

Ode to Roanoke Valley

Morning mist rolls soft on the Blue Ridge line

Appalachian hills in the sunrise shine

McAfee Knob stands proud in the golden glow

Watching the valleys and towns below

Roanoke River winding calm and free

Singing through forests like a melody

Hearts here are warm, simple, and true

Roanoke Valley, there's no place like you



Build your dreams where the air feels right

Trade the rush for stars every night

Stay and grow where your roots run deep

Find a life that you can truly keep



Credit: ChatGPT

How Local Governments Are Using AI to Improve Services



VALTA
Virginia Association of Local Tax Auditors

A discussion with the
Virginia Association of
Local Tax Auditors

Uma Marques, Roanoke County, with assistance from ChatGPT, Claude
Department of Information Technology
7/9/2026

Presentation Layout

PAST: Introduction to AI – Why, What is it, Short History, Some Definitions

PRESENT: State of AI Technology, benefits, opportunities and challenges for local governments

HOW: Steps to adopt AI for local governments, to maximize benefit and minimize harm

What is AI?

Artificial intelligence is a family of computer programs that use a very, very large number of processors, storage and memory, to learn patterns from data and use those patterns to make predictions, classify information, summarize material, or generate new content

Predict

Which accounts appear higher risk?

Classify

Which documents belong in an audit file?

Summarize

What changed in this ordinance or policy?

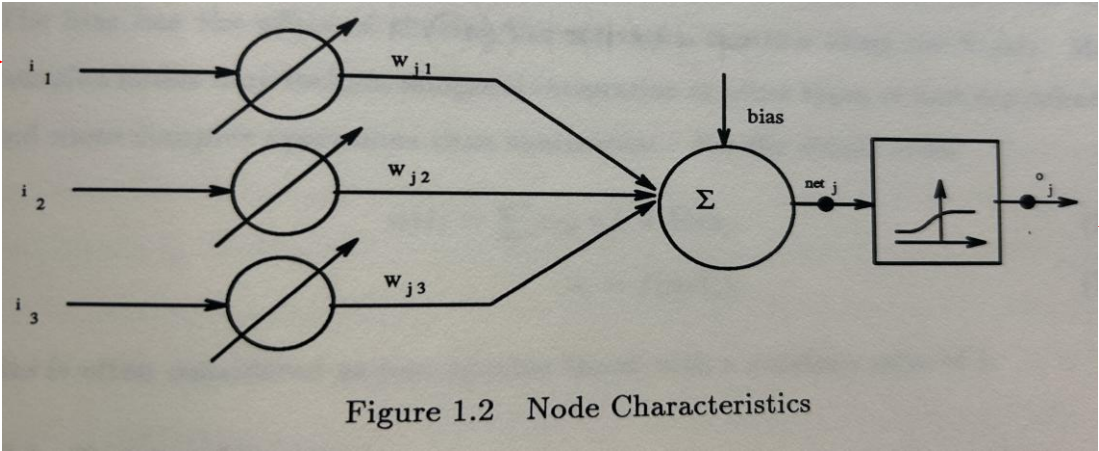
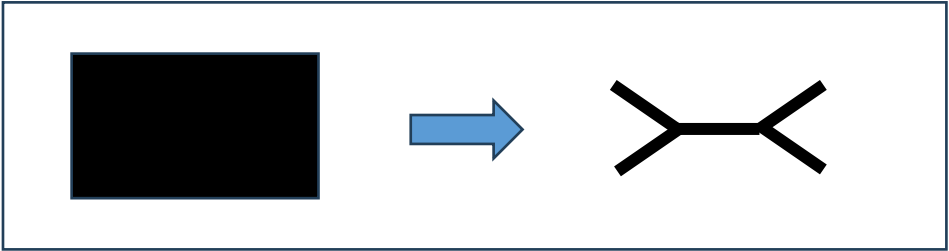
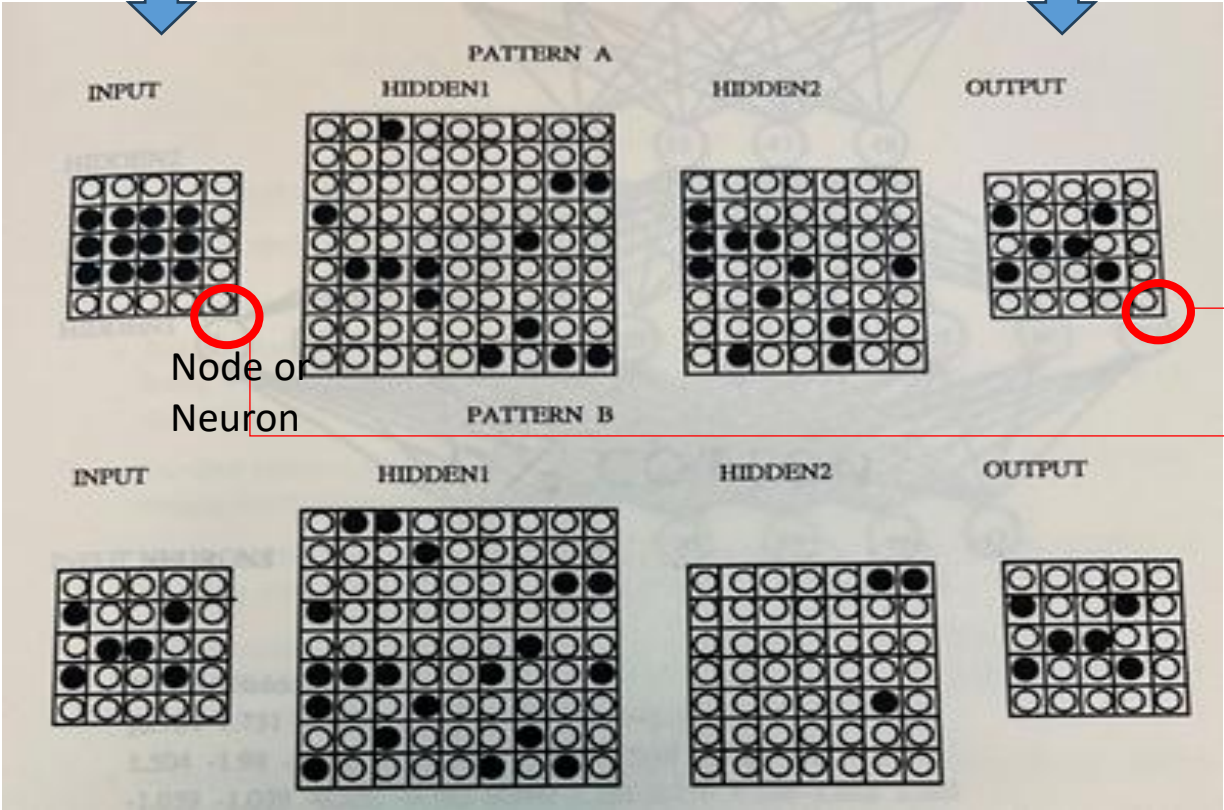
Generate

