LANE COUNCIL OF GOVERNMENTS (LCOG) and REGIONAL COOPERATIVE PARTNERSHIP AGREEMENT (CPA)

Examine, define, and restructure the long-standing multi-jurisdictional Cooperative Partnership Agreement (CPA)

- City of Eugene
- City of Springfield
- Eugene Water and Electric Board (EWEB)
- Lane County
- LCOG (28 Member Agencies to RLID)

GIS Strategic Plan

KICK OFF PRESENTATION AND TECHNOLOGY SEMINAR

Wednesday, June 27,2018

PRESENTED BY:

Curt Hinton
David Holdstock
Matt McLamb

table of contents

1. introduction
2. existing situation
3. scope of work
4. phase one – steps 1-6
5. phase two – step 7
6. phase three – step 8
7. project schedule and costs
8. GIS technology seminar

table of contents

1. introduction
2. existing situation
3. scope of work
4. phase one – steps 1-6
5. phase two – step 7
6. phase three – step 8
7. project schedule and costs
8. GIS technology seminar

geographic technologies group (GTG)

The Country's Leading GIS Strategic Planning Company

Our Company

We are an award-winning, full-service GIS company that works exclusively with local governments. We are constantly collaborating to ensure the best customer experience for our clients - embracing a culture of knowledge, commitment, and collaboration. We take pride in being a true Esri Gold Business Partner.

20 years in business

600+ local government clients

100% Client Satisfaction

GIS AWARDS

- **Multiple Esri SAG Awards**
- **URISA Best Web GIS** Guelph, Ontario, CA
- **URISA Best Public Sector GIS** Guelph, Ontario, CA
- **Five** 2017 Esri SAG Award Applications
- **Best Citizen Engagement** 2017 Award Winner

esri Partner Network Gold

SMART CITIES
Geographic Information Systems (GIS)
Smart, Resilient, and Sustainable Communities

AWARD WINNING COMPANY

Serving 600+ clients across North America

City of Nanaimo, BC

City of Vancouver, WA

City of Bozeman, MT

City of Medford, OR

Campbell County, WY

City of Edina, MN

City of Eagan, MN

County of Brant, ON

City of Mississauga, ON

City of Providence, RI

City of Guelph, ON

Town of Windsor, CA

City of Roseville, CA

City of Berkeley, CA

City of Concord, CA

San Mateo County, CA

City of Sunnyvale, CA

San Luis Obispo, CA

City of West Hollywood, CA

City of Simi Valley, CA

City of Pasadena, CA

Orange County, CA

Yuma County, AZ

City of Rio Rancho, NM

City of South Bend, IN

City of Louisville, KY

City of Virginia Beach, VA

City off Wilmington ,NC

Richland County, SC

City of Goose Creek, SC

City of Columbus Consolidated Government, GA

Athens-Clarke County

City of Roswell, GA

Gwinnett County, GA

City of Missouri City, TX

City of Boynton Beach, FL

Town of Davie, FL

City of Unalaska, AK

GIS AWARDS

- Esri SAG Awards
- Esri Best Citizen Engagement
- URISA Best Web GIS
- URISA Best Public Sector GIS

about GTG

We Serve All Local Government Departments

We take pride in being an award-winning GIS company that provides full-service enterprise GIS solutions and software for local government. GIS for local government is what we do.

- Executive Management
- Transportation
- Emergency Management and EOC
- Police Department
- Tree Management and Arborist
- Parks and Recreation
- Environmental and Conservation
- Legal Department
- Planning and Zoning
- Housing Department
- Water, Sewer, and Stormwater
- Engineering
- Public Information Officer
- Sheriff Department
- Building and Inspections
- Code Enforcement
- Economic Development
- Information Technology
- Elections
- Community Development
- Telecommunications
- Electric
- Tax Assessors
- Fire Department
- Cooperative Extension
- Libraries
- Schools
- Public Health
- Social Services
- Finance Department

about GTG

Strategic Planning

Enterprise Implementation

Data Creation, Collection, and Conversion

LGIM

Training, Education, and Knowledge Transfer

Staff Augmentation and On-Call Technical Support

Land Management and Parcel Fabric Solutions

Application Development

GTG project team

David Holdstock

chief executive officer

\\ certified GISP
\\ GIS award winner
\\ published author

Years of experience **25**

Curt Hinton

president, owner

\\ certified GISP
\\ GIS award winner
\\ published contributor

Years of experience **25**

Matt McLamb

chief technology officer

\\ GIS strategic planning
\\ ArcGIS online
\\ LGIM expert

Years of experience **10**

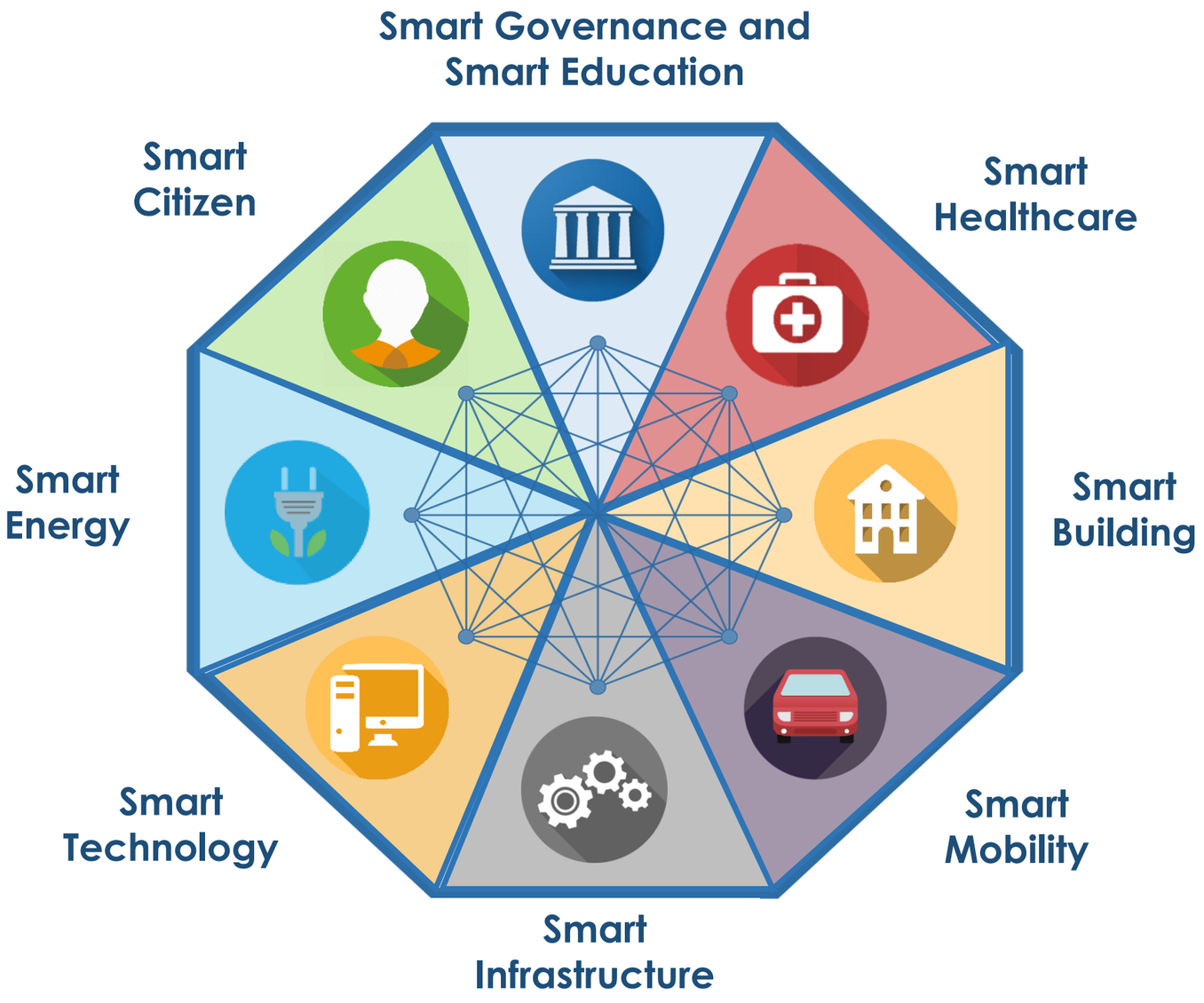
Kathy Andrade-Ulloa

senior strategic planner

\\ GIS strategic planning
\\ business development
\\ database management

Years of experience **13**

SMART CITY CONCEPTS



What is a Smart City?

A Smart City objective– a connected ecosystem to improve the quality of life for residents

A Smart City technology– must harness the data from smart devices, networks, cloud infrastructure, and applications and analytics to develop new insights as well as new products and services.

A Smart City platform- must have a smart city platform for integration or Interoperability of smart technologies (collect, combine, and manage data), enable new applications, and a smart connected city ecosystem. The Internet of Things (IoT) is evolving rapidly.
A Holistic View - A system of Systems

What is a Resilient City?

"A Resilient City is one that has developed capacities to help absorb future shocks to its social, economic, and technical systems and infrastructure so as to still be able to maintain essentially the same functions, structures, systems and identity."

What is a Sustainable City?

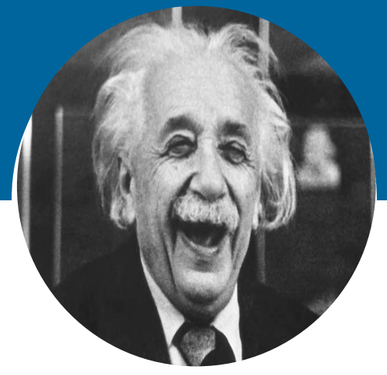
About Sustainable Development. Are you looking for examples of sustainable development? ...

- Wind Energy.
- Solar Energy.
- Sustainable Construction.
- Efficient Water Fixtures.
- Green Space.
- Sustainable Forestry.

SMART CITIES
Geographic Information Systems (GIS)
Smart, Resilient, and Sustainable Communities

Smart Cities and GIS: Timeline

History
Explorers



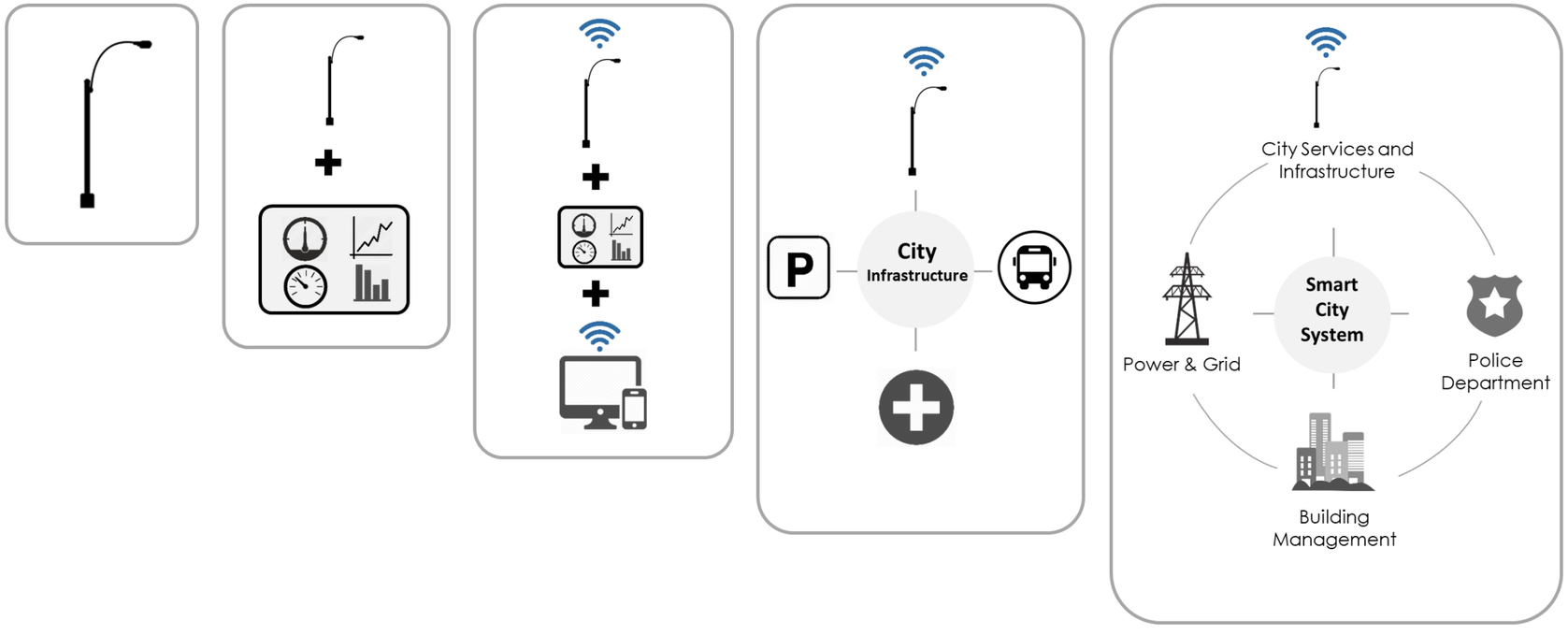
1960 to 1980
Proof of Concept:
GIS Pioneers

1980 to 2000
Desktop, Analysis, and Projects:
GIS Managers

2000 to 2020
Enterprise, Strategic, and Scalable: GIS Coordinators

2020 to 2040
Smart, Resilient, Sustainable
Geographic Information Officers

Asset → Smart Asset → Smart, Connected Asset → Connected System → System of Systems



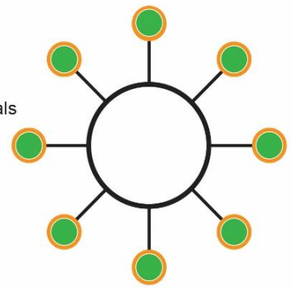
governance models

Decentralized, Centralized, Hybrid, and Hybrid & Regionalization Governance Models

Decentralized Governance Model

The second type of management strategy is called a Decentralized model. As the name implies a decentralized organizational structure divides GIS responsibilities throughout various departments.

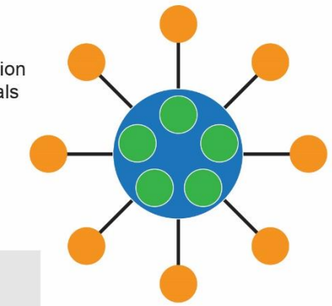
» GIS responsibilities are divided throughout the organizations
» Multiple GIS groups/activities
» Small groups of GIS professionals
  • hardware/software
  • data distribution
  • data exchange
  • training
» End users share responsibility for maintaining data
» Multiple budget sources



Centralized Governance Model

The first type of governance model is Centralized. A centralized organizational structure maintains a central department or division that is responsible for all GIS services.

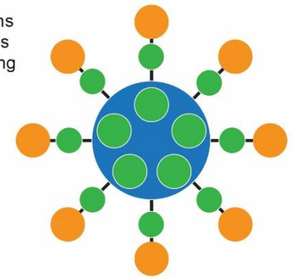
» Single GIS business unit
» Dedicated department or division
» Core group of GIS professionals
  • create and edit data
  • hardware/software
  • analysis
  • data distribution
» Single budget source



Hybrid Governance Model

Many local governments utilize a Hybrid GIS organizational structure, based on the advantages of centralized and decentralized organizational structures

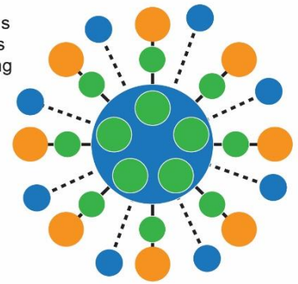
» Attempts to capture the strengths of unified and distributed models
» GIS functions are managed using responsibility matrix
» Intra-departmental stakeholder teams
» Funding and leadership are shared
» Dual accountability



Hybrid & Regionalization Governance Model

Many local governments utilize a Hybrid GIS organizational structure that supports a regionalization of GIS. It has the advantages of a centralized and decentralized model.

» Attempts to capture the strengths of unified and distributed models
» GIS functions are managed using responsibility matrix
» Intra-departmental stakeholder teams
» Funding and leadership are shared
» Dual accountability



LCOG
LANE COUNCIL OF GOVERNMENTS

our methodology \\ seven keys to GIS success

7 KEYS to GIS SUCCESS PHILOSOPHY

GIS MASTER PLAN

Careful planning ensures broad organizational commitment and adequate funding, and minimizes common road blocks. It serves as a guide for staffing, data standards, training, and hardware and software purchases.

1

GOVERNANCE

This is the most critical characteristic of successful GIS programs. Most organizations will need to evaluate and implement the optimum governance model for managing and maintaining their GIS.

2

QUICK SUCCESS

The earliest phases of GIS are typically the most expensive and the most important, but the least glamorous. High impact projects that can be implemented in the first year help maintain enthusiasm and build credibility for GIS.

3

EDUCATION

Make sure users throughout the organization understand what GIS can do for them. Give users at all levels a preview of how they will soon be able to do their jobs more efficiently with GIS.

4

EASE OF USE

Gone are the days when GIS was limited to a few highly trained power users. Make sure you implement intuitive, easy solutions so everyone can benefit. Some of the most widely accepted GIS applications are delivered to the public via the Internet.

5

ENTERPRISE-WIDE IMPLEMENTATION

Spread the responsibilities for GIS throughout the organization and offer all departments the opportunity to use the technology. GIS should be as widely used as a word processor, on every desktop in the organization. This approach helps turn data into valuable information.

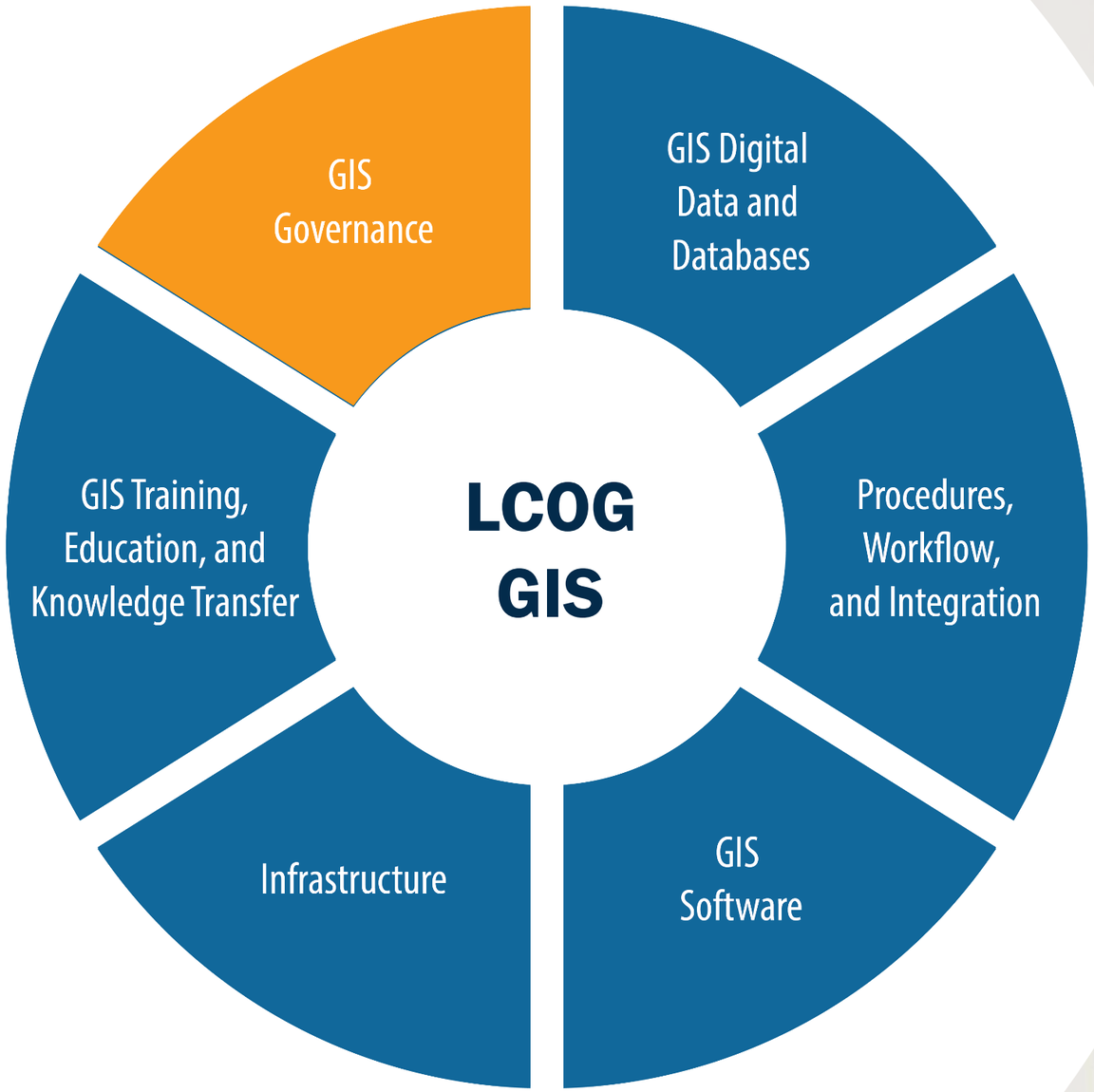
6

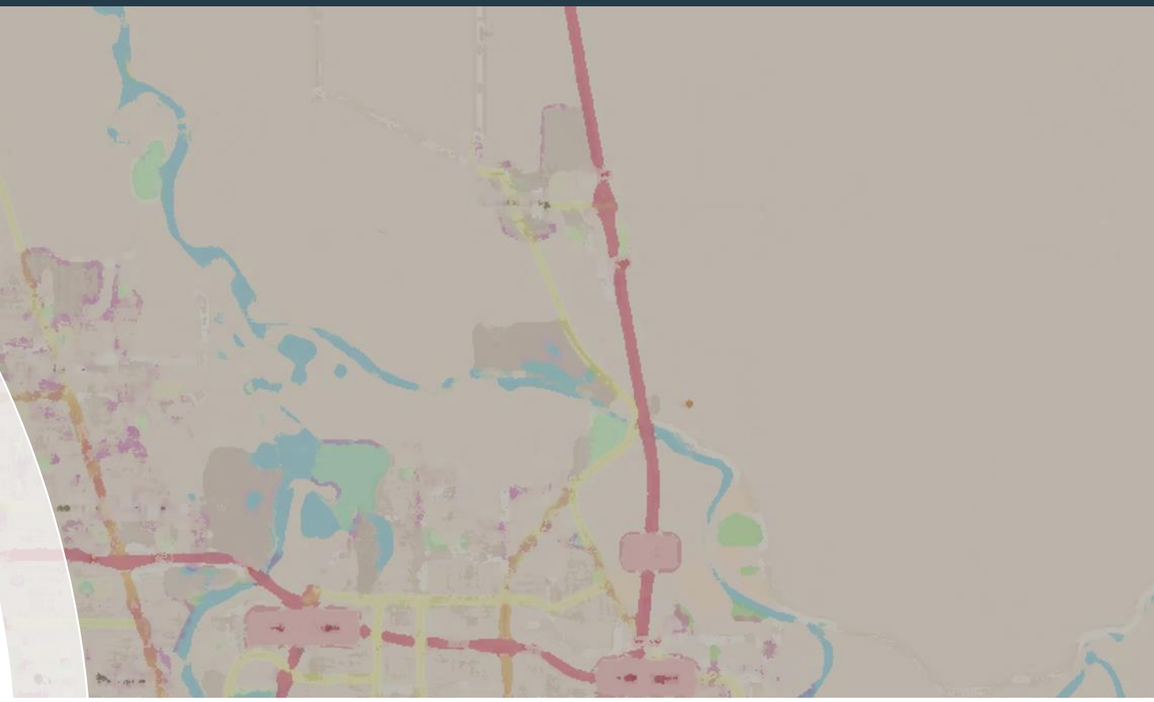
QUANTIFY BENEFITS VS COST

Proven savings in time, life, and money guarantees continued support and momentum. Make sure you invest resources on solutions that solve specific problems.

7

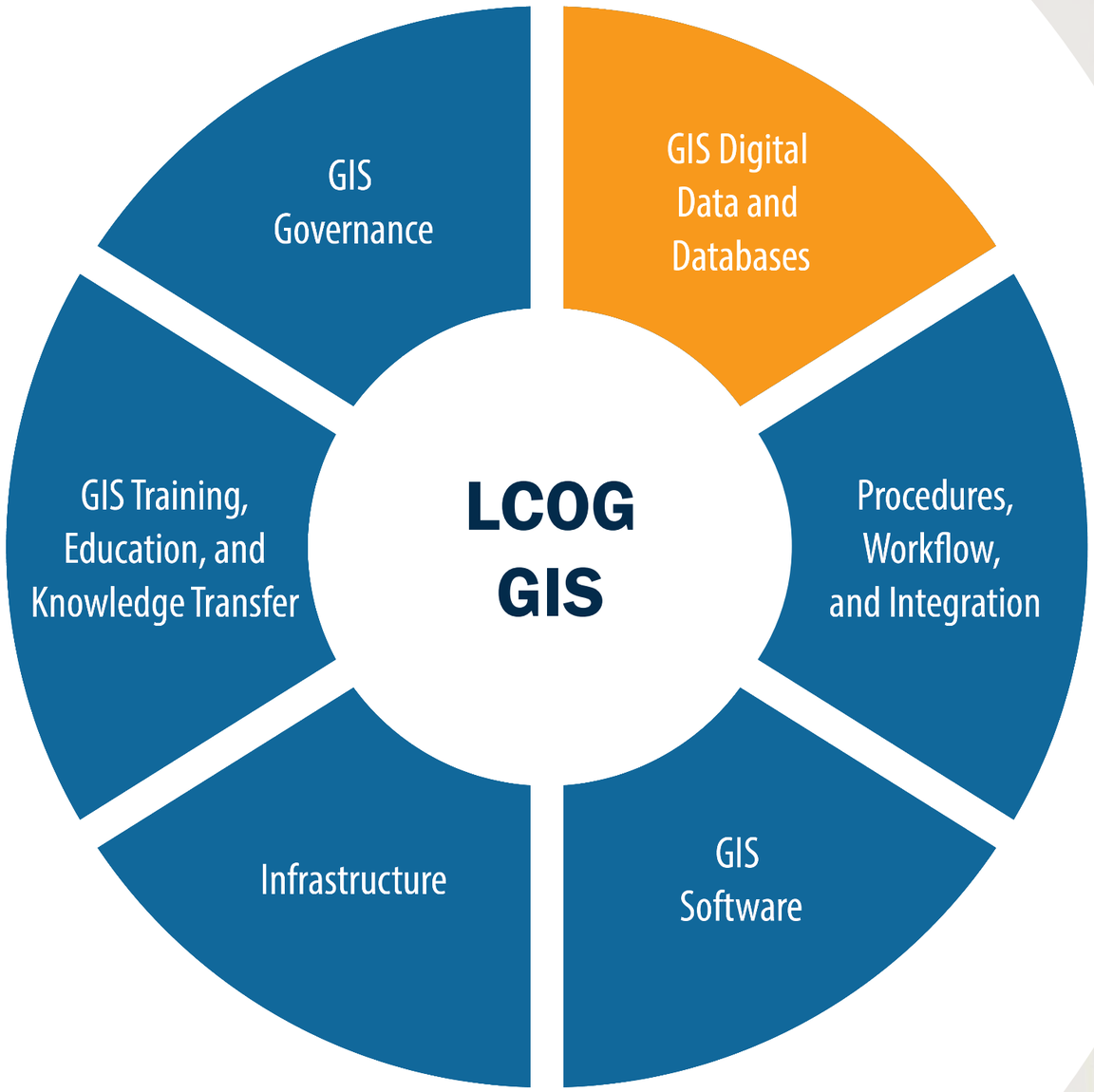
our methodology \\ six pillars of GIS sustainability

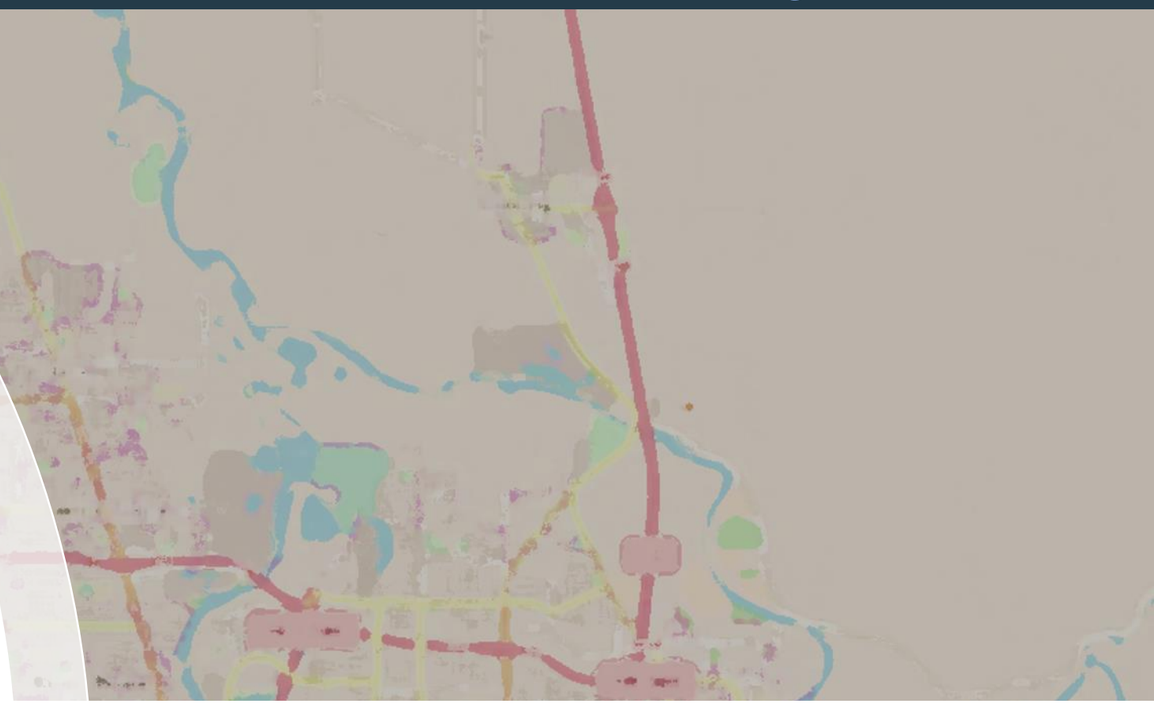




Decentralized, Centralized, Hybrid, and Hybrid & Regionalization Governance Models.

