

2023 TDOT GAM PROGRAM UPDATE

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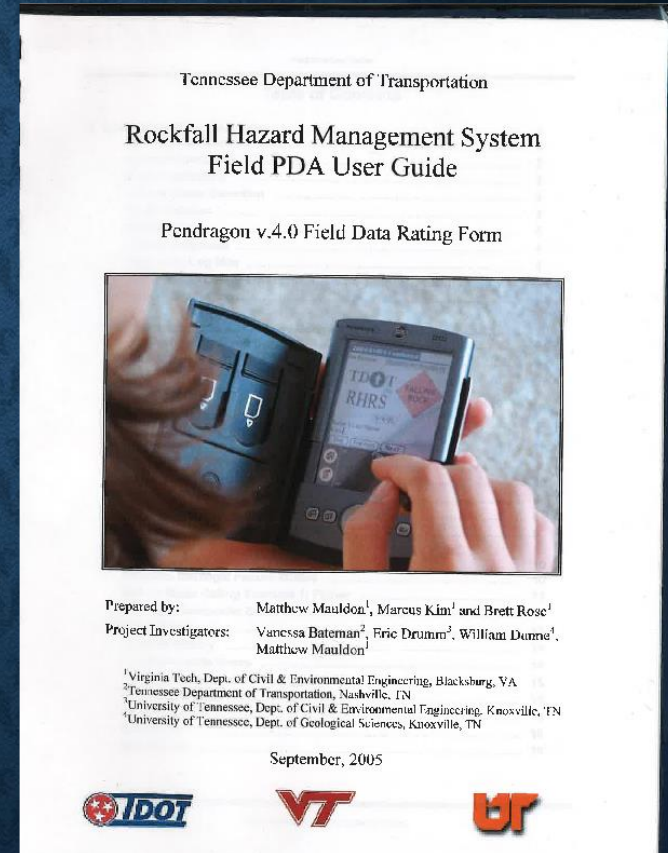
PRESENTATION OVERVIEW

- **2020 GAM Subcommittee presentation given**
- **Inclusion of landslide sites into an existing rockfall site database**
- **Update of TDOT's Efforts since 2020**
- **Forecast of Future**

WHERE WE WERE IN 2020

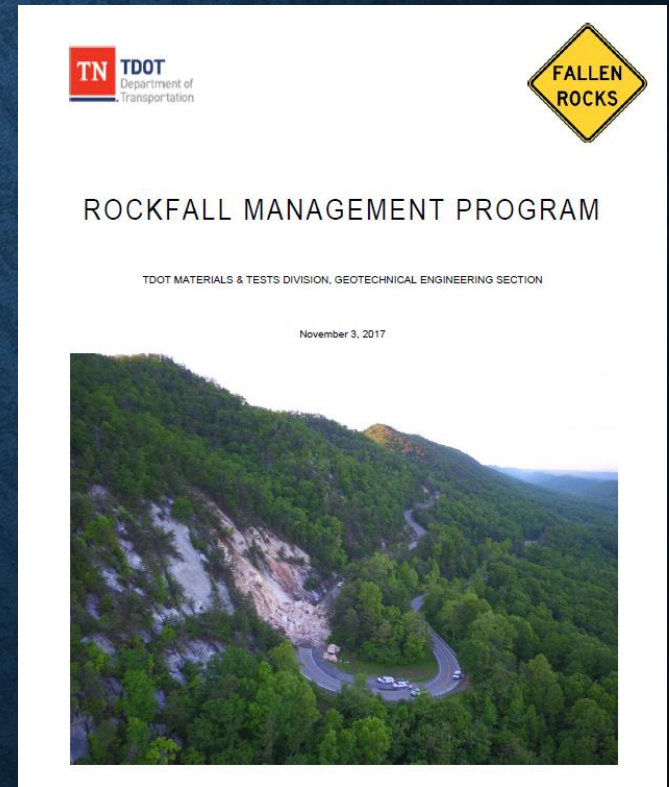
PREVIOUS TDOT ROCKFALL MANAGEMENT SYSTEM

