

Implementation Plan Outline Subobjective 4.3.5 – Gulf Hypoxia

Goal 4: Healthy Communities, and Ecosystems. Protect, sustain or restore the health of people, communities, and ecosystems using integrated and comprehensive approaches and partnerships.	Objective 3: Ecosystems. Protect, sustain, and restore the health of natural habitats and ecosystems.	Subobjective 4.3.5: Score for overall aquatic system health of coastal waters of the Gulf of Mexico on the “good/fair/poor” scale of the National Coastal Condition Report. (5 point scale)
Strategic Target IV-O: Size of the hypoxic zone in the Gulf of Mexico, as measured by the five year running average of the size of the zone.		

1. **PAMS**

2002 Baseline(s)	(1) 1996-2000 running average size = 14,128 km ² (2) 1996-2000 annual average concentration of nitrogen = 1,568 Thousand Metric Tons
2008 Target	5,000 km²
2005 Target	14,128 km² (Note: 14,128 km² is the baseline running average of the hypoxic zone as measured between 1996-2000.

Supporting Implementation Tasks	-FY04-	-FY05-
	<p>(1) Confirm/reaffirm the Federal (EPA, USDA, ACOE, NOAA, and DOI) partnership commitment to the collaborative implementation of the National Task Force’s Hypoxia Action Plan to pursue the 30% annual nitrogen loadings reduction target.</p> <p>Supporting Reference: “Ensure coordination among Federal Agencies in reducing the oxygen-starved zone by implementing strategic partnership planning with USDA, Army Corps of Engineers, NOAA and DOI.” (December 2004).</p>	<p>(1) Initiate support for prioritization of the “100 Highest Opportunity Watersheds” in States Performance Partnership Agreements (PPAs) beginning in FY07.</p> <p>Supporting Reference: “Help communicate to States that we are looking for a 30% reduction in nitrogen discharges to the Gulf.” -</p>
	<p>(2) Assess the anticipated nitrogen reduction contribution that will be accrued toward the 30% reduction target from the implementation of EPA’s Water programs authorities throughout the watershed framework of the MS River Basin through 2010.</p> <p>Supporting Reference: “Determine the impact of EPA’s base water quality programs on nutrient reductions from the Mississippi River to the Gulf of Mexico and integrate Gulf oxygen-starved zone reduction goals into these base water quality programs.” (December 2004) --</p>	<p>(2) Formulate the multi-year (FY2007-2010) budget strategies necessary to support State-based implementation of nutrient-focused reduction measures in the “100 Highest Opportunity Watersheds.”</p>
	<p>(3) Develop and implement collaborative state-based methodologies to identify the highest yielding watersheds (i.e.: 8 digit HUCs) in terms of average annual nitrogen loadings to the Mississippi River Basin and the Gulf of Mexico to determine EPA’s “100 Highest</p>	<p>(3) Design and implement the supporting collaborative monitoring and assessment framework necessary to measure and calibrate the performance of nitrogen reduction strategies undertaken in the “100 Highest Opportunity Watersheds.”</p>

