

# ***My Job Would be Impossible Without GIS!***

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## **GIS Makes the Impossible Possible**

**2026 Washington GIS Conference  
May 21, 2026 – Bellevue**

*Greg Babinski, MA, GISP, EthicalGEO Fellow  
GIS Management Consulting Services LLC*

2026 WASHINGTON GIS CONFERENCE



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## **My job would be impossible without GIS....**

### **Abstract:**

*In conducting various GIS return on investment studies, I utilize the 'with versus without' GIS ROI methodology developed by Professor Richard Zerbe of the University of Washington Evans School of Public Administration. With this methodology we ask GIS users to estimate how much time it would take them to do their job tasks without GIS.*

*Although most users can conceptualize an answer to this question, with surprising frequency GIS users say that they cannot.*

*They claim that 'my job would be impossible without GIS.'*

*This presentation breaks down what this means and how indeed we can develop an answer to the question. GIS professionals should grasp both the underlying power of GIS and the powerful message that GIS-Power provides society.*

*GIS makes the impossible possible!*

## Greg Babinski

Greg Babinski has 37 years experience in GIS management. For 24 years he held various Management roles for the King County GIS Center in Seattle, including 20 years responsibility for GIS budgeting, financial planning, financial management, and client services management. Before that he worked for nine years as GIS Mapping Supervisor for the East Bay Municipal Utility District in Oakland. In 2021 he launched the *GIS Management Academy*<sup>™</sup> and GIS Management Consulting Services.

He holds an MA in geography from Wayne State University. He is a GISP – Certified GIS Professional. He is Past-President of URISA and was founder and Past-Chair of URISA's GIS Management Institute. In 2005 he founded *The Summit* – the Washington State GIS Newsletter. In 2019 Greg was awarded an EthicalGEO Fellowship by the American Geographical Society. In addition to GIS consulting, he is a GIS researcher, author, and instructor.

Greg was the original developer of the *GIS Capability Maturity Model* and co-chaired the committee that developed the *Geospatial Management Competency Model* adopted by the US Department of Labor.

He has spoken about GIS management across North America, Europe, Asia and Australia. Greg has taught GIS for Public Policy as an instructor with the University of Washington Evans Graduate School of Public Administration. He has authored chapters in various books about GIS management, five articles in the *Geographic Information Science & Technology Body of Knowledge*, and many articles in *ArcNews*, *The GIS Professional*, *The Summit*, and other publications.

In his spare time Greg likes ‘...hiking steep, narrow and dangerous trails that lead high above the clouds to awesome views.’

## GIS Makes the Impossible Possible



Tape player starts...A voice is heard...

*Good evening, GIS Team. Despite many years of developing and deploying GIS for our agency, many pressing needs remain.*

*The Agency's Special Activities Division has relentlessly hunted for more uses and benefits from GIS, but some users remain skeptical.*

*And the Agency's leadership continues to promise new services and programs to our stakeholders. Many of the uses of GIS remain unknown and we believe many more benefits remain at-large and uncaptured.*

*Your mission, should you choose to accept it, is to identify, apprehend, and bring back these new unknown applications and put them into use.*

*If you or any members of your GIS team are caught or killed, the Secretary will disavow any knowledge of your actions. Good luck, GIS! This message will self-destruct in 5 seconds.*

The player stops.



## Why conduct a GIS ROI Study?

### From the Seattle GIS Board Charter:

#### *2. Guiding Principles:*

*In its CGDB oversight role, the GIS Board strives to:*

**a. maximize return on the City's investment in shared GIS infrastructure,**

*In its Citywide coordinating and standard-setting role, the GIS Board embraces the following guiding principles:*

*g. The City should seek solutions that promote customer service, efficiencies, and expertise.*

*h. The City should adopt common tools and practices for application development and integration to **maximize the return on the City's investment**, minimize costs, and develop a sharable, in-house talent pool.*



