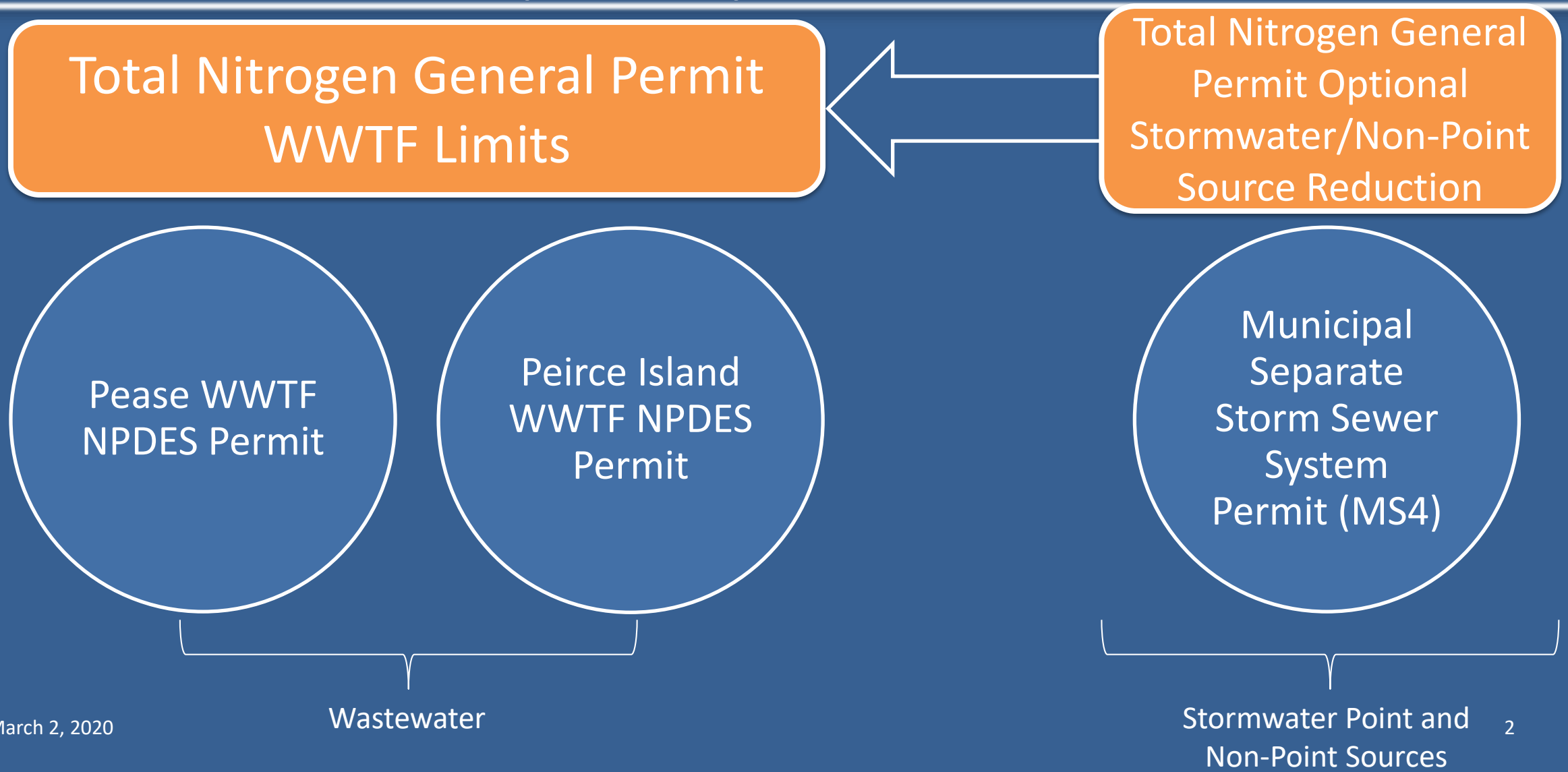
DRAFT Great Bay Total Nitrogen General Permit

