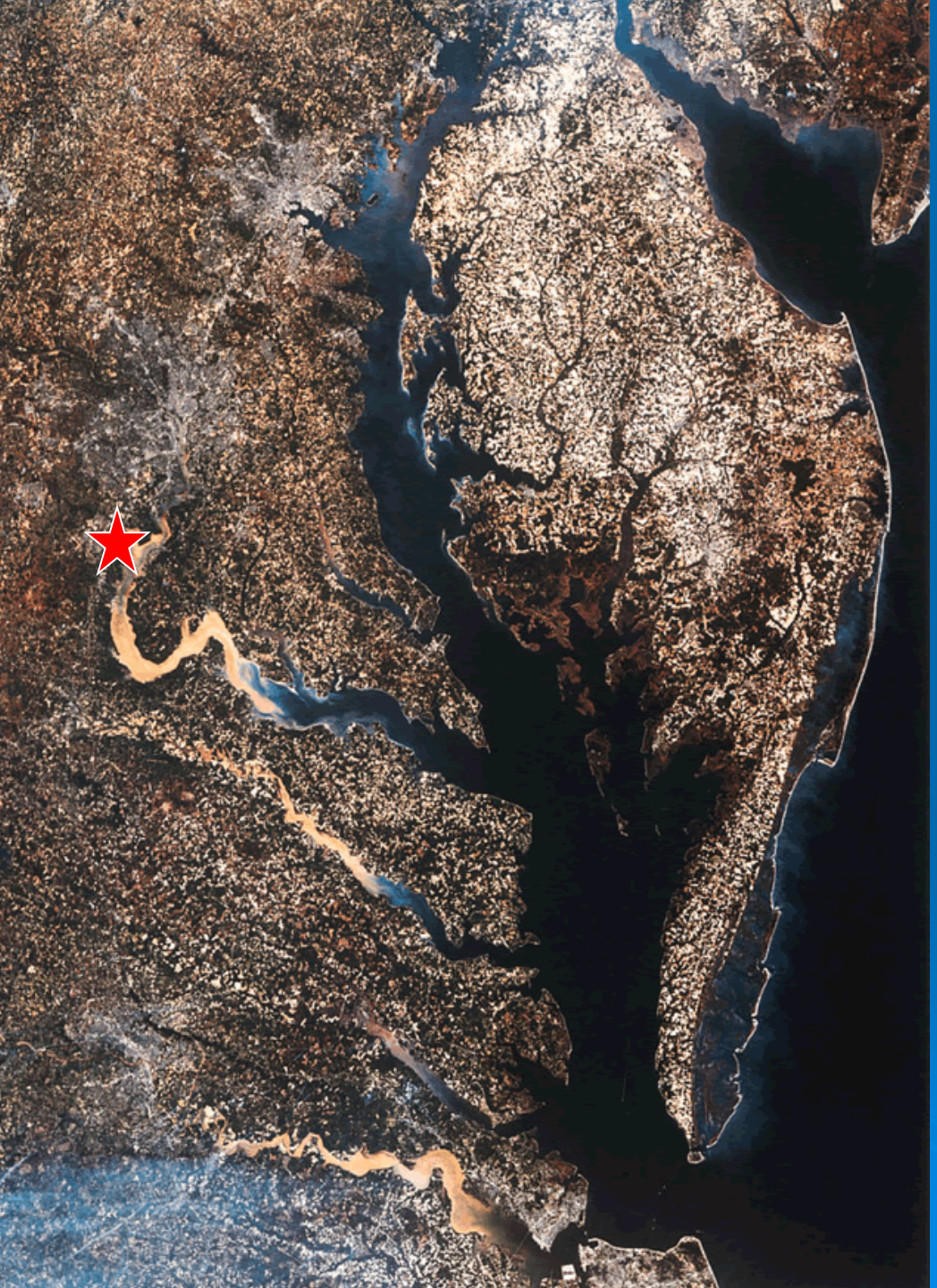
Virginia Phase II WIP Analysis for Arlington, VA

COG WRTC Meeting
November 10, 2011

ARLINGTON
VIRGINIA

Arlington Watershed Facts

- 2010 Census: 207,627 people
- Phase I jurisdiction
- 26 square miles
- 7,972 persons/square mile
- 41% impervious cover
- 334 miles of storm sewers
- 28.5 miles of perennial streams
- Potomac River watershed



Chesapeake Bay TMDL

Virginia Phase II WIP Preliminary Pollutant Reduction Requirements

Nitrogen	4%	(10%)
Phosphorus	10%	(15%)
Sediment	15%	(25%)