**Prof. Richard O. Zerbe  
University of Washington**

**GIS ROI Methodology**

**2012 King County GIS ROI Study**

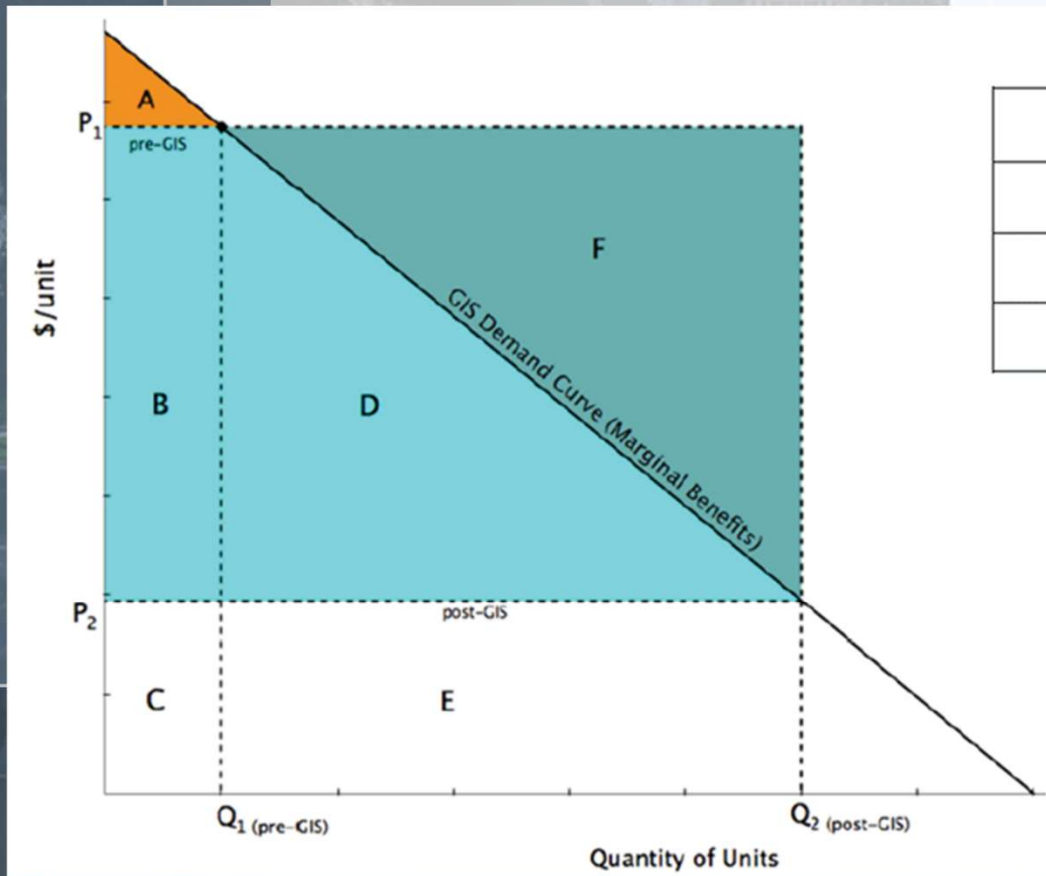
**2024 Seattle GIS ROI Study**

***‘With Versus Without’***

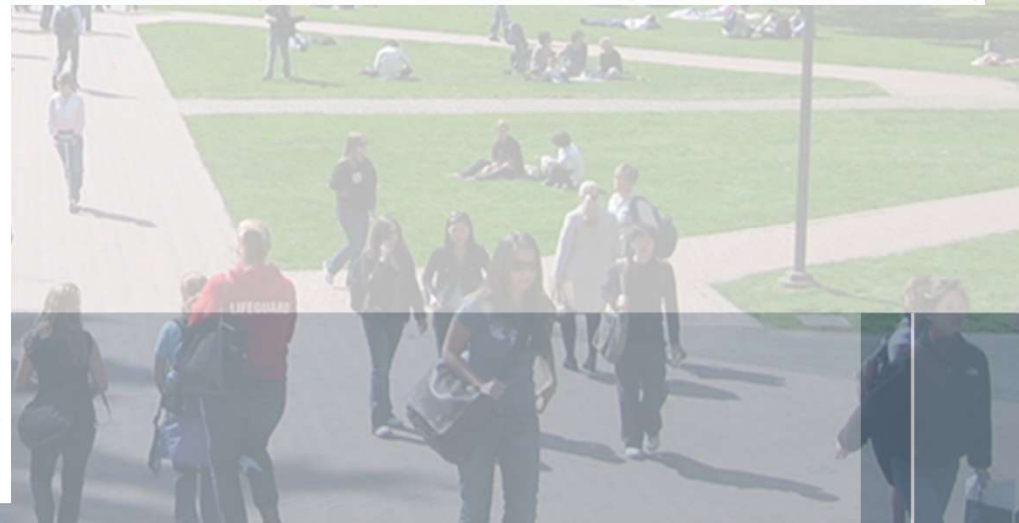


**Prof. Richard O. Zerbe**

# **‘With versus Without’ GIS ROI Methodology**

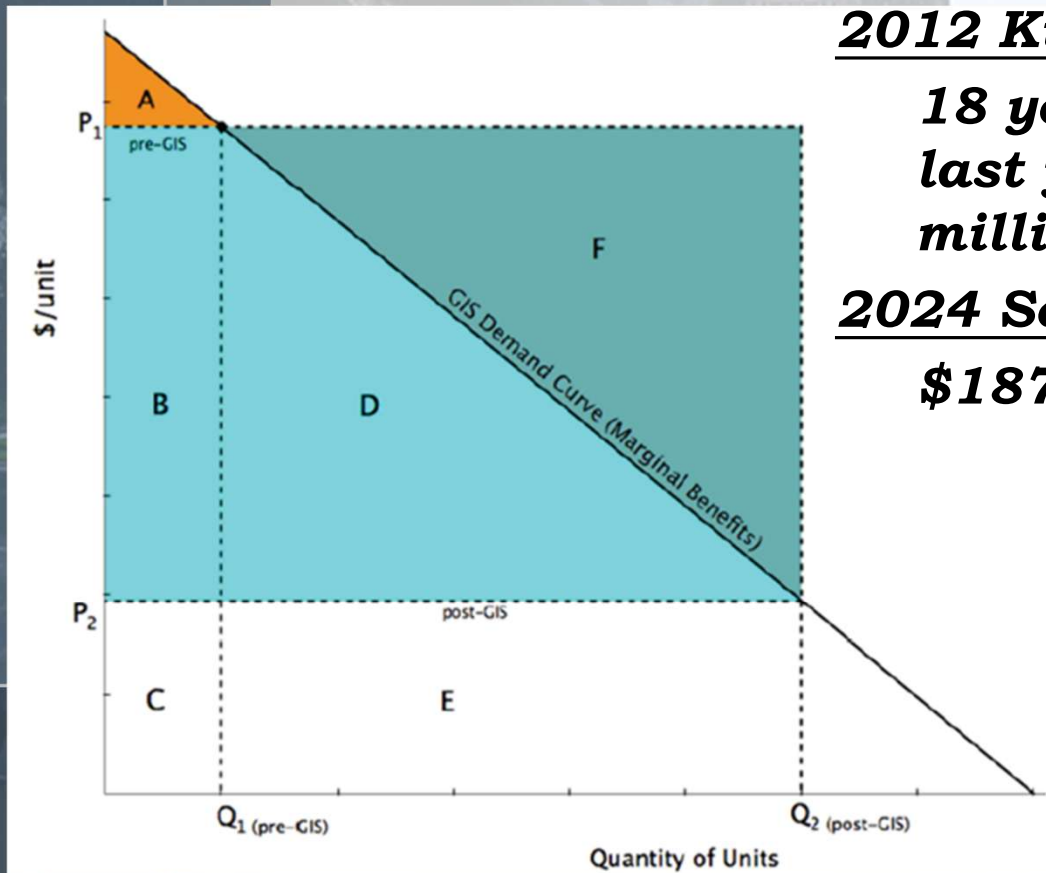


	Estimate 1 (new demand curve)	Estimate 2 (old demand curve)
Gross Benefits	$B + C + D + E + F$	$B + C + D + E$
Costs	$C + E$	$C + E$
Net Benefits	$B + D + F$	$B + D$



