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Leveraging Technology in Disaster Recovery:

Advancing Fiscal Responsibility Through
Innovation Stewardship

Thursday, November 7, 2025

Zachary E. Stern

Texas General Land Office • Commissioner Dawn Buckingham, M.D.

Overview

1. Texas GLO-CDR Department
2. Definitions & Goals
3. Innovation Stewardship
4. Texas GLO-CDR Transformation of Process



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Texas GLO, Community Development & Revitalization Department



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Texas General Land Office

Community Development and Revitalization (CDR) Department

Disaster recovery and mitigation funds to help communities recover after a disaster.

Funds part of the U.S. Department of Housing and Urban Development's (HUD) Community Development Block Grant (CDBG) program.



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CDR Grant Portfolio

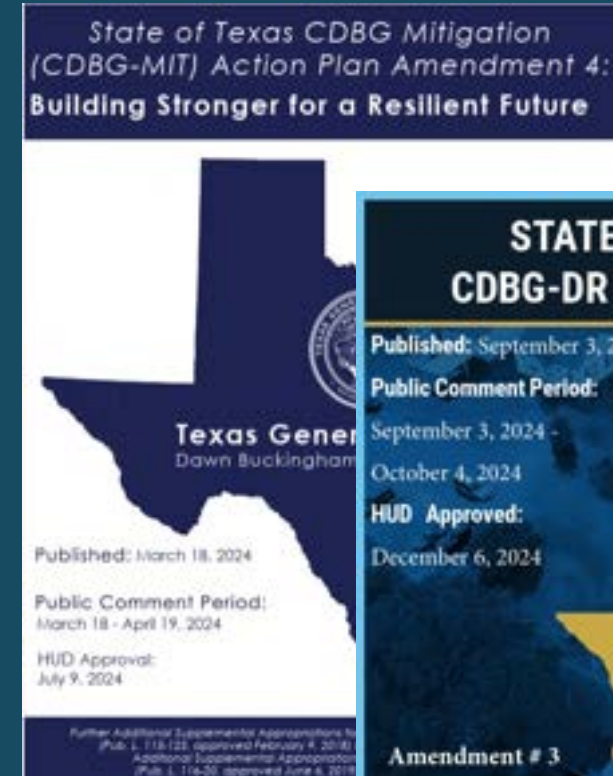
More than \$14.8 billion in HUD CDBG-DR/MIT funds for disasters dating back to 2005

CDBG-DR (\$10.5 Billion) to Recover From:

- Hurricanes Rita, Dolly, Ike, and Harvey
- 2011 Wildfires
- 2015 and 2016 Storm and Flood Events
- 2018 South Texas Floods and 2019 Disasters
- 2021 Winter Storms
- 2024 Disasters

CDBG Mitigation Funds (\$4.3 Billion):

- 2015, 2016, Harvey (2017), and 2018



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Definitions & Goals



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Definitions

Presentation Title Components

- **Fiscal Responsibility:** Efficient, transparent, and strategic use of public funds to maximize impact, ensure accountability, and build long-term resilience in disaster recovery and mitigation efforts ⁽¹⁾.
- **Stewardship:** Responsible and forward-looking management of public resources to appropriately serve both current and future needs, while ensuring long-term value, trust, and accountability ⁽²⁾.



Bottom Line

- **Bottom Line (Private Sector):** Net profit of a company after all expenses have been deducted from revenue—used as a key measure of financial performance and business success.
- **Bottom Line (Government Sector):** Value delivered to the public through effective, efficient, and unbiased use of resources—measured by outcomes, impact, and trust rather than profit.

BOTTOM LINE (GOVERNMENT)



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INNOVATION STEWARDSHIP



Definition

Innovation Stewardship (*John Kao*)

- **Stewardship over Governance:** Emerges through representative, strategic collaboration across diverse stakeholders.
- **Top-Down and Bottom-Up:** Requires empowered leadership and bottom-up insight from those closest to the work (*context*).
- **Conceptual to Practical:** Connects big ideas to real outcomes by balancing creativity with structure and guiding diverse input toward clear goals.



