

Engineering, Business Case, and Strategic Planning • Survivability and Resilience Strategies for Public Safety Networks • Broadband Wireless and Fiber Optics Networks
Business Planning and Life Cycle Analysis • Smart Grid

Infrastructure Modernization & Integration with Existing Systems Disaster Planning & Recovery • Strategic Planning & Engineering

Capabilities

- ❖ Expertise in **fiber and wireless** network architecture, infrastructure, equipment, and applications
- ❖ Expertise in network solutions, including **integration of existing systems** and **migration to emerging technologies**
- ❖ Network planning, design, engineering, and implementation oversight
- ❖ Review existing architectures and emergency plans
- ❖ Field testing and **reliability** assessments
- ❖ Assessment of needs – internal and external
- ❖ Evaluate and test **WiMAX** capabilities within different bands of spectrum
- ❖ Back-up **emergency planning**
- ❖ High-level **IT/infrastructure disaster recovery and continuity of operations** strategies and procedures
- ❖ **Smart Grid/AMR/AMI** planning, engineering, design
- ❖ Review of vendor proposals
- ❖ IV&V
- ❖ Oversight of vendor implementation
- ❖ Acceptance and performance testing
- ❖ Business planning
- ❖ Lifecycle/business case analysis

Designed and implemented the only communications network to remain operational in Lower Manhattan on 9/11

Representative Recent Experience

- ❖ **Seattle Wireless Strategic Plan** – far-ranging strategic planning to meet public safety and other government needs for wireless broadband services, taking into account technology, spectrum policy, and financial considerations
- ❖ **Montgomery Continuity of Operations/Disaster Recovery Plan** – strategic planning and development of procedures for video and cable operations of County government in close proximity to Washington, DC terrorist targets
- ❖ **Washington DC** – business and technical planning and strategies for extensive public fiber optics network
- ❖ **Los Angeles Department of Water & Power** – technology and business planning for use of fiber optic network to serve utility, business, and public needs
- ❖ **Arlington County, VA Master Technology Plan** – develop long-term plan for County technology development and services intended to migrate to new technologies and to integrate existing network infrastructure
- ❖ **Annapolis, MD Wireless Broadband Infrastructure Project** – design cost-effective, broadband wireless network to serve as backbone to link all city facilities and provide for citywide video surveillance system with data and voice capabilities.
- ❖ **Delaware Department of Transportation** – analyze and update fiber optic and wireless communications systems; design migration of wireless network from 800MHz to 700 MHz; develop strategic plan for use of wireless resources, including spectrum in multiple bands; design and install systems for status monitoring for control and operations of highway emergency systems
- ❖ **Washington DC/National Capital Region Interoperability Program** – multi-year Homeland Security effort to interconnect 21 jurisdictions in and around Washington, DC with fiber optic, microwave, and other technologies for public safety and emergency communications purposes
 - Series of feasibility analyses
 - Engineering
 - Network design and architecture
 - Bid documents and specifications
 - Program management
 - Oversight of implementation
 - Migration of applications to network
- ❖ **Seattle Fiber Optic Network Study** – conduct feasibility study and market research to evaluate technical and business models for fiber-to-the-premises networking across Seattle
- ❖ **San Francisco Next Generation Network Design** – develop conceptual design and assess feasibility of next generation fiber network construction to meet internal City needs, including public safety. Conduct market research to quantify business and residential needs. Develop specifications and strategies for incremental fiber and wireless deployment to public housing and key users
- ❖ **Emergency Ops Center Video-Conferencing Network** - video conferencing network among EOCs and ECCs of 21 jurisdictions in three states.
 - Network design
 - Bid documents and specifications
 - Implementation oversight
- ❖ **IT Recovery Center** – feasibility study for multi-jurisdiction recovery center in **Northern Virginia** to enable participants to function in the event of disaster.
 - Determine range of costs
 - Design interconnection network required
 - Assess potential capabilities

- o Evaluate benefits of government-owned facility vs. leased facility/ service

❖ **Arlington County, VA Public Safety Network** – plan use of IT and high-bandwidth communications to improve capabilities of first responders, provide decision-makers with critical information during emergency situations, and ensure continuity of government in event of disaster