**Prof. Richard O. Zerbe**

## **‘With versus Without’ GIS ROI Methodology**



**2012 King County GIS ROI Study:**

***18 years = \$775 million in net GIS ROI;  
last year of the study GIS ROI = >\$87  
million – one year!***

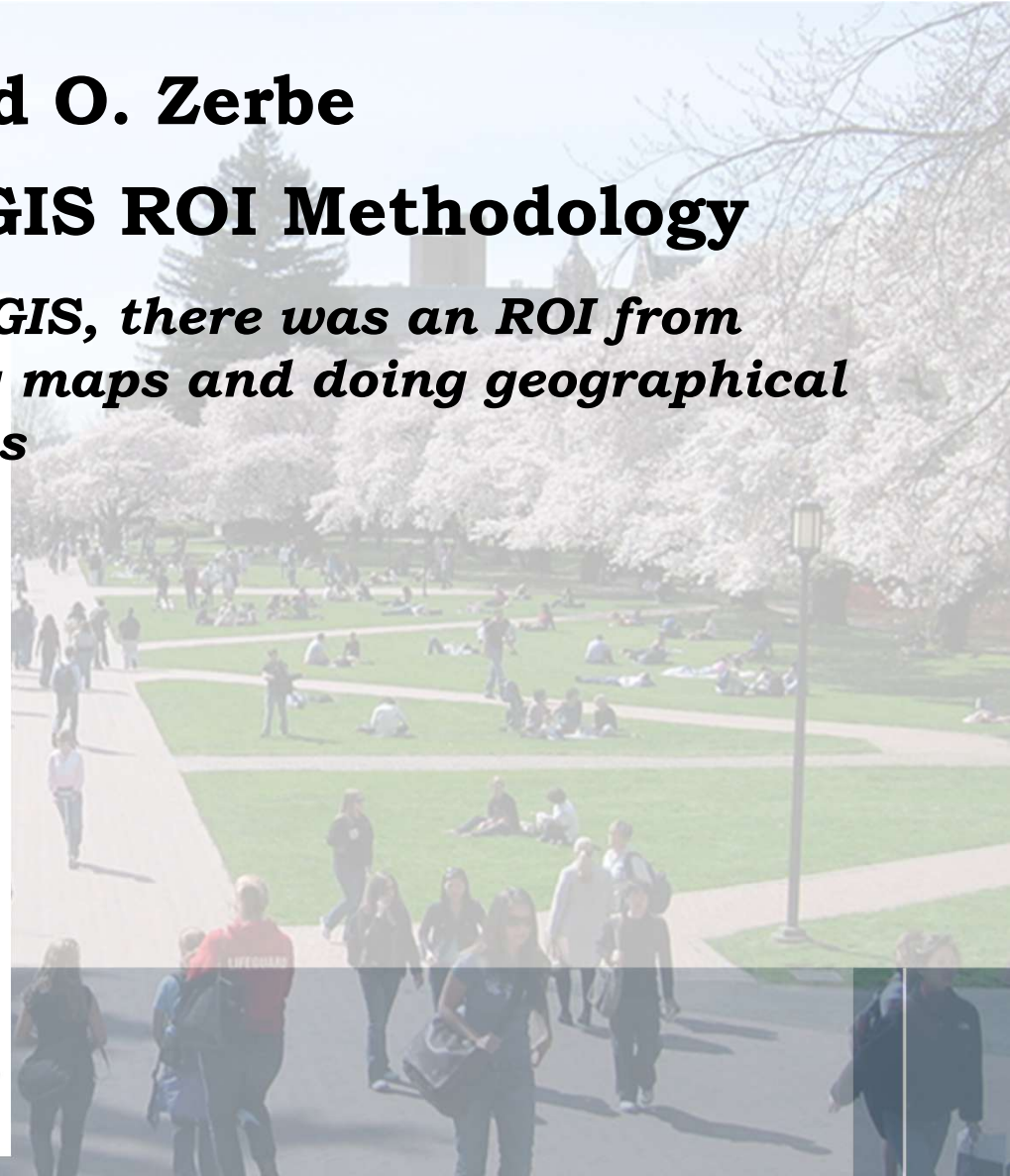
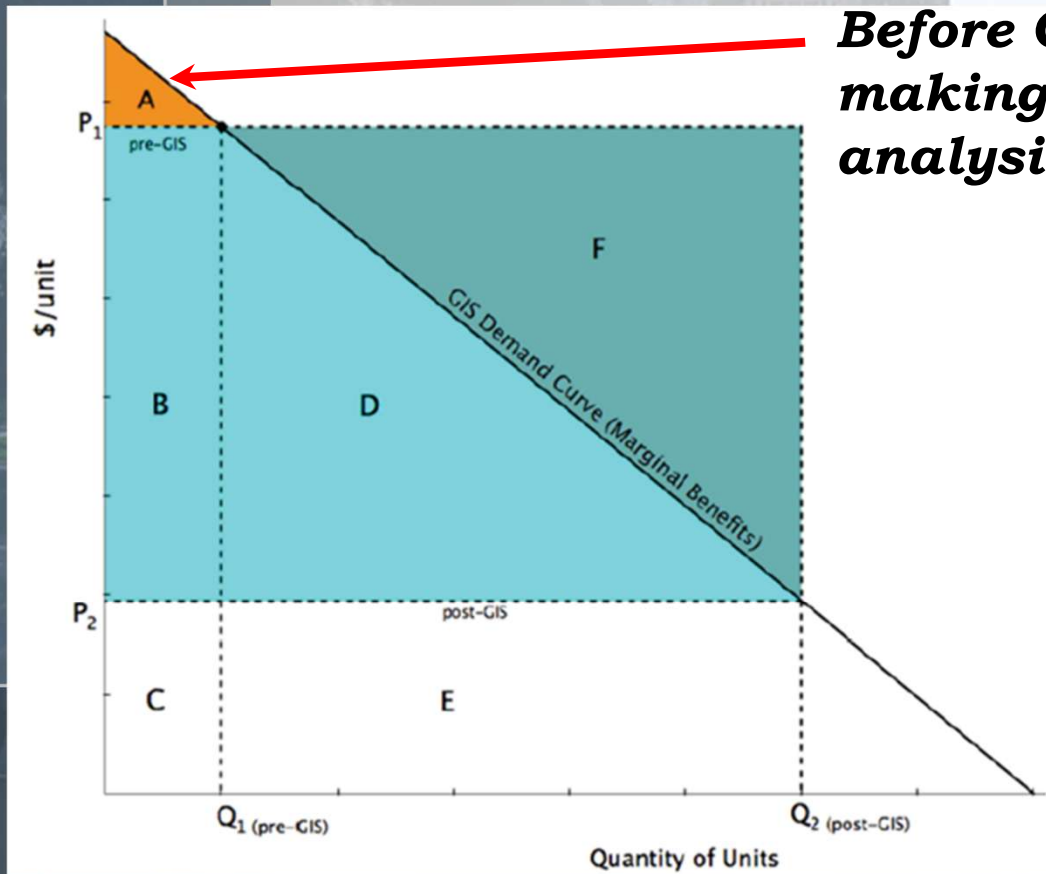
**2024 Seattle GIS ROI Study:**

***\$187-\$126 million – one year!***

**Prof. Richard O. Zerbe**

## **‘With versus Without’ GIS ROI Methodology**

*Before GIS, there was an ROI from making maps and doing geographical analysis*





## **How do agencies benefit financially from GIS in empirical terms?**

*The Zerbe 'with versus without' methodology requires us to ask end users directly...*

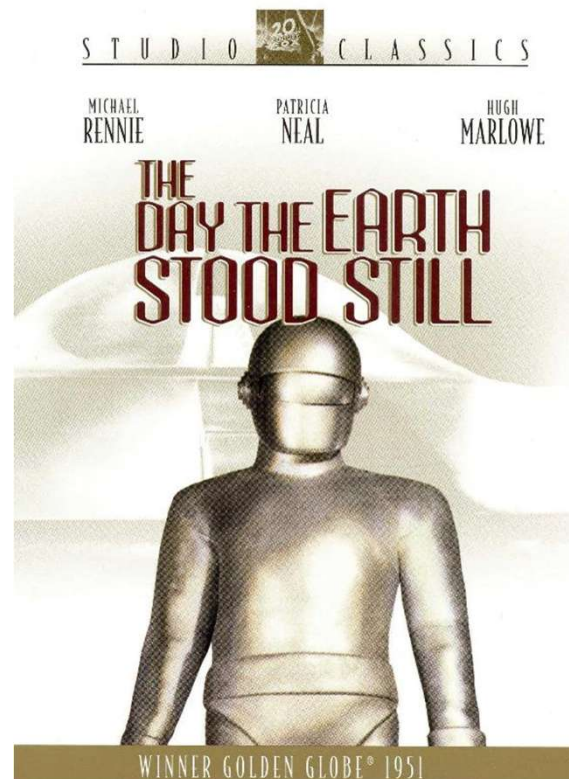
**Think about the individual jobs that you do using GIS. What if you did not have GIS software, data, applications, processes, files?**



## How do agencies benefit financially from GIS in empirical terms?

*The Zerbe 'with versus without' methodology requires us to ask end users directly...*

**Think about the individual jobs that you do using GIS. What if you did not have GIS software, data, applications, processes, files?**





## **How do agencies benefit financially from GIS in empirical terms?**

*The Zerbe 'with versus without' methodology requires us to ask end users directly...*

**Think about the individual jobs that you do using GIS. What if no one had GIS software, data, applications, processes, files?**