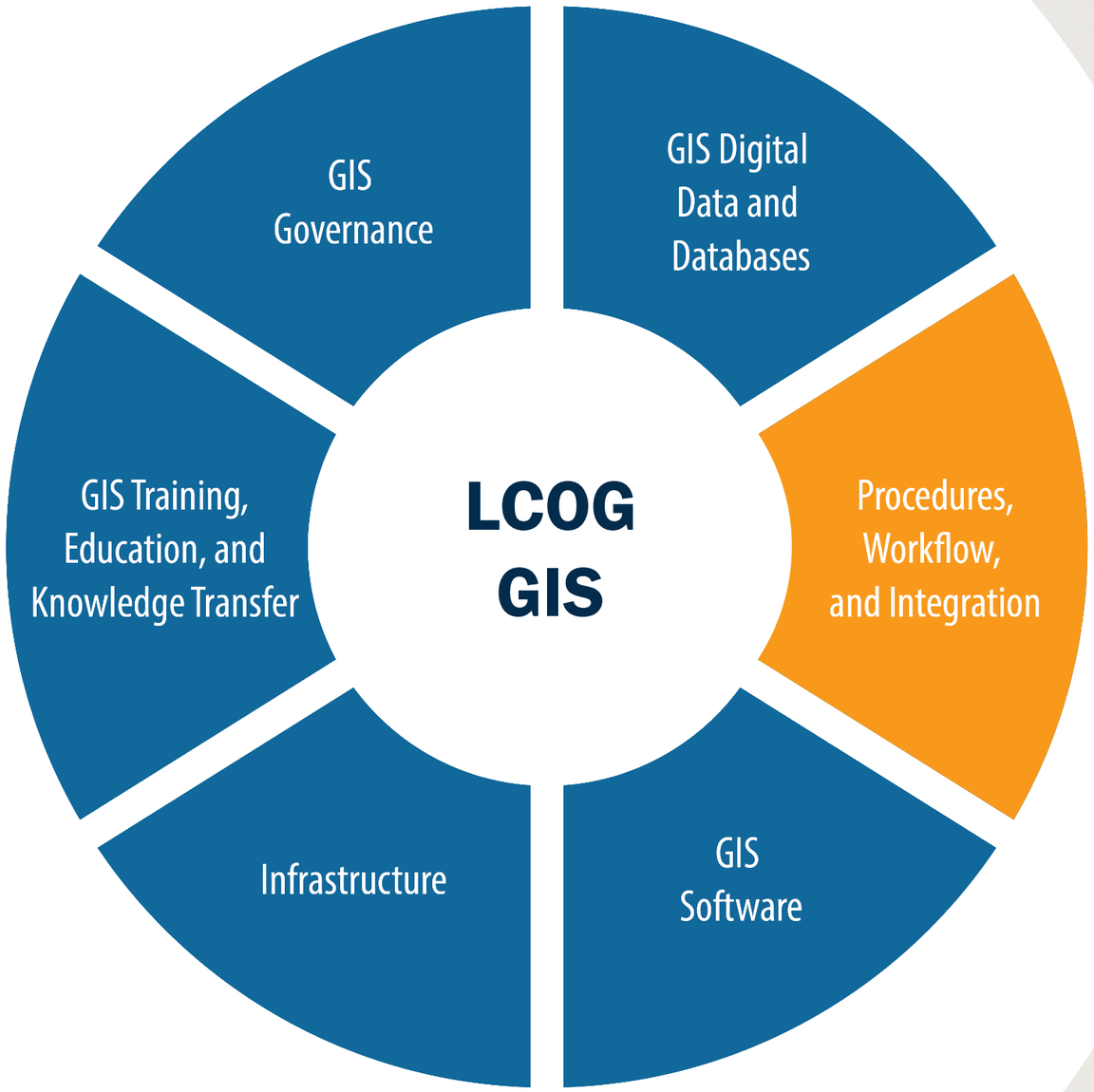
our methodology \\ six pillars of GIS sustainability

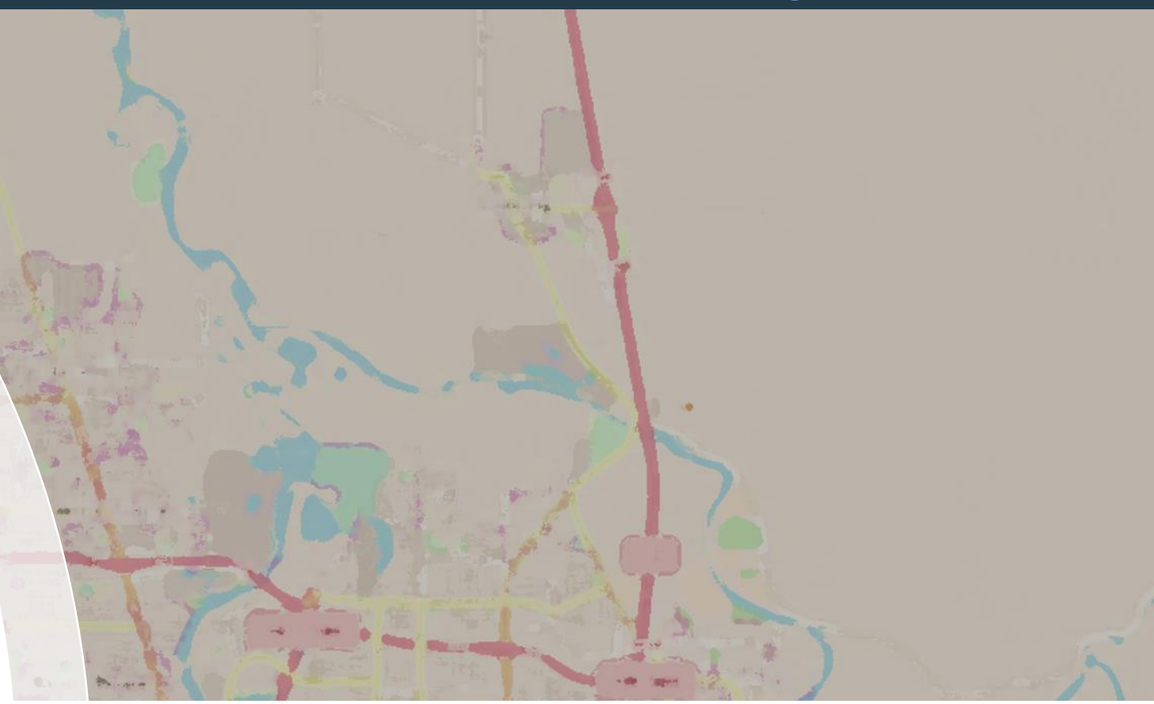




Design, build, collect, and maintain reliable and sustainable GIS digital data layers.

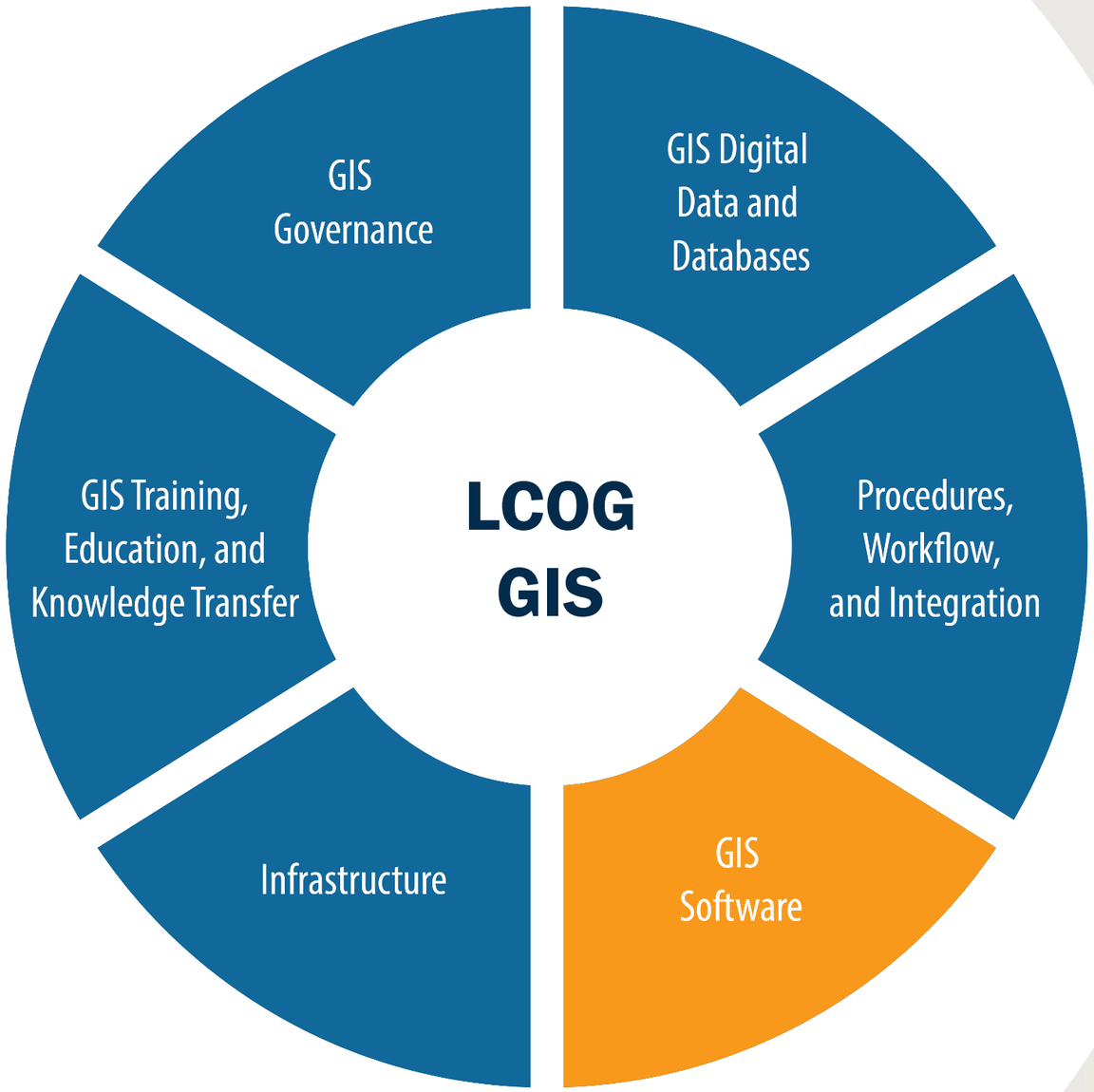
our methodology \\ six pillars of GIS sustainability

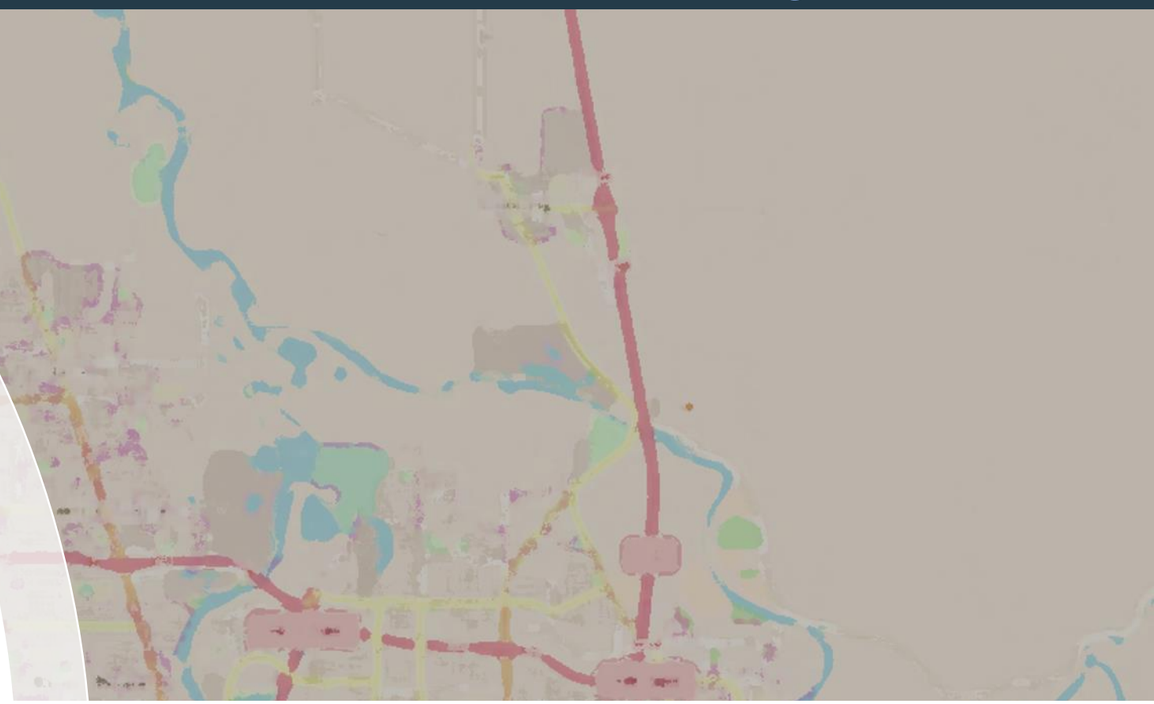




Integrate GIS functionality with existing systems, business processes, and workflow.

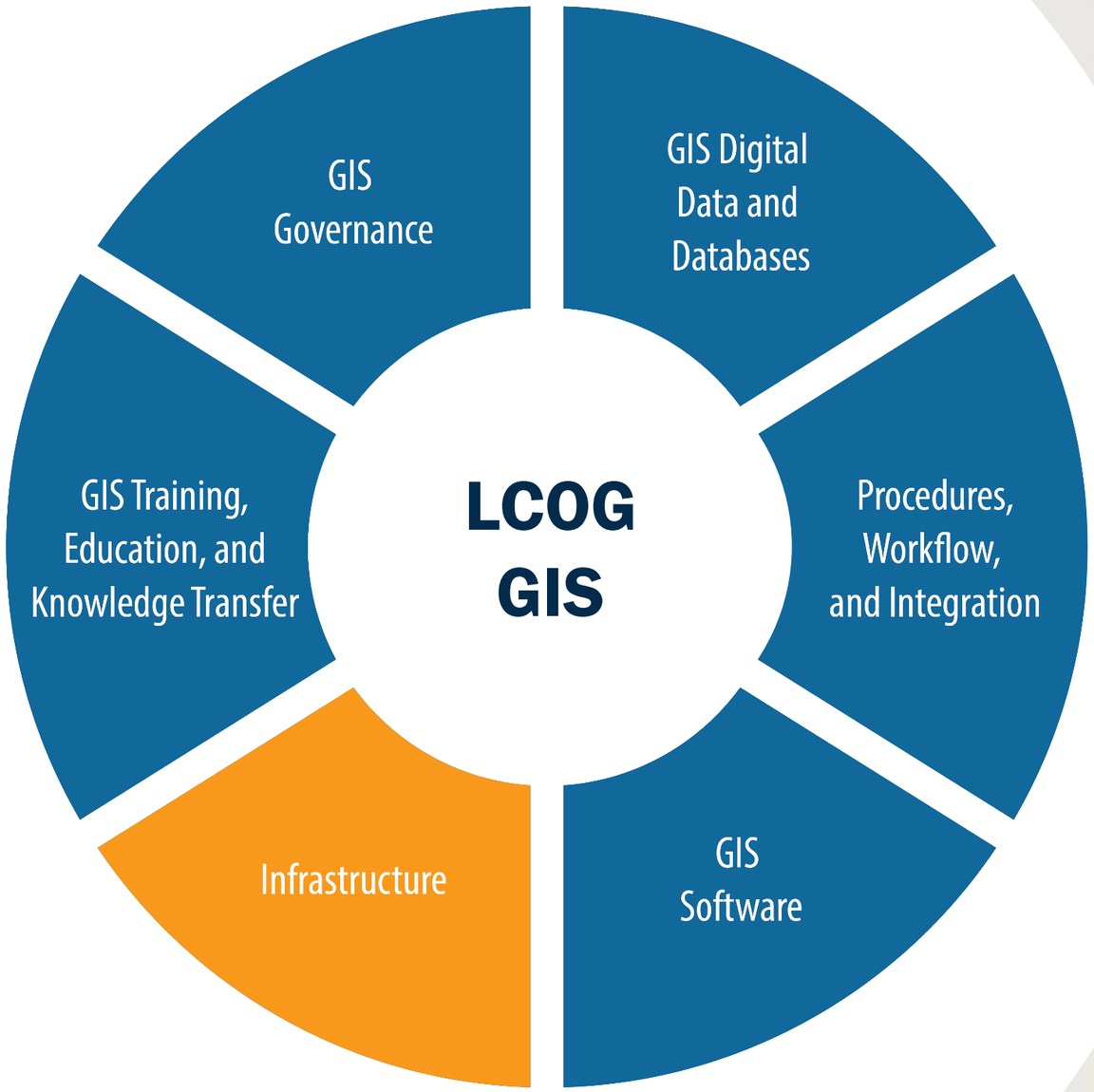
our methodology \\ six pillars of GIS sustainability

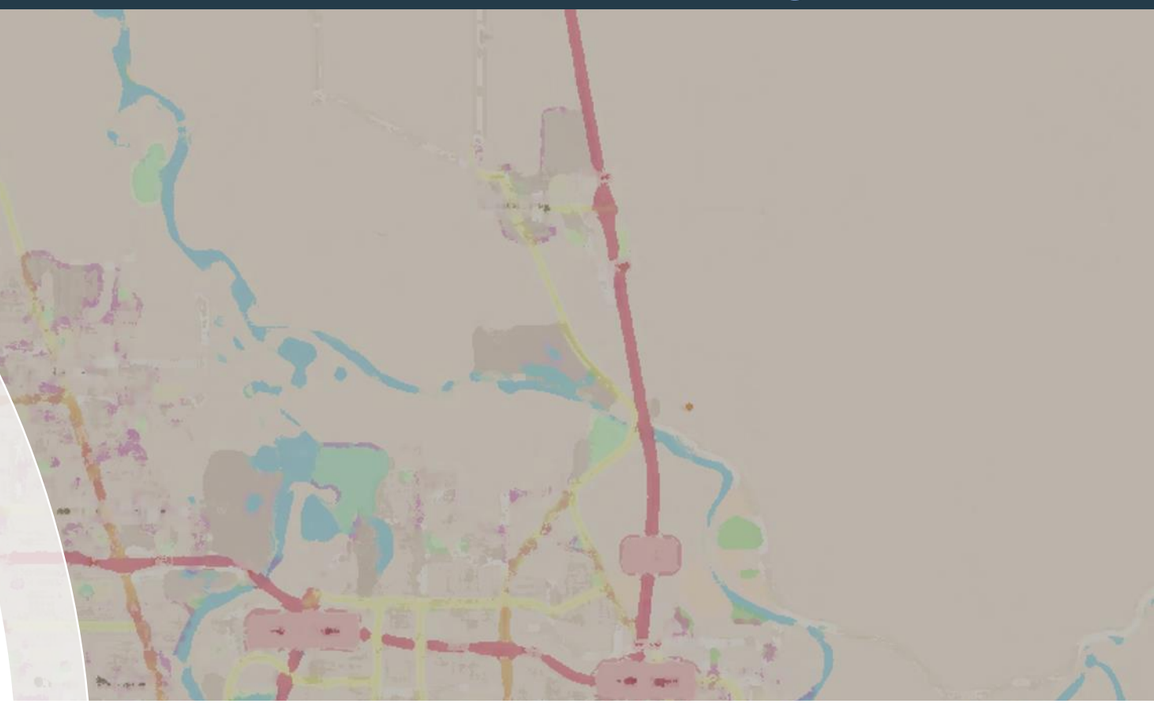




Make GIS software accessible throughout the organization and to the public.

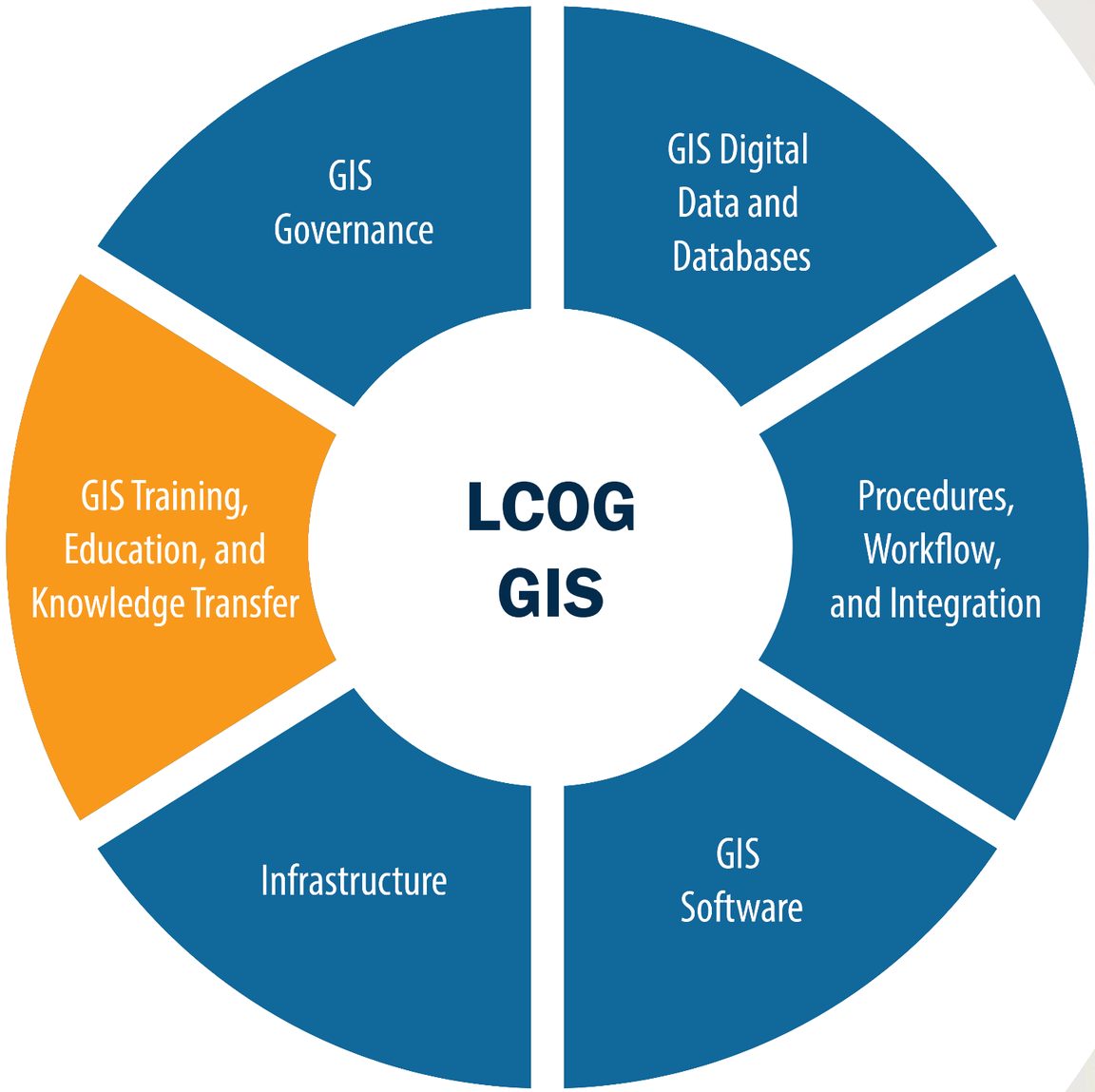
our methodology \\ six pillars of GIS sustainability

