King County GIS Center
Statement of Qualifications

Geographic Information System Services

Consulting

Needs Analysis

System Planning,
Implementation,
& Support

Database Design
& Maintenance

Application
Development
& Conversion

Data
Development

Data Analysis
& Visualization

Custom Mapping

Training
& Onsite Support

We put GIS to work for King County & Beyond

King County GIS Center
201 South Jackson Street
Suite 706
(MS KSC-NR-706)
Seattle, WA 98104

www.kingcounty.gov/gis

King County

KING COUNTY GIS CENTER

STATEMENT OF QUALIFICATIONS

TO PROVIDE

GEOGRAPHIC INFORMATION SYSTEMS (GIS) SERVICES

King County GIS Center
201 South Jackson Street
MS: KSC-IT-0706
Seattle, Washington 98104
USA
http://www.kingcounty.gov/GIS
May 2015

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EXECUTIVE SUMMARY

The King County GIS (KCGIS) Center is pleased to submit this statement of our qualifications to provide geographic information systems (GIS) services. The KCGIS Center commitment is to help our customers put GIS to work to meet their priority business goals. Whether we are working for a city or a county, a utility, transit agency, or a special district, a business or private citizen, we deliver GIS based solutions that provide business value to our clients.

INTRODUCTION

The King County GIS Center is the single most extensive and capable GIS operation in the Pacific Northwest. Our unique blend of enterprise GIS resources, end-user experience, and highly capable client services helps us deliver exceptional value to our customers.

The KCGIS Center team is comprised of more than two dozen highly qualified GIS professionals with a wide array of technical competencies to ensure the GIS services and products we offer meet customer's needs and are delivered in a timely manner.

The breadth of the GIS services we provide and the depth of the technical resources available for our customers make the KCGIS Center a unique service provider:
- We operate and maintain core enterprise GIS resources (data warehouse, database administration, application development, etc.) for more than 4,800 internal King County GIS users and for the public at large.
- We provide matrixed GIS staffing services to meet customers' in-house GIS staffing needs.
- We provide custom on-demand GIS client services and operate an extensive technical GIS training program.

Most King County GIS resources and services are available to outside agencies and many are also used indirectly by King County businesses and residents.

STAFF RESOURCES

The King County GIS Center is currently staffed with 28 FTE positions, plus system administration service provided via King County IT. All but one of these positions is a GIS professional. Our management team is comprised of working managers who maintain involvement in projects where their specialized experience is needed to ensure the best possible value for our clients.

INNOVATION:

KCGIS Center staff members are all experts within their GIS specialties, but they are also innovators. We approach each customer with an open mind, try to learn their unique business environment and individual project needs, and then develop the best GIS based business solution in collaboration with them. Our goal is to apply the best GIS technology and products to provide value for our customers. KCGIS staff members are encouraged to propose innovative business solutions to help meet this goal.

FACILITIES AND TECHNOLOGY RESOURCES:

King County GIS Center offices in downtown Seattle are located in a LEED-certified building with modern technological facilities and capabilities. King County government's fiber-optic backbone wide-area network is tied to the internet via three redundant and independently-serviced 100-megabit connections. The KCGIS Center is equipped with the latest computing resources and GIS software. The data storage space available on KCGIS Center servers exceeds 100 terabytes. Data security is provided by the King County Information Technology Backup Service, which will begin sending backups to Amazon Web Service cloud storage in mid-2015. A complete 'Business Continuity' remote hotsite with redundant hardware, software, and GIS data will become operational in late 2015.

The KCGIS Center utilizes the full Esri/ArcGIS suite of software. The KCGIS Center maintains a multitude of Esri software licenses, including the latest versions of ArcGIS (10.x), ArcGIS Server (10.x), and ArcGIS extensions. This wide variety of GIS software enables the KCGIS Center to perform any GIS task imaginable, and to serve a diverse client base.

King Street Center also houses our GIS Training Center, a state of the art facility with a 16 student capacity.

PROJECTS

We have almost 20 years of experience helping customers meet their needs for GIS solutions to their business problems. Our projects range from database and application development, to GIS needs assessment and implementation planning and support, mapping and GIS analysis, matrixed GIS staff services, GIS training in our facility or at client sites, and our unique *GIS Services Express*® program.

For more information about the KCGIS Center, see our web site at: www.kingcounty.gov/gis. Let's talk about your business needs and how the King County GIS Center can help you put GIS to work.

1: THE KING COUNTY GIS CENTER

The King County GIS (KCGIS) Center is pleased to submit this statement of our qualifications to provide geographic information systems (GIS) services. The KCGIS Center commitment is to help our customers put GIS to work to meet their priority business goals. Whether we are working for a city or a county, a utility, transit agency, or a special district, a business or private citizen, we deliver GIS based solutions that provide business value to our clients.

INTRODUCTION

The King County GIS Center is the single most extensive and capable GIS operation in the Pacific Northwest. Our unique blend of enterprise GIS resources, end-user experience, and highly capable client services helps us deliver exceptional value to our customers. We received an Esri Special Achievement in GIS Award for our unique Return on Investment (ROI) study that found KCGIS delivered more than $775 million in net benefits to the county during our first 18 years of operation, and between $87-180 in the most recent year studied.

The KCGIS Center team is comprised of more than two dozen highly qualified GIS professionals with a wide array of technical competencies to ensure the GIS services and products we offer are delivered in a timely manner. The volume of our existing on-site GIS staffing services and our on-demand client services work allow us to provide cost effective business solutions to help agencies meet their GIS services needs throughout the Pacific Northwest and beyond.

The breadth of the GIS services we provide and the depth of technical resources available for our customers make the KCGIS Center a unique service provider:

- First, we operate and maintain core enterprise GIS resources (data warehouse, database administration, application development, etc.) for all King County GIS users and for the public at large. Our web mapping services are available via the KCGIS MapPortal (http://www.kingcounty.gov/operations/GIS/Maps.aspx). These enterprise applications provide more than two million user sessions per year. They are used by more than 4,800 users within King County and they are available to outside agencies and many are used directly by businesses and residents.
- Second, we provide matrixed GIS staffing services to meet customers' in-house GIS staffing needs. For some clients we provide a complete 'turn-key' GIS operation, while for others we supply supplemental on-site GIS staff. This GIS staffing responsibility gives us a unique end-user perspective of the effectiveness of the core GIS resources we manage and of the custom on-demand client services we provide.
- Third, we provide custom on-demand GIS client services. This is the consulting portion of our business. Our professional staff are not merely theoreticians, but practicing users of the types of GIS solutions government and business requires. This gives us a unique perspective on what works and what may not work to meet a client's GIS needs.

***Our professional staff are not merely theoreticians, but practicing users of the types
of GIS solutions government and business requires***

Why is the KCGIS Center in business to offer GIS services to other organizations? We have a long-term interest in successful GIS development throughout the Puget Sound area and across the Pacific Northwest region. We share substantial geography and long-term interests with local and regional organizations. We share many of the same citizens and taxpayers who depend on our services, fund our programs, and expect government to use limited financial resources in a cost-effective manner.

For many types of GIS services, the KCGIS Center provides the best value for regional organizations and the customers we serve. For many of our services the residents and businesses you serve are our customers as well. We will be in business as long as your organization, with a permanent interest in the success of your GIS.

HISTORY & BUSINESS ORGANIZATION

GIS in King County originated in a number of separate departments in the early 1990's. In 2001 the King County Council approved an ordinance that established the KCGIS Center for the purpose of "operating, maintaining and enhancing automated geographic information systems that serve both county agencies and external customers."

As a result, the KCGIS Center operates as a business. We market our services both internally and externally and all our revenue is obtained solely from our customers. We know our success depends on satisfied clients and we are committed to deliver quality GIS business solutions that provide value for each of our customers.

For more information about the KCGIS Center, see our web site at: www.kingcounty.gov/gis. To answer questions or to discuss KCGIS Center qualifications, services, or how we might help with your business needs, please contact:

- George Horning, KCGIS Center Manager: 206-477-4401; George.Horning@kingcounty.gov.
- Dennis Higgins, Client Services Manager: 206-477-4415; Dennis.Higgins@kingcounty.gov.
- Greg Babinski, Finance & Marketing Manager: 206-477-4402; Greg.Babinski@kingcounty.gov.

Thank you for the opportunity to submit our qualifications for your consideration.

2: SERVICES & OFFERINGS

Our GIS services provide value to our clients. We help them put GIS to work, to meet their unique business needs.

GIS CLIENT SERVICES:

We provide a wide variety of contracted and on-demand services to meet specific customer needs. The types of GIS client services we provide include:

- GIS consulting, GIS needs analysis/system planning, and GIS implementation management
- Turn-key GIS operational support
- GIS database design, conversion, and maintenance
- GIS application development, migration, and maintenance
- GIS support (on-call, help desk, tutoring, one-on-one training, desktop GIS support)
- GIS mapping and spatial analysis
- Publication-quality cartography
- 3D visualization and animation capability
- Customized business-focused GIS training
- GIS data development/maintenance and GIS data exchange/format transfer services
- GIS data delivery via DVD, hard drive, or FTP. See: http://www.kingcounty.gov/operations/GIS/GISData/GISDataDistribution.aspx.
- *GIS Services Express:* We provide access to a variety of our client services offerings at reduced rates for customers who can commit to buying annual blocks of service. For more information about *GIS Services Express* see: www.kingcounty.gov/operations/GIS/ClientServices/GISServicesExpress.aspx.

GIS TRAINING:

We also provide the most extensive GIS training program in the Pacific Northwest:

- Two of our ArcGIS instructors maintain Esri Desktop Associate and CompTIA certifications.
- *GIS Training Express*: Low-cost Esri software training and custom GIS training classes in our downtown Seattle GIS training facility or on-site in client offices.
- *GIS Academy*, an intense, comprehensive week-long learning program offered twice a year.
- We also partner with other organizations (US Census Bureau, GeoSpatial, TeachMeGIS, and URISA) to bring advanced technical and management training to Seattle. See: www.kingcounty.gov/gis/training/.

MATRIXED GIS STAFFING SERVICES:

We provide on-site GIS staff for customers who need an ongoing level of support. Matrixed services provide customers with staff drawn from our pool of GIS professionals who are fully trained, highly competent, well supported, and ready to go to work on client projects *from Day One*. We can provide a fully staffed turn-key GIS operation or single staff with specialized skills. This service is tailored for customers who need GIS support with variable long-term requirements. It is also ideal for one-time project needs or to backfill quickly when an agency's own GIS staff are unavailable to do the work. This service is available for county agencies and external customers.

Our pool of GIS professionals are fully trained, highly competent, well supported, and ready to go to work on client projects from Day One.

ENTERPRISE OPERATIONS:

We operate and maintain core GIS resources (data warehouse, database administration, application development, etc.) for all King County GIS users and for the public at large. Our 38 current enterprise operations customers are distributed across the region in more than 10 separate business locations. A 17 member Technical Committee coordinates data maintenance and priority initiatives. Enterprise Operations customers receive:

- Database administration services - SDE (Geodatabase) and file-based data warehousing
- Enterprise Spatial Data Warehouse (100+ TB) with more than 1300 maintained layers and tables, as well as an extensive library of over 318 imagery, elevation and landcover datasets (includes 66 enterprise and over 144 project imagery data sets). External municipal and regional data from nearly 100 sources add another 4800 data layers to the Warehouse
- Data storage space for customer GIS data and projects, with high speed ultra-broadband access
- System administration services, including data security, access control, and backup/restore services
- Remote 'Business Continuity' hot-site, with redundant hardware, software, and data for disaster recovery
- Metadata (dataset documentation) management and Spatial Data Catalog

- Custom 'back-end' data maintenance/management applications for daily posting routines to maintain data currency in the Spatial Data Warehouse.
- Custom 'front-end' applications, including iMap, ParcelViewer, LibTool, and other desktop user applications
- Hosting of custom-developed customer-specific ArcGIS Server applications (more than 50 ArcGIS Server applications and REST services have now been deployed)
- Cost-effective access to Esri software through consolidated enterprise license management
- Access to KCGIS Help Desk services and Esri-authorized training at reduced rates
- A wide variety of free brownbag GIS workshops
- Pictometry Online GIS accounts
- ArcGIS Online Accounts

REGIONAL GIS SERVICES

Most King County GIS resources and services are available to outside agencies and many are also used indirectly by King County businesses and residents.