## **How do agencies benefit financially from GIS in empirical terms?**

*The Zerbe 'with versus without' methodology requires us to ask end users directly...*

**Think about the individual jobs that you do using GIS. What if you did not have GIS software, data, applications, processes, files?**

**For both the 2012 King County and the 2024 Seattle GIS ROI studies, hundreds of end-users were asked explicitly....**

*Think about a job that you do now with GIS. How long does it take you to complete that job now, with GIS?*

*Now, imagine that you had no access to GIS. Zero GIS data, applications, software....nothing. Now, how long do you think it would take you to do that same job without GIS?*



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**Typical answers were....**

*I can complete a permit application review in 90 minutes with GIS, but without it would take at least four hours...*

**GIS ROI = 4 hours – 1.5 hours = 2.5 hours x labor cost**



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**For the 2024 Seattle GIS ROI studies, ~600 people answered this question.**



## How do agencies benefit financially from GIS in empirical terms?

**For the 2012 King County GIS ROI study, ~215 people answered this question.**

**For the 2024 Seattle GIS ROI studies, ~600 people answered this question.**

**King County ~5% of respondents paused, then said *'My job would be impossible without GIS.'***

**Seattle Steet Use Permit Reviewer: *'GIS makes my job possible. It would take too much time to go into the field to verify information.'***

**Seattle City Light: *Each employee uses GIS several hours a day. Impossible to produce outputs without GIS!***

**SPU: *Many DWW assets fall into this unlocatable asset category and instead of fielding many field staff to try and paint infrastructure which are difficult or impossible to find, we have opted to respond to these requests by sending out a tailored GIS map.***

**SPU: *People couldn't 'map' the right asset to the work order without GIS. GIS is crucial to all 50 crews.***

**SPU: *Manages illegal dumping and enforcement, as well as litter abatement. Couldn't tell their story without the hot spot map. GIS maps are critical for running programs.***

**SPU Rain Wise: *Program would grind to a halt without GIS....couldn't do the job without.***

**SPU Plan Review: *Can't imagine what they would do without GIS! They complete close to 1000 plan reviews per year.***

**SPU Watershed Engineering: *Without GIS, engineers couldn't design these culverts to industry standards; unsure of what the alternatives would look like.***

**SPU Drainage Billing: *Could not maintain drainage billing data or equitably set rates. Approximately 98% of revenue of over \$200M relies on GIS calculations.***

**Seattle OPCD: *Seattle Open Data Portal. Without AGOL, OPCD could not support this type of data sharing.***

**SDCI Directors Office: *"GIS is essential. We could not perform our work without it."***

**SFD Research & Quality Improvements: *This function not possible without GIS!***



**How do agencies benefit financially from GIS in empirical terms?**

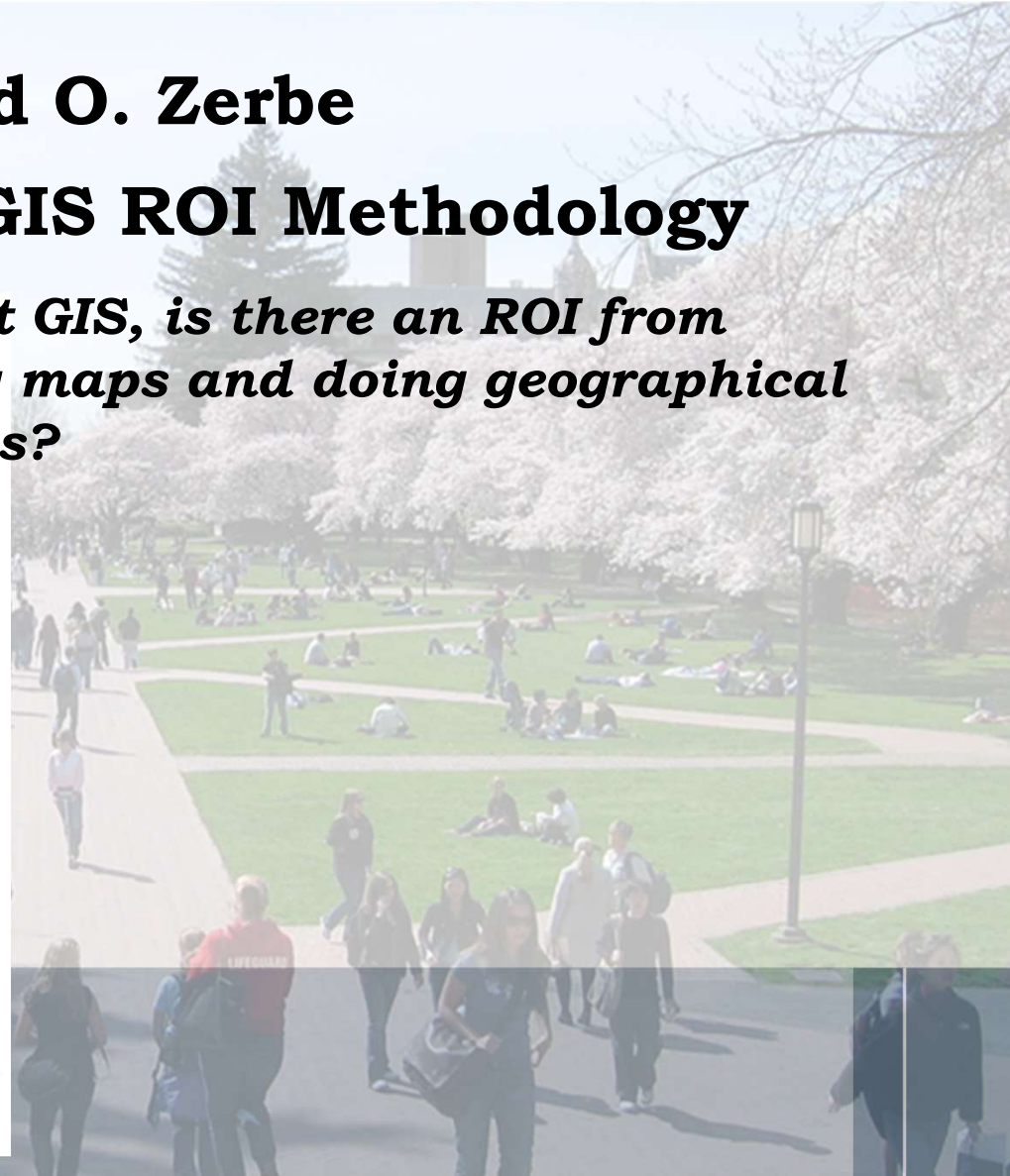
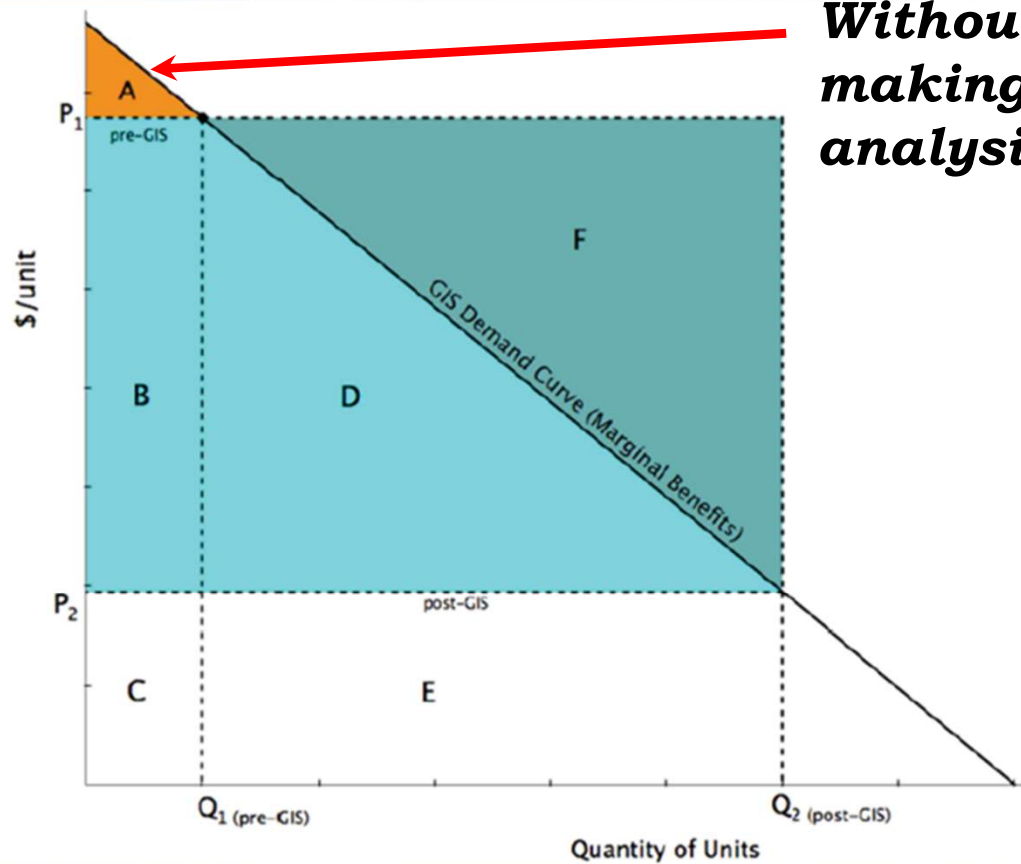
***'My job would be impossible without GIS.'***

