



Unlocking the Future of AML & AMD Reclamation

October 2023



Who is RES?

RES is restoring a resilient earth for a modern world, project by project.



- Founded in 2007, inspired by notion that restoration can be a win/win for both humanity and the environment
- Nation's largest ecological restoration company, creating ecological uplift by doubling down on nature's own processes
- Pioneered how to make environmental mitigation markets work with a turnkey, total-stewardship business model
- First mitigation bank sponsor in Pennsylvania
- Largest mitigation bank sponsor in West Virginia



The ecological uplift of a mitigation project helps offset unavoidable impacts of infrastructure projects like highway expansions.

Question

What are the steps involved in delivering an AML reclamation project?

Traditional AML Reclamation Project Delivery

What are the steps involved in delivering an AML reclamation project?

- Identify Problem
- Acquire Property Access
- Procure Design/Data Collection Services
- Collect Data/Design Project
- Acquire Permits
- Bid Construction
- Procure Contractor
- Construct Project

Question

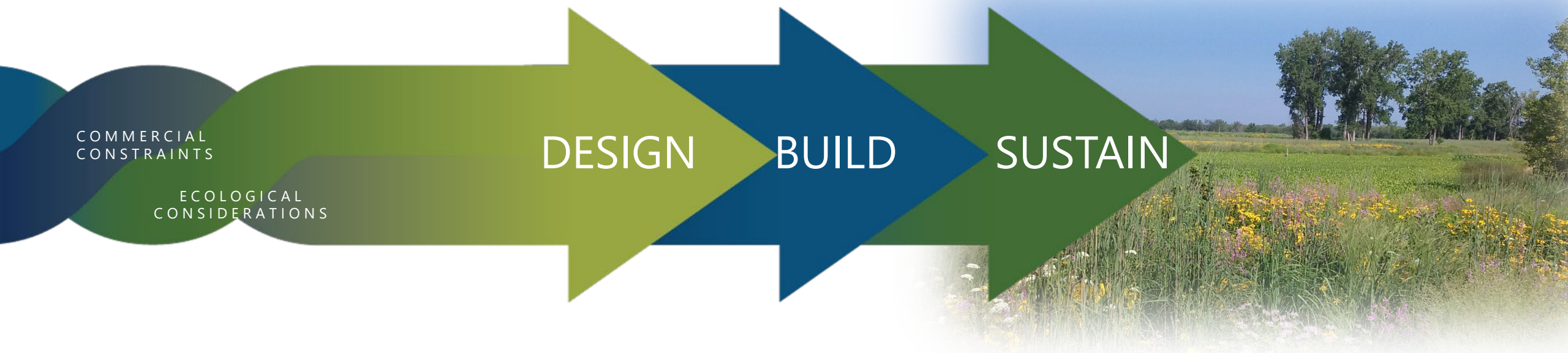
What is the greatest cost in this approach?

Traditional AML Reclamation Project Delivery

What is the greatest cost in this approach?

- *TIME*

RES Full Delivery Approach



RES
Team

Behind the Scenes

- Land acquisition
- GIS specialists
- Environmental, health, safety and security
- Regulatory project managers
- Project controls
- Government affairs
- Public and community relations
- Financial
- Legal

On the Ground

- Certified foresters
- Construction managers
- Engineers
- Field crew members
- Field ecologists
- Hydrologists
- Landscape architects
- Nursery managers
- Rosgen IV certified stream designers
- QA/QC oversight teams
- Superintendents
- Wetland scientists
- Wildlife biologists

RES Project Delivery- Procurement Comparison

- Design–Bid–Build
 - Traditional project delivery with multiple contracts = relatively intense administration
- Design–Build & Engineering–Procurement–Construction (EPC)
 - Separate contracts for land acquisition, design/construction, and operations
 - Can accelerate the project development phase
- Full-Delivery
 - A single contract to acquire the real estate (site), develop, and operate the project up to a future regulatory closeout
 - A “product” is delivered, in the form of a measure of performance
 - Guaranteed regulatory compliance, transfer of liability
 - Typically ***includes 5-10 years (or more) of guaranteed performance***

Full-Delivery Project Delivery is also referred to as:

- “Turnkey”
- **“Design, Build, Operate, Maintain (DBOM)”**
- “Pay for Performance”
- “Performance Based”