Draft a checklist, letter, or plain-language explanation

At this core, AI is about learning patterns and predicting the next likely one

Make this

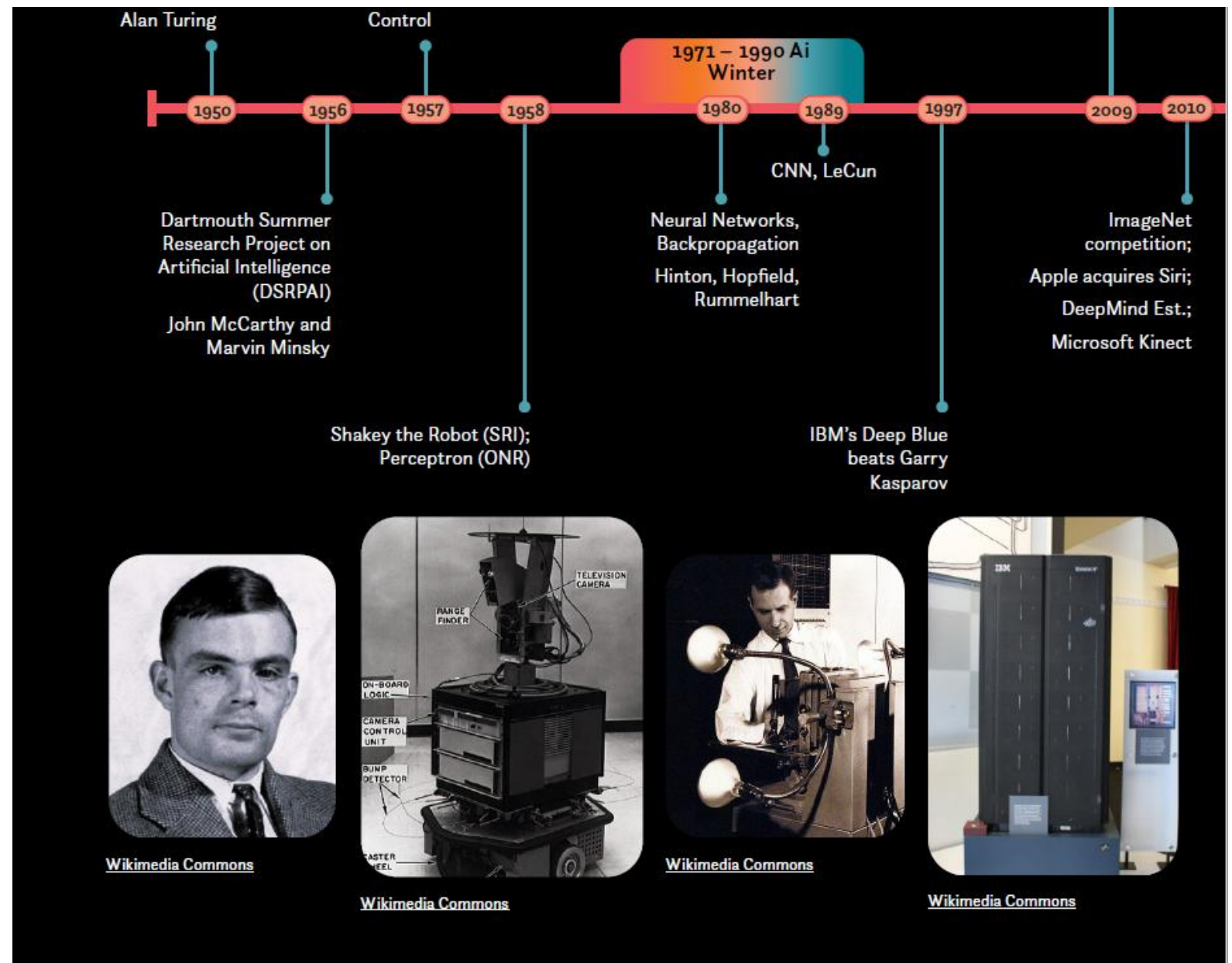
Into this



Starting in 1950, AI has steadily progressed...