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Balancing Innovation & Accountability

The Fiscal Steward Challenge

- ⚖️ Urgent need for faster, smarter disaster response
- 🧱 Regulatory frameworks can lag behind emerging tools
- 🔧 Tools exist, but adoption is uneven
- 🔄 Balancing process transformation with fiscal responsibility
- 🏛️ Public trust requires accountability and transparency



Texas GLO-CDR Transformation of Process



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Framework: Innovation & Fiscal Stewardship

Evolving Approach to the Solution

- Integrate appropriate technology
- Enable adaptability and ongoing evolution
- Drive process transformation
- Leverage leadership commitment to streamline operations
- Improve efficiency



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The Business of the GLO

- Determining Applicant/Project Eligibility
 - Low- and Moderate-Income (LMI) Summary Data (HUD – LMISD)
- Environmental Review
- Documenting Beneficiaries
 - Census/ACS data
- Scoring Applications
- Tracking Progress/Documenting Expenditures/Grant Reporting
 - TIGR & DRGR



Leveraging Existing Assets

ESRI

- ArcGIS Pro
- AGOL
- Hub (Basic & Premium)
- Survey123
- Dashboard
- Experience Builder

Microsoft

- SharePoint List
- Power Apps
- Power Automate
- PowerBI

Feature Manipulation Engine/Data
Interoperability Tool



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Survey123/ Power Automate: Construction Quality Assurance Checklist

- Survey123

Form 11.03 Final Checklist

Disclaimer: The Texas General Land Office has made every effort to ensure the information contained on this form is accurate and in compliance with the most up-to-date CDBG-DR and/or CDCG-MIT federal rules and regulations as applicable. It should be noted that the Texas General Land Office assumes no liability or responsibility for any error or omission on this form that may result from the interim period between the publication of amended and/or revised federal rules and regulations and the Texas General Land Office's standard review and update schedule.

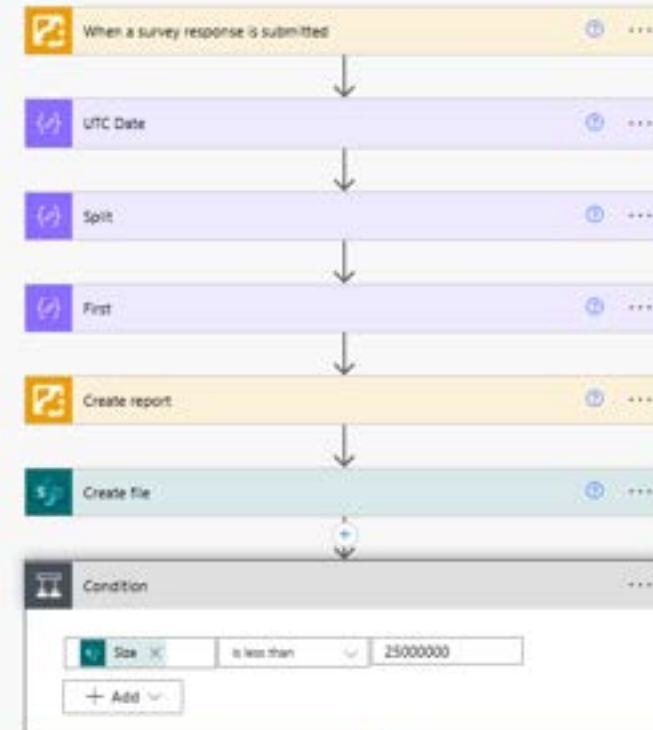
1 - 86 | Project Information

87 - 89 | Deficient Items

90 - 102 | Signatures

103 - 131 | Miscellaneous Comments and Photos

Submit



✓ If yes

Send Report in an email

Add an action

✗ If no

Send an email (V2)