***Really?***

**Prof. Richard O. Zerbe**

## **‘With versus Without’ GIS ROI Methodology**

*Without GIS, is there an ROI from making maps and doing geographical analysis?*



**How do agencies benefit financially from GIS in empirical terms?**

***'My job would be impossible without GIS.'***

***Really?***

***Without GIS, is there an ROI from making maps and doing geographical analysis?***

***Yes?***

***No?***

***Maybe?***

**Without GIS, is there an ROI from making maps and doing geographical analysis?**

***Dr. John Snow – 1853  
London cholera epidemic:***

***Cholera deaths***

***Broad Street pump***

***GIS? No***

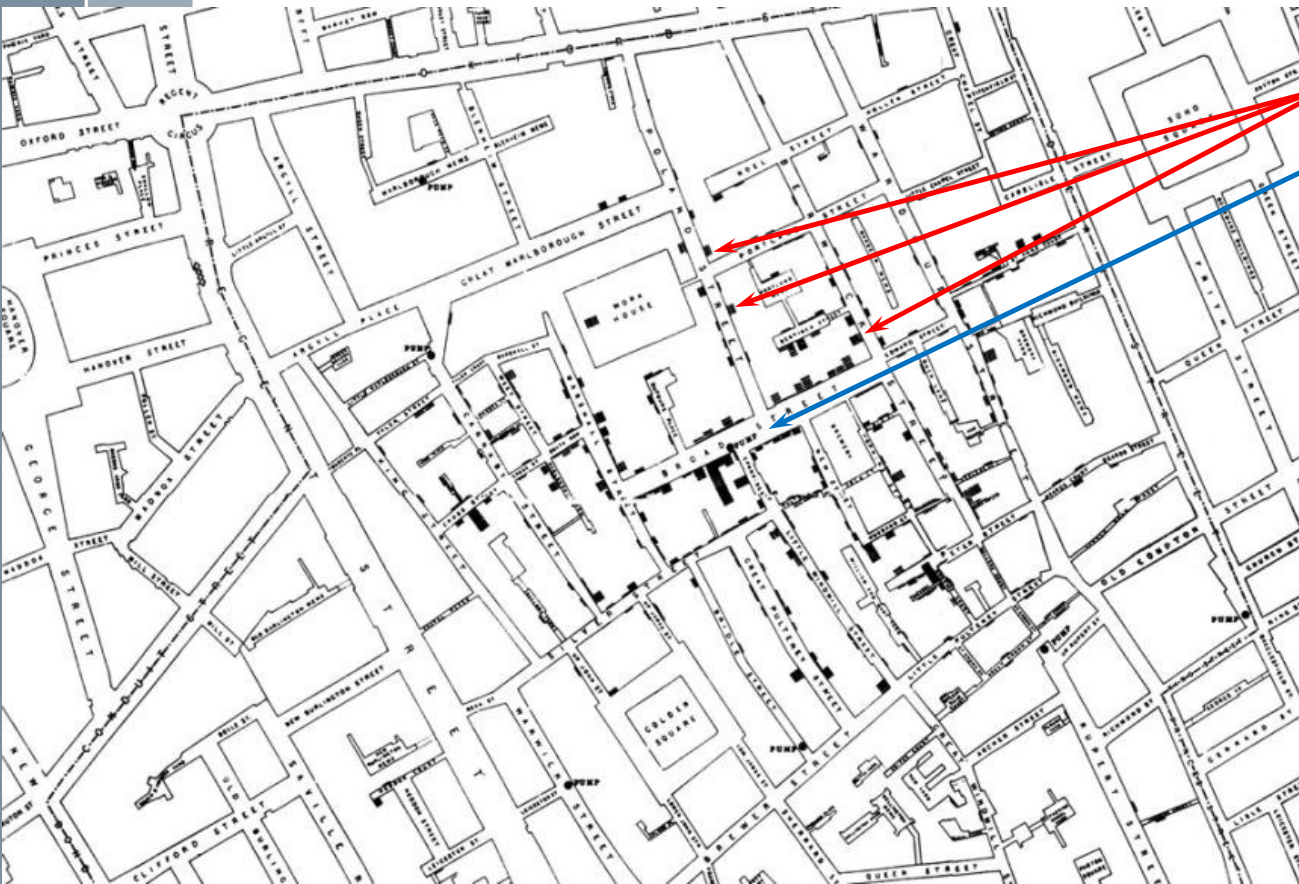
***Impossible? No***

***ROI? Yes***

***Dr. Snow spent weeks  
compiling and then  
mapping data by hand...***

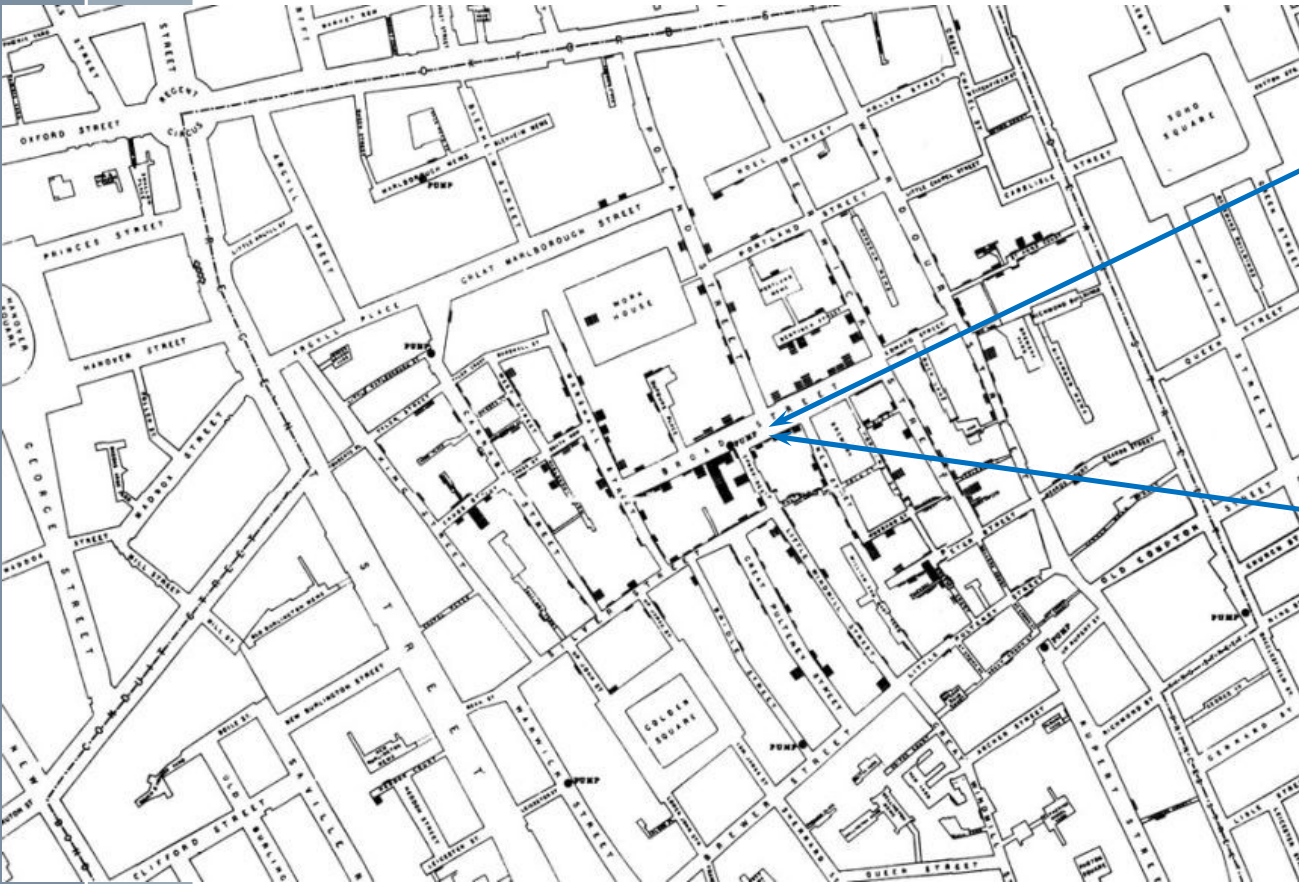
***The cost of the effort to do  
the manual geographical  
analysis was less than the  
benefit of the lives saved!***

***With GIS this type of  
analysis is routine!***



**Without GIS, is there an ROI from making maps and doing geographical analysis?**

***Dr. John Snow – 1853  
London cholera epidemic...  
Broad Street pump  
Greg Babinski, 2024 London***





## How do agencies benefit financially from GIS in empirical terms?

*'My job would be impossible without GIS.'*

**Create a mailing list based on a buffer around a point or line...One response from AI:**

### Step 1: Establish Your Target Center

- *Identify the anchor address: Pick the exact starting property or intersection.*
- *Locate your grid: Find a physical, printed local street map or atlas (e.g., Thomas Guide).*
- *Mark the center: Place a pin or draw a dot on your paper map at the anchor point.*

### Step 2: Calculate and Draw the Buffer

- *Check the map scale: Look at the printed legend (e.g., 1 inch equals 500 feet).*
- *Measure the radius: Use a standard ruler to calculate your target distance on paper.*
- *Set a drawing compass: Adjust the compass point to match your calculated ruler distance.*
- *Draw the boundary: Swing the compass 360 degrees around the center pin to draw a perfect circle.*

### Step 3: Extract Street Names and House Numbers

- *List included streets: Write down every street name that falls inside or touches the circle.*
- *Note the intersections: Identify where the circle cuts off a street to establish bounding blocks.*
- *Perform a physical walk or drive: Travel the designated blocks with a notepad.*
- *Record addresses manually: Log every visible house number, apartment number, and business name.*

### Step 4: Cross-Reference and Verify Names

- *Utilize a printed cross-reference directory: Find a physical Polk Directory or reverse telephone book at a local public library.*
- *Look up by street: Search the directory by street name and house number instead of person name.*
