



ATTACHMENT I – General Qualifications
ANNUAL REQUEST FOR QUALIFICATIONS AND EXPERIENCE NO:
ADSP015-00004729

STATE PROCUREMENT OFFICE
Department of Administration
100 North 15th Avenue, Suite 201
Phoenix, Arizona 85007

(If a firm has branch offices, complete for each specific branch office seeking work.)

1. **Annual Request for Qualifications**

| | |
|---|--|
| a. FIRM (OR BRANCH OFFICE) NAME: | Wilson & Company, Inc., Engineers & Architects |
| b. FIRM (OR BRANCH OFFICE) STREET: | 410 N. 44 th Street, Suite 460 |
| c. FIRM (OR BRANCH OFFICE) CITY: | Phoenix |
| d. FIRM (OR BRANCH OFFICE) STATE: | Arizona |
| e. FIRM (OR BRANCH OFFICE) ZIP CODE: | 85008-7605 |
| f. YEAR ESTABLISHED: | 2002 (founded in 1932) |
| (g1). OWNERSHIP - TYPE: | S-Corporation |
| (g2) OWNERSHIP - SMALL BUSINESS STATUS: | N/A |
| h. POINT OF CONTACT NAME AND TITLE: | Dan Marum, Associate Vice President Southwest Transportation Planning Manager |
| i. POINT OF CONTACT TELEPHONE NUMBER: | 602-283-2702 |
| j. POINT OF CONTACT E-MAIL ADDRESS: | Dan.marum@wilsonco.com |
| k. NAME OF FIRM (If block 1a is a branch office): | Wilson & Company, Inc., Engineers & Architects |



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2. EMPLOYEES BY DISCIPLINE

| a. Discipline Title | b. Function: Primary (P) or Secondary (S) | c. No. of Employees - Firm | d. No. of Employees - Branch |
|---------------------------|---|----------------------------|------------------------------|
| Admin | (P) | 74 | 1 |
| Aerial Photographer | (P) | 3 | |
| Architect | (P) | 8 | |
| Cad Technician | (P) | 68 | 2 |
| Civil Engineer | (P) | 123 | 4 |
| Construction Inspector | (P) | 35 | |
| Electrical Engineer | (P) | 7 | |
| Environmental Scientist | (P) | 2 | |
| GIS Specialist | (P) | 2 | |
| Geologist | (P) | 1 | |
| Hydrographic Surveyor | (P) | 0 | |
| Land Surveyor | (P) | 34 | 2 |
| Mechanical Engineer | (P) | 4 | |
| Photogrammetrist | (P) | 8 | |
| Planner: Urban/Regional | (P) | 7 | 3 |
| Remote Sensing Specialist | (P) | 1 | |
| Structural Engineer | (P) | 11 | |
| Transportation Engineer | (P) | 9 | 2 |
| ROW Specialist | (P) | 6 | |
| Railroad Expert | (P) | 7 | |
| Other Employees | (P) | 15 | 1 |
| Total | | 425 | 15 |



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4. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT (Complete one Section 4 for each key person.)

| | | | |
|--|--|---|-----------------------------------|
| a. NAME Daniel F. Marum | b. ROLE IN THIS CONTRACT Project Manager | c. YEARS EXPERIENCE | |
| | | 1. TOTAL 31 | 2. WITH CURRENT FIRM 10 |
| d. FIRM NAME AND LOCATION (City and State) Wilson & Company, Inc., Engineers & Architects 410 N. 44th Street, Suite 460, Phoenix, AZ 85008 | | | |
| e. EDUCATION (DEGREE AND SPECIALIZATION) BS, Business Administration/Urban Geography, University of Arizona, 1981 | | f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) | |
| g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) Institute of Transportation Engineers (ITE) Transportation Planners Council American Planning Association (APA) | | | |

H. RELEVANT PROJECTS

| | | | |
|----|--|---------------------------------------|------------------------------|
| 1) | (1) TITLE AND LOCATION (City and State) Central Phoenix Transportation Framework Study, Phoenix, Arizona | (2) Year Completed 2014 | |
| | | Professional Services 2010-14 | Construction (if applicable) |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Manager for a study to identify potential enhancements to the transportation network serving the core area of the Phoenix metropolitan area. Attention is being given to anticipated "Buildout" conditions to determine future multimodal transportation needs. The study involves definition and evaluation of alternative improvement strategies, including DDI interchanges and HOV ramps. Significant stakeholder outreach has been conducted in the form of focus groups, geographic dialogues, and charrettes that address study area improvement strategies and specific strategies for the I-10/I-17 "Spine" Corridor. | | |
| 2) | (1) TITLE AND LOCATION (City and State) I-10/I-17 Corridor Master Plan, Phoenix, Arizona | (2) Year Completed | |
| | | Professional Services On-going | Construction (if applicable) |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Wilson & Company Project Manager for a study to investigate and identify alternative strategies to provide additional capacity in the I-10/I-17 corridor in central Phoenix. Strategies may include additional general purpose and/or HOV lane capacity, interchange improvements, managed lanes, ITS, transit, and improvements to adjacent arterial roadways. Strategies are being evaluated using the MAG regional travel demand model, with specific improvements to be tested using the TranModeler simulation model. | | |
| 3) | (1) TITLE AND LOCATION (City and State) Arizona-Sonora Border Master Plan | (2) Year Completed 2012 | |
| | | Professional Services 2012 | Construction (if applicable) |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Deputy PM for this comprehensive bi-national Transportation Master Plan. The Master Plan provides prioritization of projects to improve international Land Ports of Entry (LPOE) on the Arizona-Sonora border and the transportation infrastructure serving them as well as a framework for coordinating the planning and delivery of projects. | | |
| 4) | (1) TITLE AND LOCATION (City and State) ADOT On-Call Intermodal Transportation Consultant Services | (2) Year Completed | |
| | | Professional Services On-going | Construction (if applicable) |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Manager and single point-of-contact for management of the overall contract and will oversee a team of experienced team Task Managers for each discipline, along with Lead Service Providers, and Support Personnel. Under this contract, Dan will oversee the provision of the following 10 professional disciplines: transportation data collection and analysis, transportation planning and analysis, transportation improvement programming, rail freight and passenger planning, transit planning, bicycle planning, safe routes to school, air quality, transportation research, and scenic byways. This current contract represents the third consecutive on-call services contract which Dan has managed for ADOT. | | |
| 5) | (1) TITLE AND LOCATION (City and State) Central Arizona Governments Regional Transportation Plan (RTP) | (2) Year Completed | |
| | | Professional Services On-going | Construction (if applicable) |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Project Manager for development of the first RTP for the CAG region, encompassing Pinal and Gila counties. The process involves development of socioeconomic data for the entire region to support a new subregional travel demand model. The model is used to identify future regional transportation network needs and associated improvements. It will also develop elements for transit, aviation and nonmotorized components. | | |



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| | | | |
|--|---|---|----------------------|
| a. NAME Alan S. Ferreira, PE | b. ROLE IN THIS CONTRACT Project Engineer | c. YEARS EXPERIENCE | |
| | | 1. TOTAL | 2. WITH CURRENT FIRM |
| | | 17 | 2 |
| d. FIRM NAME AND LOCATION <i>(City and State)</i> Wilson & Company, Inc., Engineers & Architects 410 N. 44th Street, Suite 460, Phoenix, AZ 85008 | | | |
| e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> | | f. CURRENT PROFESSIONAL REGISTRATION <i>(STATE AND DISCIPLINE)</i> | |
| Additional graduate courses in Transportation Engineering, California State University, 1995-97 Bachelor of Science, Civil Engineering, Arizona State University, 1995 | | Professional Engineer Arizona #41700 Professional Engineer California #61719 | |
| g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Publications, Organizations, Training, Awards, etc.)</i> Member of American Society of Highway Engineers (ASHE), American Council of Engineering Companies (ACEC) American Public Works Association (APWA) Training: Leadership in Engineering Administration Program (LEAP) 2007, ACEC; Road Safety Audits and Road Safety Audits Reviews (NHI Course 380069); FHWA and National Highway Institute; Designing and Implementing Roundabouts, Barry Crown, ADOT Technical Workshop | | | |

H. RELEVANT PROJECTS

| | | | |
|----|---|-----------------------|-------------------------------------|
| | (1) TITLE AND LOCATION <i>(City and State)</i> | (2) Year Completed | |
| | Updating the Arizona Strategic Highway Safety Plan, Arizona | On-going | |
| | | Professional Services | Construction <i>(if applicable)</i> |
| | | 2013 | |
| 1) | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager currently responsible for assisting the Arizona Department of Transportation (ADOT) in developing an update to the Arizona Strategic Highway Safety Plan (SHSP). The SHSP is a data-driven, comprehensive, multidisciplinary plan that integrates the "4 E's" of transportation safety: Engineering, Education, Enforcement and Emergency Services. It establishes statewide performance measures, goals and objectives; identifies emphasis areas; and provides strategies to improve safety on all public roadways. This statewide safety strategy document will guide Arizona's highway safety planning and programming processes and facilitate implementation of recommended safety strategies and countermeasures. The project is a collaborative approach with the State's many safety partners. | | |
| | (1) TITLE AND LOCATION <i>(City and State)</i> | (2) Year Completed | |
| | Central Phoenix Transportation Framework Study, Phoenix, Arizona | On-going | |
| | | Professional Services | Construction <i>(if applicable)</i> |
| | | On-going | |
| 2) | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Engineer for an ongoing study that complements the Statewide Framework Studies being conducted with the Building a Quality Arizona (BQAZ) process. This study identifies potential multi-modal enhancements to the transportation network required to serve anticipated "Buildout" conditions in Downtown core areas and urban activity centers of Phoenix, Glendale, Peoria, Scottsdale, Tempe, and Chandler. | | |
| | (1) TITLE AND LOCATION <i>(City and State)</i> | (2) Year Completed | |
| | McCartney Road / Eleven Mile Corner Road Corridor Studies, City of Coolidge, AZ (Arizona Department of Transportation (ADOT) Multimodal Transportation On-call, Arizona statewide) | 2013 | |
| | | Professional Services | Construction <i>(if applicable)</i> |
| | | On-going | |
| 3) | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Engineer responsible for the design elements and utility coordination for this ADOT PARA study that identifies two corridor alignments and right-of-way needs. The McCartney Road corridor is approximately 25 miles in length, extending from I-10 to SR-79. The Eleven Mile Corner Road corridor extends between SR-287 in the north to McCartney Road in the south. The project also conducts the Planning and Environmental Linkages processes to develop environment documentation for future design efforts in support of federal approvals. | | |
| | (1) TITLE AND LOCATION <i>(City and State)</i> | (2) Year Completed | |
| | Germann Road Corridor Improvements Study, Queen Creek, Arizona (Arizona Department of Transportation (ADOT) Multimodal Transportation On-call, Arizona statewide) | 2013 | |
| | | Professional Services | Construction <i>(if applicable)</i> |
| | | 2013 | |
| 4) | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Engineer responsible for design elements of this ADOT PARA study that establishes facility type, number of lanes, right-of-way needs, and general alignment required to accommodate projected traffic growth and enhance safety on Germann Road. In addition, this corridor feasibility study evaluated alternatives associated with a grade-separation of Germann Road and the Union Pacific Rail Road. | | |
| | (1) TITLE AND LOCATION <i>(City and State)</i> | (2) Year Completed | |
| | Trell Road and State Route 287 Intersection ROW Study, City of Casa Grande, Arizona (City of Casa Grande On-call Civil Engineering Services) | 2013 | |
| | | Professional Services | Construction <i>(if applicable)</i> |
| | | 2013 | |
| 5) | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Engineer responsible for the study that developed an intersection concept design to determine the right-of-way needs for the addition of exclusive right turn lanes and second left turn lanes at the intersection of Trell Road and State Route 287/Florence Boulevard in the City of Casa Grande, Arizona. | | |



