



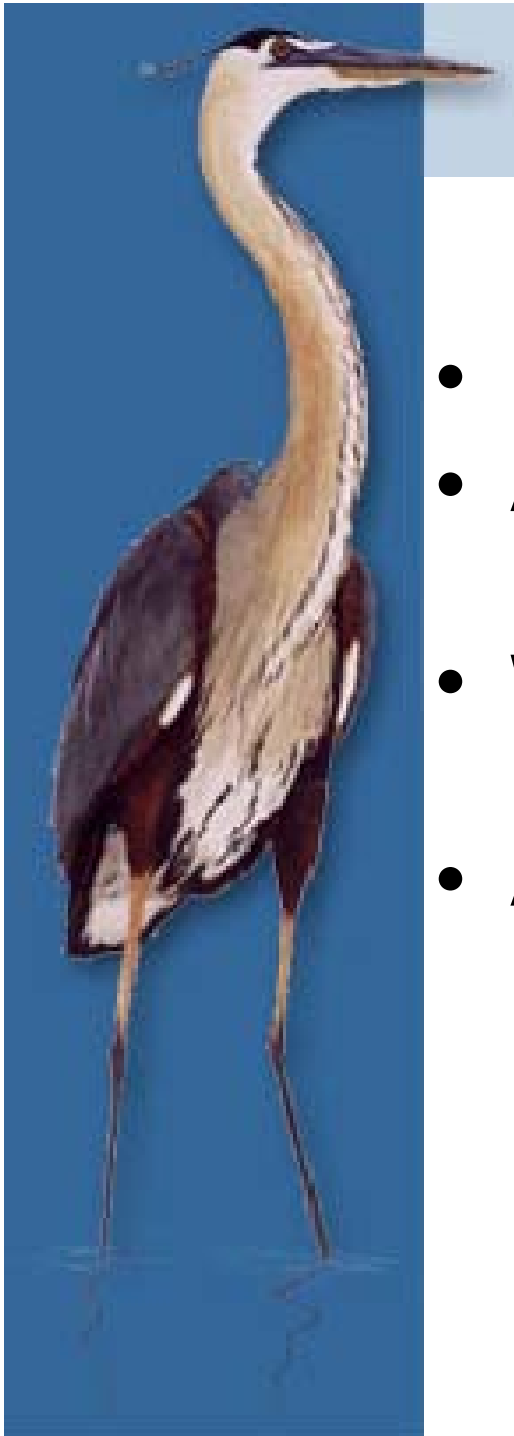
Maryland Bay Restoration Funding Challenges

A presentation to the
Bay Restoration Fund Advisory Committee

January 17, 2013

Introduction

- Maryland's Key WIP Funding Challenges:
 - Stormwater Retrofits of Previously Developed Land
 - Septic Systems
- This presentation explains the genesis of the current WIP, describes the costs and introduces broad approaches to addressing the costs.
- The BRF Advisory Committee is invited to provide guidance now and in the future.

