirements under federal Clean Water Act).

Therefore, sewer separation for remaining portion of Madison Valley basin was discontinued in favor of other means for dealing with combined sewer overflows.

- ✓ Extensive Computer modeling completed for basin.
- ✓ Physical model built for key basin section.



Results:

- ✓ Determined project storage requirements.

Madison St. Cable Car 1929

In the 1880s, a cable railway with trestle was constructed on East Madison Street.

In the early 1900s, the trestle was filled in to create a roadway and embankment.



This blocked the natural watercourse and a combined sewer trunk was built to carry sewage and stormwater to the north side of Ship Canal.