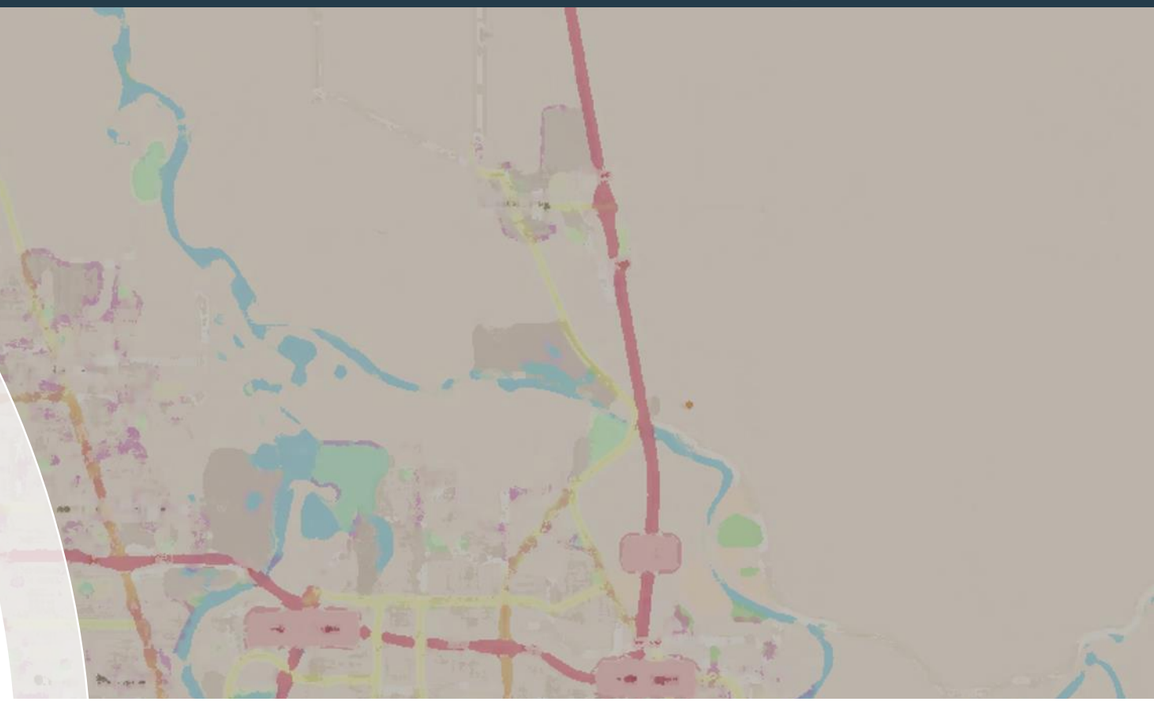




Using the right technology (Hardware, software, mobile tools, GPS, & other geospatial related tools) for your needs.

our methodology \\ six pillars of GIS sustainability



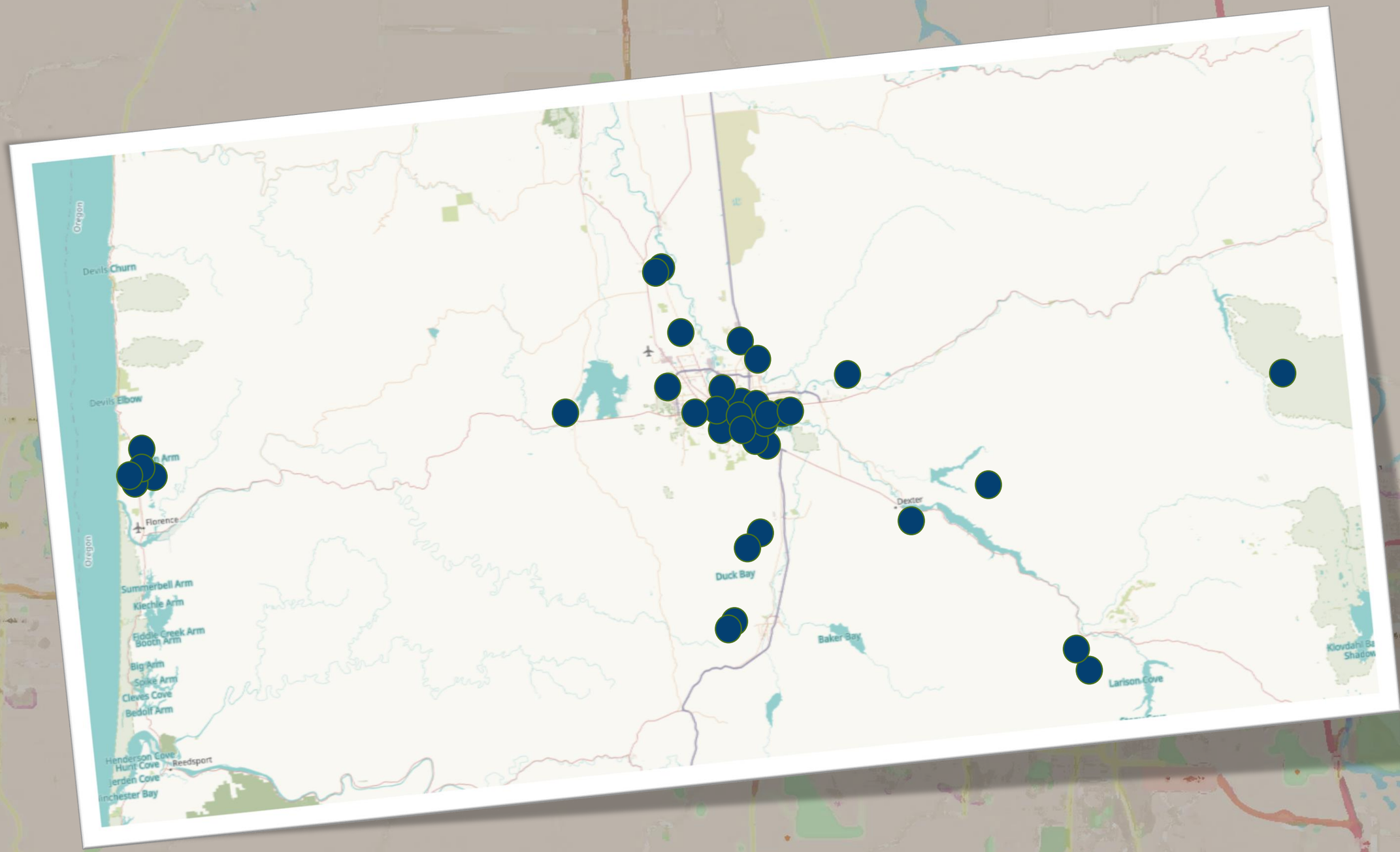


Train, educate, and promote knowledge transfer for all staff.

table of contents

1. introduction
2. existing situation
3. scope of work
4. phase one – steps 1-6
5. phase two – step 7
6. phase three – step 8
7. project schedule and costs
8. GIS technology seminar

LCOG member map



understanding essential acronyms-

L.C.O.G.
(Lane Council of Governments)

\\ A voluntary association of local governments throughout the Lane County region responsible for coordinating and providing public services for the county's citizens

\\ Among the services LCOG provides is a regional GIS – 28 Member Agencies with subscription based access to RLID

R.L.I.D.
(Regional Land Information Database)

\\ A digital warehouse of land-based digital information for Lane County, Oregon

\\ A suite of web-based applications found at www.rlid.org through which users can access and work with data stored in the RLID geodatabase

C.P.A.
(Cooperative Partnership Agreement)

- \\ A multi-jurisdictional GIS data systems and services partnership composed of:
- City of Eugene
- City of Springfield
- Eugene Water and Electric Board (EWEB)
- Lane County
- LCOG and 28 of their members

\\ Other non-partner government agencies

\\ Other commercial RLID subscribers (private agencies)

RLID Budget and Regional GIS Partner Shares

	FY11/12 Budget	FY12/13 Budget	FY13/14 Budget	FY14/15 Budget	FY15/16 Budget	FY16/17 Budget	FY17/18 Budget	FY18/19 Proposed	CPA Cost Share (%)
Eugene	$153,400	$153,400	$153,400	$153,400	$153,400	$153,400	$158,002	$162,742	18.10
EWEB	$74,063	$74,063	$74,063	$74,063	$74,063	$74,063	$76,285	$78,573	8.74
Lane County	$123,439	$123,439	$123,439	$123,439	$123,439	$123,439	$127,142	$130,956	14.57
LCOG	$74,063	$74,063	$74,063	$74,063	$74,063	$74,063	$76,285	$78,573	8.74
Springfield	$64,187	$64,187	$64,187	$64,187	$64,187	$64,187	$66,113	$68,096	7.58
CPA Shares Subtotal	**$489,152**	**$489,152**	**$489,152**	**$489,152**	**$489,152**	**$489,152**	**$503,827**	**$518,940**	**57.73**
RLID Subscriber Revenue	$283,500	$292,000	$295,000	$310,000	$321,998	$326,000	$346,000	$380,000	42.27
Total Budget	**$772,652**	**$781,152**	**$784,152**	**$799,152**	**$811,150**	**$815,152**	**$849,827**	**$898,940**	**100.00**
Partner Agency COLA	3%	0%	0%	0%	0%	0%	3%	3%	

Notes

CPA shares include annual reserve funding for regional hardware and software maintenance. Partner agency shares (excluding subscriber revenue) are approximately as follows: Eugene (32%), Lane County (25%), LCOG (15%), EWEB (15%), and Springfield (13%).

RLID subscriber revenue is total annual amount collected from commercial and other non-partner agency users of the services accessed through the RLID web site.

table of contents

1. introduction
2. existing situation
3. scope of work
4. phase one – steps 1-6
5. phase two – step 7
6. phase three – step 8
7. project schedule and costs
8. GIS technology seminar

project overview \\ scope of services

What we're here to do...

- Examine, define, and restructure the CPA

How we will achieve it...

1. Understand the:
   - *the existing GIS ecosystem*
   - *the distribution of user skill levels and needs*
2. Participation of all stakeholders

project overview \\ goals and objectives

PHASE I: ASSESS THE CURRENT SYSTEM

Describe and assess existing regionally shared spatial data system architecture, centralized services, technology framework, and partner interactions in the context of current partner agency requirements

- Architecture
- Centralized Services
- Technology Framework
- Partner Interactions

PHASE II: DEFINE FUTURE CONDITIONS

Define optimal regionally shared GIS system components and services, as well as the technological and resource requirements necessary to sustain these

- Components
- Services
- Technology
- Resources

PHASE III: ESTABLISH GOVERNANCE

Recommend workable partnership model(s) for continuing collaborative regional GIS systems participation, governance, and a sustainable business and funding model

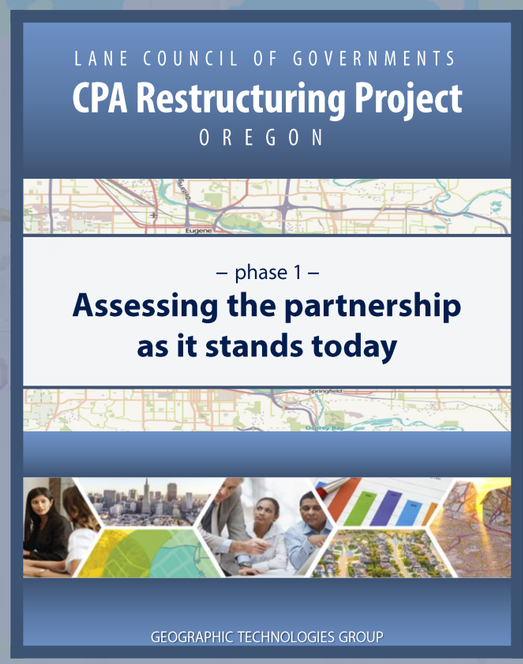
- Partnerships
- Governance
- Collaboration
- Sustainability
- Funding Model

project overview \\ 3 phases

phase 1
examine. assess.

- Stakeholder roles and responsibilities
- Existing governance strategies

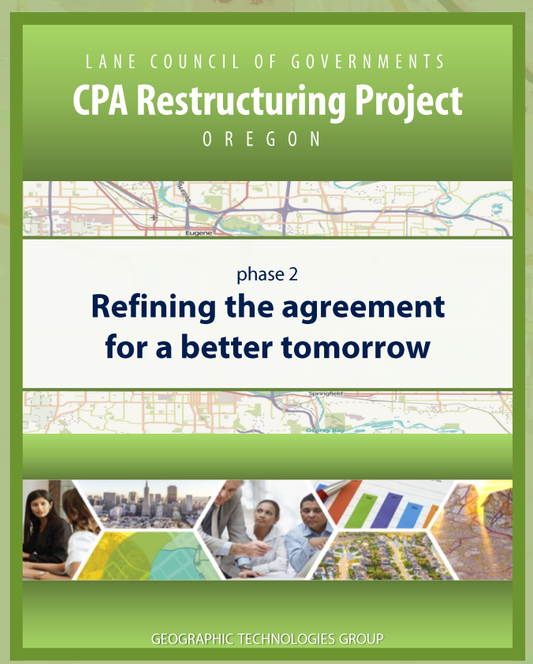
total duration: 8 months
(May 2018 - Jan 2019)



phase 2
deliberate. devise.

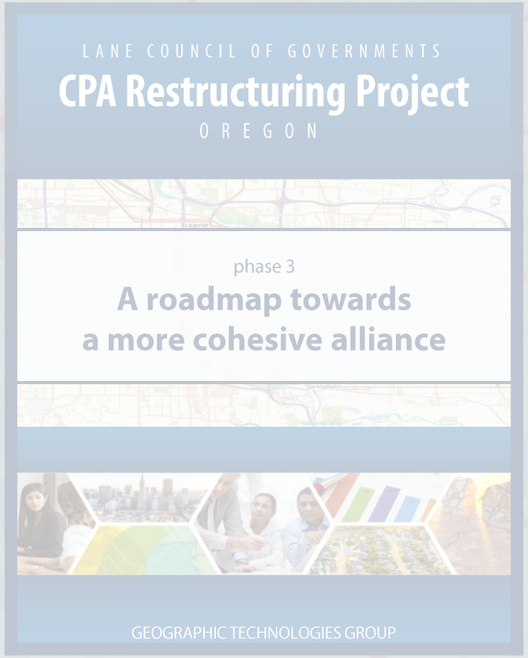
- A more cohesive alliance
- A more integrative governance model

total duration: 1 month
(Jan 2019 – Feb 2019)



phase 3
develop. design.

- A refined strategic GIS plan
- A step-by-step roadmap to implementation



project overview \\ current active phases

PHASE I

STEP 01 Multi Agency Stakeholder ID and Description (GTG)

STEP 02 Online Questionnaire

STEP 03 Kick- Off Workshop and Technology Seminar

STEP 04 GIS Stakeholder/ Partner Interviews

STEP 05 Five (5) Multi- Agency Cooperative GIS Working Sessions

STEP 06 GIS Needs Assesment Findings Presentation and Report

PHASE II

STEP 07 Plan, design, and re-structure an optimum future LCOG/CPA

table of contents

1. introduction
2. existing situation
3. scope of work
4. phase one – steps 1-6
5. phase two – step 7
6. phase three – step 8
7. project schedule and costs
8. GIS technology seminar

PHASE 1

STEP 1 Multi-Agency Stakeholder Identification and Description

LANE COUNCIL OF GOVERNMENTS

CPA Restructuring Project

OREGON

phase 1

Assessing the partnership as it stands today

GEOGRAPHIC TECHNOLOGIES GROUP

schedule

PHASE 1

STEP 1

phase 1

duration

☐	1. stakeholder and partner research	May 18 – Jun 1
☐	2. stakeholder questionnaire	Jun 12 – Jun 26
☐	3. project kickoff meeting	Today
☐	4. stakeholder interviews	Aug 24 – Sep 24
☐	5. multi-agency coordinated work sessions	Sep 28 – Oct 26
☐	6. phase 1 wrap-up presentation/report	Oct 26 – Jan 18

(2019)

objective

PHASE 1

STEP 1

! research and document the partners and stakeholders of the Lane County regional GIS ecosystem

\\ LCOG members

\\ CPA partners

\\ private RLID subscribers

\\ potential future partners, members, subscribers

\\ distribution of GIS user ability levels

objective

Stated in the Request for Proposals (RFP)

Review and restructure the regionally shared GIS systems and services administered under the longstanding Cooperative Partnership Agreement (CPA).

Partnership Objective

Our objective is to develop strategic plan(s) that address the organizational components of an innovative, successful, and durable regional partnership that continues well into the future.

The Partners have established a **process framework and two advisory bodies for supporting this effort**. The bodies are the long-standing Regional GIS Coordinators committee (GIS Coordinators), consisting of GIS leads from the five partner agencies; and the CPA Partnership Development Steering Workgroup (Steering Workgroup), composed of program manager and director stakeholders and the GIS Coordinators.

Geographic Technologies Group Project Goals and Objectives

Review, plan, design and restructure the regionally shared spatial data systems and services administered under the longstanding Cooperative Partnership Agreement (CPA), with special focus on **participation, governance, technology and an enterprise funding model.**

An Enterprise, Sustainable, Scalable and Enduring Multi-Jurisdictional GIS Strategic Plan

Geographic Technologies Group understand that the Partners seek professional consulting services to perform the following task:

Regional Land Information Database (RLID) and Cooperative Project Agreement (CPA)

1. Governance
2. Participation
3. Technology
4. Funding Model

Why is a regional model full of opportunities?
What can LCOG – RLID/CPP and this Interagency model offer the region?
How can RLID grow?

LCOG members

PHASE 1

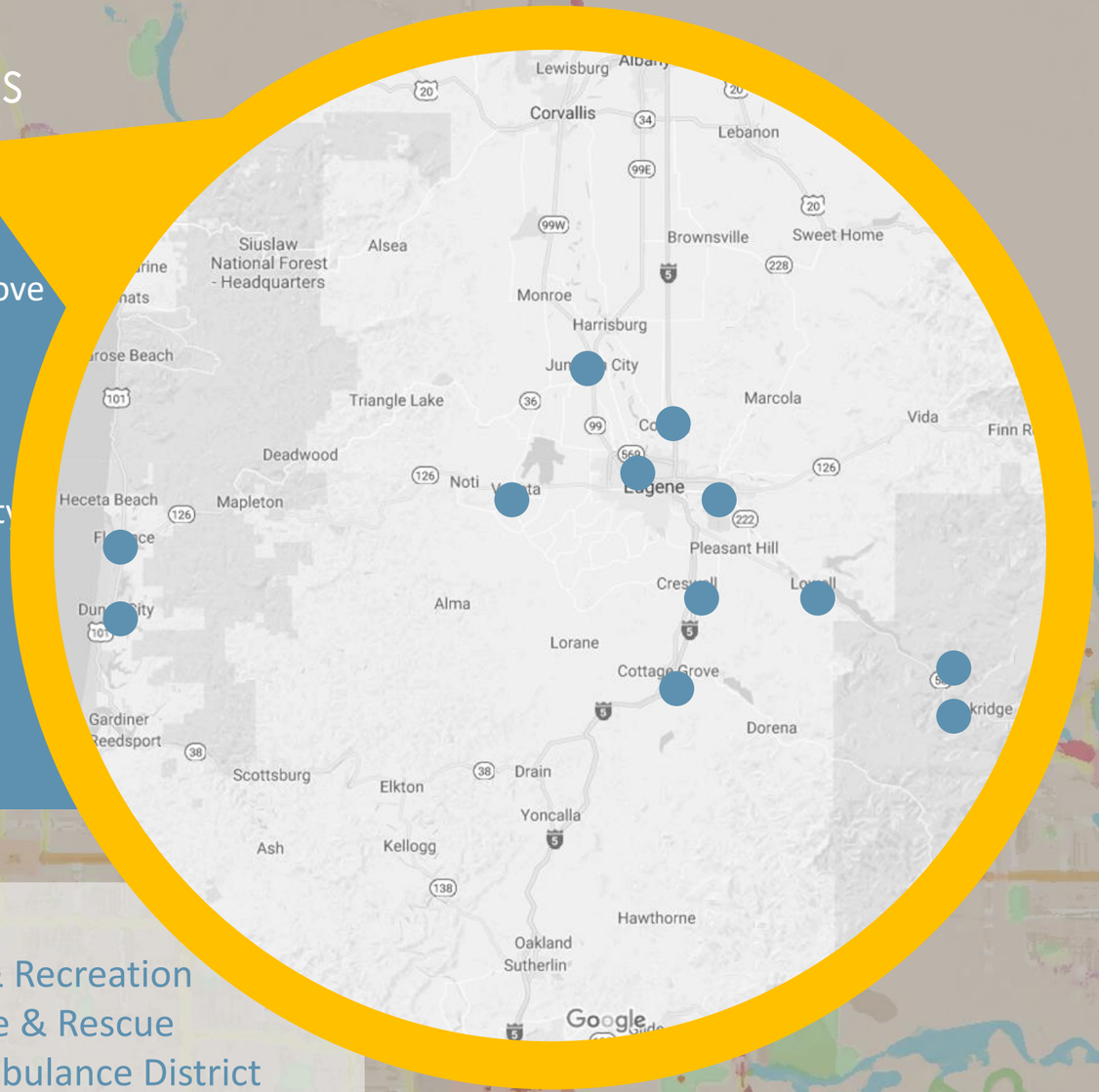
STEP 1

6 School Districts

- School District 19 (Springfield)
- School District 4J (Eugene)
- School District 40 (Creswell)
- School District 45J (South Lane)
- School District 52 (Bethel)
- School District 68 (McKenzie)
- Education, College, and Libraries:
  - Siuslaw Library District
  - Fern Ridge Library District
  - Lane Library District
  - Lane Community College
  - Lane Education Service District

12 Cities

- City of Coburg
- City of Cottage Grove
- City of Creswell
- City of Dunes City
- City of Eugene
- City of Florence
- City of Junction City
- City of Lowell
- City of Oakridge
- City of Springfield
- City of Veneta
- City of Westfir



Emerald People's Utility District
Eugene Water & Electric Board
Heceta Water People's Utility District
Junction City RFPD
Lane County
Lane Transit District
Port of Siuslaw
River Road Park & Recreation
Siuslaw Valley Fire & Rescue
Western Lane Ambulance District
Willamalane Park & Recreation District

separated into stakeholder tiers

PHASE 1

STEP 1

tier 1	senior policy makers	\\ partners
tier 2	technical GIS managers & specialists	\\ partners
tier 3	data users, browsers & subscribers	\\ partners \\ LCOG members \\ private agencies
tier 4	potential future subscribers	\\ non-partner agencies (public and private)

PHASE 1

STEP 2 Online Questionnaire

LANE COUNCIL OF GOVERNMENTS

CPA Restructuring Project

OREGON

phase 1

Assessing the partnership as it stands today

GEOGRAPHIC TECHNOLOGIES GROUP

objective

PHASE 1

STEP 2

phase 1

		duration
☑	1. stakeholder and partner research	May 18 – Jun 1
☐	2. stakeholder questionnaire	Jun 12 – Jun 26
☐	3. project kickoff meeting	Today
☐	4. stakeholder interviews	Aug 24 – Sep 24
☐	5. multi-agency coordinated work sessions	Sep 28 – Oct 26
☐	6. phase 1 wrap-up presentation/report	Oct 26 – Jan 18 (2019)

objective

PHASE 1

STEP 2

! Gather information on the state of the regional GIS partnership as it exists today

\\ open to all stakeholder tiers

\\ separate versions designed for varying knowledge and experience

\\ statistical findings report following completion of survey

questionnaire \\ introduction

PHASE 1

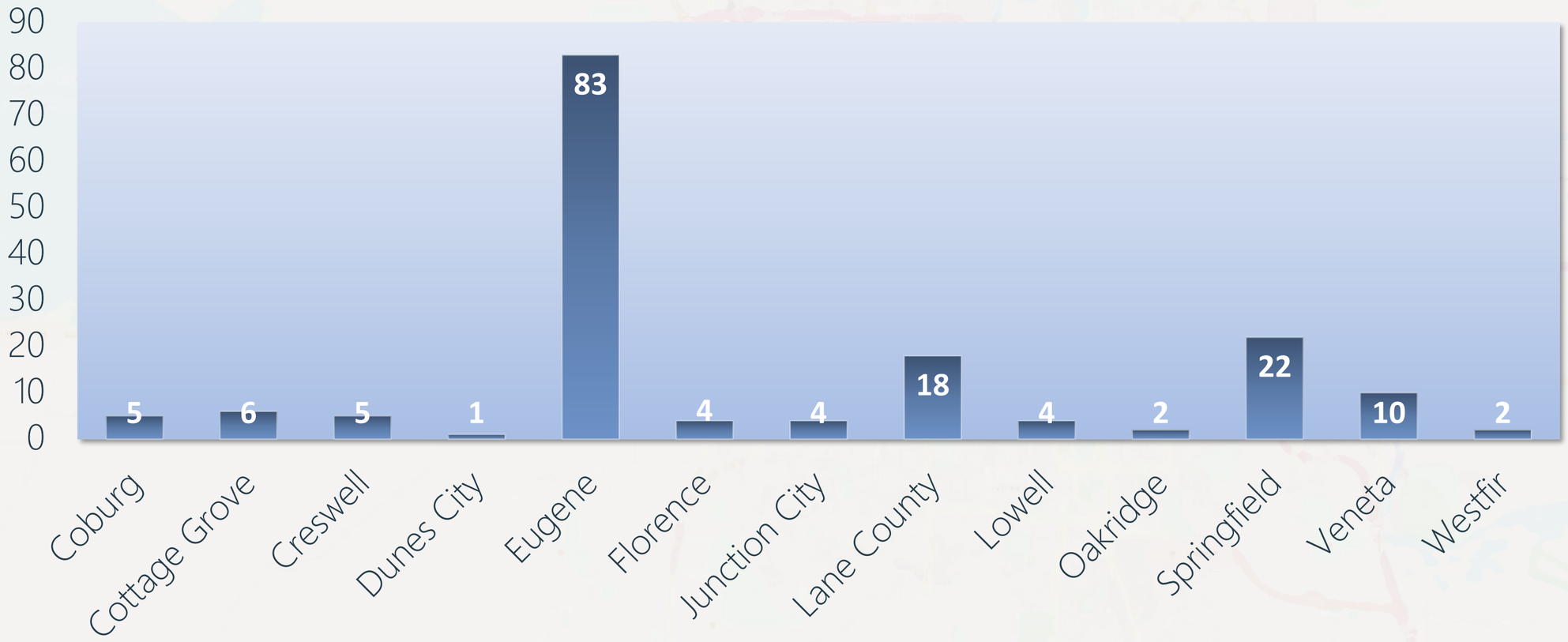
STEP 2

400 invitees

120 respondents

30% participation

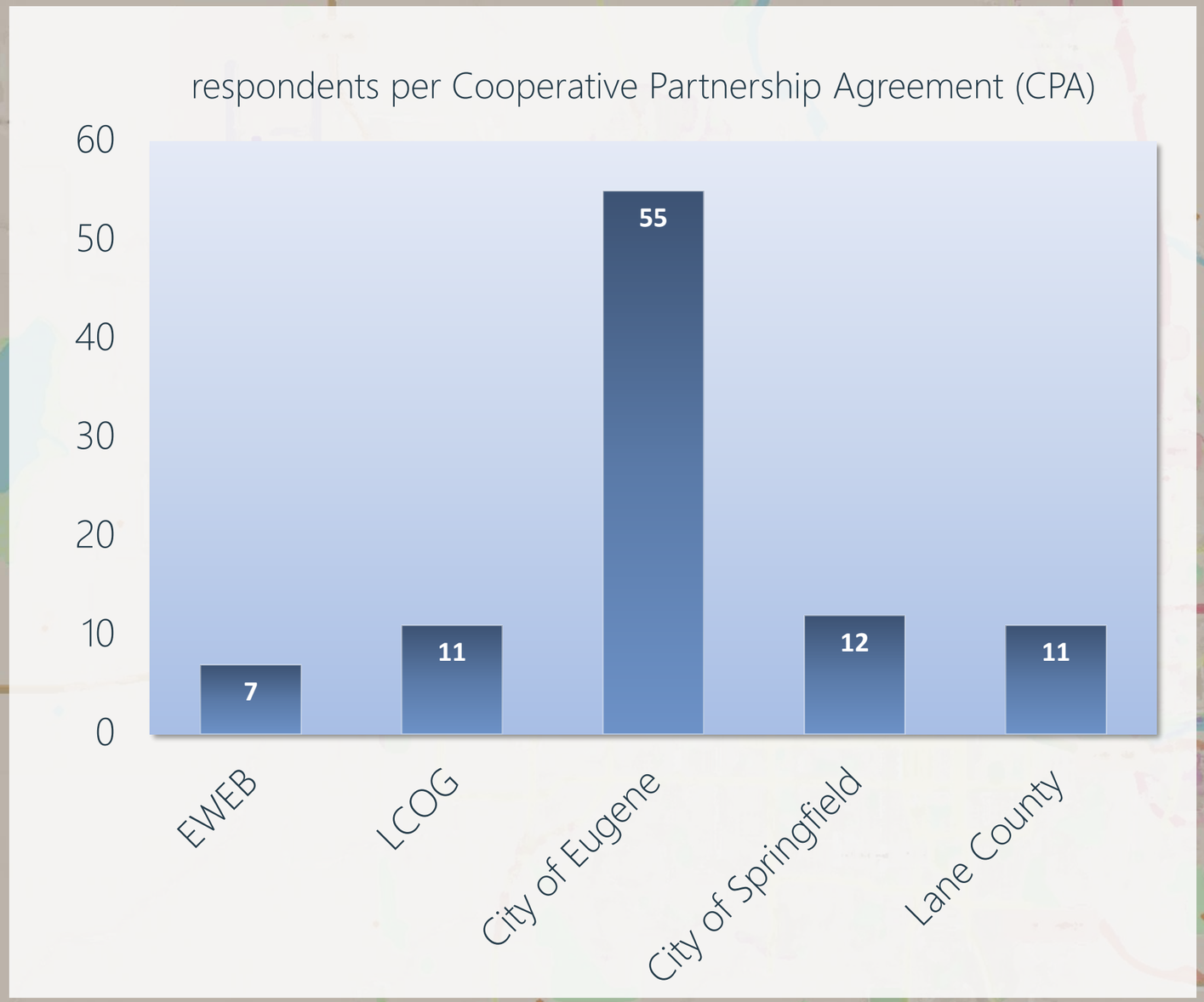
respondents per LCOG member municipality