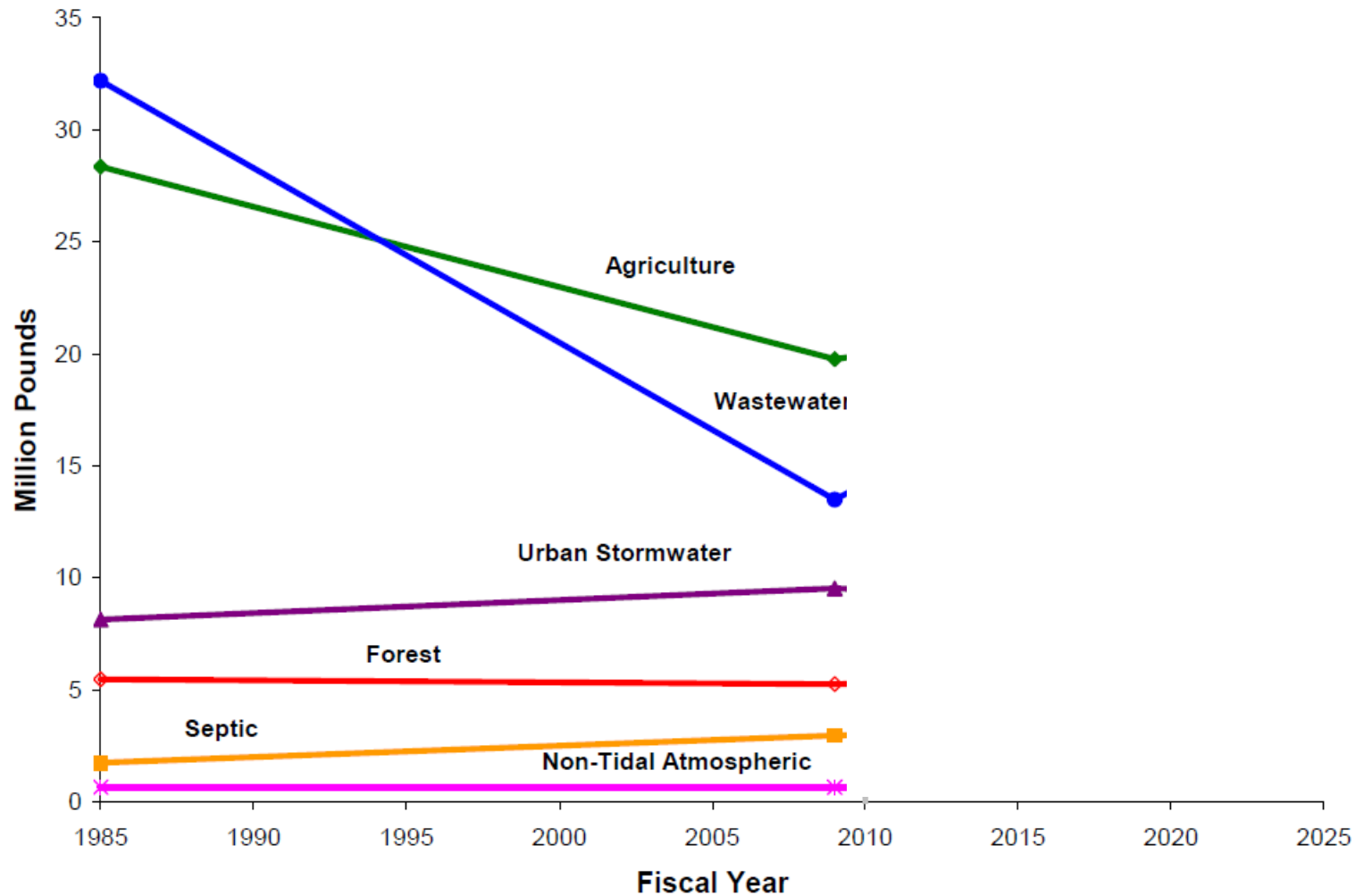


Overview

- Background on Bay TMDL
- Allocations & the Underlying Implementation Strategy
- Watershed Implementation Plan & Initial Cost Estimate
- Addressing the Funding Challenges

