

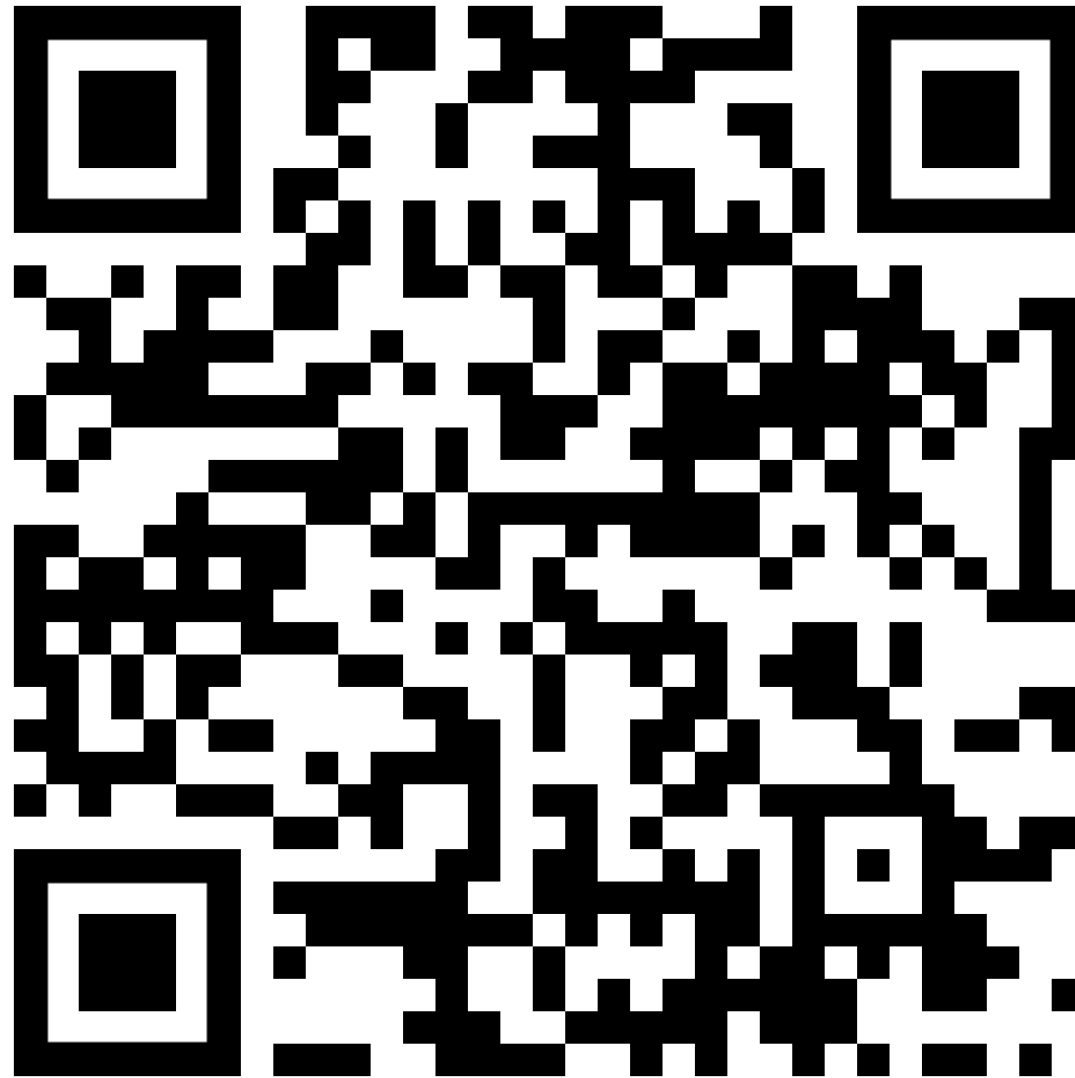
# AI for County Government:

*Improving Efficiency, Service, and  
Decision-Making*



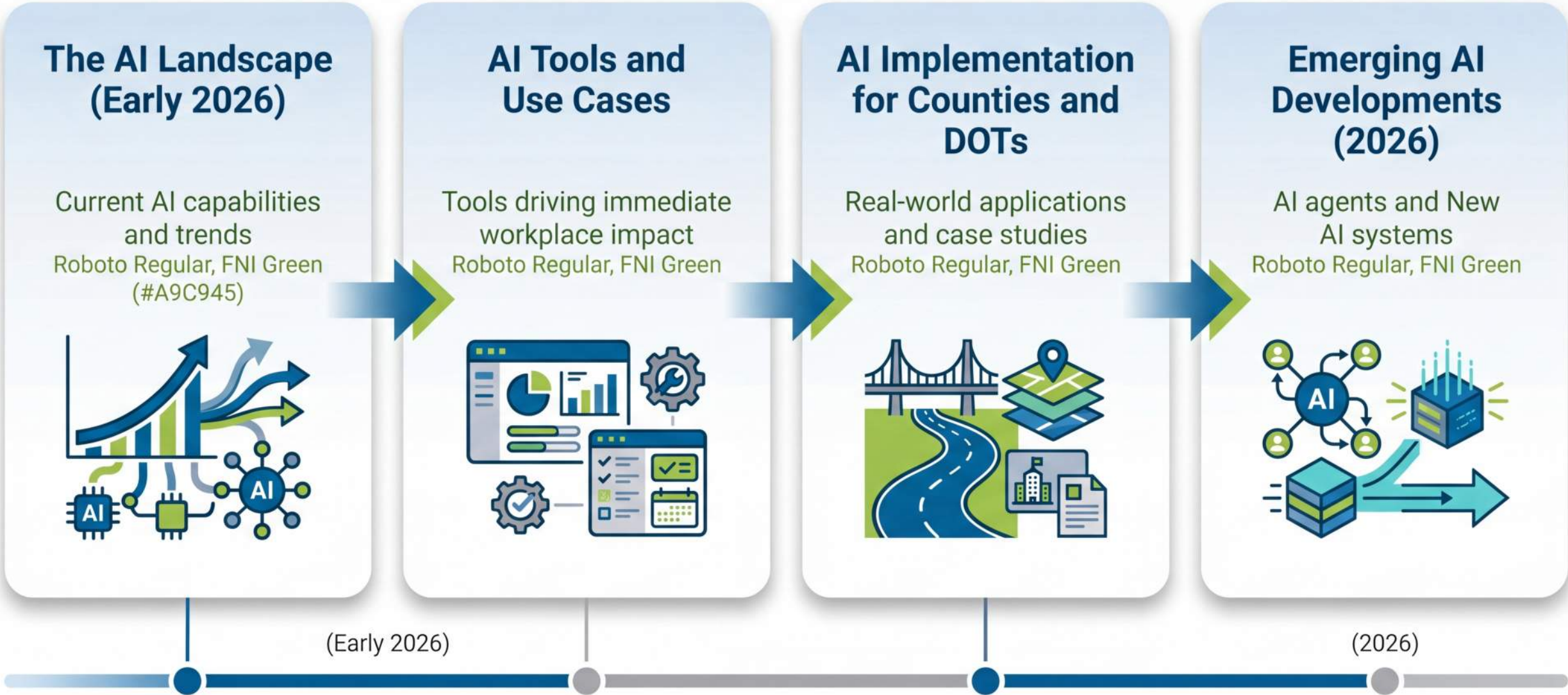
*April 15, 2026*

# Presentation Landing Page



[www.freese.com/AI](http://www.freese.com/AI)

# Presentation Roadmap



# The AI Landscape

*AI Capabilities in Early 2026*

# AI Platforms

## AI Foundational Model Platforms (LLMs)



ChatGPT



Claude



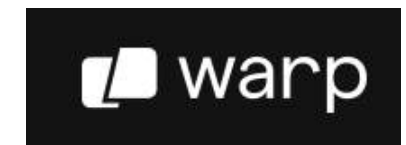
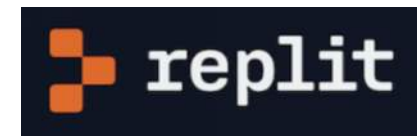
## AI Integrated Platforms



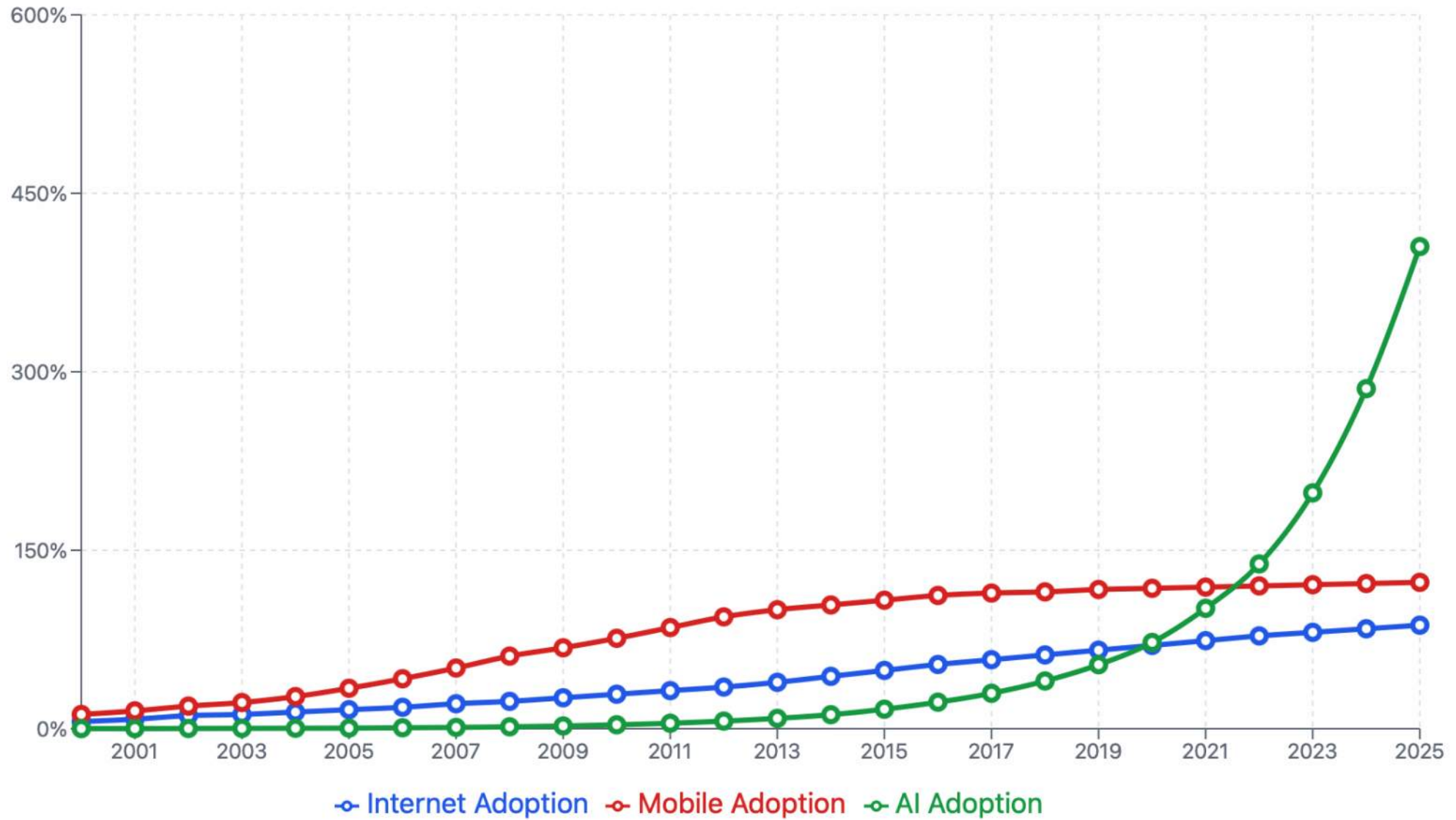
Copilot



## Agentic Development Environments

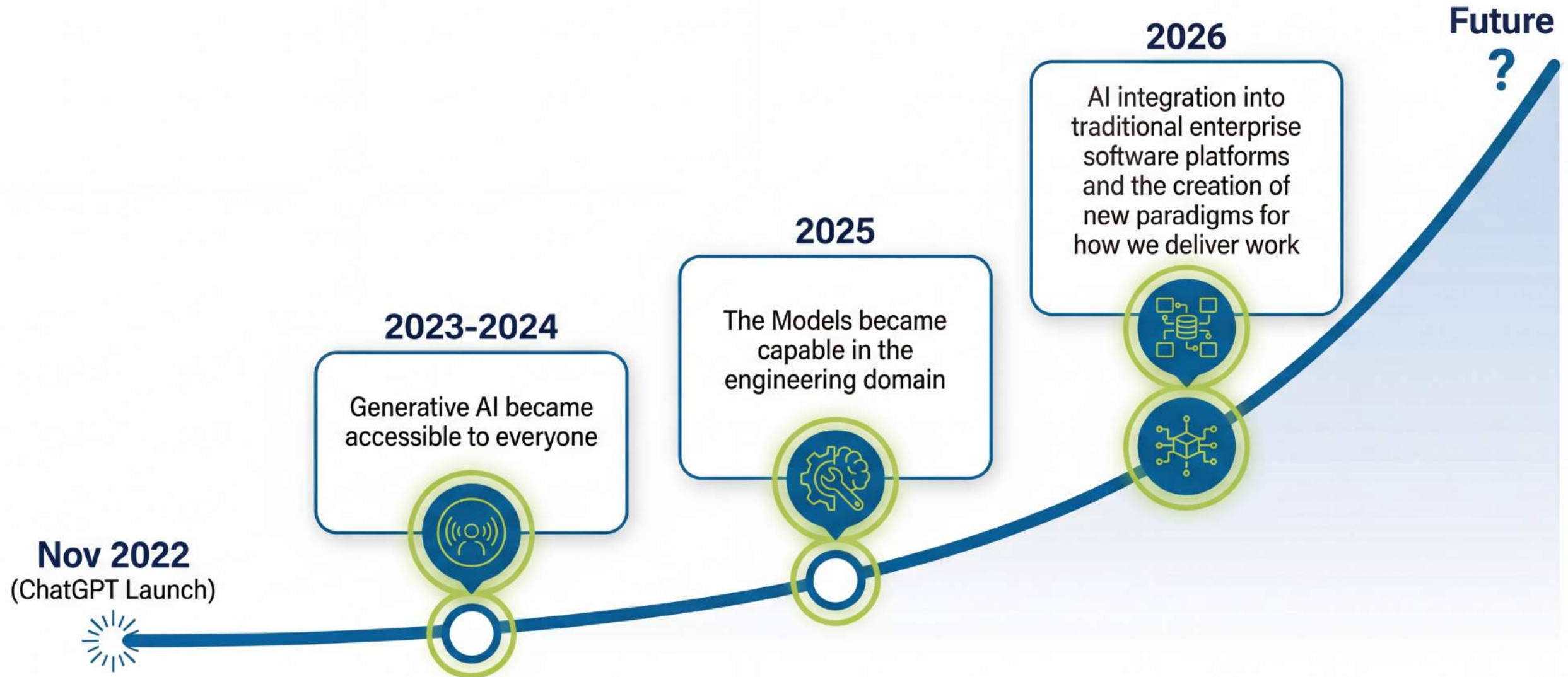


## Adoption Rate (% of Global Population)



# Why This Conversation, Why Now

AI has crossed the threshold from “interesting” to “essential”




# Types of AI Models – Understanding the Landscape

## Not All AI Is the Same


### Artificial Intelligence (AI)

AI is an umbrella term covering multiple model types with different capabilities.