Planning-Level Methodology

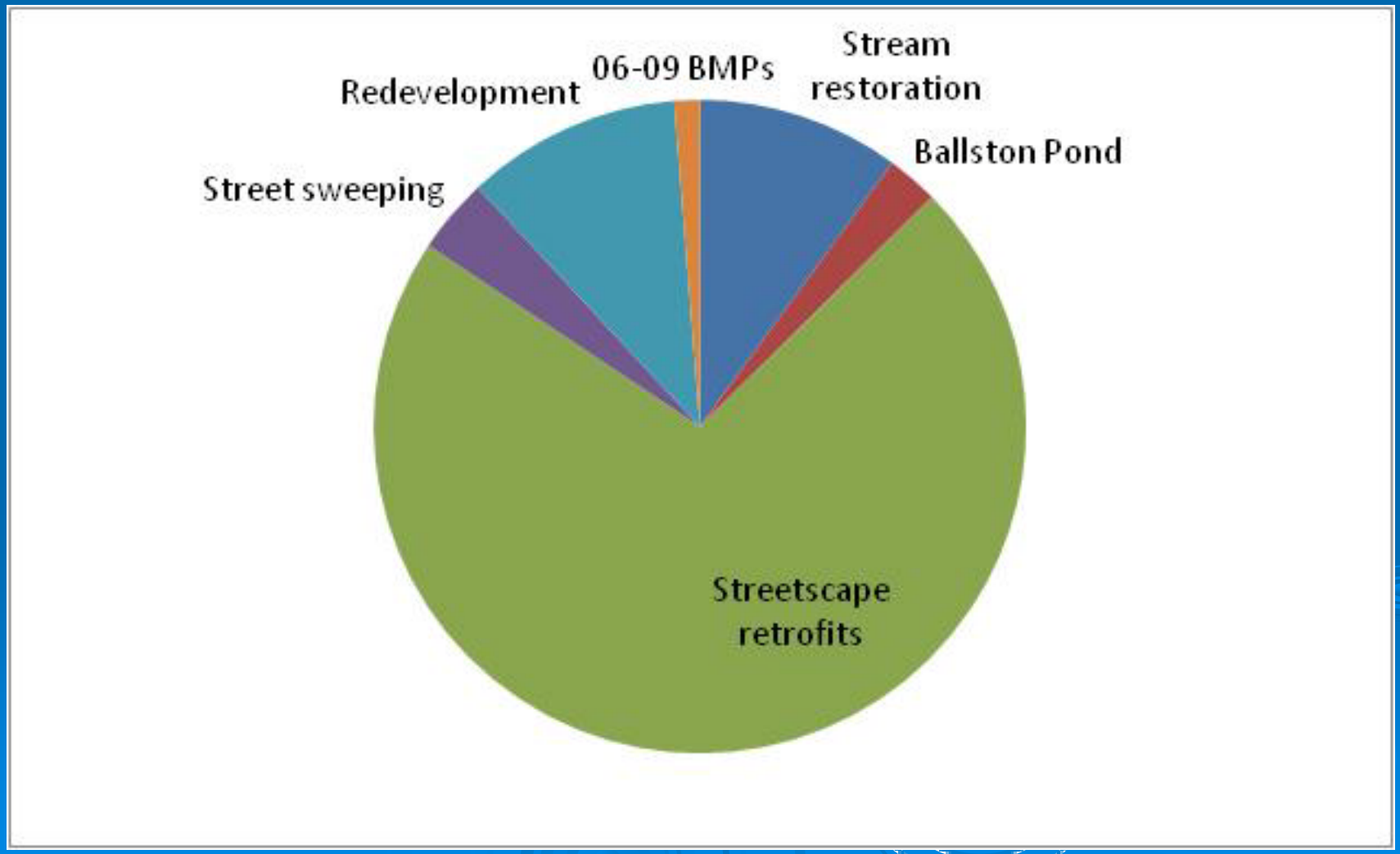
- DCR-generated load reduction ‘targets’
- Accounted for 2009 ‘progress’ BMPs
- Runoff reduction method spreadsheet to estimate loads removed by ‘future’ BMPs and redevelopment
- Redevelopment impervious cover extrapolation to 2025 based upon 2001 through 2009 data
- Bay program BMP efficiencies

Target Load Scenario 1

- Ballston Pond retrofit (400+ acre drainage area)
- Commercial street sweeping expansion to 26x/yr
- 2,000 acres of streetscape retrofits (12% of County land area; 22% of impervious area)
- 10 miles of stream restoration (35% of stream miles)
- 10% net reduction of loads from 410 new impervious acres from redevelopment (2012-2025)
- Existing Bay Program credits for stream restoration

Target Load Scenario 1

Portion of target load reductions by BMP type (TP)