- Regional data coordination and data sharing program with a well-funded imagery acquisition/refresh program. The 2012-2013 program included more than 50 agencies. The current Imagery Project has 90 external participating agencies across four counties.
- King County Regional GIS User Group Meetings (the only free regional GIS User Group meeting which is open to the public).
- Public data access via King County's GIS Data Portal (nearly 500 datasets as GDB, KMZ and Shapefiles). See: http://www5.kingcounty.gov/gisdataportal/
- Public GIS data access via King County's Open Data Portal. See: http://www.datakc.org/

3: MANAGEMENT & STAFF RESOURCES

The King County GIS Center is currently staffed with 28 FTE positions, plus system administration service provided via King County IT. All but one of these positions is a GIS professional. A functional breakdown of our personnel resources includes:

- GIS Management Team: 4 FTEs
- GIS Programmers: 5 FTEs
- GIS Database Administrator: 1 FTE
- GIS Project Manager: 1 FTE
- Senior GIS/Mapping Analysts: 7 FTEs
- Chief Cartographer   1 FTE
- GIS Training Coordinator   1 FTE
- GIS/Mapping Analysts: 7 FTEs
- Office Manager   1 FTE

MANAGEMENT

Our management team is comprised of working managers who maintain involvement in projects where their specialized experience is needed to ensure the best possible value for our clients.

PROJECT MANAGEMENT

The KCGIS Center project management approach is based on the IT Project Management methodology developed and refined by King County's Information Technology Department (KCIT). The KCIT methodology recognizes five phases in a project life cycle: Planning, Project Development, Project Execution (including implementation planning, solution design, solution development, and implementation), Production, and Measurement. In practice, every GIS project is different. The essence of our project management approach is an individual project plan, developed in collaboration with the client to document for both client and KCGIS Center staff how the contract scope of work, deliverables, timeline, and budget will be achieved.

The KCGIS Center can also utilize Project Management staff from King County's Project Management Office, on an as-needed basis.

COMMITMENT TO QUALITY

We know our reputation depends on the opinions our customers form based on the work products and services we deliver to them. An enthusiasm for GIS technology, a commitment to professional development and competency, and a customer service focus are key characteristics we look for and nurture in all KCGIS Center team members. Our commitment is reflected in a variety of programs and business practices that form a foundation of quality within our organization and provide value to our customers:

- Management commitment to deliver quality products and services, demonstrated by active involvement with both clients and service delivery staff.
- A professional development plan for each GIS staff member, supported by resources to turn training plans into action.
- An array of KCGIS Best Practices and Standards to ensure that our quality performance standards are agreed, known, and acted on.
- Development of a detailed GIS O&M plan (http://www.kingcounty.gov/operations/GIS/About/O_M.aspx)
- Bi-monthly regional GIS user group meetings (separate from staff or project meetings) to focus on best practices, innovation, and quality enhancement for GIS professionals. These meetings also include vendor presentations and guest speakers.
- Bi-monthly internal GIS user meetings to help enhance standards, procedures and competencies.
- Monthly GIS Technical Committee meetings, which provide end user feedback, direction, and priorities for KCGIS Center services.
- Weekly quality assessments of posted GIS data to comply with King County GIS best practices (see: http://www.kingcounty.gov/operations/GIS/GISData.aspx).
- Bi-monthly 'Data Digests' broadcast to all KCGIS users to announce Data Warehouse changes or additions.
- Monthly application developer user meetings to leverage coding resources and to help enhance standards, procedures and competencies.
- Regularly scheduled 1:1 meetings for every staff member with their supervisor.
- The KCGIS Center has assessed its operations and management against the URISA GIS Management Institute's GIS Capability Maturity Model and the Geospatial Management Competency Model. It is our plan to use this assessment and periodic updates to continually refine our operations and management maturity.

QUALITY ASSURANCE METHODOLOGY

With our Commitment to Quality as a foundation, we implement cost effective quality assurance methodologies for individual projects. Quality management for a GIS consultant requires flexibility, because of the wide variety of services, from needs assessment/planning, data development, mapping, training, application development, system design, and implementation. A quality management plan based on specific project requirements will be developed to meet client goals and objectives.

For example, a data development project quality management plan would include staff and procedures to check data completeness, validity, logical consistency of attributes, physical consistency, referential integrity, and positional accuracy, while the mapping component would include coordinate control review, conflict resolution, automated routines, and visual quality assurance. An application development project quality management plan would include defining reliability, usability, and maintainability criteria, then segmenting the application design into discrete program input/output processes. Each process can then be coded and tested incrementally against specifications and the overall design. The KCGIS Center relies on application programmer peer review, both on a project basis and within the community of King County GIS programmers.

A key aspect of our quality management approach is to provide the QA manager with direct access to the KCGIS Center Manager, to ensure that any potential quality issue is not bottlenecked at any point in the project.

INNOVATION

KCGIS Center staff members are all experts within their GIS specialties, but they are also innovators. We approach each customer with an open mind, try to learn their unique business environment and individual project needs, and then develop the best GIS based business solution in collaboration with them. Our goal is to apply the best GIS technology and products to provide value for our customers. All KCGIS staff members are encouraged to propose innovative business solutions to help meet this goal.

Our goal is to apply the best GIS technology and products to provide value for our customers.

GIS PROFESSIONAL STAFF RESOURCES

KCGIS Center staff members have the breadth and depth of technical competency necessary to support a wide variety of clients. Indeed, our existing customer base and diversified lines of business provide the ideal environment to nurture and develop a team of exceptionally competent staff. KCGIS Center staff members are typically highly motivated to be working in public service with GIS technology. They are also characterized by a high-degree of professionalism, team and personal pride, openness to innovation, and a customer-service focus. A collaborative approach to projects and problems helps ensure effective project execution.

The KCGIS Center recruits only experienced and highly qualified staff, then works to not only maintain skill levels but also enhance individuals' technical and management knowledge and abilities. The result is high staff retention and

team cohesion. As of May 2015, the average time working for the King County GIS Center or its predecessor agency for our 28 staff members was 13.4 years. Our standards are high and most of our GIS staff have relevant university degrees. Six of our staff members have master's degrees, and seven are Certified GIS Professionals (GISP).

We provide our staff with access to an ample budget for training and the time and flexibility to pursue career development opportunities. Each staff member develops an annual training plan which is discussed and agreed with his/her supervisor.   Training and development needs are also woven into performance reviews.   Performance planning also includes rigorous goals and measurements. Our management and supervisory staff have access to an extensive management training curriculum provided by King County, as well as training provided by the Institute for Management Studies, the UW Evans School of Public Affairs, URISA, and other similar programs.

Each staff member is assigned to one of our three business lines, but we have the flexibility to assign them to work on any project, based on workload needs, qualifications, and professional development goals. In addition, we have the ability to hire temporary staff to ensure that we can meet temporary spikes in demand for GIS services by our customers.

GIS PROFESSIONAL STAFF BIOGRAPHIES

The following brief biographies outline the GIS-related knowledge, skills, and abilities of key and representative staff, along with their educational background, and relevant work history.

GEORGE HORNING KCGIS Center Manager (2002 to present)	**KCGIS Center Responsibilities** • Strategy and management of King County GIS Center Enterprise Operations and Matrixed Staff Services • Oversee King County GIS Center Client Services **Education:** BS Biology & Certificate in Cartography: San Diego State University; MA Geography/GIS, University of Washington **Prior Work Experience:** • GIS Manager – KC Dept. of Development and Environmental Services, 1993 to 2002
DENNIS HIGGINS, GISP GIS Client Services Manager (2002 to present)	**KCGIS Center Responsibilities:** • GIS Client Services Group Management • Project management • Programming; GIS analysis, mapping **Education:** B.A. Geography, University of Washington **Prior Work Experience:** • GIS Manager, KC Dept. of Parks and Recreation, 2000 – 2001 • GIS Analyst, KC Dept. of Development and Environmental Services, 1993 – 2000
GREG STOUGHT Enterprise Services Manager (1998 to present)	**KCGIS Center Responsibilities:** • Contract administration, project management • Regional GIS data acquisition and management • Matrix GIS Program management **Education:** BA Geography, University of Minnesota **Prior Work Experience:** • GIS Coordinator, City of SeaTac & University of Washington, 1992 – 1998 • Database Administrator, Esri, 1986 – 1992
GREG BABINSKI, GISP Finance & Marketing Manager (2002 to present)	**KCGIS Center Responsibilities:** • KCGIS Center Financial & Marketing Management • Project Management & GIS Consulting • GIS course developer and instructor **Education:** BA Geography, MA Geography, Wayne State University **Prior Work Experience:** • KCGIS Center Manager, 1998 – 2001 • GIS Supervisor, East Bay Municipal Utility District, 1989-1998
ADAM CABRERA GIS Programmer (2010 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • ArcGIS, ArcGIS Server, ArcGIS Online, Esri Web Application Builder • Application development with JavaScript, HTML5, CSS, REST, XML, Silverlight, .NET, Python, SQL and ArcGIS Server APIs • ArcGIS Desktop, ArcGIS Model Builder, SQL Server, MS Access **Education:** Computer Science, CSU Bakersfield & Lakeland College **Prior Work Experience:** • GIS Programmer, King County DDES 2001-2010 • GIS Project Manager/Analyst, Kern County School District, 1996-2000

MICHAEL JENKINS GIS Programmer (1997 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • ArcGIS, ArcGIS Server • Application development with JavaScript, HTML5, CSS and ArcGIS Server APIs • ArcGIS Server system planning, configuration, monitoring and administration **Education:** BS Geography, Ohio University **Prior Work Experience:** • GIS Analyst, Geomatics International, 1994 – 1996
PAUL MCCOMBS GIS Programmer (2011 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • Analysis: ArcGIS Toolbox/Model Builder, Python, R, QGIS, MS Access, MS Excel • Editing: ArcGIS, QGIS, OpenStreetMap, ArcInfo, • Mapping: ArcGIS Desktop, QGIS, ArcGIS Online • Database Management: SQL Server, PostgreSQL/PostGIS, MySQL, MS Access, SQLite • GIS Academy Geoprocessing Instructor and expert **Education:** B.A. Geography, University of Washington **Prior Work Experience:** • GIS Analyst, KC Dept. of Development and Environmental Services, 1994 – 2011 • GIS Contractor, Microsoft, 1996
DAVID OSTANSKI GIS Programmer (1999 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • ArcGIS, VB, Python; SQL, ArcObjects • GIS Academy Data Analysis Instructor & expert **Education:** BS Surveying Engineering, University of Maine **Prior Work Experience:** • Software Engineer, Lockheed Advanced Simulation Center 1998 - 99 • GIS Analyst, King County TRC, 1995 - 1998
HARKEERAT KANG, GISP GIS Programmer (2002 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • ArcGIS, ArcGIS Server, ArcGIS Online, Web App Builder, Esri JavaScript Web API • Programming with VB, AXL, XML, Python, JavaScript, HTML, CSS, ASP, ASP.NET, Cold Fusion • SQL Server, MS Access, GPS **Education:** BA Geography Honors, Guru Nanak Dev University, India; MA Geography, Punjab University, India; BA Geography, University of Washington **Prior Work Experience:** • GIS Analyst, King County Wastewater Treatment Division, 2000 - 2002 • GIS Analyst, KCGIS Center, 1999 – 2000 • GIS Technician, Washington State Department of Natural Resources, 1998 - 1999
DEBBIE BULL GIS DBA & Programmer **(2000 to present)**	**Summary of GIS related Knowledge, Skills, Abilities:** • SQL Server DBA, ArcGIS for Server Enterprise Basic (ArcSDE) • Programming with Python, Visual Basic • ArcGIS Desktop **Education:** BA Math, Whitman College **Prior Work Experience:** • GIS Analyst/UNIX System Administrator, KC DDES, 1994 – 2000 • GIS Technician/Cartographer, KC Planning & Community Dev. Div. 1992 – 1994
MIKE LEATHERS GIS Data Coordinator (2002 to present)	**Summary of GIS Related Knowledge, Skills, Abilities:** • Coordinate with all KC agencies to publish their GIS data to the Spatial Data Warehouse • Develop workflows and processes for maintaining SDW data content and integrity • Imagery Acquisition Project Management • GIS Academy Metadata Instructor and expert **Education:** MS Geology, Geophysics, Oregon State Univ; BS Geology, Virginia Polytechnic and State Univ. **Prior Work Experience:** • Data Acquisition Project Manager, King County Road Services & DNRP Divisions, 2000-2001 • GIS Analyst and Database Administrator, Bureau of Land Management, 1990-2000
YUKO CARAS Senior GIS Specialist (2006 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • ArcGIS, ArcInfo, ArcView • Programming with VB, JavaScript, Python, ArcObjects, SQL • SQL Server, MS Access, GPS **Education:** MS, University of Montana **Prior Work Experience:** • GIS Analyst, NOAA Fisheries Science Center, 2003 - 2006 • GIS Technician/Analyst, Seattle Public Utilities, 2001 – 2003 • GIS Technician, City of Mercer Island, 2001