- Late 1990's – FHWA tasked DOT's to build rockfall risk site inventory
- \$3M program was established in mid-2000s
- Program dollars used in unintended manner by other Divisions

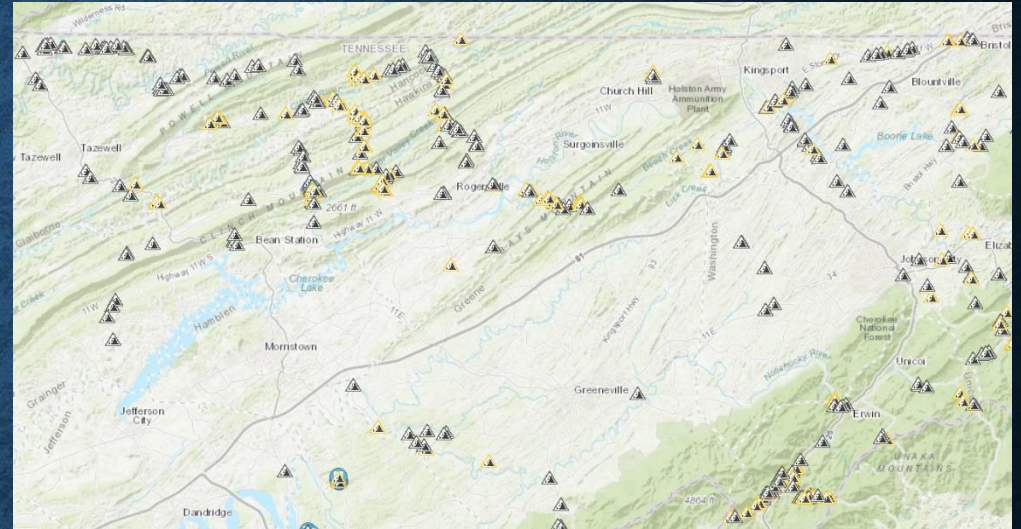


2016 TDOT RESETS 'ROCKFALL MANAGEMENT PROGRAM'

- Case argued to leadership
- \$10M funds RMP per year in 2016
- Formal Policy Document Developed



2016 - TDOT IT BUILDS NEW DATABASE



- Updated GISdB
- ArcGIS versions incompatible
- Built smart phone app for data input
- We got back up & running

2018 - TDOT PROCURES ROCKFALL CONSULTANTS



- Re-Rate Existing Rock Slope Sites
- Seek New Rock Slopes Sites
- Provide design expertise

2019 – FEBRUARY FLOODING



- Over one hundred landslides on TDOT ROW

(Photo Taken 2/24/19 source: WSMV-TV, Garbee, J.)

2019 TDOT TAMP



- FHWA requires bridges and pavements only
- Sets criteria for performance management
- Budget dollars for Future
- Slopes and Walls – not required specifically yet

2019 TDOT TAMP

Recommends LANDSLIDES be Monitored

Version 2019.1.0							owners	and maintenance		
	2	Rock Slides/ Slope Failure	Project	6.1	6.7	41.3	If rock slides occur,	<ol style="list-style-type: none"> 1. Road closure and damage may occur 2. Decreased mobility is likely 3. Long-term impact by saturation of subgrade 4. Injury/Death may occur 5. Increased maintenance/reconstruction costs 6. Litigation from private property owners 	<ol style="list-style-type: none"> 1. Continue with the Rockfall Mitigation Program that has been established and continue to update the list as more sites present themselves. 2. Continue to prioritize the list utilizing the risk-based approach. 3. Continue to fund the program to ensure priority sites are being mitigated. 4. Establish a new Landslide Mitigation Program to address potential slope failures below the roadway. 5. Identify annual funding for Landslide Mitigation Program. 	ROBERT JOWERS Jerry Hatcher
							If Federal Funding continues to be at current levels or reduced.	<ol style="list-style-type: none"> 1. Number of new projects will be reduced 2. Capacity projects will be de- 	<ol style="list-style-type: none"> 1. Continue to monitor and manage funding 2. Adjust performance goals/targets 	