- *Copy resident names: Write down the current occupant names listed next to your collected addresses.*
- *Mark vacant properties: Note missing numbers or labels indicating vacant lots to save on postage.*

### Step 5: Format the Mailing List

- *Create a paper ledger: Rule columns for Recipient Name, Street Address, Unit/Apt, City, State, and Zip Code.*
- *Transcribe legibly: Print all information in clear, block lettering to prevent later reading errors.*
- *Group by postal route: Arrange the addresses sequentially by street to help mail carriers and speed up delivery.*



**How do agencies benefit financially from GIS in empirical terms?**

***‘My job would be impossible without GIS.’***

**Create a mailing list based on a buffer around a point or line....One response from AI:**

**Step 1: Establish Your Target Center**

**Step 2: Calculate and Draw the Buffer**

**Step 3: Extract Street Names and House Numbers**

**Step 4: Cross-Reference and Verify Names**

**Step 5: Format the Mailing List**

***GIS? No***

***Impossible? No***

***ROI? Maybe not....***

***Search for other options? Yes – Posted notices, public access TV, newspaper legal notices....***



**How do agencies benefit financially from GIS in empirical terms?**

***‘My job would be impossible without GIS.’***

**Sometimes we cannot imagine a different way of doing business, unless we think imaginatively about the potential of GIS....**



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### **King County SEPA reviews....**

**Washington’s State Environmental Policy Act (SEPA), adopted in 1971, requires that local government agencies *have an opportunity* to assess and mitigate the environmental impacts of all major construction proposals. This includes public facilities and private projects such as an office building, grocery store, or apartment complex.**

**Under SEPA, local government can review a proposal’s environmental analysis and weigh in before final permitting decisions are made. The SEPA review process helps agency decision-makers, applicants, and the public understand how the proposal will affect the environment and determinants of health.**

**SEPA can be used to modify or deny a proposal to avoid or reduce probable impacts and promote protective factors that are otherwise in short supply.**

**For construction projects in King County, the Department of Public Health (DPH) is the local agency charged with reviewing environmental impacts and providing feedback. The SEPA review evaluates neighborhood conditions including tree cover, pollution, and access to transit, parks, and recreational trails. It also considers health disparities for residents in the neighborhood such as high rates of asthma, COPD (chronic obstructive pulmonary disorder), and obesity.**