TODD KLINKA Senior GIS Analyst (1999 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • ArcGIS, Python, MS Access • GIS analysis, data development and cartography • Knowledge of natural resource programs and data **Education:** Master of Urban Planning, Univ. of Washington; BS Geography, Univ. of Wisconsin **Prior Work Experience:** • GIS Technician, King County GIS Center, 1995-1999 • Cartographic Technician, U.S. Census Bureau, GIS, 1995 • Computerized Mapping Consultant, Chicago Park District, 1992 - 1994
KEN RAUSCHER Senior GIS Analyst (1999 to present)	**Summary of GIS Related Knowledge, Skills, Abilities:** • GIS Analysis, Model Builder, Python • GIS-based image processing & analysis • Orthorectification and georeferencing **Education:** BS, Oregon State University **Prior Work Experience:** • Director, national center for Resource Innovation: NW Region, 1994-1999 • GIS Analyst, Oregon Water Resources Department, 1989-1994 • Cartographer, NOAA Marine Chart Branch, 1984-1987
SHAUN O'NEIL, GISP Senior GIS Analyst (1999 to present)	**Summary of GIS Related Knowledge, Skills, Abilities:** • ArcGIS, MS Access, Trimble Pathfinder & Terrasync, • GIS Analysis, Water/Wastewater/Stormwater Networks • GPS **Education:** BA Geography, BA History, University of Washington **Prior Work Experience:** • GIS Analyst, Gray and Osborne, 1997-1999 • GIS Analyst, US Census Bureau, 1995-1996
VICTOR HIGH Senior GIS Analyst (2002 to present)	**Summary of GIS Related Knowledge, Skills, Abilities:** • ArcGIS: Grid, Tin, Routing, Tracing; ArcView • Programming with AML; Access, HTML, GIS Animation, Multimedia, Python, Midi • GIS-based 3D Visualization **Education:** GIS Certificate & AA Design, Green River Community College **Prior Work Experience:** • GIS Analyst, KC Road Maintenance Section, 1995 - 2001 • Mapping Drafter, KC Assessor, 1990 – 1994 • Technical Illustrator, Boeing, 1979-1988
SHARI CROSS Senior GIS Analyst (2002 to present)	**Summary of GIS Related Knowledge, Skills, Abilities:** • ArcGIS, ArcInfo • Custom Map Requests • Technical Writing **Education:** BA Geography/GIS, Florida Atlantic University, 1998 **Prior Work Experience:** • GIS Specialist, DNPR-WTD, 2001 • GIS Analyst, KCGIS Center, 2000 - 2001 • GIS Technician, Snohomish County GIS, 1999 - 2000
PETER KEUM, GISP Senior GIS Analyst (2002 to present)	**Summary of GIS Related Knowledge, Skills, Abilities:** • Sewer Utility Systems • Esri ArcMap Desktop: Cartography, Data Analysis, Geoprocessing Tools • Geospatial Open Source Tools and Technologies **Education:** BA Astronomy& Physics, University of Virginia; MS Urban Systems Engineering, George Mason University **Prior Work Experience:** • GIS Analyst, DNRP WTD 1998-2001 • Technical Contract Staff - Bucher, Willis & Ratcliff: Engineering firm. 1992 – 1995
PATRICK JANKANISH Chief Cartographer (1998 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • Publication-quality cartographic design and production for print and interactive media • Graphic and web design, publication design and layout, writing and editing • Cartography workshop author, instructor, and consultant **Education:** BA, Geography, University of Washington **Prior Work Experience:** • Freelance Cartographer/Designer/Consultant, 1990 – 1998 • Cartographer, UW, NW Cartography & Roy F. Weston, 1978 – 1990

CHERYL WILDER, GISP GIS Training Program Coordinator (1998 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • ESRI Certified Trainer, ESRI Certified ArcGIS Desktop Associate, CompTIA CTT+ • ArcGIS Desktop 10.x, ArcGIS Pro, ArcGIS Online for Organizations **Education:** BA Geography, Wayne State University; Microsoft Certified Professional **Prior Work Experience:** • Instructor/Technical Support Analyst, Esri, 1994 – 1998 • GIS Technician US Fish & Wildlife Service, 1992 – 1994
MARY ULLRICH GISP GIS Analyst GIS Instructor (1999 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • Esri Certified ArcGIS Instructor, ESRI Certified ArcGIS Desktop Associate, CompTIA CTT+ • ArcView, ArcInfo, ArcGIS; Custom Map requests; Technical writing **Education:** BA Geography, Central Washington University; GIS Certificate, University of Washington **Prior Work Experience:** • GIS Technician, Washington DNR, 1998 – 1999
GAVIN GRAY GIS Analyst (2002 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • ArcGIS, MS Access, GPS, Adobe Illustrator, Python Programming • Data Development and Maintenance, Property Research, Legal Descriptions, Cartography **Education:** BA Geography, BS Geology, University of Washington, 1990 **Prior Work Experience:** • GIS Analyst, King County Parks 1996-2002 • GIS Analyst, King County Planning and Community Development 1991-1996
TONI CARPENTER GISP GIS Analyst (1999 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • ArcGIS, ArcInfo, ArcGIS Server, GIS Analysis, Custom maps • Programming with JavaScript, HTML • Data creation, editing, management, COGO **Education:** General Studies, University of Washington; GIS Certificate, Green River Community College **Prior Work Experience:** • GIS Analyst, Snohomish County, 1997 – 1999 • GIS Technician, King of the Road Maps, 1996 - 1997
FRANK WHITMAN GIS Analyst & Programmer (2001 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • ArcGIS, ArcGIS Server, Geodatabase Administration • Python, SQL, SQL Server Database Administration • GIS Academy Instructor: ArcMap Editing and Geodatabase **Education:** BA, Geography, University of Washington; GIS Certificate, Green River Community College **Prior Work Experience:** • GIS Analyst, King County TRC, 1999-2001 • GIS/Planning Technician, City of Redmond, 1998-1999
CHRIS LANDBACK GIS Analyst (2001 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • ArcGIS, ArcInfo, ArcView • GPS, data development, analysis, and custom mapping **Education:** BA Geography, University of Washington **Prior Work Experience:** • GIS Technician, City of Seattle 2000-2001
CONSTANCE Carlson GIS Analyst (2002 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • ArcGIS, ArcInfo, GIS Analysis, Custom Map requests, KCGIS WEB Page maintenance • Programming with HTML, DreamWeaver, SiteCore, Python **Education:** BLA Landscape Architecture & BA Psychology, University of Washington, 1991 **Prior Work Experience:** • GIS Analyst, WA. Dept. Of Natural Resources, 1995 – 2000 • GIS Analyst, King County, June 1995 - December 1995
CRYSTAL BACH GIS Specialist (2008 to present)	**Summary of GIS related Knowledge, Skills, Abilities:** • AGS, ArcGIS Online, ArcInfo, MS Suite of Products • Programming with JavaScript and HTML • Project Development, Implementation and Data Management, GPS Training and Collection **Education:** BA Geography, University of Washington **Prior Work Experience:** • GIS Analyst, City of Seattle, 2008

More detailed resumes are available for these and all other KCGIS Center staff members on request.

4: FACILITIES & TECHNOLOGY RESOURCES

FACILITIES:

King County GIS Center offices are located in the King Street Center Building in downtown Seattle, Washington. King Street Center, built in 1999, is a Green Building Rating System LEED-certified building with modern technological facilities and capabilities. King County government's fiber-optic backbone wide-area network is tied to the internet via three redundant and independently-serviced 100-megabit connections. Our office address/contact information is:

King County GIS Center	Phone: 206-477-4401; Fax: 206-263-3145
201 South Jackson Street, Suite 706	Email: giscenter@kingcounty.gov
MS: KSC-NR-0706	Web Site: www.kingcounty.gov/gis
Seattle WA 98104	Directions: http://www.kingcounty.gov/operations/GIS/About/Location.aspx

TECHNOLOGY RESOURCES:

The KCGIS Center is equipped with the latest computing resources and GIS software. We maintain a robust hardware update and maintenance program. Our PC's are on a four-year schedule for maintenance and replacement, ensuring that the latest technological advances and the fastest computing environment possible are available to KCGIS Center staff at all times. KCGIS Staff utilize PC's running Microsoft Windows 7. The current KCGIS Center standard for new desktop hardware is a Dell OptiPlex 9010 with an i7 quad core processor, 16GB RAM, and 1GB video card. Taken as a whole, the data storage space available on KCGIS Center servers exceeds 100 terabytes. Data security is provided by the King County Information Technology Backup Service, which will begin sending backups to Amazon Web Service cloud storage in mid-2015. A complete 'Business Continuity' remote hotsite with redundant hardware, software, and GIS data will become operational in late 2015.

> **The KCGIS Center is equipped with the latest computing resources and GIS software.**

We have access to a range of printing devices on site, from desktop laser printers to large-format inkjet printers, most with PostScript drivers. We can print two-sided documents in black-and-white and color up to tabloid size (11x17 inches). We can produce color inkjet prints on roll stock up to 60 inches wide. Off site, the nearby King County Print Shop offers high-speed digital color printing which is ideal for short-run, high-quality brochures, booklets, etc. We also regularly contract with commercial printing companies for high-quality, high-volume offset printing of maps and map products.

The KCGIS Center utilizes the full Esri/ArcGIS suite of software. The KCGIS Center has purchased and maintains a multitude of Esri software licenses, including the latest versions of ArcGIS (10.x), ArcGIS Server (10.x), and ArcGIS extensions. This wide variety of GIS software enables the KCGIS Center to perform any GIS task imaginable, and to serve a diverse client base.

The King County GIS Center is experienced using the Trimble TSC1 data collector and the Trimble GeoX handheld series, with Terrasync software and Pathfinder for data downloading and processing.

We also maintain multiple licenses of Adobe Creative Suite Design Premium, a collection of graphic design, illustration, and publication software for print, web, and mobile device output. Publication-oriented cartography projects are accomplished with a workflow that integrates GIS technology and data with graphic arts tools that are made GIS capable using plug-in products from Avenza Systems Inc. Carrara software from DAZ 3D adds real-world scene construction, rendering, and animation capabilities to our cartography and GIS visualization toolbox.

King Street Center also houses our GIS Training Center, a state of the art facility with 16 student PC's, an instructor's PC, overhead projector, connection to the KCGIS data warehouse and internet, and a well stocked GIS library.

Our GIS software inventory includes:

Esri Software:
- ArcGIS 10
- ArcGIS Server
- ArcGIS Online

Esri ArcGIS Extensions:
- COGO
- Network Analyst
- Spatial Analyst
- 3D Analyst
- Geostatistical Analyst
- Survey Analyst
- Tracking Analyst
- Publisher

Adobe Creative Suite:
- Photoshop CS Extended
- Illustrator
- InDesign
- Flash Catalyst
- Flash Professional
- DreamWeaver
- Fireworks
- Acrobat Pro
- Bridge
- Device Central

Other Software:
- MS SQL Server; MS Access
- Oracle Jdeveloper Enterprise
- Visual Basic
- Python
- AutoDesk AutoCAD
- ERDAS Imagine & Photogrammetry Suite
- Altova XMLSPY
- LizardTech MrSID & JP2 Encoder
- Carrera 3D

- Visual Studio .Net Professional
- Visual Studio Team Foundation Server
- SnagIt
- MS SharePoint
- Open LM License Monitoring
- Avenza Map Publisher for Adobe Illustrator
- MS WCMS
- Pictometry Online
- Vestra Geosystems Monitor
- MS Team Foundation Server

5: PROJECT PORTFOLIO

The follow list is representative of typical King County GIS Center Matrix GIS Staffing Services and On-Demand GIS Client Services projects. More information about these projects and other projects along with client reference contact names are available upon request.