questionnaire

PHASE 1

STEP 2

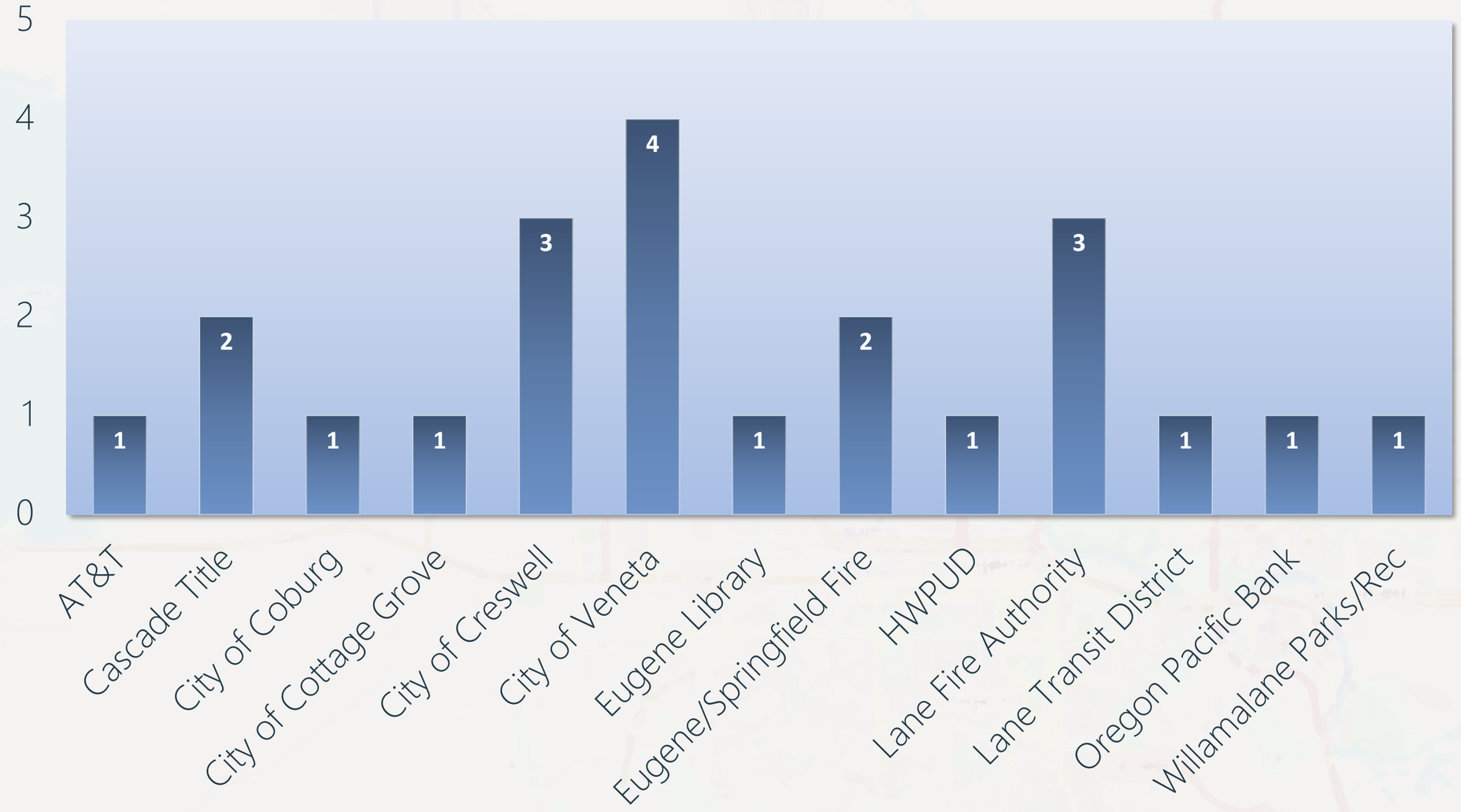


questionnaire

PHASE 1

STEP 2

respondents per LCOG member or subscriber agency



questionnaire \\ personal

PHASE 1

STEP 2

how respondents rated their...

\\ familiarity with GIS systems and services	6.5
\\ satisfaction with existing regional GIS offerings	7
\\ level of GIS expertise	6

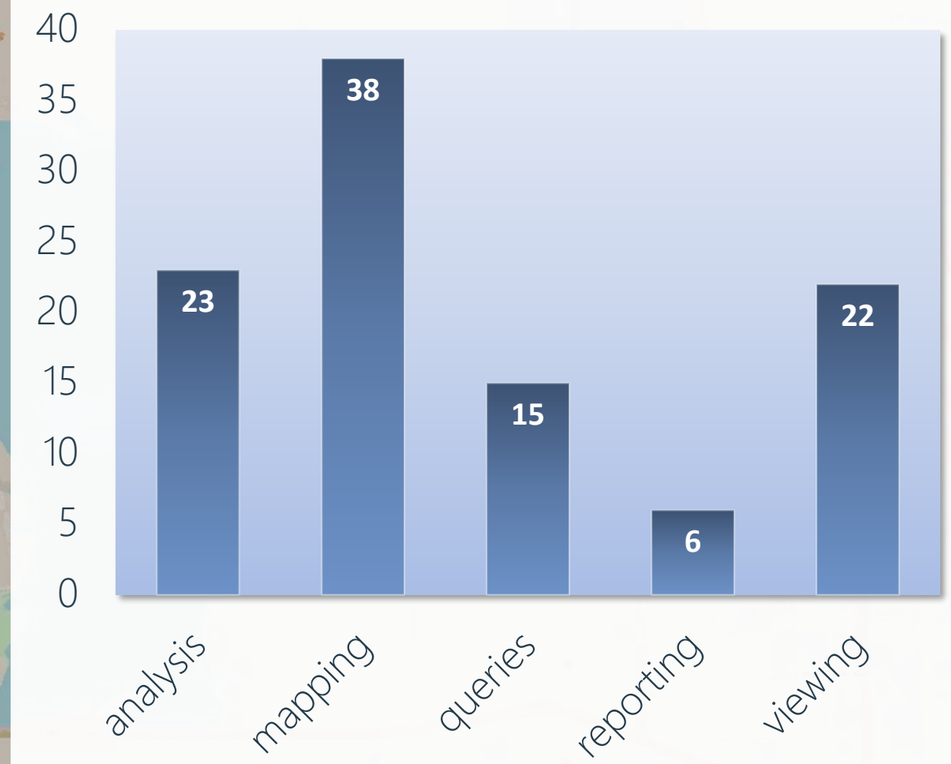
out of 10
overall average

questionnaire \\ data

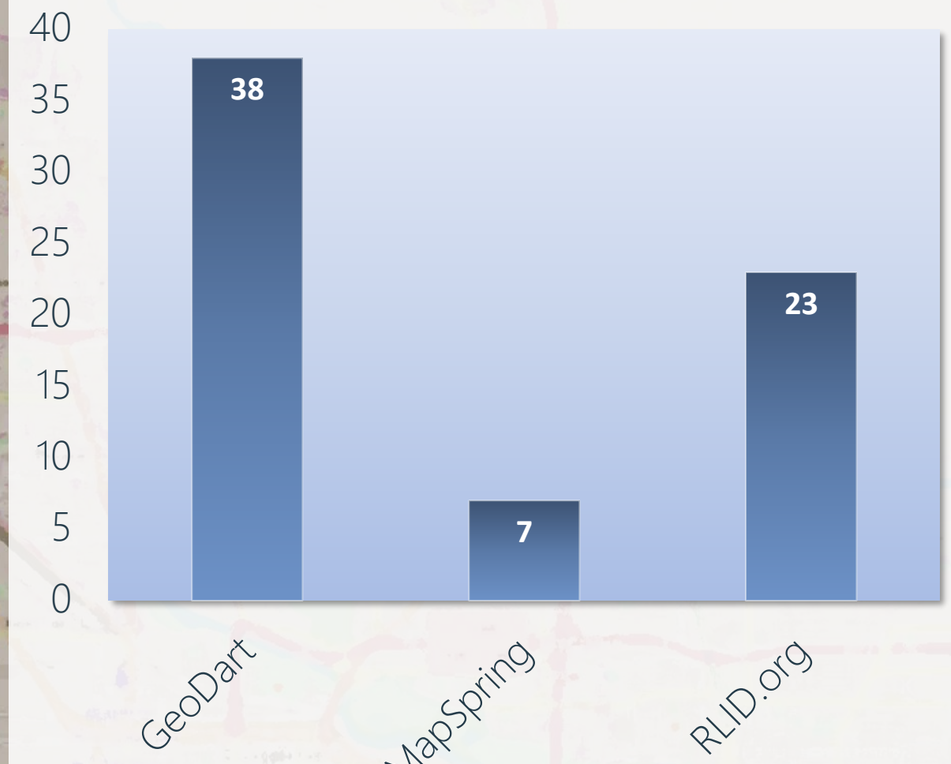
PHASE 1

STEP 2

most common uses per respondent



most used legacy software per respondent



"other" specified:

- developing mapping applications
- managing SQL server
- supporting local governments
- all of the above (8)
- web maps and apps for parks/rec
- maintaining inventories
- locating infrastructure/assess

"other" specified:

- Lane County mapping app (2)
- Lane County internal network
- direct access to RLID geodatabase (5)

questionnaire \\ data

PHASE 1

STEP 2

ever access RLID geodatabase?

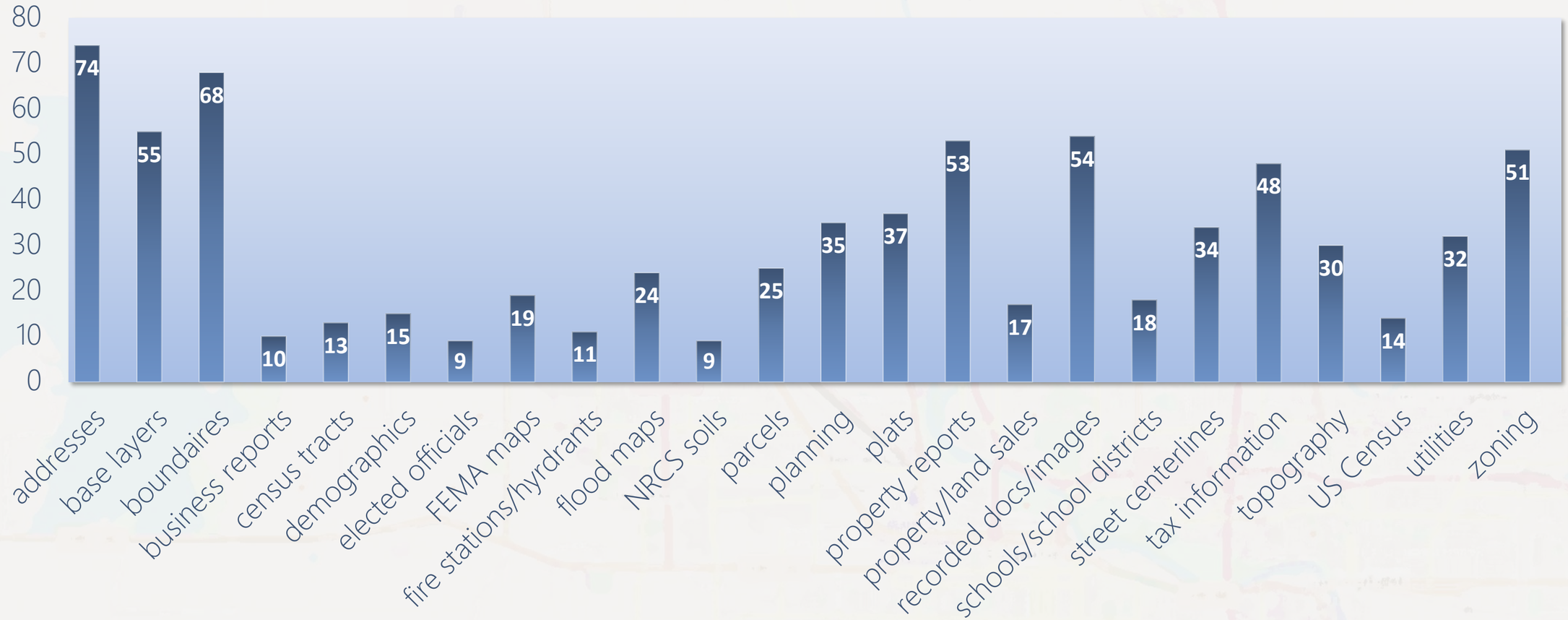
"yes" specified:	• develop/manage backend (2) • detailed info on tax lots (2) • deeds and property info (2) • queries and analysis • property search • PSAP data • roads • regional datasets • importing data to ArcGIS pro • Batch extracts • network analysis

questionnaire \\ data

PHASE 1

STEP 2

most used datasets/layers/maps per respondent...



"other" specified:

- deeds & records
- tax maps
- natural resources (geodart) (2)
- historic streetcar rails
- ROW mask
- POS data (geodart)
- aerial photos (geodart) (2)
- environmental (geodart) (2)
- street classification
- projects
- vegetation (internal)
- parks data (geodart)
- storm/waste water (3)
- historical data
- assessor QTR sections

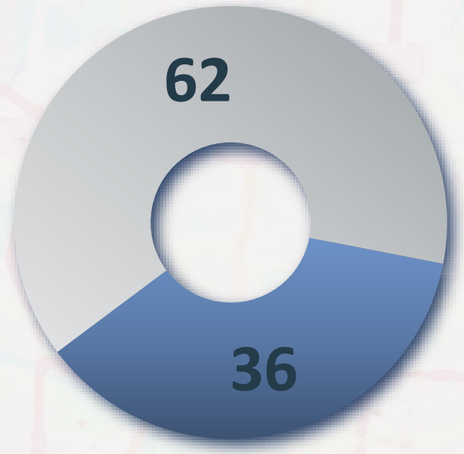
questionnaire \\ data

PHASE 1

STEP 2

any inaccurate or incomplete data?

"yes" specified:	• seismic info • aerial photos (2) • creeks, streams • tax lot history (4) • tax/parcels (3) • topography • easements (3) • building footprints • zoning (2) • wastewater system (2) • jurisdictional boundaries • addresses (3) • utilities • fire hydrants • buildable lands • square footage



questionnaire \\ data

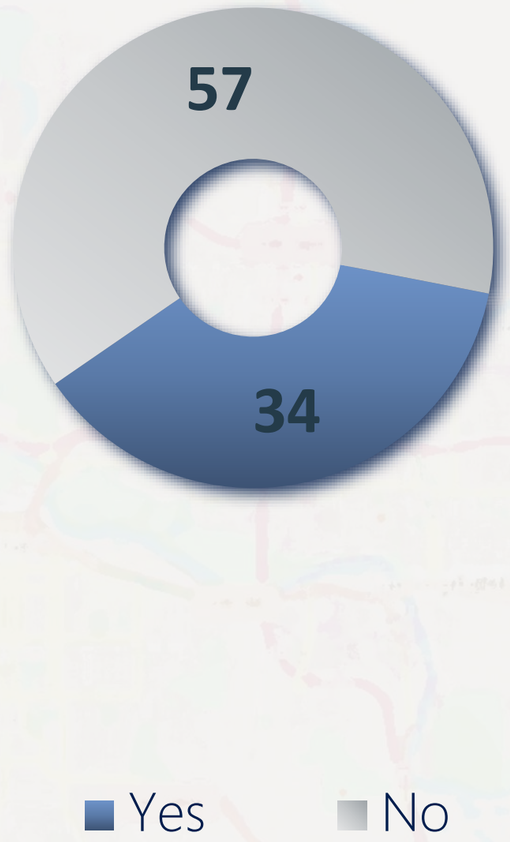
PHASE 1

STEP 2

any missing or unavailable data?

"yes" specified:

- hydrography/hydrology (2)
- farmland protection soils
- hazardous materials
- EPA/DEQ brownfields (2)
- social services
- Google Earth aerials (2)
- parks/rec specific layers (4)
- transit routes and stops (2)
- boundary change details
- utility infrastructure
- storm/waste water (2)
- state and federal regulations
- IRIS & RAPTOR emergency (2)
- project specific demographics
- Springfield asset attributes
- employment
- Eugene street trees
- historic data
- scanned connection cards
- special districts
- medic first-in areas



questionnaire \\ data

PHASE 1

STEP 2

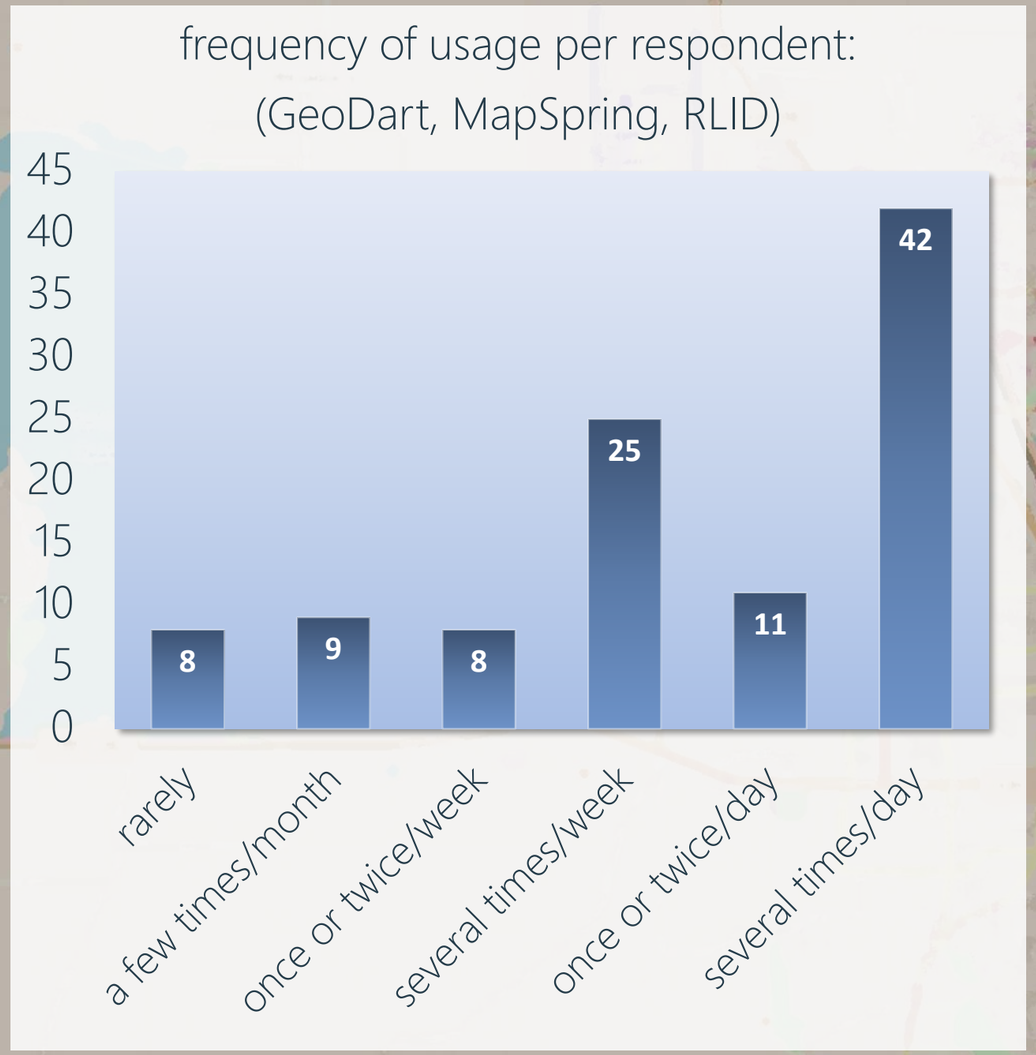
how respondents rated the...

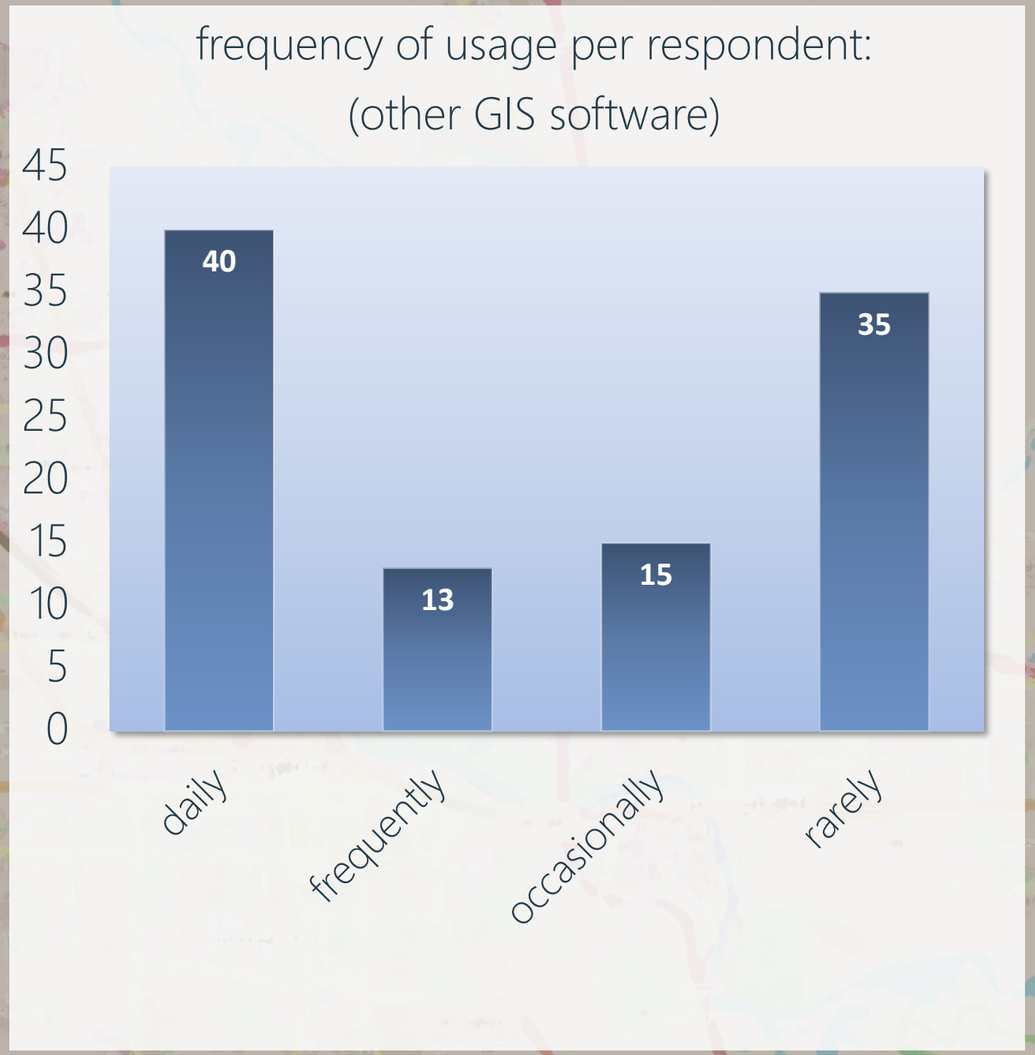
\\ accuracy and reliability of existing data	**6.5**
\\ accessibility of systems, services and data	**7** out of 10 overall average