**Based on these conditions – and the type of construction project proposed – the SEPA reviewer makes recommendations that improve population health and advance health equity, such as adding trees, carpool parking, bicycle parking, and improved pedestrian access to nearby transit and green spaces.**



## **How do agencies benefit financially from GIS in empirical terms?**

***‘My job would be impossible without GIS.’***

**Sometimes we cannot imagine a different way of doing business, unless we think imaginatively about the potential of GIS....**

### **King County SEPA reviews....**

**Each SEPA review letter takes about 5 hours for staff to research and write manually.**

**Typically, King County receives 40-60 requests per month for SEPA reviews – approximately 600 a year.**

**However, due to staffing constraints, DPH can only review about 4 construction proposals per month (less than 10%).**

**This leaves most construction proposals unassessed, and results in many missed opportunities to improve the well-being of our community.**

***GIS? No***

***Impossible? No***

***ROI? Maybe, maybe not... The constraint is lack of available staffing.***

***Search for other options? Yes – GIS & AI to the rescue!***



**How do agencies benefit financially from GIS in empirical terms?**

***'My job would be impossible without GIS.'***

**King County SEPA reviews....**

***King County AI-GIS-Strengthened State Environmental Policy Act (SEPA)  
Response Letter Generator***



## How do agencies benefit financially from GIS in empirical terms?

*'My job would be impossible without GIS.'*

### King County SEPA reviews....

### *King County AI-GIS-Strengthened State Environmental Policy Act (SEPA) Response Letter Generator*

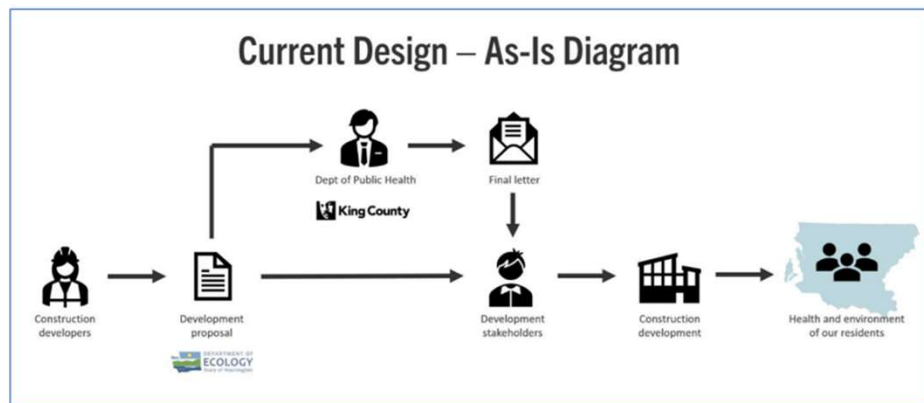
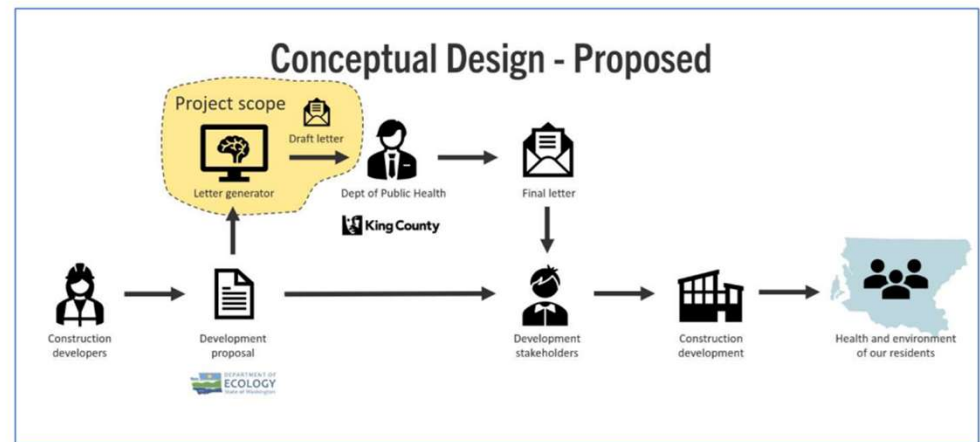


Figure 1





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*‘My job would be impossible without GIS.’*

King County SEPA reviews....

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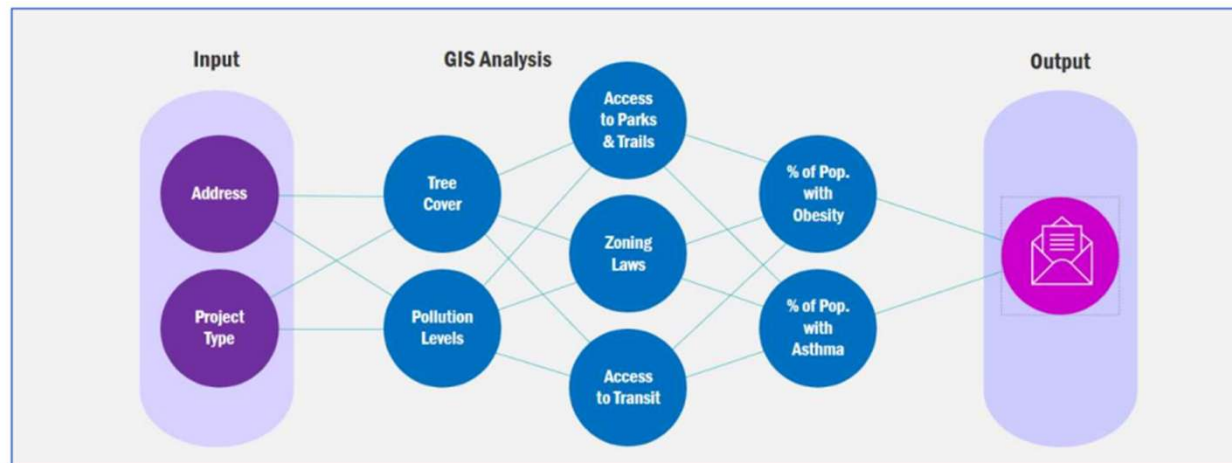


Figure 3 – System overview



## How do agencies benefit financially from GIS in empirical terms?

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### King County SEPA reviews....