Target Load Scenario 2

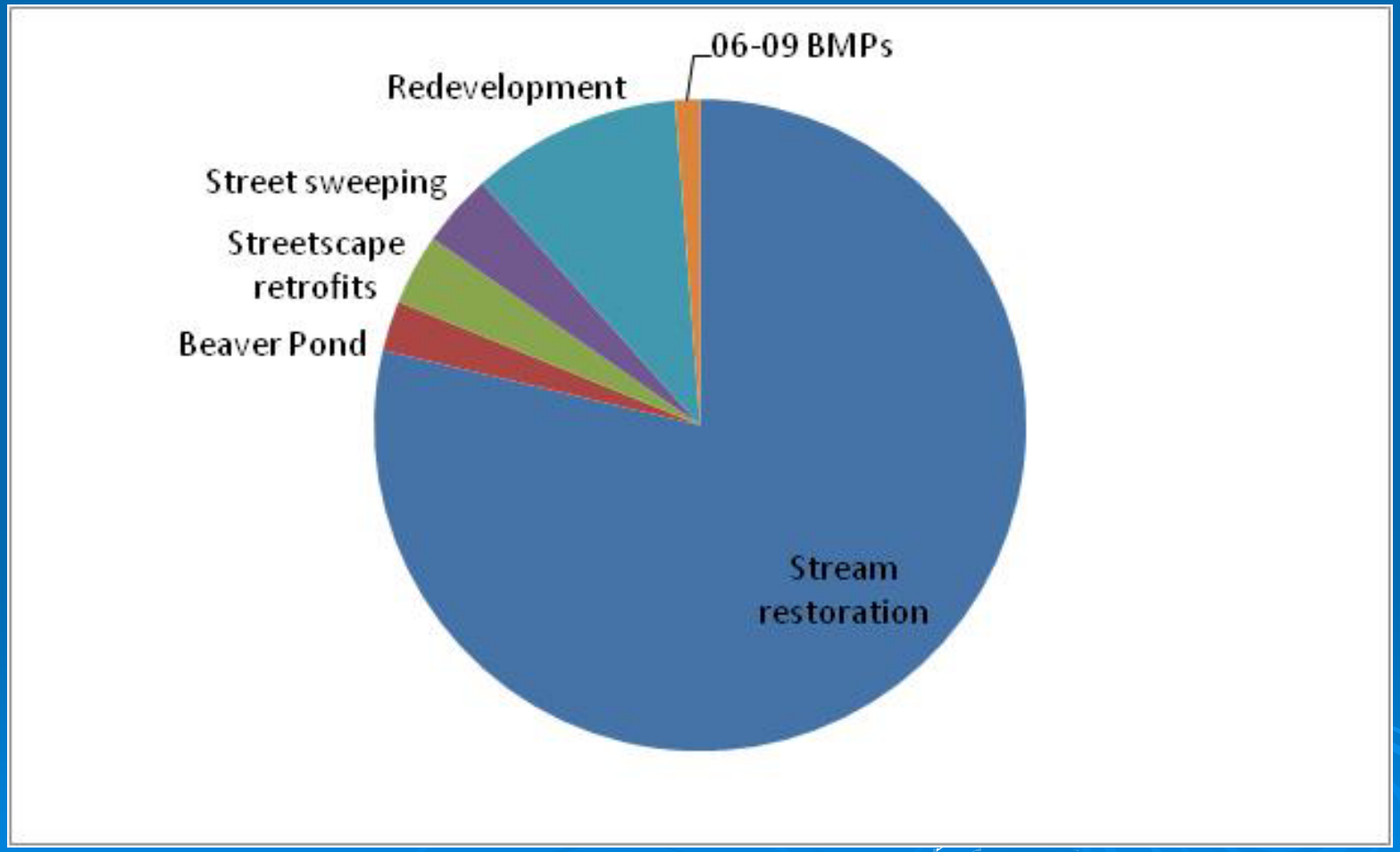
Same as Scenario 1 except:

- 100 acres of streetscape retrofits (0.6% of County land area; 1.4% of impervious area)
- 3.5 miles of stream restoration (12% of stream miles; 540% of required TSS reduction!)
- CSN proposed interim credits for stream restoration

	TN	TP	TSS
Existing credit	0.02	0.0035	2.55
Interim credit	0.2	0.068	310
Lbs/linear foot/year			

Target Load Scenario 2

Portion of target load reductions by BMP type (TP)



Sediment and Nutrients

Patrick Henry Drive bioretention retrofit

Key Points

- Retrofit levels needed under Scenario 1 exceed master plan-identified potential and not feasible by 2025
- Stream restoration credit level very important
  - CSN proposed interim credits make stream restoration the most ‘productive’ urban BMP – by a large margin
  - Predict final credit will be lower
- Throughput limitations for delivering retrofits and stream restoration a strong reality
- Redevelopment reductions will help but only a little

Interim strategy?

- Use surplus N and P credits from Arlington's POTW to achieve compliance
- Buy time (20+years) to implement retrofits and stream restoration projects
- Currently, no mechanism exists for this approach, but under evaluation