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. RESUMES OF KEY PERSONNEL PROPOSED FOR THIS CONTRACT (Complete one Section 4 for each key person.)

| | | | |
|---|--|---|-----------------------------------|
| a. NAME Amy M. Moran | b. ROLE IN THIS CONTRACT Transportation Engineer | c. YEARS EXPERIENCE | |
| | | 1. TOTAL 21 | 2. WITH CURRENT FIRM 10 |
| d. FIRM NAME AND LOCATION (City and State) Wilson & Company, Inc., Engineers & Architects 410 N. 44th Street, Suite 460, Phoenix, AZ 85008 | | | |
| e. EDUCATION (DEGREE AND SPECIALIZATION) BS, Civil Engineering, Cornell University, 1993 | | f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) | |
| g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) Institute of Transportation Engineers | | | |

H. RELEVANT PROJECTS

| | | | |
|----|---|---|---|
| 1) | (1) TITLE AND LOCATION (City and State) Arizona Department of Transportation (ADOT) Multimodal Transportation On-call, Arizona statewide | (2) Year Completed | |
| | | Professional Services Ongoing | Construction (if applicable) |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Deputy PM for multiple multimodal transportation planning studies, including a Transportation Master Plan for the City of Yuma and a Transportation Needs Study for the Yuma Foothills and Mesa del Sol areas – both focusing on roadway, bicycle, and pedestrian needs for “buidout” of the study area, with an associated implementation program; and a corridor feasibility study for the Germann Road corridor in Queen Creek, AZ, which identified the future ROW footprint for the six-lane arterial and associated grade-separation of the UPRR. | | |
| 2) | (1) TITLE AND LOCATION (City and State) Maricopa County Department of Transportation (MCDOT) Transportation Planning On-Call, Maricopa County, AZ | (2) Year Completed | |
| | | Professional Services 2010-2014 | Construction (if applicable) 2014 |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Deputy PM for multiple transportation planning studies, including development of an updated project ranking system for prioritization of TIP projects; a policy study for Neighborhood Electric Vehicles; a study to identify project priorities in association with development of the TIP, and transportation master plan assistance for the Town of Buckeye, AZ. | | |
| 3) | (1) TITLE AND LOCATION (City and State) Greenway Parkway Corridor Feasibility Study | (2) Year Completed | |
| | | Professional Services 2013-2014 | Construction (if applicable) 2014 |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Deputy PM for the feasibility study to identify the ultimate ROW footprint for a future Arizona Parkway facility. Analysis included evaluation of various concept and candidate alternatives and a recommendation of a preferred alignment based on development, environmental, drainage, and utility constraints. | | |
| 4) | (1) TITLE AND LOCATION (City and State) Central Arizona Governments Regional Transportation Plan | (2) Year Completed | |
| | | Professional Services 2011-2014 | Construction (if applicable) 2014 |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Deputy PM for this study which identified shor-, mid-, and long-range trnasportaiotn improvement strategies for Pina and Gila counties. Study involved extension coordination with ADOT, CAG, and member agencies in the deveopment of a focused area travel demand model for the CAG region, which was used to test various alternative roadway capacity and connectivty strategies. Planning level cost estimate were prepared for the recommended newtork implementation strategy, and a funding gap analysis was conducted. | | |
| 5) | (1) TITLE AND LOCATION (City and State) City of Phoenix Comprehensive Downtown Transportation Study | (2) Year Completed | |
| | | Professional Services 2013-2014 | Construction (if applicable) 2014 |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE Deputy PM for analysis of various improvement strategies to address short-, mid-, and long-term transportation needs in the central phoenix downtown core. Recommendations were developed to modified roadway cross-sections that included conversion of one-way streets to two-way travel, and strategies to incorporate on-street parking, transit, and enhanced bicycle and pedestrian facilities within available right-of-way. | | |



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| | | | |
|---|--|--|-------------------------------|
| a. NAME Jim K. Townsend, AICP | b. ROLE IN THIS CONTRACT Senior Transportation Project Manager | c. YEARS EXPERIENCE | |
| | | 1. TOTAL 21 | 2. WITH CURRENT FIRM 9 |
| d. FIRM NAME AND LOCATION (City and State) Wilson & Company, Inc., Engineers & Architects 410 N. 44th Street, Suite 460, Phoenix, AZ 85008 | | | |
| e. EDUCATION (DEGREE AND SPECIALIZATION) BS, Urban & Regional Planning, California State Polytechnic University, 1993 | | f. CURRENT PROFESSIONAL REGISTRATION (STATE AND DISCIPLINE) American Institute of Certified Planners | |
| g. OTHER PROFESSIONAL QUALIFICATIONS (Publications, Organizations, Training, Awards, etc.) Organizations: American Planning Association, AZ, OK, MO, KS Chapters Presentations: <ul style="list-style-type: none"> • Presentation – “MPO & COG Guidelines and Procedures Manual” – 2013 Rural Transportation Summit, Prescott, Arizona • Presentation – “A Design-Build Approach for Expediting Procurement, Design and Construction of Transportation Maintenance Programs” – 2012 WASHTO Conference, Denver, Colorado • Presentation – “City of Coolidge Comprehensive Transportation Feasibility Study” – 2012 Arizona Department of Transportation (ADOT) Roads and Streets Conference Publications: Innovative Design-Build Road Maintenance Strategy, A Proven Direction for Kansas City, APWA Reporter, June 2012 Continuing Education: <ul style="list-style-type: none"> • Public Involvement in the Transportation Decision Making Process, NHI • Systematic Development of Informed Consent, IPMP • Advanced ArcInfo GIS, ESRI • Coordinating Transportation & Land Use, NTI • Practical Project Development & Environmental Documentation | | | |

H. RELEVANT PROJECTS

| | | | |
|----|---|---------------------------------------|---|
| 1) | (1) TITLE AND LOCATION (City and State) Arizona Strategic Safety Highway Plan | (2) Year Completed | |
| | | Professional Services On-Going | Construction (if applicable) N/A |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Wilson & Company is assisting the ADOT in developing an update to the SHSP. The SHSP is a data-driven, comprehensive, multidisciplinary plan that integrates the “4 E’s” of transportation safety: Engineering, Education, Enforcement and Emergency Services. It establishes statewide performance measures, goals and objectives; identifies emphasis areas; and provides strategies to improve safety on all public roadways. This statewide safety strategy document will guide Arizona’s highway safety planning and programming processes and facilitate implementation of recommended safety strategies and countermeasures. The goal of the SHSP update is to assure state-of-the-art practices are adopted to achieve a significant reduction in traffic fatalities and serious injuries on all public roads, including non-State-owned public roads and roads on tribal lands. A Safety Launch will be undertaken bringing together stakeholders from across Arizona providing a unique opportunity to examine critical safety issues impacting multimodal transportation while identifying opportunities for improving transportation safety on all public roadways in the state. This will be followed by a Safety Summit to address the identified emphasis areas during the SHSP development process. The intent is to create a plan that is comprehensive and flexible that can be implemented by agencies at all levels of state and local government. | | |
| 2) | (1) TITLE AND LOCATION (City and State) Central Phoenix Transportation Framework Study | (2) Year Completed | |
| | | Professional Services 2014 | Construction (if applicable) N/A |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Jim is the Quality Control/Quality Assurance Task Manager and the Existing Conditions Assessment Task Project Manager for this study aimed at identifying potential multi-modal enhancements to the transportation network required to serve anticipated “Buildout” conditions in Downtown core areas and urban activity centers of Phoenix, Glendale, Peoria, Scottsdale, Tempe, and Chandler. | | |
| 3) | (1) TITLE AND LOCATION (City and State) McCartney Road / Eleven Mile Corner Road Corridor Studies, City of Coolidge, Arizona | (2) Year Completed | |
| | | Professional Services 2013 | Construction (if applicable) N/A |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm As a next step to the recently completed Comprehensive Transportation Feasibility Plan, the City is now conducting two corridor studies on the most pressing facilities: McCartney Road and Eleven Mile Corner Road. The goal of both studies is to identify corridor alignment and right-of-way needs at a planning level and conduct Planning and Environmental Linkages processes to develop environment documentation for future design efforts and in support of federal approvals. | | |
| 4) | (1) TITLE AND LOCATION (City and State) MAG Designing Transit Accessible Communities Arizona | (2) Year Completed | |
| | | Professional Services 2013 | Construction (if applicable) N/A |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Wilson & Company Project Manager to the Maricopa Associations of Governments (MAG) to conduct a study aimed at furnishing MAG member agencies with additional tools and guidelines to promote better accessibility for pedestrians and bicyclists to transit stops and stations. The effort included inventorying and categorizing more than 7,000 transit stops in the MAG region. The resulting product is a set of measures and strategies for local governments to create transit accessible and livable neighborhoods. | | |
| 5) | (1) TITLE AND LOCATION (City and State) Arizona Department of Transportation MPO & COG Procedures & Guidelines Manual | (2) Year Completed | |
| | | Professional Services 2014 | Construction (if applicable) N/A |
| | (3) BRIEF DESCRIPTION (Brief scope, size, cost, etc.) AND SPECIFIC ROLE <input checked="" type="checkbox"/> Check if project performed with current firm Project Manager to develop a collaborative manual that documents and describes administrative processes for COG and MPO functions and interaction / reporting to ADOT. The manual covers responsibilities, programs, programming, schedules, modes and special programs available for project and program development. | | |



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| | | | |
|---|---|--|----------------------------------|
| a. NAME Jothan Samuelson | b. ROLE IN THIS CONTRACT Transportation Analyst | c. YEARS EXPERIENCE | |
| | | 1. TOTAL 6 | 2. WITH CURRENT FIRM 1 |
| d. FIRM NAME AND LOCATION <i>(City and State)</i> Wilson & Company, Inc., Engineers & Architects 410 N. 44th Street, Suite 460, Phoenix, AZ 85008 | | | |
| e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> | | f. CURRENT PROFESSIONAL REGISTRATION <i>(STATE AND DISCIPLINE)</i> | |
| Masters in Transportation Engineering, Arizona State University, May 2011 B.S. in Civil Engineering, Arizona State University, Dec 2008 | | Engineer in Training Arizona #1137 | |
| g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Publications, Organizations, Training, Awards, etc.)</i> | | | |
| AZ ITE, ITS Arizona | | | |