- “Rock Slides / Slope Failures” evaluated as #2 Risk
- TAMP recommends creation of landslide risk mitigation program
- Combine Landslide Sites with existing Rockfall Mgmt. Program

2019 - CFG

TN Customer Focused Government Department

- Every Department must submit an improvement initiative
- TDOT's submitted the work related to Unstable Slope Program
- Will serve to keep the TAMP directive on schedule

OK. THAT WAS A SUMMARY UP TO THE 2020 PRESENTATION

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Activities Update

2020 COVID PANDEMIC

Working From Home

- We all jumped on airplanes
- No one wore masks
- Working from Home became new reality
- Hiring from Home too

2020 COVID PANDEMIC

Consultant Contracts

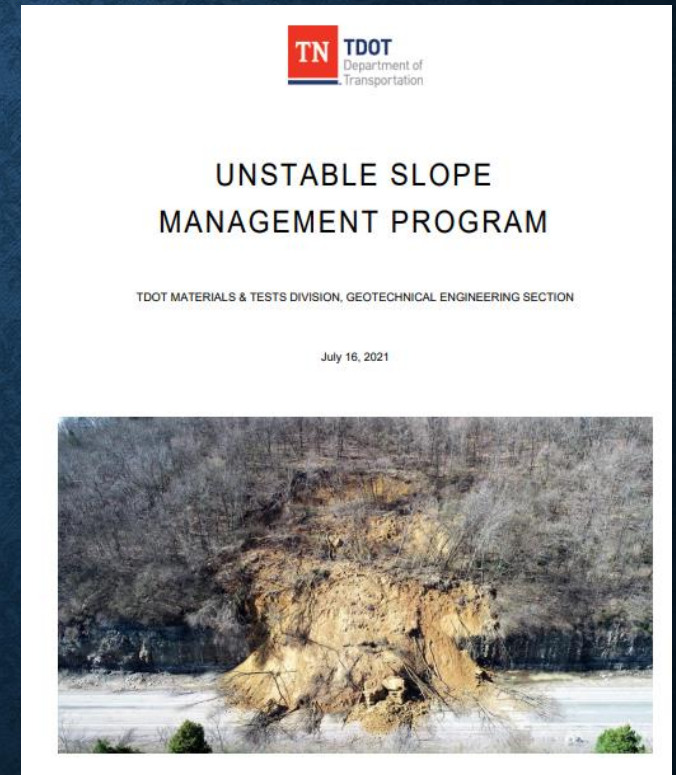
- Consultants even paused field rating activities
- Hotel rooms were unavailable



2020 COVID PANDEMIC

Update Technical Documents

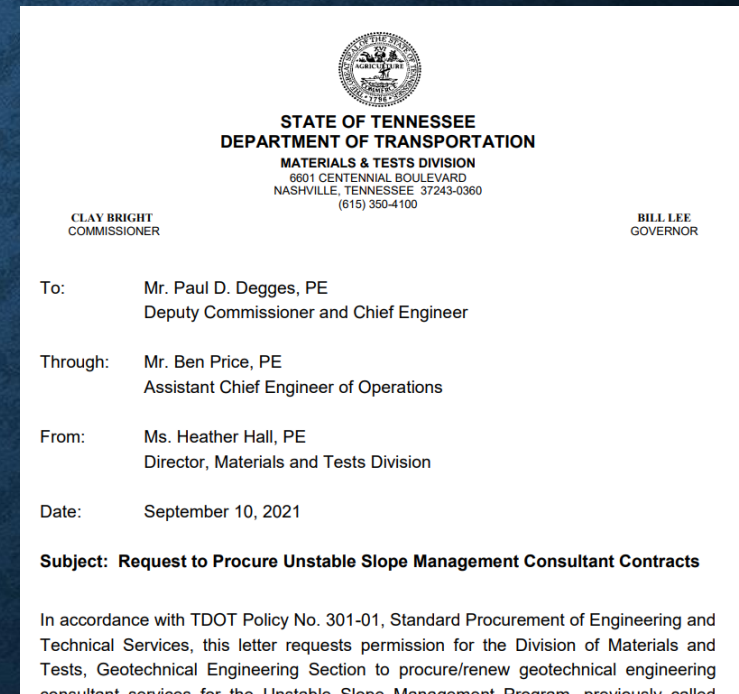
- Good year to update internal documents
- New version *Unstable Slope Management Program* drafted
- Reviewed Special Provisions for rockfall mesh