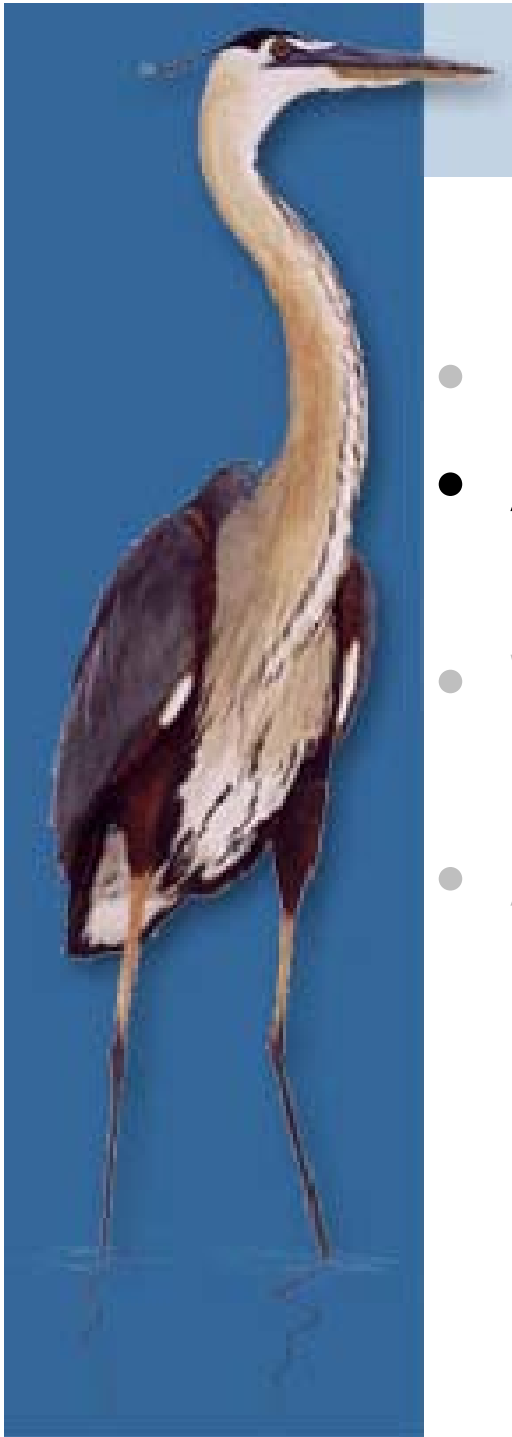
Background

- Bay Restoration Progress in the Past



Background

- The Bay TMDL caps nutrient & sediment loads.
- EPA allocated allowable loads to states.
- States allocated loads among sources, i.e., identifies the responsibility to reduce loads by sector:
 - Agriculture
 - Wastewater (municipal, industrial)
 - Urban Stormwater (from past development w/o controls)
 - Septic Systems



- Background on Bay TMDL
- **Allocations & the Underlying Implementation Strategy**
- Watershed Implementation Plan & Initial Cost Estimate
- Addressing the Funding Challenges

Pollutant Loading Allocations

Option A: Least-Cost Strategy

Option B: Equitable Allocations

Maryland's Approach: A Hybrid of the Options

- Point Sources:
 - 2004 Nutrient Cap Strategy
- NPS Allocations:
 - “Equal % Reduction of Reducible Load,” e.g.,
 - Forest “reducible load” is about zero.
 - Septic “reducible load” is about 50% (all systems on BAT)
 - Properties of the Allocation Method:
 - Polluter Pays Principle =>Equity
 - Gives Credit for Past Reductions
 - Does Not Reflect a Least-Cost Reduction Strategy

Underlying Implementation Strategy

“... the underlying strategy assigns equitable responsibility for reductions, which is not the least cost approach; however, sectors facing higher costs may pay for reductions from other sectors that have lower costs.”