H. RELEVANT PROJECTS

| | | | |
|----|---|---------------------------------------|-------------------------------------|
| | (1) TITLE AND LOCATION <i>(City and State)</i> Arizona State Strategic Highway Safety Plan, Phoenix, Arizona | (2) Year Completed On-Going | |
| | | Professional Services 2013 | Construction <i>(if applicable)</i> |
| | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Assisted in development of the state strategic highway safety plan for the Arizona Department of Transportation. Primary responsible has been in the analysis of crash and other data supporting a data driven process to meet FHWA requirements. Work with safety data has included extensive geospatial analyses of characteristics associated with all serious crashes in the statewide crash database using GIS and other database management applications. Also, performed transportation safety research tasks, literature review, and technical document writing. Supported project manager in coordination with client and safety stakeholders including participation in all safety task force work sessions and project workshops. | | |
| 2) | (1) TITLE AND LOCATION <i>(City and State)</i> MAG Performance Measurement Dashboard Website, Phoenix, Arizona | (2) Year Completed 2013 | |
| | | Professional Services 2013 | Construction <i>(if applicable)</i> |
| | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Performed all traffic data analyses supporting internal development of the Maricopa Association of Governments performance measures website. Assisted in coordination with IT staff in organization and revisions to the performance measure dashboard platform. | | |
| 3) | (1) TITLE AND LOCATION <i>(City and State)</i> Performance Measurement Data Reports, Phoenix, Arizona | (2) Year Completed 2013 | |
| | | Professional Services 2013 | Construction <i>(if applicable)</i> |
| | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Performed analysis and development of regional performance measures and graphics for freeway and arterial facilities for the Maricopa Association of Governments Transportation website. | | |
| 4) | (1) TITLE AND LOCATION <i>(City and State)</i> 2012 Vehicle Occupancy Study, Phoenix, Arizona | (2) Year Completed 2013 | |
| | | Professional Services 2013 | Construction <i>(if applicable)</i> |
| | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Assisted in scoping and management of an extensive study collecting vehicle occupancy data for the Maricopa Association of Governments. The project collected occupancy data using both the windshield method at 100 individual count locations and the innovative carousel method along 345 miles of urban freeway. Involvement included coordination with consultants, review of project deliverables, and development of final project report. Project was presented at the 2013 ITE Western District Conference. | | |
| 5) | (1) TITLE AND LOCATION <i>(City and State)</i> Traffic Data Collection and Management On[□]Call, Phoenix, Arizona | (2) Year Completed 2012 | |
| | | Professional Services 2012 | Construction <i>(if applicable)</i> |
| | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE Participated in analysis, review, and management for various data collection task orders under this On[□]Call for the Maricopa Association of Governments. | | |



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| | | | |
|--|---|--|-------------------------------|
| a. NAME Nathan Gardner | b. ROLE IN THIS CONTRACT Arizona Survey Manager | c. YEARS EXPERIENCE | |
| | | 1. TOTAL 24 | 2. WITH CURRENT FIRM 1 |
| d. FIRM NAME AND LOCATION <i>(City and State)</i> Wilson & Company, Inc., Engineers & Architects 410 N. 44th Street, Suite 460, Phoenix, AZ 85008 | | | |
| e. EDUCATION <i>(DEGREE AND SPECIALIZATION)</i> | | f. CURRENT PROFESSIONAL REGISTRATION <i>(STATE AND DISCIPLINE)</i> | |
| B.A.S., Technology Management, Northern Arizona University, 2012, Graduated summa cum laude A.A.S., Network Administration, Pima Community College, 2011 A.A.S., Network Security, Pima Community College, 2013 | | Professional Surveyor Arizona #36786 (2001) | |
| g. OTHER PROFESSIONAL QUALIFICATIONS <i>(Publications, Organizations, Training, Awards, etc.)</i> | | | |
| Arizona Professional Land Surveyors Association, National Society of Professional Surveyors, International Right of Way Association | | | |

H. RELEVANT PROJECTS

| | | | |
|----|---|---------------------------------------|-------------------------------------|
| 1) | (1) TITLE AND LOCATION <i>(City and State)</i> City of Tempe Waterline Surveying, Tempe, Arizona | (2) Year Completed 2013 | |
| | | Professional Services 2013 | Construction <i>(if applicable)</i> |
| | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Survey Manager for mapping control and supplemental surveying to be combined with mapping information. This project was to collect information on waterlines and utilities and combine that with mapping data for the creation of a base map for several old neighborhoods. This base map will be used by design firms for the replacement of old water lines and installation of additional water lines. | | |
| 2) | (1) TITLE AND LOCATION <i>(City and State)</i> Carefree Street Surveying, Carefree, Arizona | (2) Year Completed 2013 | |
| | | Professional Services 2013 | Construction <i>(if applicable)</i> |
| | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Survey Manager for the creation of a base map showing the roads and utilities in a small neighborhood. The client was contracted to design new replacement water lines and avoid conflicts with existing utilities. This survey was essential to the determination of where new the water lines could be placed. | | |
| 3) | (1) TITLE AND LOCATION <i>(City and State)</i> US Army Corps of Engineers, Arizona Border Work, Southern Arizona | (2) Year Completed On-Going | |
| | | Professional Services 2013 | Construction <i>(if applicable)</i> |
| | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Survey Manager for boundary surveys and property descriptions for properties and easements. | | |
| 4) | (1) TITLE AND LOCATION <i>(City and State)</i> Metro Water On-Call Surveying, Tucson, Arizona | (2) Year Completed 2009 | |
| | | Professional Services 2009 | Construction <i>(if applicable)</i> |
| | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Survey Manager for construction staking and as-built services. | | |
| 5) | (1) TITLE AND LOCATION <i>(City and State)</i> Rancho Sahuarita Master Planned Community Survey, Tucson, Arizona | (2) Year Completed 2009 | |
| | | Professional Services 2009 | Construction <i>(if applicable)</i> |
| | (3) BRIEF DESCRIPTION <i>(Brief scope, size, cost, etc.)</i> AND SPECIFIC ROLE <input type="checkbox"/> Check if project performed with current firm Survey Manager for water and sewer, lift station, and force main design surveys, construction surveys, and as-built surveys. | | |



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

| | | |
|--|--|---|
| a. TITLE AND LOCATION <i>(City and State)</i> Arizona Statewide On-Call Transportation Planning Services | b. YEAR COMPLETED | |
| | PROFESSIONAL SERVICES On-going | CONSTRUCTION <i>(If applicable)</i> N/A |

23. PROJECT OWNER'S INFORMATION

| | | |
|---|--|---|
| c. PROJECT OWNER Arizona Department of Transportation | d. ORIGINAL BUDGET/NTE AMOUNT OF PROJECT \$3.1 Million | e. TOTAL COST OF PROJECT On-going |
|---|--|---|

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Wilson & Company provides multimodal transportation planning services for many organizations and communities throughout Arizona through its on-call services contract with the Arizona Department of Transportation. Services provided include long-range transportation planning, transportation master plans, corridor feasibility and corridor improvements studies, tribal long-range transportation plans, and development of research/reference documents. Projects include:

Arizona Strategic Highway Safety Plan (SHSP) – The SHSP is a data-driven, comprehensive, multidisciplinary plan that establishes statewide performance measures, goals and objectives; identifies emphasis areas; and provides strategies to improve safety on all public roadways. The document will guide Arizona's highway safety planning and programming processes and facilitate implementation of recommended safety strategies and countermeasures.

Arizona Department of Transportation MPO-COG Guidelines – This manual documents and describes administrative processes for COG and MPO functions and interaction / reporting to ADOT. The manual covers responsibilities, programs, programming, schedules, modes and special programs available for project and program development.

City of Yuma Transportation Master Plan (TMP) – The purpose of the TMP is identification, definition, and adoption of recommendations for maintaining and improving the community's roadways, transit services and facilities, pedestrian facilities, and bicycle routes and facilities, with consideration given to truck and rail freight services, and air travel accommodations.

McCartney & 11 Mile Corridors Study – These corridors in Coolidge, AZ are being studied to identify planning level corridor alignment and right-of-way needs and conduct Planning and Environmental Linkages processes to develop environmental documentation for future design efforts and federal approvals.

Germann Road Corridor Study – The study established the facility type, number of lanes, right-of-way needs, and general alignment required to accommodate projected traffic growth and enhance safety on Germann Road, including concepts for a new grade separation over the Union Pacific Railroad tracks for the town of Queen Creek and city of Mesa.

Transportation Needs Study for the Yuma Foothills and Mesa del Sol Areas – This study identified roadway, transit, pedestrian, and bicycle improvements to address growing

population and land use changes for improved mobility and safety. Funding and implementation of needed improvements was assessed for five-, ten-, and twenty-year planning periods.

Coolidge Comprehensive Transportation Plan – The study identified short-, mid-, and long-range improvement projects to serve motorists, pedestrians, and bicyclists. The feasibility analysis examined regional roadway alignments having economic significance to the city of Coolidge, as well as bicycle and pedestrian circulation based on analysis of safe and feasible routes to connect key nodes in the city, such as schools, parks, and commercial centers. Plan development supported updates to the City's Transportation Improvement Plan.

Navajo Nation Long-Range Transportation Plan (LRTP) – This update to the Nation's LRTP addresses multi-modal transportation needs over the next 20 years, defines an implementation plan for transit, airports, freight, pedestrian and bicycle improvements, and provides planning policies and implementation guidelines for IRR Program improvements and needs.

Southern Navajo County LRTP – This long range, sub-regional transportation plan for southern Navajo and Apache Counties established an existing conditions database, developed a TransCAD model to forecast 2015 and 2030 conditions, identified future mobility needs, and developed a roadway improvement plan.

Central Navajo County LRTP – This study expanded the travel demand model developed for the Southern Navajo County Transportation Plan through the use of an integrated GIS, including geocoding, a Linear Referencing System for roadway attributes, and an integrated socioeconomic TAZ dataset. The TransCAD model was used to test future transportation networks and identify near-term and long-term transportation improvements to aid in project prioritization, CIP development, and long-term fiscal planning.

Snowflake-Taylor Multi-Jurisdictional Feasibility Study - This study is focused on examining right-of-way needs for key collector and/or arterial roadways in and between the two towns that balance local and regional travel needs. The study (1) coordinates and prioritizes identified future transportation corridors, and establishes (2) establishes probable alignments and rights of way for future improvements, inclusive of non-motorized traveling options.