Add an action



Survey123 Connect: Disaster Recovery Funding Application

- Enforces greater accuracy through:
 - Selecting from pre-existing

Jurisdiction Name
Begin typing name and select from choice below

-Please select-

Is the mailing address a Physical Address or P.O. Box?

begin group	applicantInfo	<p span style="color: white; background-color: black; font-weight: bold;text-align: center;">Jurisdiction Inform field-list					
select_one_from_file	applicantJuris	Jurisdiction Name	Begin typing name and select from choice below		autocomplete		
text	applicantName2	If Jurisdiction Name is not in list, type here					
select_one mail	applicantMailType	Is the mailing address a Physical Address or P.O. Box?					
text	applicantAddress	Mailing Address	Begin typing address and select from responses below		geocode		
text	applicantStAddr	Street Number and Name			hidden	pulldata("@json",\${applicantAddress}, "attributes.StAddr")	
text	applicantCity	City			hidden	pulldata("@json",\${applicantAddress}, "attributes.City")	
text	applicantZip	Zip			hidden	pulldata("@json",\${applicantAddress}, "attributes.Postal")	
text	applicantPO	Enter P.O. Box					
select_one juris_type	applicantType	Jurisdiction Type					

6












Survey123 Connect: Disaster Recovery Funding Application

begin group	projectInfo	<p style="color: white; background-color: black; font-weight: bold;text-align: center;">Project field list		
select_one project_type	projectType	Project Type		
decimal	projectCDBGAmt	CDBG-DR Request Amount	For Hurricanes Ike & Dolly and Hurricane Harvey the maximum CDBG-DR Request Amount is \$20,000,000. For the remaining gra	<=20000000
note		CDBG-DR Request Amount(friendly format)		if(string-length(string(\$projectCDBGAmt)) <= 3, concat("\$", string(\$projectCDBGAmt)), if(string-length(string(\$projectCDBGAmt)) = 4, concat("\$",
decimal	projectLev	Project Leverage (Match) Amount	Projects that will entail non-CDBG Leverage that is at least 10% of the CDBG-DR funds requested receive 5 points in the scoring	
note		Project Leverage Amount (friendly format)		if(string-length(string(\$projectLev)) <= 3, concat("\$", string(\$projectLev)), if(string-length(string(\$projectLev)) = 4, concat("\$",
note		Project Leverage %		concat((\$projectLev div \$projectCDBGAmt)*100,"%")
decimal	projectAmt	Total Project Amount	hidden	\$projectCDBGAmt+\$projectLev
note		Total Project Amount		if(string-length(string(\$projectAmt)) <= 3, concat("\$", string(\$projectAmt)), if(string-length(string(\$projectAmt)) = 4, concat("\$",
select_one nat_ob	natObj	Under which National Objective will the project qualify?		
select_one lmi_cert	lmiCert	How will you be demonstrating that the project meets the national objective?		
integer	lmiScore	LMI Score	20 Points if the project meets the LMI national objective.	if(selected(\$natObj), 'lmi', 20, 0)
text	disDeclar	Disaster Declarations	hidden	pulldata("@layer", "getRecordAt", "https://services3.arcgis.com/13DnApjhE0EY9ik/arcgis/rest/services/Texas_Counties_DisasterD
integer	dr1791	Ike DR-1791	hidden	pulldata("@json", \$disDeclar, "attributes.Ike_DR_1791_")
integer	dr1780	Dolly DR-1780	hidden	pulldata("@json", \$disDeclar, "attributes.Dolly_DR_1780_")
integer	dr4029	Wildfires DR-4029	hidden	pulldata("@json", \$disDeclar, "attributes.Wildfire_DR_4029_")