	Project Name: *Client*	Project Description	Project Status
Application Development Projects	**iMap** *King County*	King County iMap is a long-established, KCGIS Center-developed, web-based mapping application that King County citizens and government staff use day in and day out to access and view a multitude of authoritative King County spatial data layers and the wealth of information they hold. Interactive tools give iMap users the ability to select, view, navigate, and investigate data themes and map layer combinations, as well as conduct searches, determine locations, and create and print custom map views. In 2015, KCGIS Center developers launched a new version of iMap that they completely rebuilt from the ground up using the latest web-mapping technology, which includes seamless support for using iMap on tablets and smartphones. http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx	New iMap launched April 2015
	Parcel Viewer2 *King County*	Parcel Viewer 2 is a web-based map viewer developed and hosted by the KCGIS Center that makes it easy to look up King County parcel information. Users can search for and find parcels by street address, street intersection, or parcel number, or by simply panning and zooming on an interactive map. The parcel map display provides links to the highly detailed King County Assessor's Reports and the Districts and Development Conditions Report. Additional tools allow users to customize the selection of multiple parcels, switch basemaps, measure features in the map display, and share and print map views. Parcel Viewer is used widely by King County staff, private citizens, and the real-estate and insurance industries. http://www.kingcounty.gov/operations/GIS/PropResearch/ParcelViewer.aspx	Parcel Viewer 2 permanently replaced "Classic" Parcel Viewer in January 2014.
	Traffic Counts *King County Road Services Division*	A web-based mapping tool providing a visual representation of traffic count data at intersections throughout unincorporated King County. Users can select intersections from the map display or a tabular list, and view a schematic diagram which shows traffic counts for all directions entering and leaving the intersection. Traffic data for each year from 2005 to 2009 is available. Users can also export traffic count data for single or multiple locations for use in spreadsheets and databases. The measurement of traffic volumes is one of the most basic functions of roadway planning and management. Traffic counts are the most commonly employed measure of roadway usage and are needed for the majority of traffic engineering analysis. Some of the uses for traffic count data include: safety analysis, pavement design, revenue forecasting, statistics for the placement of businesses and services, traffic signal timing, air quality analysis, noise analysis, planning studies, and planning the timing of maintenance activities. http://gismaps.kingcounty.gov/TrafficCounts/	Completed and launched, 2010
	ParkFinder *King County Parks & Recreation Division*	Web-based mapping and information access system which enables users to map the locations of King County parks and trails and obtain information about sites which are of interest. Linked to detailed spatial and tabular data, ParkFinder gives users the option to search by park name, trail name, or type of recreational activity. A fully interactive mapping system enables users to pan and zoom to focus on the park or trail they are interested in, as well as locate other nearby King County parks and trails. http://www.kingcounty.gov/environment/dnrp/park_map.aspx	Completed and launched, 2010
	"What do I do with...?" *King County Solid Waste Division*	Web-based mapping and information access system which enables residents and businesses to map the locations of companies which accept unwanted items and materials for reuse, recycling, or proper disposal. Linked to detailed spatial and tabular data, this application enables users to locate businesses and organizations based on the type of item or material which they want to dispose of. A fully interactive mapping system enables users to pan and zoom to focus on the companies which best match their needs, as well as locate other nearby sites for disposing of their unwanted items and material. http://your.kingcounty.gov/solidwaste/wdidw/index.asp	Completed and launched, 2009
	Regional Travel Alerts Expansion *King County Office of Emergency Management*	Funded by an Urban Areas Security Initiative grant from the Department of Homeland Security, the KCGIS Center worked as subcontractor to the King County Office of Emergency Management to expand the county's My Commute web application to include travel alert information from cities in the region. Tasks performed included outreach to cities, and development of mobile enabled travel alert reporting tools for the cities, security settings to prevent unauthorized updates, and interfaces to web mapping services provided by select cities. http://gismaps.kingcounty.gov/MyCommute/	Completed 2009, Updated 2014

	Project Name: *Client*	Project Description	Project Status
Application Development Projects	**Federal Way Schools Web Site:** *Federal Way School District*	Design and programming of a web site for the Federal Way School District. Web site allows residents to locate addresses and determine elementary, middle, and high school assignments as well as school board director districts.	Completed 2009, with annual updates
	Airport Asset Management System *King County International Airport*	The Airport Asset Management System (AAMS) gives airport personnel the ability to access a suite of airport asset management applications from a single online site. Users access a unified database to view, edit, add, and search leases, facilities, insurance, and inspection information through maps and traditional database query interfaces. AAMS was developed through a process of in-depth interviews with key department users to determine business practices and requirements. The project included design and conversion of department tabular and spatial data. KCGIS designed and implemented AAMS to provide airport staff with the data access and functionality they need.	Completed in 2014
	Elections District Finder *King County Elections Office*	This custom application is a location-based map service that identifies voting districts by entering an address. The user invokes a location search using the map service, which then finds different districts on address entry, and provides results on the page with district names. The map also zooms in to the location with a marker so users can verify the location along with multiple district boundaries and names in display. The map service is part of new iMap v.2.0 replacement series.	Completed 2012 and updated in 2015
	Service Provider Lookup *King County Development Disabilities Division*	The Early Intervention Providers (EIP) application provides staff and clients of King County's Developmental Disabilities Division to determine the early-intervention provider agencies that served specific areas of the county. Users of the site, such as parents looking for help for their child, are able to enter their address into the application, which is then geocoded and queried against the service provider database. Users are provided with the names of providers serving the area, with phone number, contact name, web site link, address and email to the agencies. See: http://www5.kingcounty.gov/eiproviders/.	Completed 2014
	Lidar Swipe Viewer *King County*	Lidar Swipe Viewer is a public web-based application that gives users the ability to directly compare aerial photography of King County and southwest Snohomish County to a lidar-derived shaded-relief representation of the ground surface for the same area. Users navigate to an area of interest and simply 'swipe' a bar or spyglass in the viewer across the screen to alternately see the aerial photography and the shaded-relief image for that selected area. Viewer navigation is accomplished by familiar pan and zoom, or by address or landmark search. King County GIS Center staff generated a digital ground model from its lidar data. The shaded-relief ground image was generated by mathematically throwing an artificial light upon the 3D bare-earth model from the upper left corner of the image. Lidar Swipe Viewer is a simple but powerful tool that helps users see and understand ground-surface morphology. See: http://www.kingcounty.gov/operations/GIS/Maps/LidarViewer.aspx.	Launched June 2014
	Community Climate Change Preparedness Response *U.S. Forest Service*	This web-enabled GIS application provides information and context about land characteristics related to climate change. A forest health assessment is used to customize and prioritize landowner recommended actions. It includes a web-enabled GIS application that allows homeowner/landowners to pull up an online view of their parcel, and learn about the characteristics of sites in King County has been developed and tested. The application allows users to learn about on the ground characteristics including carbon sequestered on site, development pressure, proximity to migration corridors and protected lands, and water resources. See: http://gismaps.kingcounty.gov/ForestryCPR/.	Completed 2013
Database Development	**SeaTac Geodatabase Design and Updates** *City of SeaTac*	The King County GIS Center designed and created an Esri based personal geodatabase schema for the City of SeaTac GIS to house extracts and periodic updates from the County Assessor's Geodatabase. The work included design of an update process to allow the City of SeaTac to incorporate both spatial and tabular (entity and attribute) updates from the Assessments Geodatabase. Related implementation support work for SeaTac is ongoing.	Ongoing
	Natural Resources Inventory Monitoring Database *King Conservation District*	This project developed a database to support the Conservation District's future GIS trend analysis and mapping needs. This project collected, compiled, and assessed external GIS data pertaining to four natural resource categories, as well as general geographic and political data. Types of data included habitat extent and quality in aquatic, riparian and upland areas; aquatic, wetland and terrestrial species diversity and abundance; physical environmental conditions – water, air, soil; and human uses – working resource lands with harvest levels of protein, produce and flowers and fiber. The source data was analyzed for suitability, then combined into common projection, scale, and file format, suitable for use in an integrated GIS environment	Completed 2007

	Project Name: *Client*	Project Description	Project Status
Database Development	**INET Data & Application** *King County I-Net*	I-Net is a state-of-the-art fiber optic network service provided by King County for public facilities in King County. I-Net requested our help to find a better way to keep track of the entire fiber-optic infrastructure that it owns and manages. Beginning in 2011, the King County GIS Center developed and implemented an information management system that allows them to maintain an accurate and up-to-date representation of their infrastructure and clients, and to produce reports and maps of their system. We developed a data model, data storage repository, and a suite of secure web-based tools to help the I-Net team enter and update data, and produce reports and maps. The data schema was developed with the regional Community Connectivity Consortium and adapted to meet I-Net's specific needs. With schema and web tools in place, KCGIS trained I-Net staff to do data conversion, entry and maintenance using the new tools. Training also covered data manipulation and improvement, and GIS-based queries and reports. We also helped demo the GIS web-tools and data for key decision makers to make them aware of these powerful resources. The KCGIS Center continues to support I-Net as they grow their system and engage with more clients to provide improved data infrastructure to our region.	Launched in 2013 with ongoing refinement and support.
GIS Needs Assessment	**Ellensburg CAD to GIS Conversion Plan:** *City of Ellensburg*	Conducted several interviews with key staff, reviewed documentation, and produced a detailed CAD data conversion plan for the City of Ellensburg. Plan included several options for data import and coordination, software considerations and advice, and general labor and cost estimates.	Completed 2008.
	City of Snohomish GIS Needs Assessment *City of Snohomish*	The King County GIS Center conducted a GIS Needs Assessment and Implementation Plan for the City of Snohomish. The work included on-site staff interviews and investigation of the City's GIS-related resources and business needs. After an alternatives analysis was completed, a GIS Needs Assessment report was drafted, passed through internal QA/peer review, and submitted to the client. The work was completed in six weeks.	Completed 2007
	GIS Needs Assessment & Development Plan: *Jefferson County*	KCGIS Center developed a GIS Needs Assessment and Development Plan to help Jefferson County implement GIS all County departments and agencies. We conducted field interviews to document existing GIS functionality. Our report showed where limited capacity, poor access, and inadequate coordination across and within departments was hindering business processes. King County GIS made recommendations and laid out options for how to proceed toward a successful implementation of GIS technology on a county-wide basis.	Completed 2014
Mapping and GIS Analysis	**Metro Bus System Maps** *King County Metro*	KCGISC Client Services worked with King County Metro Transit Marketing & Service Information and Service Development staff to develop a new set of Metro system maps from the ground up. Previous Metro system maps, although based on GIS information, were primarily graphic products, and they simply identified bus routes and their locations. The new, completely redesigned system maps, which are a true hybrid of GIS and graphic arts production, emphasize various rider-focused categories of service, especially service frequency. The King County GIS Center maintains the maps, which are updated three times per year—efficiently thanks to their GIS and graphics framework. They are formatted for web display and download, as well as for print output, mainly for field display as poster-size maps in scores of kiosks at transit locations throughout Metro's service area. The new master system map is also the ongoing source for a variety of map product spin-offs.	Completed 2013, with Tri-annual updates
	Regional Transit Map Book: *Sound Transit*	This project developed a 28-page collection of regional and local transit maps, service information, and provider contacts. The booklet features include a region-wide map that delineates the three-county Sound Transit District and a separate area map for each of the five Sound Transit fare zones. The area maps depict all Sound Transit routes and the connecting local bus routes. Several large-scale maps show even more detail for key urban transit locales. This project included printing, binding, and a 100,000 copy press run.	Completed 2006 Revised & reprinted in 2008, 2010 & 2014