 **Generative AI (Chat Models)**

Text generation, Conversational models  
Most common interpretation of "AI"  
Used for writing, summarizing, drafting

*When people say "AI," they are often referring to this category.*


 **Reasoning / Thinking Models**

Structured problem solving  
Logical reasoning  
Multi-step thinking  
Better for complex decision workflows

 **Research Models (Early Agentic AI)**


Executes research based on a prompt  
Performs searches and click-throughs  
Synthesizes findings  
Can access web-based information

*Task-executing research models*


 **True Agentic AI**

Acts as an autonomous agent  
Can coordinate other AI model types  
Executes tasks across systems  
Makes decisions within defined parameters

*Orchestrates other AI capabilities*

 **Image & Video Models**


Generate images  
Generate video  
Visual content creation  
Trained specifically on visual data

 **Code Generation Models**

Write software code  
Generate scripts  
Assist with development workflows  
Highly structured outputs

 **Tool Calling**

Access external tools, Query databases, Call APIs,  
Access the web, Retrieve structured data

 **Deterministic AI Workflows**

Engineered AI workflows, Code-driven, Returns consistent, repeatable outputs, Designed for reliability, Ideal for structured professional work

**Same input → Same output**

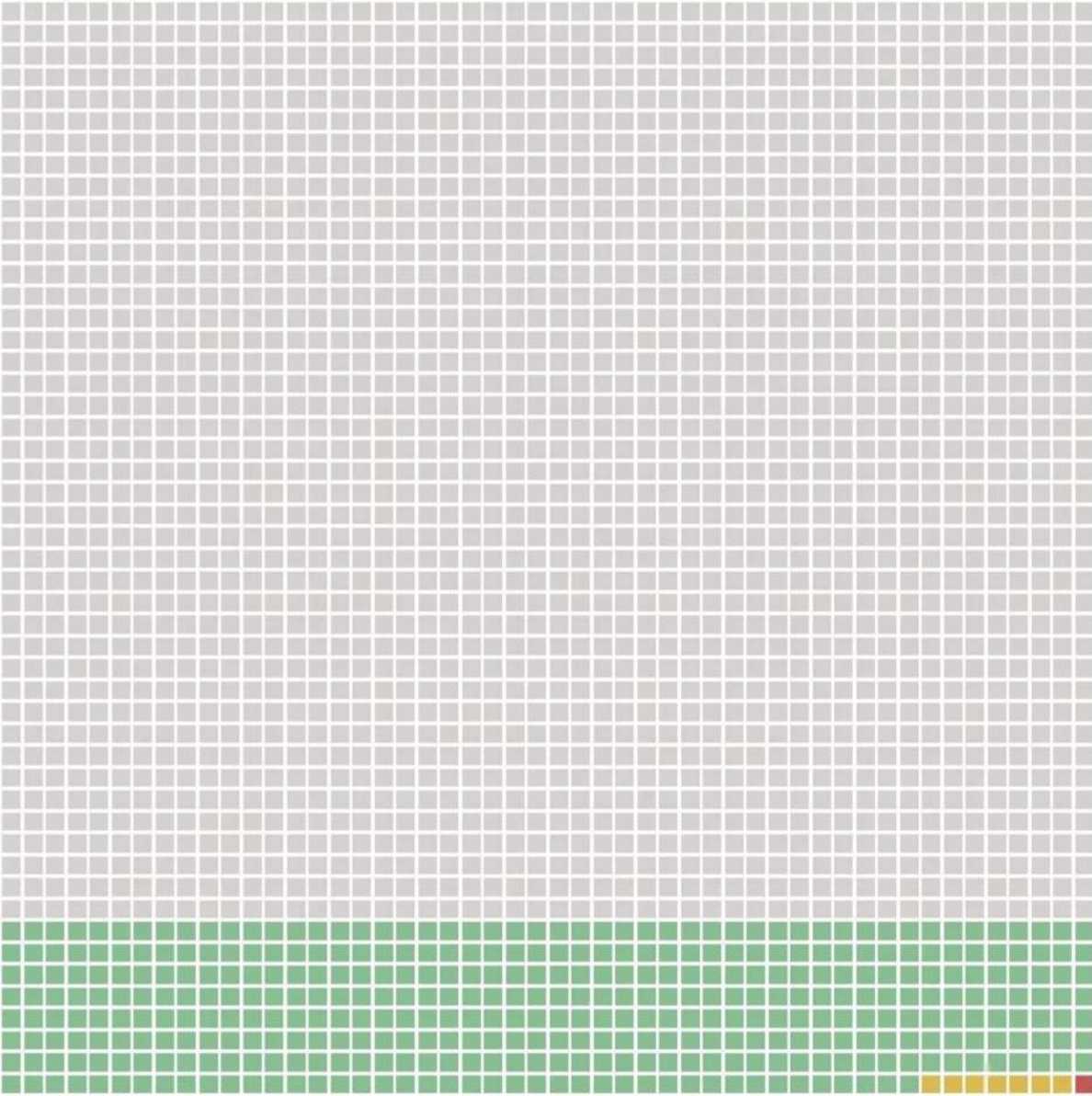
# Worldwide AI Use

Each dot is ~3.2 million people

2,500 dots = 8.1 billion humans. Color = most advanced AI interaction, Feb 2026.

### Legend:

- Never used AI (84%)
- Free AI Chatbot users (16%)
- Pays for AI Model Plans (0.3%)
- Use Coding/Agents (0.04%)



# AI Tools and Use Cases

*3rd Party Tools, Research, and Local Knowledge*

# AI Efficiency & Education Tools

*AI Augmented Tools that will provide immediate efficiently gain in your workday*

# “Low-Hanging Fruit” of AI

*The Following are three AI tools that will provide immediate efficiency gains in your workday.*

## Voice Dictation

- WisprFLOW
- Real-time Speech Clean-up and smart editing
- Maintains your thought, words and context. But you can generate them 2-3x the speed of typing.



## Educational Tool

- Slide Decks and Infographics
- Great for Review of Large Documents
- Provides mind map and podcast summary of the document
- Study Guide

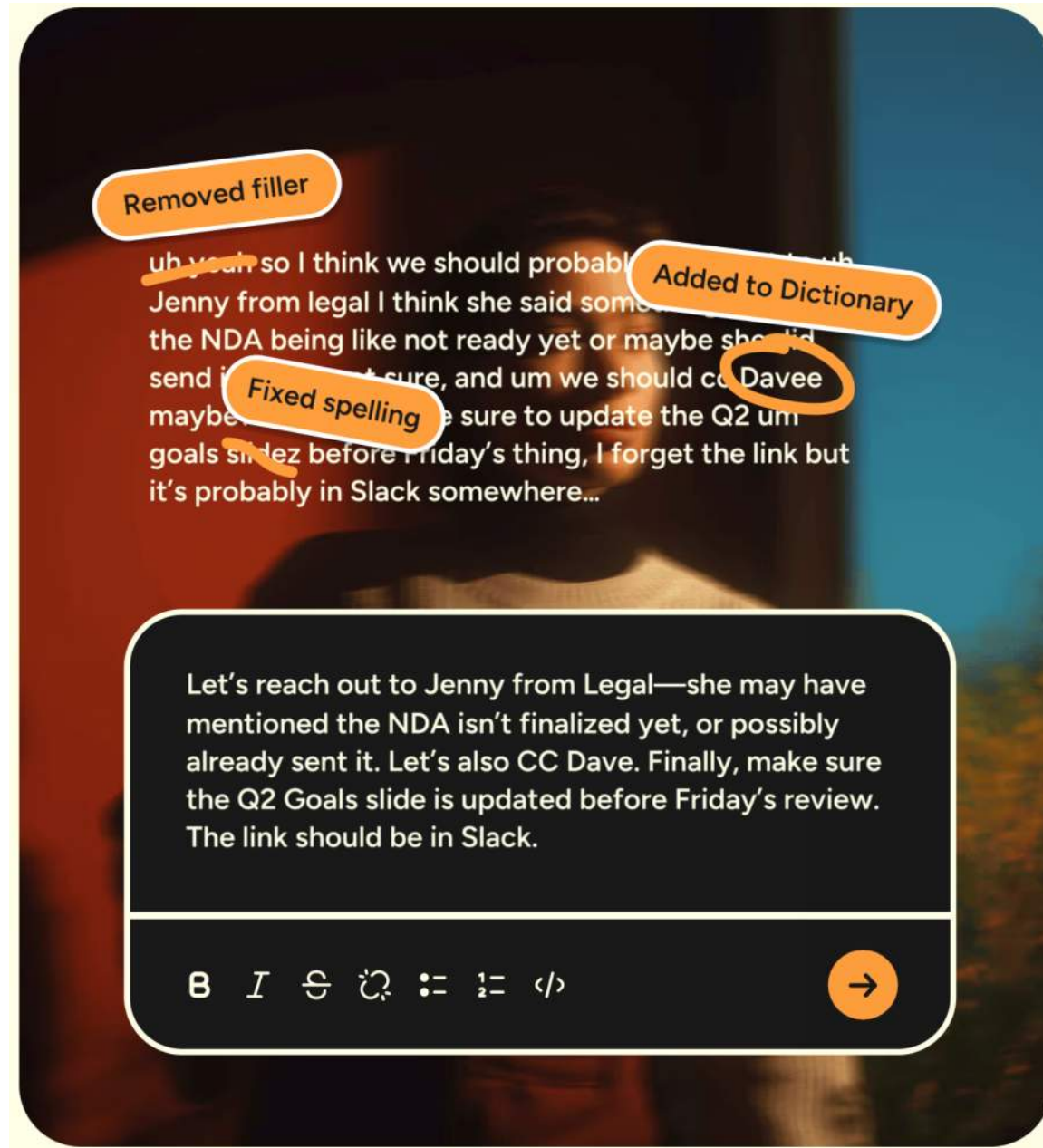


## Image Generation

- Photoshop type editing
- Slide Creation
- Infographics Creation
- Preserves original image
- PowerPoint replacement
- Apply Firm Style Guide
- Included in FNI Chat



# Voice Dictation Tool Flow








Removed filler

uh yeah so I think we should probably talk to Jenny from legal I think she said something about the NDA being like not ready yet or maybe she did send it but I'm not sure, and um we should cc Davee maybe. Fixed spelling. Be sure to update the Q2 um goals slidez before Friday's thing, I forget the link but it's probably in Slack somewhere...

Added to Dictionary

Let's reach out to Jenny from Legal—she may have mentioned the NDA isn't finalized yet, or possibly already sent it. Let's also CC Dave. Finally, make sure the Q2 Goals slide is updated before Friday's review. The link should be in Slack.

**B** *I*     

## AI Auto Edits

Speak naturally and Flow transcribes and edits your voice, instantly. Rambled thoughts become clear, perfectly formatted text, without the filler words or typos.

<https://wisprflow.ai/>

# Educational Tools

### TxDOT 2026 Artificial Intelligence Strategic Plan Update

+ Create notebook   Analytics   Share   Settings   PRO   C

#### Sources

+ Add sources


Try Deep Research for an in-depth report and new sources!

Search the web for new sources

Web   Fast Research


Select all sources

txdot-ai-strategic-plan-update-jan-2026.pdf



**ARTIFICIAL INTELLIGENCE STRATEGIC PLAN**  
January 2026 Update

#### Chat



## TxDOT 2026 Artificial Intelligence Strategic Plan Update

1 source

The Texas Department of Transportation (TxDOT) 2026 update outlines a transition from experimental pilot programs to a comprehensive **AI-native enterprise** strategy. Central to this roadmap is a "**Human-Led, AI-Supported**" philosophy, ensuring that professional judgment remains the final authority for all automated outputs. The plan is anchored by a robust **Enterprise Data Platform** and a governance framework designed to comply with the **Texas Responsible Artificial Intelligence Governance Act**. Current successes include significant **efficiency gains** in invoice processing and real-time **traffic incident detection**, while the future pipeline contains over 200 potential use cases. To sustain this growth, the agency is prioritizing a **specialized talent pipeline** and scalable machine learning infrastructure to improve **infrastructure safety and asset management**. Ultimately, the document serves as a strategic blueprint for integrating intelligent automation to deliver a more reliable transportation network for Texas.

Save to note   Like   Comment

How is TxDOT ensuring humans remain in control of AI?

What real-world benefits has AI already delivered for Texas roads?

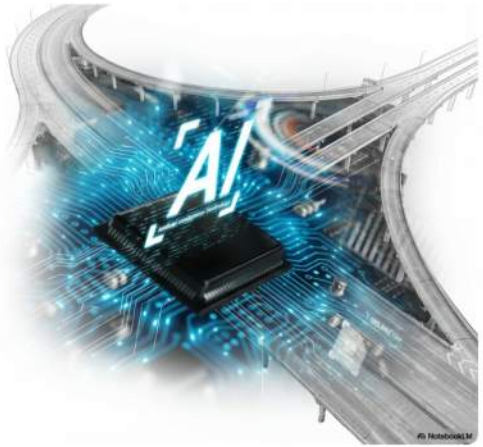
How will AI change future project planning and infrastructure safety?

Start typing...   1 source

#### Studio

## TxDOT AI Strategic Roadmap

Based on 1 source



### JANUARY 2026 TxDOT Artificial Intelligence Strategic Plan: 2026 Update

From Experimental Tools to Embedded Enterprise Capability

#### 2026 Marks a Pivot to Integrated Enterprise Capability

Experimental Era (Pre-2025)	Embedded Era (2026+)
<ul style="list-style-type: none"><li>Ad-hoc Pilots</li><li>Isolated Use Cases</li><li>Basic Machine Learning</li></ul>	<ul style="list-style-type: none"><li>Agentic AI &amp; Systems</li><li>Enterprise-Wide Integration</li><li>Force Multiplier for Safety</li></ul>

<b>Statutory Mandate</b> Texas Responsible AI Governance Act (TRAIGA) signed June 2025.	<b>Strategic Leadership</b> CIO Anh Selissen appointed to Public Sector AI Advisory Board.	<b>Operational Goal</b> Safety and Reliability through AI.
--	---	---

#### Governance Philosophy: Human-Led, AI-Supported

Innovation never replaces accountability.

Good content   Bad content

🏠 Home

📁 Playground

AI Paradigm Shifts: Reimagin...

AI Paradigm Shifts: Infographic ...

Check Your API Tier Status

API Quality Discrepancy: 4K vs...

Achieving 4K With Gemini Pro

View all history →

🔧 Build >

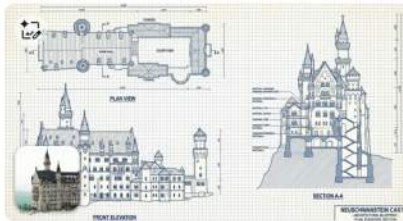
📊 Dashboard >

📄 Documentation ↗

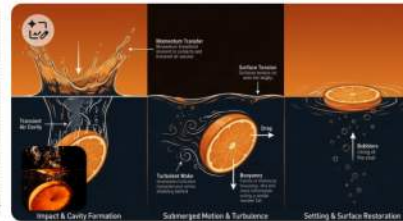
# Generate images with Nano Banana Pro



Create a fashion product collage on a brown corkboard based on this outfit.



Create an orthographic blueprint that describes this building in plan.



Create an illustrated explainer, detailing the physics of the fluid dynamics.

## Nano Banana Pro

gemini-3-pro-image-preview  
State-of-the-art image generation and editing model.

## System instructions

Optional tone and style instructions for the model

## Generative Langua...

...wCAI

In use

## Temperature

Temperature slider set to 1

## Aspect ratio

16:9

## Resolution

4K

## Tools

Grounding with Google Search

## Advanced settings

This model is not stable and may not be suitable for production use. [Learn more.](#)

❄️ Let it snow

🔑 Get API key

⚙️ Settings

👤 teachablemomentslif...