<p>Opportunity Watersheds” focus relative to addressing Gulf Hypoxia.</p>	
<p>(4) Establish supporting regional strategies and plans to attain the balance (re: EPA’s target partnership apportionment less anticipated reductions achieved from base WQ programs) of nitrogen reductions from the “100 Highest Opportunity Watersheds.”</p>	<p>(4) Assess, in partnership with USGS, trends in sub-basin-and aggregate average annual concentration of nitrogen discharges to the Gulf (2001-2005).</p>
<p>(5) “Develop and implement partnerships to more effectively coordinate the annual monitoring and assessment cruises used to evaluate and assess the size and impact of the Gulf of Mexico hypoxic zone, in particular in partnership with EPA , NOAA, and Louisiana Universities Marine Consortium. -</p> <p>Supporting Reference: ORD’s 6 Yr. Modeling and Monitoring Framework to Address Gulf of Mexico Hypoxia) –</p> <p>Essential FY04 Activities:</p> <ul style="list-style-type: none"> - Field Sampling - Lab Analyses - Model Development – Gross Isle 	<p>(5) Continue Support in FY05 (Yr. 4 of ORD’s 6 Yr. Modeling and Monitoring Framework to Address Gulf of Mexico Hypoxia).</p> <p>Supporting Reference: ORD’s 6 Yr. Modeling and Monitoring Framework to Address Gulf of Mexico Hypoxia) –</p> <p>Essential FY05 Activities:</p> <ul style="list-style-type: none"> - Model Development – Gross Isle
<p>(6) Establish and implement a targeted awards program (“Friends of the Gulf” to bring significant positive exposure to those corporations, institutions and/or individuals within the Mississippi River Basin that have undertaken effective voluntary measures to reduce nutrient inputs to the Mississippi River system and ultimately to the Gulf of Mexico.</p> <p>Supporting Reference: Encourage voluntary nutrient input reductions to the Mississippi River system by establishing a recognition program (June 2004).</p>	<p>(6) Continue and expand implementation of the “Friends of the Gulf” awards recognition program.</p>
<p>(7) Target 25% of FY04 Watershed Initiative Grants to address Gulf Hypoxia. –</p>	<p>(7) Establish Performance Measurement Framework (e.g., Nutrient/Nitrogen Baseline) for the targeted 25% Watershed Initiative Grants.</p>
<p>(8) Solicit expanded point source innovations to reduce nutrient discharges to the MS River by conducting direct solicitation for voluntary “BASF-like” industry-led reductions .</p>	<p>(8) Evaluate response to FY04 solicitation for expanded point source innovations to reduce nutrient discharges to the MS River and conduct second round solicitation – (Yr 2) .</p>
<p>(9) Solicit non-point source innovations to reduce nutrient discharges to the MS River through closer partnership with Agricultural Producer Leadership (re: Industry-Led Solutions (ILS) Partnership). –</p>	<p>(9) Evaluate performance of the ILS non-point source innovation partnerships and develop supporting outreach strategies to “scale-up” adoption and implementation of the most effective models.</p>
<p>(10) Assess, in partnership with USGS, trends in sub-basin-and aggregate average annual concentration of nitrogen discharges to the Gulf (2001-2004).</p>	<p>(10) Continue annual sub-basin loadings trends assessment and reporting (2001-2005).</p>

(11) Develop and submit to the Task Force’s Monitoring and Modeling Committee EPA’s recommendations for refining and/or focusing the first 5 Year Science Reassessment scheduled for FY05.	(11) Design, develop and implement EPA’s partnership component of the 5-year science re-assessment of nutrient load reductions achieved and the response of the hypoxic zone, water quality throughout the Basin, and economic and social effects of Gulf of Mexico hypoxia.
(12) Explore, and where possible, secure collaborative (e.g., EPA / USDA) support for implementation of priority showcase watershed projects identified by the Lower MS River Sub-basin Team of the National Hypoxia Task Force.	(12) Continue collaborative (e.g., EPA / USDA) support for implementation of priority showcase watershed projects identified by the Lower MS River Sub-basin Team of the National Hypoxia Task Force.
(13) Provide strategic support to Gulf Coastal States in their efforts to develop nutrient standards for estuaries and near coastal waters (re: Northern Gulf Nutrient Pilot Study) .	(13) Complete the Northern Gulf Nutrient Pilot Study.
(14) Facilitate the National Task Force Coordination Committee’s assessment of Sub-basin Team implementation barriers and development of supporting structure and process recommendations.	(14) Facilitate the National Task Force’s review and adoption of appropriate implementation and/or modification of the Hypoxia Action Plan’s Sub-basin Team architecture (re: follow-up to Coordination Committee’s assessment of sub-basin team implementation barriers and development of supporting recommendations.)

1. How are activities linked directly or indirectly to Strategic target / subobjective

The FY04/05 activities listed in Section 1 directly support the implementation of subobjective 4.3.5.

2. Data issues/improvements

Completing Activity #2 for FY04:

“Assess the anticipated nitrogen reduction contribution that will be accrued toward the 30% reduction target from the implementation of EPA’s Water programs authorities throughout the watershed framework of the MS River Basin through 2010.”

will involve conducting a level of program performance assessment not currently supported by EPA’s monitoring and data systems. Consequently, OW and the Gulf of Mexico Program will jointly secure contract support to work with the regions to establish an initial (coarse scale) estimate of the impact of EPA’s base water quality programs on nutrient reductions from the Mississippi River to the Gulf of Mexico (December 2004).