	Project Name: *Client*	Project Description	Project Status
Mapping and GIS Analysis	**Community Transit Map Book**: *Community Transit*	Developed over 60 bus route maps for two route booklets (one regional and one local) covering the entire Community Transit system. Managed data collection and creation, style guide, Illustrator file creation, inset maps and text details. Post-production documentation and mentoring of Community Transit staff was included.	Completed March 2008. Client continues to use system
	Tahoma School District "Stormwater Neighbor-hood Atlas" and Custom GIS Training *Sustainability Ambassadors*	This atlas is a sustainability-themed publication that comprises multiple regional, local, and neighborhood-level stormwater indicator maps that focus on the Tahoma School District in suburban King County. In addition to cartographic and publication design and production, KCGIS Center trainers developed and delivered a custom GIS workshop for school district educators. http://www.sustainabilityambassadors.org/stormwater-atlas	Workshop conducted August 2013; atlas published October 2013.
	Fire Station Location Analysis *King County Fire District 38*	This project is typical of GIS analysis for local fire, search and rescue, and emergency medical agencies. For Fire District 38 the KCGIS Center analyzed the response times/service areas from two fire station sites in 5, 6, and 9 minute travel time increments. The project included identifying overlap areas between the two sites. The analysis was accompanied by large scale detailed maps.	2008
	Custom Suburban City Maps *Cities of Carnation, Snoqualmie, and Kenmore*	KCGIS Center Client Services developed custom maps, employing publication-quality cartographic design techniques that identify and showcase the distinctive geographic characteristics, unique amenities, and special points of interest throughout each of these three King County cities. In each case, a map of the full citywide extent is supplemented with one or more detail map views of special areas of interest, such a city's downtown core.	Carnation 2010 Snoqualmie 2013, revised 2014 & 2015. Kenmore 2015.
	Library Site Study Maps *King County Library System*	This annual project develops maps to support library branch demographic analysis and planning. For each selected library site, one map shows an aerial image with census tracts, schools, and the library location. A second map depicts street and location detail. Each map is also generated as a PDF image for final delivery.	Annually since 2001
3D Animation Mapping	**Our Duwamish 3D Animation** *KC WTD*	3D animation showing the services King County provides in the Duwamish Water Basin. Animation is based on the color and style of a map produced by KCWTD GIS. King County services shown include: Water Treatment, River Site cleanup\restoration, Bus Transportation\Boeing Airport, and Health Services. www.youtube.com/watch?v=TeVsZ0nda68	2013
	Willowmoor Floodplain Restoration 3D Animation *KC DNR*	Animation of Lake Sammamish, it's streams and the outlet to the Sammamish River at Marymoor Park where King County is trying to mitigate lake flooding and fish habitat. King County DNRP produced a video for a town meeting with citizens who were concerned about flooding Lake Sammamish The GIS Center produced the flyover portion of the video using GIS data\software and 3D software for the animation. www.youtube.com/watch?v=iTHQsg3F6bc	2015
Matrixed Staff Services	**Solid Waste Matrixed GIS Staffing:** *KC SWD*	This project provides one (1.00 FTE) GIS staff for a variety of Solid Waste Division GIS projects. Assignments include work on a "What Do I Do With….?" public application to promote household and business reuse and recycling, disaster debris planning support, and ad-hoc mapping for the division's managers, staff, and programs.	Since 2002
	Parks Division Matrixed GIS Staffing *KC Parks*	This project provides one (1.00 FTE) GIS staff for a variety of Parks GIS projects. Assignments include development and maintenance of the ParkFinder application and development and maintenance of parks and trails facilities databases. The dedicated Parks Division staff members are also supplemented with GIS desktop and system administration support provided on an on-call basis via KCGIS Center Client Services.	Since 2002
	Matrixed GIS Staffing Customers *WLRD* *WTD* *Transit* *Roads* *KCA* *DOE* *KCIA* *DPER* *OSPB*	Since 2002, the KCGIS Center has provided continuous matrixed GIS staffing services to other county departments and divisions. These include Water & Land Resources Division (3-5 FTEs), Wastewater Treatment Division (3-5 FTEs), and Roads Division. Past matrixed GIS staffing services customers include Transit Division, King County Assessor, and Elections Department. Elections Department matrixed GIS staff after the 2010 Census, to assist in remapping the many elections district boundaries that needed to change because of shifting populations revealed by the census. More recent and continuing matrixed GIS staffing customers include King County International Airport, Office of Strategy, Policy & Budget, and Department of Permitting and Environmental Regulation (DPER). By using matrixed KCGIS staff, DPER was able to eliminate its own GIS unit, reducing costs while maintaining all the GIS capability required for its business needs.	Since 2002

	Project Name: *Client*	Project Description	Project Status
GIS Training Services	**On-site GIS Software Training:** *Cities of Redmond & Bellingham, Snohomish County, Seattle Schools, WADFW*	In addition to classes offered in our state-of-the-art Seattle GIS training lab, the KCGIS Center provided Esri-certified instructors to teach GIS desktop courses in City of Bellingham, Seattle Public Schools, City of Redmond, and Snohomish County offices. Bellingham, Redmond, Seattle Schools, and Snohomish County each saved over 50% of the cost for their staff who attended the courses, compared to the cost for Esri provided training in Seattle or Olympia. They also saved travel and lodging costs by holding the training on-site. Most recently, KCGIS staff taught custom ArcGIS-based training for the Washington Department of Fish & Wildlife in their regional field office.	2004, 2005, 2006, 2007, 2008, 2009, 2013
	Other On-site Training: *URISA Certified Training*	Four KCGIS staff members are URISA-certified instructors. In addition to providing URISA Certified training workshops in our Seattle facilities, KCGIS instructors have taught URISA workshops across the U.S., including California, Alaska, West Virginia, Idaho, Illinois, Texas, and elsewhere in Washington State	Since 2008 ongoing
GIS Services Express	**GIS Services Express for WMI** *Waste Management Inc.*	This project delivered a wide variety of GIS services to meet Waste Management business needs. A needs evaluation was performed and a work plan developed, including data, GIS data query and display, mapping, and projects. WMI staff trained on KCGIS data warehouse layers and directory structure. Activity included acquiring data from Kitsap, Snohomish, and Skagit Counties and integrating it into a format usable for WMI applications. Work also included development of templates for map production and output to various digital forms.	Completed 2007
	GIS Services Express for SPWSD *Sammamish Plateau W&SD*	The King County GIS Center provided GIS consulting and implementation support for the Sammamish Plateau Water and Sewer District (SPWSD). Work included database consulting, utility base map update and integration, and utility water and sewer line data maintenance.	Completed 2008
	Other GIS Services Express Clients	Other past and current GIS Services Express clients include: • Seattle Public School District • Cities of Newcastle, Sammamish, and Covington • Manufacturing Industrial Council of Seattle/Environmental Coalition of South Seattle • Puget Sound Clean Air Agency	Various Past and Ongoing Clients

Additional information about these and other completed projects is available on request, including client contact information, cost of completed work, staff assigned, etc.

6: RATES

King County GIS Center client services are provided at hourly billing rates and matrixed staffing services are provided at monthly rates calculated to recover all appropriate allocated costs. Regional enterprise operations services are provide at a fee based on proportional services usage. Classroom GIS training is provided on a per seat basis. For more information about King County GIS Center services and rates, contact:

> **Greg Babinski, Finance & Marketing Manager**
> **King County GIS Center**
> **201 South Jackson Street, Suite 706**
> **MS: KSC-IT-0706**
> **Seattle, WA 98104**
> **Voice: 206-477-4402   Email: greg.babinski@kingcounty.gov**

gb: marketing:kcgis-soq:soqmaster.doc   May 1, 2015

KING COUNTY GIS CENTER
Annual Report

2014

MISSION

The King County GIS Center (KCGIS Center) delivers efficient, high-quality GIS technology solutions to King County agencies, the public, and our regional partners, in order to meet the needs of King County government and the communities we serve. The core value of the KCGIS Center is to provide services that are accurate, consistent, accessible, affordable, and comprehensive.

WHO WE ARE—WHAT WE DO

The King County GIS Center provides services that integrate hardware, software, and data for the capture, management, analysis, and display of geographically-referenced information. The technology we offer enables users to view, manipulate, interpret, and visualize data to reveal spatial relationships, patterns, and trends. The GIS outputs we produce come in the form of maps, charts, reports, and interactive applications. Our GIS tools and functionality are embedded in many of the County's business systems where location-based analysis is a requirement.

Our staff of experienced, highly-skilled GIS professionals is available to county agencies and external customers for GIS consulting and project management, as well as for all forms of GIS technical support, including database design, data development and maintenance, map creation, geospatial analysis and reporting, and GIS application development for the desktop, web, and mobile devices. We also provide publication-quality cartographic services, as well as certified and custom GIS training at our training facility in Seattle and at client sites.

King County GIS Center
201 South Jackson Street
Suite 706
Seattle, WA 98104

www.kingcounty.gov/gis

King County

These GIS products and services provide essential support for the business and management needs of King County departments, local and regional agencies, citizens, and private firms throughout the Puget Sound region. The KCGIS Center creates solutions to meet client requirements through three lines of business.

Enterprise Operations provides centralized technical, administrative, and management coordination for the County's GIS programs to support GIS professionals and end users across all King County agencies.

Client Services offers a full spectrum of GIS consulting, project, technical, and training services to King County agencies and external customers on an on-demand, cost-reimbursable basis.

Matrix Staff Services supports client agencies with a team of experienced GIS professionals assigned to work directly with agency personnel in order to develop in-depth knowledge and specialized skills to support the unique business needs of agency-specific work programs.

2014 ACCOMPLISHMENTS

ENTERPRISE OPERATIONS

Regional Imagery Project Management and Interagency Collaboration

In 2014 the KCGIS Center once again provided leadership and coordination in laying the groundwork for the second installment of a five-county regional aerial imagery project, following the highly successful initial phase of this project during 2012. That phase of the project involved 52 partner agencies and jurisdictions. In 2015 the KCGIS Center will manage an effort that will include nearly 100 participants,

This broad base of participation dramatically reduces participant costs for high-quality, high-resolution aerial imagery, and enables new imagery to be collected and made available on a more frequent basis than would otherwise be possible. In addition to overall project management, we provide financial coordination to this ongoing project, as well as management and technical support.

The KCGIS Center is also working with the Office of the King County Executive and major stakeholders, including the Puget Sound Lidar Consortium and the City of Seattle, to advance a similar type of consortium-based project to acquire lidar elevation data for King County. This effort is only in its initial stages, but we expect that potential cost savings of 50–70% will encourage involvement by a significant community of partner organizations who need accurate elevation data and supplemental products for hazard mapping and other uses.

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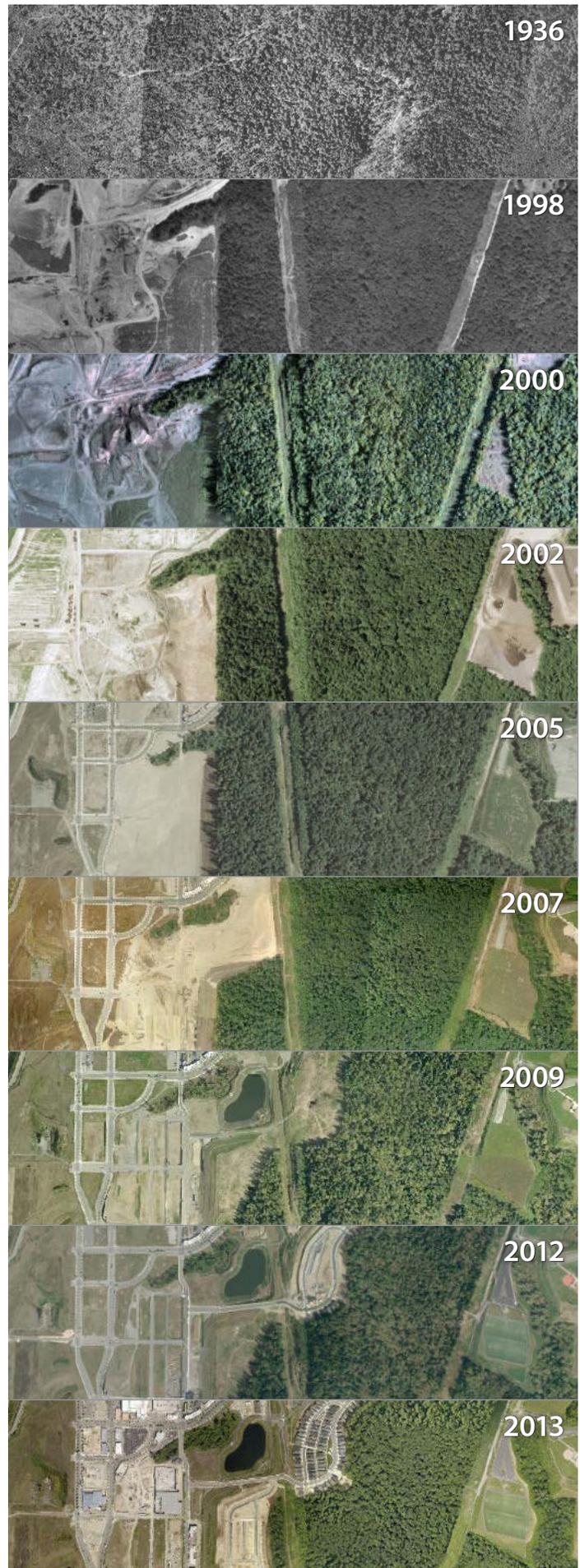
Internet Mapping Services and Applications

In May of 2014 the KCGIS Center and King County Road Services launched a new version of the My Commute on-line application and its companion application, Road Alerts Editor. The new system utilizes a linear referencing system to present King County travel alerts as a linear event layer on the roads network, rather than a simple line feature class in the geodatabase. These updates ended our reliance on the application framework called WebADF, the last remaining dependency on the ArcGIS for Server 10.0 system which had been superseded by ArcGIS for Server 10.1 in late 2013. This cleared the way for migration to 10.1. The next upgrade for the ArcGIS for Server system is planned for the summer of 2015, and will migrate the system to ArcGIS for Server 10.3.

Efforts to fully retire the legacy web-mapping system, ArcIMS, gained momentum in the latter half of 2014 with the selection of Esri's Web AppBuilder for ArcGIS as the application framework for a new version of iMap to be built on ArcGIS for Server technology. This new version of iMap will replace the original ArcIMS version of iMap in early 2015.

Spatial Data Warehouse and Enterprise Data Coordination

Through 2014 our enterprise Spatial Data Warehouse (SDW) continued to grow, with many new data layers added to expand the County's ability to meet a wide range of business requirements. The SDW now hosts more than 1,300 GIS data layers and tables, which are maintained by the KCGIS Center and 16 contributing county agencies.