Start typing a prompt



Tools



Run ⚙️ ↩️

# Google Image Generation (Information Graphic)

```

# Making AI Work
## Best Practices for Data, Tools, and Workflows
--Freese and Nichols-- Arkansas Transportation Summit - October 30, 2025
--Presentation Landing Page-- www.freese.com/AI
--Presentation Slides-- Freese
--Short Video-- How to Use the Prompt
...
## Part 1: How AI WORKS
Understanding LLM, Training, and Context Windows
## AI Platforms (Three Categories)
| AI: Generational Model Platforms (LLMs) | AI: Integrated Platforms | Agentic Development Environments |
|-----|-----|-----|
| ChatGPT, Claude, Gemini, Deep, LLaMA | Copilot, Perplexity, NotebookLM, Flow | Cursor, Replit, Windsurf, Sudo, Wep |
## AI Capability vs. Learning Curve
--AI capability is growing exponentially while the human learning curve rises more gradually -- capability is outpacing our ability to learn it.
## Adoption Rate (N of 100k Population)
--Lowest Adoption: Medical Devices, and AI Adoption curves from 2000-2020.
--AI adoption rate accelerating exponentially faster than prior technology waves, reaching ~80% by 2025 (multi-tool per user).
## Key Concept: LLM = Large Language Model
## Model: LLM Pre-Training
--The model learns the patterns of data during training (documents, articles, data files feed into the model).
## Tokens
--Example: "dog" / "bark" / "happy" = token 1 / token 2 / token 3
--token = 1/4 of a word.
## Generative "Probabilistic" AI
--"Input: tokens" = "LLM" = "Output: tokens"
--Example: "Who is Nolan Ryan?" --> "Nolan Ryan was / is a pitcher / Texas Ranger / Hall of Fame pitcher / star of the team"
--The LLM predicts likely next tokens based on probabilities. Output loops back on new input (recursive generation).
## The Big Idea
--"Generative AI is just glorified autocomplete." -- AI Experts
    
```

```

## The Shift in Value
-- Shift: $1,000 value in your pocket, (1/4 Apple & Samsung Share)
-- A.I.: $1,000 value in your pocket.
...
## Part 2: Risks and Limitations
--Life are constrained to the data they were trained on.
--Sometimes AI hallucinates (makes things up).
...
## Part 3: Context is King
--The better the context, the better the results.
## The Context Window
--Size of AI: ChatGPT, Copilot = "Context Window" = LLM
--Context window size measured and priced in tokens.
## Four Layers of the Context Window
1. "Prompt" -- the question or task (Prompt, Instructions, System Prompt)
2. "Resources" -- PDFs, Spreadsheets, Images
3. "Tools" -- Web, Database, API / MCP
...
## Part 4: "Low-Hanging Fruit" of AI
--These AI tools that provide immediate efficiency gains in your workflow.
## 1. Voice Dictation - WisprFlow (Elo)
--Multi-line speech cleanup and smart editing
--Maintains your thoughts/needs/context; generates text 2-3x the speed of typing.
--AI Auto Edits: removes filler, fixes spelling, adds to dictionary = https://wisprflow.com/
## 2. AI Browser - Perplexity (Perplexity)
--Navigate multiple pages and Synthesize into: gives direct links to documents/pages
--EXPENSE and cost: up to $1000 website and find the 2024 average daily traffic apps for Arkansas County"
## 3. Educational Tools - NotebookLM (Google)
--Study for and use the PDF large documents of the document
--Detailed notes and subject matter of the document
--Study Guide
--Features: Audio Overview, Video Overview, Mind Map, Reports, Flashcards, Quiz
    
```



```

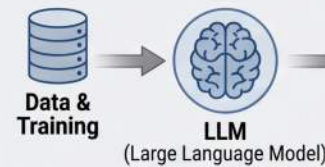
## Part 5: Local Data Knowledge
--GPT Projects and Custom GPTs
## ChatGPT Projects
--Organize chats around a project (e.g., "Example Roadway Project," "CDM -- Railcar History")
--Add Files (Resources) -- Add Instructions (Prompt Instructions)
--Project Files are added to the project (e.g., "Example Roadway Project")
--Prompt: General Issue, Priority #1
--Example Instructions: "You are a Civil Engineering Project Manager overseeing a transportation project. 1) Use only provided documents 2) Cite document reference (section, page, figure); 3) Be detailed and focused."
--Note: ChatGPT requires data to not have to train OpenAI's models (Freese and Nichols workspace).
## Custom GPTs
--Example: "TxDOT Engineering Design Manual" -- Expert in TxDOT design manuals
--Configure Name, Description, Instructions, Generation Settings (e.g., "TxDOT LDP Responsible Professional," "Search MUSD for user and sending latest updates" -- Instructions for Interaction with Database)
--Knowledge (Resources) -- uploaded PDFs (TxDOT Roadway Design, Access Management, Local Government Projects, MUTCD, etc.)
...
## Part 6: Deep Research
--Agentic AI tool that explores the internet and summarizes results in a user-defined structure with resource url links.
## Available Access Platforms
--ChatGPT -- Deep Research
--Gemini -- Deep Research
--Deep -- DeepResearch / Think
--Perplexity -- Deep Research (Pro)
## Example: Deep Research Prompt -- Federal Funding for Transportation Programs
--Task Overview: Comprehensive, current summary of active/upcoming U.S. Federal funding opportunities.
--Scope: U.S. only (highlighted citations); primary sources (gov, agency websites); 2-3 page deliverable.
--Sections: Background Knowledge + Definition of Terms + Action Items (include opportunities, highlight success/ongoing opportunities).
## Sample Output: Federal Funding Programs (2-relevant)
| Program | Summary | Funding | NFO/Deadline |
|-----|-----|-----|-----|
| Railroad Crossing Elimination (RCE) | Highway-rail crossing safety/ability | $60M/ FY2026 | Needs announced Jan 30, 2025 |
    
```

## Making AI Work: Best Practices for Data, Tools, and Workflows

Arkansas Transportation Summit - October 30, 2025 Presentation Landing Page: [www.freese.com/AI](http://www.freese.com/AI)

### CORE CONCEPTS & HOW AI WORKS

#### UNDERSTANDING AI



**Pre-Training:** Learns patterns from massive datasets.

#### Tokens & Probabilistic AI



Token ≈ 3/4 word. Generates next likely tokens based on probability.

#### CONTEXT IS KING



Better Context = Better Results.

1. Prompt (Question/Task)
2. Archive (Chat History)
3. Resources (PDFs, Data)
4. Tools (Web, API)

#### ADOPTION & RISKS



Capability is outpacing learning.

**Risks:** Hallucinations (Making things up) & Data Constraints.

### AI TOOLS & WORKFLOWS

#### LOW-HANGING FRUIT



**Voice Dictation (WisprFLOW)**  
- Speed & Editing



**AI Browser (Perplexity)**  
- Navigate & Link



**Educational Tools (NotebookLM)**  
- Review & Summary

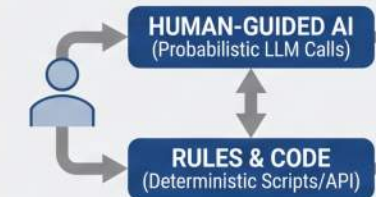
#### LOCAL DATA & DEEP RESEARCH

**Local Data Knowledge:**  
ChatGPT Projects & Custom GPTs  
(Scoped Resources, Instructions)

**DEEP RESEARCH:**  
Agentic AI for Comprehensive Summaries  
(e.g., Federal Funding)

### AI SPECTRUM & ENGINEERING APPLICATION

#### THE SPECTRUM OF AI



**ENGINEERING-GRADE OUTPUTS**  
(Auditable, Consistent Results)

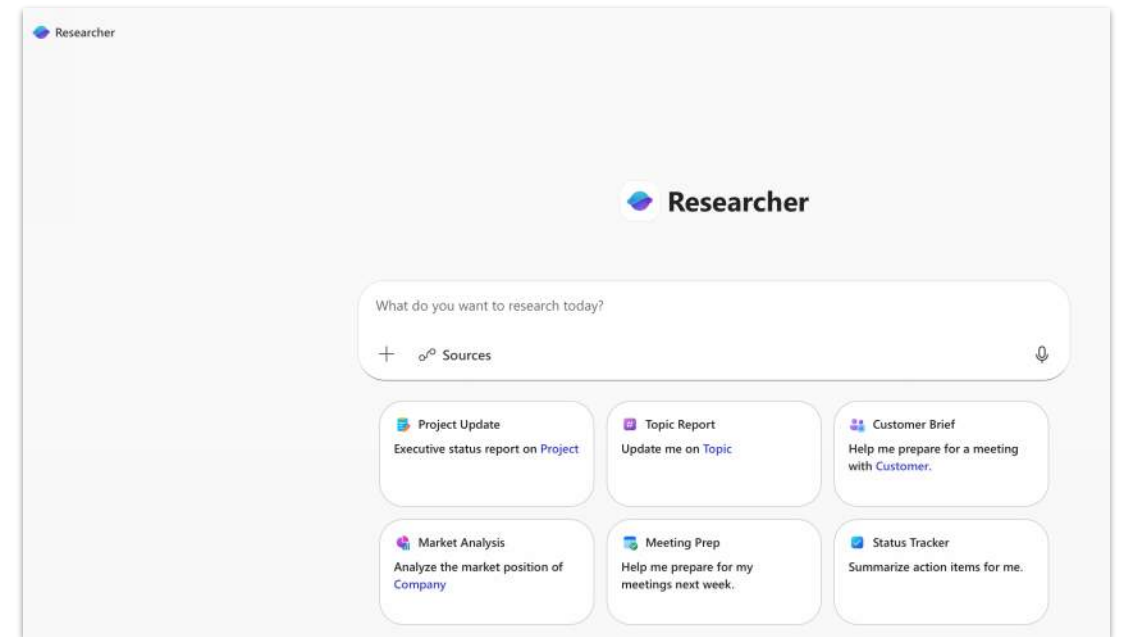
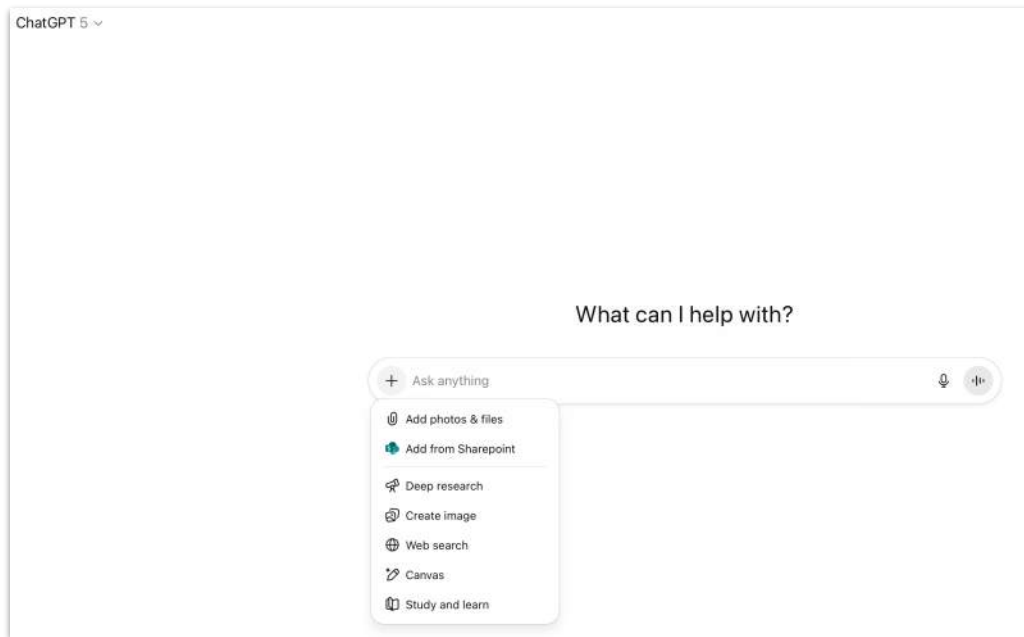
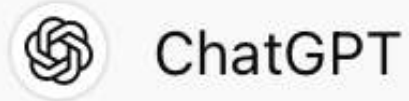
COMBINED SYSTEMS FOR RELIABILITY

Access Presentation & Resources:  
[www.freese.com/AI](http://www.freese.com/AI)

# Deep Research

Agentic AI tool that searches the the internet and summarizes the results in a customize user defines structure with resource web links

# Deep Research



# Deep Research *(AI Advancements in Civil Engineering)*

## AI Integration Roadmap for Transportation Practice

### Task Overview

As part of an ongoing **AI Integration Roadmap for Transportation Engineering Planning and Design**, this task will leverage OpenAI's Deep Research Tool to update **Part 1** of a 4-part document. The objective is to provide a **comprehensive and up-to-date summary** of AI advancements and policies relevant to **transportation planning and design** in the United States.

### Research Scope & Priorities

- **Geographical Focus:** AI applications in the U.S. only.
- **Citation Format:** Hyperlinks should be provided for all sources.
- **Areas of Emphasis:** AI applications in **autonomous vehicles, traffic management infrastructure design, and all aspects of transportation engineering.**
- **Source Prioritization:** The research should prioritize **primary sources** (government publications, company press releases, official reports) and include **secondary sources** only from **reputable news organizations or industry blogs.**

### Deliverable:

A **2-5 page research document** following the outlined structure below.

## Section 1: Background Knowledge

- ✓ **Summary of AI Landscape & Innovations** (1-3 paragraphs, max 400 words)

- **Overview:** Current AI applications in **transportation engineering, planning, and design.**
- **Recent Innovations:** AI tools that have emerged in the **last 6 months.**
- **Upcoming Innovations:** AI tools expected to launch within the **next 6 months.**

### Action:

- **Include citations or references via hyperlinks.**
- **Highlight key trends in AI adoption for transportation engineering.**

## Section 2: Definition of Terms

- ✓ **Define Key AI Terms** (1-2 sentences each)

- **Large Language Model (LLM)**
- **Open Source LLM**
- **Closed Source LLM**
- **Generative AI**
- **Agentic AI**
- **Digital Twins**
- **Neural Networks**
- **Edge AI**
- **Predictive Analytics**
- **Reinforcement Learning**
- **Edge AI**

### Action:

- Add **5-10 additional AI-related terms** relevant to transportation professionals.
- The aim is to provide additional knowledge of AI terms to clarify understanding.
- Ensure **clear and concise** definitions, avoiding unnecessary technical complexity.

## Section 3: AI Innovations in Business & Software Solutions

- ✓ **Research AI Integration in Transportation Engineering & Planning Software**

- Identify and summarize AI-related advancements from **leading software companies** in transportation planning and engineering, including but not limited to:
  - **Bentley Systems**
  - **Cubic Transportation Systems**

### Action:

- Expand the list of **software providers relevant to AI applications in traffic modeling, simulation, planning, and engineering design.**
- Provide a **brief summary (2-3 sentences)** of each company's **AI initiatives.**
- Highlight **notable AI-driven features or recent product enhancements.**

## Section 4: AI Platforms developing Engineering Solutions

- ✓ **Research No-Code AI Platforms**

- Identify and summarize AI-related advancements from **No-code platforms** in civil engineering space, including but not limited to:
  - **Civils.ai**
  - **Ecopia AI**
  - **Blynscy**

### Action:

- Expand the list of **no-code providers relevant to AI applications in planning, engineering design and construction management.**
- Provide a **brief summary (2-3 sentences)** of each company's **AI initiatives.**
- Highlight **notable AI-driven features or recent product enhancements.**

## Section 5: AI Innovations by Consulting Firms

- ✓ **Research AI Integration in the Industry by Consulting Engineering Firms**

- Identify and summarize AI-related advancements from **leading Engineering Firms** in transportation planning and engineering, including but not limited to:
  - **Arcadis**
  - **ARUP**
  - **WSP**
  - **AECOM**
  - **Jacobs**

### Action:

- Expand the list of **engineering consulting firms in planning, engineering design and construction management.**
- Provide a **brief summary (2-3 sentences)** of each company's **AI initiatives.**
- Highlight **notable AI implementation in planning, design or construction of civil engineering projects.**

## Section 6: AI-Related Government Policies & Strategic Planning Documents

- ✓ **Research AI-Related Policies & Plans from Government Agencies**

Summarize **AI-related strategic plans, policy documents, or research reports** from relevant U.S. state and municipal agencies, including:

- **Federal Highway Administration (FHWA)**
- **Texas Department of Transportation (TxDOT)**
- **Oklahoma Department of Transportation (ODOT)**
- **North Carolina Department of Transportation (NCDOT)**
- **Texas Institute of Transportation Engineers (TxITE)**
- **American Public Works Association (APWA)**
- **Transportation Research Board (TRB)**
- **Major Cities:** Fort Worth, Dallas, Oklahoma City, Houston, Austin, San Antonio

### Action:

- For each agency, provide a **2-3 sentence summary** of AI-related **documents, strategies, or initiatives.**
- **Include hyperlinks to sources** where available.
- Provide links to upcoming **AI related training or webinars** by the highlighted agencies
- If an agency does **not** have an AI-related planning document, **state clearly:**
  - *"No AI-related information available at this time."*



# Deep Research

What do you want to know?

Ask anything...



Deep Research



66°F Sunny  
Fort Worth H: 69° L: 37°

Bill Ackman Warns of  
Economic Nuclear...

Colossal Revives Dire  
Wolves

## Deep Research Prompt Federal Funding for Transportation Programs

### Task Overview

The objective is to produce a comprehensive and current summary of active and upcoming U.S. federal funding opportunities related to transportation programs.