questionnaire \\ software

PHASE 1

STEP 2



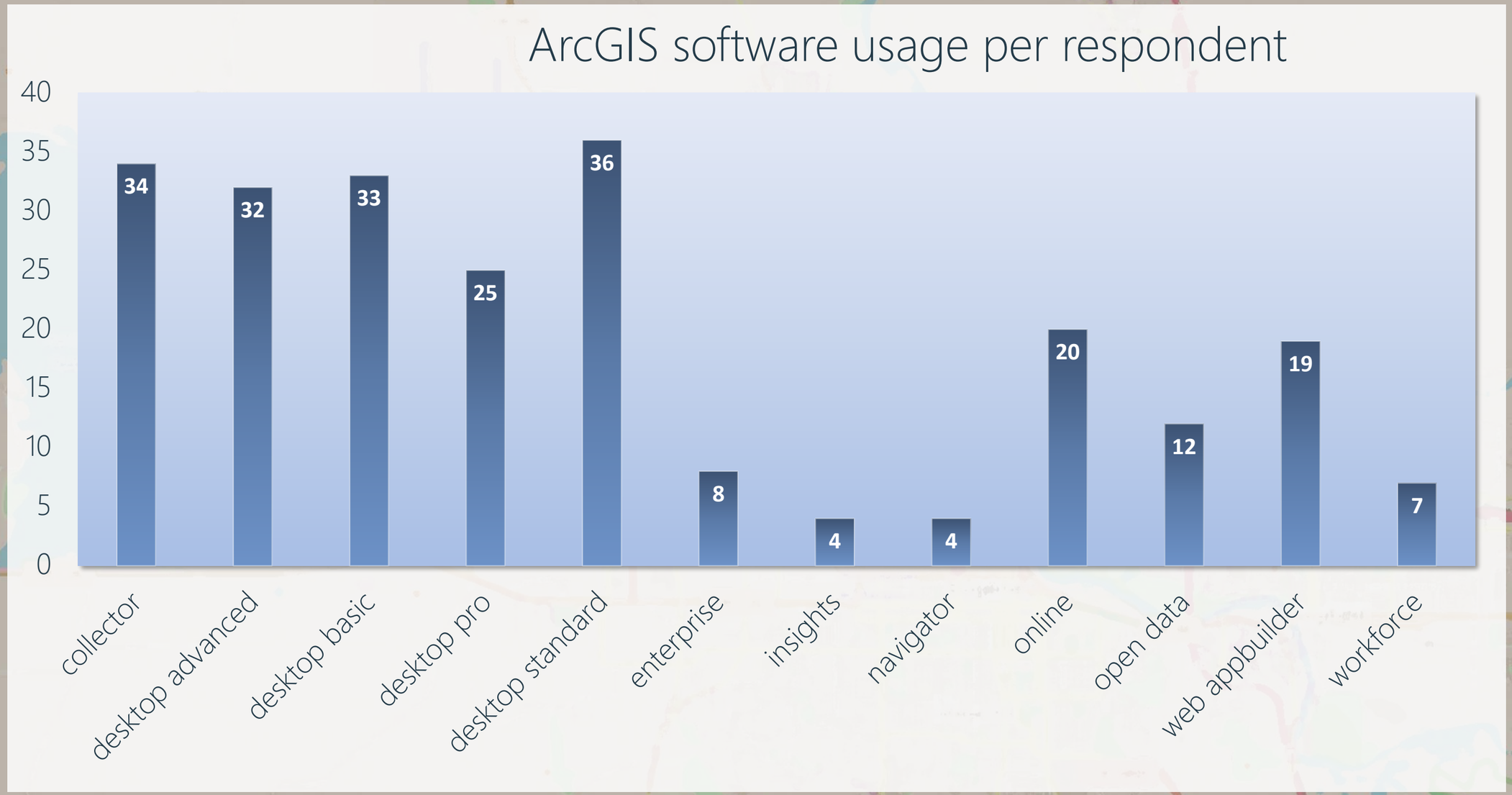


questionnaire \\ software

PHASE 1

STEP 2

ArcGIS software usage per respondent

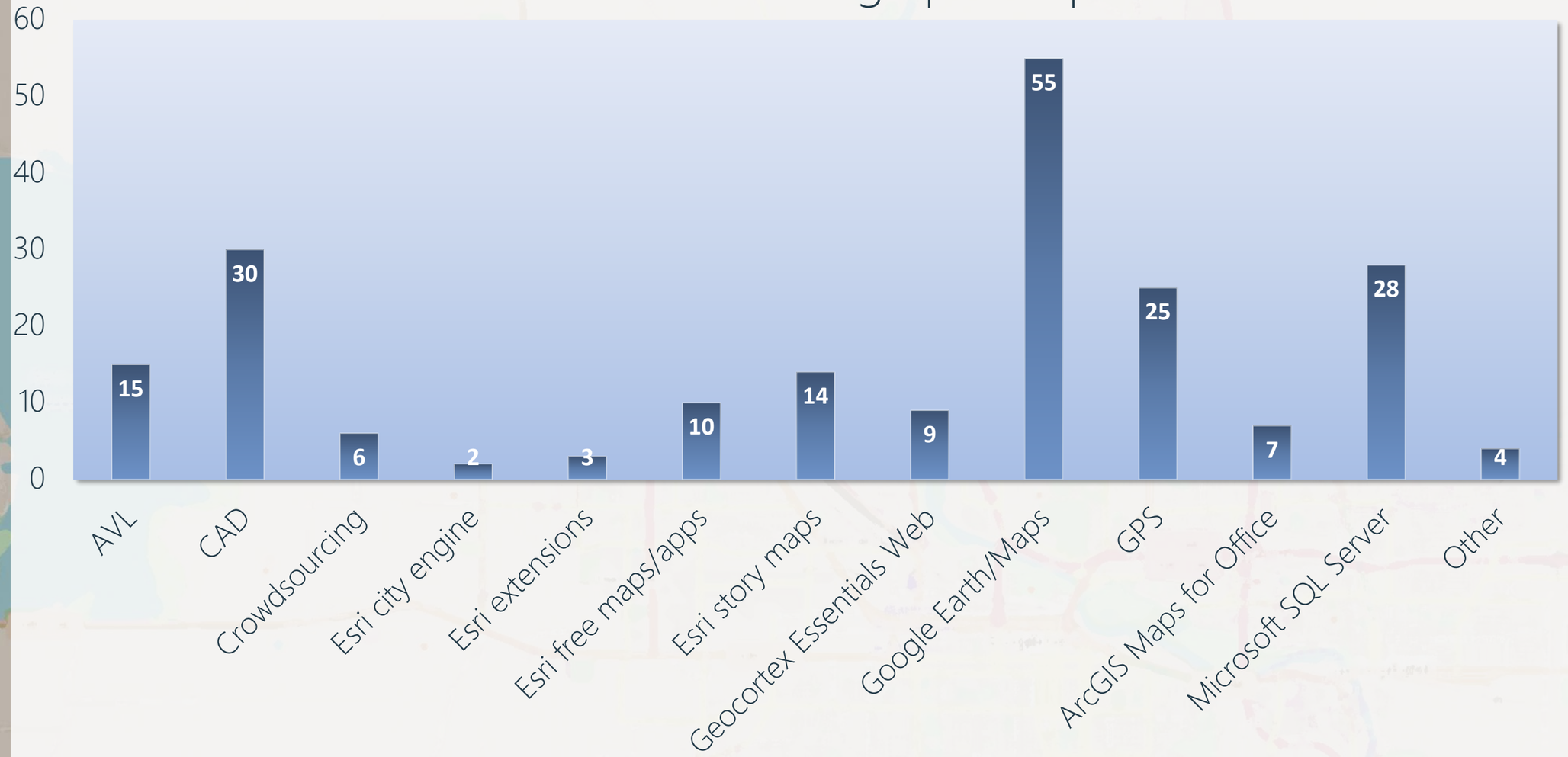


questionnaire \\ software

PHASE 1

STEP 2

miscellaneous software usage per respondent...



"other" specified:

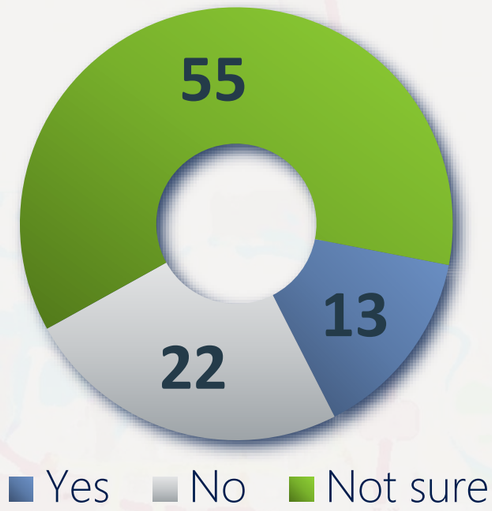
- Network Analyst (5)
- Spatial Analysis (5)
- 3D Analysist (2)
- Federal/state web maps
- Esri Javascript API
- Drone2Map
- Publisher/ArcReader
- Survey123
- Operations dashboard
- ArcGIS Solutions
- openstreetmap.org
- QGIS
- Mapbox
- Tableau
- Cartoviewer

questionnaire \\ governance

PHASE 1

performance indicators or metrics?

"yes" specified:	• list and verify desired outcomes • monitor use of data layers and GIS apps • service desk tracks requests • monitor number of trainings • monitor annual GIS priorities



STEP 2

GIS work plan review periodically?

"yes" specified:	• CPA work plan review annually • Springfield work plan annually • PW work plan review annually • GIS coordinators review annually

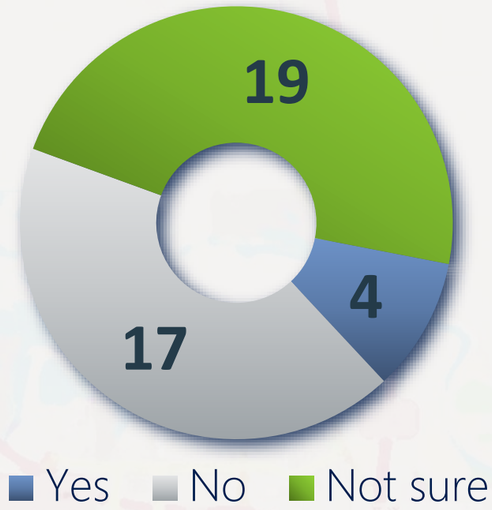
questionnaire \\ governance

PHASE 1

any service level agreements?

"yes" specified:

- Planning division (maybe)
- City of Eugene (maybe)
- LCOG and Planning

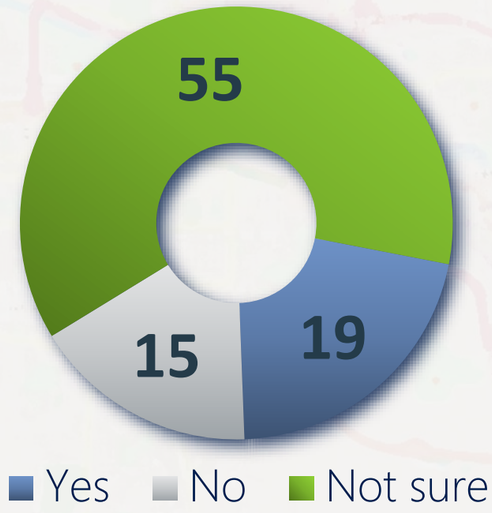


STEP 2

policies, mandates, BPs, SOPs?

"yes" specified:

- data maintenance procedures
- AGOL best practices
- data distribution procedures and restrictions
- update schedules of certain data layers



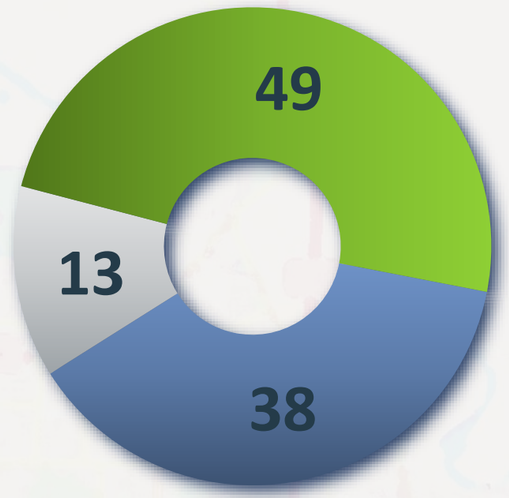
questionnaire \\ governance

PHASE 1

STEP 2

clear lines of responsibility?

"yes" specified:	• identified data custodian roles • county responsible for parcel mapping • LCOG responsibility for shared boundary overlays • clearly defined within Springfield • IGA with Lane County for data maintenance and map generation • CoE PWE specifies processes f… Eugene GIS…



"It would be helpful if the responsibilities for managing GIS data (and a comprehensive list/chart of layers and coverage) were developed and shared among CPA agencies."

questionnaire \\ governance

PHASE 1

STEP 2

how respondents rated the...

\\ level of collaboration between agencies **6**

\\ effectiveness of current governance model **6**

out of 10
overall average

questionnaire \\ governance

PHASE 1

STEP 2

how respondents rated the...

\\ integration of GIS into agency procedures	6
\\ partnership's facilitation of knowledge transfer	7
\\ integration of GIS alongside other systems	6

out of 10
overall average

questionnaire \\ procedures

PHASE 1

STEP 2

any overlap of data storage/maintenance?

"yes" specified:	• tax lot data • zoning layer (3) • numerous write-offs between agencies • uncodified plans for aggregation pipelines • parcels created by city then modified by county • easements, streets, plan designations • city limits (2) • imagery

> "Some cities maintain their own city limits and/or zoning and do not always communicate changes to LCOG so data can occasionally get out of sync."

questionnaire \\ procedures

PHASE 1

STEP 2

any overlap of GIS responsibilities?

"yes" specified:	• tax lots (2) and deed mapping • boundary changes • software/data procurement • maintaining large imagery sets

"need clear lines of who does what and decentralized"

"Yes, but minor instances, far surpassed by benefits"

"City of Eugene needs to have a more centralized GIS Team"

"To say that there is waste and overlap would be a gross understatement"

questionnaire \\ knowledge transfer

PHASE 1

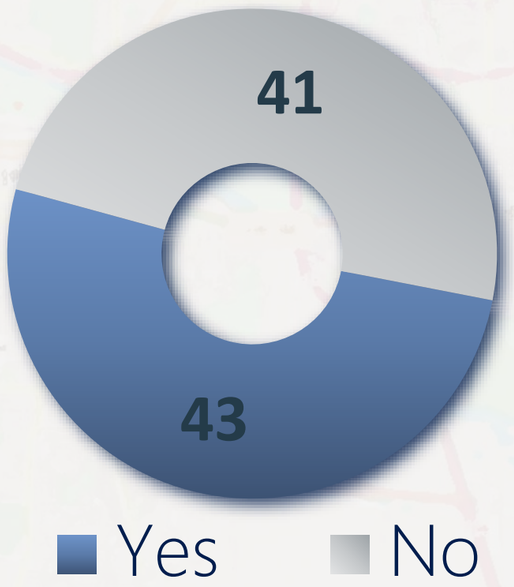
participated in LCOG training for RLID?

"yes" specified:	• new RLID maps • map basic, one-on-one training • initial introduction long ago • upgrade to features (3) • technical software training

STEP 2

any outside training for GIS in general?

"yes" specified:	• Python programming (LCOG) • ArcGIS Pro customization (LCOG) • Esri workshops (3) • Esri conferences (2) • Pictometry Connect (3) (LCOG) • GeoDart (Eugene) • Autodesk, Oracle • Urisa conference



questionnaire \\ knowledge transfer

PHASE 1

STEP 2

ever received tech support from LCOG?

"yes" specified:

- mapping
- ArcGIS SDE
- Python
- server issues
- LIDAR analysis
- Buildable Lands Inventory project
- accessing data (3)
- correcting data
- Data Warehouse project
- ArcGIS licensing
- versioning
- GeoDart (2)
- application troubleshooting

"It's not great. Slow respon"

"LCOG technical support is consistently excellent"

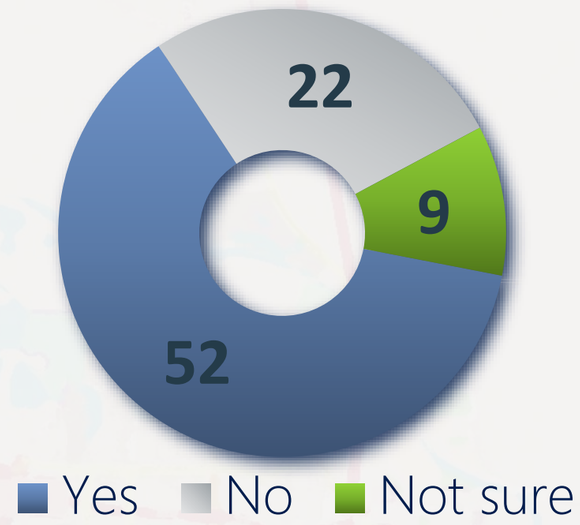
questionnaire \\ infrastructure

PHASE 1

can you access GIS data 24/7?

"no" specified:

- Only downtime due to service or updates
- only at office workstation (2)
- limited shared licenses (2)

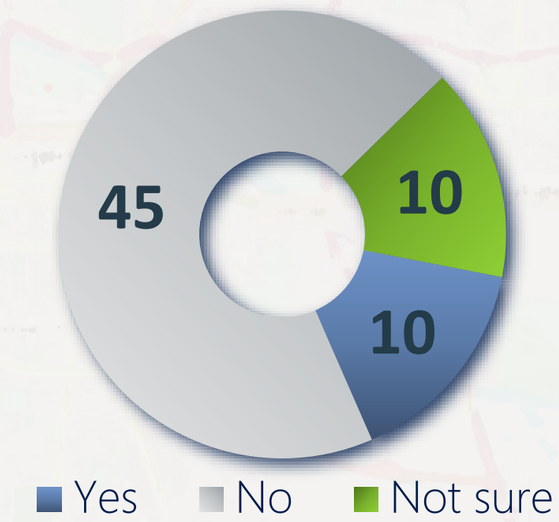


STEP 2

any issues with data storage capacity?

"yes" specified:

- limited server space
- LCOG/CPA does not have a comprehensive data or backup plan that accounts for cold storage of items
- imagery and LIDAR point clouds becoming large
- capacity limits historical data



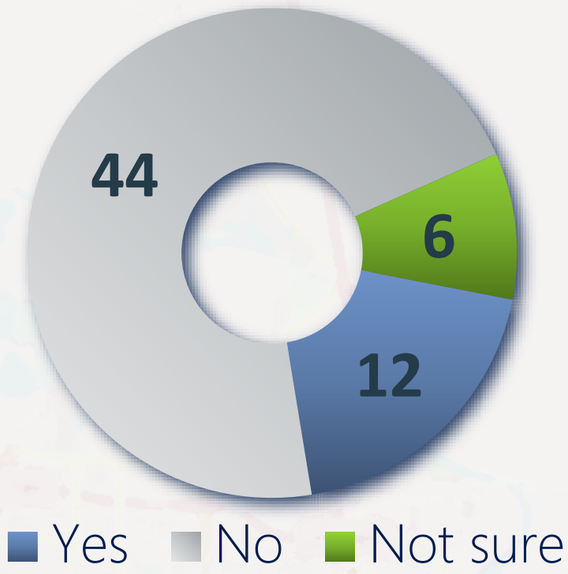
questionnaire \\ infrastructure

PHASE 1

STEP 2

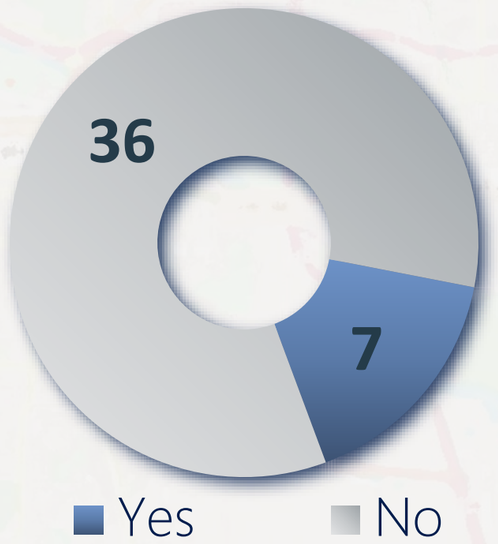
any issues with network connectivity?

"yes" specified:	• slow Wi-Fi, limited cell towers • Network could be faster • Concerned about connectivity impact from recent domain sharing changes • License availability • no VPN access • GeoDart sometimes slow • some servers not accessible



access GIS data with mobile device?

"yes" specified:	• quick checks aware from work station • testing and user support (phone and tablet) • web maps • field research – reference points and property boundaries.



PHASE 1

STEP 3 Kick-Off Workshop and Technology Seminar

LANE COUNCIL OF GOVERNMENTS

CPA Restructuring Project

OREGON

phase 1

Assessing the partnership as it stands today

GEOGRAPHIC TECHNOLOGIES GROUP

objective

PHASE 1

STEP 3

phase 1

		duration
☑	1. stakeholder and partner research	May 18 – Jun 1
☑	2. stakeholder questionnaire	Jun 12 – Jun 26
☐	3. project kickoff meeting	Today
☐	4. stakeholder interviews	Aug 24 – Sep 24
☐	5. multi-agency coordinated work sessions	Sep 28 – Oct 26
☐	6. phase 1 wrap-up presentation/report	Oct 26 – Jan 18 (2019)

project kickoff

PHASE 1

STEP 3

Objective

! To address all components of the project including the scope of work, the key pillars of GIS sustainability, and relevant examples of other regional organizations.

\\ open to all stakeholder tiers

\\ introduction of GTG team members

\\ software demonstration during the technology seminar

\\ chance to answer any questions

City of Nanaimo, ON

City of Simi Valley, CA

City of Roswell, GA

PHASE 1

STEP 4 GIS Stakeholder/ Partner Interviews

LANE COUNCIL OF GOVERNMENTS

CPA Restructuring Project

OREGON

phase 1

Assessing the partnership as it stands today

GEOGRAPHIC TECHNOLOGIES GROUP

objective

PHASE 1

STEP 4

phase 1 — duration

☑	1. stakeholder and partner research	May 18 – Jun 1
☑	2. stakeholder questionnaire	Jun 12 – Jun 26
☑	3. project kickoff meeting	Today
☐	4. stakeholder interviews	Aug 24 – Sep 24
☐	5. multi-agency coordinated work sessions	Sep 28 – Oct 26
☐	6. phase 1 wrap-up presentation/report	Oct 26 – Jan 18 (2019)

partner/stakeholder interviews

PHASE 1

STEP 4

Objective

! To gather information on existing structure and GIS usage.

\\ tier 1 & tier 2 stakeholders from:

- City of Eugene
- City of Springfield
- Eugene Water and Electric Board
- Lane County
- LCOG

\\ topics to include:

- regional GIS needs
- existing architecture
- future architecture
- centralized services
- shared technologies
- partner interactions
- partner requirements
- GIS sustainability

\\ one to two hours in length

\\ on-site at agency's headquarters

PHASE 1

STEP 5 Multi-Agency Cooperative GIS Working Sessions

LANE COUNCIL OF GOVERNMENTS

CPA Restructuring Project

OREGON

phase 1

Assessing the partnership as it stands today

GEOGRAPHIC TECHNOLOGIES GROUP

objective

PHASE 1

STEP 5

phase 1 duration

☑	1. stakeholder and partner research	May 18 – Jun 1
☑	2. stakeholder questionnaire	Jun 12 – Jun 26
☑	3. project kickoff meeting	Today
☐	4. stakeholder interviews	Aug 24 – Sep 24
☐	5. multi-agency coordinated work sessions	Sep 28 – Oct 26
☐	6. phase 1 wrap-up presentation/report	Oct 26 – Jan 18 (2019)

cooperative work sessions

PHASE 1

STEP 5

Objectives

! introduce challenges to build strength within the partnership, and share and discuss new and creative ideas

\\ five (5) sessions to be scheduled

\\ open to tier 1 & tier 2 stakeholders

\\ two (2) to three (3) hours in length

\\ onsite at these locations:

- City of Eugene
- City of Springfield
- Eugene Water & Electric Board
- Lane County
- LCOG

PHASE 1

STEP 6 GIS Needs Assessment Findings Presentation and Report

LANE COUNCIL OF GOVERNMENTS

CPA Restructuring Project

OREGON

phase 1

Assessing the partnership as it stands today

GEOGRAPHIC TECHNOLOGIES GROUP

objective

PHASE 1

STEP 6

phase 1

		duration
☑	1. stakeholder and partner research	May 18 – Jun 1
☑	2. stakeholder questionnaire	Jun 12 – Jun 26
☑	3. project kickoff meeting	Today
☐	4. stakeholder interviews	Aug 24 – Sep 24
☐	5. multi-agency coordinated work sessions	Sep 28 – Oct 26
☐	6. phase 1 wrap-up presentation/report	Oct 26 – Jan 18 (2019)

findings presentation & report

PHASE 1

STEP 6

Objective

! Provide a comprehensive review of the findings gathered throughout phase 1 including the following metrics:

\\ benchmarking

\\ key performance indicators (KPIs)

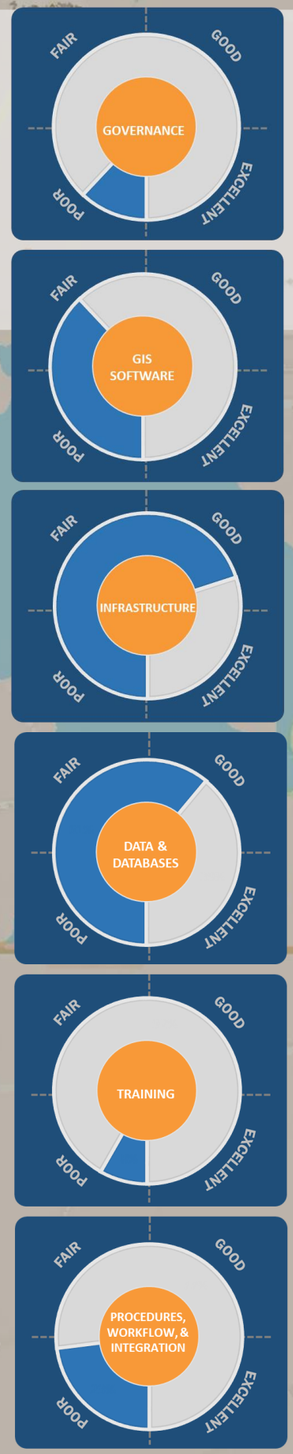
\\ SWOT analysis

\\ comparable multi-jurisdictional models

overview \\ benchmarking

PHASE 1

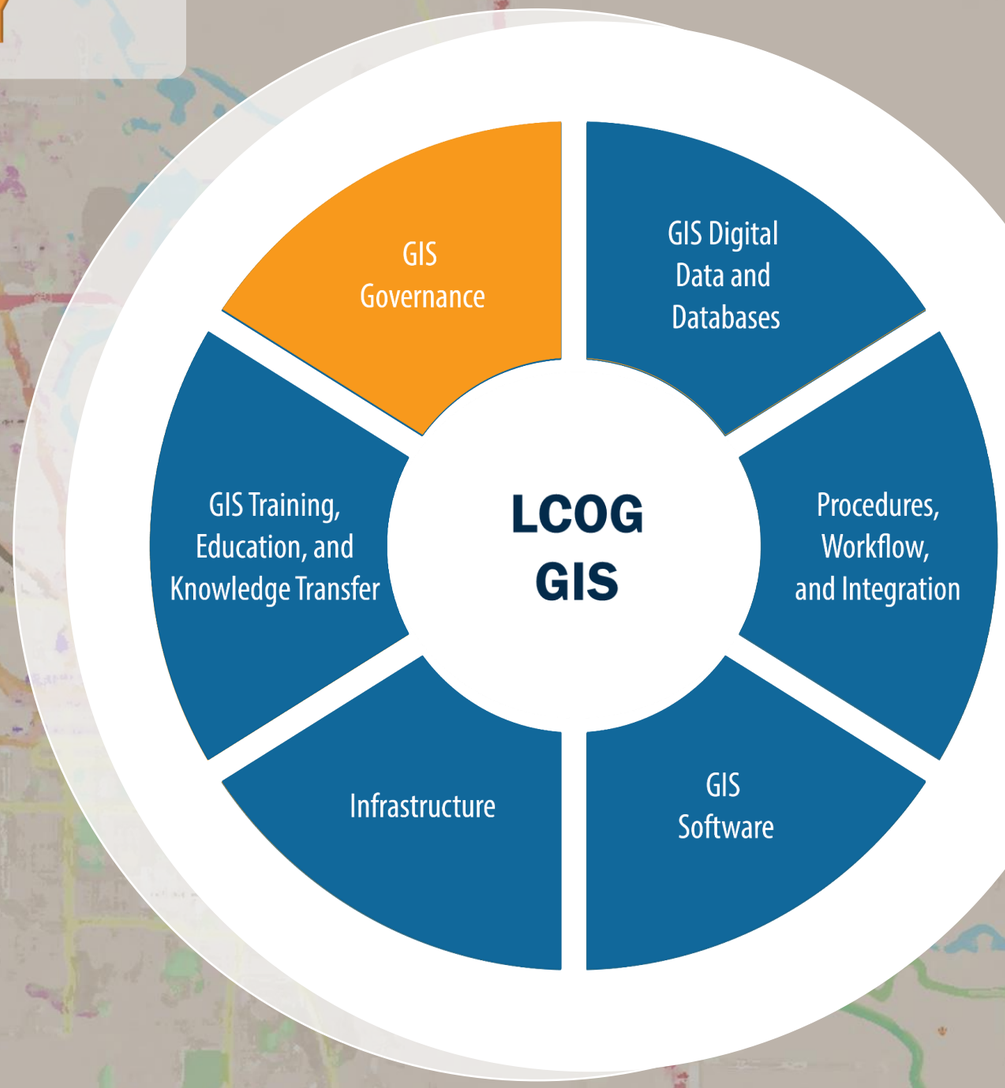
STEP 6



Benchmarking metrics example

THE 6 PILLARS OF SUSTAINABILITY

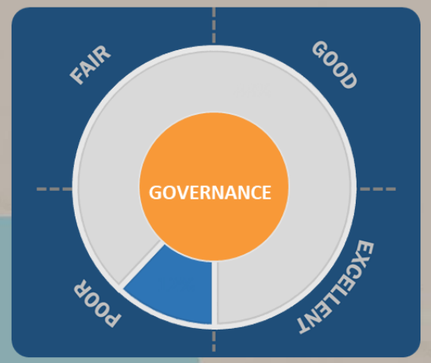
The six main components of the Lane Council of Governments enterprise, sustainable, and enduring GIS.