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(Present no more than five (5) projects. Complete one Section 5 for each project.)

| | | |
|--|--------------------------------------|---|
| a. TITLE AND LOCATION <i>(City and State)</i> US 60/Grand Avenue Access Management Plan, SR-303L/Estrella Freeway to SR-74 | b. YEAR COMPLETED | |
| | PROFESSIONAL SERVICES 2009 | CONSTRUCTION <i>(If applicable)</i> N/A |

23. PROJECT OWNER'S INFORMATION

| | | |
|--|---|--|
| c. PROJECT OWNER Maricopa Association of Governments (MAG) | d. DOLLAR AMOUNT OF PROJECT \$ 538K | e. TOTAL COST OF PROJECT N/A |
|--|---|--|

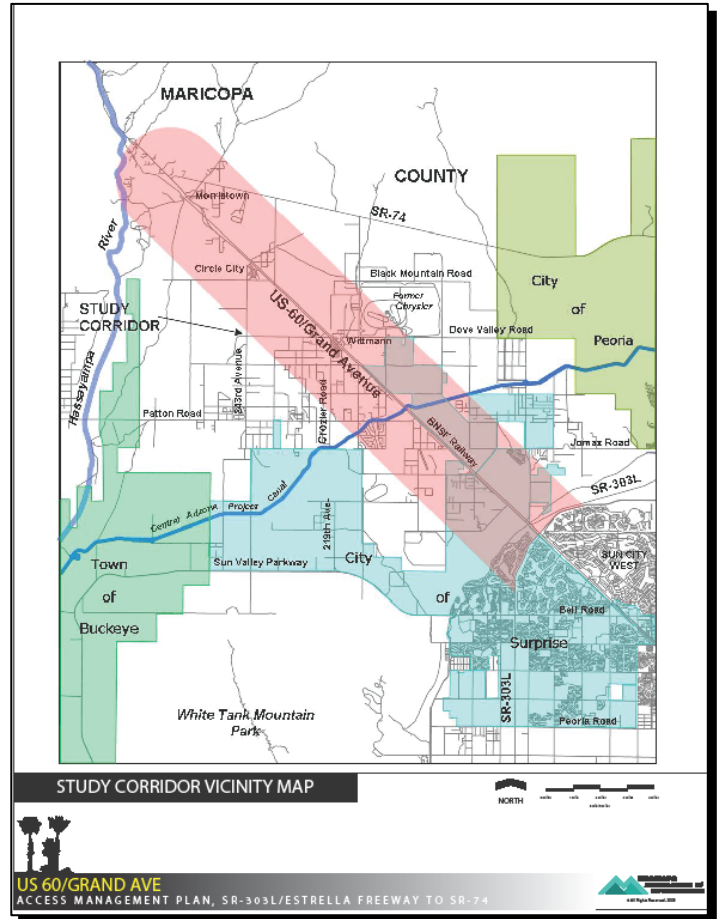
f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

Wilson & Company was selected to define and develop the Access Management Plan (Plan) for US-60/Grand Avenue between approximately Loop 303 and SR-74. The US-60/Grand Avenue Access Management Plan defines a long-range vision and ultimate facility concept for the corridor section.

The City of Surprise, Arizona Department of Transportation (ADOT), Maricopa Department of Transportation, and the Maricopa Association of Governments are working on isolated issues without the support of a comprehensive facility master plan to guide capacity improvements or access control enhancements. This study provides a clear vision for the corridor that incorporates the input of all key stakeholders.

Close coordination with other current or recently completed studies and design concepts within the corridor were required. Additionally, this Plan serves as a test case to aid in the evaluation of the recommendations contained in the statewide Access Management Plan developed by ADOT.

In addition to addressing long-range travel needs within the corridor, the Plan details appropriate access management strategies with a special emphasis given to a detailed implementation plan. This ensures that interim and ultimate design features are in place to accommodate projected traffic growth. The Plan focuses on roadway improvement recommendations, a multi-modal evaluation including rail, transit, high occupancy vehicle lanes, bicycles, and pedestrians were addressed.





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| | | |
|--|--------------------------|-------------------------------------|
| a. TITLE AND LOCATION <i>(City and State)</i> | b. YEAR COMPLETED | |
| | PROFESSIONAL SERVICES | CONSTRUCTION <i>(If applicable)</i> |
| | 2012 | N/A |

Designing Transit Accessible Communities

23. PROJECT OWNER'S INFORMATION

| | | |
|--|------------------------------------|---------------------------------|
| c. PROJECT OWNER | d. DOLLAR AMOUNT OF PROJECT | e. TOTAL COST OF PROJECT |
| Maricopa Association of Governments | \$ 200K | On-going |

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)



Transit accessibility variables differ according to the type of transit service and the location where this service is provided. As such, providing a transit stop devised as a “one size fits all” approach - a not too uncommon practice - has proven to be ineffective and wasteful of precious funding dollars. It has been demonstrated that the more successful transit stops are an integral element of the neighborhoods served.

Recognizing this point, Wilson & Company was selected by the Maricopa Associations of Governments (MAG) to conduct a study aimed at furnishing MAG member agencies with additional tools and guidelines to promote better accessibility for pedestrians and bicyclists to transit stops. The effort included:

- Inventory and categorization of more than 7,000 transit stops in the MAG region using a cluster analysis.
- Outreach to area stakeholders representing a diverse group including advocates of seniors, disabled, pedestrians, and bicyclists.
- Development of a prototype for each category of transit stop.
- Transit rider surveys to document accessibility challenges of riders, particularly pedestrians and bicyclists.
- Development of a toolkit of measures and strategies for local governments to create transit accessible and livable neighborhoods.
- Development of a funding framework including funding options, improvement costs and prioritization of transit stops.

The study determined that successful transit stops offer the community a synergistic combination of right of way, structure, and modes. Although each stop has its own particular attributes, it is unique as to its location and adjacent community elements (bike trails, sidewalks, benches, shade, land use, etc., i.e., its “transportation context”). When evaluating each stop’s transportation context, the study’s focus was not limited to just the transit stop; rather, how the transit stop was integrated into the fabric of the community and how the transit stop’s infrastructure supported, preserved, and reinforced the community and how riders interfaced with the stop.

To this end, the study provides MAG member agencies a document that serves as a pathway to making future transit stops more accessible for those who need and want to utilize the transit system. In a larger context, the study helps local governments promote livable and multi-modal neighborhoods.



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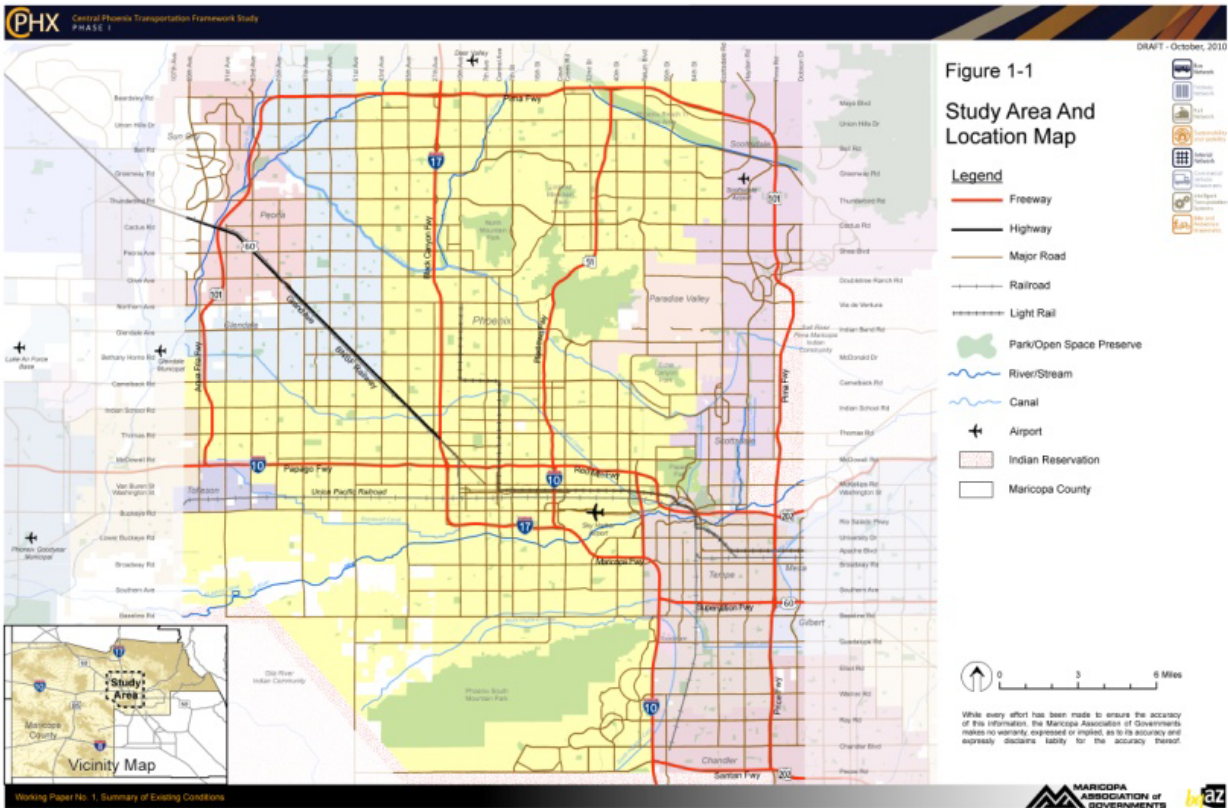
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(Present no more than five (5) projects. Complete one Section 5 for each project.)

| | | | |
|--|---|---|---|
| a. TITLE AND LOCATION <i>(City and State)</i> | | b. YEAR COMPLETED | |
| Central Phoenix Transportation Framework Study | | PROFESSIONAL SERVICES 2012 | CONSTRUCTION <i>(If applicable)</i> N/A |
| 23. PROJECT OWNER'S INFORMATION | | | |
| c. PROJECT OWNER Maricopa Association of Governments | d. DOLLAR AMOUNT OF PROJECT \$1.6 Million | e. TOTAL COST OF PROJECT On-going | |

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)



Wilson & Company was engaged to develop an environmentally sustainable, multi modal transportation system to serve the core area of the Phoenix Metropolitan Area well into the future – a system that likely will be implemented at multiple jurisdictional levels. Existing study area features were documented to identify opportunities to enhance the future multimodal transportation system to provide efficient and effective regional connectivity under Buildout assumptions – growth over the next 40 to 60 years. Wilson & Company worked with MAG to develop a forecast of Buildout socioeconomic projections (8 million population in the region), based on growth scenarios, as defined by community vision, goals, and guiding development principles. A dynamic stakeholder involvement process resulted in identification of over 200 potential improvement strategies to enhance vehicular, transit, bicycle, and pedestrian travel throughout the study area. These improvement strategies were further investigated and technical memoranda are being prepared to detail potential strategies for: the Interstate 10/Interstate 17 “Spine” Corridor, a Freeway System Plan, SR-30 Corridor Extension, Direct High Occupancy Vehicle (DHOV) Interchanges, Park-and-Ride Connectivity, Diverging Diamond Interchange Conversions, Active Traffic Management, Arterial Corridor and Intersection Concepts, and Roadway Maintenance. In the current phase, the study is investigating the application of several identified strategies in the focused area of the downtown core to determine the feasibility of implementing road diets, one-way to two-way streets conversions, and complete street conversions to incorporate bicycle and parking within available right-of-way



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5. EXAMPLE PROJECTS WHICH BEST ILLUSTRATE PROPOSED TEAM'S QUALIFICATIONS FOR THIS CONTRACT

(Present no more than five (5) projects. Complete one Section 5 for each project.)