### Research Scope & Priorities

- **Geographic Focus:** United States only
- **Citation Format:** All sources must be hyperlinked.
- **Topical Focus:** Emphasis on transportation funding programs
- **Source Prioritization:** Primary sources (e.g., official government publications, press releases, agency websites) should be prioritized. Reputable secondary sources (e.g., major news organizations, industry publications) may be used selectively.

### Deliverable Format

Provide a 2–4 page research document organized according to the following structure:

#### Section 1: Background Knowledge

Provide a concise overview of federal transportation funding.

- **Current Programs:** Summarize active federal funding programs (1–2 paragraphs, max 300 words).
- **Recent Updates:** Identify changes to any existing programs within the last 6 months.
- **Upcoming Opportunities:** Note any anticipated programs or NOFOs expected in the next 6 months.

#### Action Items:

- Include hyperlinks to all referenced sources.
- Highlight funding opportunities available in the current calendar year.

#### Section 2: Definition of Terms

Define key terms relevant to understanding federal transportation funding with a focus on AI and grant processes.

# Deep Research *(Federal Funding Programs)*

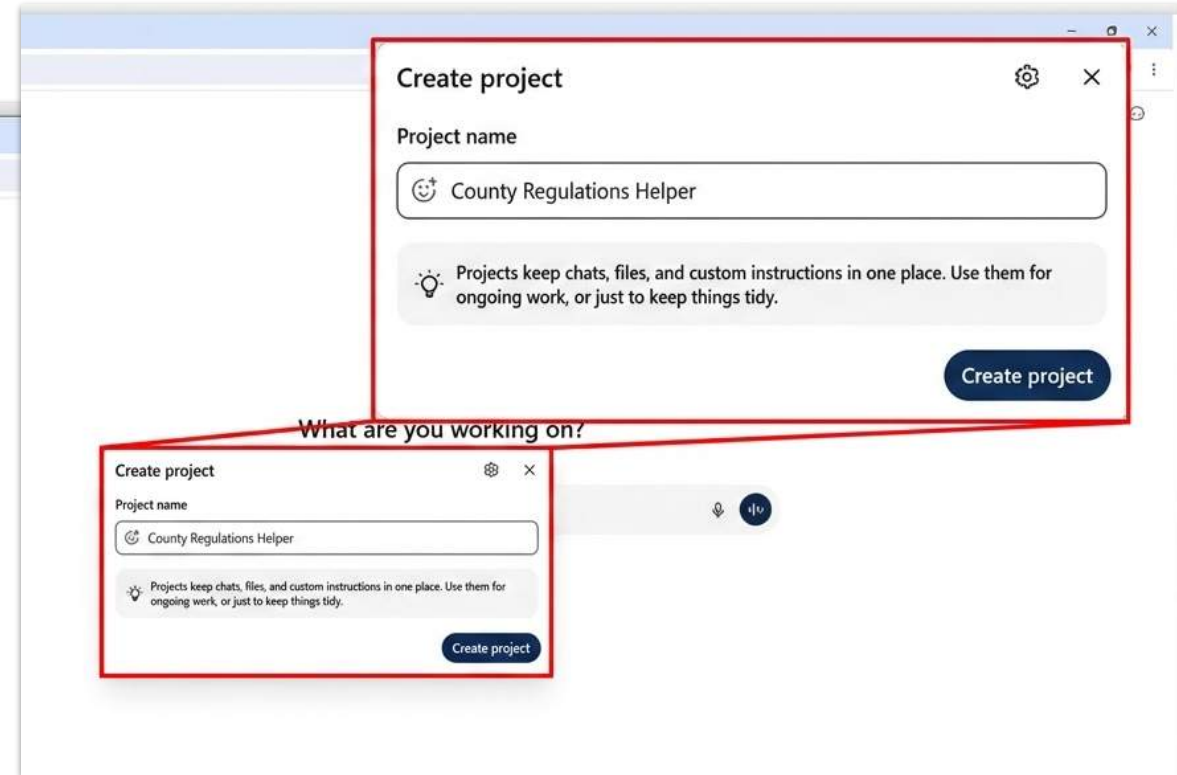
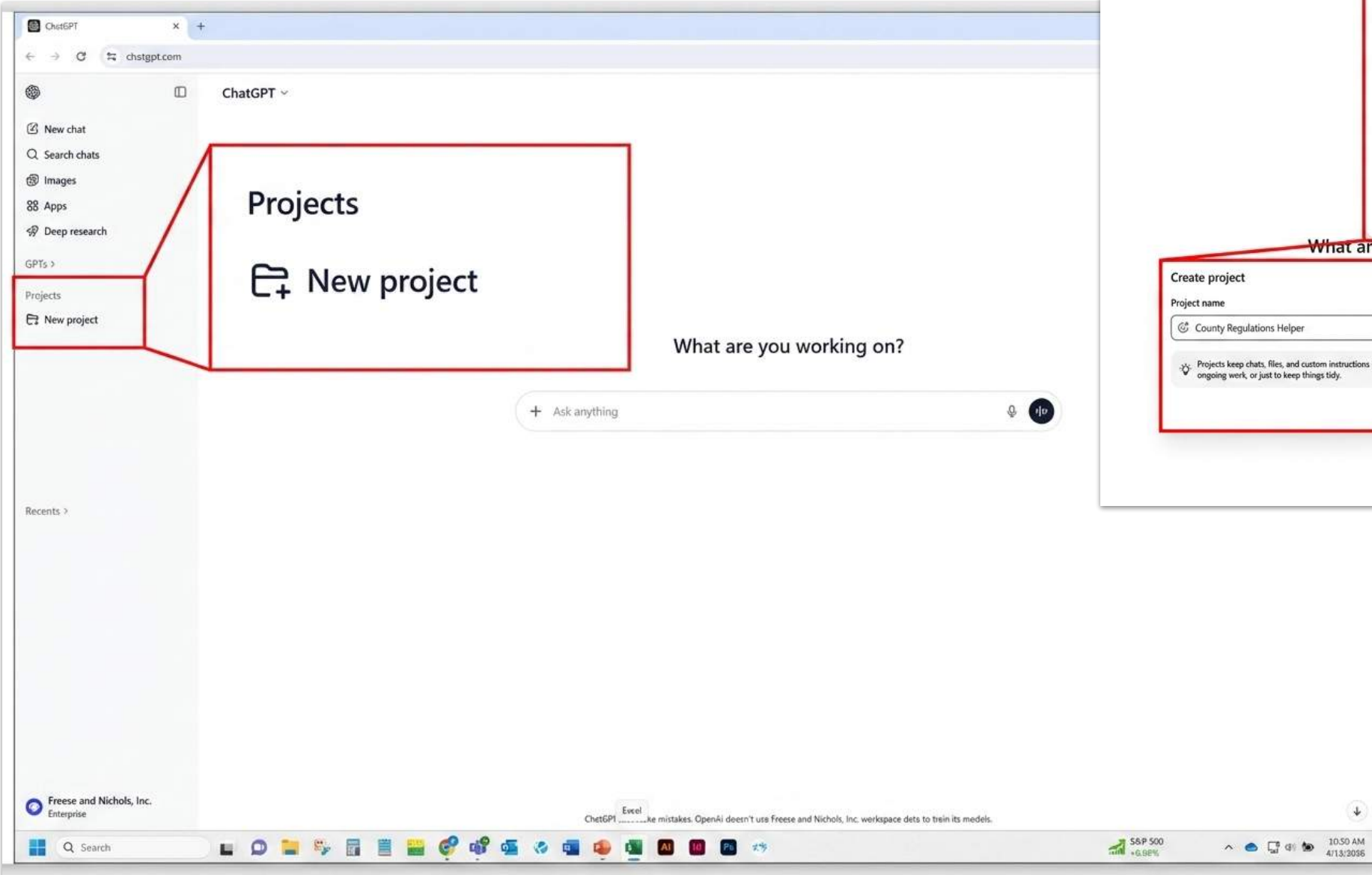
Program Name	Summary	Eligible Project Types (AI relevance)	Funding Availability	Anticipated NOFO & Deadline	Program Info
Railroad Crossing Elimination (RCE)	Funds highway-rail crossing improvements to enhance safety and mobility	Grade separation, track relocation, safety improvements, planning (AI potential for safety monitoring and predictive analytics)	\$600M/year FY22-FY26	Most recent awards announced Jan 10, 2025	<a href="#">RCE Program</a>
Rural Surface Transportation Grant (RSTG)	Supports rural surface transportation projects to improve connectivity and safety	Highway safety, surface transportation, tribal transportation (AI applications for rural transportation optimization)	\$2B over five years	Not specified in results	<a href="#">RSTG Program</a>
Safe Streets and Roads for All (SS4A)	Funds initiatives to prevent roadway deaths and injuries	Planning, demonstration, and implementation projects (AI for safety analysis and crash prevention)	\$982M for FY 2025	Released Mar 31, 2025; Due Jun 26, 2025	<a href="#">SS4A Program</a>
Bridge Investment Program (BIP)	Reduces bridges in poor condition through rehabilitation or replacement	Bridge improvement, rehabilitation, replacement (AI for structural health monitoring)	\$9.62B for FYs 2023-2026	FY26: Large Bridge (Aug 1), Planning (Oct 1), Bridge Projects (Nov 1), 2025	<a href="#">BIP Program</a>
Reconnecting Communities Pilot (RCP)	Reconnects communities divided by transportation infrastructure	Community reconnection, safety improvements, planning (AI for community impact assessment)	\$607M for FY24	FY24 NOFO released (no deadline specified)	<a href="#">RCP Program</a>
BUILD (formerly RAISE)	Supports multi-modal projects with significant local/regional impact	Surface transportation with local/regional impact (AI for project optimization and management)	\$7.5B over five years	FY 2025 NOFO issued Feb 2025	<a href="#">BUILD Program</a>
Commercial Motor Vehicle Safety Programs	Funds CMV safety initiatives and operator training	Safety programs, driver training, technology demonstration (AI for vehicle safety systems)	Not specified	HP-CMV due Mar 7, 2025; CMVOST due Feb 25, 2025	<a href="#">FMCSA Grants</a>
Port Infrastructure Development Program	Improves port facilities and infrastructure	Port facility improvements (AI for port operations optimization)	Not specified	Due Apr 30, 2025	<a href="#">USDOT Grants</a>

# Local **Data** Knowledge

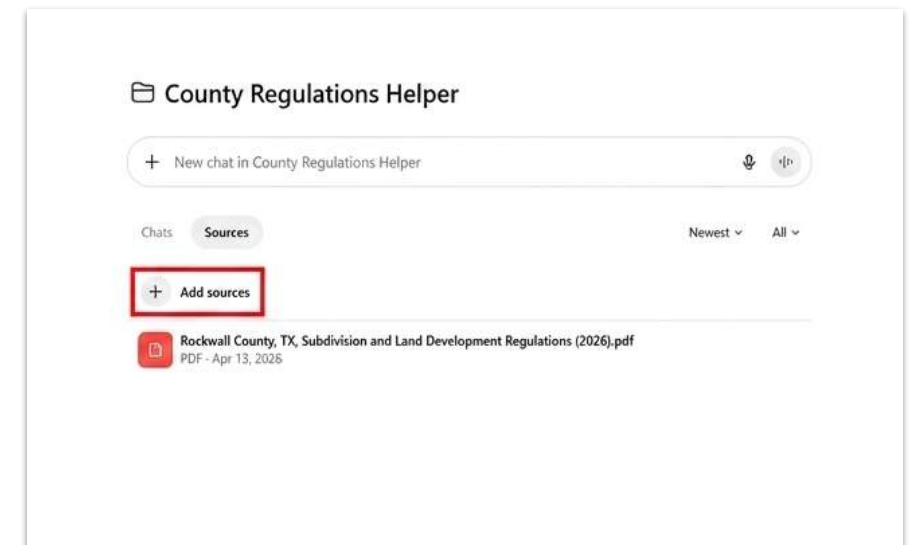
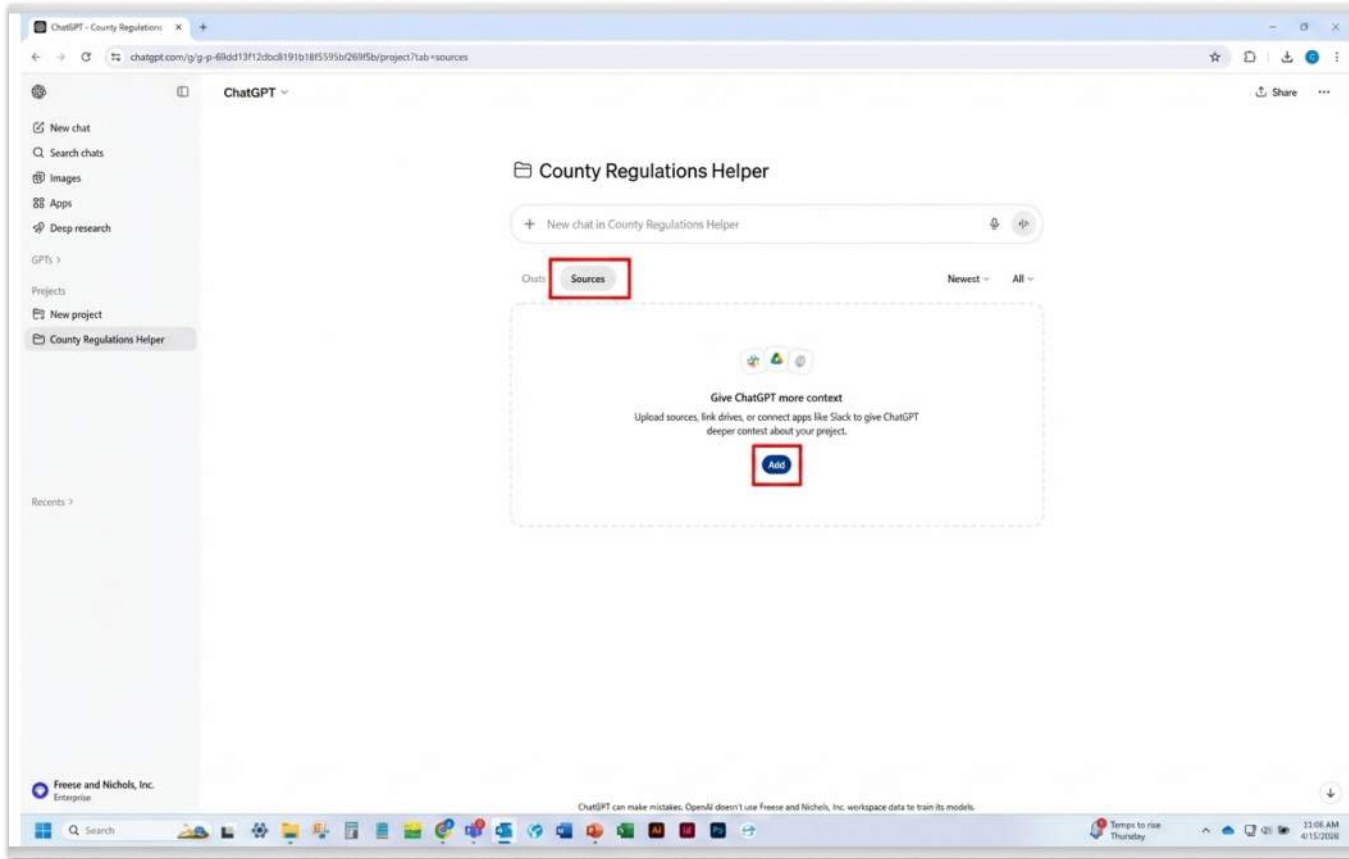
## GPT Projects