### ***King County AI-GIS-Strengthened State Environmental Policy Act (SEPA) Response Letter Generator***

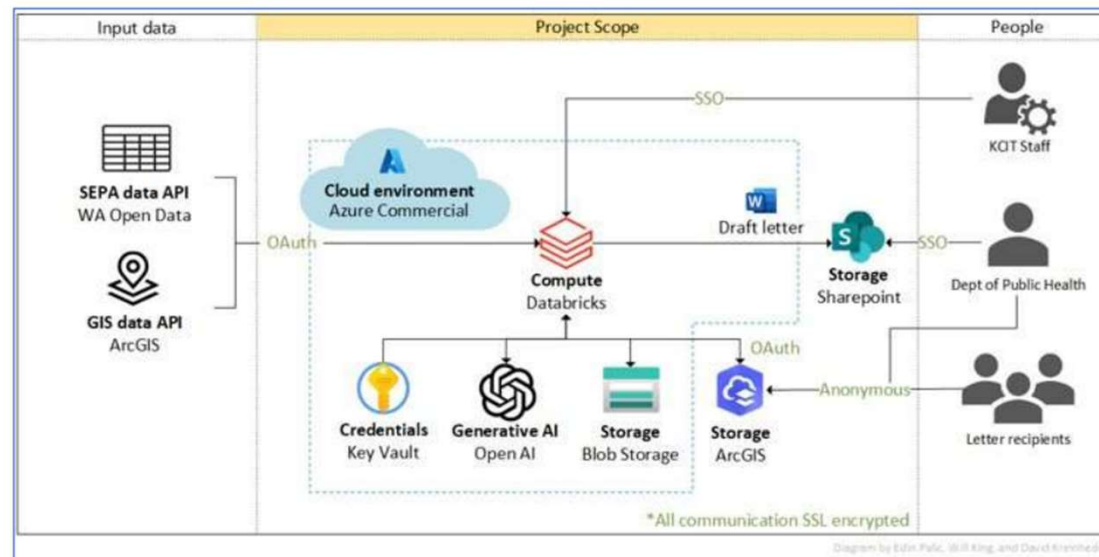


Figure 5 – Physical design



**How do agencies benefit financially from GIS in empirical terms?**

***‘My job would be impossible without GIS.’***

**King County AI-GIS-Strengthened State Environmental Policy Act (SEPA) Response Letter Generator\***

***The application reduced the time required per review. Previously, each SEPA review letter required about 5 hours of manual research and writing. With the new application, the process now takes as little as 20 minutes for human review. This represents a reduction in processing time of over 90%.***

***The application increased the number of SEPA proposals that can be reviewed annually. Given that King County receives approximately 600 review requests per year, the previous method would have consumed around 3,000 hours annually. These savings can free up critical staff hours that can be redeployed to other essential public health activities.***

***\*URISA (GPN) 2025 Exemplary Systems in GIS - Single Process System Category - Exemplary System Award: King County GIS Center/Seattle, Washington: King County AI-GIS-Strengthened State Environmental Policy Act (SEPA) Response Letter Generator. See:***

***[https://cdn.ymaws.com/thevpn.org/resource/resmgr/documents/awards/esig/2025\\_winners/kcgis\\_application\\_-\\_single\\_p.pdf](https://cdn.ymaws.com/thevpn.org/resource/resmgr/documents/awards/esig/2025_winners/kcgis_application_-_single_p.pdf)***



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*‘My job would be impossible without GIS.’*

King County SEPA reviews....

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**GIS? Yes!**

**Impossible? No**

**ROI? Yes!**

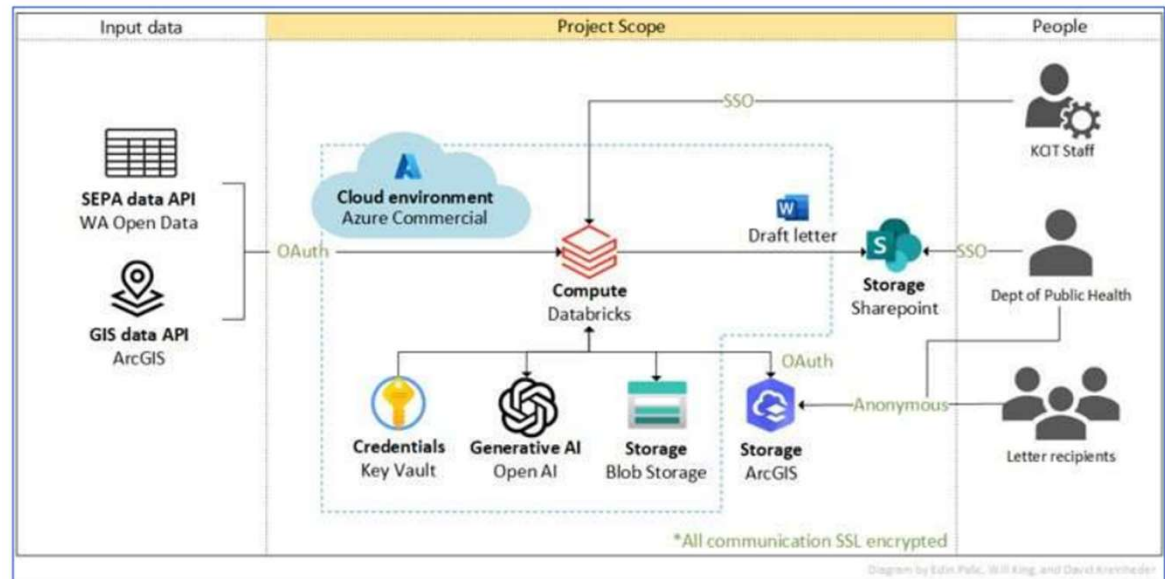


Figure 5 – Physical design



***‘My job would be impossible without GIS.’***

***Resources....***

***[Seattle GIS ROI Study – YouTube Video](#)***

***[GIS&T Body of Knowledge: GIS ROI Article](#)***

***[Society for Benefit-Cost Analysis](#)***

***[Washington State Institute for Public Policy \(ROI methodology\)](#)***



***'My job would be impossible without GIS.'***

***A final thought on GIS and 'Mission Impossible'....***

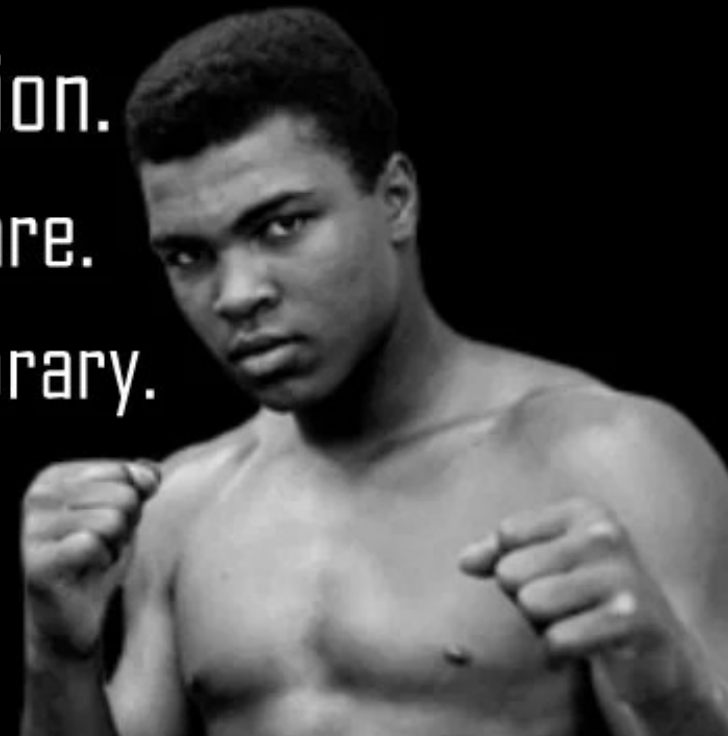
Impossible is just a big word thrown around by small men who find it easier to live in the world they've been given than to explore the power they have to change it.

Impossible is not a fact, it's an opinion.

Impossible is not a declaration, it's a dare.

Impossible is potential. Impossible is temporary.

**IMPOSSIBLE IS NOTHING!** - Muhammad Ali





# Contact information

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<https://www.linkedin.com/groups/13986701/>