integer	dr4223	2015 Floods DR-4223	hidden	pulldata("@json", \$disDeclar, "attributes.F2015_Floods_DR_4223_")
integer	dr4245	2015 Floods DR-4245	hidden	pulldata("@json", \$disDeclar, "attributes.F2015_Floods_DR_4245_")
integer	dr4266	2016 Floods DR-4266	hidden	pulldata("@json", \$disDeclar, "attributes.F2016_Floods_DR_4266_")
integer	dr4269	2016 Floods DR-4269	hidden	pulldata("@json", \$disDeclar, "attributes.F2016_Floods_DR_4269_")
integer	dr4272	2016 Floods DR-4272	hidden	pulldata("@json", \$disDeclar, "attributes.F2016_Floods_DR_4272_")
integer	dr4332	Harvey DR-4332	hidden	pulldata("@json", \$disDeclar, "attributes.F2017_Harvey_DR_4332_")
integer	dr4377	2018 South Texas Floods DR-4377	hidden	pulldata("@json", \$disDeclar, "attributes.F2018_ST_Floods_DR_4377_")
integer	dr4454	2019 Disasters DR-4454	hidden	pulldata("@json", \$disDeclar, "attributes.F2019_Disasters_DR_4454_")
integer	dr4466	2019 Disasters DR-4466	hidden	pulldata("@json", \$disDeclar, "attributes.F2019_Disasters_DR_4466_")
integer	numDis	Number of CDBG-DR Eligible Presidential Declarations from 2008 to 2019	hidden	\$(dr1791) + \$(dr1780)+\$(dr4029)+\$(dr4223)+\$(dr4245)+\$(dr4266)+\$(dr4269)+\$(dr4272)+\$(dr4332)+\$(dr4377)+\$(dr4454)+\$(dr4466)
integer	numDisScore	Number of CDBG-DR Eligible Presidential Declarations from 2008 to 2019	20 Points Possible (10-12 Disaster Declarations = 20; 7-9 Disaster	if((\$numDis)<=3, 5, if((\$numDis)<=6, 10, if((\$numDis)<=9, 15, if((\$numDis)>=10,20, 0)))
integer	leverage	Leverage	5 Points if the project entails non-CDBG Leverage that is at least 1	if((\$projectLev div \$projectCDBGAmt) >= 0.10, 5, 0)
text	soviCounty	County SoVI	hidden	pulldata("@layer", "getValueAt", "attributes.Sovi_5_Class", "https://services3.arcgis.com/13DnApjhE0EY9ik/arcgis/rest/services/S
text	soviPlace	Place SoVI	hidden	pulldata("@layer", "getValueAt", "attributes.CLASS_5", "https://services3.arcgis.com/13DnApjhE0EY9ik/arcgis/rest/services/SoVI_
text	sovi	SoVI	hidden	if(selected(\$applicantServArea), 'city', \$soviPlace), \$soviCounty))
integer	soviScore	SoVI Score	15 Possible Points (15 - High; 12 - Medium High; 9 - Medium; 6 -	if(\$sovi)="High", 15, if(\$sovi)="Medium High", 12, if(\$sovi)="Medium", 9, if(\$sovi)="Medium Low", 6, if(\$sovi)="Low", 3, 0))
integer	cdi	CDI	hidden	pulldata("@layer", "getValueAt", "attributes.Comp_Rnk", "https://services3.arcgis.com/13DnApjhE0EY9ik/arcgis/rest/services/Cor
integer	cdiScore	CDI Score	20 Possible Points (20 - Top 10%; 15 - Top 25%; 10 - Top 75%; 5 -	if(\$cdi)=5, 20, if(\$cdi)=4, 15, if(\$cdi)=3, 10, if(\$cdi)=2, 5, 0)))
integer	pha	Project is from a Public Housing Authority	10 Points if the Project is proposed by a Public Housing Authority.	if(selected(\$applicantType), 'pha', 10, 0)
decimal	povCounty	County Poverty	hidden	pulldata("@layer", "getValueAt", "attributes.Poverty_Rate", "https://services3.arcgis.com/13DnApjhE0EY9ik/arcgis/rest/services/P
decimal	povCity	City Poverty	hidden	pulldata("@layer", "getValueAt", "attributes.Poverty_Rate", "https://services3.arcgis.com/13DnApjhE0EY9ik/arcgis/rest/services/P
decimal	poverty	Poverty Rate	hidden	if(selected(\$applicantServArea), 'county', \$povCo
note		Poverty Rate	In circumstances where applicants have a tie score, Poverty Rate	concat(round(\$poverty)*100,2,"%")



