Integrated Market-like Strategies to Meet the Iowa Nutrient Reduction Strategy - A Solution to Gulf Hypoxia: The Farmer Part of the Equation

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### Company Snapshot

#### Overview
- RES is the premier provider of ecological and water resource solutions in the US
- RES founded in 2007
  - In 2014, RES acquired EBX, founded in 1998
  - In 2016, RES acquired Angler Environmental, founded in 1999
- 40,400 acres of restored and protected wetlands
- 180+ miles of streams restored and conserved
- 225 mitigation sites, completed or in process
- 20,000 acres of custom, turnkey mitigation solutions
- Over 350 storm water management facilities designed and constructed
- 600 commercial, municipal and residential storm water management facilities maintained
- 240 tons of water quality nutrient reductions
- 400 erosion and sediment control inspections at active construction sites across eight states
- 3,700 acres of endangered species habitat restoration and preservation
- 10,000,000 restorative trees planted across all operating regions
- Over 1,750 federal and state permits received using RES-supplied compensatory mitigation solutions.

#### Mission
*Resource Environmental Solutions (RES) delivers comprehensive ecological restoration and water resource solutions that help project developers obtain required permits and stay in compliance when projects impact wetlands, streams and habitats.*

*We help clients manage risk from operations in environmentally sensitive areas by providing proactive project impact analyses, streamlining permitting processes, and limiting liability and regulatory exposure.*
Iowa Landscape

- 9.9 million tiled acres
- 3,000 drainage districts
- 92% of N and P budget for Iowa is agriculture-related
Regulatory/Government Context

- Gulf of Mexico Hypoxia Workgroup since 2008
- Iowa Nutrient Reduction Strategy emanating from Gulf work (PS/NPS)
- Farm Bill Programs ongoing – cost-share/practice-based
- Resiliency Funding – $97M in HUD National Resilience
- Swampbuster – USDA
- MS4
Iowa is one of 12 states taking part in Hypoxia Plan

2013 INRS – Obligation to reduce TN 75% and TP 66% for both PS and NPS

10-year window for WWTPs to upgrade to be spared from having to meet INRS reduction standards

Currently, it is a “voluntary” program, but it is anticipated that nutrient limits will be enforced in next 5-10 years

Trading/offsets anticipated as option

DNR allows for early crediting in advance of formal establishment of trading program
Basic Market Factors that Need to be Defined

- Regulatory Drivers and authorizations-demand?
- Eligibility of Buyers and Sellers
- Baseline requirements before trade
- Lifespan of BMP practices
- Sale period requirements
- Currency-N,P,S and impervious acre
- Service Area-where can you sell credits?
- Liability for success
- Trading Ratios (Uncertainty, Delivery and/or Retirement)
- Options other than trade
- Verification process
- Pricing
Farmer/Landowner Considerations

- Approval to submit application and certify and sell credits
- Baseline analysis assistance
- Acreage and practices for credit generation
- Any restrictions on land use or crop rotation?
- Timeline (annual/10-years/permanent)
- Payment?
- Responsibilities for installation and management of practices
- Responsibilities to maintain baseline and pay property taxes
- Access and right of inspection
- Performance liability for credit generation and sales
- Insurance
- Default
Swampbuster

• Program dates back to 1985 Farm Bill and creates disincentives to converting wetlands for agricultural production by limiting access to benefit programs

• Farming wetlands prior to December 23, 1985 (“prior converted wetlands”) is exempt

• Those who planted wetlands converted between December 23, 1985 and November 28, 1990 were ineligible for benefits in the years the crop was planted

• Currently, to maintain eligibility, producers must certify: a) that they have nor produced crops on wetlands converted after December 23, 1985 and b) that they did not convert a wetland to make agricultural production possible after November 28, 1990

• Mitigation, including mitigation banks, is available to prevent or correct swampbuster non-compliance
Swampbuster (cont.)

• The 2014 Farm Bill added crop insurance subsidies to the list of benefits that could be lost to swampbuster due to non-compliance

• The limitation applies to wetlands converted after February 7, 2014:
  □ An entity would be ineligible for crop insurance subsidies if impacts are five (5) acres or greater; or
  □ For conversions less than 5 acres, the subsidy is lost unless the landowner pays into a wetland restoration fund or undertakes mitigation

• Swampbuster non-compliance on just one of the producer’s farms could lead to the loss of program benefits for all of the producer’s lands

Source: USDA
Swampbuster Mitigation

• Currently, no formal NRCS approach
• Mitigation under the program is for the express use of agricultural impacts
• Are the standards less rigorous than 404 mitigation? Service Area? Functional protocol? Credit schedule?
• Focus on mitigating small and seasonally cropped wetlands; deep storage is not a favored restoration approach
• Question of whether mitigation can be stacked with water quality credits
• $9 million available to jumpstart in FY 2016
• NRCS retains oversight
• Priority given to states with a large number of wetland determination requests, such as Iowa
• Announced an award for 10 projects in South Dakota, Ohio, North Dakota, Nebraska, Minnesota, Michigan, Iowa, Illinois, and Georgia
Agriculture in Iowa

• **Buyers or Sellers?**

  • **Buyers:**
    - □ Swampbuster
    - □ Nutrient reduction

  • **Sellers:**
    - □ Swampbuster
    - □ Nutrient reduction
    - □ Other

• Is the agricultural community prepared to pay?
Project Concepts

- Look at urban/rural interface
- Understand upstream drainage opportunities
- Target beneficial agricultural lands
- Integrated Concept
  - Nutrient load reductions for the benefit of municipalities
  - SRF Watershed Restoration opportunity
  - Integrate flood benefits
  - Integrate swambuster?
  - MS4
  - Source protection
  - Other
Major Considerations for Ag as a Supplier

• Legal ability to stack and integrate (stacked capital vs stacked resources)
• More refined definition of NRCS Swampbuster mitigation requirements of market
• Analysis of cost/benefit by undertaking alternative nutrient reduction projects
• Define type of project: wetland, streams, drainage water management
• Clarity on nutrient reduction efficiencies
• Clarity on INRS
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