Maryland Phase II WIP, Section 1.10.2 p. 54

Allocation of Reduction Responsibility

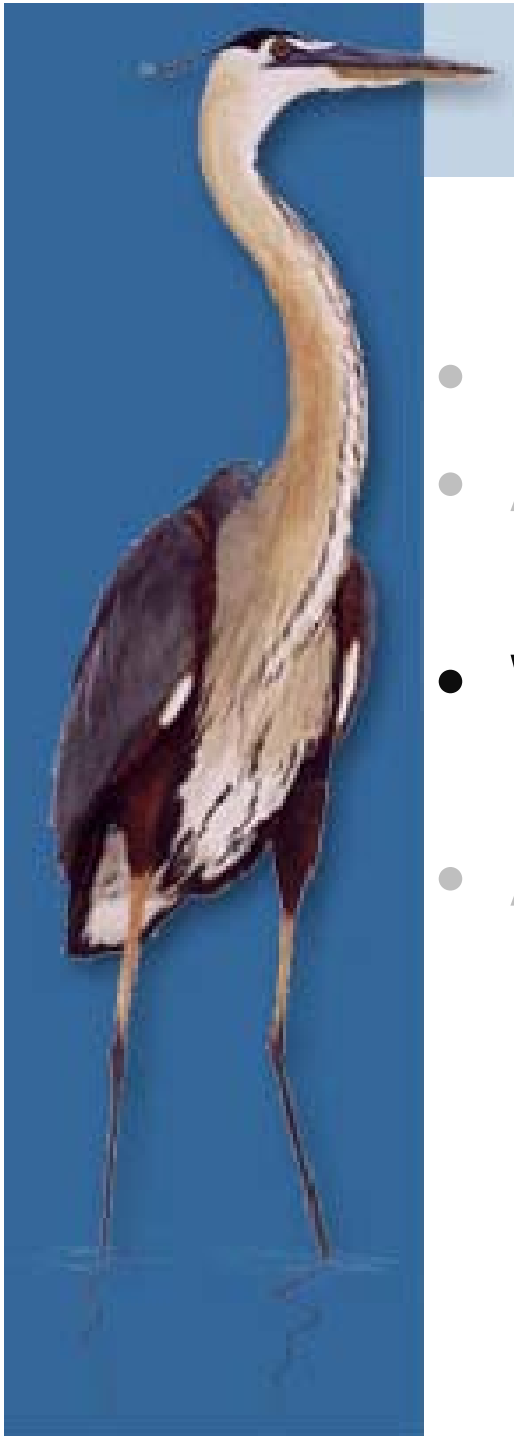
Meeting the Final Target from the 2010 Loading Levels

Nitrogen – Millions of Pounds

Source Sector	2010 Load	2025 Load	Load Reduction
Agriculture	19.95	15.22	4.73
Wastewater Plants	14.37	8.92*	5.45
Septic Systems	3.00	1.85	1.15
Urban Retrofits	9.48	7.55	1.93

Source: Computed from Table 2, Maryland Phase II WIP.

* Full reduction at 2017 after which loads increase toward a cap of 10.58 million lbs, See Table 3 of Maryland Phase II WIP.