Large portions of the SDW were overhauled during the year, including the area supporting imagery and elevation data, to take advantage of new data storage and delivery technology. Efforts continued to improve the metadata for enterprise data layers, providing key information about the data, how they were created, and how they should be used. This has become increasingly important, as most King County GIS enterprise data layers are now available for free download from our GIS Data Portal, an online service which has proven very popular with other jurisdictions and agencies and with the public.

## Regional Spatial Data Coordination—Regional Spatial Data Development

During 2014 the KCGIS Center continued its long-established program of acquiring GIS data through data-sharing arrangements with partner organizations throughout King County and the region. New and updated data layers covering a broad range of themes were acquired from numerous cities and other local agencies, neighboring counties, and state, regional, and federal agencies. All of these data layers are documented and managed in the SDW to ensure

that county staff have current and comprehensive spatial data available at all times for their programs and projects.

During 2014 a process was initiated to systematically identify, review, and remove outdated externally sourced data to help maintain and ensure the quality, currency, and value of this key data resource.

Substantial progress was made during 2014 on a major initiative to develop countywide GIS data layers for zoning and land-use designations. These are being created by integrating zoning and land-use data for all of the 39 incorporated cities in King County with the equivalent data for the unincorporated areas of the county. The resulting data layers will provide detailed local zoning and land-use data in a continuous, uninterrupted format for all county staff whose work involves project areas covering multiple jurisdictions. The initial version of the countywide zoning data layer, which will retain all of the detail and specificity of each jurisdiction's zoning classifications, is expected to be completed during the first quarter of 2015. A simplified version of the zoning data layer will also be developed during 2015 for use in cases where a more general perspective on multi-jurisdictional zoning is appropriate for mapping and analysis.

Work will also begin during the first quarter of 2015 on the creation of countywide land-use designation data layers. This will follow the same process as the development of the countywide zoning data and will generate similar detailed and simplified data products. Work on the initial versions of these data layers is expected to be complete during the second half of the year. Once the countywide zoning and land-use designation data layers are complete, they will be placed on a regular cycle of ongoing maintenance, using updates from the cities to ensure that their data remain current. The simplified versions of each regional data layer will also be made available for free download from the KCGIS Data Portal.

KCGIS DATA PORTAL

www.kingcounty.gov/gis/data
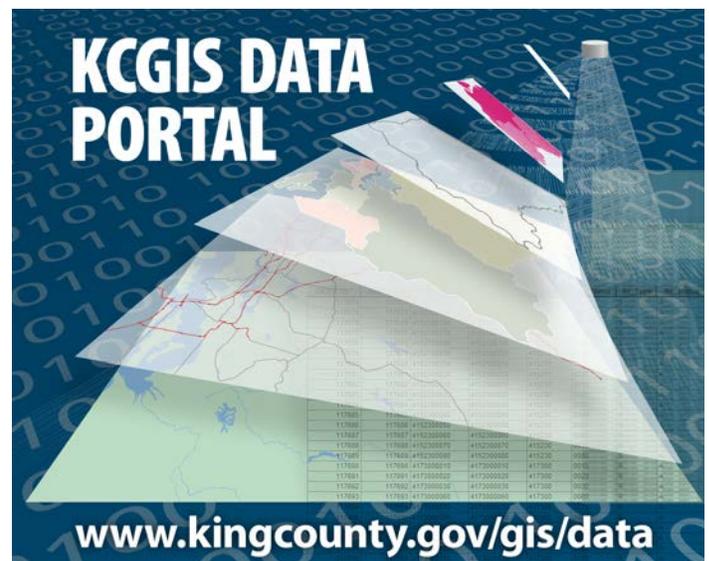
CLIENT SERVICES

During 2014, KCGIS Center Client Services staff completed more than 120 projects of all types for 60 different customers, including 33 King County agencies, 11 other jurisdictions and government agencies, and 16 private firms and individuals.

Key Client Services projects completed during 2014

King County Metro Transit

- Transit Viewer interface graphic design and map symbology creation
- Maintenance of the master system map used for transit facility kiosk display, online publishing, and derivative products, such as Metro's Emergency Snow Network map.

King County Department of Community and Human Services (DCHS)

- Housing project maps
- Veterans services analysis
- Mental Illness and Drug Dependency program mapping
- Family homelessness analysis

King County Animal Control

- Address/jurisdiction data verification and updating (ongoing)

City of Covington

- Map design and production
- Data development and maintenance

City of Kenmore

- ArcGIS for Server setup support and operational consulting

City of SeaTac

- Quarterly custom spatial geodatabases

U.S. Forest Service (USFS)

- Two USFS grant-funded projects related to understanding and motivating private forest landowner responses to climate change.

A particularly significant Client Services project during 2014 was the development and deployment of the Early Intervention Providers (EIP) website for the Developmental Disabilities Division of DCHS. This custom system provides a quick, effective means for division staff and the public to determine which early-intervention service provider agencies serve specific areas of King County. Users of the website, such as parents seeking help for a child, can enter their address which is then geocoded and queried against a database of service providers. A list is returned which identifies the providers which serve that address. Users are provided with a contact name, phone number, street address, email address, and website link for each service provider in their area.

During 2014 Client Services also worked as a subcontractor to the King County Office of Emergency Management, enhancing the My Commute web application to enable it to accept travel-alert information from cities in the county. This work was funded by a grant from the U.S. Department of Homeland Security. Outreach to key cities resulted in the creation of travel-alert web-map services from cities with the necessary GIS technical capability. For other cities, a browser-based editing tool was created. The tool was developed to have a responsive interface, which makes it possible to enter travel alerts from small-screen mobile devices as well as desktop computers. Integrating real-time travel-alert information from cities makes My Commute a truly regional resource for citizens as they travel throughout King County.
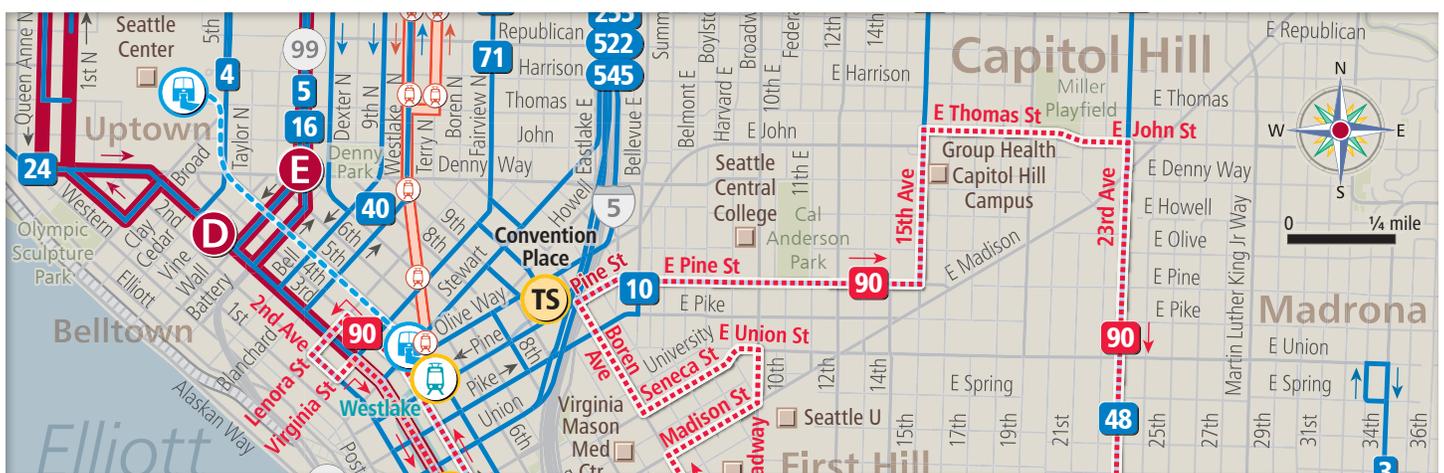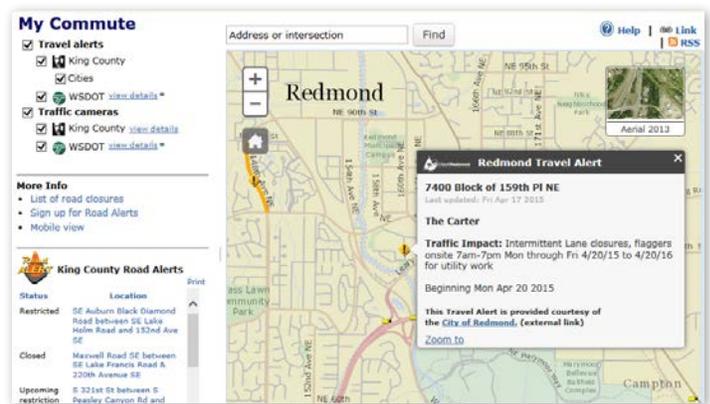
Typical of key projects completed for long-established clients was the design and production of an entirely new parks map for the City of Tukwila Parks and Recreation Department. City staff contacted the KCGIS Center and requested assistance from Client Services in recreating a map previously used for the City's annual parks and recreation programs brochure. The new map was developed based on an older existing Tukwila parks map, with extensive redesign to create a cleaner, more modern, and more legible representation of the Tukwila park system. This project was completed on a tight timeline to meet the City's schedule requirements, but resulted in an attractive, high-quality cartographic product which Tukwila Parks will be able to use flexibly and effectively for years to come.

The KCGIS Center Training Program experienced significant growth and change in 2014. A total of 160 individuals enrolled in our GIS training classes, including students from more than 10 King County agencies and from numerous external agencies and private organizations. A successful transition was completed from the now-discontinued Esri®-Authorized Training Classes, which we had taught for many years, to a new suite of GIS classes produced by TeachMeGIS. The new classes have been well received by our students and by our experienced, highly knowledgeable training staff. The KCGIS Center also debuted a series of ArcGIS Online training courses which are produced in-house and which are proving to be very popular.

King County GIS Center
GIS Training Express™ Program
KCGIS Custom Classes

GIS Academy™

Staying Current with GIS: Beyond the Basics

Document Your Data: Mastering Metadata

Managing Tabular Data Using SQL and GIS Tools

Topics in Advanced GIS Editing

Efficient Geoprocessing Using Model Builder

Effective Analysis: A Tour of GIS Tools

Putting It All Together: A Project Workshop to Visualize Your Data

We help you put GIS to work

King County GIS Center
201 South Jackson Street
Suite 706
Seattle, WA 98104
www.kingcounty.gov/gis

King County

MATRIX STAFF SERVICES

Department of Natural Resources and Parks
Parks and Recreation Division

During 2014 an online, intranet version of the widely used ParkView application was developed and deployed, and became immediately popular with Parks and Recreation managers and staff. Extensive data development and cartographic production facilitated the creation of a detailed map atlas for the entire Eastside Rail Corridor from Renton to Woodinville. Expanded data development and updating supported numerous revisions to the 18 maps in the popular Backcountry Trails map brochure series. Data analysis and map production were also provided for multiple grant applications to secure funding for key Parks programs and facility development. Extensive updates were completed for the Parks bridge and trestle database to support maintenance planning and to produce working field maps for maintenance crews.

Cedar River Trail trestle

Department of Natural Resources and Parks
Solid Waste Division

A new phase of criteria-based research was completed during 2014 to locate suitable candidate sites for disaster debris storage and management. The initial group of sites identified by this process will be evaluated in detail and ranked during the coming year to determine a final set of sites which are best suited for short-to-medium-term storage and management of debris resulting from natural disasters. Extensive spatial analysis and mapping were completed to develop multiple service-area scenarios for use in planning for the potential closure of one or more of the County's transfer stations. Detailed spatial and demographic analysis was conducted to identify potential target areas in the county for recycling education programs. Maps of selected areas were prepared to assist in planning educational outreach events and activities.

Bow Lake Transfer Station

Department of Natural Resources and Parks
Wastewater Treatment Division (WTD)

Several key projects were completed during 2014, including analysis of the vulnerability of WTD's major facilities within the 100-year floodplain. This analysis was part of a larger climate-change vulnerability study and was presented during a symposium at the 2014 Climate Change Conference held at the University of Washington. A GIS analysis of more than 18,000 parcels to determine their feasibility for the King County/Seattle Public Utilities RainWise program was also completed during the year. WTD GIS staff supported the implementation of several major capital projects, including siting the Georgetown Wet Weather Treatment Station, the Lake Hills Trunk Upgrade, and the North Creek Forcemain Upgrade. GIS data development and maintenance concentrated during the year on updating the FIRS GIS database, which is used for asset management.