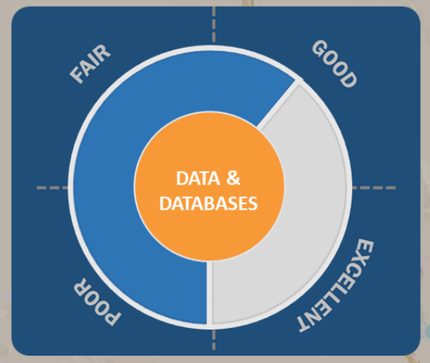


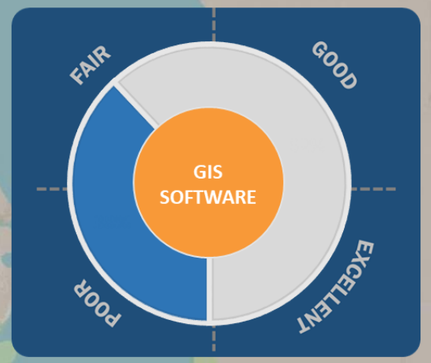
overview \\ benchmarking example

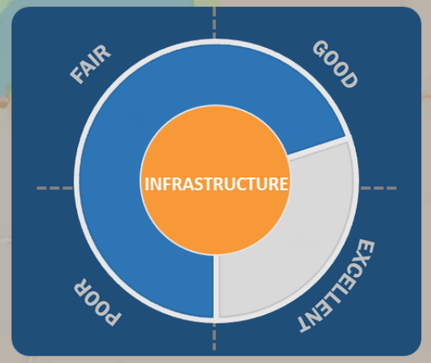
PHASE 1

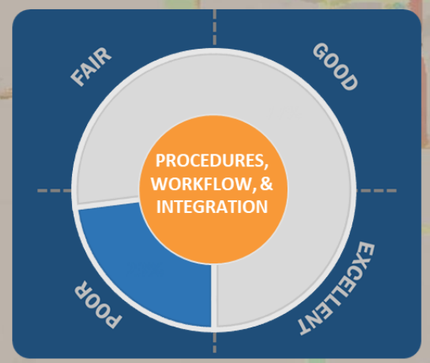
STEP 6

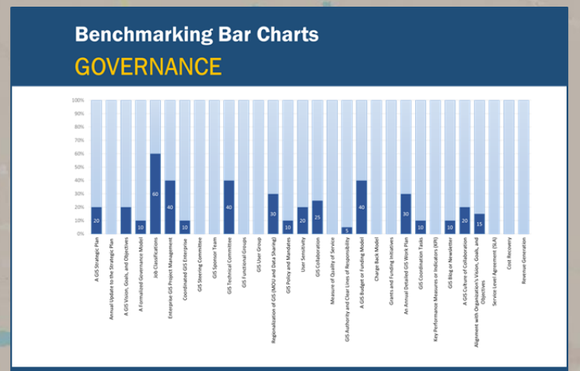


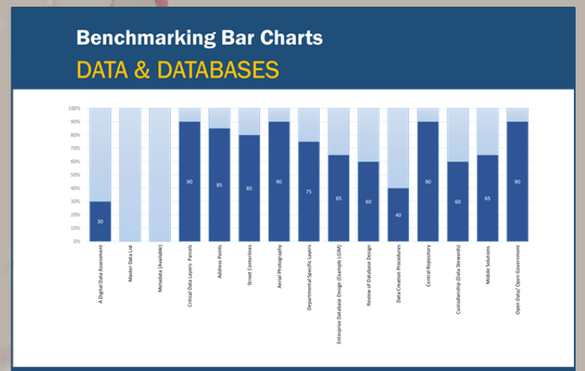


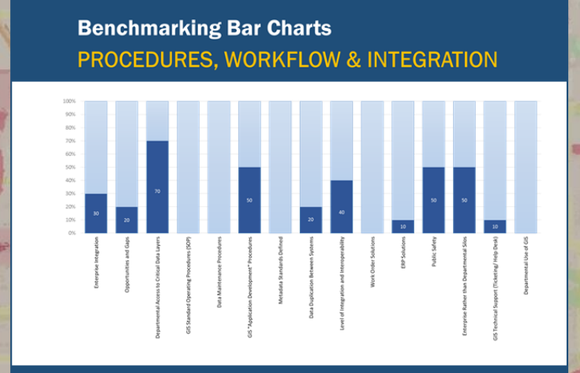


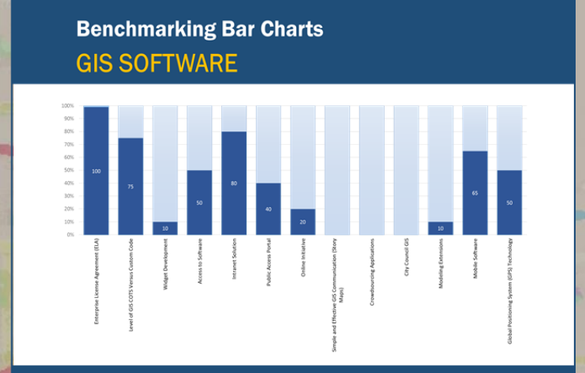


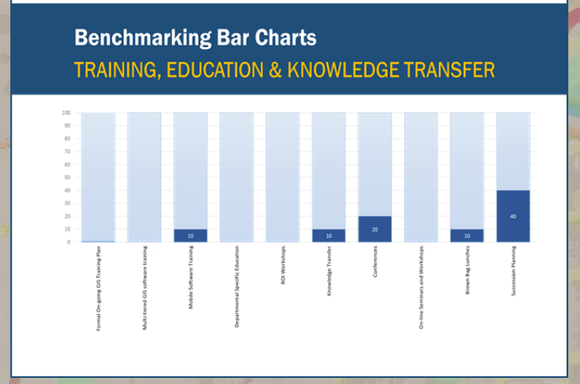


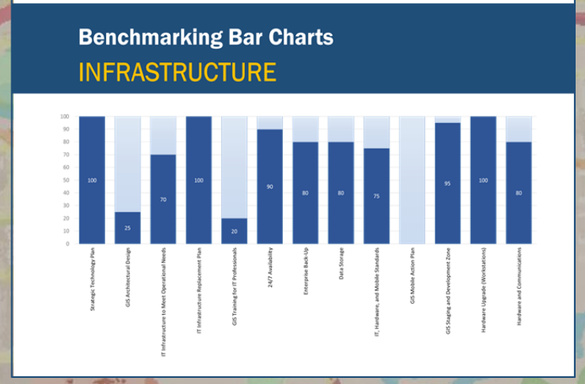












overview \\ KPIs example

PHASE 1

STEP 6

CITY OF NANAIMO

Develop an enterprise, scalable, sustainable and enduring GIS that promotes effective and innovative use of geospatial technology, supported by good GIS governance and coordination, standards, and on-going training and education.

GOALS

GOVERNANCE
Implement an Optimum GIS Governance Model

OBJECTIVE
Develop an understandable strategy for the management and effective utilization of GIS with clear lines of responsibility, decision making, and overall governance.

DATA AND DATABASES
Design, Build, Update, Collect, and Maintain Reliable and Sustainable GIS Digital Data Layers

OBJECTIVE
Utilize Esri's Local Government Standardized Models.

PROCEDURES AND WORKFLOW
Promote GIS interoperability throughout the organization

OBJECTIVE
Integrate GIS Functionality with Existing Database Systems, Business Processes, and Workflow.

GIS SOFTWARE
Make GIS Software Accessible throughout the Organization, and to the Public and other interested parties

OBJECTIVE
Deploy a full suite of Esri's GIS software solutions across the enterprise – Desktop, Internet, Intranet, and Mobile.

GIS TRAINING
Train, Educate, and Promote Knowledge Transfer for all City Staff

OBJECTIVE
Improve the GIS knowledge base within each City department. Develop a training, education, and knowledge transfer plan to encourage the effective use of GIS technology.

INFRASTRUCTURE
Build and Maintain IT Infrastructure to support an Enterprise, Scalable and Sustainable GIS

OBJECTIVE
Continually evaluate the IT architecture to support enterprise GIS growth and change.

GIS NEEDS, TASKS, & OBJECTIVES

GOVERNANCE

Task 1: Create a GIS Technology Plan
A sound GIS Technology Implementation Plan (GIS TIP) provides the game plan for the City's development of a successful relationship with geospatial technology.

Task 2: Annually update the GIS Technology Plan
The Technology Plan should be updated annually. The City's roles, vision, and functions constantly evolve. The Technology Plan should be updated to stay relevant to Nanaimo's vision and the practical aspects of implementation.

Task 3: Develop a GIS vision, goals, and objectives
The larger vision of the City must be broken down into concrete goals. The vision, goals, and objectives of GIS technology must align with the City's vision and have measurable objectives.

Task 4: Develop a formalized governance model
The term governance model refers to the constellation of relationships between individuals and departments within the City. A governance model lays out lines of responsibility and the hierarchy of decision making power within the City. These lines connect executives, managers, and staff, or more broadly the stakeholders. A stakeholder is any individual directly affected by the City's activities. Formalizing a governance model allows the City to maximize accountability and efficiency.

DATA AND DATABASES

Task 1: Perform a digital data assessment and review
A digital data assessment examines the completion and breadth of the City's existing data layers. It evaluates the accuracy, completeness, and overall health of the existing digital data layers within the City. Once the data are assembled, gaps and weaknesses are identified and subsequently improved.

- Staff in Community Development and Fire rescue noted a need to enhance the address layer to include multi-units such as strata, duplexes, and strip malls.

Task 2: Create and maintain a Master Data List
The Master Data List (MDL) enumerates all of the data sets that the City needs for enterprise GIS implementation. The various data sets should be detailed by type and source, and assessed in terms of their quantities, accessibility, and formats.

Task 3: Metadata
Metadata describes the collective characteristics of data. In short, metadata are data about data. Metadata details how, when, and where data has created or collected its documents scale, accuracy, resolution and other properties.

PROCEDURES AND WORKFLOW

Task 1: Develop and maintain enterprise integration
Enterprise integration describes the process whereby smaller disparate systems are integrated into the corporate initiative. The City has some enterprise integration, but could benefit from expansion.

Task 2: Identify opportunities and gaps
Gaps in the enterprise and integrated GIS solution need to be identified and documented. It could include public safety data, permitting data, work order data, or crowdsourcing information. Opportunities are those databases that can effectively be incorporated into the enterprise GIS initiative.

Task 3: Create GIS standard operating procedures
Standard operating procedures (SOPs) are the City's formally ratified blueprint for actions to be taken in pursuit of a desired objective. They are step by step, formulaic, and repeatable. In the geospatial context, SOPs prevent redundancy in data compilation and unnecessary effort. Adoption of SOPs also decreases organizational liability.

- Engineering staff needs to develop SOPs for data submission, and conversion between CAD and GIS data.

GIS SOFTWARE

Task 1: Promote GIS Widget development -
A widget is a term for a small software program that augments the functionality of a larger software program. GIS widgets provide a way to customize applications in accordance with the specific needs and circumstances of the City.

- Community Development staff identified a need for an operational dashboard to assist in the maintenance of the City's tree and forestry layer.
- Emergency Management staff need a common operational picture and dashboard developed to allow them to manage and track assets and activity during an emergency.
- Parks and Recreation Staff would need a dashboard developed to properly track and maintain assets.
- The Capital Improvement Projects dashboard could be developed for Engineering and Public Works.
- A Public Works-centric dashboard would allow staff to monitor day to day operations.

Task 2: Improve access to software
Access to software describes who can interact with what software, and to what extent. The objective is to evaluate how much access there is to GIS software within the City. While the City's users all have access to their software, opportunities exist for improving the way in which GIS data is made available to the departments.

GIS TRAINING

Task 1: Develop a formal ongoing GIS training plan
A formal ongoing GIS training plan is a ratified outline of steps, schedules, and costs for continuing to train the City's employees. It is important to have an ongoing training plan, considering that GIS is a rapidly evolving technology, and organizational needs are ever changing.

- All users will require training to ensure optimization of GIS tools.

Task 2: Conduct multi-tiered GIS software training
The formal training plan must include multi-tiered GIS software training using a standardized process for training employees in the use of GIS technology.

Task 3: Conduct mobile software training
Mobile software training is the process of teaching users how to engage with GIS technology on their mobile device. The formal training plan must include mobile software training.

Task 4: Conduct departmental-specific education
Departmental-specific education provides specialized training procedures according to a department's specific needs. The City should ensure that all departmental GIS users have the appropriate training to carry out the GIS functions necessary to enable them to do their job.

INFRASTRUCTURE

Task 1: GIS architectural design
GIS architectural design is the plan that addresses GIS software technology, capacity performance, and IT infrastructure including hardware, network communications, software architecture, enterprise security, backup, platform performance, and data administration.

Task 2: GIS training for IT professionals
In order for IT professionals to assist the City with many GIS activities including but not limited to crowdsourcing or tech support, they need a proficiency in GIS technologies.

Task 3: GIS mobile action plan
A mobile action plan is an outline of the tactics that the City will deploy in order to increase GIS accessibility on tablets and smartphones. The City should deploy a mobile action plan that reflects the current GIS and IT environment.

overview \\ SWOT analysis

PHASE 1

STEP 6

SWOT ANALYSIS

STRENGTHS

What advantages do you have? What do you do better? What unique resources do you have access to?

WEAKNESSES

What good opportunities can you spot? What are some interesting trends? Are there any changes population profiles, lifestyles, etc.?

OPPORTUNITIES

What can you improve? What can you avoid? What factors prevent sales? Which employees need improvement?

THREATS

What obstacles do you face? What are your competitors doing? Is GIS technology threatening your position?

comparable multi-jurisdictional models

12 SHARED COLLABORATIVE GIS SYSTEMS

- City of Vancouver and Clark County, WA
- Columbus Consolidated Government, GA
- Athens-Clarke County, GA
- City of Casper and Natrona County, WY
- City of Edina and LOGIS, MN
- City of Winston-Salem and Forsyth County, NC
- Orange County and Municipalities, CA
- City of Eagan and LOGIS, MN
- Gwinnett County and Municipalities, GA
- Rome-Floyd County, GA
- San Mateo County, CA
- Louisville/Jefferson County Information Consortium (LOJIC) and Louisville/Jefferson County, KY

Additional Organizations Researched:

- Leon County and Tallahasee, FL
- San Diego County and City, CA
- Knox County and Knoxville Utilities and City, TN
- Mario County and Indianapolis, IN
- DeKalb County and Auburn, IN
- Champaign County Consortium, IL
- McLean County, IL Regional GIS
- Cheyenne- Laramie County Cooperative GIS

KEY FACTORS

- Population
- Budget
- Services
- Software

EXAMPLES

- City of Edina and LOGIS
- Gwinnett County and Municipalities
- Louisville-Jefferson County and LOJIC
- City of Vancouver and Clark County

challenges of multi-agency GIS

Organization	Politics	Funding	Participation of Partner Agency (do-it-themselves)	Architecture Data Sharing	Software Licensing	Cost	Governance Model	Integration and Interoperability	Level of Expertise in Participating Agencies
City of Vancouver and Clark County, WA	✓	✓		✓	✓	✓	✓	✓	✓
Columbus Consolidated Government, GA	✓	✓	✓	✓	✓	✓	✓	✓	✓
Athens-Clarke County, GA	✓	✓	✓	✓	✓	✓	✓	✓	✓
City of Casper and Natrona County, WY	✓	✓			✓				
City of Edina and LOGIS, MN		✓	✓	✓	✓	✓		✓	✓
City of Winston-Salem and Forsyth County, NC	✓		✓			✓			✓
Orange County and Municipalities, CA	✓	✓	✓	✓	✓	✓	✓	✓	✓
City of Eagan and LOGIS, MN		✓	✓	✓	✓	✓		✓	✓
Gwinnett County and Municipalities, GA		✓	✓	✓	✓	✓			✓
Rome-Floyd County, GA	✓	✓		✓					
San Mateo County, CA	✓	✓	✓				✓		✓
Louisville/Jefferson County and LOJIC, KY	✓	✓		✓	✓	✓	✓	✓	✓

tenure of recognized regional GIS programs

respondent organization	GIS program name	city/state location	tenure of program
Milwaukee County (WI)	Milwaukee County Automated Mapping and Land Information System (MCAMLIS)	Milwaukee, WI	9
Pulaski Area (AR) GIS (PAgis)	Pulaski Area Geographic Information System (PAgis)	Little Rock, AR	26
City of Oshkosh (WI)	not applicable	Oshkosh, WI	20
Muscatine (IA) Area Geographic Information Consortium (MAGIC)	Muscatine (IA) Area Geographic Information Consortium (MAGIC)	Muscatine, IA	14
Atlantic County (NJ) Office of GIS	Atlantic County Office of GIS	Northfield, NJ	17
Clark County (KY) Consortium for GIS	Clark County Consortium of Geographic Information Systems	Winchester, KY	17
Southwestern Pennsylvania Commission	not applicable	Pittsburgh, PA	21
Washington County (MD)	not applicable	Hagerstown, MD	8
San Diego County (CA)	San Diego Geographic Information Source (SanGIS)	San Diego, CA	30
City of Hayden, ID	Kootenai County GIS, North Idaho Regional Resource Center, Idaho Geospatial Council	Hayden, ID	15
Oregon Metro	Regional Land Information System (RLIS)	Portland, OR	25

From: Croswell-Schulte Information Technology Consultants
National Survey of Multi-Organizational GIS Programs, February 2015

tenure of recognized regional GIS programs

respondent organization	GIS program name	city/state location	tenure of program
City of Phoenix, AZ	not applicable	Phoenix, AZ	20
County of Allegheny (PA)	not applicable	Pittsburgh, PA	14
Lane Council of Governments (LCOG)	Regional Land Information Database (RLID)	Eugene, OR	40
Johnson County (KS)	AIMS (Automated Information Mapping System)	Olathe, KS	28
Nashville Davidson County (TN)	Metro GIS	Nashville, TN	18
Metro GIS (Twin Cities, MN)	Metro GIS	St Paul, MN	18
Arrowhead Regional Development Commission (MN)	North Shore GIS Consortium	Duluth, MN	5
Knoxville Knox County KUB GIS (KGIS)	Knoxville Knox County Knoxville Utilities Board (KUB) GIS (KGIS)	Knoxville TN	29
Allen County (IN)	iMap Consortium	Fort Wayne, IN	5
Palm Beach County (FL)	Countywide GIS (CWGIS)	West Palm Beach, FL	20
Planning and Development Services of Kenton County (KY)	Land Information of Northern Kentucky GIS or LinkGIS	Fort Mitchell, KY	28

From: Croswell-Schulte Information Technology Consultants
National Survey of Multi-Organizational GIS Programs, February 2015

tenure of recognized regional GIS programs

respondent organization	GIS program name	city/state location	tenure of program
GIS Consortium (IL)	GIS Consortium	Des Plaines, IL	15
McLean County Regional Planning Commission (IL)	McGIS	Bloomington, IL	20
King County (WA)	King County GIS	Seattle, WA	12
Chester County (PA)	Chester County GIS Consortium	West Chester, PA	14
Idaho State University	East Idaho Regional Resource Center (EIRRC)	Pocatello, ID	4
Merced County Association of Governments (CA)	not applicable	Merced, CA	27
DeKalb County (IN)	City/County GIS CoCiGIS	Auburn, IN	15
IUPUI / IMAGIS Indianapolis Mapping & Geographic Infrastructure System	Indianapolis/Marion County Geographic Infrastructure System (IMAGIS)	Indianapolis, IN	28
City of Cincinnati /Hamilton County (OH)	Cincinnati Area Geographic Information System (CAGIS)	Cincinnati, OH	27

From: Croswell-Schulte Information Technology Consultants
National Survey of Multi-Organizational GIS Programs, February 2015

tenure of recognized regional GIS programs

respondent organization	GIS program name	city/state location	tenure of program
Sacramento Area Council of Governments (CA)	Sacramento County GIS Cooperative, Yolo County GIS Cooperative	Sacramento, CA	12
Gwinnett County (GA)	Gwinnett GIS Community Partnership (informal name)	Lawrenceville, GA	5
Berkeley County (SC)	Berkeley County GIS Consortium	Moncks Corner, SC	23
Butte County Association of Governments (CA)	Butte County Association of Governments Regional GIS	Chico, CA	17
City of Mississauga (ON)	not applicable	Mississauga, ON	NA
Contra Costa County (CA)	Bay Area Regional GIS Council (BAR-GC)	Martinez, CA	NA

From: Croswell-Schulte Information Technology Consultants
National Survey of Multi-Organizational GIS Programs, February 2015

table of contents

1. introduction
2. existing situation
3. scope of work
4. phase one - steps 1-6
5. phase two – step 7
6. phase three – step 8
7. project schedule and costs
8. GIS technology seminar

PHASE 2

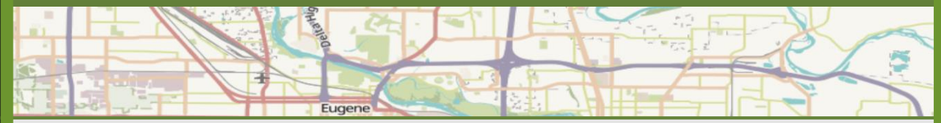
STEP 7

Plan, Design and re-structure an Optimum future LCOG/CPA

LANE COUNCIL OF GOVERNMENTS

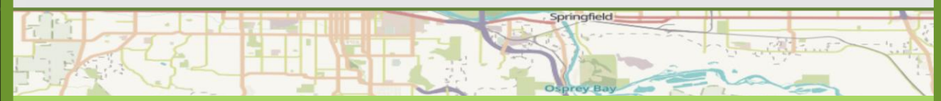
CPA Restructuring Project

OREGON



phase 2

Refining the agreement for a better tomorrow



GEOGRAPHIC TECHNOLOGIES GROUP

GEOGRAPHIC TECHNOLOGIES GROUP

alternative CPA models

PHASE 2

STEP 7

Objective

! Develop two alternative future CPA models for LCOG that improve upon or enhance the following:

\\ CPA priorities

\\ future GIS system and service needs

\\ collaboration opportunities

\\ funding model

\\ GIS sustainability

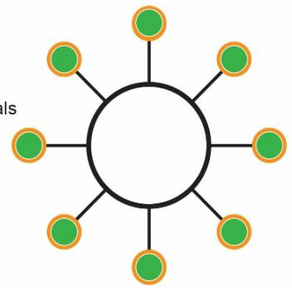
governance models

Decentralized, Centralized, Hybrid, and Hybrid & Regionalization Governance Models

Decentralized Governance Model

The second type of management strategy is called a Decentralized model. As the name implies a decentralized organizational structure divides GIS responsibilities throughout various departments.

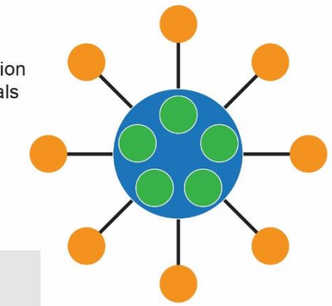
» GIS responsibilities are divided throughout the organizations
» Multiple GIS groups/activities
» Small groups of GIS professionals
  • hardware/software
  • data distribution
  • data exchange
  • training
» End users share responsibility for maintaining data
» Multiple budget sources



Centralized Governance Model

The first type of governance model is Centralized. A centralized organizational structure maintains a central department or division that is responsible for all GIS services.

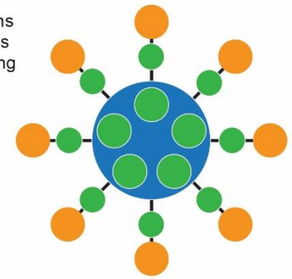
» Single GIS business unit
» Dedicated department or division
» Core group of GIS professionals
  • create and edit data
  • hardware/software
  • analysis
  • data distribution
» Single budget source



Hybrid Governance Model

Many local governments utilize a Hybrid GIS organizational structure, based on the advantages of centralized and decentralized organizational structures

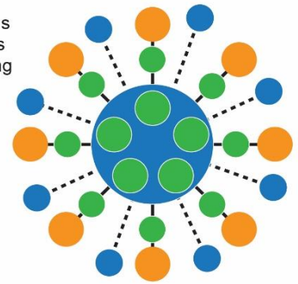
» Attempts to capture the strengths of unified and distributed models
» GIS functions are managed using responsibility matrix
» Intra-departmental stakeholder teams
» Funding and leadership are shared
» Dual accountability



Hybrid & Regionalization Governance Model

Many local governments utilize a Hybrid GIS organizational structure that supports a regionalization of GIS. It has the advantages of a centralized and decentralized model.