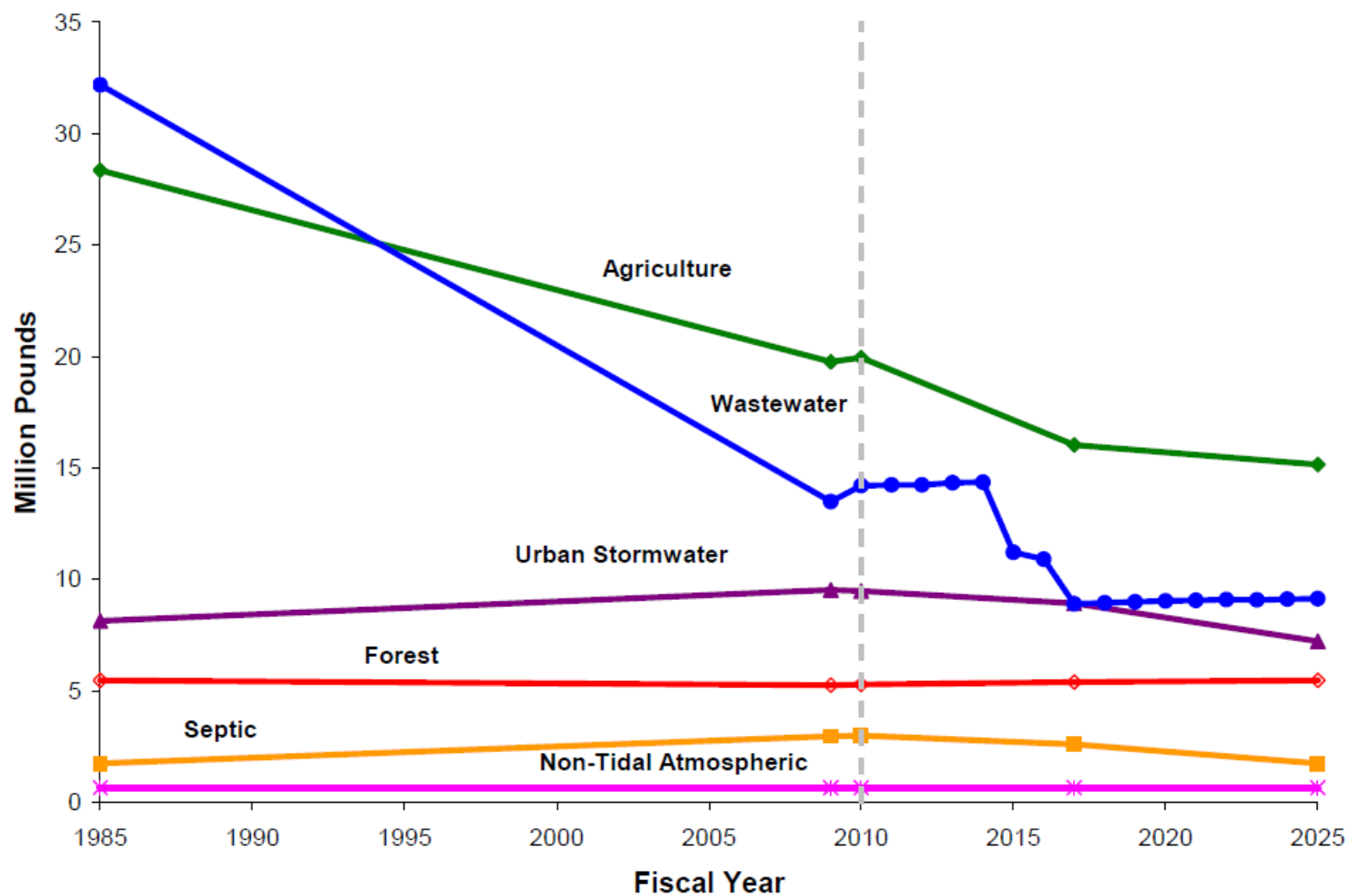
- Background on Bay TMDL
- Allocations & the Underlying Implementation Strategy
- **Watershed Implementation Plan & Initial Cost Estimate**
- Addressing the Funding Challenges

Watershed Implementation Plan

- Point Sources:
 - ENR Upgrade of Major Municipal + 5 Large Minors
 - Upgrade Major Industrial Discharges
 - 33% TN Reduction from Minor Industrial Discharges
- Agriculture:
 - Numerous Actions: Cover crops, Enhanced NMPs ...
- Urban Stormwater Retrofits:
 - Treat 20% of Impervious Cover + Other SW Controls
- Septic Systems:
 - Upgrade 181,000 systems
 - Connect 42,000 systems