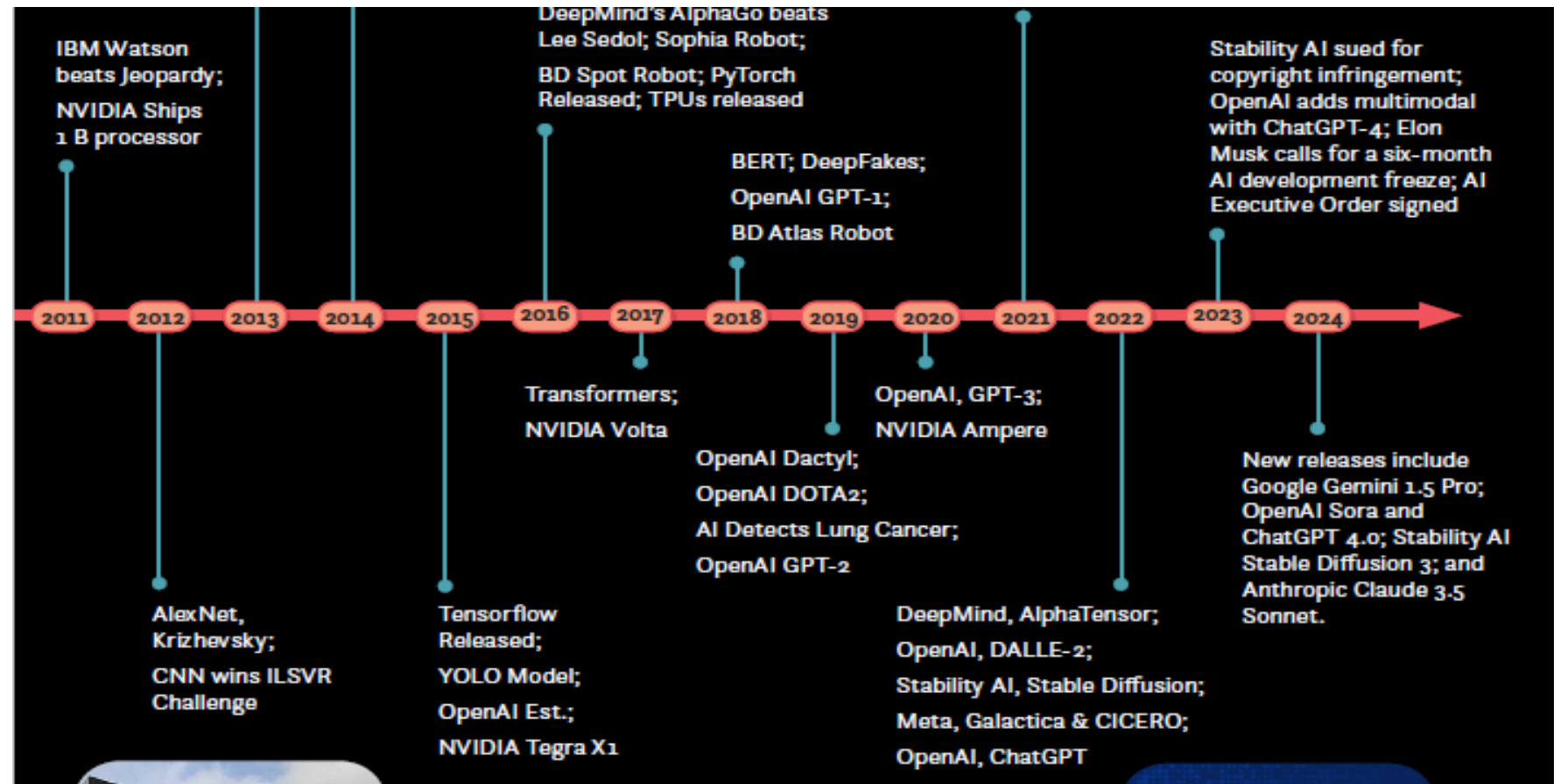
Turing Test:

<https://youtu.be/4VROUIAF2Do?si=T65InXnSvGeBywy->



...to mainstream in 2025

Predicted by Star Trek decades ago:
<https://youtu.be/9uVBPeOlx7c?si=g-fKxITwdHGLilZu>



And it is growing at a very fast pace...

AI used to have separate fields...



Computer Vision



Speech Recognition



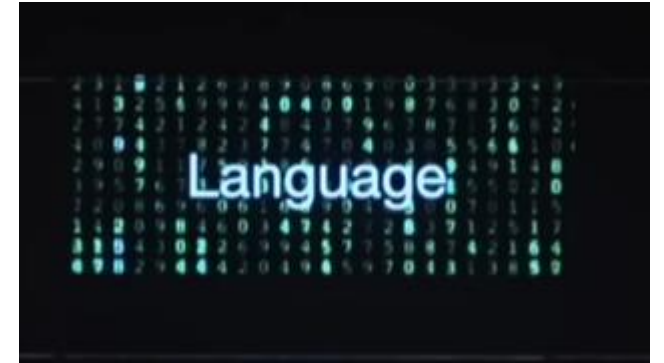
Robotics



Image Generation



Everything has converged into one common **Language** now. Progress made in any one area instantly benefits all areas



And these **Large Language Models** are evolving fast

*Triggers Philosophical questions:
Reid Hoffman video clip*

Understanding Artificial Intelligence vs. Generative Artificial Intelligence

AI	GenAI
Technical Definition	Technical Definition
The automation of tasks utilizing computer systems where little to no human intervention and oversight is required. Examples include speech recognition, language translation, security cameras and software applications such as computer monitoring of HVAC systems that automate heating/cooling.	The development and deployment of artificial systems that can generate novel content by relying on large language models, data sets and other methods of machine learning, including inputs from humans. Examples include ChatGPT, Copilot, Google Bard, Einstein, Claude and Otter.ai.
Layman's Definition	Layman's Definition
AI is like a digital assistant, automating processes that organize data for employees to make informed decisions. Examples include smart devices such as lights in the courthouse or self-driving cars that collect data. Other examples include transcribing apps, voice command prompts, and customer relationship management scripts used in chatbots. This is similar to a behind-the-scenes advisor.	GenAI, such as ChatGPT, generates creative content, which not only assists in regular tasks but also is capable of drafting documents, designing educational materials, or creating public service announcements, showcasing its ability to produce new and original content when you ask it questions, otherwise known as prompts.