Lake Hills Trunk Upgrade site

Department of Natural Resources and Parks
Water and Land Resources Division

Accomplishments during 2014 included substantial data development, analysis, and mapping to support ongoing planning and management needs for the Green, Cedar, Snoqualmie, and Tolt rivers. These GIS services contributed significantly to the process of improving the management of river facilities and existing riparian vegetation, and in guiding the evaluation and selection of future habitat improvement projects. For the Stormwater Services section, a data-collection application was designed, developed, and fully implemented, using ArcGIS for Mobile and Collector for ArcGIS. A new database and an interactive mapping application were also developed for Stormwater Services, to support Equity and Social Justice studies. Spatial analysis and mapping activities contributed to successful efforts to secure grant funding for Farmland Preservation and Basin Stewardship acquisitions.

Salmon habitat restoration project, Rainbow Bend, Cedar River

Department of Permitting and Environmental Review (DPER)

A key focus for DPER GIS Matrix Services during the year was migrating systems and services from aging, obsolete servers before their support from Microsoft was discontinued. File services were successfully migrated to a new, fully supported virtual service, while ArcSDE database services were moved to the KCGIS enterprise server. Significant progress was also made towards the complete retirement of the obsolete web-mapping system, ArcIMS. Support for Automation, the King County permitting system, was another priority activity in 2014, and crucial issues involving missing functions and complicated workarounds were successfully resolved. DPER GIS Matrix Services were assisted by KCGIS Center Enterprise Operations staff in georeferencing numerous scanned Critical Area Designation maps, thus making them available to GIS users throughout the County and enabling the collection of all wetland boundaries recorded on the maps.
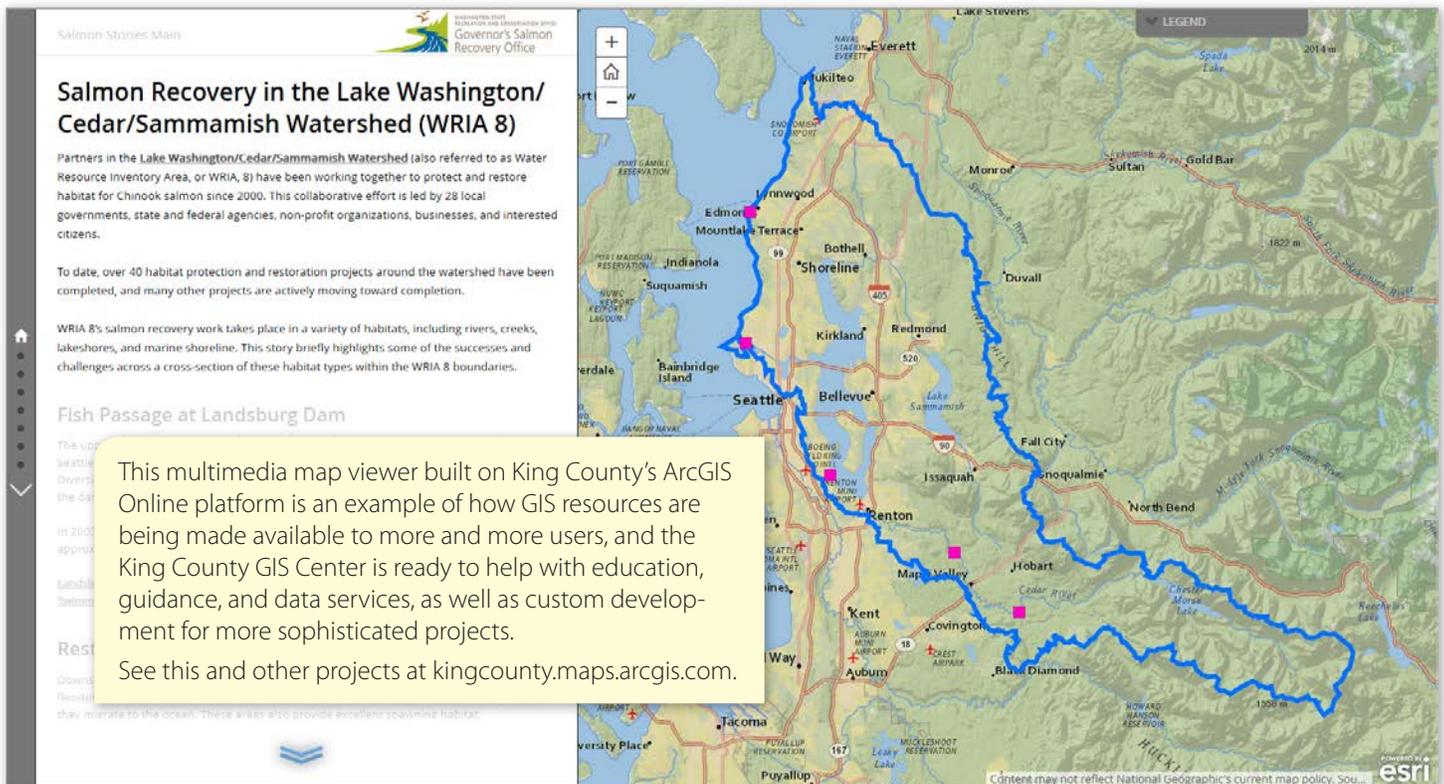

Scanned Critical Area Designation map
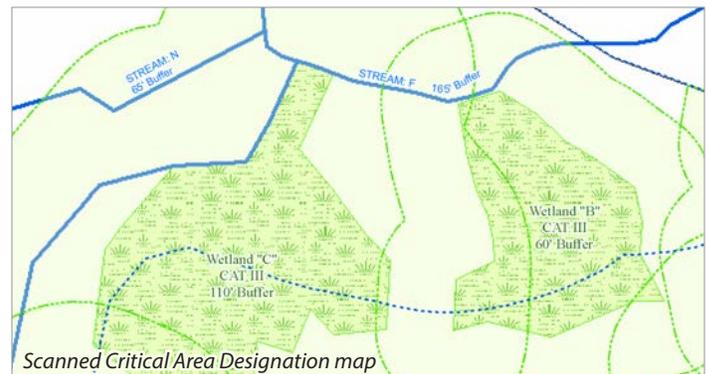
Department of Transportation
King County International Airport/Boeing Field

During 2014 KCGIS Center GIS Matrix Services provided substantial application and database development and support for the Airport Management System used by King County International Airport. This system is designed to give airport personnel the ability to use a suite of applications from a single online site. Each application accesses a unified database, whereas previously, data were maintained in separate applications. The Airport Management System also accesses hard-copy maps and reports, so users can view the most current information in multiple forms. The suite of applications enables users to view, edit, add, and search leases, facilities, and insurance and inspection information through maps and traditional database query interfaces. The majority of the work completed during 2014 was for hangar and tiedown management, insurance tracking for leases and hangars/tiedowns, and building facilities reporting. Database design, conversion of department tabular and spatial data, and a web interface were all successfully completed and delivered to Airport management and staff.

Department of Transportation
Road Services Division

The Roads Viewer and Roads Asset Editor applications, which are used by Road Services staff for facility and asset management, were rewritten by KCGIS Center programmers to provide greater functionality and utility, and to make them compatible with the newest version of the commercial public asset management software, Cityworks. The public-facing interface for the My Commute application was improved, and the associated editing tool that allows Road Services field staff to enter travel alerts was simplified. The KCGIS Center senior cartographer designed a set of custom map symbols to display features in the Roads Viewer. KCGIS Center analysts contributed to two key data development projects for Road Services. Edits were completed to update road centerline data for the cities of Tukwila and Duvall in TNET, the County's authoritative transportation-network data layer, and network topology was built for 330 miles of drainage features (e.g., pipes, culverts, and catch basins) along county-maintained roads.

Roadside ditch during storm event

OUTLOOK

With completion of the 2015 Regional Orthoimagery project, the KCGIS Center will begin planning with our partner agencies for the next imagery acquisition, to occur in 2017 or 2018. We are also exploring the possibility of a new lidar acquisition, to replace existing 14-year-old data. Availability of newer lidar data would significantly improve the GIS surface terrain model for King County and support the critical need for current, accurate landslide hazard mapping.

Once again in 2015 the KCGIS Center will emphasize the adoption of new technology. Tools provided by Esri are putting increasingly sophisticated GIS capabilities directly in the hands of GIS professionals and end users alike. Foremost among these tools are ArcGIS Online and Collector for ArcGIS. We will develop effective new training materials to familiarize our own staff and our GIS training clients with these tools, and the KCGIS Center will take the lead in demonstrating their power, flexibility, and accessibility.

Finally, the KCGIS Center will pilot the use of cloud-based services in 2015. King County's contract with Amazon Web Services provides an opportunity for us to realize significant efficiency gains and cost savings in using the cloud for storage of our vast collection of digital imagery. Use of cloud-based services will facilitate the exploration of open-source GIS tools for enhanced performance and freedom from costly proprietary software. The cloud will also provide a secure replication environment for disaster recovery, filling a critical need in ensuring system security and operational continuity.

This multimedia map viewer built on King County's ArcGIS Online platform is an example of how GIS resources are being made available to more and more users, and the King County GIS Center is ready to help with education, guidance, and data services, as well as custom development for more sophisticated projects.

See this and other projects at kingcounty.maps.arcgis.com.

King County GIS Center Facts and Figures

- Number of Client Services Projects in 2014
  - 121
- Number of discrete Client Services customers in 2014
  - 33 King County agencies
  - 11 other government agencies
  - 16 private customers
- Number of KCGIS Training Program students in 2014
  - 160 from 11 King County agencies
  - 41 from other government agencies
  - 26 private customers
  - 152 from Washington
  - 8 from out of state, including 1 from Saudi Arabia
- KCGIS Center staff have taught classes and workshops in 14 states and 7 countries.
- Internal web-mapping application user sessions in 2013
  - 212,147 (135% increase over 2011)
- Discrete internal web-mapping application users in 2013
  - 4,856
- Discrete internal desktop GIS users in 2013
  - 609 (4% increase over 2012)
- The KCGIS Center 28 staff members have an average of 13.2 years of service on staff
- The KCGIS Center received an Esri Special Achievement in GIS Award in 2013
- A GIS return-on-investment study conducted at the University of Washington demonstrated that the King County Geographic Information System delivered $775 million in net financial benefits over its first 18 years of operation.

King County
GIS CENTER

We help you put GIS to work
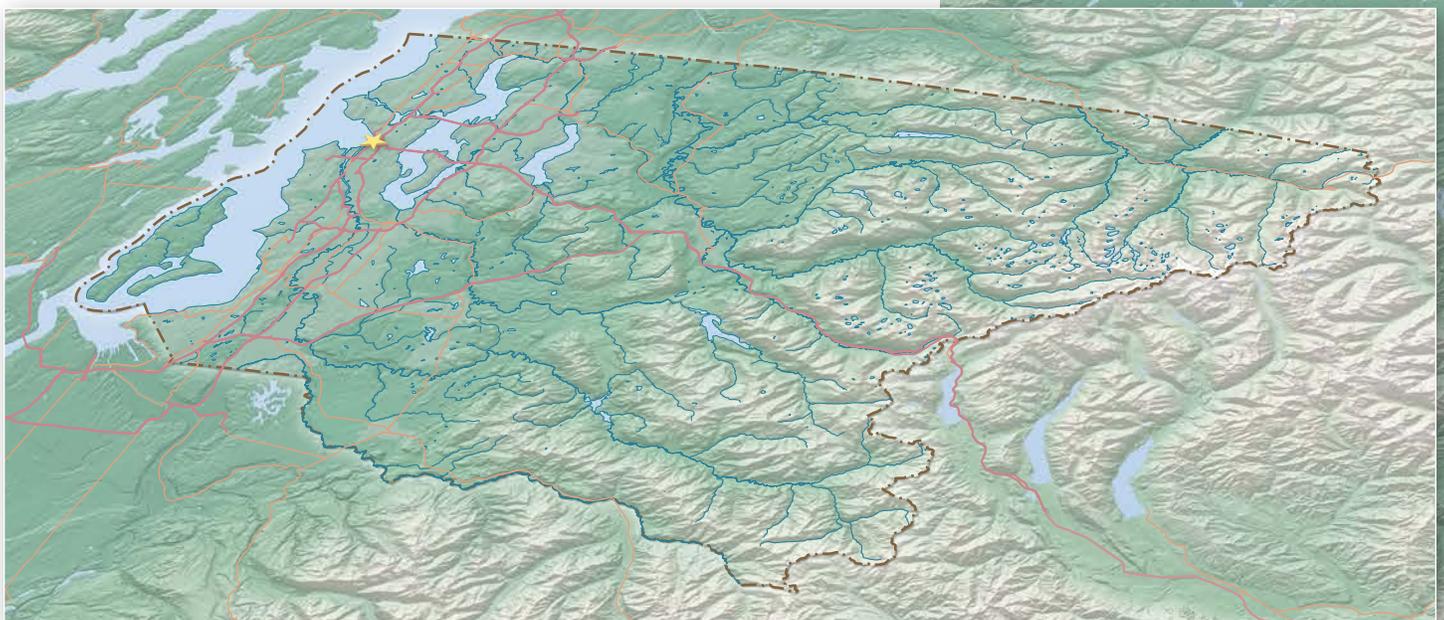
GIS SERVICES EXPRESS™

Flexible On-Call GIS Support!