3. Intersection with other EPA programs

General: Each EPA/State annual program meeting will include a session discussing Gulf Hypoxia status, progress and individual program interaction. Assist in identifying and quantifying

past and current nutrient reductions from EPA programs. Identify highest opportunity watersheds for nitrogen reduction activities.

TMDLs: It is anticipated that the process of identifying the “100 Highest Opportunity Watersheds” identified focus for addressing this subobjective will correlate strongly to the “nutrient-related” (N, P, DO, sediments) Mississippi River Basin TMDLs completed or in the process of being completed by FY06. Therefore, support for the development of TMDL implementation plans and support for the implementation of these plans in highest nutrient yield subwatersheds that eventually drain to the Gulf is essential to the accomplishment of this subobjective.

Monitoring: The ability to measure EPA’s apportioned progress toward the goals of Subobjective 4.3.5 will be dependent on the Agency’s ability to effectively forecast and measure the nitrogen reductions it anticipates from the wide range of direct (point source innovations) and indirect (e.g., strategic wetlands) programs it administers in cooperation with the MS River Basin States. Therefore, EPA will need to better integrate Mississippi mainstem and subwatershed level nutrient monitoring into each state's Monitoring Strategy. Additionally, EPA will need to effectively participate in (and solicit state participation in) the Mississippi drainage monitoring workgroup led by USGS and NOAA.

Nonpoint source: To address this subobjective, a portion of 319 funds will need to be targeted toward achieving nitrogen reductions in the highest nutrient load subwatersheds that eventually drain to the Gulf. Targeting of these incentive-based tools are anticipated to be included in the Regions supporting watershed plans.

Wetlands: The Integrated Assessment pointed to the potential positive impact of strategically targeted wetlands and their ability to reduce nitrogen discharges to the MS River and the Gulf of Mexico. Consequently, closer targeting of EPA’s limited wetlands program investments in the MS River Basin (particularly toward the “100 Highest Opportunity Watersheds”) should be considered a priority.

NEPs: Barataria-Terrebonne (BTNEP) CCMP – Support integrated coastal wetlands restoration measures (e.g., LCA, Coast 2050, CWPRA, etc.).

Permitting: Assist in voluntary point source reductions nitrogen reductions through source targeting, outreach and recognition. Assure that all permits in Gulf drainage states include locally-based nutrient water quality limits where applicable.

WQ Standards: OW and Regions should identify downstream nutrient reduction opportunities during standards review and approval and assure Gulf nutrient issues are a part of nutrient standards dialogue with states.

Air Office: Secure supporting analysis by subwatershed areas of highest potential for nutrient deposition and identify likely sources.

OECA: Secure efforts to target activities where nutrient related (N, P, DO, sediment) permit violations are occurring. Develop support for nitrogen related supplemental projects in Mississippi drainage area wherever feasible.

ORD: ORD's Gulf Ecology Division (GED) at the Gulf Breeze Laboratory, is spearheading EPA's integrated coastal modeling and monitoring efforts related to Gulf Hypoxia. GED has a six year program plan to develop the modeling and monitoring framework (FY02-07). OW, OWOW and the Gulf of Mexico Program Office are participating as partners in this modeling framework development through the ship time services of the OSV Anderson for seasonal cruises to establish and verify boundary conditions and providing partial support to the efforts of the Gross Isle lab to develop the underlying modeling system(s).

5. HQ/Regional Guidance

EPA Strategic Plan 2004-2008

Components: Water
Regions 3-8
ORD

6. Engage with other Federal programs – goal of incorporation into other agencies strategic plans

USDA: USDA is perhaps the most important federal program partner through which effective collaboration must be secured to address reducing nitrogen inputs to the MS River system. The National Task Force on Gulf Hypoxia's Implementation Plan (published January, 2001) established an incentive-based voluntary framework for addressing Gulf Hypoxia with a focus on reducing average annual nitrogen inputs (from 1980-1996 averages) to the Gulf by 30%. The National Hypoxia Task Force's current assessment of the nitrogen load to the Gulf estimates that 74% of the nitrate and 65% of the total nitrogen inputs to the system to agricultural nonpoint sources. USDA, a featured partner of the Hypoxia Task Force relative to addressing agricultural nonpoint sources, can influence through technical regulations how (the BMPS) nutrient reduction funds are spent from the Farm Bill. Also, working with USDA's State Conservationists, the locations where the funding is spent can be influenced. We must continue to build on our joint approaches to CAFOs and Nutrient Trading with a new Joint Partnership targeted to Hypoxia reduction.