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Pulling it all Together: The Whole Stack

- Microsoft Forms 
- SharePoint Lists for account tracking 
- Power Automate generates email and updates SharePoint 
- AGOL Groups for security 
- ArcGIS Hub Premium for hosting data 
- FME/Data Interoperability Tool to ETL data from Excel to AGOL 
- AGOL Experience Builder to visualize and make data internally available 



Pulling it all Together: Microsoft Forms


2024 Duplication of Benefits Access Request

Hi, Zach. When you submit this form, the owner will see your name and email address.

1. Explain why you need access to the 2024 Duplication of Benefits data?

Enter your answer

Submit

 Microsoft 365

This content is created by the owner of the form. The data you submit will be sent to the form owner. Microsoft is not responsible for the privacy or security practices of its customers, including those of this form owner. Never give out your password.

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Pulling it all Together: SharePoint

Policy & Mapping 2024 DOB Access Request						
Request Reason	Access Requested By	Requester Email	Access Request Date	Date User added to AGG Group	Access Request	Access Removal Date
To help create maps and reports as needed pertaining to DOB	[REDACTED]	[REDACTED]	August 08	8/8/2025	Approved	
I will need this access to the 2024 Duplication of benefits data to efficiently review the previous assistance that the applicant received so that I may determine if there is a duplication of benefits.	[REDACTED]	[REDACTED]	August 08	8/8/2025	Approved	10/14/2025
To review HAP - 24D files.	[REDACTED]	[REDACTED]	August 08	8/8/2025	Approved	
To verify the amount an applicant received for any review of reimbursement invoices.	[REDACTED]	[REDACTED]	August 08	8/8/2025	Approved	
As HRP program manager I need access to this data.	[REDACTED]	[REDACTED]	August 08	8/8/2025	Approved	
To check DOB while review application	[REDACTED]	[REDACTED]	August 08	8/8/2025	Approved	
Review DOB for applicants applying for HAP - 24D	[REDACTED]	[REDACTED]	August 08	8/8/2025	Approved	
I review applications.	[REDACTED]	[REDACTED]	August 08	8/8/2025	Approved	
HAP Housing Case Management	[REDACTED]	[REDACTED]	August 08	8/8/2025	Approved	
For the meeting	[REDACTED]	[REDACTED]	August 08	8/8/2025	Approved	
Housing and Quality assurance team application review for HAP	[REDACTED]	[REDACTED]	August 08	8/8/2025	Approved	
Perform DOB checks on 24D applicants	[REDACTED]	[REDACTED]	August 08	8/8/2025	Approved	
I work with the RPM section and need access to the 2024 DOB viewer to ensure functionality, etc.	[REDACTED]	[REDACTED]	August 07	8/7/2025	Approved	
Process invoices	[REDACTED]	[REDACTED]	August 16	8/16/2025	Approved	
I currently work for GLD's CDR State-Run Housing Programs.	[REDACTED]	[REDACTED]	October 08	10/8/2025	Approved	



Pulling it all Together: Power Automate ➤

The image displays a Power Automate flow and its associated email template. On the left, the 'Send Approval Email' action is configured with the following details:

- Parameters:** Settings, Code view, Testing, About
- To *:** Access Request...
- Subject *:** Title
- Body *:** A rich text email body with a greeting, an approval message, and instructions for creating an account and accessing data.
- Advanced parameters:** Showing 3 of 7