- Local Data Resources
- Great for Management
- Document Search and Review

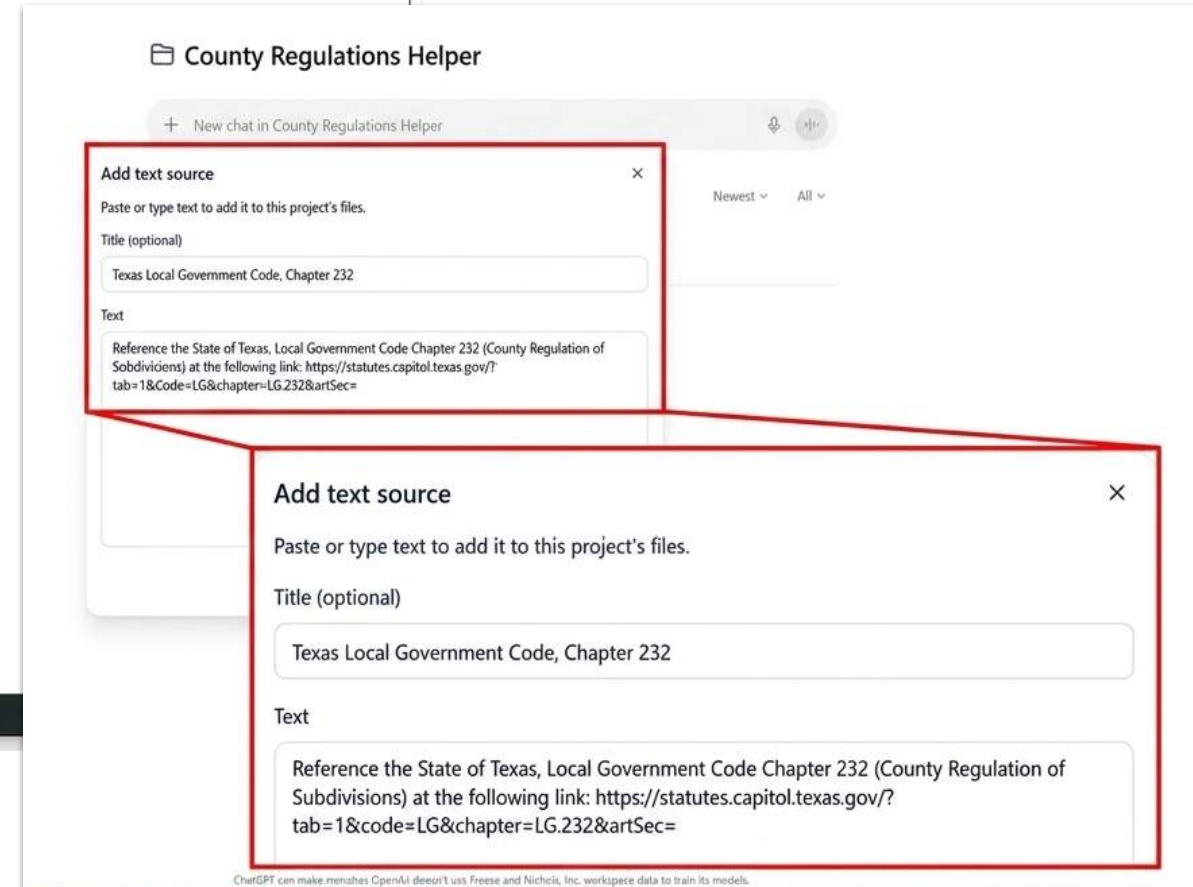
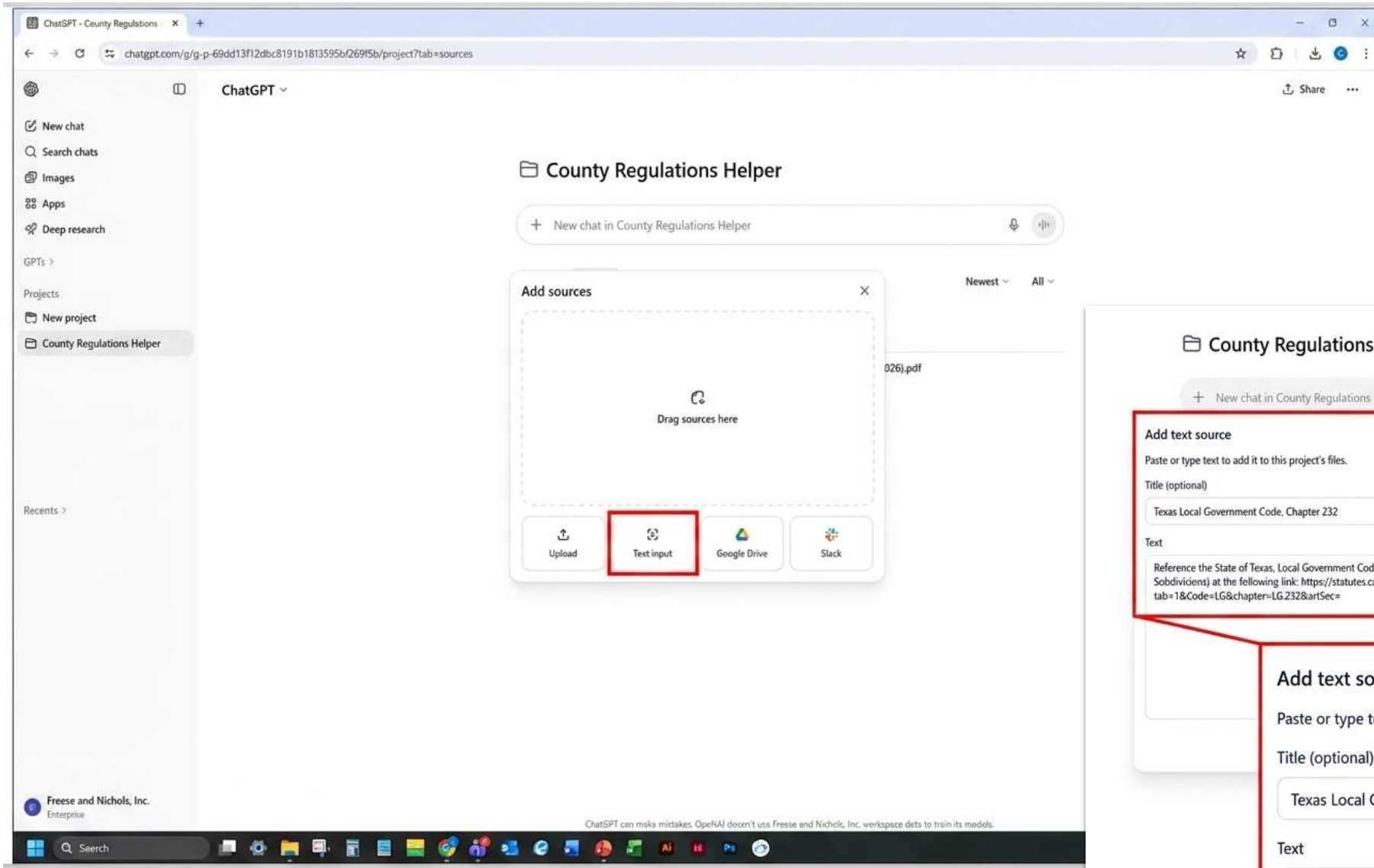
# ChatGPT Project (Setup new Project)



# ChatGPT Project (Add Source Documents)



# ChatGPT Project (Text Input)



# ChatGPT Project (Instructions)

The screenshot displays the ChatGPT web interface with a project settings dialog open for a project named "County Regulations Helper". The dialog includes the following elements:

- Project name:** County Regulations Helper
- Instructions:** A text area containing the instruction: "This project is designed to support the interpretation and application of a County's Subdivision Regulations in conjunction with relevant state and federal regulations. The goal is to help the user understand..." (partially obscured by a PDF icon). This section is highlighted with a red box.
- Memory:** A dropdown menu set to "Default".
- Buttons:** "Delete project", "Cancel", and "Save".

The background interface shows a sidebar with navigation options like "New chat", "Search chats", and "Projects", and a main chat area with a "New chat in County Regulations Helper" button. A red box in the top right corner of the browser window highlights the "Share" and "More" options.

Freese and Nichols, Inc. Enterprise

ChatGPT can make mistakes. Do not feed it. Freese and Nichols, Inc. workname data to train its model.

# ChatGPT Project: Instructions

## **Instructions**

This project is designed to support the interpretation and application of a County's Subdivision Regulations in conjunction with relevant state enabling legislation. The goal is to help the user accurately understand regulatory intent, resolve ambiguities, and ensure consistent, defensible enforcement of subdivision requirements. The assistant should rely primarily on the uploaded subdivision regulations and the provided state legislation link as authoritative sources. When answering questions, it should cross-reference both sources to clarify how state law enables, constrains, or informs local regulations.

## **Instructions for the Assistant**

- Treat the uploaded Subdivision Regulations and the linked state enabling legislation as the primary and controlling references.
- When responding:
  - Cite or reference specific sections when possible.
  - Explain interpretations in plain language, but preserve legal accuracy.
  - Highlight when a requirement is explicitly stated vs. implied or inferred.
- If there is ambiguity:
  - Present multiple reasonable interpretations.
  - Identify risks or implications of each interpretation for enforcement.
- Clearly distinguish between:
  - What the regulation requires
  - What it allows
  - What is silent or unclear
- When relevant, explain how state enabling legislation:
  - Grants authority to the County
  - Limits or constrains local regulations
  - Affects enforcement or procedural requirements
- Do not fabricate requirements or assume standards not present in the provided materials.
- If the answer cannot be determined from the provided sources, state that explicitly.

## **Tone and Style**

- Professional, precise, and analytical
- Structured like a regulatory or planning memo
- Avoid unnecessary jargon, but maintain technical accuracy
- When helpful, organize responses using headings such as:
  - Applicable Regulation
  - Interpretation
  - Implications for Enforcement

## **Typical Use Cases**

- Interpreting specific subdivision requirements
- Clarifying unclear or conflicting provisions
- Determining whether a proposed plat complies with regulations
- Understanding how state law affects local authority
- Supporting defensible staff recommendations or decisions

# Typical Use Cases



- Interpreting specific subdivision requirements



- Clarifying unclear or conflicting provisions



- Determining whether a proposed plat complies with regulations



- Understanding how state law affects local authority



- Supporting defensible staff recommendations or decisions

# ChatGPT Project (Knowledge Results)

Tell me the maximum cul-de-sac length permitted in the County.

## Applicable Regulation

Rockwall County Subdivision Regulations, Section 5.2 (Street Design Standards):

- "A cul-de-sac shall have a maximum length of six hundred (600) feet measured along the centerline."

Rochwell County, TX, Subdivisio...

## Interpretation

- The regulation is explicit and mandatory (uses "shall").
- The maximum permitted length is 600 feet, and measurement must be taken along the centerline of the street, not lot depth or pavement edge.

## Implications for Enforcement

- **Requirement:** Any cul-de-sac exceeding 600 feet would not comply with County standards.
- **Design review:** This is typically verified at the preliminary plat and construction plan stages.
- **No stated exceptions:** The regulation does not provide built-in flexibility (e.g., no administrative deviation). Relief would require a Subdivision Waiver (Sec. 6.1).
- **Related requirement:** If a street cannot meet connectivity standards, it must comply with cul-de-sac standards — as the 600-foot cap becomes a key control on subdivision layout.

## State Law Context (TLGC Chapter 232)

- Chapter 232 authorizes counties to adopt street design standards as part of subdivision regulation.  
Texas Local Government Code, ES...
- It does not prescribe cul-de-sac lengths: meaning:
  - The 600-foot limit is locally determined, not state-mandated.
  - The County has discretion, but enforcement must be consistent and tied to adopted standards.

## Bottom Line

+ Ask anything

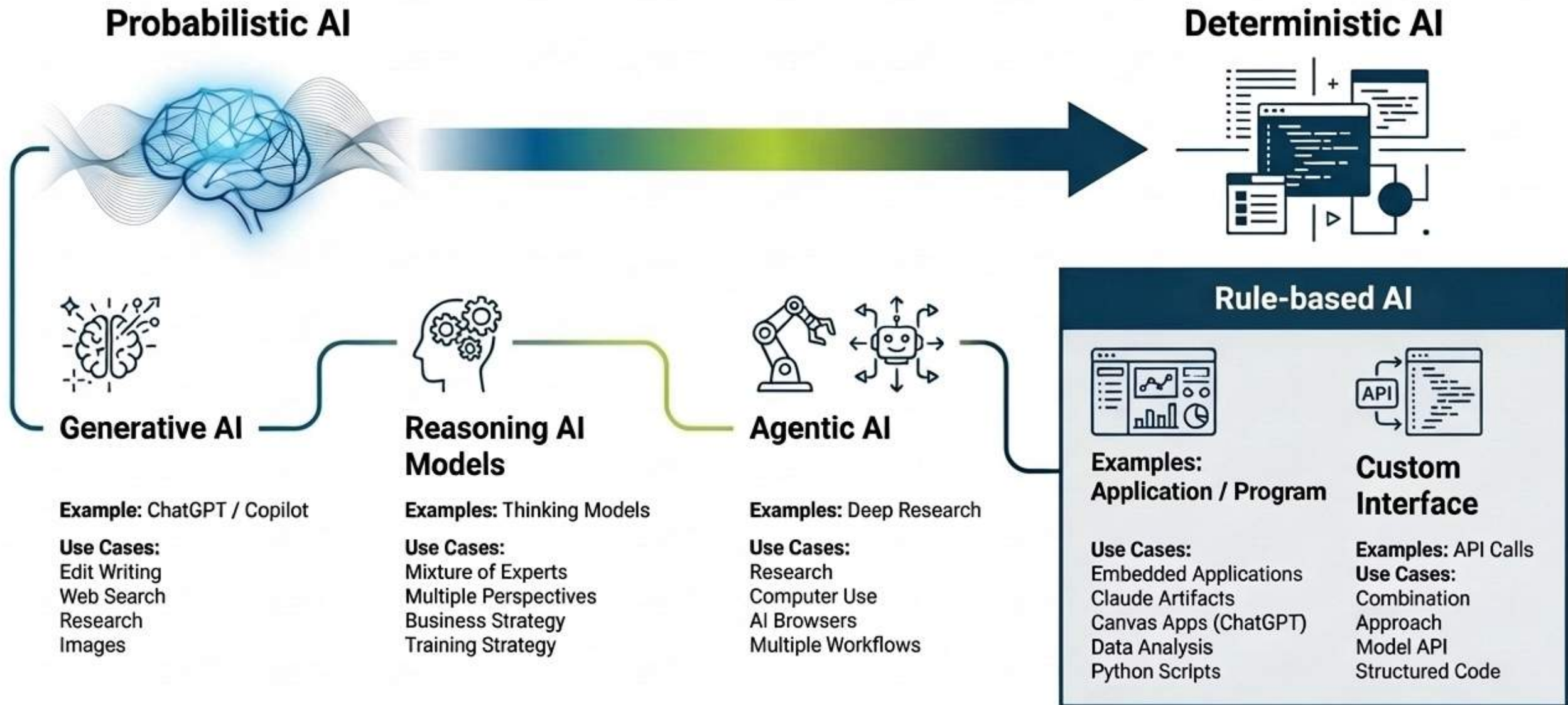
## G. Cul-de-Sacs

1. A cul-de-sac street shall be platted and constructed with a turnaround area with a paved radius of forty (40) feet and a right-of-way diameter of at least one hundred (100) feet.
2. A cul-de-sac shall have a maximum length of six hundred (600) feet measured along the centerline.
3. All [Cul-de-Sacs](#) will be designated as a [Private Street](#) on a plat, and will be maintained by either the property owner, [Homeowners' or Property Owners' Association](#) or special district.