2021-2022 CONSULTANT PROCUREMENT

Unstable Slope Specialty Consultant

- Avoid service gap
- Long procurement process - over a year
- Scope of Work includes new tasks



2020 COVID PANDEMIC

Rockfall Mitigation Projects

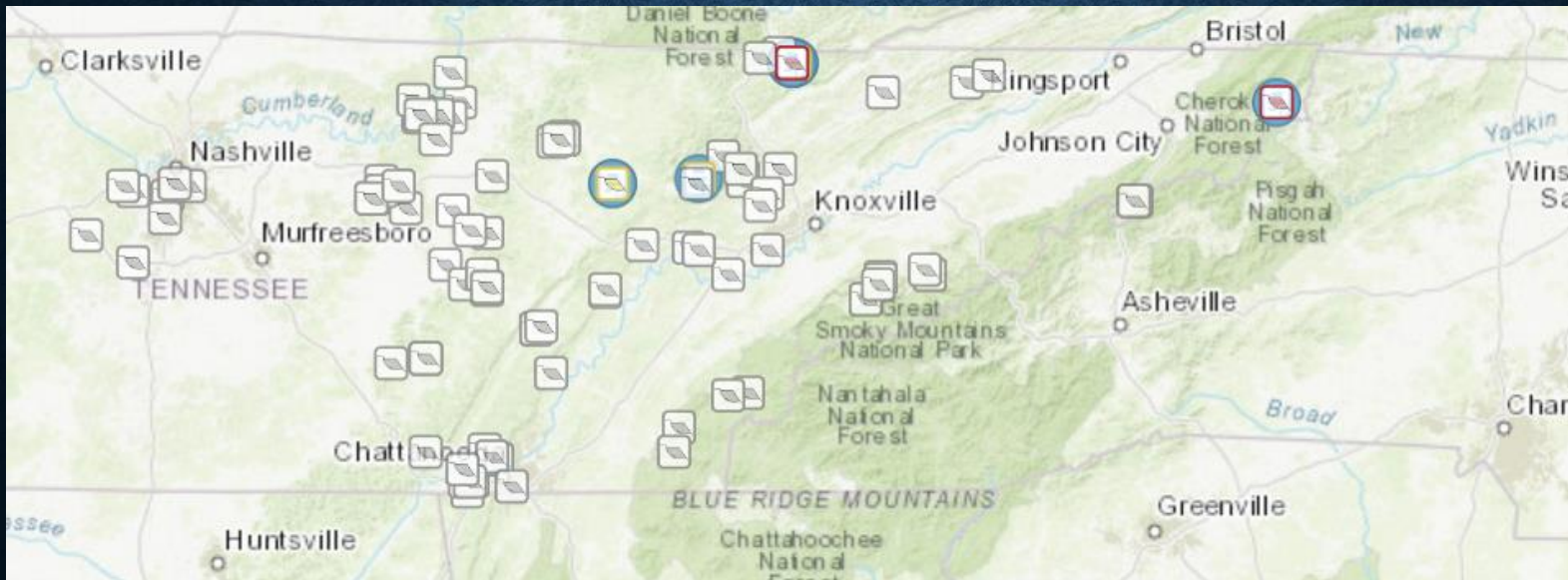


- 18 projects under design approximately \$6 M
- FY2021 let to construction \$ 11 M

2022 – LANDSLIDES IN USMP

GISdB

- Collaborated with IT to add a 'Landslide' Layer
- Took input from Districts – forty-three sites
- Completed just in time to be used for work orders for 2022 contracts



2021 PROJECT LOGJAM

Rockfall Mitigation Plans Development

- Goal: obligate \$10M per year
- Design about 15% construction costs – inevitable logjam
- Funding priority meeting was made with leadership

• **8 Projects FY 2023 Schedule (PE,CN)** **-\$ 30.2 M**
• Includes PE for two new interstate projects

• **13 Projects FY 2024 Schedule (PE, CN)** **-\$ 52.2 M**
• (Includes \$20 M CN for SR-40, Polk Co.?)