ACOE: The ACOE program initiative of primary focus for Subobjective 4.3.5 is the Louisiana Coastal Assessment (LCA) and related programs to restore Louisiana coastal wetlands. Preliminary assessments indicate that as much as 10-15% of the average annual nitrogen inputs to the Gulf could be sequestered through the massive restoration plans being studied under the LCA. EPA could enhance its tie to ACOE in this area through the MRBST? ACOE is a member of the Mississippi River Gulf of Mexico Hypoxia Task Force.

NOAA: NOAA Co-Chairs the Hypoxia Task Force’s Monitoring, Modeling and Research Committee. NOAA has been authorized through the Harmful Algal Blooms and Hypoxia Research and Control Act (HABHRCA) to conduct and maintain the scientific assessment(s) agreed to in the Hypoxia Action Plan. The plan calls for an update of the integrated science assessment every 5 years over the course of the implementation period (2001-2015). The first reassessment is slated for 2005. NOAA is a member of the Mississippi River Gulf of Mexico Hypoxia Task Force.

DOI: DOI/USGS is NOAA’s supporting Co-Chair on the Hypoxia Task Force’s Monitoring, Modeling and Research Committee. USGS’ river monitoring and modeling systems provided the primary scientific characterizations of nitrogen flux in the MS River basin and sub-basins for the integrated assessment. DOI/USGS is a member of the Mississippi River Gulf of Mexico Hypoxia Task Force.

7. Partnerships

The underlying structure of National Task Force’s Plan to address Gulf Hypoxia is centered on the continued development and effective implementation of nutrient reduction partnerships throughout the MS River Basin. This draft plan is currently focused on the Federal and State partnerships that must be secured and carried out to achieve the goal. Additionally, there are a number of local and NGO partners that either have been, or will be, approached to provide their leadership and resource involvement as well, eg.:

- the Harte Foundation;
- The Nature Conservancy (TNC);
- the Lower Mississippi Valley Initiative (LMVI);
- Mississippi River Basin Alliance (MRBA); and,
- the Texas Institute for Applied Environmental Research (TIAER)

Many additional local and NGO partnerships essential to the achievement of this subobjective strategy are expected to emerge from the formation of the remaining Sub-basin Teams and their inclusion will identified and documented in future updates to this strategy.

Innovative elements

EPA will pursue four featured innovation themes in the course of achieving this subobjective. These innovations will be supported in the corresponding program activities listed in the subobjective strategy:

Supporting Program Activity Measures:

Theme:	-FY04-	-FY05-
Education / Outreach	Establish and implement a targeted awards program (“Friends of the Gulf” to bring significant positive exposure to those corporations, institutions and/or individuals within the Mississippi River Basin that have	Continue FY05 implementation of the “Friends of the Gulf” awards program.

	undertaken effective voluntary measures to reduce nutrient inputs to the Mississippi River system and ultimately to the Gulf of Mexico. – June 2004	
Voluntary Point Source Reductions	Solicit expanded point source innovations to reduce nutrient discharges to the MS River by conducting direct solicitation for voluntary “BASF-like” industry-led reductions.	Evaluate response to FY04 solicitation for expanded point source innovations to reduce nutrient discharges to the MS River and conduct second round solicitation – (Yr 2) .
Industry-led Non-point Source Reductions	Solicit non-point source innovations to reduce nutrient discharges to the MS River through closer partnership with Agricultural Producer Leadership (re: Industry-Led Solutions (ILS) Partnership).	Evaluate Industry-Led Solutions (ILS) response to FY04 solicitation for recommendations on non-point source innovations to reduce nutrient discharges to the MS River and conduct follow-up workshop with industry leaders to establish FY06-FY10 collaborative reduction strategies – (Yr 2) .
Nutrient Trading	-TBD-	-TBD-

8. Watershed-specific plans

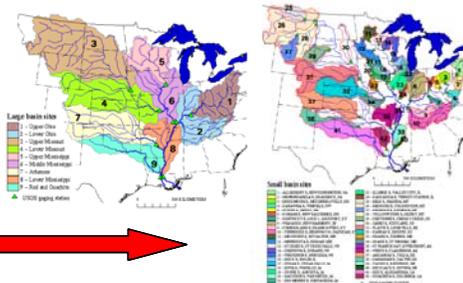
The proposed strategy for addressing Subobjective 4.3.5 is to develop and implement effective Federal/State/Local partnership efforts to reduce excess nitrogen inputs to the Mississippi River System from the “100 Highest Opportunity Watersheds” as defined by the regions. A draft “methodology” for delineating these priority watersheds, and ultimately the supporting watershed-specific partnership plans for reducing their nitrogen inputs, will be developed by the regions for discussion at the next national meeting of the Water Directors scheduled for January 27-28, 2004.