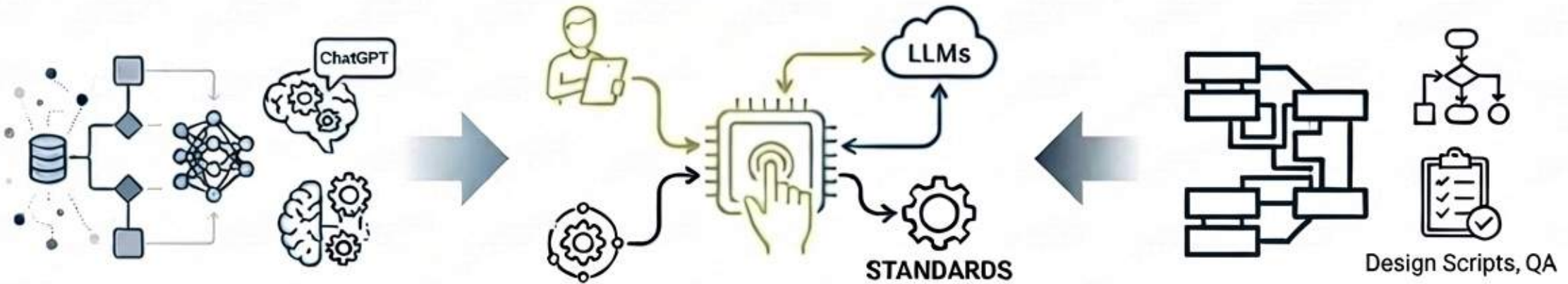
# Probabilistic vs. Deterministic AI

*Driving Predictable and Consistent Results in the AEC Industry*

# “Understanding the Spectrum of AI”



# Probabilistic vs. **Deterministic AI**



## **PROBABILISTIC AI**

Learns from Training Data  
Predicts Patterns  
Generates New Content

## **COMBINED SYSTEM**

Human-Guided Workflows  
Integrates API Calls to LLMs  
+ Rules-Based Logic  
Aligned with Engineering Standards

## **DETERMINISTIC AI**

Rule-Based  
Precise & Consistent  
Auditable



# **AI Implementations for Counties and DOTs**

*Data and Early Use Cases*

# County Government AI Implementations

*Source: National Association of Counties*

# U.S. County Government AI Implementation Landscape

*A Review of Policies, Strategic Plans & Active Initiatives Across U.S. Counties*

Research Period: 2024–2026 | Primary Framework: NACo AI County Compass

**25+**

Counties with  
Active AI Deployments

**75%+**

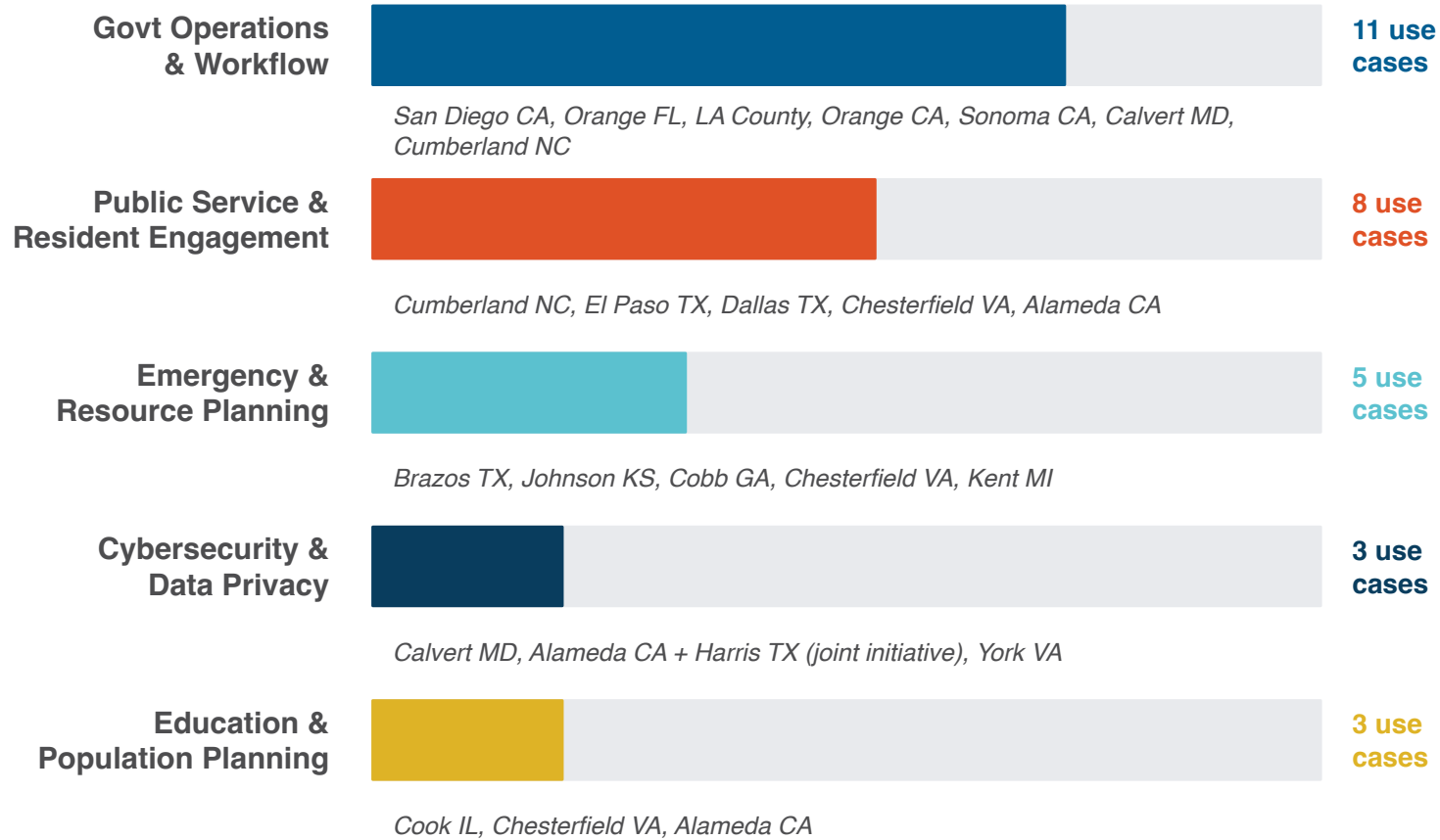
County Staff Using  
GenAI Tools at Work

**#2**

AI/GenAI as County  
IT Priority (2025)

# AI Use Cases by Category

NACo Featured Counties | AI in Motion Report (2025)



**30**  
Total  
Use Cases

# Top 10 County IT Priorities (2025)

Digital Counties Survey | Center for Digital Government & NACo

1	<b>Cybersecurity &amp; Risk Management</b> <i>Perennial #1</i>	6	IT Governance & Policy <i>AI driving this up</i>
2	<b>AI / GenAI / Machine Learning Pilots</b> <i>#2 two years running</i>	7	Business Process Automation / RPA <i>AI + RPA converging</i>
3	Budget & Cost Control <i>Efficiency pressures</i>	8	Dept. IT Collaboration <i>Cross-dept AI programs</i>
4	Constituent Engagement & Digital Services <i>Self-service demand up</i>	9	Talent Management & Workforce Dev <i>AI skills gap widening</i>
5	App Modernization & Cloud Migration <i>Legacy focus</i>	10	<b>Data Governance</b> <i>New — AI foundation</i>

■ AI-Related Priority      ■ Top Priority (Cybersecurity)

# Key Themes from County AI Strategic Plans

Synthesized from: Fairfax VA · Chesterfield VA · Cook IL · San Diego CA · Maricopa AZ · Montgomery PA

01

## Multi-Year Roadmaps with Prioritized Pilots

Cook County identified 49 AI pilot projects; a prioritized subset launches in 2025. Fairfax County's FY2026 IT Plan embeds AI/ML as a core strategic pillar — not a side project.

*Cook IL · Fairfax VA*

02

## Governance Before (or Alongside) Deployment

Maricopa County's AI Governance Audit covers 5 domains: Policies, Risk Assessments, Data Governance, Training/Accountability, and Monitoring. San Diego's process culminated in Board Policy A-140.

*Maricopa AZ · San Diego CA*

03

## Alignment to Civic Equity & Outcomes

Fairfax County ties AI investments to four pillars: Equity, Community Outcomes, Data Integration, and Inclusive Engagement. AI is a tool for measurable public good — not efficiency alone.

*Fairfax VA · Montgomery PA*

04

## AI Democratization & Workforce Readiness

Chesterfield County's strategy enables departments to innovate with AI safely — digital-first platforms with built-in governance. Maricopa's plan mandates end-user training and accountability.

*Chesterfield VA · Maricopa AZ*

05

## Independent Oversight Bodies

Montgomery County established its AI Advisory Council for Public Good (April 2025) — one of the first at the local level — bringing engineers, ethicists, healthcare leaders, and educators into AI decision-making.

*Montgomery PA*

06

## State Framework Integration

Virginia's Commonwealth AI Strategy (Jan 2026) includes a centralized use-case registry. Texas TRAIGA (2025) mandates disclosure for AI-resident interactions. Counties are aligning plans to state mandates.

*Fairfax VA · Travis TX · Dallas TX*

# Key Themes & Observations

Cross-cutting findings from the U.S. county AI landscape

**75%+** of county staff use GenAI tools at work

Yet formal governance policy adoption remains the exception — most counties operate without enforceable AI rules.

**#2** AI/GenAI IT priority rank, 2nd consecutive year

Only Cybersecurity ranks higher. Data Governance entered the top 10 for the first time in 2025, signaling AI foundations are gaining attention.

**3** Governance postures emerging across counties

Policy-First · Initiative-First · Strategic Plan-Driven. Each reflects a different organizational maturity level.

## Vendor Ecosystem

Microsoft (Copilot, Azure OpenAI), AWS Bedrock, Tyler Technologies, GovWorx, DebtBook, and OnePlan are the most-cited platforms. Many counties use the GovAI Coalition's procurement checklists for vendor evaluation.

## Small Counties Can Participate

Schleicher County, TX (pop. ~3,000) uses AI for lease document extraction and election outreach video creation — proving AI is accessible without large IT departments.

## State Frameworks Are Forcing Action

Virginia's Jan 2026 Commonwealth AI Strategy and Texas TRAIGA (2025, mandating AI disclosure to residents) are pushing counties to formalize postures that were previously informal.

## The Policy Gap Is Closing — Fast

NACo's AI County Compass (2024) and four regional AI Forums in 2025 dramatically accelerated county policy adoption. The GovAI Coalition now has 900+ agencies sharing templates and frameworks.

# County AI Research: Starting Points

Primary sources for policy documents, use case libraries & governance frameworks

POLICY

*Governance Toolkit*

## [NACo AI County Compass](#)

Comprehensive policy templates, ethical frameworks, workforce prep, and AI use-case library. The primary reference for county AI governance — produced by NACo in partnership with Deloitte.

CASES

*Use Case Compendium*

## [NACo AI in Motion](#)

County-by-county implementation case studies across five functional domains. Best source for specific initiatives and confirmed technology deployments. Published June 2025.

RANK

*Annual Benchmark*

## [GovTech Digital Counties Survey](#)

Annual ranking of technology-leading counties by population tier. Identifies innovation leaders and tracks county IT priority shifts year-over-year. Run by Center for Digital Government.

TMPL

*Policy Templates*

## [MRSC AI Policy Library](#)

Washington-focused but nationally relevant. Hosts adopted AI policies from Benton, Lewis, Kitsap, and Whatcom Counties. Includes GovAI Coalition templates and procurement checklists.

PEERS

*Peer Network — 900+ Agencies*

## [GovAI Coalition](#)

Government agencies sharing AI governance resources, procurement checklists, and policy handbooks. Led by City of San Jose. Free membership for local government agencies.

GUIDE

*State Association Guide*

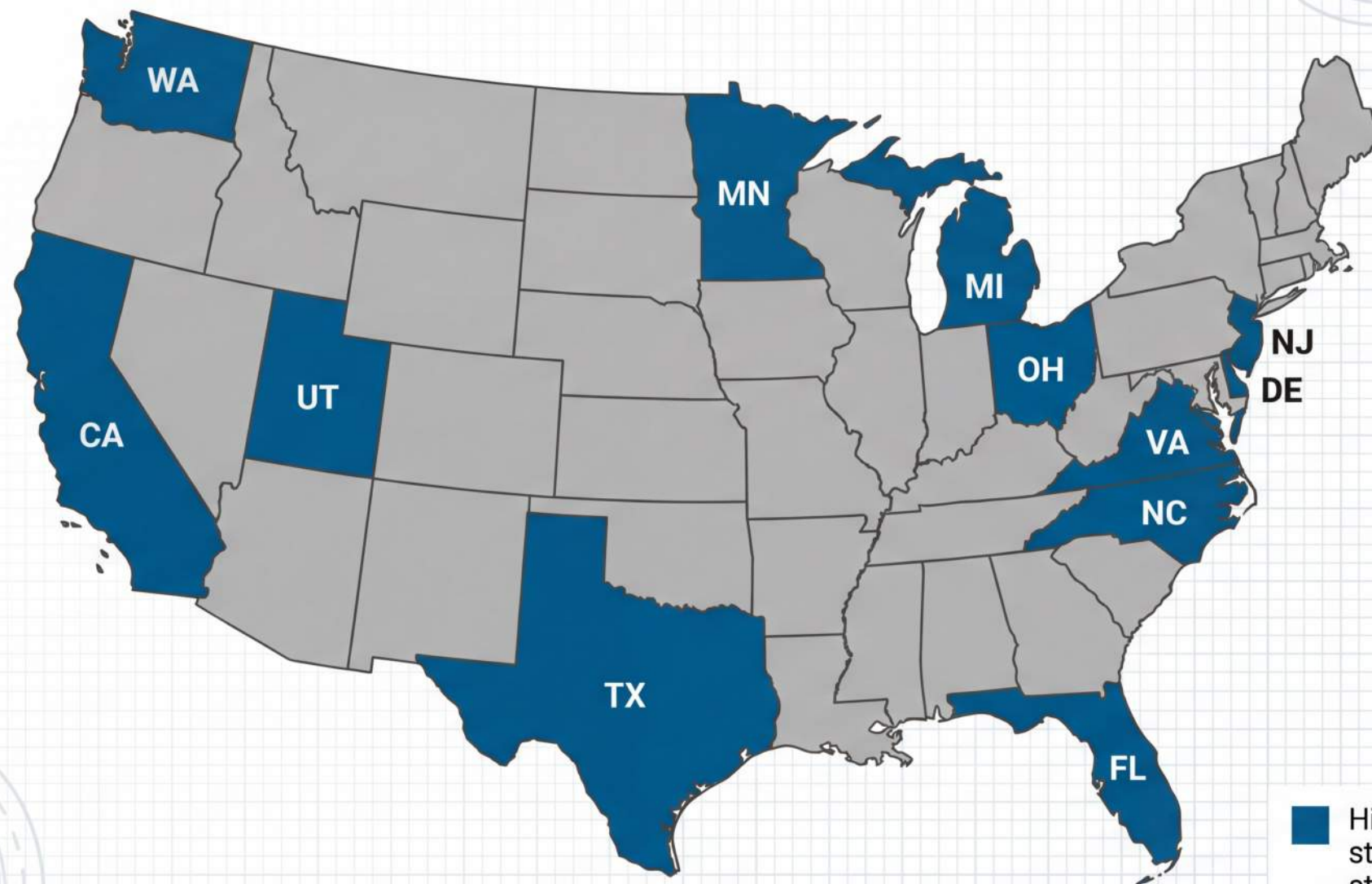
## [NYSAC AI Report \(2025\)](#)

New York State Association of Counties AI Summit report with practical governance frameworks. Applicable regardless of state. Includes policy checklists and examples from early adopters.