» Attempts to capture the strengths of unified and distributed models
» GIS functions are managed using responsibility matrix
» Intra-departmental stakeholder teams
» Funding and leadership are shared
» Dual accountability



LCOG
LANE COUNCIL OF GOVERNMENTS

table of contents

1. introduction
2. existing situation
3. scope of work
4. phase one – steps 1-6
5. phase two – step 7
6. phase three – step 8
7. project schedule and costs
8. GIS technology seminar

PHASE 3

STEP 8 The GIS Strategic Plan Roadmap

LANE COUNCIL OF GOVERNMENTS

CPA Restructuring Project

OREGON

phase 3 -

A roadmap towards a more cohesive alliance

GEOGRAPHIC TECHNOLOGIES GROUP

GEOGRAPHIC TECHNOLOGIES GROUP

step 8

PHASE 3

STEP 8

Objective

! Design and develop a roadmap to guide the implementation of the GIS Strategic Plan

\\ a refined strategic GIS plan

\\ a step-by-step roadmap to implementation

table of contents

1. introduction
2. existing situation
3. scope of work
4. phase one – steps 1-6
5. phase two – step 7
6. phase three – step 8
7. project schedule and costs
8. GIS technology seminar

project schedule and costs

phase 1		duration	cost
☑	1. stakeholder and partner research	May 18 – Jun 1	$6,925
☑	2. stakeholder questionnaire	Jun 12 – Jun 26	$7,009
☑	3. project kickoff meeting	Today	$6,950
☐	4. stakeholder interviews	Aug 24 – Sep 24	$10,550
☐	5. multi-agency coordinated work sessions	Sep 28 – Oct 26	$18,005
☐	6. phase 1 wrap-up presentation/report	Oct 26 – Jan 18 (2019)	$10,550

phase 2		duration	cost
☐	1. Stakeholder research period	Jan 18 – Feb 19 (2019)	$23,875
		additional expenses:	$16,207

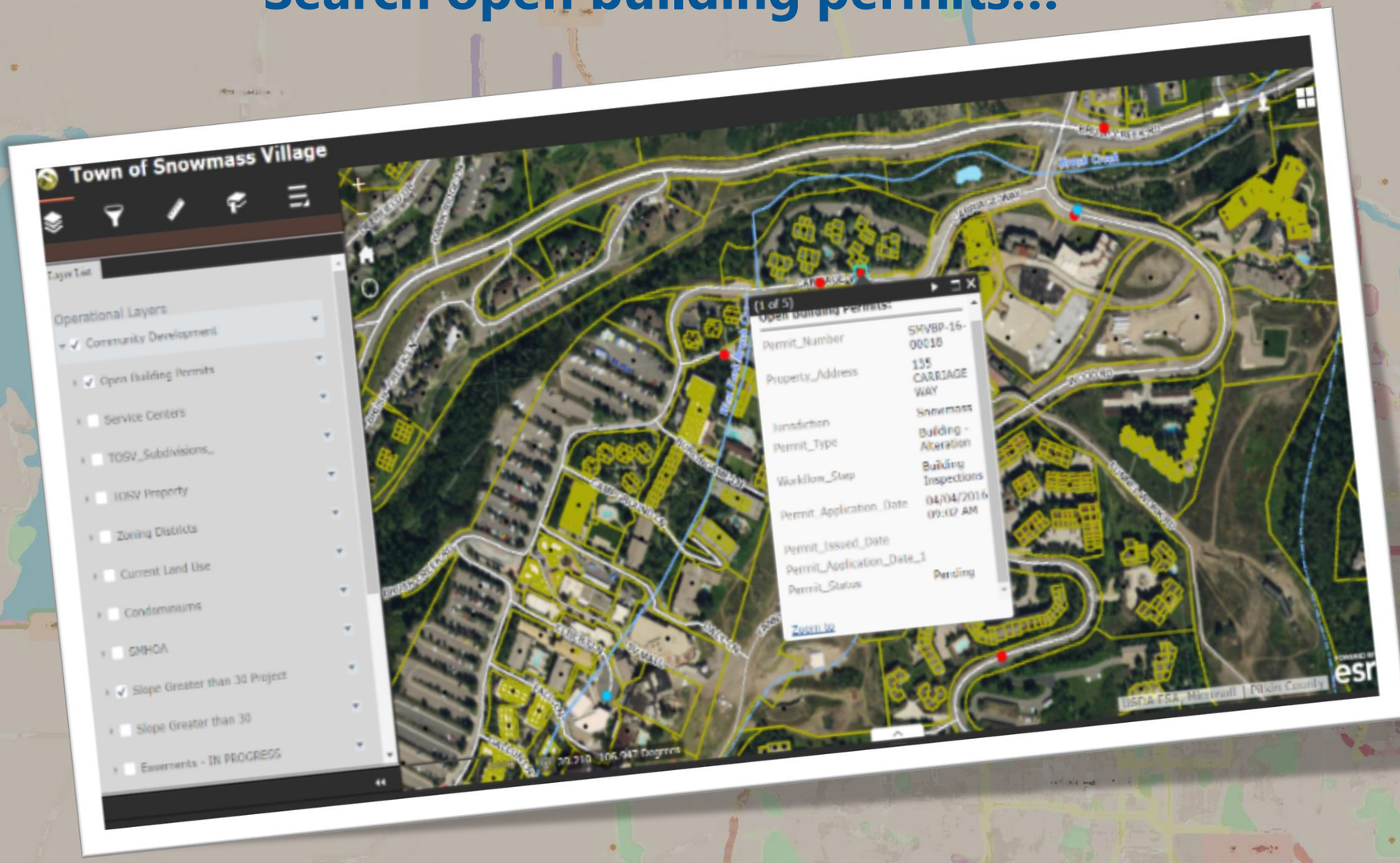
Phase 1 and Phase II: Total Fee $109,836.24

table of contents

1. introduction
2. existing situation
3. scope of work
4. phase one – steps 1-6
5. phase two – step 7
6. phase three – step 8
7. project schedule and costs
8. GIS technology seminar

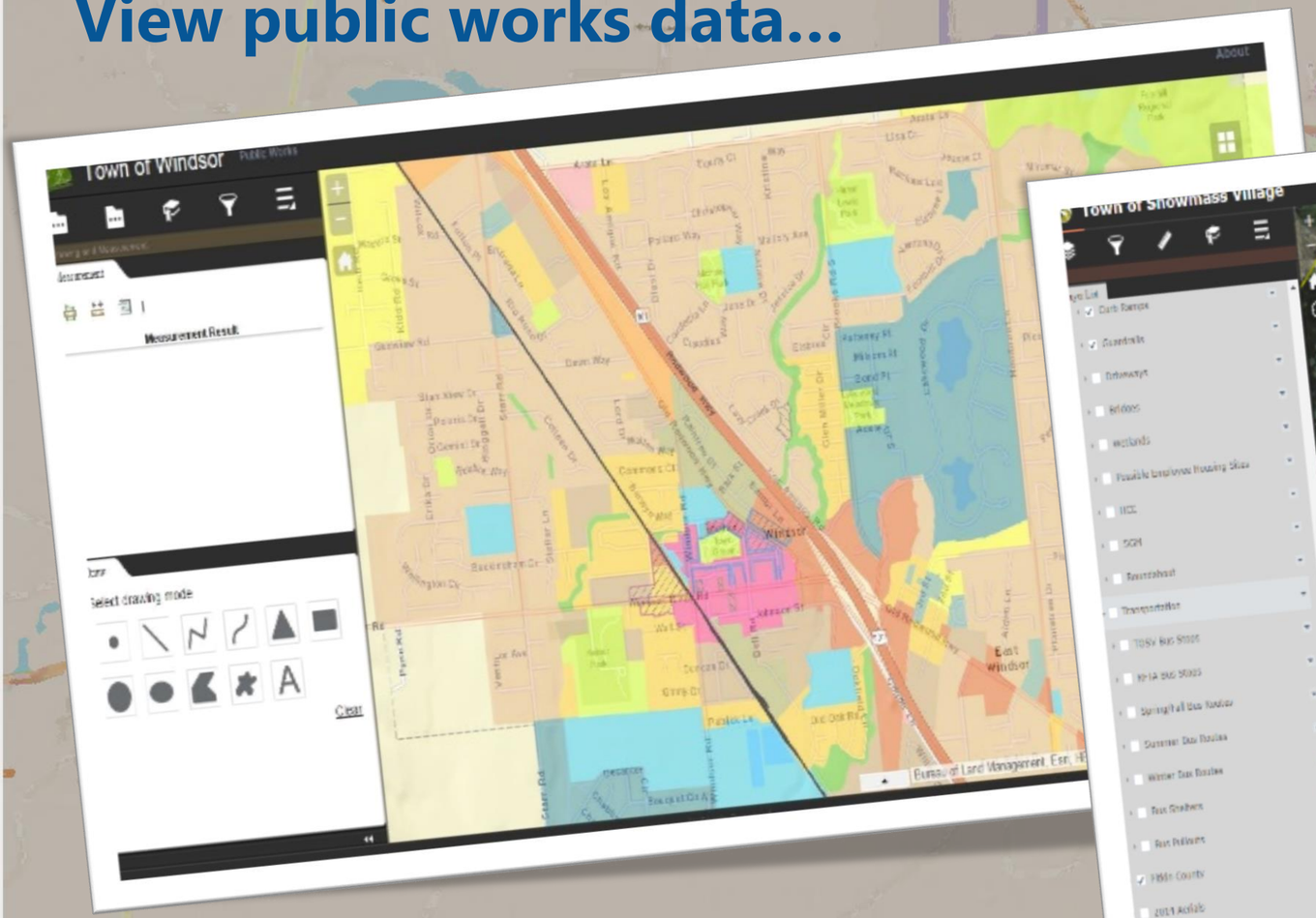
GIS tech \\ intranet portals

Search open building permits...



GIS tech \\ intranet portals

View public works data...



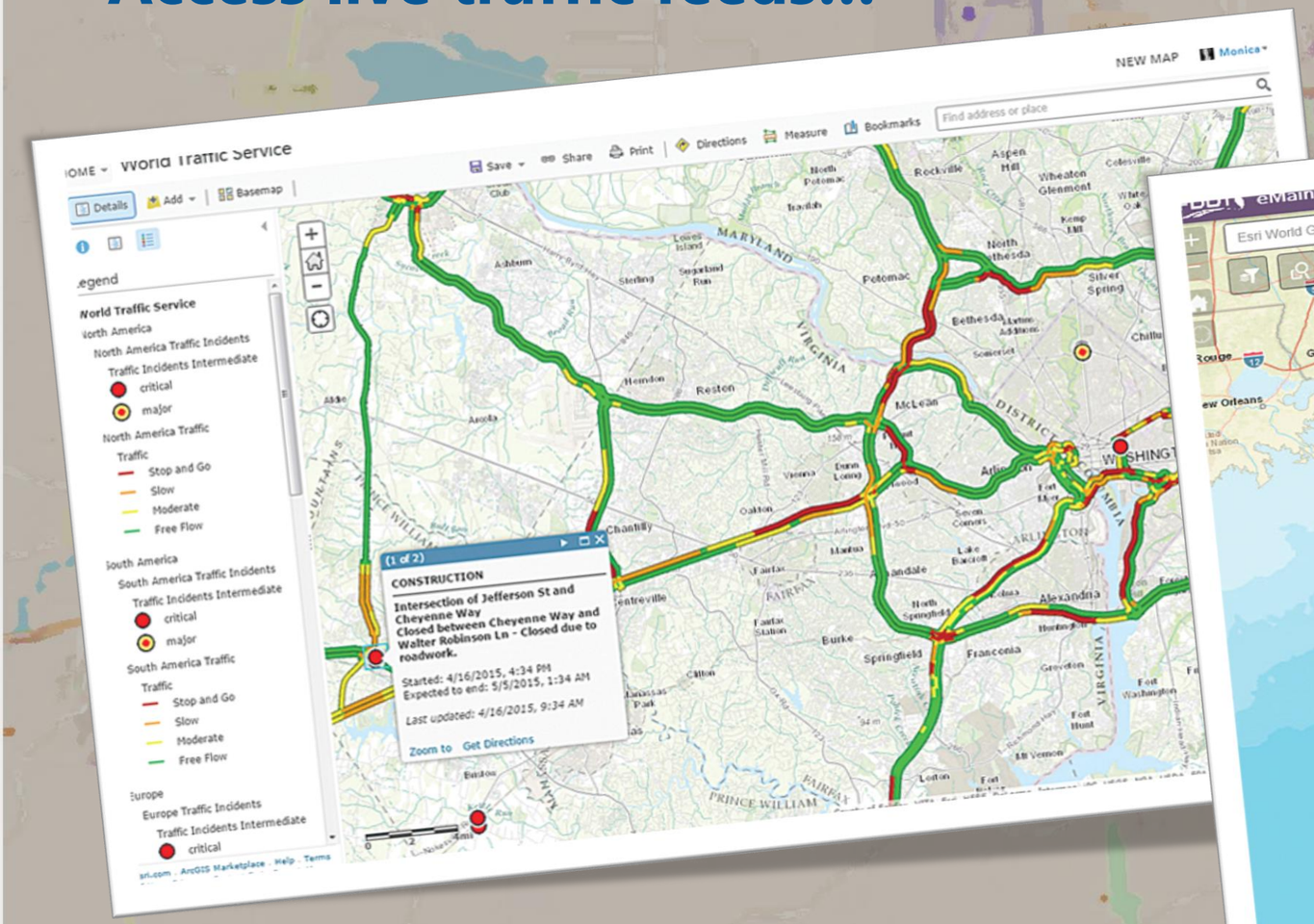
Track transportation assets...

GIS tech \\ public-facing maps & apps

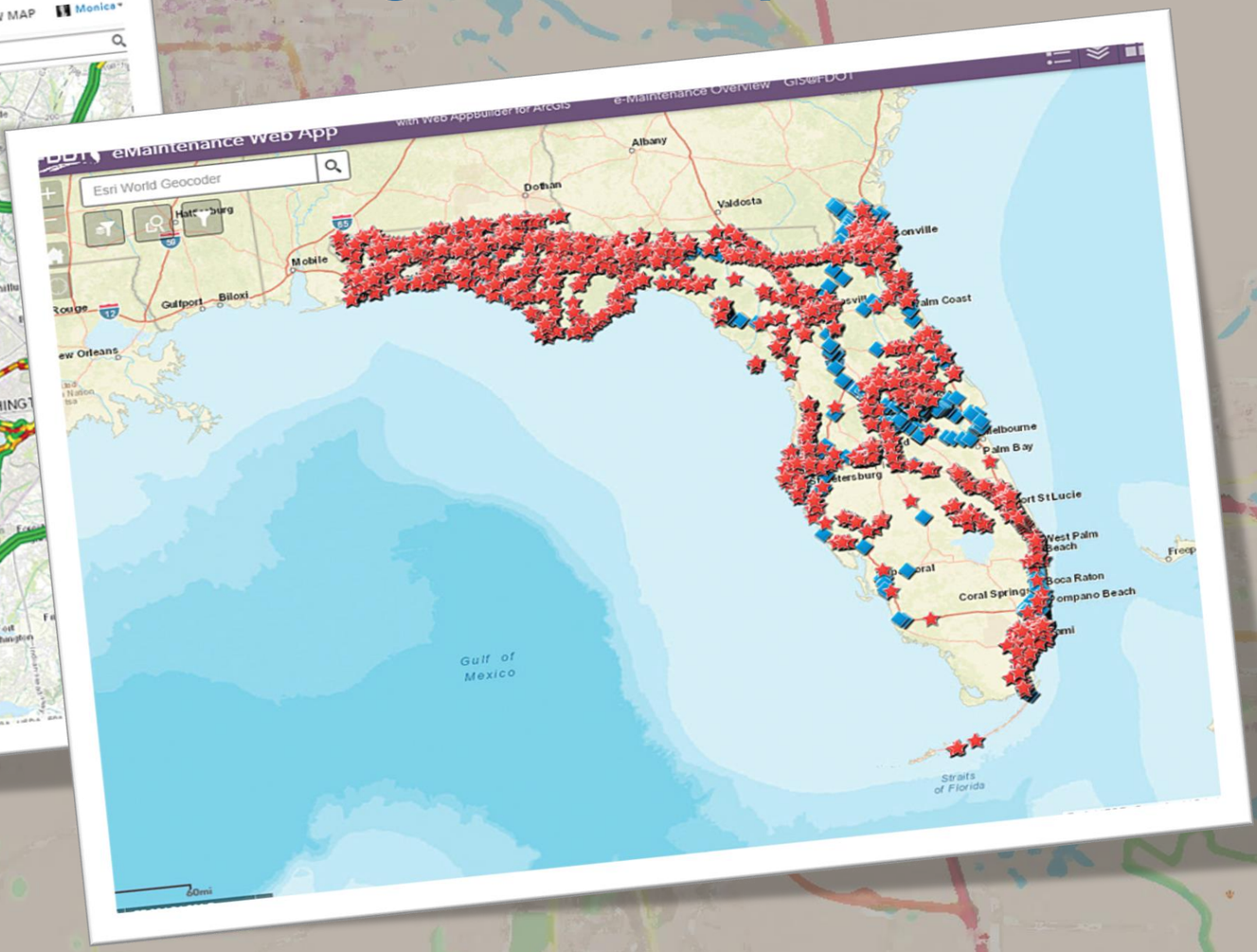
Search water mains, hydrants, and more...

GIS tech \\ public-facing maps & apps

Access live traffic feeds...



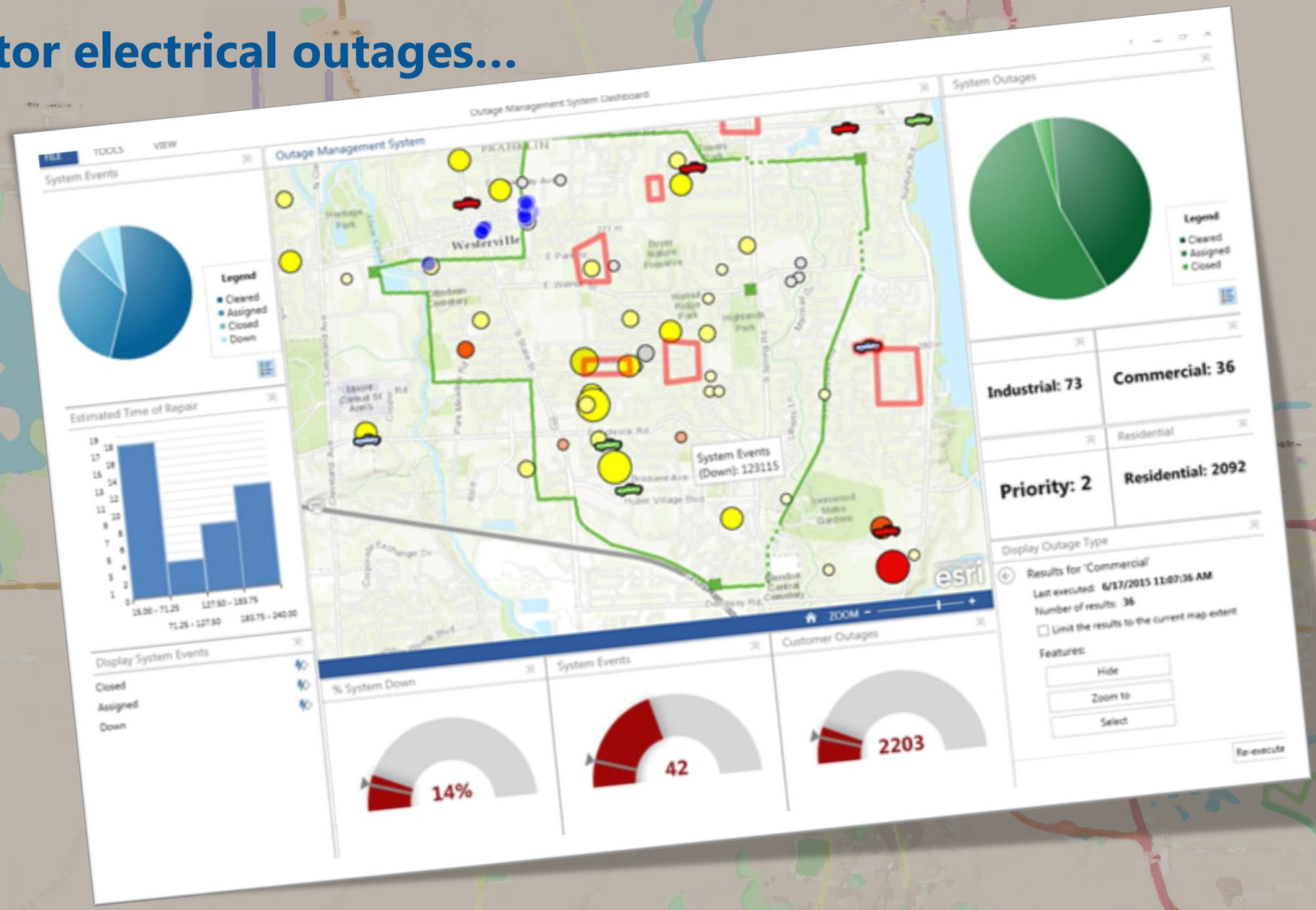
View guardrail inspection results...



GEOGRAPHIC TECHNOLOGIES GROUP

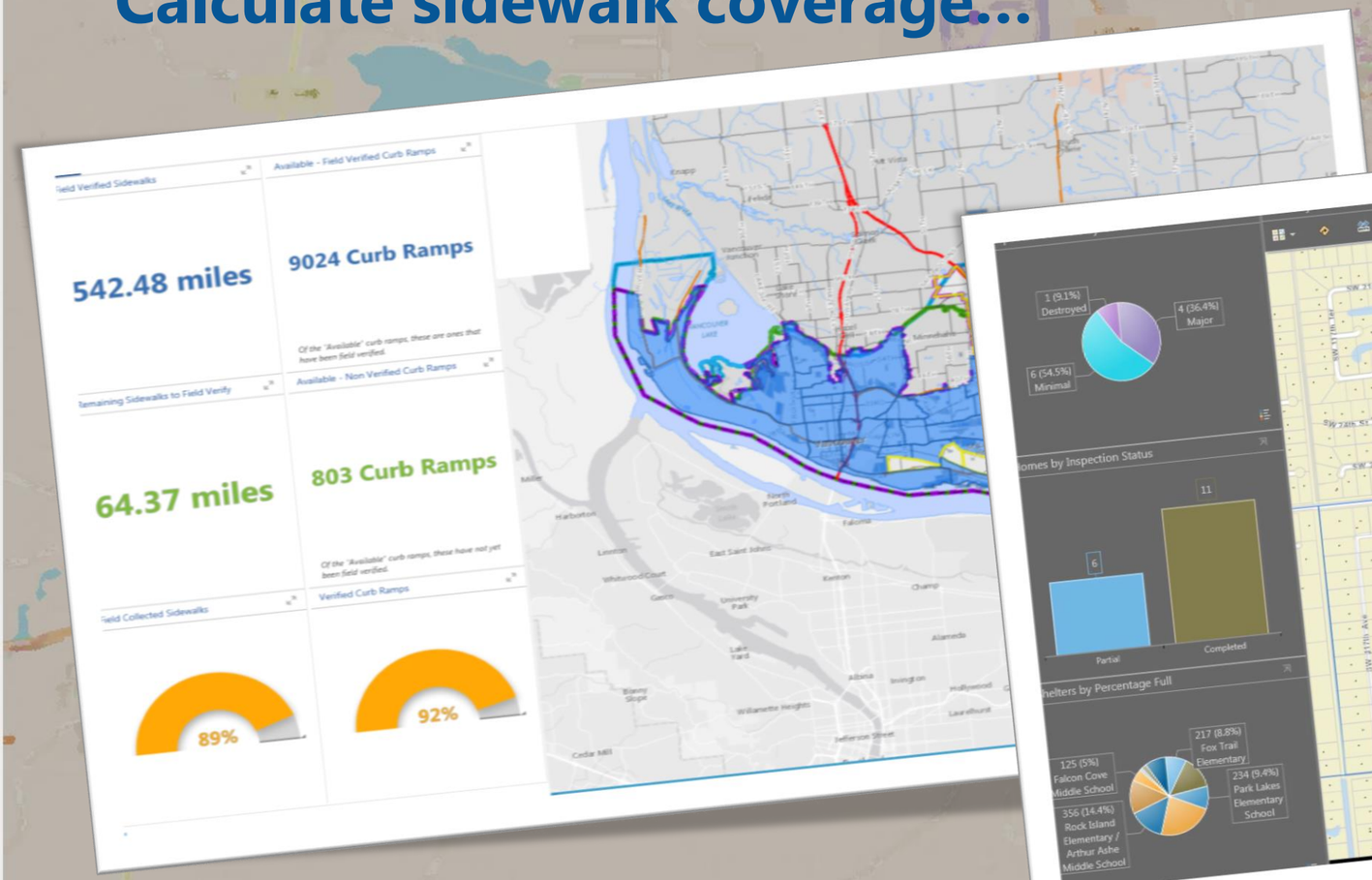
GIS tech \\ operations dashboards

Monitor electrical outages…

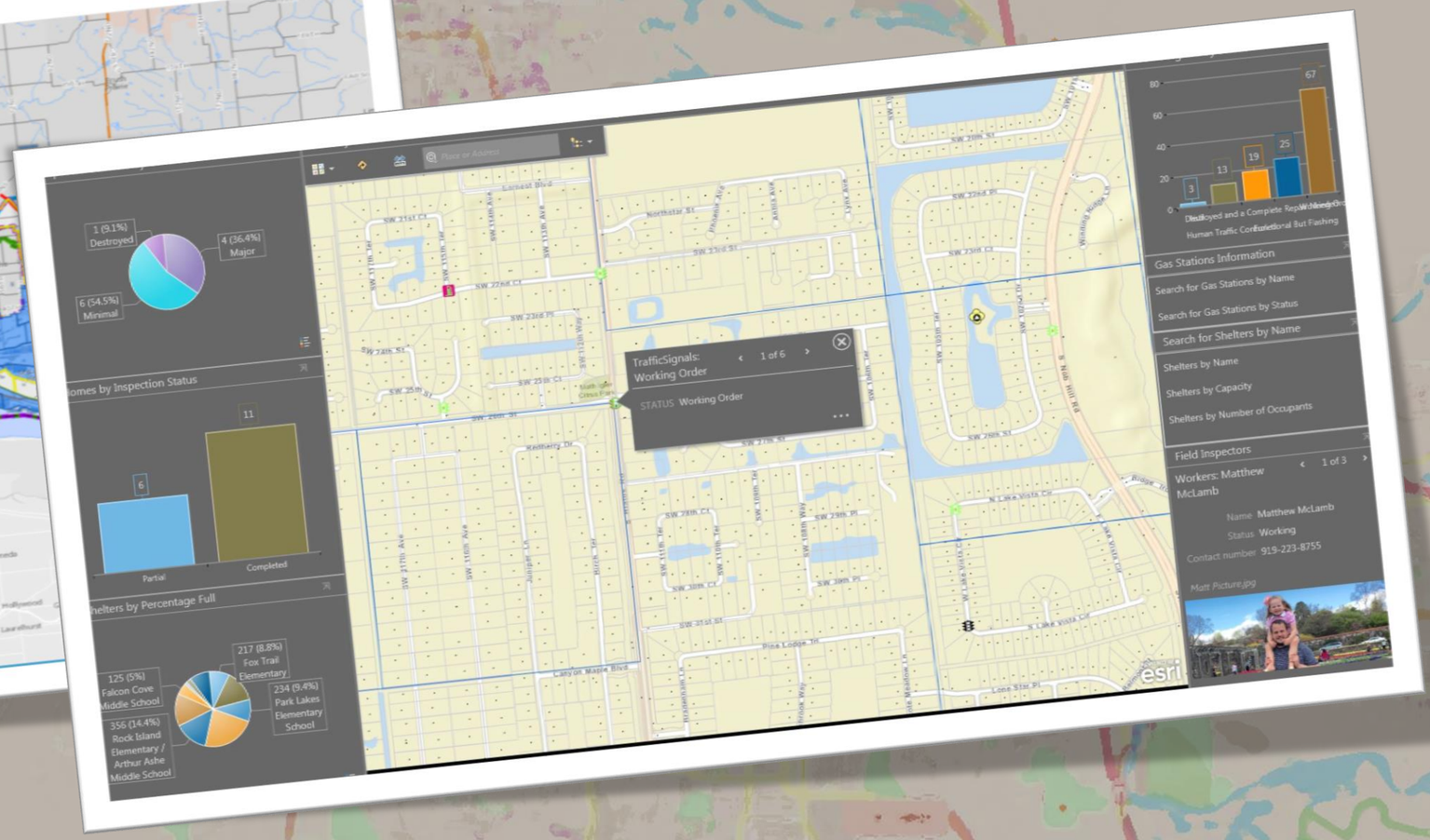


GIS tech \\ operations dashboards

Calculate sidewalk coverage...



Check traffic signal statuses...