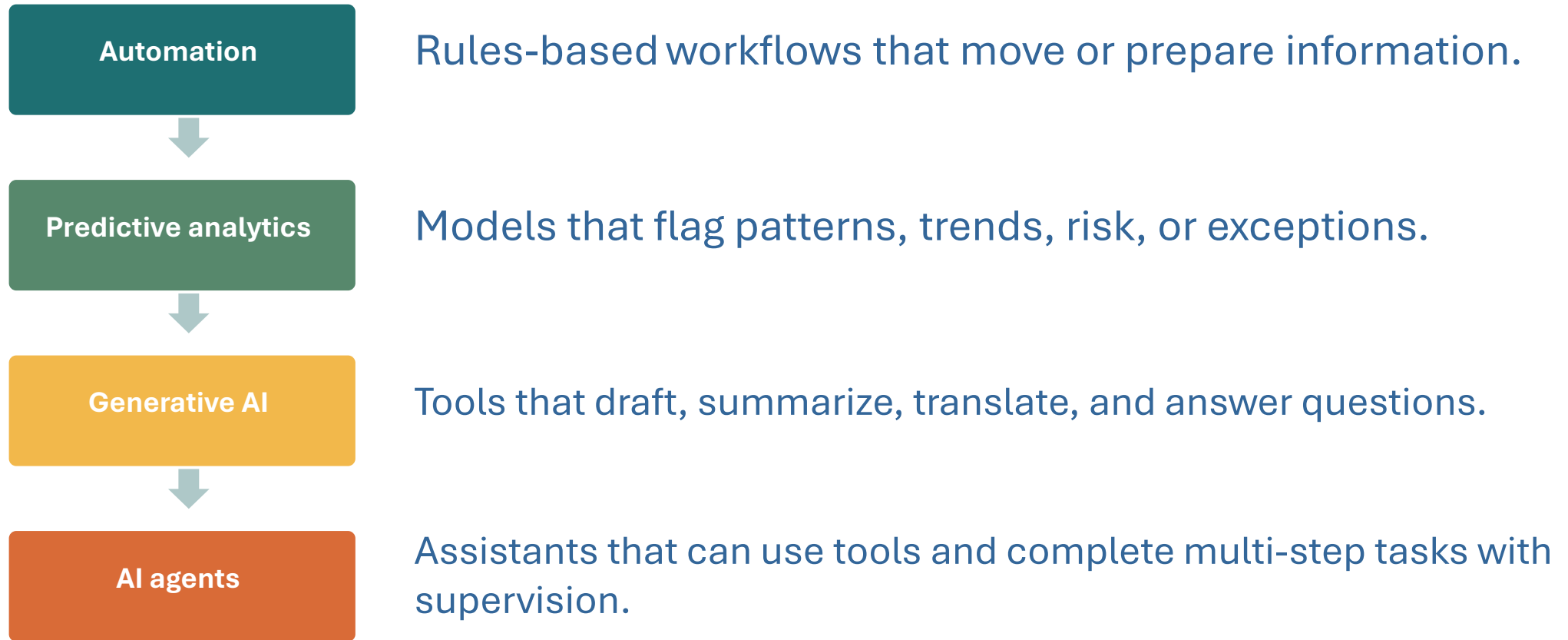
Presentation Layout

PAST: Introduction to AI – Why, What is it, Short History, Some Definitions

PRESENT: State of AI Technology, benefits, opportunities and challenges for local governments

HOW: Steps to adopt AI for local governments, to maximize benefit and minimize harm

AI is taking root in four main areas in the market



Most immediate local government value comes from combining generative AI with existing business processes—not from “full automation.”

There are at least four main drivers for AI engagement in our environment

Workload pressure

More services, tighter budgets, and harder-to-fill positions.

Data growth

Finance, assessment, permitting, fleet, and other areas.

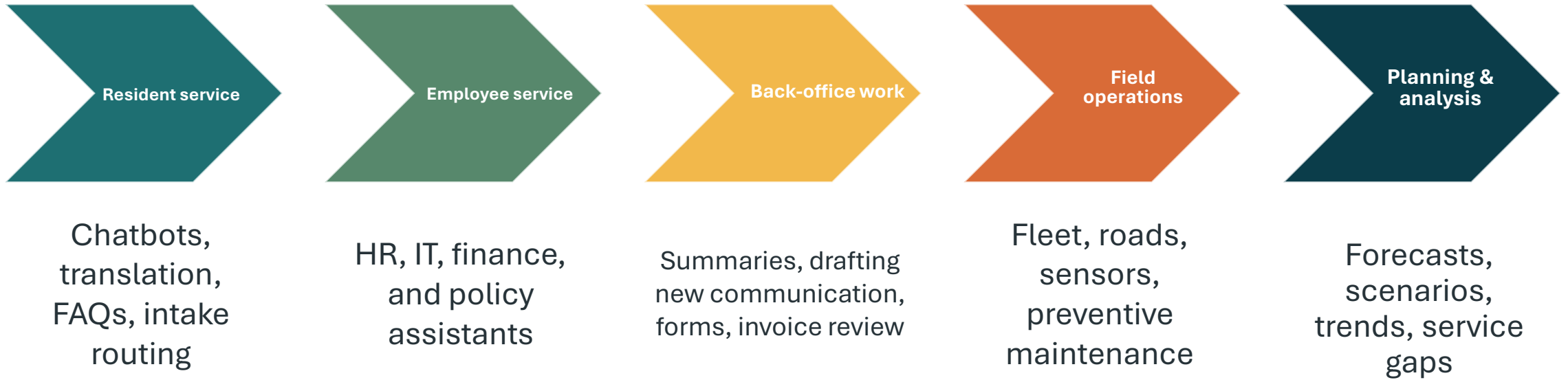
Public expectations

Residents expect fast, clear, and increasingly, digital service.

Vendor adoption

AI is being embedded in mainstream government systems whether agencies ask for it or not.

We can take help from AI in a few areas...



For Tax Auditors, some areas of opportunity could be risk analysis, increasing speed of work, document review, taxpayer communication, and consistent application of guidance to public

... and need to engage with AI now, for two main reasons...

BENEFITS

Huge opportunities to use the technology for local governments to increase our operational efficiency and effectiveness

RISKS

Huge risks we need to be aware of, and have guardrails in place, to protect our data and reputation and maintain trust with citizens

There are numerous risks that need guard rails NOW (1 of 2)

Confidentiality

Unknowingly entering taxpayer, personnel, legal, or security data into public AI tools.

Accuracy

AI may sound confident while being wrong, incomplete, or outdated.

Bias & fairness

Models can reinforce patterns in historical data or vendor training data – reflect human biases.

Cybersecurity

AI can increase phishing, social engineering, and malware targeting.

Records & transparency

Government use must preserve accountability, retention, and audit trails – data put into free AI environments are irretrievably lost

There are numerous risks that need guard rails NOW (2 of 2)



Cost Pressure

- Public AI tools that are often free, consume data and use it to improve its knowledge – any sensitive county data loaded to speed up operations could become permanent property of the AI
 - Inadvertently loading staff social security numbers, health data and more



Inappropriate Use

- Using AI inappropriately (some examples for prohibiting AI are in hiring, law enforcement) could get us into serious liabilities



Sensitive Data Loss

- Premature use of AI without Data Governance



Third Party Risk

- Vendors are increasingly embedding AI into mainstream systems and if we work with inexperienced vendors who did not train AI ethically, we may be liable for poor decisions made by AI



Workforce Knowledge

- Protecting local government data and educating the workforce to guard against cyberattacks with increased sophistication

We face challenges to mitigate our risks

- Data readiness — Paper processes, siloed systems, inconsistent fields, and incomplete metadata.
- Procurement — Unclear AI terms, security requirements, data rights, and vendor accountability.
- Workforce trust and guidance — Staff need clarity on what AI may do, what it may not do, and how work changes and how it impacts job security.
- Governance capacity — Policy, legal, IT, records, finance, and departments must coordinate.
- Sustainability — Pilots need funding, owners, documentation, and a path to retire or scale.