Watershed Implementation Plan

- Load Reductions by Sector



WIP Costs per Pound Reduced

Costs to Meet the Final Target from the 2010 Loading Levels

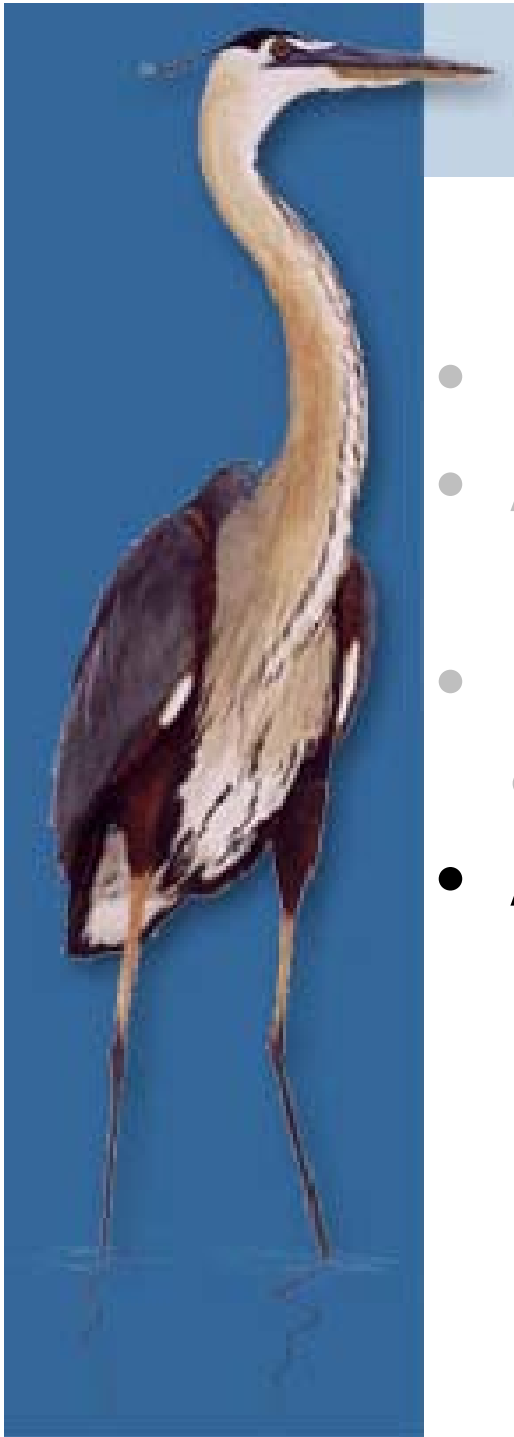
Source Sector	Cost (millions)	Nitrogen Reduced (pounds/yr)	Average Cost/lb Reduced
Agriculture	\$928	4,730,000	\$200
Wastewater Plants	\$2,368	5,450,000	\$400
Septic Systems	\$3,719	1,150,000	\$3,200
Urban Retrofits	\$7,388	1,930,000	\$3,800
TOTAL	\$14,353	13,260,000	\$900

Source: Computed from Table 2, Maryland Phase II WIP.

Note: WIP strategy reductions are slightly different than Final Targets

Observations and Caveats on Costs of the WIP

- Costs:
 - The costs are very simplified
 - Private sector costs not consistently included
 - No consideration of financing costs
 - Provides a rough comparison between sectors
- 77% of load reduction from Ag and point sources
- Average total cost not too unreasonable
- Funding challenges for septic and stormwater



- Background on Bay TMDL
- Allocations & the Underlying Implementation Strategy
- Initial Watershed Implementation Plan & Initial Cost Estimate
- **Addressing the Funding Challenges**

Addressing WIP Funding Challenges

Funding Strategies In General:

1.  Cost –  Revenue = Funding  Gap

2. Time Considerations

Addressing WIP Funding Challenges

Septic Systems: (Hypothetical)

1. Unknown Future Changes:
 - 2004 Trib Strategy: Upgrade 100% of Septics
 - 2012 WIP: Upgrade 41% of Septics
2. Potential Increase in BAT Efficiency
 - 50% Efficiency => 41% of Septics Upgraded
 - 70% Efficiency => 29% of Septics Upgraded
3. Increased BRF funding in 2018
4. Pool funds to pay for lower-cost reductions

Addressing WIP Funding Challenges

Urban Retrofits: (Hypothetical)

1. Unknown Future Changes
2. Chesapeake & Coastal Trust Fund, SRF, etc.
3. Revenue Bonds on new SW fees
4. Increased BRF funding in 2018
5. Borrow unused WWTP allocation in 2025
6. Pool funds to pay for lower-cost reductions (minimum traditional sw controls required)
7. New federal grant funding

Addressing WIP Funding Challenges

Future Steps:

1. Refine cost estimates (EPA)
2. Estimate Revenues from existing funding sources including financing potential
3. Assess funding gaps
4. Conduct quantitative analyses various funding options (cost, revenue, timing)
5. Continue federal funding dialogue

End