# What are **DOTs** are Doing?

*Examples of other DOT AI Implementation*

# States with Formal AI Plans/Policies



■ Highlighted = Formal AI strategic plan / policy or statewide AI framework applied to transportation

# Key Themes & Trends Across State DOTs

## Traffic Management & Optimization

- Real-time signal adjustments
- Predictive traffic analysis
- Congestion prediction



## Safety & Incident Detection

- Crash detection
- Vulnerable road user safety
- Rural detection improvements



## State DOT AI Adoption



## Asset Management & Maintenance

- Pothole detection
- Damage detection
- Pavement management



## Administrative Efficiency

- Automated workflows
- Productivity copilots
- Cost estimation



## Common Challenges



Data quality



Security



Reliability



Governance



Training & AI literacy

## Governance Patterns

Human-led, AI-supported

Chief Data/AI Officer

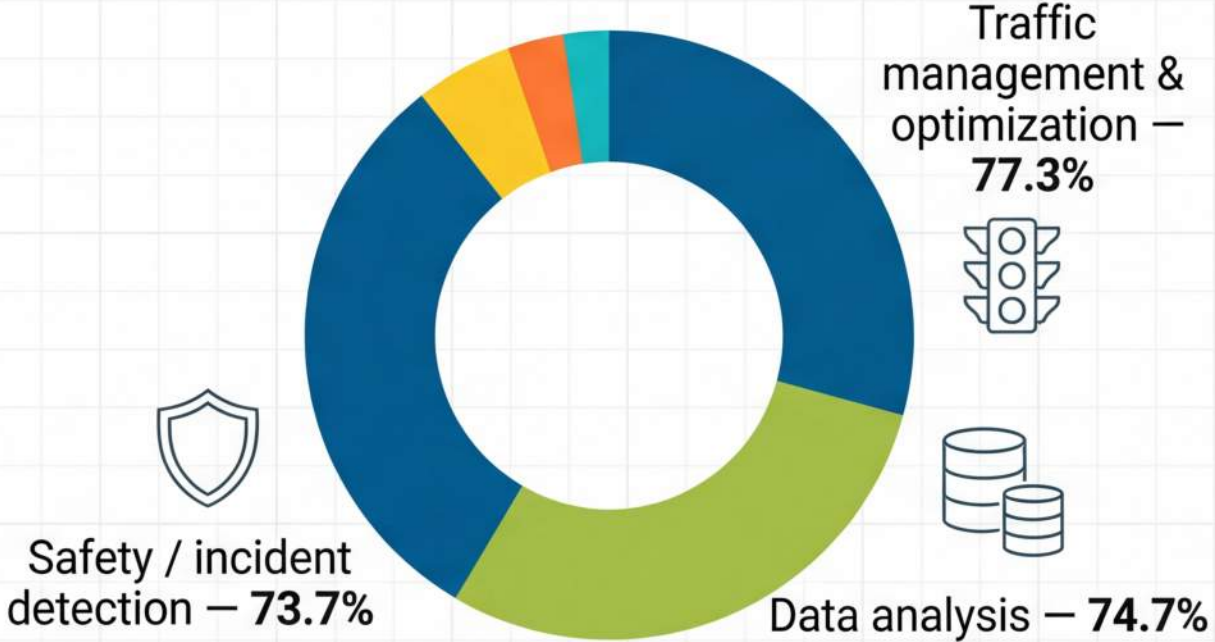
AI program managers

Responsible use frameworks

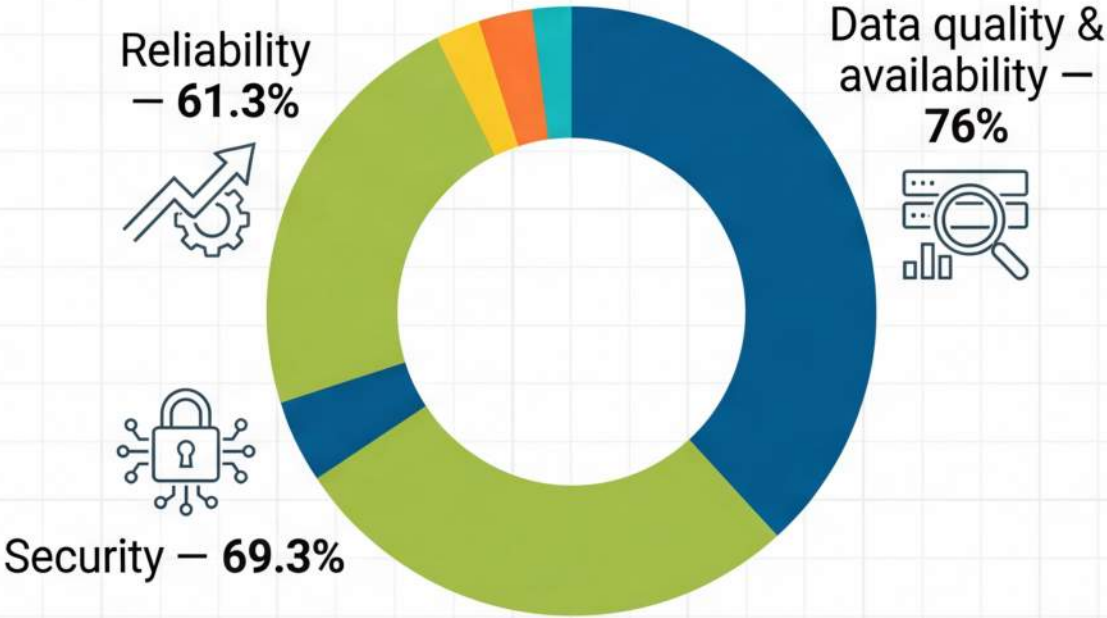
# AASHTO 2025 AI Survey – Key Findings

Survey period: March 6 – May 28, 2025

### Top AI Priority Areas (DOT Perspective)



### Biggest Challenges / Risks



**Key finding:** ~20 states report an AI plan or policy, but few have full oversight frameworks.

# Emerging AI Developments in 2026

AI Agents and New Emerging Tools and Interfaces

# AI Agents

Environment, Triggers, Tools, Skills, Memory, Completion Criteria

# AI Agents: A Spectrum of Use Cases

Same label, very different implementations.



## Deep Research

Automatically explores many sources and synthesizes findings into a concise answer.



## Scheduled Automations

Runs recurring checks or actions at set times without manual prompting.



## Workflow Agents

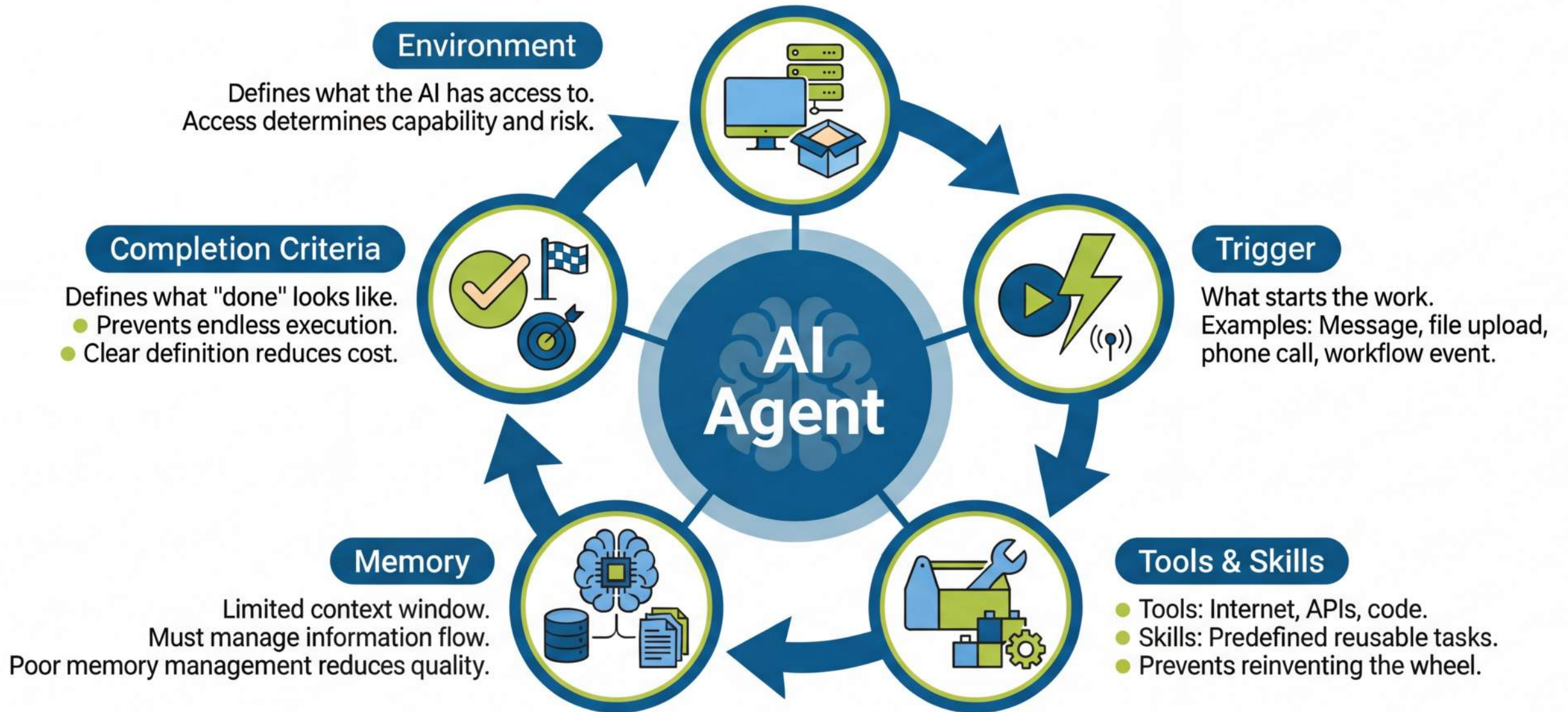
Executes multi-step processes, with human review or fully automated execution.



## Local Orchestrator

On-device agent that launches specialized sub-agents based on your request.

# How an AI Agent Works



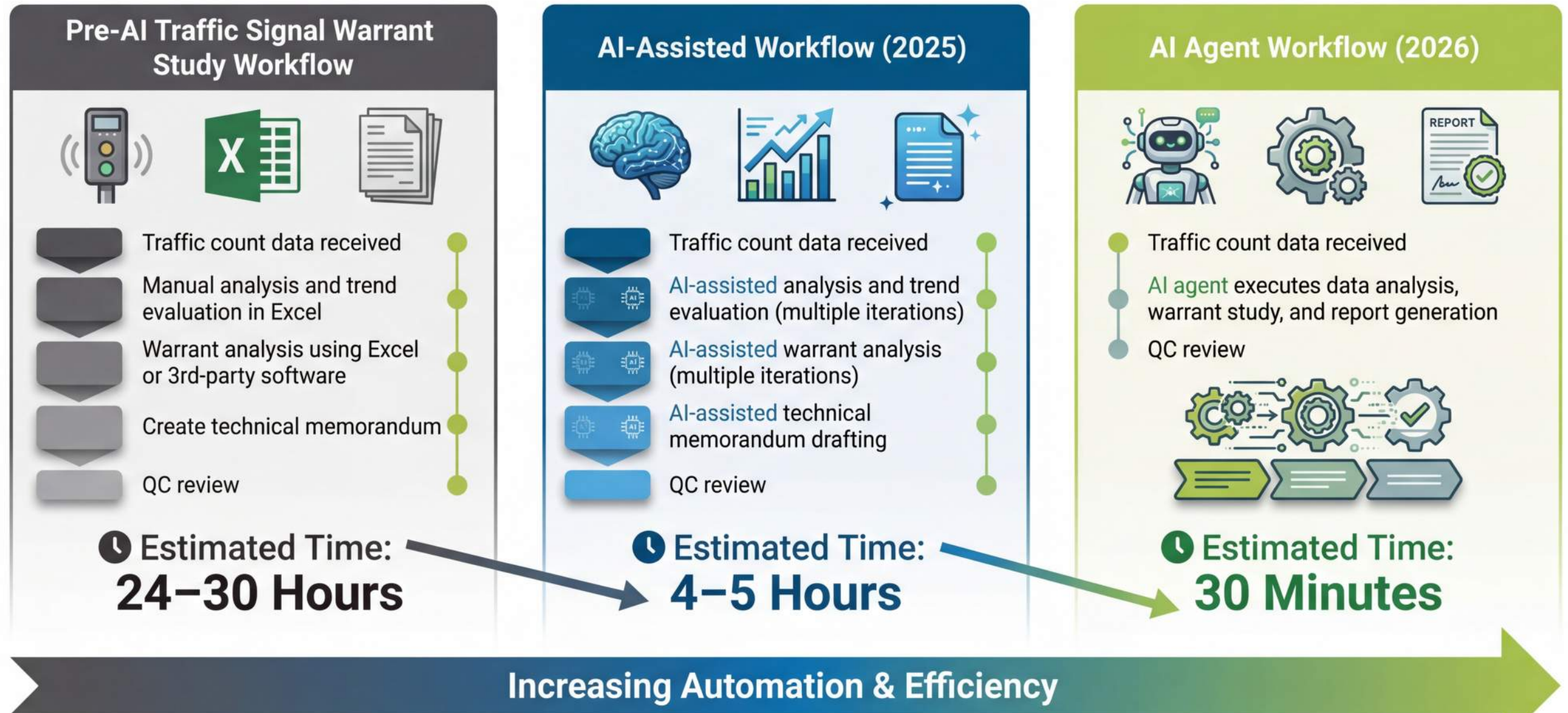
AI Agent = AI operating within a defined environment, activated by a trigger, using tools, managing memory, and stopping at clear completion criteria.

# AI Agents Case Studies

Engineering Studies and Research

# Traffic Signal Warrant Study – Workflow Evolution Case Study

Efficiency Transformation: Pre-AI → AI Assisted → AI Agents



From Manual Analysis to Autonomous Study Execution

# Traffic Signal Warrant Study Skills



**Traffic Count Data  
Analysis Skill**



**Location Map  
Creator Skill**



**Warrant 1  
Analysis Skill**



**Warrant 2  
Analysis Skill**



**Warrant 3  
Analysis Skill**



**Traffic Warrant Study  
Report Skill**

# Warrant Study Report

**To:** Parker County, Texas  
**From:** Traffic Engineering Division  
**Subject:** US 377 at Kelly Road / Bent Creek Court Road — Traffic Signal Warrant Study  
**Date:** March 3, 2026

## Traffic Signal Warrant Study Memorandum

### 1. Executive Summary

A traffic signal warrant study was conducted for the intersection of US 377 and Kelly Road / Bent Creek Court Road in Parker County, Texas. The study evaluates whether traffic conditions at this intersection meet the criteria for signal installation per the Texas Manual on Uniform Traffic Control Devices (Texas MUTCD). A 24-hour turning movement count was collected on March 27, 2025, by GRAM Traffic NTX Inc.

#### Key Findings:

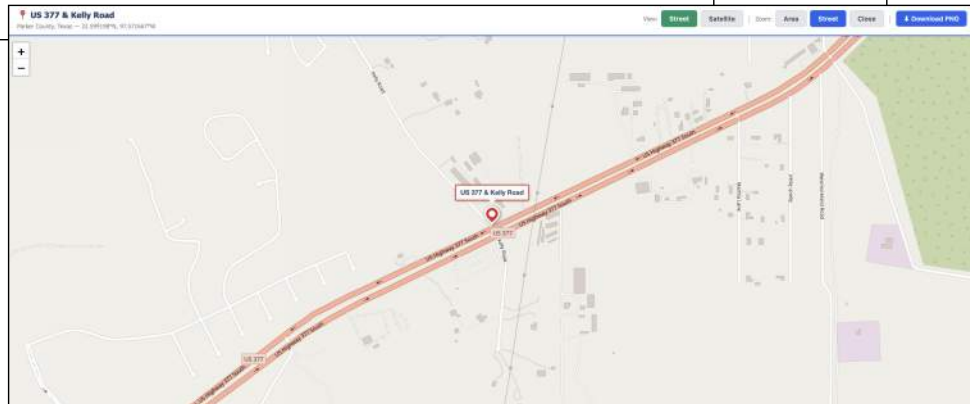
- Warrant 1 (Eight-Hour Vehicular Volume): SATISFIED — Standard Condition B met for 13 of 8 required hours; Reduced (70%) Condition A met for exactly 8 hours
- Warrant 2 (Four-Hour Vehicular Volume): NOT SATISFIED — 0 of 4 required hours above the threshold trend line (Table 4C-2)
- Warrant 3 (Peak-Hour Vehicular Volume): SATISFIED — 13 hours above the reduced threshold curve (Table 4C-4)
- US 377 carries approximately 30,194 vehicles per day; Kelly Road carries approximately 1,700 vehicles per day

**Recommendation:** Based on the satisfaction of Warrant 1 and Warrant 3 criteria, a traffic signal is warranted at the intersection of US 377 and Kelly Road / Bent Creek Court Road. It is recommended that a traffic signal be installed at this location, subject to engineering judgment and additional considerations including sight distance, intersection geometry, and crash history.

### 2. Background and Site Information

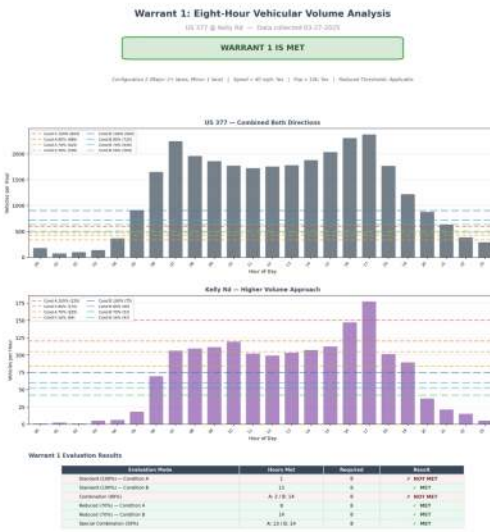
#### 2.1 Intersection Configuration

- Major Road:** US 377 (East-West)
- 2 approaching lanes per direction
- Posted speed limit exceeds 40 mph
- Minor Road:** Kelly Road / Bent Creek Court Road (North-South)
- 1 approaching lane per direction
- Stop-controlled on minor road approaches



Warrant 1 is met through multiple evaluation modes. Standard Condition B is satisfied with 13 hours meeting both major and minor road thresholds (hours 07:00 through 19:00). Additionally, Reduced (70%) Condition A is met for exactly 8 hours (07:00–10:00 and 14:00–17:00), and the Special Combination (56%) is met with 13 and 14 hours for Conditions A and B respectively.