- Importance
- Structure
- Compliance
- Costs
- Opportunities
- Risks
- Next Steps

National Pollutant Discharge Elimination System (NPDES) Permits

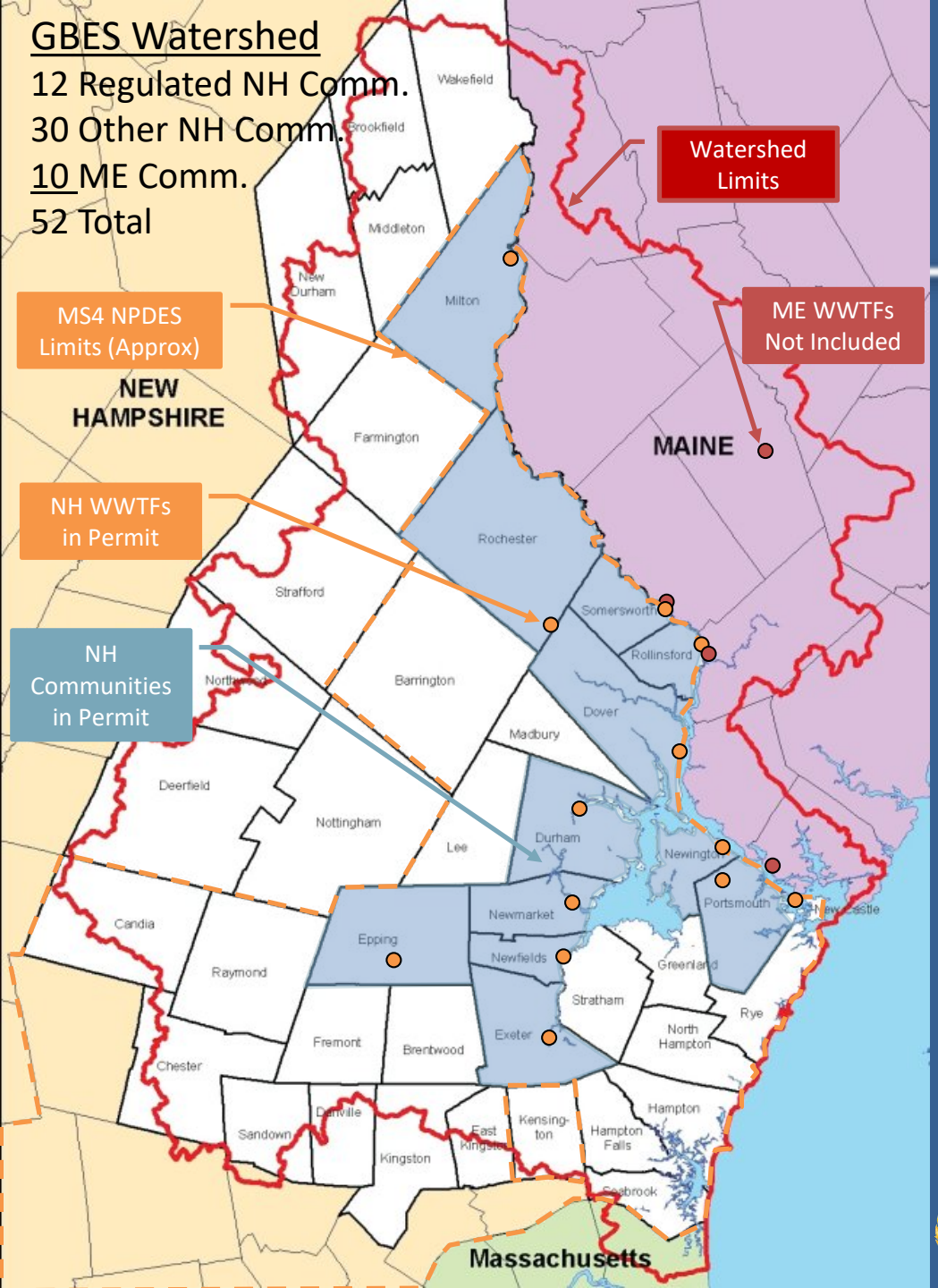


Importance

- New Regulatory Framework With Potential Advantages
- Areas Of Concern
  - Growth Limiting Aspects
  - Potential Impacts on Private Property
  - Costs for Compliance Are Unknown But Significant
- Action Tonight
  - Peer Review Request to Evaluate Basis Of Permit