We face challenges to mitigate our risks

- Limited and balanced budget and staffing to provide cybersecurity services to protect from AI based threats – strong policies, procedures, year-round simulations and just-in-time training, annual training, ability to buy tools and more.
- Data Governance is expensive and a multi-year effort, and some localities need to start from the very beginning – moving from paper to digital
- Workforce may not have enough incentive to automate tasks and take on new ones and Governments have strong dependencies on workforce to take the risk of having them leave
- Unfunded mandates from the Federal and State Government to redirect our planned budgets

With all that said, we can pursue measurable benefits

Time saved

Reduce repetitive search, drafting, and review tasks

Consistency

Use standard checklists, templates, and guidance

Service quality

Plain-language answers and faster response times

Better Selection

Focus limited audit capacity on higher-risk cases

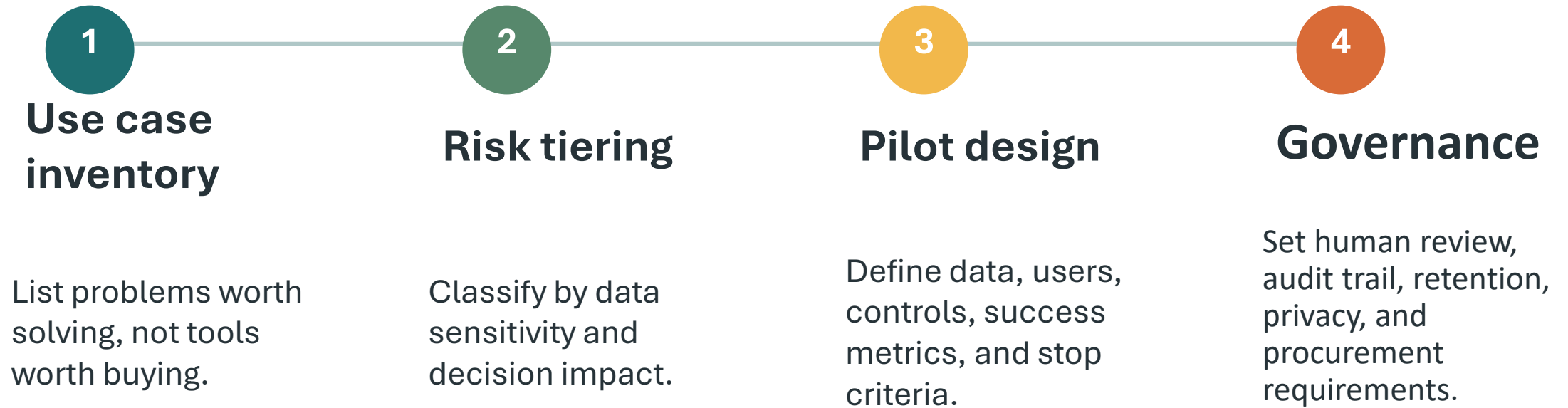
Presentation Layout

PAST: Introduction to AI – Why, What is it, Short History, Some Definitions

PRESENT: State of AI Technology, benefits, opportunities and challenges for local governments

HOW: Steps to adopt AI for local governments, to maximize benefit and minimize harm

We have ways of implementing AI to suit our needs



Start with “human-in-the-loop” use cases: staff productivity, summarization, checklist support, and analytics that inform—not decide.

Several ways to bring AI to local governments

- Community Test Beds
- Partnerships with Academia through Capstone projects and internships
- Pilots with Industry
 - Need a Pilot Project Framework – let us discuss!

Bringing AI to local governments through Community Testbeds



Testbed Stafford | Stafford Testbed X

https://vatestbed.com

ServiceDesk Plus Neogov PluralSight ICMA YouTube LinkedIn Roanoke County, V... CAFE - Home CAFE-FormPolicy ... National and Local... Templates & Reso... Dell Government AI Co...

English

Home Projects Entrepreneurship Sponsors News & Reports Founders Contact Us

The Virginia Smart Community Testbed

Stafford, Virginia

Mission

Serves as Virginia's "living laboratory" to test new smart technology, and generate practical, proven knowledge that can be used as the "model smart community" by cities and counties across the country.

Vision

Make the Commonwealth of Virginia a leading state in Smart Community implementation, focusing on the economic, and social benefits of the digital transformation.

Purpose

The Smart Community Testbed will foster the growth of smart cities in the Commonwealth of Virginia. This Testbed is designed as a "shared knowledge platform" engaging private and public interests to develop practical, and relevant solutions for smart communities.



Image Credit: Virginia Innovation Partnership Corporation & Stafford County, VA



Benefits of Community Testbeds

- Cost effective for government and industry
- Real-world testing of technology that benefits customers and the product seller – the community becomes the testbed
- Opportunities for show-and-tell for local governments, to learn from each other
- Opportunities for product vendors to test their products in a friendly environment, and tweak for unexpected real-world performance situations
- Time to plan procurement and to get smart about writing RFP for innovation