| | | |
|--|--------------------------------------|--------------------------------|
| a. TITLE AND LOCATION (City and State) Topographic/Planimetric and Utility Mapping for the HC-130J Joint Use Fuel Cell at Davis Monthan Air Force Base Tucson, Arizona | b. YEAR COMPLETED | |
| | PROFESSIONAL SERVICES 2011 | CONSTRUCTION (If N/A |

23. PROJECT OWNER'S INFORMATION

| | | |
|---|--|---|
| c. PROJECT OWNER U.S. Army Corps of Engineers Albuquerque District, John Peterson | d. DOLLAR AMOUNT OF PROJECT \$54,543 | e. TOTAL COST OF PROJECT \$54,543 |
|---|--|---|

f. BRIEF DESCRIPTION OF PROJECT AND RELEVANCE TO THIS CONTRACT (include scope, size, and length of project)

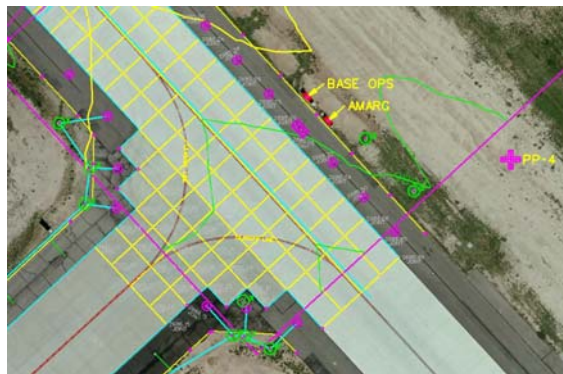
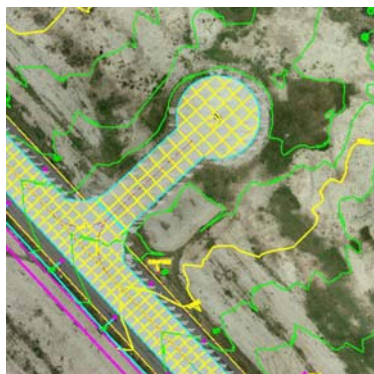
Wilson & Company provided **topographic/planimetric mapping**, including all utility data, and digital terrain models to be used for the design and construction of the HC-130J Joint Use Fuel Cell Hangar project at Davis Monthan Air Force Base in Tucson, Arizona. The mapping developed under this contract will be used by the Government for engineering design, including preparation of demolition plans, site plans, roadway plan and profiles, grading and drainage plans, and utility plans and profiles for construction. Following construction, the mapping will be used in the preparation of as-built drawings of the facilities, and will be incorporated into the base's geographic information system (GIS) data.



The location of the area surveyed encompassed approximately 91.5 acres. Gathering topographic and planimetric map data was completed using GPS and total stations. Accurate measurement of these features is critical to the Government's design of the referenced projects. These points were added to the models used to produce the mapping to enhance their accuracy. Field surveys were conducted to establish **geodetic control** and originated from 1st, 2nd or 3rd order control.

New color **aerial imagery** was collected with a distortion-free aerial mapping camera and processed to the field control points. This color imagery was acquired at an altitude of 1,500-feet above mean terrain with airborne GPS and IMU data (used in conjunction with existing control network). Final color digital **orthoimagery** was generated having a final pixel resolution of three inches.

Topographic and planimetric maps were produced at a scale of one-inch equals 50 feet. Plotted map index contours were shown at five-foot intervals with intermediate contours shown at one-foot intervals. Mapping included the location and elevation of all field control monuments (expressed with the horizontal and vertical control) with survey ties. A **digital terrain model (DTM)** of the topographic surveys was provided for each site mapped. DTMs were compatible with InRoads Version 8 by Bentley Systems and submitted with the drawing files on CD-ROM.



Wilson & Company provided detailed metadata files that meet the full requirements of the FGDC metadata standard. The metadata files were provided in .xml format and be imbedded in **ESRI delivered shape files**.



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6. ADDITIONAL INFORMATION

a. PROVIDE ANY ADDITIONAL INFORMATION YOU FEEL MAY BE NECESSARY TO DESCRIBE YOUR FIRMS QUALIFICATIONS. (ATTACH ADDITIONAL SHEETS AS NEEDED.)

Wilson & Company excels when the entire team shares ownership in the outcome, and we collaborate to bring out the best ideas. Intensity to exceed expectations and discipline to keep focused on details result in solutions that set a new standard for success.

The Wilson & Company team brings a wealth of expertise in civil engineering and related services, ranging from conceptual to final design. With staff that blends public (City and DOT) and private sector backgrounds, we utilize innovation, context sensitive design, and value engineering to guide the decision making process and develop out-of-the-box ideas and approaches to provide workable solutions.

Founded in 1932, Wilson & Company is an engineering, architecture, surveying, mapping, environmental, and planning firm employing staff throughout 20 offices in 13 states. Our staff of nearly 450 professionals includes civil, mechanical, electrical and structural engineers; architects; planners; biologists; surveyors; mappers; GIS specialists; construction managers; and inspectors. We provide services to federal and municipal governments, public transportation agencies, railroad companies, industrial and commercial corporations, private developers, institutional, primary and secondary education, healthcare, and energy companies. The cornerstone of our success is Higher Relationships, standards in Shared Ownership; Collaboration; Intensity, Discipline and Solutions.

Wilson & Company has been meeting the needs of Arizona communities since 1982. In 2004, we extended our capacity to serve local markets by enhancing our transportation planning and engineering division, and currently have 17 Arizona employees. We develop and maintain solid relationships with all clients, ultimately earning their trust and respect. Satisfied clients include: the Arizona Department of Transportation (ADOT), Maricopa Association of Governments (MAG), Maricopa County Department of Transportation (MCDOT), Central Arizona Governments (CAG), Navajo County Department of Transportation, Navajo Nation Department of Transportation, and the following communities throughout the State of Arizona: Avondale, Buckeye, Casa Grande, Chandler, Coolidge, Glendale, Goodyear, Holbrook, Maricopa, Mesa, Peoria, Phoenix, Queen Creek, Scottsdale, Sedona, Snowflake, Surprise, Tempe, Taylor, Tucson, Wickenburg, and Yuma.

The Wilson & Company team has the experience, staff, and resources to perform the large variety of projects that ADOA member agencies may need. We understand the critical nature of project task schedules, and our team members make a personal commitment to meet agency demands. This commitment is combined with a proven track record of delivering projects on time, on

Client Service Commitment

Delivering excellent and reliable service comes from top management's commitment to client service. Regular and frequent contact ensures optimal understanding of your needs and concerns. Our commitment includes:

- Internal deadlines to keep your projects on schedule.
- Systematic approaches in standards and procedures to ensure predictable quality.
- Strong teams committed to project continuity and follow-through.

Four specific elements drive our project approach:

Accuracy

Wilson & Company has high internal standards for service delivery. Simply, our clients deserve our best effort and product. A simple error can have little or huge consequences, depending upon what it is and when it is discovered. Our professional response to the discovery of an error is to seek an open and objective evaluation of the cause of the mistake. Quality client relationships and sound solutions result when we share client needs and long-term goals.

Dependability

Your project manager and his team are responsible for understanding your expectations and putting them into a documented form including schedule, budget project description, scope of services, task assignments, and any other items required internally for the execution and monitoring of our services. The team will provide immediate notification in advance of potential problem situations.

Competence

To gain competence, individuals must grow and reach beyond their present knowledge or past experiences. We continually rely on the judgment of our lead practitioners and managers to make the call on their own level of competence and that of others. An important measure of a true professional is the judgment to recognize when outside expertise may be needed. Our collaborative approach encourages all team members to solicit help both within the organization and among selected specialty subconsultants when needs arise.

Responsiveness

Our staff is not too busy to accept telephone calls, return calls, or initiate contact with clients when we know we should. Getting our attention should not be and is not a barrier for clients. We welcome constructive criticism, and you can be assured that your concerns will be met with owner-level decision-making authority.

budget, and with consistent quality across multiple active projects. We believe the strength of our company lies in the following:

- Dedicated staff who work closely with clients to understand their goals, objectives and issues
- Extensive and successful history of completing projects relevant to ADOA members



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- Professional staff members with working knowledge of federal, state and local requirements and agency deadlines

A large pool of experienced professional in all facets of work available for staff augmentation that can manage an entire project from start to finish or work side by side with agency personnel to augment their existing staff
A strong Quality Assurance/Quality Control team State-of-the-art equipment and software accessible to our experienced staff

Areas of Expertise

Transportation

Wilson & Company's Transportation services include:

- Land Use/Socioeconomic Evaluations
- Growth Forecasting
- Travel Demand Modeling
- Regional/Sub Area Transportation Planning Studies
- Circulation System Planning
- Access Management Planning
- Corridor Improvement Feasibility Studies
- Concept Design
- Simulation Modeling
- Value Pricing Studies
- Public Involvement
- Geographic Information Systems

Freeway Interchange Geometry: Conceptual alignment of freeway interchange ramps and junctions is key to developing a successful design. Early decisive actions -- value engineering and sensitivity analysis -- define the project's potential for success. Value engineering and context-sensitive thinking allows for consideration of atypical solutions and, thus, maximizes the chance of reaching an optimal solution. Sensitivity analysis ensures that refinement or fine-tuning the conceptual design leads to a superior design. In conjunction with our work on CPHX, we analyzed and developed conceptual alternative configurations to assess the feasibility of future improvements along Interstate 10, Interstate 17, and the future SR-202L and SR-30 freeways. Conceptual layouts for potential future Direct High-Occupancy Vehicle (DHOV) Ramp interchanges and Diverging Diamond Interchange (DDI) conversions throughout the core freeway network are also being developed. Wilson & Company also completed the I-5 North Coast Corridor Project for Caltrans District 11, which defined intersection geometry and lane configurations for 27 interchanges and evaluation of six proposed Direct Access Ramps to HOV lanes.



Arizona Parkway conceptual design

Arterial Intersection Design Analysis: Successful intersection design takes into consideration interactions with upstream and downstream intersections, surrounding land uses, as well as transit, pedestrian, and bicycle needs. Design speeds, sight distance evaluation, utilities, grades, and traffic control all play an important role in defining the best-suited design. However, for capacity-constrained intersections, innovative approaches must be evaluated that address the specific operational and physical attributes. While studying indirect-left turn parkways for the Maricopa County Department of Transportation, Wilson & Company developed the concept for the Parkway-Grade Separated Intersection, which occupies a smaller footprint than traditional grade-separations while maintaining the efficiencies of two-phase signal operation. Technical memorandum developed in conjunction with the CPHX study documents the potential integration of this grade-separation treatment and others, such as the grade-separated queue jumps in an urban setting.

Other recent design proposals prepared by Wilson & Company included one-way couplet treatments, two-phase intersection operations (e.g. continuous flow intersection and ParaFlow intersections), roundabouts, and indirect Michigan left-turn treatments. Such non-traditional intersection design treatments have proven effective under the proper conditions and Wilson & Company has a proven history of developing unique and innovative solutions for client consideration. Additionally, through our recent Designing Transit Accessible Communities (DTAC) study conducted for MAG, we developed strategies to improve access to transit for pedestrians and bicycles, which should be considered in the design of arterial intersections.