Current Discussion Draft Assessment Methodology....

Priority Watershed Selection Criteria Discussion Illustration...

Step 1: Assess and Rank the Nitrogen Contribution by Subbasin (1980-1996)

...at the “42 Sub-Sub-basin Scale from USGS’s Data in the Integrated Assessment



Step 2: Cross-Index/Inventory Corresponding “8 Digit” Watershed Framework of the 42 Subbasins

= MS River Basin of Watersheds

Step 3: Cross-Correlate Step 2 Inventory to Current State and Regional Focus on “Nutrient Related” 303(d) Impairments and Supporting TMDLs (e.g., DO, Nitrates in DW, etc.)

= Subset of Step 2 Watersheds

Step 4: Compare and Cross-Correlate Watersheds Identified in Step 3 to States’ Placement of Importance on Addressing “Nutrient Related” Impairments Supporting TMDLs (High / Medium / Low).

= Subset of Step 3 Watersheds

Step 5: Re-rank “High Importance” Watersheds Against “Step 1” Ranking to Get “Top 100” Highest Opportunity Watersheds” Listing...

= “100 Watershed” Subset of Step 4 Watershed Listing

9. Funding

Program:	Description:	FY04:	FY05:
OWOW & GMPO	Contractual Support re: Program Activity #2 - Assess the anticipated nitrogen reduction contribution of EPA's base WQ programs implementation in the MS River Basin (2000-2010) towards EPA's "target partnership apportionment."	\$150K	
GMPO	Lower MS River Sub-basin (Tech Support)	\$25K	\$25K
GMPO & OST	Nutrient Pilot Study (Northern Gulf)	\$100K	\$70K
Watershed Initiative (Hypoxia Targets)	25% Hypoxia Targeted Awards	\$5M (+/-)	
HQ and Regional 104(b)(3) funds <ul style="list-style-type: none"> • Monitoring • Wetlands (Hypoxia Targets)			
Regional Geographic Initiative (Hypoxia Targets)			
SRF funding (Hypoxia Targets)			
319 funding (Hypoxia Targets)			
ORD (Hypoxia Targets)	Implementation of Monitoring and Modeling Framework Workplan		
ORD (Hypoxia Targets)	RARE Funds		
Other			

10. Other issues/concerns:

There are three primary issues/concerns that must be addressed to effectively carry out this subjective implementation plan:

A. Setting Appropriate Partnership Balance

EPA must work with the primary Department/Agency Task Force members to establish an appropriate balance of partnership responsibility and **joint** accountability for accomplishing the objectives set out in the Hypoxia Action Plan.

Consideration should be given to requesting a summit between the EPA Administrator

and the Secretaries of the other Task Force Departments/Agencies (i.e., USDA, DOC/NOAA, DOD/ACOE and, DOI) to establish the appropriate apportionment of partnership burden for attaining the 30% nitrogen reduction target called for in the Hypoxia Action Plan.

B. Absence of Integration of the Strategic Planning activities across offices and programs.

Currently, most, if not all of the implementation plans for the Programs and Regions are being developed independent of one another. This will all but certainly result in ineffective leveraging of EPA's limited technical and financial resources that can be brought to bear on this strategic subobjective. Addressing the absence of integration this late in the strategic planning process will be difficult, yet essential.

C. Absence of Supporting Nutrient Criteria and Standards

The primary programmatic tools EPA brings to this effort center largely on the NPDES and TMDL programs. The effectiveness of TMDLs related to Gulf Hypoxia presupposes that states have established nutrient criteria and standards (preferably, numeric) so that the list of impaired streams accurately reflects the streams that are indeed impaired for nutrients. Consequently, to attain the help we need from these programs we must consider how to most effectively help the States establish their nutrient standards, including nitrogen in freshwater systems.