- o Fiber infrastructure design and cost estimates to support public safety dispatch radio systems and other wireless communications initiatives
- o Advise regarding negotiations, design, and construction of a fiber optic network backbone interconnecting more than 50 County facilities
- o Provide initial design and competitive procurement documentation
- o Oversee and test construction and implementation

❖ **Emergency AM Radio Broadcast Systems** for Delaware Department of Transportation and Offices of Emergency Management in Howard County, MD and Arlington County, VA

- o Develop AM radio broadcast systems to disseminate emergency information to public
- o Conduct FCC licensing
- o Provide detailed design and implementation oversight

❖ **700 MHz Wireless Broadband Analysis for US Conference of Mayors, National League of Cities, National Association of Counties, NATOA** – prepare technical analysis of “D Block” and public safety spectrum capabilities and considerations for filing by national municipal associations in FCC proceedings

PRINCIPALS

Joanne Hovis, President: communications analyst and attorney with extensive experience managing complex communications infrastructure projects and intimate knowledge of the communications regulatory environment.

Dr. Andrew Afflerbach, Director of Engineering: licensed Professional Engineer with 14 years experience in complex technology and network planning and design, including for Homeland Security.

David Doulong, Principal Engineer: telecommunications engineer with more than two decades of experience with the specifying, designing, and managing deployment of fiber optic, data, telecommunications, and video systems. Qualified as USN Surface Warfare Officer, OOD Underway, and Command Duty Officer; Formerly Officer-in-Charge of Mine Survey Vessel; Promoted to USN Captain (O6) (2000). **Current DoD Clearance: Top Secret/SCI;** US Coast Guard Licensed Merchant Marine Officer: Master 200 GT Near Coastal, Master 500 GT Inland, Mate 1600 GT Near Coastal.

Thomas Asp, Principal Engineer: engineer and MBA with 20 years of experience with communications and public power systems including electric and telecommunication system design; evaluation of the financial impact of projects on utility operations; mobile telephony, Smart Grid/AMR/AMI, and distribution automation.

Corporate Status:	Small Business, Woman-Owned
DUNS Number:	10-386-3650
Cage Code:	1LU36
EIN:	52-1442373
ORCA Registration:	Completed

GSA Schedule 70 - IT
Contract Number GS-35F-0067U, Awarded 10/29/07
Contract Period: 11/5/07 – 11/4/12
Payment Terms: Net 30 Days

GSA Schedule 871 - Engineering (Pending)
GSA Schedule 874 - MOBIS (Pending)

NAICS CODES

541330	Engineering Services
541618	Other Management Consulting Services
541512	Computer Systems Design Services
541490	Other Specialized Design Services
541340	Drafting Services
541370	Surveying and Mapping (Except Geophysical) Services
541519	Other Computer Related Services
541611	Administrative Management and General Management Consulting Services
541690	Other Scientific and Technical Consulting Services
541712	Research and Development in the Physical, Engineering, and Life Sciences (except Biotechnology)
541990	All Other Professional, Scientific and Technical Services

SERVICES

- ❖ Broadband Communications Networks
- ❖ Technology Planning and Design
- ❖ Homeland Security and Public Safety
- ❖ Interoperable Communications
- ❖ Fiber-Optic, Satellite, and Wireless Technology
- ❖ Inter-Agency/Facility Networking and Planning
- ❖ Smart Grid/AMI/AMR Strategy
- ❖ Technology Training
- ❖ Project Management
- ❖ Intelligent Transportation Systems
- ❖ Safety Evaluation/Inspection of Network Physical Plant
- ❖ Communications Network Performance Evaluation
- ❖ Video Engineering/Video-Conferencing/Studio Design
- ❖ Voice and/or Video over Internet Protocol (IP)

All work conducted by experienced professionals

All CTC engineering work is conducted or supervised by licensed Professional Engineers. All business planning and analysis is conducted or supervised by MBAs and CPAs.

CTC Principal Engineers hold either a Professional Engineer license or at least one graduate degree. All senior staff have years of experience designing and implementing communications systems utilizing a full range of technologies, including wireless and fiber optics.