Design Concept Report Review: Wilson & Company team members have extensive experience in "Peer



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Reviews” and have been on-call consultants to a number of jurisdictions to perform report reviews on behalf of the agencies. Some Wilson & Company key staff members are ex-City engineers and ex-DOT engineers, who have conducted numerous report reviews for their respective jurisdictions.

Alternatives Analysis Review and Supplemental Concept Development: Wilson & Company uses a comparative analysis approach to guide the design process and identify for decision makers the trade-offs involved in reaching an informed decision. Recent studies and concept design evaluations by Wilson & Company, in conjunction with a number of freeway interchange design projects in the midwest and western United States, have led to the construction of innovative geometric treatments, including DDIs, SPUIs and ramp junctions as roundabouts, as opposed to traditional signalized intersections. The comparative analysis process used to arrive at the recommended solution relied upon a matrix of criteria (safety, congestion relief, multimodal compatibility, cost, etc.) to define the attributes of each alternative.

Construction, Right-of-Way (ROW), Design and/or Operations Cost Analysis: Cost is heavily influenced by design parameters. Therefore, Wilson & Company utilizes value engineering to improve the design at the concept stage. On recent projects, Wilson & Company assessed the sensitivity of alternative ramp alignments and roadway grades to a number of critical design criteria, including: right-of-way acquisition, bridge size, retaining wall needs, utility impacts, construction duration and cost, compatibility with maintenance operations, as well as the effect of on ramp meter operations and queuing, sight distances, and access to adjacent properties.

Bridge Engineering

Understanding our client’s needs as well as the physical properties of building materials and the forces that act upon them both is the hallmark of our structural engineers. They understand that customer service, budgets, and deadlines are just as important as the technical aspects of beams, columns, and foundations. Our structural team understands the special requirements of a contract in terms of coordination, timely response, budgetary constraints, community involvement, and technical requirements. Our team’s structural professionals have learned what works best both in the preparation of the design and what will work best over the life of the structure and our structural engineers believe that close attention to detail and

coordination with all team members pays off in long-lasting and trouble-free facilities.

Transportation Planning

Team members are well-versed in the development of framework, corridor, and area studies. Successful plans require accurate definition of planned study area land uses in combination with an understanding of programmed or planned transportation improvements to provide a foundation for the definition of future transportation needs. Often, flexibility is required to test various “what-if” scenarios before defining a preferred scenario and associated implementation program. Buy-in from affected agencies, stakeholders, and community members is crucial in developing plans that can be supported by responsible jurisdictions, local businesses, and area residents.

Relevant projects include:

- Central Phoenix Transportation Framework Study, Maricopa Association of Governments
- Germann Road Corridor Improvement Study, Arizona Department of Transportation
- Greenway Parkway Corridor Feasibility Study, Maricopa County Department of Transportation
- Casa Grande Downtown Traffic Circulation Study and UPRR Grade Separation, City of Casa Grande
- McCartney Road/Eleven Mile Corner Road Corridor Planning and Environmental Linkages Study, Arizona Department of Transportation
- US-60/Grande Avenue Corridor Optimization, Access Management Plan, and System Study, Maricopa Association of Governments
- Designing Transit Accessible Communities, Maricopa Association of Governments
- City of Coolidge Comprehensive Transportation Plan, City of Coolidge
- Regional Transportation Plan, Central Arizona Governments
- Arizona-Sonora Border Master Plan, Arizona Department of Transportation
- Transportation Needs Study for the Yuma Foothills and Mesa del Sol Areas, Arizona Department of Transportation
- Hassayampa Framework Study for the Wickenburg Area, Maricopa Association of Governments
- White & Parker Major Investment Study, City of Maricopa
- MPO & COG Guidelines & Procedures Manual, Arizona Department of Transportation

Specific Area Comprehensive Transportation Plans:

Wilson & Company has prepared numerous Comprehensive Transportation Plans, including most



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recently for the City of Coolidge, Yuma County Foothills and Mesa Del Sol areas, Town of Buckeye, City of Maricopa, and City of Casa Grande. We are finalizing the first Planning and Environmental Linkages (PEL) study for the City of Coolidge. We are also currently preparing the very first Regional Transportation Plan for the Central Arizona Governments, comprised of Pinal and Gila counties. Our team members have extensive experience in refining land use assumptions, translating socioeconomic and transportation network data for use in regional modeling efforts, interpreting and analyzing model generated data, and presenting analysis conclusions in a manner that is understandable to the public and key decision makers. During conduct of the CPHX study, we developed analysis methods that focus on improving person mobility, rather than the traditional vehicle mobility. The methods included cutline analyses that accounted for both vehicle and transit capacity, and travel time comparisons between key origin-destination pairs that focused on person travel time, incorporating all modes of travel.

Corridor Major Investment Studies: Wilson & Company staff have managed several recent corridor studies, including the US-60 Access Management Plan (SR-303L to SR-74); US-60/Grand Avenue Corridor Optimization, Access Management Plan, and System Study (COMPASS); the McCartney Road/ Eleven Mile Corner Road Corridor Studies; the Greenway Parkway Feasibility Study; the Germann Road Corridor Improvement Study; and the White & Parker Major Investment Study. We have also participated in past studies, including the Bell Road, Maricopa/Casa Grande Highway, Van Buren Street, Patton Road/Jomax Road, El Mirage Road, and Turner Parkway Corridor Studies. These corridor studies require a greater level of focused analysis. Output from a regional model often provides foundational data for more detailed definition of peak period corridor characteristics, allowing for focused analysis of facility cross-sections and associated right-of-way requirements; intersection design and performance; integration of transit, bicycle, and, pedestrian facilities; and effects of access management strategies.

Alternative Mode Planning for Specific Areas or Corridors: Alternative mode planning is critical to identifying comprehensive transportation solutions for an already over-burdened transportation network. The challenge is to define future opportunities to integrate alternative travel modes (e.g. fixed-route bus, express bus, bus-rapid transit, LRT, commuter rail, as well as pedestrian traffic and bicycles) into both existing and planned transportation corridors. Our recent work on the Designing Transit Accessible Communities Study, City of

Casa Grande Downtown Traffic Study, Peoria Sports Complex, and the Goodyear Downtown/Sports Complex resulted in recommendations of modified roadway cross-sections and intersection treatments to enhance pedestrian, bicycle, and transit access and safety.

Framework Study Follow-Up and Amendment: Team members have participated in various framework studies, including the I-10/Hassayampa Valley, I-8/I-10 Hidden Valley, Wickenburg, and Central Phoenix Transportation Framework studies. We are well-versed in all aspects of the framework study process, specifically detailed mapping required for the environmental scan, refinement of socioeconomic data assumptions, cut-line and volume-to-capacity (v/c) analysis of multiple network scenarios, criteria-based evaluation of selected networks, implementation phasing analyses, and extensive public outreach efforts. Our experience on these studies has equipped us with the specific knowledge necessary to conduct analyses and prepare work products and mapping that are consistent in content, context, and format with previous Framework Study efforts.

Wilson & Company also worked closely with Navajo DOT to develop their current Long Range Transportation Plan (LRTP). In doing so, we conducted meetings across Navajo Nation and understand how to effectively conduct public meetings, work with the agencies and chapters throughout the Nation, and present to the Chapter Officials. We worked closely with the County DOTs and community stakeholders, and coordinated with BIA DOT, which is critical in any transportation planning process. The plan outlined several Nation-level transportation strategies, as well as Growth Center transportation strategies for future implementation in the TTIP, which was also included in the LRTP document. In the northeast Arizona, our team's transportation planning work has included working on and administering PARA projects and area studies including:

- Navajo Nation LRTP Update (2009)
- Central Navajo County Transportation Plan (2010)
- Snowflake-Taylor Multijurisdictional Plan (2011)
- Southern Navajo County and Southern Apache County Transportation Plan (2007)
- Winslow PARA (Woodson administered the project for the City)
- Arizona Strategic Highway Safety Plan (current project)

Transportation Operations

Team members are well versed in the application of various operational software applications, such as TransCAD/TransModeler, HCS, Synchro, VISSIM, and CORSIM.



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Relevant projects include:

- Central Phoenix Transportation Framework Study, Maricopa Association of Governments
- Germann Road Corridor Improvement Study, Arizona Department of Transportation
- Casa Grande Downtown Traffic Circulation Study and UPRR Grade Separation, City of Casa Grande
- US-60/Grande Avenue Corridor Optimization, Access Management Plan, and System Study, Maricopa Association of Governments
- Transportation Needs Study for the Yuma Foothills and Mesa del Sol Areas, Arizona Department of Transportation
- White & Parker Major Investment Study, City of Maricopa
- SR-189 Design Concept Report, Arizona Department of Transportation

Data Collection and Traffic Analysis: Wilson & Company is experienced with all phases of traffic analysis and data collection. We have the hardware capabilities in-house to perform 9-hour vehicle turning movement counts and 48-hour tube counts on intersections and roadways for relevant data collection needed for traffic impact analysis, safety studies and intersection analysis. We have in-house software available, such as Synchro and SimTraffic for traffic signal analysis and progression; PetraPro for traffic data analysis; and TraxPro for traffic data collection. We also have familiarity and practice with parking studies, pedestrian studies, accident summaries, and origin-destination studies.

Traffic Data Review and Analysis: Team members are available to assist agency staff in the compilation of additional data that may be required to support interpretation, analysis, and presentation of data in a manner that provides meaningful performance statistics. Our team possesses capabilities at all levels of data review and analysis, ranging from broad based cut-line and segment v/c analysis to GIS-based analysis to sophisticated 3-D multi-modal simulation analysis. We are currently conducting an extensive GIS-based analysis of crash data trends in support of update of the Arizona Strategic Highway Safety Plan (SHSP).

Our library houses key publications such as the *Highway Capacity Manual*, *Manual on Uniform Traffic Control Devices*, *ITE Traffic Engineering Handbook*, *Manual of Traffic Engineering Studies*, *Trip Generation*, *Parking Generation*, *AASHTO Green Book*, *FHWA Guidance, I*, and *Manual of Traffic Signal Design*, and many other

trade publications. Moreover, our staff has extensive training and experience in their applications.

Travel Demand Model Results for Specific Areas or Corridors: Wilson & Company team members have conducted numerous studies requiring the use of travel demand model data and/or post processing of data to produce detailed estimates of corridor and area-specific performance measures. We are well-equipped to translate and analyze data generated by the TransCad model, as well as integrate the data into meaningful displays. In previous studies, Wilson & Company has developed GIS and spreadsheet tools to evaluate model output data.

Operations Model Result Reports for Specific Areas or Corridors: The procedures recommended in the NCHRP 255 are the preferred method for translating model generated volume data into peak-period turn volumes for use in detailed operations analysis. The team is skilled in the application and interpretation of results of multiple operations model platforms, including Synchro, VISSIM, and TransModeler. Most recently, we have conducted detailed simulation analysis of the White & Parker Road and SR-189 corridors in Arizona, as well as various design-build pursuits in other midwest and western states.