GIS SERVICES EXPRESS™
Flexible, on-call support to help ensure that GIS succeeds in your town or agency!

A geographic information system (GIS) has proven to be an effective tool for a wide variety of municipal, business, and utility applications. No one knows the needs for GIS in your agency better than you, but finding cost-effective means to meet all of those needs may be a challenge for your organization.

GIS SERVICES EXPRESS from the King County GIS Center is now available to help your agency GIS succeed. The *GIS SERVICES EXPRESS* concept is based on a customized annual work program that you develop for your agency from a wide menu of KCGIS Center client services and products. It's the same program model that has successfully supported distributed GIS activity in King County for many years.

The *GIS SERVICES EXPRESS* objective is to provide regional agencies and businesses, both large and small, the targeted help they need to get the most from their investment in GIS.

What are GIS SERVICES EXPRESS features?
A standard package of products and services:
- Eight (8) hours of free consulting from your *GIS SERVICES EXPRESS* representative.
- One (1) copy of all KCGIS Standard Data Disks published during the year.
- $100 of free KCGIS Center plotting and printing services.
- Access to KCGIS Center training classes at the lower King County employee rate.

A customized 100-hour program from the array of services our 30 GIS professionals can provide:
- Data development—conversion, thematic map layer creation, or ongoing maintenance.
- Map layer library organization and database administration (Oracle, SQL Server, Access).
- Training—ESRI-Authorized GIS training and custom King County GIS classes.
- On-call help desk assistance and one-on-one on-site end-user support.
- ArcGIS implementation—extensions and custom script development.
- Programming in a wide variety of GIS-related languages and platforms.
- Web design, development and maintenance of on-line mapping solutions.
- Mapping—on-call for peak workload/fast turn around, or publication-quality cartography.
- Project support—needs assessment, project management, general consulting.

How does GIS SERVICES EXPRESS work?
- You develop your annual work program with your *GIS SERVICES EXPRESS* representative.
- Your *GIS SERVICES EXPRESS* representative coordinates delivery of your 100 hours of annual service.
- KCGIS Center invoices your agency monthly for actual services provided at our hourly billing rate.
- You receive your eight hours of free consulting.

What are GIS SERVICES EXPRESS benefits?
- Low-cost access to a wide variety of highly skilled and knowledgeable GIS professionals.
- Free services, data, plotting, and low-cost training.
- Customized program to fit the needs of agencies both large and small, GIS savvy and beginners.

Why should you use *GIS SERVICES EXPRESS*?

1. **It allows your own agency's GIS staff to focus on your core business.**

2. **Smaller GIS operations can use GIS Services Express to develop a contingent capability for special projects and non-standard business needs.**

3. **It gives you the ability to manage incremental increases in GIS capability without the commitment of new staff and equipment.**

Frequently Asked Questions

What are the business terms and conditions for *GIS SERVICES EXPRESS*?

Services from *GIS SERVICES EXPRESS* are provided by the King County GIS Center in accordance with our standard business terms and conditions, which are published at: www.kingcounty.gov/operations/GIS/ServicesTerms.aspx.

How do you calculate any KCGIS Center training courses taken by my agency toward my 100-hour annual GIS SERVICES EXPRESS commitment?

The normal King County employee cost for any course is divided by the normal KCGIS Center hourly billing rate to determine the number of hours credited to the 100-hour annual commitment.

### Can I renew my GIS SERVICES EXPRESS agreement for additional years?

Yes!

What if my agency needs more than 100 hours of annual service?

No problem. Agencies that use more than 100 hours of annual service will be invoiced for the additional hours at the normal KCGIS Center hourly billing rate. After 100 hours, agencies can also opt to start a new GIS Services Express annual term to qualify for an additional eight hours of free service and other benefits.

What if my agency doesn't use its 100 hours of annual service?

Agencies that do not use their 100 hours of annual service will be invoiced for the eight (8) hours of free up-front consulting, the cost of the KCGIS Data DVDs provided, and the non-King County employee price for any KCGIS Center training taken.
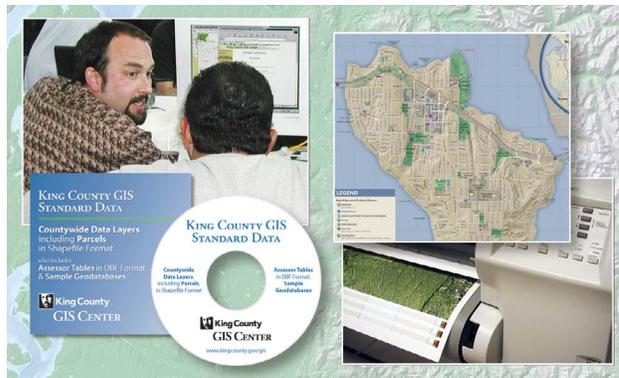
Who Uses *GIS SERVICES EXPRESS*?

Typical customers:

- Waste Management, Inc.
- City of Newcastle
- City of Sammamish
- Seattle Public Schools
- Puget Sound Clean Air Agency
- Sammamish Plateau Water and Sewer District
- MIC/ECOSS (Manufacturing Industrial Council/ Environmental Coalition of South Seattle)

Who should I contact to find out more about *GIS SERVICES EXPRESS*?

Dennis Higgins
dennis.higgins@kingcounty.gov
206-263-4523

Greg Babinski
greg.babinski@kingcounty.gov
206-263-3753

King County
GIS CENTER

www.kingcounty.gov/operations/GIS/ClientServices.aspx

King County GIS Center Location

The King County GIS Center is located on the seventh floor of the *King Street Center* in downtown Seattle's Pioneer Square neighborhood.

King County GIS Center

201 South Jackson Street
Suite 706 (MS KSC-NR-0706)
Seattle, Washington 98104

www.kingcounty.gov/gis

Fax: 206-263-3145

Computer Training Room

Seventh Floor, Room 7289

Take any elevator to the seventh floor. Room 7289 is entered directly from the elevator lobby.

Secondary Training Facility

Seventh Floor, Rooms 7044-7045
Dept. of Natural Resources and Parks
Schoy'em/Sch'es (North/South Wind)
Conference Rooms

From the seventh-floor elevator lobby, enter through the DNRP Director's Office/GIS Center door via keycard or receptionist buzz-in.
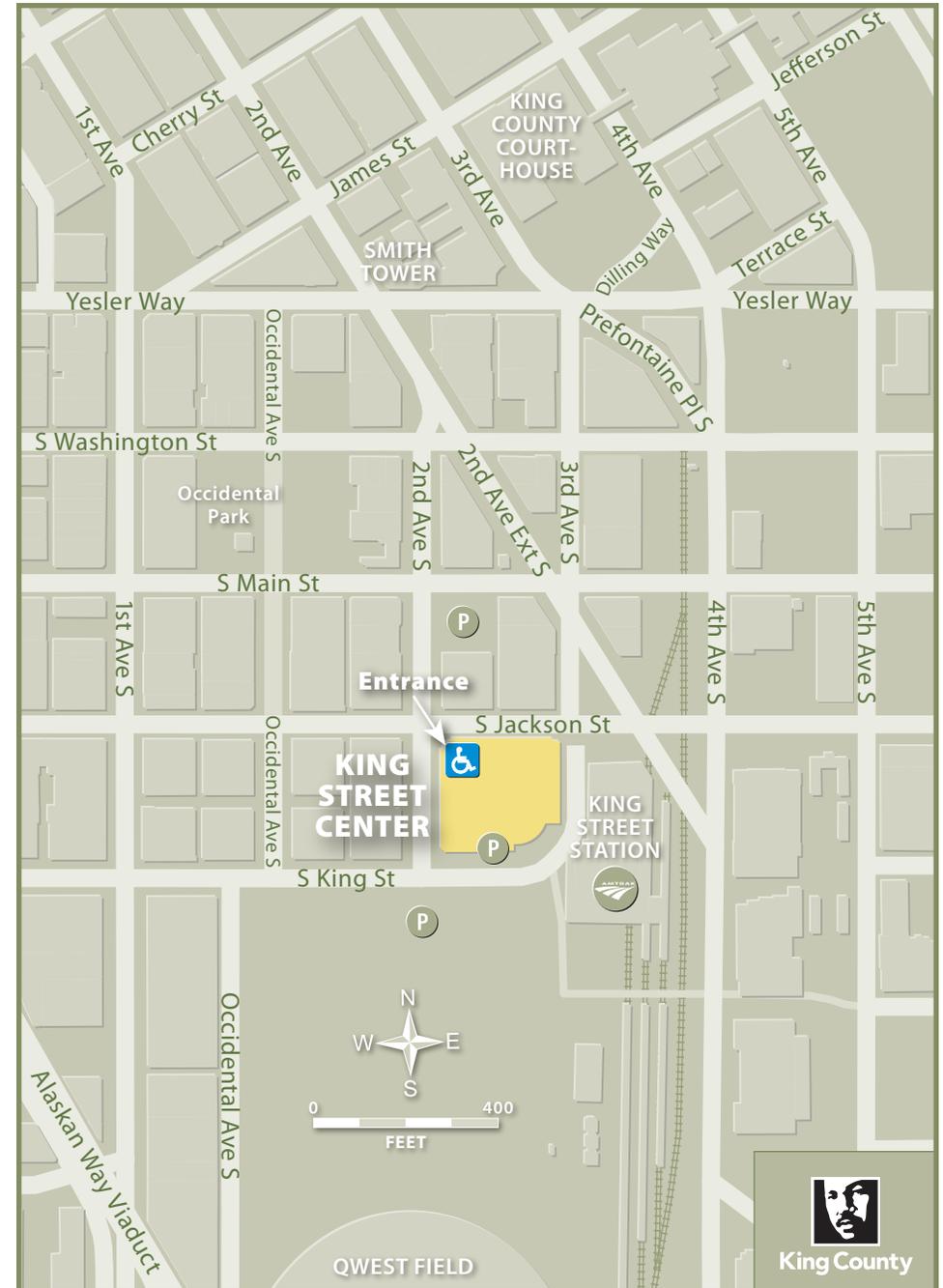
King Street Center Neighborhood, Pioneer Square

King Street Center Driving Directions & Parking Information

King Street Center is next-door to King Street Station, Seattle's Amtrak station, so finding it from the freeway is as easy as following the Amtrak signs.

From Southbound Interstate 5

- Take Exit 165A and merge onto 6th Avenue.
- Move into the rightmost thru lane and proceed to the four-way stop at Yesler Way.
- Continue straight for three blocks downhill along 6th Avenue South to South Jackson Street.
- Turn right onto South Jackson Street.
- Proceed to 2nd Avenue South.

From Westbound Interstate 90

- Take Exit 164B and merge onto I-90 West.
- Proceed on the 4th Avenue South exit ramp and prepare for a left turn.
- At the end of the ramp, turn left onto 4th Avenue South.
- When 4th Avenue South splits, veer to the left onto 2nd Avenue Extension South.
- At the next intersection turn left onto South Jackson Street (your only option).
- Proceed to 2nd Avenue South.

From Northbound Interstate 5

- Follow the Qwest Field/City Center exit.
- Prepare for a left turn at the end of the exit ramp.
- At the end of the ramp, turn left onto 4th Avenue South.
- When 4th Avenue South splits, veer to the left onto 2nd Avenue Extension South.
- At the next intersection turn left onto South Jackson Street (your only option).
- Proceed to 2nd Avenue South.

Return to Freeways: All Outbound Directions

- Drive south on 4th Avenue South.
- Follow the freeway signs onto the entrance ramp just south of South Royal Brougham Way.
- Once on the ramp, look for I-5 North, I-5 South, or I-90 signage.

Parking

- Fee-based public parking is available in the King Street Center garage. The entrance is on the King Street side of the building.
- There are several fee-based surface lots in the King Street Center neighborhood. The largest is the Qwest Field parking lot at 2nd Avenue South and South King Street.
- On-street metered parking is available throughout Pioneer Square. At most metered locations a two-hour limit is in effect Monday through Saturday, from 8am to 6pm. There is no fee outside of these hours. Note other parking restrictions on street signage.
- On Qwest Field or Safeco Field game/event days, be prepared for neighborhood traffic congestion, additional parking restrictions, and special pricing in private parking lots.

Downtown Seattle, Pioneer Square Vicinity

King County
GIS Center

King County
GIS Center