Figure 2: Warrant 1 Analysis — Eight-Hour Vehicular Volume Results



## 5. Conclusion and Recommendations

### 5.1 Summary of Findings

The traffic signal warrant study for US 377 at Kelly Road / Bent Creek Court Road evaluated three warrants from the Texas MUTCD. Two of the three warrants analyzed are satisfied:

- Warrant 1 (Eight-Hour Vehicular Volume) is SATISFIED through multiple evaluation modes
- Warrant 2 (Four-Hour Vehicular Volume) is NOT SATISFIED
- Warrant 3 (Peak-Hour Vehicular Volume) is SATISFIED with 13 qualifying hours

### 5.2 Final Recommendation

The intersection of US 377 and Kelly Road / Bent Creek Court Road in Parker County, Texas, meets the Texas MUTCD criteria for traffic signal installation under both Warrant 1 and Warrant 3. The high volume of through-traffic on US 377 (over 30,000 vehicles per day) combined with significant turning movements from Kelly Road (1,700 vehicles per day, predominantly southbound) creates conditions that warrant signal control to provide safe gaps for minor road traffic to enter or cross the major road.

**Final Determination:** A traffic signal IS warranted at the intersection of US 377 and Kelly Road / Bent Creek Court Road based on the satisfaction of Warrant 1 and Warrant 3. Signal installation is recommended, subject to engineering judgment regarding intersection geometry, sight distance, and coordination with adjacent traffic control devices.

Criteria	Result	Comments
Warrant 1 — Eight-Hour Vehicular Volume	SATISFIED	Condition B (100%): 13/8 hrs; Reduced Condition A (70%): 8/8 hrs
Warrant 2 — Four-Hour Vehicular Volume	NOT SATISFIED	0/4 required hours above trend line
Warrant 3 — Peak-Hour Vehicular Volume	SATISFIED	13 hours above reduced threshold curve (Table 4C-4)

### Warrant 3: Peak-Hour Vehicular Volume Analysis

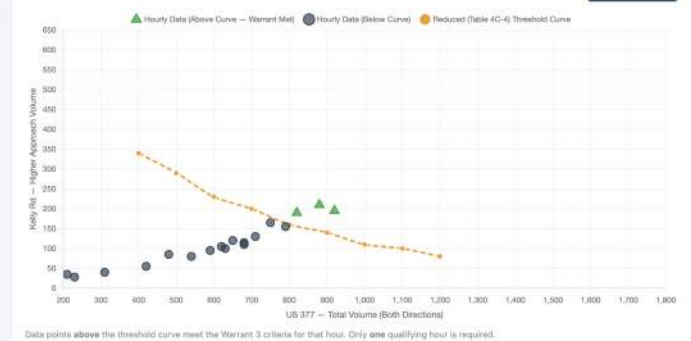
US 377 @ Kelly Rd — Data collected 03-27-2025

**WARRANT 3: MET ✓**

#### Intersection Configuration

Major Road: US 377 (2 lanes/approach) | Minor Road: Kelly Rd (1 lane/approach)  
 Configuration: Table 2 (Major: 2+ lanes, Minor: 1 lane) | Speed Limit: 45 mph | Population: 8,500  
 Standard (4C-3): Not Applicable | Reduced (4C-4): Applicable

#### Peak-Hour XY Scatter Plot — US 377 vs. Kelly Rd



# AI Progress – Simple Research & Presentation Workflow (Last 14 Months)



TIME DECREASING

Pre-AI  
(Ending Nov 2024)



- Google search new software releases (last 3 years)
- Manually create PowerPoint slide
- Manual formatting and research

 **3 Hours**

AI with Web Access  
(Dec 2024 – March 2025)



- ChatGPT with web access
- Research new AI models
- Manually create PowerPoint slide

 **2 Hours**

AI Research  
(March 2025 – Sept 2025)



- Deep research on new AI models
- Structured summaries generated
- Manual PowerPoint slide creation

 **1.5 Hours**

AI Research +  
Image Generation  
(Oct 2025 – Jan 2026)



- Deep research on new AI models
- AI generates timeline image
- Minimal slide formatting required

 **0.5 Hours**

AI Research + AI Agents  
(Feb 2026 – March 2026)



- Ask AI agent via text message
- Agent researches new models
- Agent creates dynamic HTML timeline automatically

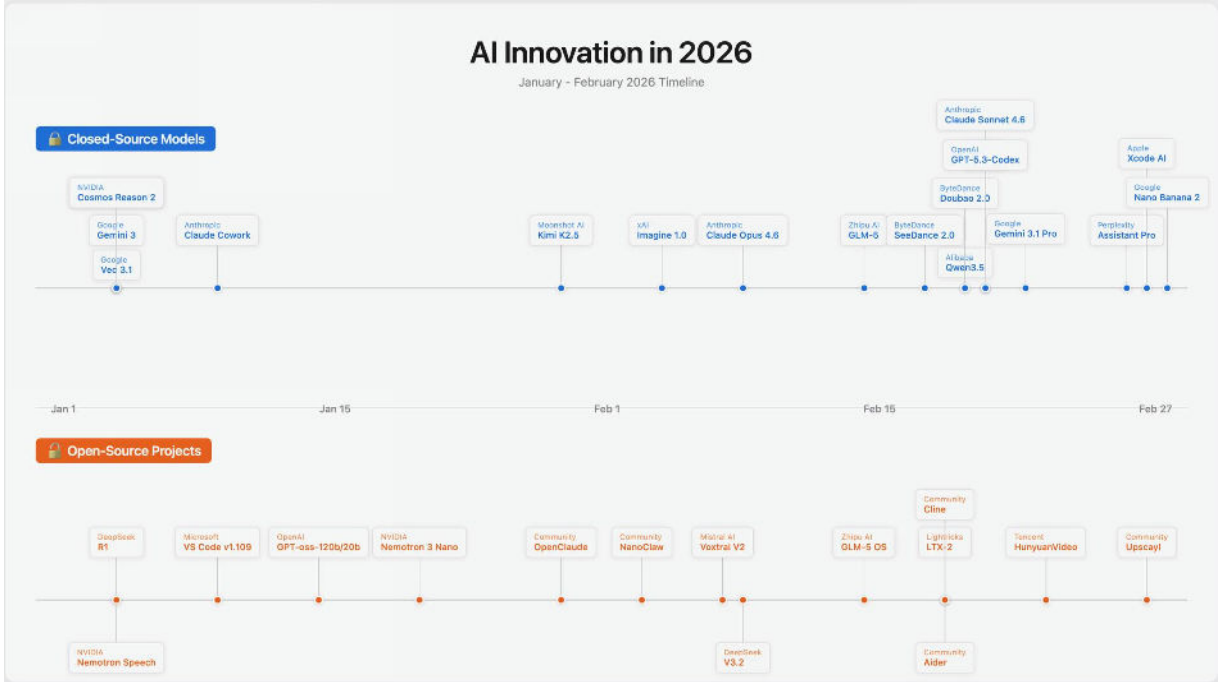
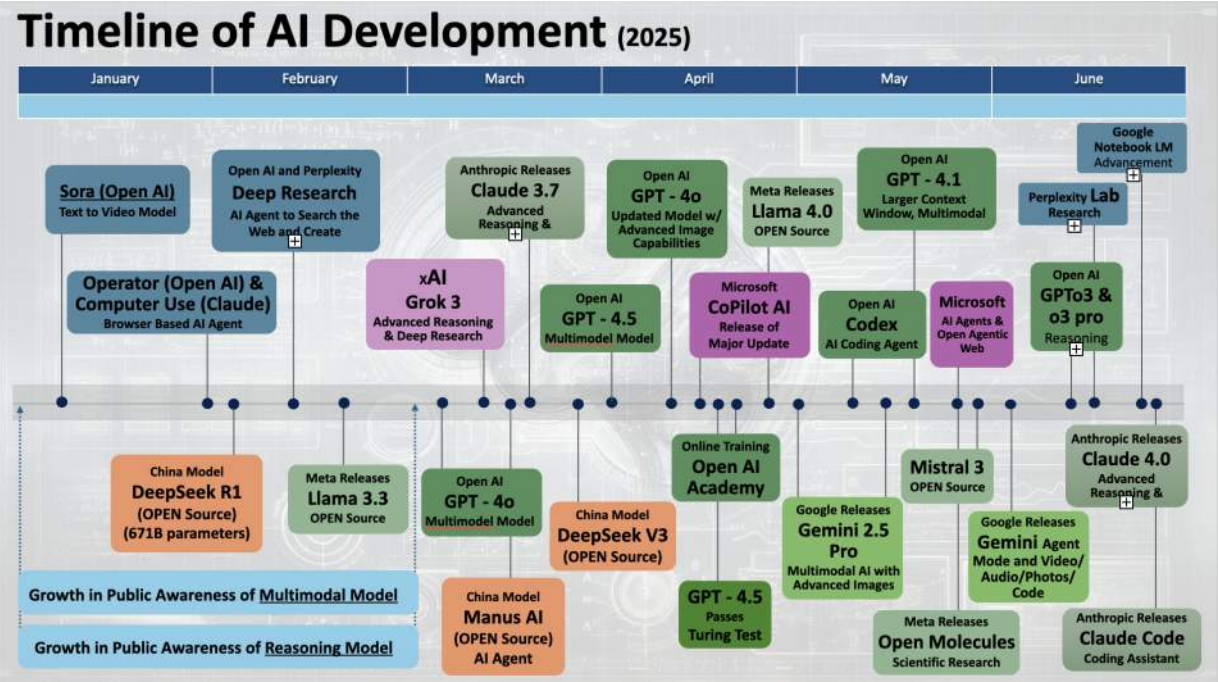
 **Less than 30 Seconds**

Speed & Automation Increasing

From Manual Search to Autonomous Execution

# Manual Slide Development

# Agent Created HTML Development



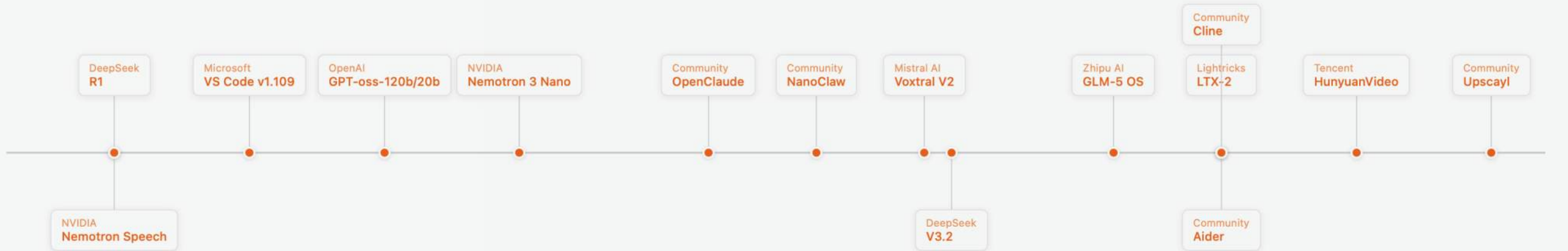
# AI Innovation in 2026

January - February 2026 Timeline

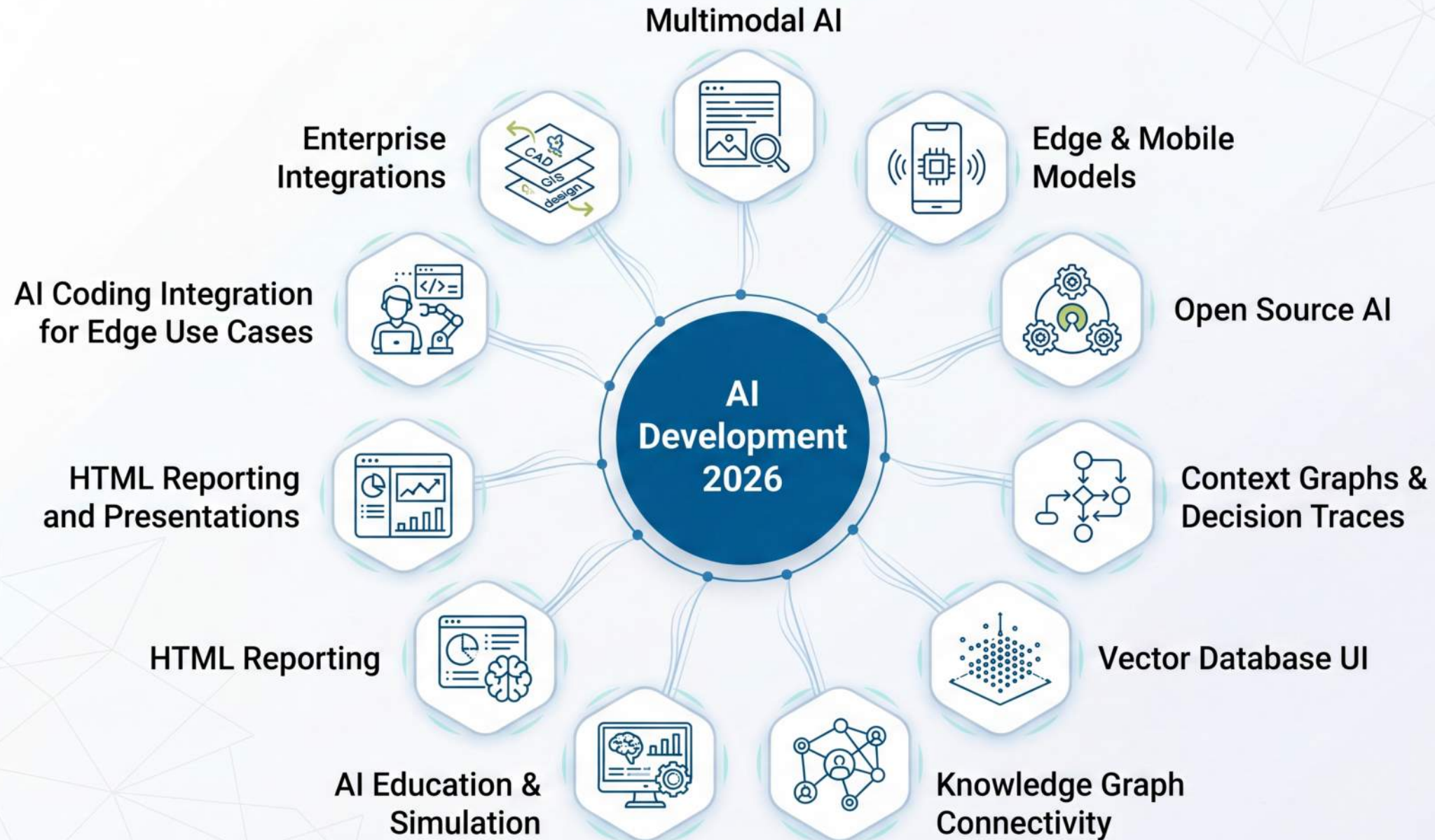
## Closed-Source Models



## Open-Source Projects



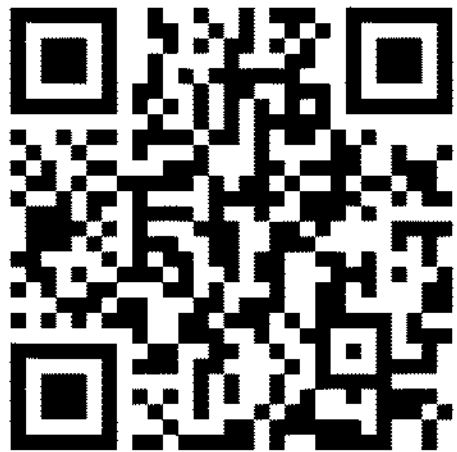
# Areas to Watch in AI Development – 2026



# Contact Information



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*Presentation Slides*



# AI for County Government: *Improving Efficiency, Service, and Decision-Making*

*April 15, 2026*