Specific Area Operation Assessment Study and Recommendations: Wilson & Company team members are well-versed in the review and use of data generated with travel demand and analysis models to produce operational statistics for intersection, corridor, or area-based assessment. We are skilled in the interpretation of such data for use in defining qualitative and quantitative evaluation criteria for establishing recommended transportation improvement strategies.

Highways; Streets; Airfield Paving; Parking Lots

Wilson & Company brings extensive insight about state and federal highway needs. Department of Transportation (DOT) clients include the states of Arizona, Colorado, Kansas, Missouri, Nebraska, New Mexico, Oklahoma, Texas, Utah and Wyoming. We have also worked with the Navajo Nation DOT and the Federal Highway Administration.

Our team recognizes budget constraints that DOTs face, and we partner with clients to find alternative solutions to accommodate needs without sacrificing service or quality. We collaborate to develop innovative ways to provide sufficient data that meets your goals and requirements.



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We recently completed an Accelerated Bridge Construction (ABC) project for Colorado DOT that minimized construction impacts to the public and maximized design and construction efficiency with a nearby bridge farm.

Our Survey and Mapping team recently used alternative LiDAR platforms for 3R projects that acquires the level of data needed for the project in the most cost efficient manner.

Drainage: Our team has completed numerous drainage assessments, preliminary and final drainage reports in the Southwest, as well as drainage facility designs for Native American tribes, municipalities, counties, state and federal entities. These include both rural and urban studies, and coordination with agencies in Arizona. Our staff is trained in the latest drainage software including HEC-1, HEC-HMS, AHYMO, HEC-RAS, Culvert Master, Flow Master, HydraCalc, and Hydraflow. Our staff also has the in-house expertise to prepare plans for and provide NPDES and Storm Water Pollution Prevention Plan design services.

FEMA: As our communities develop both publicly and privately, storm water management becomes more important. Our staff specializes in storm water system analysis and design in compliance with the full range of storm water regulations now in effect for communities and the construction industry. We have many years of experience in hydrologic analysis and hydraulic design associated with municipal storm water improvements and determining waterway openings for railroad, roadway, and bridge design. If Best Management Practices (BMPs) are required for projects, we can work with your staff to develop a system that best suits the needs of the community. We stay current on United States Corps of Engineers, Federal Emergency Management Agency, and Environmental Protection Agency regulations as they apply to stream crossings, construction within the flood plain, and storm water runoff during construction.

Wilson & Company is experienced in Floodplain Management and Federal Emergency Management Agency (FEMA) floodplain mapping and map revisions. We have several Certified Floodplain Managers (CFMs), certified by the Association of State Floodplain Managers as qualified to administer the rules and regulations of the FEMA Flood Insurance program.

Policy and Finance

The Wilson & Company team offers experienced personnel with policy and financial analysis skills, who understand that transportation investment decisions are

made in an interdisciplinary context that requires a flexible approach. Because an agency’s transportation needs often exceed its funding resources, efficient use of available funding is key, which can include: having projects ready to fund for fast-track, stimulus-type opportunities; programming projects in a timely manner to avoid loss of obligation authority; and identifying exempt projects available to utilize funds in case of a conformity lapse.

Relevant projects include:

- US-60/Grande Avenue Corridor Optimization, Access Management Plan, and System Study, Maricopa Association of Governments
- Designing Transit Accessible Communities, Maricopa Association of Governments
- Regional Transportation Plan, Central Arizona Governments
- Arizona-Sonora Border Master Plan, Arizona Department of Transportation
- White & Parker Major Investment Study, City of Maricopa
- Arizona Strategic Highway Safety Plan, Arizona Department of Transportation
- MPO & COG Guidelines & Procedures Manual, Arizona Department of Transportation

Public Private Partnership (PPP) Implications and Recommendations: Innovative program delivery approaches, such as design-build-maintain agreements, may be necessary in the future to deliver some major projects on time or even at all. They may be especially appropriate to expedite “illustrative” corridors, where the choice is toll road or no road. The Federal Highway Administration (FHWA) encourages involvement of the private sector to bring creativity, efficiency, and capital to address complex transportation needs and funding issues.

Analysis of CIP/TIP/RTP Programs: Financial accountability is important for agencies funding partners, and the general public. There is a need to look both forwards and backwards at the costs of delivering transportation systems that have been promised to, and approved by, the electorate. The current freeway program deficit outlook makes it clear that future public support will be needed for new or extended revenue streams. Support will be forthcoming only if there is solid financial information available regarding past expenditures and future needs.

Potential Impacts Related to Future Transportation Policy Decisions: Transportation policy decisions at the federal, state, and regional level all need to be identified



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and analyzed expeditiously within the regional planning process. For example, with introduction of Moving Ahead for Progress in the 21st Century (MAP-21), new federal surface transportation legislation brings numerous new objectives and program orientations, which will likely overhaul the magnitude, structure, and conditions of funding availability.

Transportation Revenues and Expenditures

Analysis: All aspects of the regional transportation planning process mentioned above are highly dependent on forecasts of future revenues, which, logically, would rely on and benefit from a spreadsheet-based application that permits “what if” scenarios. Analysis of expenditures adds key information about the accuracy of previous cost estimates and also provides the scorecard necessary for assessing the equitable distribution of certain types of funds among agencies. Maintaining expenditure data in a database format facilitates complex queries and GIS-compatibility to support the provision of reliable and accurate information needed by regional decision makers.

Public Involvement

The team understands our role on potential assignments will may not only be to lead public outreach efforts, but also to assist agency staff in analyzing data, determining appropriate courses of action, and preparing materials that translate technical findings in a manner that is understandable by stakeholders and community members.

Stakeholder Materials: Team members are available to provide assistance in developing working papers, executive summaries, newsletters, etc. for use in disseminating pertinent project-related data to affected stakeholders.

Stakeholder Feedback: Team members are experienced in developing and maintaining stakeholder databases; developing, conducting, reviewing and responding to stakeholder survey data; and tracking stakeholder feedback.

Maps, Figures, Graphics, and/or Charts: Translation of technical data is an important component of all of our past projects. Team members are skilled in the use of GIS, CAD, Adobe Illustrator, Sketch-up, and Excel for creating a variety of graphical displays of analysis results and recommendations in a manner suitable for inclusion in reports, website applications, and public presentation materials.

Presentation Materials for Staff: Our team is proficient in utilizing CAD and GIS to produce technical images, and recommends the use of Adobe Illustrator to enhance these images or produce new graphics for public presentation. Work on past projects has provided us with the necessary experience and expertise to produce materials that present technical materials in a format that is easily interpreted by stakeholders and community members.

Surveys and Data Analysis: Our team has conducted numerous stakeholder and public surveys. Most recently, surveys were conducted to gauge public opinion of connectivity to transit services at various locations throughout the valley to support MAG’s Designing Transit Accessible Communities Study.

Multimedia Materials: Team members have developed marketing materials in various formats, including radio, television, You-Tube, and web pages. We have also developed detailed simulation models and related video simulations using VISSIM to facilitate the presentation of various improvement strategies to local officials, stakeholders, and the public.

Branding, Marketing, and Public Involvement: Many projects involve some level of project branding, marketing, and defining opportunities for public involvement. Team members have developed similar materials for multiple projects, ranging from project logos to project documentation images to website design. We have also implemented various strategies for public involvement, including traditional public meetings, geographically-based dialogues, and focus area workshops.

Construction Management

In this final phase of project completion, Wilson & Company ensures that the project is constructed per the design plans and specifications. Our construction management team is well versed in specifications, DOT and FP-03 Standard Specifications for Highway and Bridge Construction, Arizona Standard Specifications for Public Works Construction, APWA Specifications for Public Works Construction, Uniform Building Code, International Building Code, Uniform Plumbing Code, OSHA, EPA, and SWPPP. Our inspectors have certifications from the National Institute for Certification in Engineering Technologies (NICET), American Concrete Institute (ACI), and for nuclear densometers.



Railroad

Relevant regional projects include:

- Santa Teresa Terminal Fueling Facility, Block Swap Yard & Intermodal Facility, Santa Teresa, New Mexico

Our expertise in creating logistic solutions is derived from working closely with railroads, transportation agencies, freight and air carriers, ports, and trucking companies. We create increasingly efficient rail networks, bringing added value to the most environmentally-friendly mode of transportation. Our focus includes:

- Capacity and Infrastructure Improvements
- Facility Design
- Trackwork Engineering
- Grade Separation Planning
- Structures
- Public Projects
- Construction Management

Design-Build

We have worked on significant design-build (DB) projects as an owner's representative and as the lead designer or team member. Successful design-build projects require quality relationships; where government agencies, private industries and the DB team share intensity, focus and commitment to common goals. We have experience in all alternative delivery processes including design-build; construction management/general contractor; construction management at risk; engineering, procurement, and construction; and job order contracting.

Land Surveying

Relevant local clients include:

- Arizona Department of Transportation
- USDA Forest Service
- Flood Control District of Maricopa County
- Central Area Association of Governments
- Pima County Regional Flood Control District
- Union Pacific Railroad
- Pima County
- BNSF
- City of Chandler
- Various local engineering and construction firms

Wilson & Company's history demonstrates our ability to routinely complete submittals to the satisfaction of our clients. Our staff is experienced and has specialized expertise in successfully completing Surveying, Geospatial, and Remote Sensing projects. Many staff members have professional certifications in their areas of expertise reinforcing and certifying their quality skill sets. We have over 20 fully equipped survey crews who are

monitored by survey task leaders via weekly scheduling calls and the Internet, which gives us flexibility to meet project schedules and includes quality control checks.

Wilson & Company is able to respond and be flexible to our client's schedules and expectations through our 20 office locations, distributed survey crews, planes and dedicated flight crews, and our highly available and skilled staff.

Our survey teams have specialized experience and technical competence in all of the following types of surveying and related services:

- Boundary / Cadastral Surveys
- Right of Way Surveys
- Alignment / Location Surveys
- Topographic Surveys
- Terrestrial LiDAR Surveys
- Hydrographic and Bathymetric Surveys
- Geodetic Network Control Surveys
- Construction Layout and Staking
- Engineering Surveys
- Rapid Response Emergency Surveys
- Photogrammetric Mapping Control
- American Land Title (ALTA) Surveys

Bathymetric Surveying

Wilson & Company has the tools and experience to perform bathymetric survey services. This survey is used to map existing underwater conditions for design and construction and to scan the bottoms of water bodies to develop hydrographic maps for later correlation with shore mapping. Our Tracker Marine Pro 16-foot boat is equipped with SonarMite Echo Sounder equipment. Our staff uses HYPACK Hydrographic Survey Software to process the data.

Terrestrial LiDAR

Surveys that require high definition such as bridges, rock escarpments, retaining walls, HVAC ductwork, conduits, piping inside buildings, power plants, electrical substations, or areas of busy highway traffic are all suited for terrestrial LiDAR. Wilson & Company provides terrestrial LiDAR scanning utilizing our Riegl VZ 400TM terrestrial scanner. Using this equipment in high traffic areas can eliminate the need for traffic control. Bridge openings and clearances are easily obtained. Terrestrial scanning allows the creation of survey basemap and a highly accurate .DTM. This is especially beneficial when designing ADA ramps and other features at busy street intersections.