Pilot Projects and a Framework

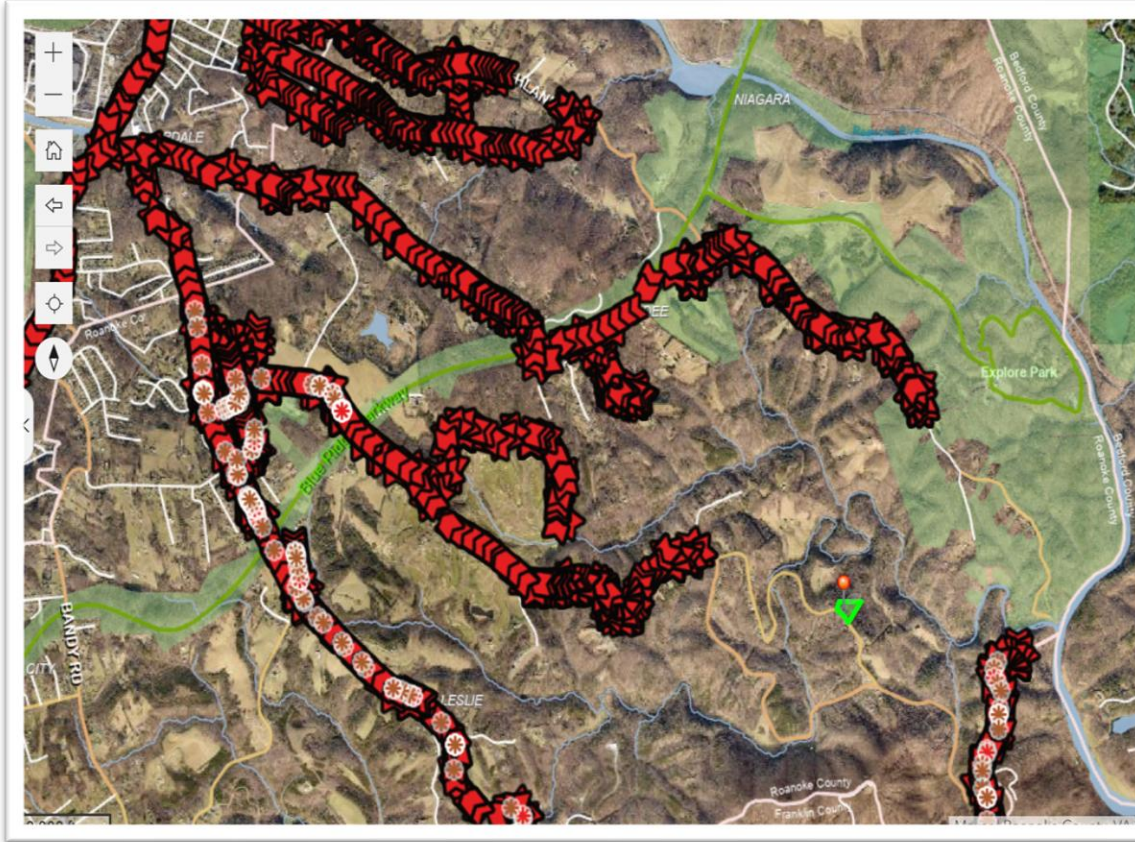
Components for success

- Partners from Government and Academia who have a mission to innovate – Federal Government, VIPC in the Commonwealth and one or more local governments
- Nominal funds - \$10K per pilot
- A Pilot Project Agreement
- A small central and secure location to store equipment and invite buyers and sellers to meet
- One Full Time Employee to manage the Test Bed

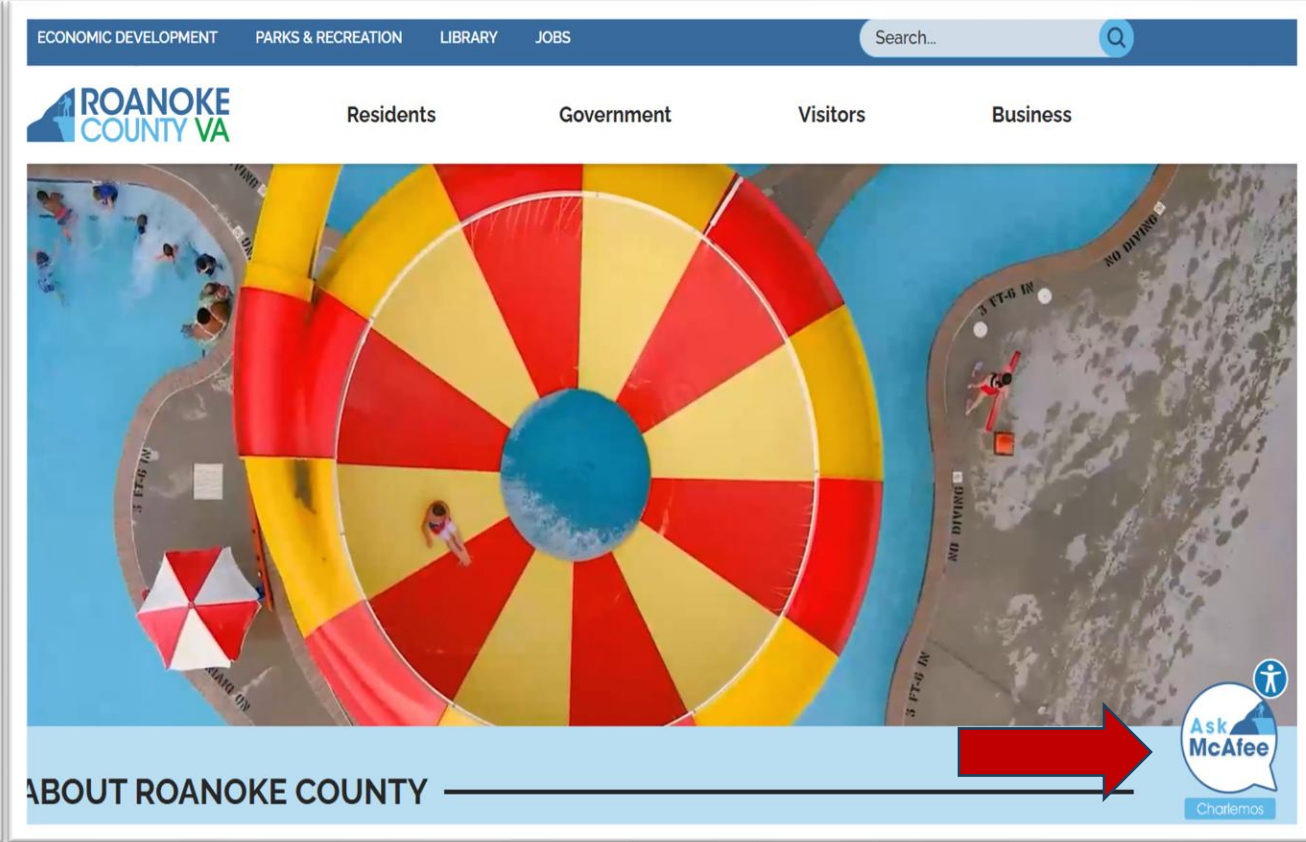
1. Report No. DDOT-RDT-23-01	2.	3. Recipient's Catalog No.	
4. Title and Subtitle DDOT Pilot Framework		5. Report Date September 27, 2023	
		6. Performing Organization Code	
7. Author(s) Karina Ricks, Camron Bridgford, Kyle Ragan, Erin Clark, Ryan Parzick		8. Performing Organization Report No.	
9. Performing Organization Name and Address Cityfi, LLC 1100 H Street NW, Suite F-101 Washington DC 20005		10.	
		11. Contract or Grant No. DOC571777	
12. Sponsoring Organization Name and Address District of Columbia Department of Transportation (SPR) 250 M Street, SE, Washington, DC 20003		13. Type of Report and Period Covered Final Report March 21, 2023 - September 27, 2023	
		14. Sponsoring Agency Code	
15. Supplementary Notes			
16. Abstract The District Department of Transportation (DDOT) has a long history of supporting innovative pilot projects in service of its mission of enhancing transportation efficiency, safety, and sustainability. Pilot projects are a means to explore innovative ideas, strategies, and technologies on a limited scale before full-scale implementation. They allow DDOT to collect real-world data, assess feasibility, and identify challenges; ultimately informing decision-making for proposed initiatives. However, the volume of inbound requests makes it difficult to manage and prioritize the projects that best align with the District's goals. This framework was developed to create a more efficient way to evaluate, prioritize, and commit to pilot projects. The framework details key components and phases, with the overarching goal of strengthening DDOT's ability to drive innovation while effectively managing resources and minimizing risks for the benefit of the city and its residents.			
17. Key Words • Innovation; Technological innovations		18. Distribution Statement No restrictions. This document is available from the Research Program upon request.	
19. Security Classification (of this report) Unclassified.	20. Security Classification (of this page) Unclassified.	21. No. of Pages 53	22. Price N/A