On the right, the flow diagram shows the following steps:

- When a new response is submitted
- Get response details
- Create item
- Start and wait for an approval
- Apply to each (loop)
- Condition (if/else)
- If True: Send Approval Email, then Update Request to YES
- If False: 2 Actions



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Pulling it all Together: ArcGIS Hub

GLO-CDR Internal Data Hub



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GLO-CDR Internal Hub

GLO Home

Experience Builder



Texas General Land Office
Community Development &
Revitalization Department

2024 Disasters DOB Viewer

A resource to view 2024 Disasters duplication of benefits data and information geospatially

Explore



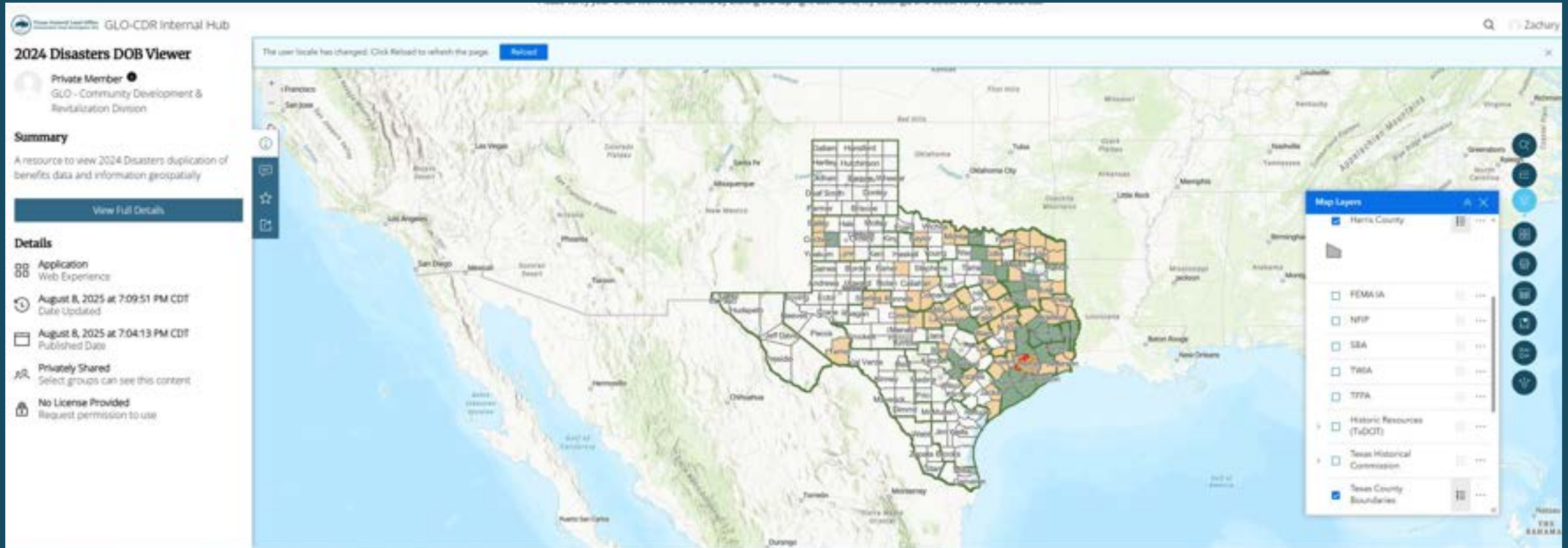
Explore

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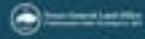
Pulling it all Together: Experience Builder



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Showing the benefits: Three examples in a StoryMap



Disaster Recovery and Mitigation Infrastructure Projects



Disaster Recovery and Mitigation Infrastructure Projects

Texas General Land Office

September 30, 2025



Thank You!

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