Structure

- Estuary Wide Load Target
  - Annual Load From All Sources
- Wastewater Effluent Limits
  - Annual Load Instead of Growing Season Concentration
- Water Quality Monitoring Program
- Optional Stormwater and Non-Point Source (NPS) Nitrogen Reduction Pathway
  - 20+ Year Implementation

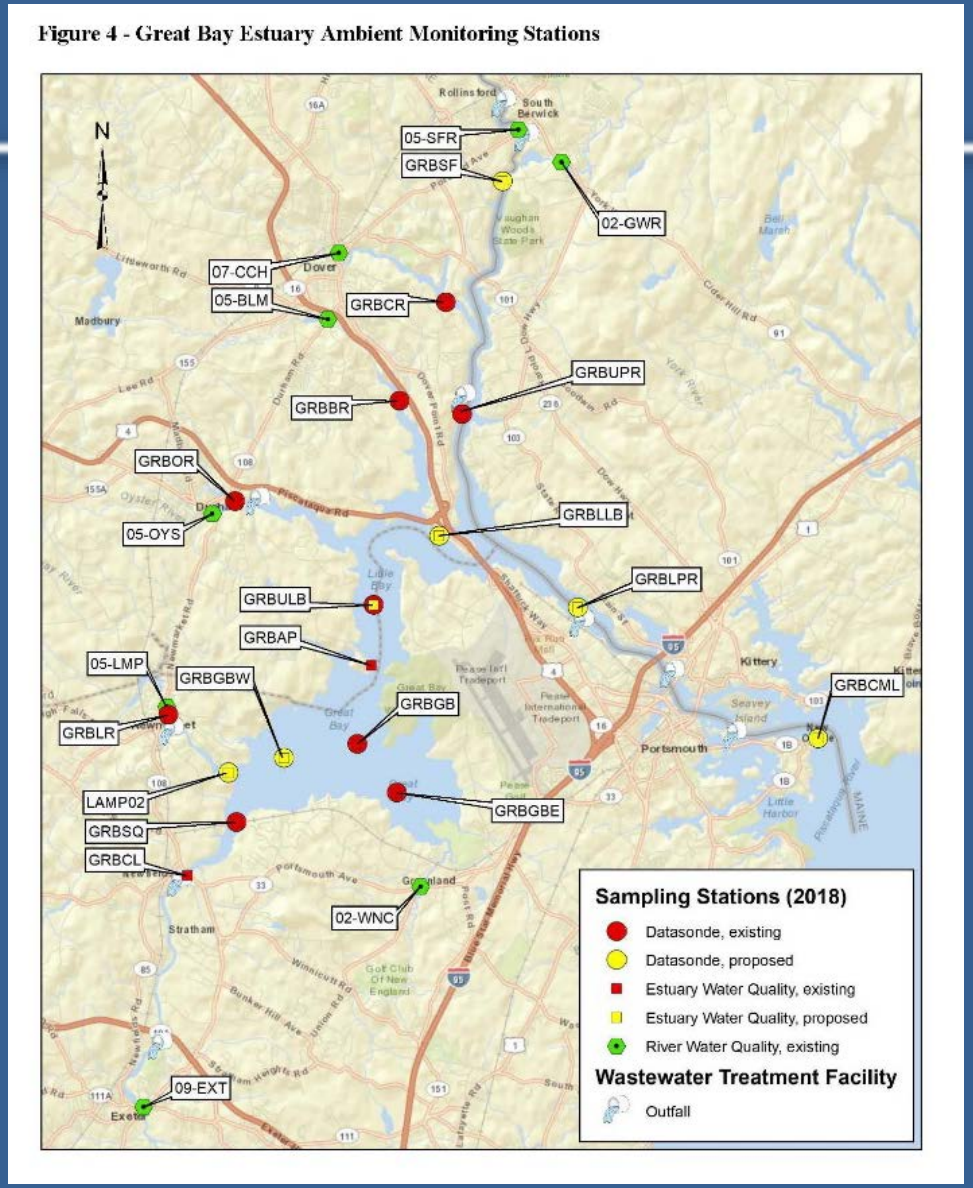


Structure

- Total Annual Nitrogen Load Target
  - 100 Kilograms/Hectare-Year
- From All Sources Of TN:
  - Wastewater Treatment Facilities
    - End Of Pipe
  - Stormwater/NPS
    - Septic System (Human Waste)
    - Fertilizers
    - Atmospheric Deposition
    - Animal Waste

Structure

- Annual Water Quality Testing Paid By Communities
  - City Responsible For ~30% Of Costs
  - No Ability To Adjust Scope And No End
- Robust Program
  - Head Of Tide (River Inputs)
  - Continuous Data Sondes Estuary Wide
  - Benthic Organisms And Sediment Surveys
  - Eelgrass Mapping
  - Program Management And Reporting
- Costs Estimated >$1M Annually
  - Portsmouth $300k To $500k annually



Compliance

- Short Term (0 to ~ 10 Years)
  - Reduce Nitrogen Loads At Peirce Island WWTF
    - Cannot Achieve Stormwater/NPS Reduction Target Using BMPs
  - Need To Closely Track Land Use Change(s) To Keep Stormwater/NPS Nitrogen Discharge In Check
  - Upgrade Pease WWTF For Maximum Nitrogen Removal
- Long Term (~10+ Years)
  - Continue To Optimize Nitrogen Removal At WWTFs
  - Likely Need to Address Stormwater/NPS Nitrogen Discharge
    - Structural And Non-Structural Stormwater/NPS Nitrogen Controls
    - Land Use Restrictions And/or Private Property Improvements

Costs

- WWTF Capital and Operations
  - Peirce Island WWTF Nitrogen Removal
  - Pease WWTF Upgrade for Nitrogen Removal
  - Effluent Water Quality Sampling for Nitrogen
- Land Use Tracking for Stormwater/NPS TN

Planned Controlled Costs

- Water Quality Monitoring
  - Current Costs Unknown and No End
  - Costs +/- Depending on Number of Communities
- Stormwater/NPS Nitrogen Reduction Projects