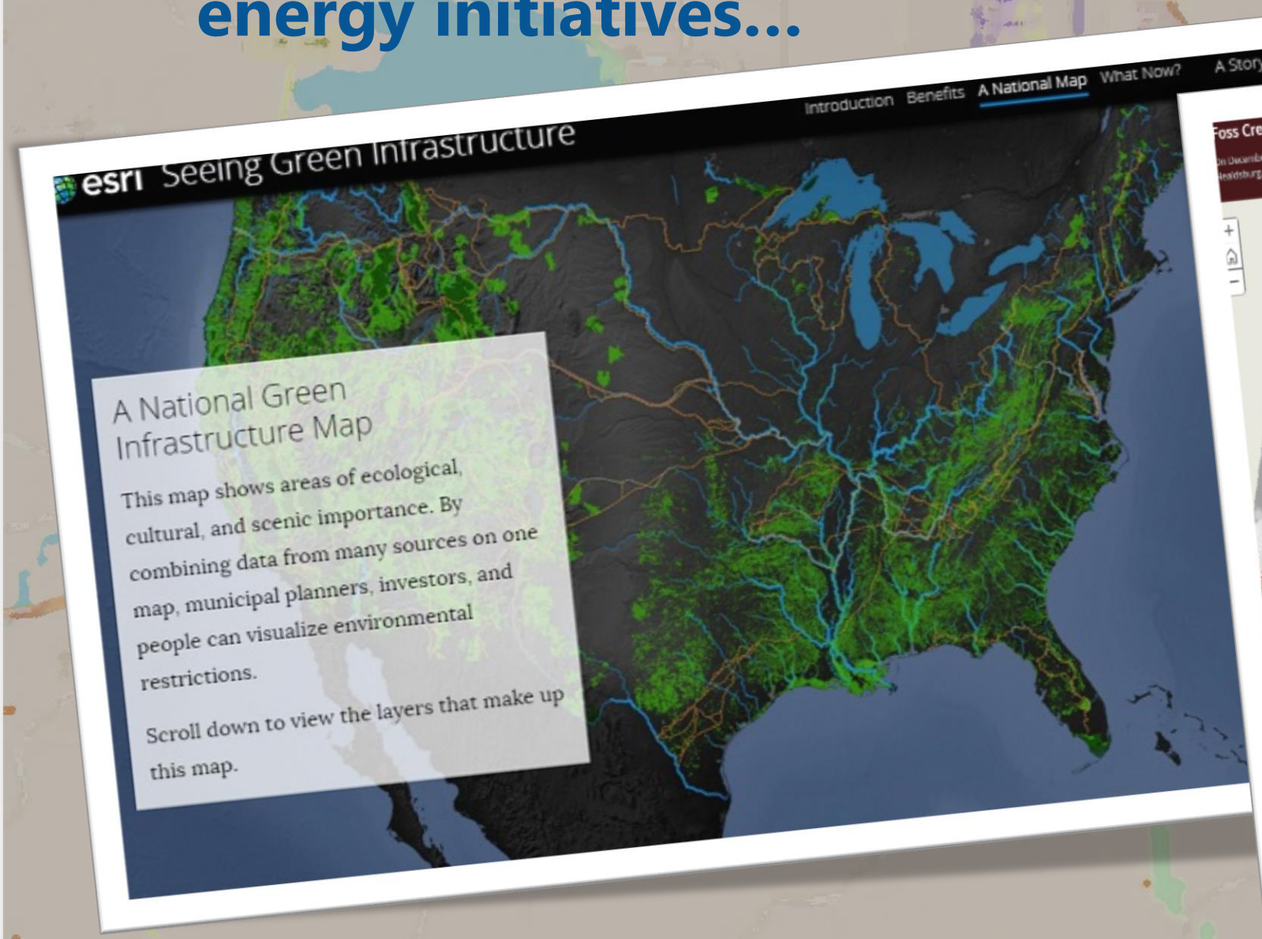


GIS tech \\ story maps

Research upcoming capital improvement projects...

GIS tech \\ story maps

Identify cities with green energy initiatives...



Track the progress of a storm...

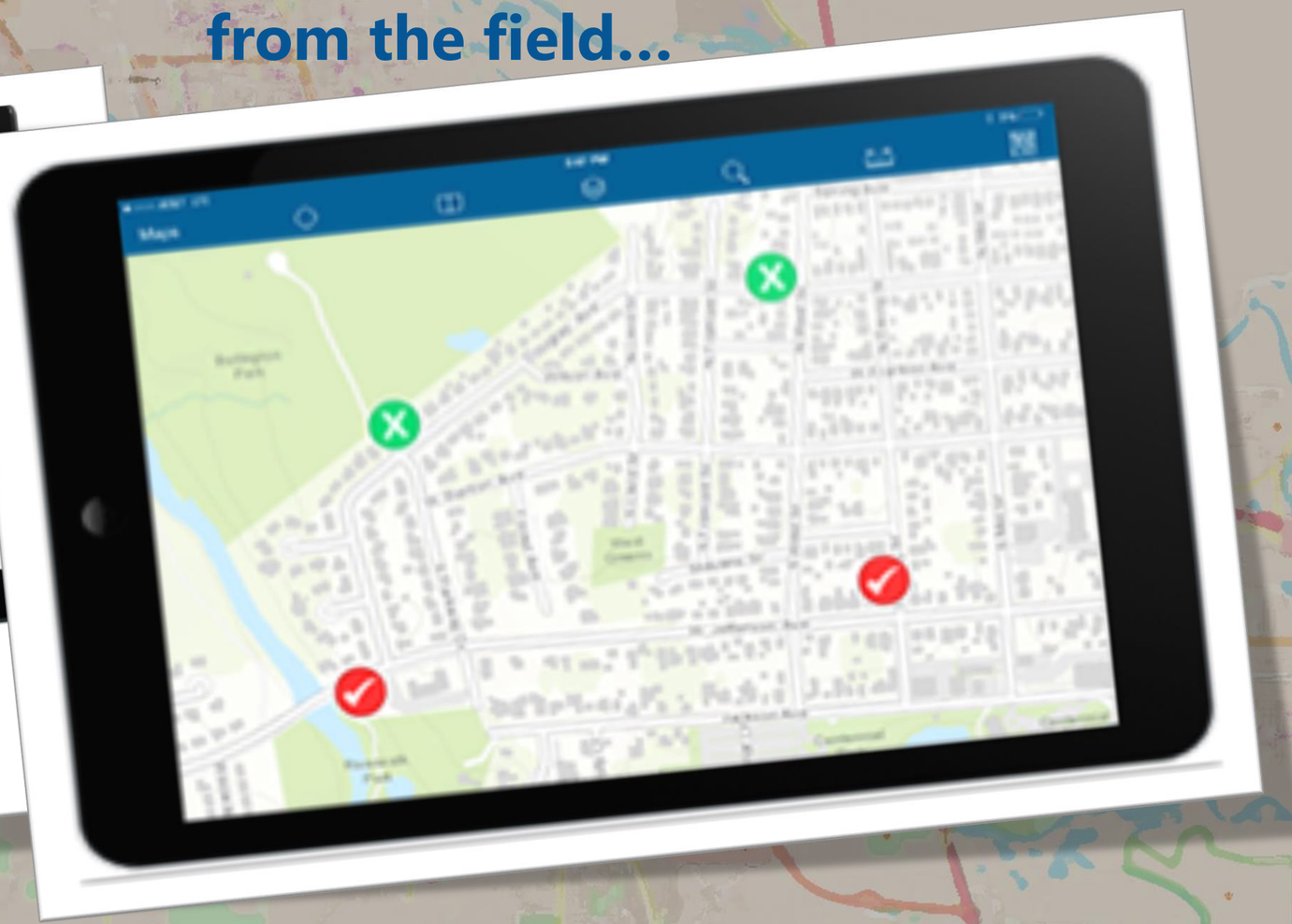
GIS tech \\ mobile solutions

Edit parcel data on a smart phone...

GIS tech \\ mobile solutions

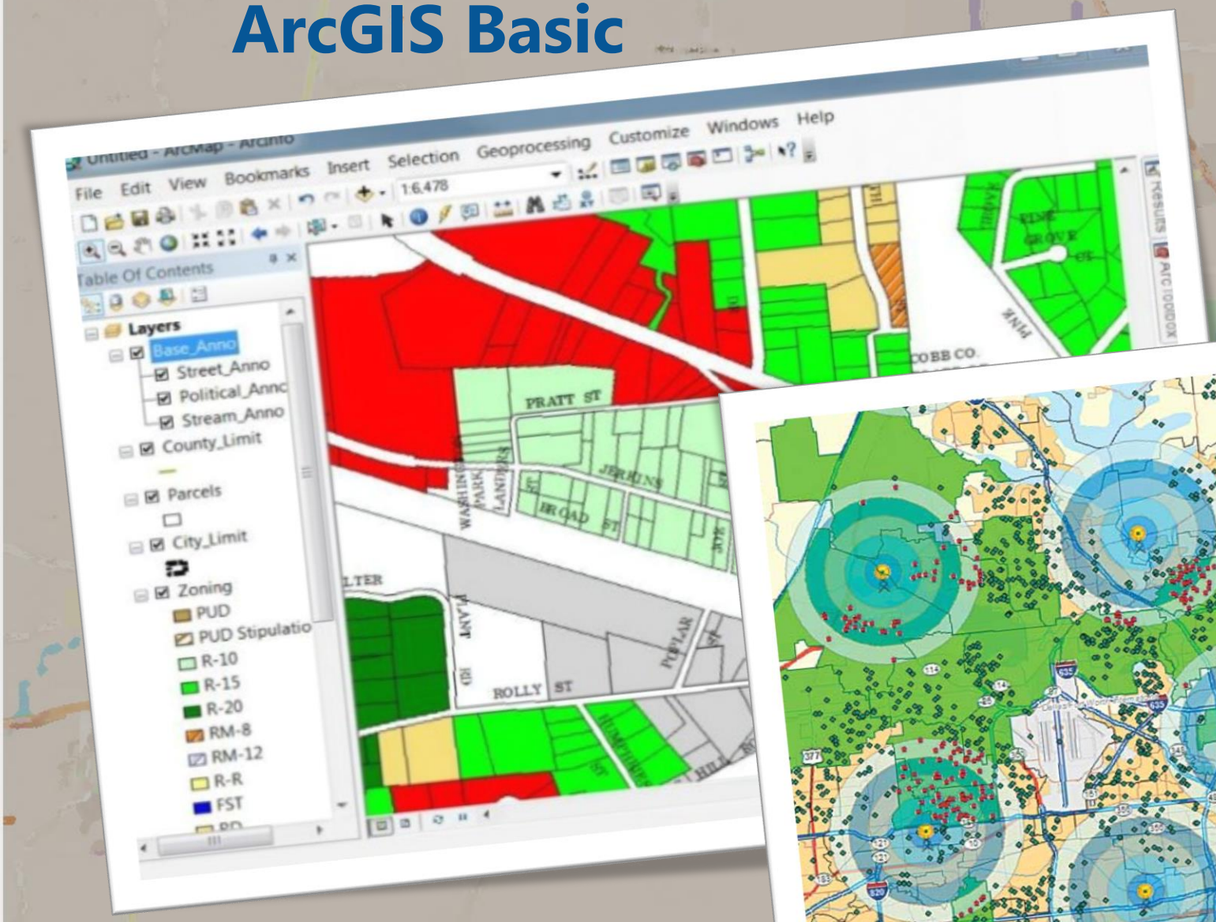
Mobile field collectors for adding/editing data...

Manage work orders from the field...

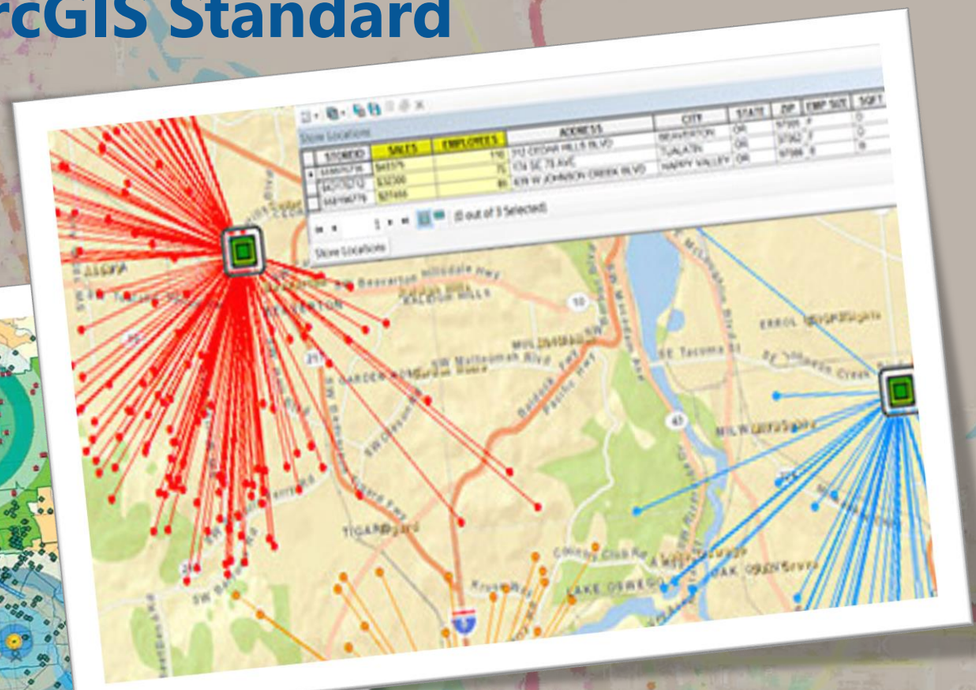


GIS tech \\ desktop software

ArcGIS Basic



ArcGIS Standard

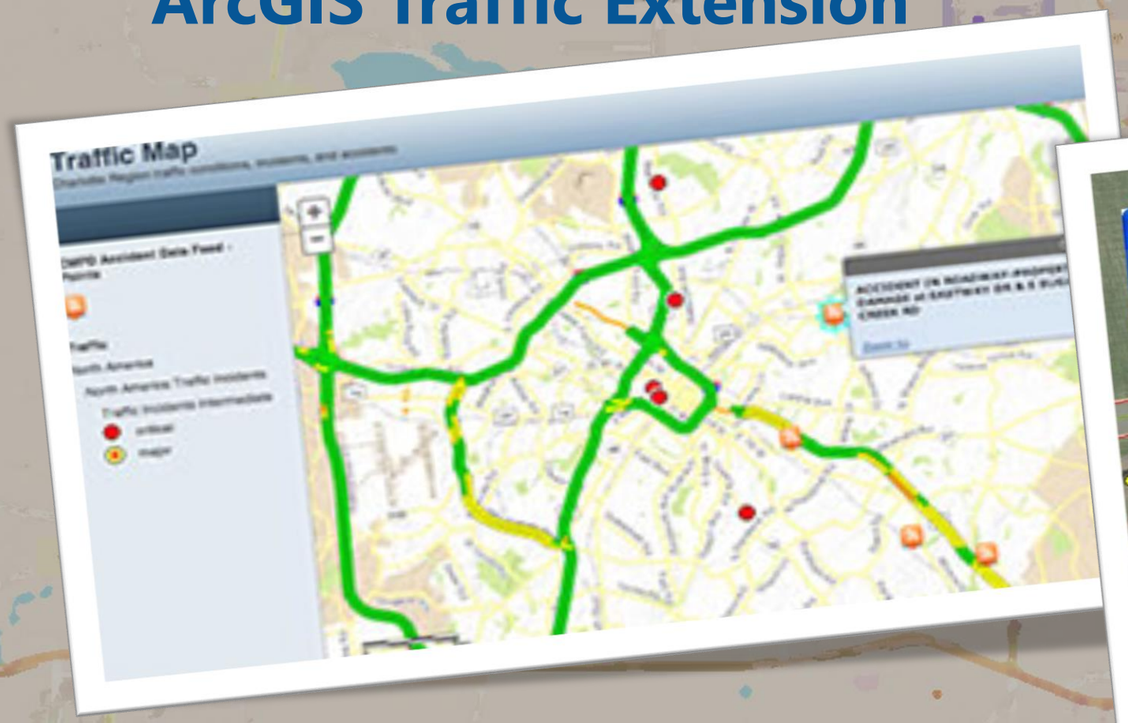


ArcGIS Advanced

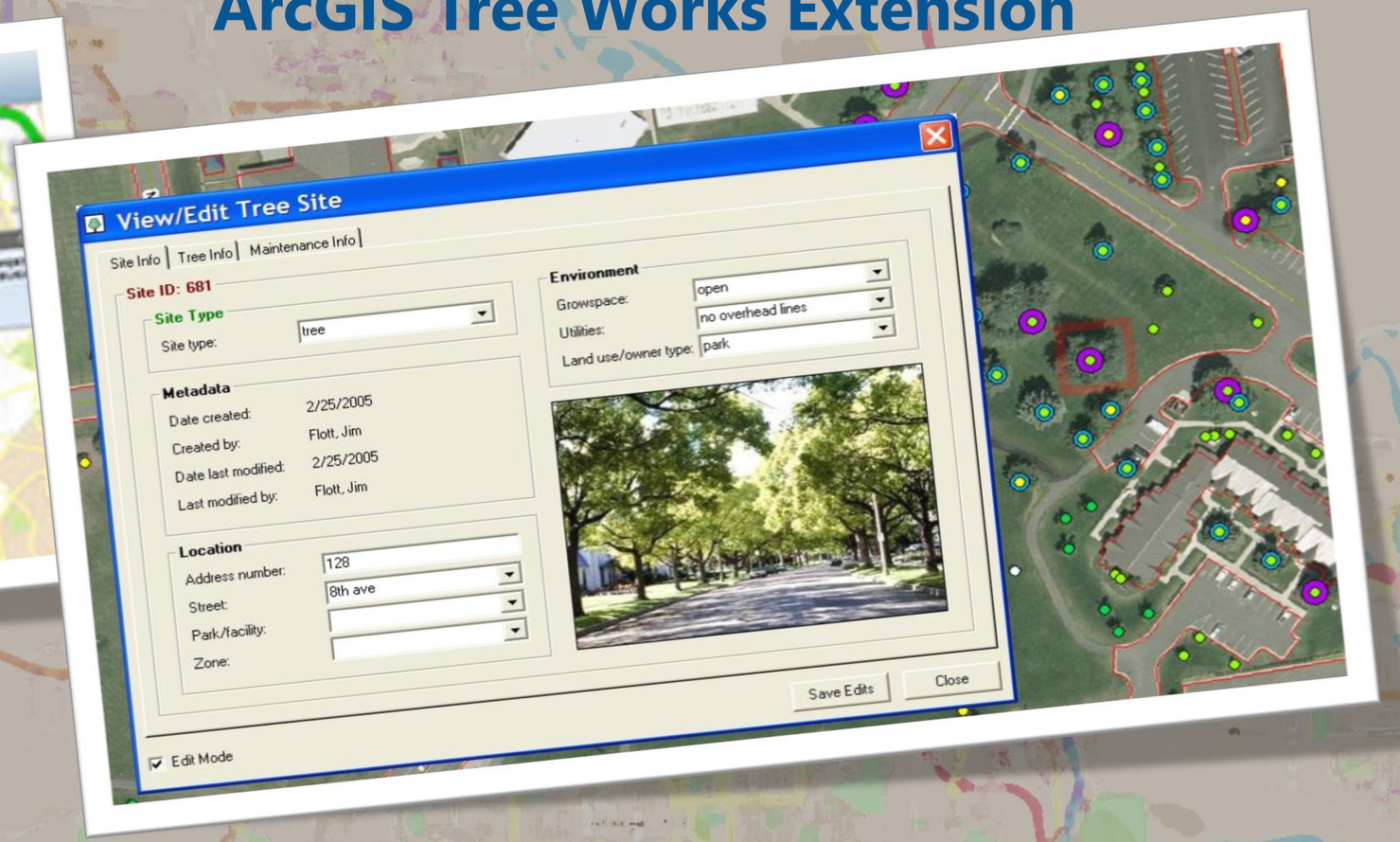
GEOGRAPHIC TECHNOLOGIES GROUP

GIS tech \\ desktop software

ArcGIS Traffic Extension

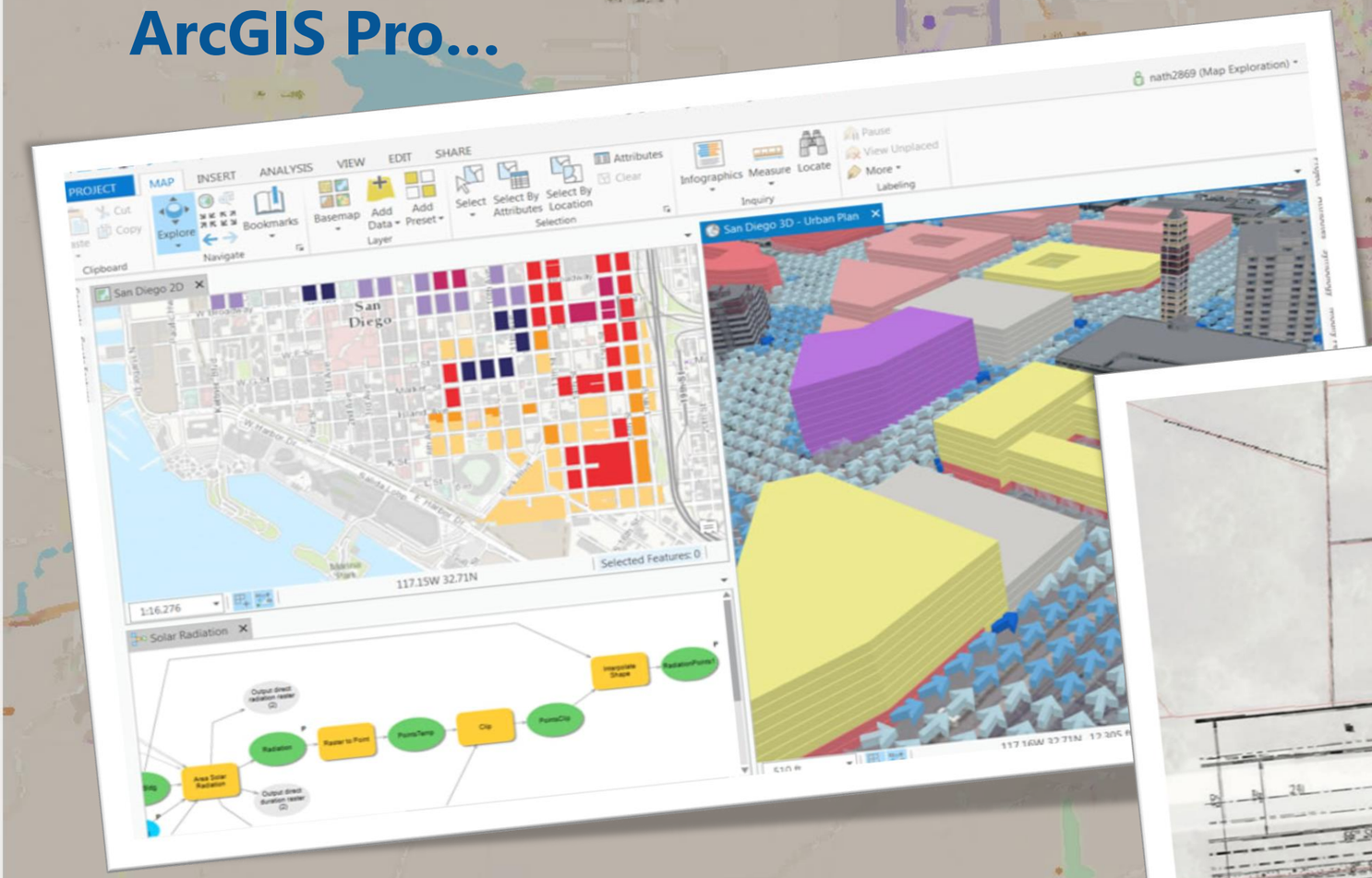


ArcGIS Tree Works Extension

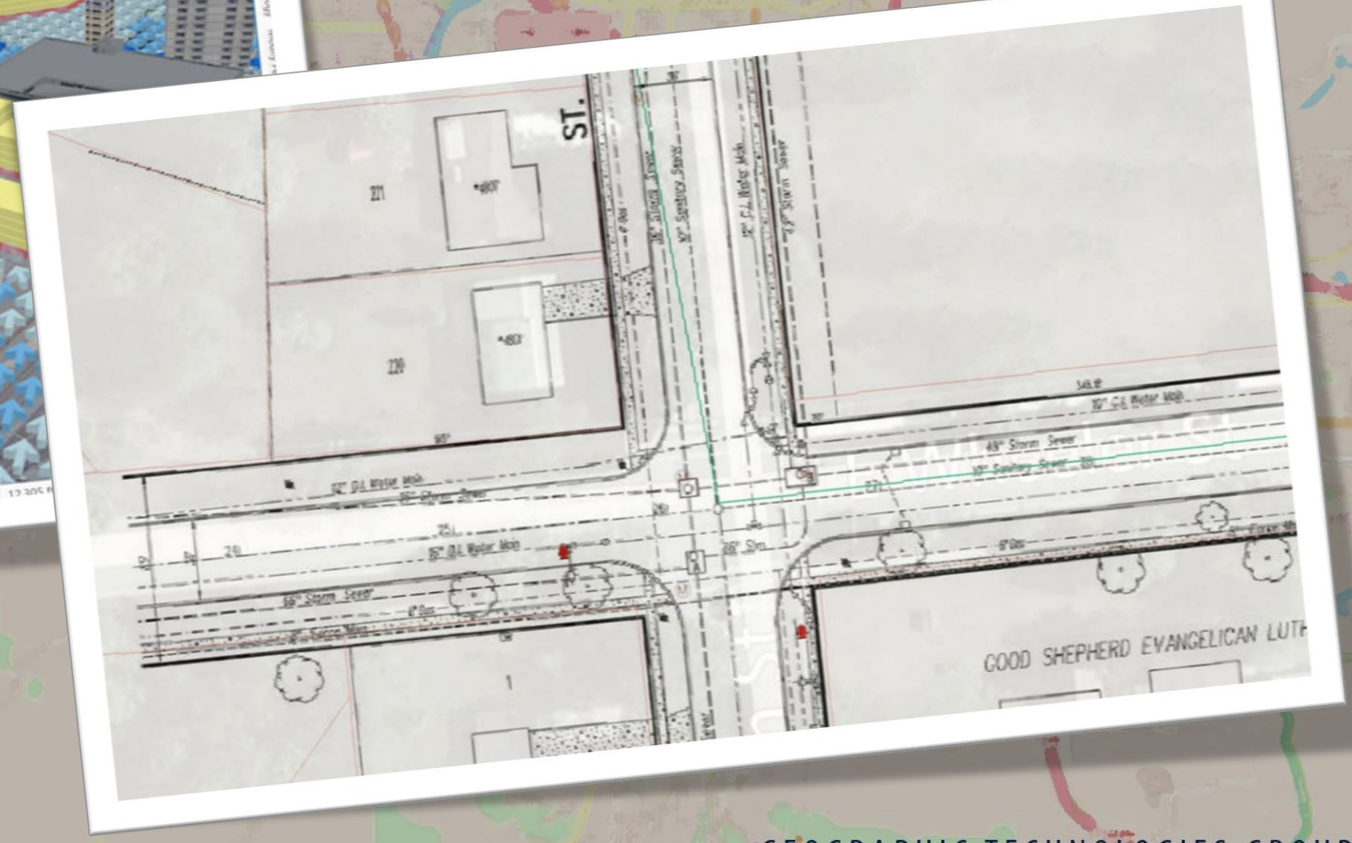


GIS tech \\ desktop software

ArcGIS Pro...



ArcGIS for AutoCAD...



LANE COUNCIL OF GOVERNMENTS (LCOG) and REGIONAL COOPERATIVE PARTNERSHIP AGREEMENT (CPA)

THANK YOU