Geospatial Capabilities

Wilson & Company has established a reputation for providing quality professional photogrammetry and geospatial mapping services to many federal, local and regional government, and private clients.

Our staff has specialized experience in:

- Project Planning
- Analytical Aerial Triangulation
- Airborne and Terrestrial LiDAR
- Photogrammetric Mapping
- Digital Orthophotography
- Geodatabase Development
- Metadata Population
- Application of CADD and GIS Data Standards
- Plan and Profile, Structure, and Cross Section files
- Submittal of CADD and Digital Image Files in File Formats Specific to Client's Requirements

Photogrammetry and Stereo Extraction

Our geospatial extraction team uses digital photogrammetric workstations (softcopy) for collection of planimetric and topographic features. Digital mapping data are routinely compiled to specifications for a diverse client base in a wide variety of 2-D and 3-D vector; and digital raster formats. Our softcopy workstations are equipped with user interfaces for collection of geospatial data directly into geodatabases, ESRI files, or CADD files. Each workstation can be customized to individual client requirements since they are all equipped with direct input menus for feature attribution, levels, and symbology.

The acquisition and integration of a variety of geospatial datasets into a comprehensive CADD or GIS file structure is regularly provided by Wilson & Company for our wide client base.

Items regularly incorporated into our photogrammetric data include field survey data, existing photogrammetric mapping, terrestrial LiDAR data, and airborne LiDAR data. Wilson & Company collects and refines most of this data in-house, but we also utilize datasets from a variety of other sources. Our Certified Photogrammetrists review, update, and edit this data directly in the stereo environment of our softcopy workstations. Our geospatial extraction team is highly skilled in merging these complex datasets into a final format for delivery to our clients.

Geographic Information Systems (GIS)

Wilson & Company provides GIS consulting, development, and production services for a variety of government and private clients. Our GIS Project

Manager, Specialists, and Analysts provide the following services:

- Geodatabase Design
- GIS Strategic Planning
- GIS Needs Analysis
- Geodatabase Development and Population
- SDSFIE Geodatabase Population
- Georeferencing of Scanned Documents and/or Legacy Data
- GIS Data Maintenance
- GIS Staff Augmentation
- Geospatial Visualization
- Webmap Hosting
- Webmap Development
- Metadata compilation

Remote Sensing & Aerial Imagery Capabilities

Digital Imagery

Wilson & Company provides aerial imagery in a direct digital format utilizing our Zeiss/Intergraph (Z/I) Digital Mapping Camera (DMC) and Rockwell Commander twin-turbine aircraft to acquire project data. The DMC is one of the most advanced and popular digital imaging sensor in use by photogrammetric mapping professionals. This sensor captures very high resolution metric imagery in a digital format; simultaneously acquiring 12-bit panchromatic, color, and color infrared for each photo mission. During aerial image acquisition, the Litton Inertial Measuring Unit (POS AV510 PCS with IMU LN200) is used to measure each image's precise exterior orientation. It is capable of recording orientation information at 200Hz.

Airborne LiDAR

Wilson & Company has the capability to acquire airborne LiDAR data with the advanced Optech ALTM Gemini 167kHz sensor from a dedicated Piper Navajo aircraft. This industry leading LiDAR sensor maximizes cost efficiency by coupling a faster pulse rate with an innovative multi-pulse technology, which increases the operating altitude while maintaining point density. The millions of collected LiDAR responses can then be processed using a refined system of algorithms within TerraScan to detect and classify a variety of features including bare earth terrain models, surface vegetation, structures, power lines, and more. Breaklines from photogrammetry or LiDARgrammetry can be added to improve the DTM surface for road crowns, ditches, and hydro-enforcement near transportation features.

Our professionals are experienced practitioners of this kind of sensor fusion, which is a technique used to create



a superior product by combining the data from multiple sensor types and platforms.

Quality Assurance/Quality Control Processes

The Wilson & Company team is committed to achieving high standards of quality in all services and deliverables that will be provided. We will set in motion the Quality Assurance/Quality Control (QA/QC) functions for the team's collective efforts and ensure that qualified experts from each firm independently review draft deliverables prior to submittal to member agencies and other stakeholders. Our QA/QC Program includes:

- QA/QC Team Members;
- Project Controls (Cost, Schedule);
- Monitoring Procedures;
- Documentation;
- Defined Milestone Reviews;
- Scheduled Set Asides for Reviews;
- Submittal Checklists; and
- Client Monitoring Requirements

Quality Control

We believe that quality control must be carried through the entire duration of the project. Our Quality Management Policy setting quality guidelines for all project activities.

- **Drawings:** All formal submittals are reviewed before submittal to the client, whether interim or final drawings. The review process includes a method to clearly document who performed the review and the date completed, who addressed the comments, and when the drawings were updated. To close out the process, the documentation indicates who reviewed the revised drawings to verify the comments were appropriately and accurately addressed. Typically, review comments are made in colored pencil/pen, the changes highlighted when incorporated into the drawings, and another distinct color/highlight used to verify the changes.
- **Calculations:** Whether performed by hand, spreadsheet or some other computer program, all important design calculations include who completed them and the date, and who checked them along with the date. If possible, design updates/revisions that include changes to the design calculations should be tracked in a similar manner.
- **Quantities/Cost Estimates:** Quantities and cost estimates are treated in a similar manner as design calculations. The name of the originator and checker, along with the date completed, are included on each quantity calculation and/ or summary page, as well as cost estimates.

- **Technical Reports/Studies:** These documents are reviewed for technical accuracy and completeness as well as editorial reviews for grammar and formatting. The technical review is completed by an individual(s) with the appropriate background and experience necessary to evaluate the findings and recommendations contained in the document. Editorial reviews for grammar and formatting are completed by staff with expertise in document/graphics preparation. The review process clearly identifies the reviewer, reviser and verifier, and includes the dates when these steps were completed.
- **Specifications:** These documents are reviewed for applicability, accuracy and completeness, and for conflicts with the design. Also these are reviewed using a process to clearly identify the reviewer, reviser and verifier, and include the dates when these steps were completed.
- **Documentation:** The process described above is targeted for completion and documentation of internal reviews. All quality review documents are stored in a clearly identified quality folder. Color scanning and electronic storage of drawings, calculations and other documents is preferred, but hard copy storage is acceptable.
- **Professional Engineering Services:** Client and/or third party review comments are documented as well, along with a response on how the comments were addressed. The preferred method of documenting review comments by the client, outside agencies and internal interdisciplinary and senior level technical reviewers is through the use of a Comment Resolution Form (CRF). The CRF is typically a spreadsheet that contains comments by reviewers, page #/drawing #, review type (preliminary, final, XX%) and date. The CRF indicates the status and final resolution of comments. All comments must be documented as being resolved before the final version of the document is released to the client.

Maintaining Schedules

Wilson & Company teams are dedicated to meeting clients' needs. We find innovative solutions to meet the most time-sensitive projects, and projects are not only done in time, they are also done well! We expect the unexpected and are poised to overcome various project proponents that affect timeliness such as funding sources and procedures, environmental findings, public involvement and tribal agencies review. We use Microsoft Project and Primavera to develop and track project schedules. To ensure that clients' expectations are met, a preliminary project schedule is submitted prior



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to execution of the contract and updated monthly in collaboration with all team members.

Cost Control

The most important step in consultant cost control is development of a complete and detailed scope of services and work-hour estimates for each task. A monthly budget summary and progress report is provided as part of progress invoicing process. This summary includes funding authorizations to date, prior payments, overall percent complete, and remaining appropriations for each key work element. Invoices are clear, detailed, and identify team members, actual hours expended, hourly rates, and percent complete. Each invoice request is supported with a written summary of accomplishments completed in the preceding month.

Cost control must be a prime objective from a project's beginning to its completion. The most important factors in achieving this are time management and clear communication about the client's expectations. As delay is the most frequent case for cost overruns, we carefully manage schedules and costs. We listen carefully to your needs and concerns, and create scoping documents that provide the framework for a sound, thorough and comprehensive project.

During the design process, internal project cost control is achieved through a detailed review of project progression in comparison to the budget expended. We conduct cost and technical reviews at project milestones as part of our Total Quality Management commitment. These reviews enhance productivity and service to our client.

Cost Estimating Techniques

We know that clients want reliable cost estimates throughout the design phase, and engineer's estimates that are realistic and competitive with the final bid amount. Our staff provides reliable cost evaluations and uses our in-house cost history system, published unit bid prices, RS Means cost data, and independent third party professional estimators.

When it appears the project budget will be exceeded, the client's project manager is immediately contacted to discuss alternatives, such as deducting items of work, phasing the project, or providing a cost-benefit

comparison analysis of lower-cost methods or equipment. As our history shows, our goal is to produce a clear and concise set of construction documents so that bidders know what is expected of them during construction and they can prepare a bid that contains a minimum number of contingency costs.

Engineering and CADD Software

As part of Wilson & Company's Computer-Aided Design and Drafting (CADD) system, staff utilizes Bentley Microstation/Inroads and AutoCAD/Civil 3D. We also currently use Bentley ProjectWise as our standard document management system. Currently, we are running the following traffic related software packages on our system: Various database management programs, HCS, SIDRA, AAP, TransCad, PASSER II-90, Transyt-7F, PASSER 3, ITRAF Family of Software, ALADAN (Street Lighting Analysis Software), LUXICON (Street Lighting Analysis Software), SYNCHRO, TRANPLAN, TMODEL2, VISSIM, TransModeler, ArcGIS, SignCAD, and AutoTurn. In addition, we use HEC-RAC, HEC-HMS, TR-20, TR-55, FloMaster, HydroFlo Culvert Master, and several other types of drainage modeling software.

Project Tracking

Wilson & Company primarily uses Microsoft Project to prepare a schedule of the critical work elements. These schedules identify major tasks, provide a detailed work breakdown structure, and can be used to demonstrate the critical path of the work in progress.

The Project Manager is responsible for day-to-day communication with staff throughout planning, design, and construction phases. Task Managers are given the resources by the Project Manager to coordinate other necessary internal disciplines, scheduling, and cost controls. In addition, staff supervises internal quality management programs, including bid ability and constructability reviews. Progress meetings are held with Client staff at intervals determined for each project. If needed, contact is made with area residents and/or property owners to obtain community input. Also, presentations are made to certain special interest groups at project milestones to ensure that the design team is meeting client needs.



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7. ANNUAL AVERAGE PROFESSIONAL SERVICES REVENUES OF FIRM FOR LAST 3 YEARS

| | |
|---|-----|
| a. Percentage of Total Work Attributable to State, Federal and Municipal Government Work: | 53% |
| b. Percentage of Total Work Attributable to Non-Government Work: | 47% |

8. AUTHORIZED REPRESENTATIVE. The foregoing is a statement of facts.

Signature: Daniel F. Marum Date: 12/17/2014

Name: Daniel F. Marum Title: Southwest Transportation Planning Manager