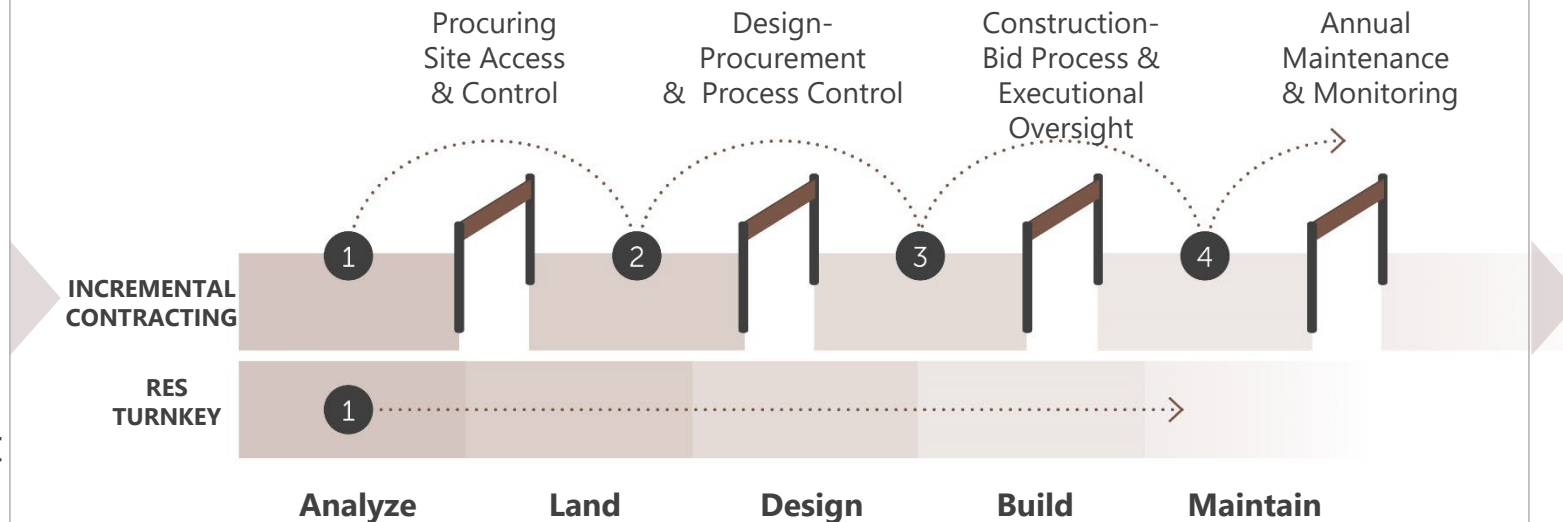
21st Century Challenges Require 21st Century Solutions

The Power of the “Full-Delivery” Approach

Transfer of Financial and Regulatory Risk

- Single contract responsible for all phases
- Guarantee delivery, of the ‘product’, on time, on budget

Each ‘hurdle’ adds cost and opportunity for error



Faster Implementation and Lower-cost

Results= Top-notch Restoration on the Ground

- **Better** work, done by experts
- **Faster** to implementation
- **Cheaper** and lower administrative costs/effort

Stakeholder Engagement



LANDOWNERS

- Secures access & project agreements
- Optimizes property value & utility post-reclamation



NON-PROFIT PARTNERS

- Aid in proposal development
- Identify potential projects



AGENCY OFFICIALS

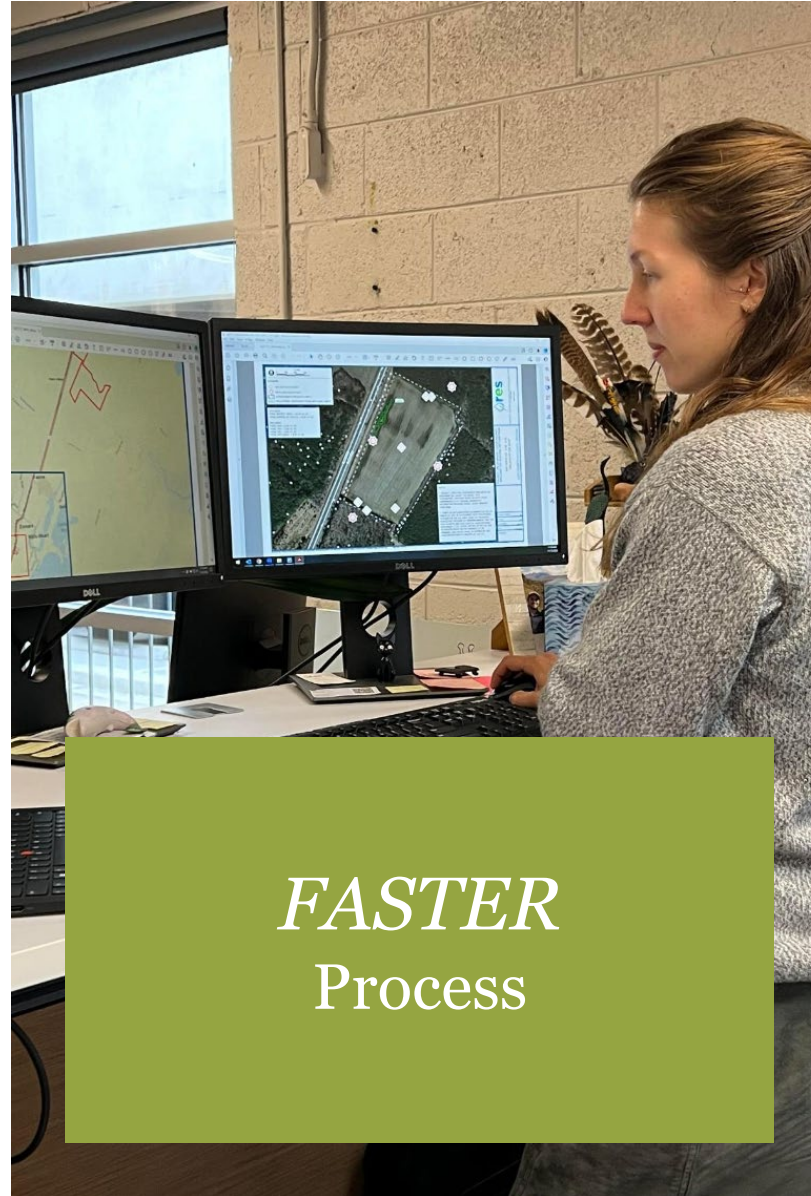
- Secure permitting & documentation
- Coordinate project approval
- Prioritize environmental hazard mitigation