FY23-FY24 Funding Req'd: \$ -82.4 M

FY 23 Unobligated Balance **\$ 12 M**

FY23-24 Program Debits (2@\$10\YR) **\$ 20 M**

USMP Deficit **\$ - 50.4 M**

2022 ROCKFALL MITIGATION PROJECT PRIORITIZATION

IIJA – PROTECT Bill

- Leadership advised to keep schedule
- There was a provision in IIJA known as PROTECT
- TDOT share will be around \$30 M for three years



JULY 2022 ROCKFALL MITIGATION PROJECT PRIORITIZATION

IIJA – PROTECT Bill

- Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT)
- FHWA issued guidance letter in July, 2022
- “Stabilizing slide areas or slopes” is listed as eligible activity



U.S. Department
of Transportation
Federal Highway
Administration

Subject: **INFORMATION:** Promoting
Resilient Operations for
Transformative, Efficient, and Cost-
Saving Transportation (PROTECT)
Formula Program Implementation
Guidance

Date: July 29, 2022

- Relocating roadways in a base floodplain to higher ground above projected flood elevation levels, or away from slide prone areas.
- Stabilizing slide areas or slopes.
- Installing riprap.
- Lengthening or raising bridges to increase waterway openings, including to respond to extreme weather.

JULY 2022 ROCKFALL MITIGATION PROJECT PRIORITIZATION

IIJA – PROTECT Bill

- Discussed with FHWA field office administrator
- Attended webinar on stipulations of PROTECT funding
- Develop ppt summary and send it to Commissioner

SEPTEMBER 2022 ROCKFALL MITIGATION PROJECT PRIORITIZATION

IIJA – PROTECT Bill

- Leader retires, FHWA field office administrator promoted
- TDOT's Long Range Planning Division is developing a Resiliency Improvement Plan
- Internal meetings are being scheduled to select and prioritize candidate projects – to spend \$30M per year

2023 – LANDSLIDES IN USMP

Pilot Landslide Sites

- Forty-three sites chosen
- Sites will be scored
- “Lessons learned” in the process can be hashed out

2023 – TDOT LANDSLIDES

Statewide Slope Stabilization Contract

- Small instabilities stabilized using soil nail walls with shotcrete face (A-wall application)
- Expensive but efficient, effective
- Value driven applications - Horizontal drains and railroad rail and w-beam guardrail wall

USMP VISION

2023 – USMP VISION

GISdB

- Landslide \ Rockfall Layers will be modified...process
- Subsidence layers next...
- then retaining wall data is being collected

2023 – USMP VISION

Data Collection

- Enormous amount of data being collected
- Are we missing the forest for all of the trees?
- Can accountability exist without measuring the performance?
- Be careful when pointing out program problems



2023 – USMP VISION

Reduce Emergency Restoration

- Hope is to make investments and reduce ER contracts – avoid weekends, long hours
- Be proactive
- Perhaps ER contracts are DOT strategy – seems to be no bottom

2023 – USMP VISION

Records Collection

- GES tracks roadway slope instabilities effectively
- Documentation of others is unknown – paperwork is a time consuming
- Are we tracking too effectively?
- ER implies act of nature - no prior concerns

2023 – USMP VISION

TnDOT TAMP

- Low hanging fruit will continue to dominate
- USMP programs and retaining wall programs will take backseat
- Geared very much to “crisis of moment”

2023 – USMP VISION

GAM Funding

- Small part of overall maintenance budget
- No funding mechanism
- \$10M will not be enough for our little program
- No amount will ever be enough

END OF PRESENTATION

**THANKS FOR THE
OPPORTUNITY!!!**

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QUESTIONS