Let us see some examples AI used in other local governments

AI Pilot in Roanoke with VA Tech – View of roads covered by our trash removal fleet – telematics sensors



AskMcAfee – Pilot to Production with CitiBot

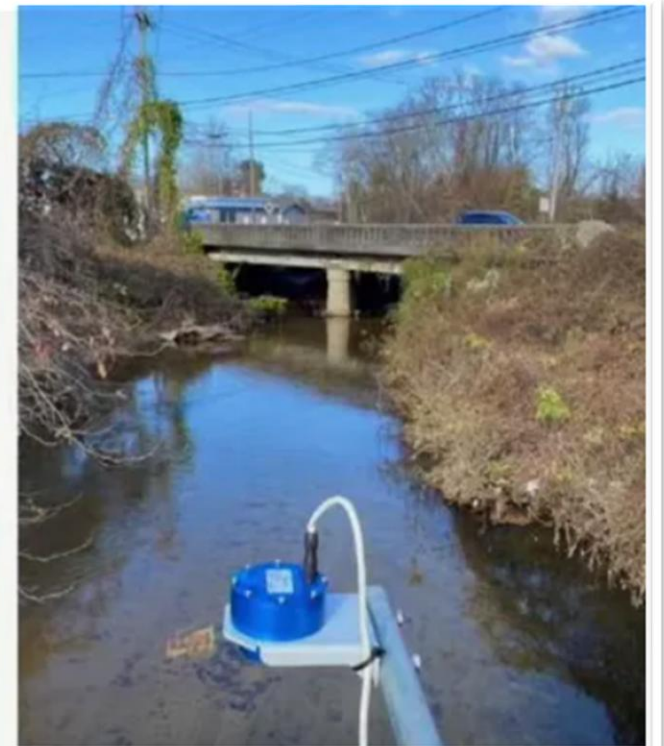


Let us see some examples of the current state of AI technology in other localities

AI powered sensors for flood, fire, air quality issues alerting



One of the AWARE Flood Sensor from Intellisense that Hendersonville now has around the city. These sensors use radar to detect water levels and automatically send updates to city staff. The blue part is the sensor, while the black part is the solar panel and battery that powers it. *Public Document*



City of Charlottesville, VA



- Internally developed chat bot trained on Finance SOP, policy, etc. data for use by employees.
- Partnership with UVA School of Data Science on use cases for AI in a local government
- AI User Group –City employee user group with meetings every six weeks. Meetings focused on AI presentations, knowledge sharing, member participation – what’s working for you using AI, what isn’t working for you using AI, etc.
- AI Policy Development – currently working with City Attorney on three policies: AI Suitability and Risk Level, Risk Management and AI User Policy