LOCAL COMMUNITIES

- Address hazards and provide environmental and economic uplift

RES Project Delivery- Why Full Delivery?



RES Project Delivery- Full Delivery Market Examples



Compensatory Mitigation Requirements

"Classic" wetland, stream, endangered species offsets for project impacts



Environmental Reclamation

Regulatory and/or legal settlements for compliance and enforcement actions



Water Quality/ Stormwater Offsets

Restoration to satisfy governmental (and DOT's) compliance for TMDL's, CSO Consent Decrees, MS4, etc.



Corporate Sustainability

Private companies engaging in voluntary restoration for greater public good, creating positive environmental benefits, often with performance 'scores' from investors

RES Project Delivery- Full Delivery Case Studies

Compensatory Mitigation: North Texas Water District: Bois d'Arc Lake PRM	<p>17,000 acres of aquatic and terrestrial resource mitigation</p> <p>Value-engineer, build, monitor and maintain for 20 years, with liability transfer thru surety bonding</p> <p>Quote from District: <i>"With the switch in delivery method, we realized about \$100 million in contract savings"</i></p>
Water Quality Trading: Virginia Center for Transportation Innovation & Research	<p>Cost-comparison of VDOT participating in water quality trading (WQT, or 'Full-delivery' approach) vs constructing onsite BMPs</p> <p><i>Cost savings of 5% to 75%, with an average cost savings of 51%</i> using WQT</p> <p>VDOT's commitment to WQT <i>spurred economic development in eco-restoration</i>, to meet VDOT and other market demands</p>
PennDOT: MS4 Sediment Reduction Pilot Project (2018)	<p><i>Design-build-operate-maintain (DBOM</i>, or 'Full-delivery' approach) seeking most # of pounds TSS, for \$750,000 contract</p> <p><i>Bids ranged from \$4.48 to \$29.99 per pound</i> (winning bid to deliver 167,000 pounds)</p> <p>Private (offsite) land, designed and constructed in under 12 months</p>
PennDOT MS4 Program-wide using DBOM	<p><i>Initially estimated MS4 compliance at \$50M, currently expecting closer to \$10M</i>, with minimal staffing</p> <p>Collaborating with municipal partners to procure DBOM TSS credits to <i>reduce cost for local taxpayers</i></p>

RES Solutions



Who We Serve

Roads & Tollways
Municipal Public Works
Oil & Gas
Mining
Renewable Energy
Power & Utilities
Manufacturing & Heavy Industry
Commercial Development

Environmental Mitigation

Wetlands | Streams | Species

Reclamation

Brownfields | Landfills | Refuse Sites

Stormwater Management & Water Quality

Stream Restoration | Green BMPs | Nutrient Reduction | AMD

Climate Adaptation & Flood Resilience

Coastal | Watershed | Urban | Corporate Sustainability

Key Outcomes

Predictable Costs,
Fixed-Price Contracts
Cost Savings
Streamlined Permits
Measurable, Verifiable Metrics
Transfer of Regulatory Burden
Self-Sustaining Ecosystems

Restoring our land and waters



406

Mitigation sites



25,664,000

Trees planted



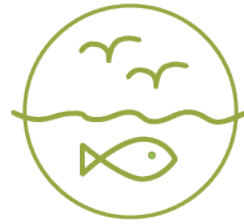
79,600

*Acres of restored and
protected lands*



650

*Miles of streams restored
and conserved*



20,200

*Acres of special-status
species habitats*



352

*Tons of water quality
nutrient reductions*

Thank You!

John Brawner

Client Solutions Manager

Denny Strickland

Project Manager

reclamation@res.us

Scan to learn more



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