



PUBLIC SAFETY CONSULTING

PROJECT PLANNING TO ACCEPTANCE

BUILDING A WORLD OF DIFFERENCE®



BLACK & VEATCH



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CONSULTING SERVICES

CUSTOMIZED SOLUTIONS FOR EVERY CLIENT

Every year an estimated 240 million calls are made to 911 dispatchers across the U.S. Once those calls are placed, the fast and accurate operation of the radio communication systems is essential to support the public's safety — and very often to save lives.

The technologies that make up the communications systems used for public safety and emergency communications have greatly improved in recent years. Governmental authorities are increasingly exploring their options to upgrade or replace their legacy systems. The process is justifiably complex, and most small- to mid-sized communities lack the depth of expertise necessary to execute a proper project plan; which includes system design and development, selection and implementation.

That's how Black & Veatch can help. As experts in the full lifecycle of communication systems for public safety agencies, we provide high-quality, independent expertise at every step of the way for our clients. From planning, designing, procuring and implementing the next-generation public safety communications networks to the operations and staffing of communications centers for rapid and efficient response ... we ensure our clients have the communications they need, when they need it.

Through our tenured experience, we offer the following benefits to our clients:

Experience. Black & Veatch, established in 1915, has over 30 years of experience helping state and local governments and public safety agencies meet all of their communications needs. Our teams are some of the most experienced and have been recognized as a "Top Consultant" within the public safety industry (*MissionCritical Communications - 2016*).

Technology. Our broad range of technical expertise includes the assessment, planning, design, procurement and implementation of everything your agency will need to take advantage of new technologies.

Vendor Neutral. Black & Veatch is neutral and objective, focused only on providing the best custom solution for you.

Black & Veatch's expertise includes:

- Interoperable Land Mobile Radio (LMR)
- Broadband and LTE
- Emergency operations/communications centers
- Next Generation 9-1-1

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CONSULTING CAPABILITIES

THREE-PHASED APPROACH

Black & Veatch provides the expertise to execute a carefully developed project plan, customized to meet our individual clients' needs. This project plan is typically segmented into three phases with periodic breakpoints that facilitate discussion, review and decision making by key stakeholders before proceeding into the next phase. The three phases are defined below:

Phase I: Needs Assessment, Conceptual Design and Budget Estimate

- Needs assessment
- Requirements definition
- System alternatives development and trade-off analysis
- Conceptual system designs and budgetary cost estimates
- Recommendations for system improvements or replacement
- Report preparation
- Presentations to city councils, commissioners' courts, and/or boards of directors

Phase II: Development of a System RFP and Vendor Selection

- Detailed technical specifications
- Vendor proposal solicitation and evaluations
- Vendor oral presentations
- Vendor best and final offers
- Contract negotiations and execution

Phase III: System Implementation, Acceptance Testing, Project and Construction Management

- Conduct project kickoff and orientation meeting
- Conduct detailed system design review
- Attend factory system staging event
- Address FCC licensing
- Monitor vendor performance
- Manage and minimize change orders
- Inspect system installations
- Develop and conduct system acceptance testing program
- Develop and rehearse system cutover plan
- Develop and conduct user training
- Assist client with cutover to new system



ADDITIONAL SERVICES

- Construction management
- Environmental studies
- Foundation and drainage design
- Geotechnical studies (soil analyses)
- Licensing and regulatory assistance
- Microwave and optical fiber system design
- Preliminary and as-built drawing package
- Radio coverage and system throughput analysis
- Site lease negotiation
- Site planning and construction
- Site selection and alternate location
- System design
- Tower and shelter design
- Tower loading and structural analysis
- Tower remediation
- Zoning and permitting assistance





THE BLACK & VEATCH

DIFFERENCE

NATIONAL FOOTPRINT WITH LOCAL SERVICE!

- Founded in 1915 and headquartered in Overland Park, Kansas
- Over 60 U.S. offices and 110 worldwide offices
- Global workforce of more than 10,000 professionals
- Extensive experience in mission critical communication systems
- Designed and/or constructed approximately 25% of the United States communication infrastructure
- Deployed over 100,000 wireless sites across the United States
- Deployed more than 40,000 miles of optical fiber systems
- Local offices and local talent — meeting regional needs
- Registered engineers in all 50 states
- Ranked “Top Consultant” by *MissionCritical Communications* (2016)
- *Engineering News-Record* (ENR) Rankings (2016)
 - Ranked 10 in Top 100 Design-Build Firms
 - Ranked 1 out of Top 5 in Towers and Antennae
 - Ranked 2 out of Top 15 in Telecommunications (ranked #1 for six consecutive years (2010-2015))
- Quality assurance and quality control - ISO 9001:2015 certified
- Industry Leading Safety Rating EMR = 0.38

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