Unknown Uncontrolled Costs

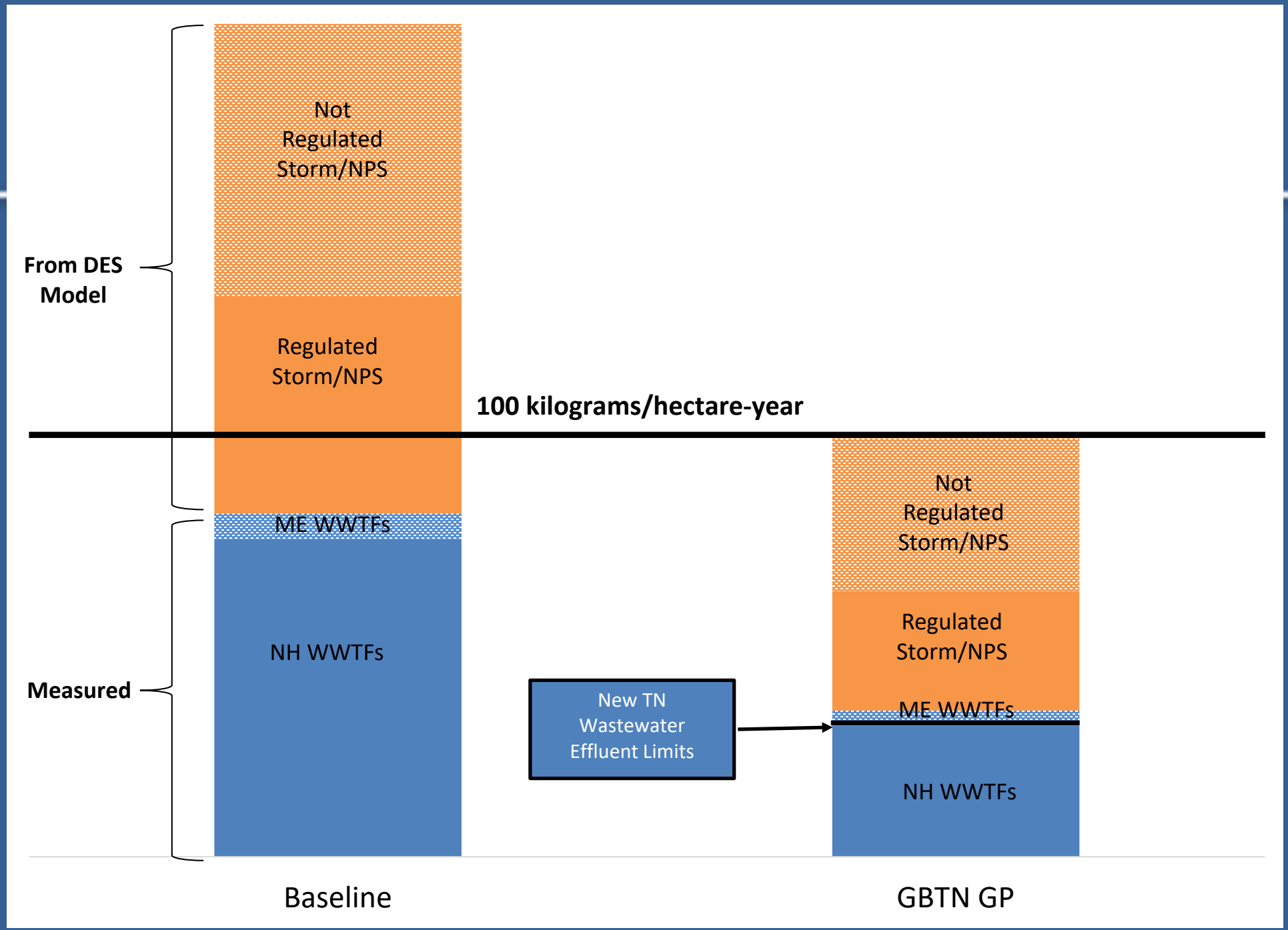
Opportunities

- Flexibility To Manage Nitrogen Removal At Both WWTFs (“bubble”)
- Ability To Offset Stormwater/NPS Nitrogen Reduction Target Using WWTFs
- Provides Structure for Credits For Non-WWTF Projects That Reduce Nitrogen
  - Requires Clarity In Permit

Risks

- Significant Costs for Long Term Water Quality Monitoring Plan
- Accepting Permit Structure and Scientific Basis “Locks In” Nitrogen Impairment
  - Will Result In Further Stormwater MS4 NPDES Permit Requirements
- Technology May Not Be Adequate to Keep Stormwater/NPS Nitrogen Discharges In Check
  - Likely Result In Limits On Growth And Private Property Nitrogen Controls
  - Growth Shift From Communities With WWTFs To Communities Without
- Future Reductions In TN Limits Likely
  - Reopener Clauses
  - Other Communities Are Not Included

Risks


From DES Model
Measured
Not Regulated Storm/NPS
Regulated Storm/NPS
ME WWTFs
NH WWTFs
100 kilograms/hectare-year
New TN Wastewater Effluent Limits
Not Regulated Storm/NPS
Regulated Storm/NPS
ME WWTFs
NH WWTFs
Baseline
GBTN GP

Next Steps

- Decision On Peer Review Support
  - Concern That 100 kg/ha-yr Threshold Not Applicable
  - 9 Out of 12 Communities To Date Have Requested
- Develop and Submit Comments on DRAFT Permit April 8, 2020

Questions and Answers