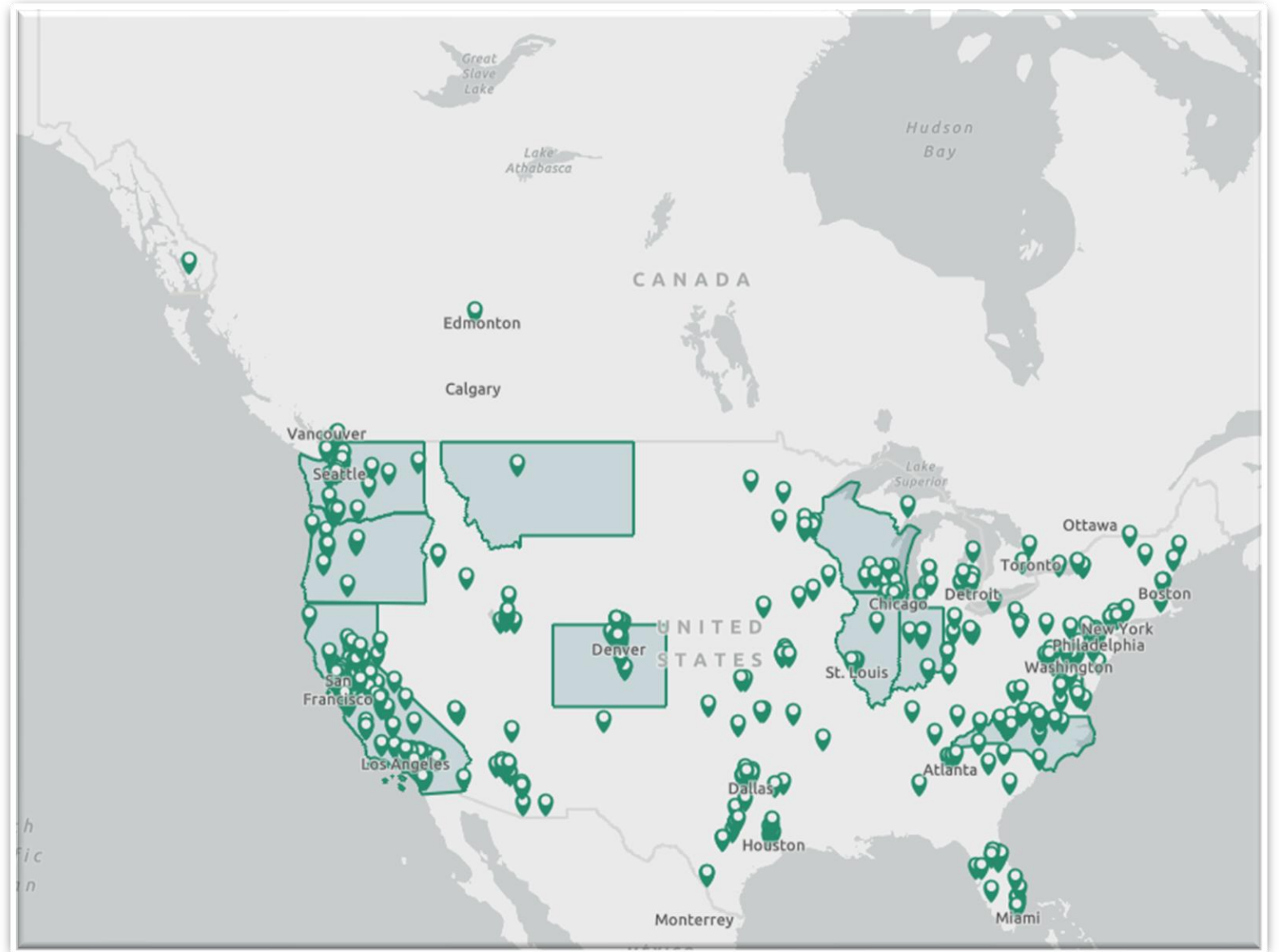
York County, VA



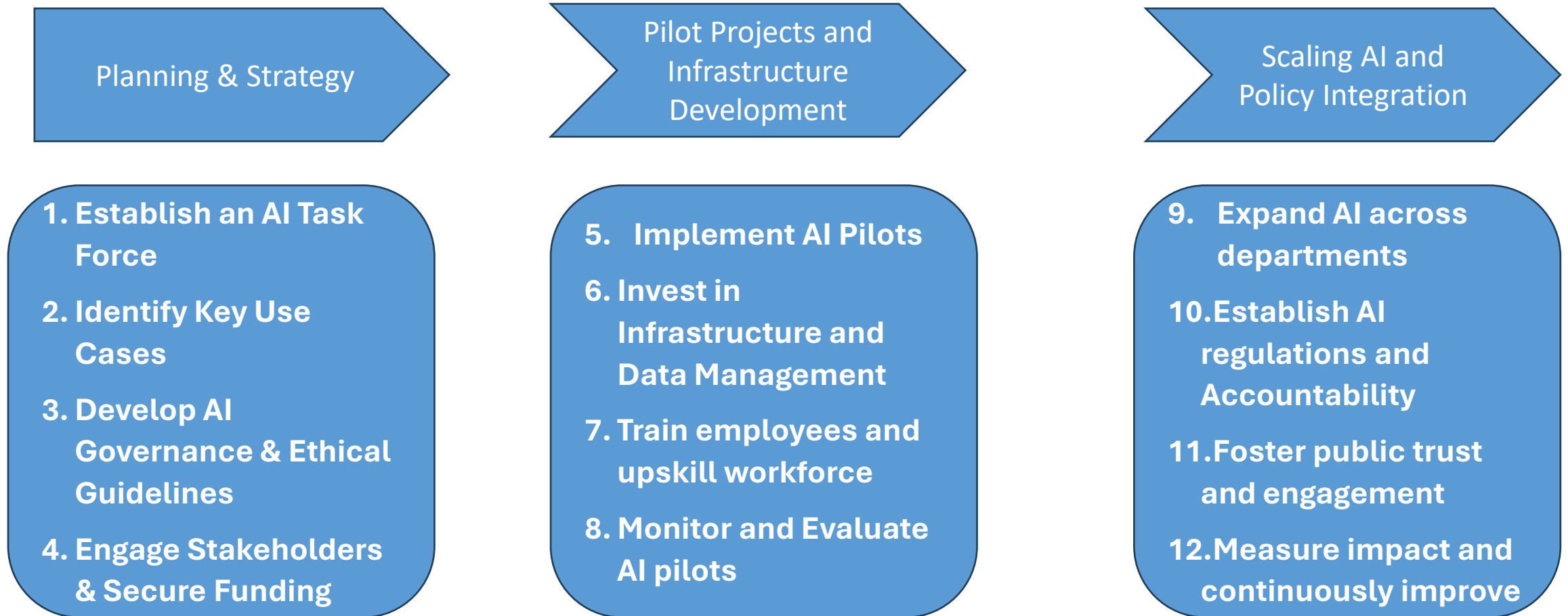
- General Productivity
- Website Chatbot
- Synthesia training - an artificial intelligent avatar that can be used for training to enable consistency across training platforms, allowing for sections to be updated in the future and still presenting the same voice for a seamless experience. This in turn offsets staffing costs and produces increased professional outputs.
- Recycling App

GovAI coalition is a great initiative tailored for local governments by local governments

Over 600 agencies are members of GovAI Coalition



One roadmap for AI adoption...generated by AI!



Source: Chatgpt.com (seemed appropriate!)

References

1. The Modern Artificial Intelligence Primer with a special focus on generative AI – Booz Allen, September 2024
2. AI County Compass – A comprehensive toolkit for local governance and implementation of artificial intelligence, National Association of Counties, July 2024
3. Images:
 - Flood sensors: [Hendersonville gets early flood warning system: solar-powered radars](#)
 - Wildfire sensors: n5sensors.com