



July 22, 2014

Mr. Norm Johnson
Village of Orland Park
14700 Ravinia Avenue
Orland Park, Illinois 60462

Re: Metropolitan Area Network Feasibility and Planning Report

Dear Mr. Johnson:

Thank you for the opportunity to meet with you to discuss our capabilities and your concerns regarding the Metropolitan Area Network (MAN) Fiber Optic Infrastructure Planning project. We feel that Technical Design Services, Inc. (TDSi), has the required experience and resources to assist the Village of Orland Park in achieving its goals of delivering a reliable, high bandwidth connection between the various buildings and connection points dispersed throughout the Village while reducing the overall Telecommunications and Network costs incurred today through leased service provisioning. Per your request and based on the information from our initial meeting, we have developed the following consulting services proposal for your consideration. We appreciate your time and look forward to working with you.

Our Understanding

It is our understanding that the Village of Orland Park has several buildings, pump stations, towers and lift stations that are connected together to provide voice and data networking services. The network connections between these various facilities are a combination of wireless systems and land line leased services that have been in place for a number of years. These existing systems are not functioning and/or delivering the required level of service that the Village is demanding for today's network needs and anticipated future growth. The Village has already determined that the cost to upgrade the existing wireless hardware and/or procure additional leased services exceeds its value and would not provide the needed capacity.

To address this issue, the Village of Orland Park would like to examine alternatives to replace the existing network connections between the various sites with that of a Village owned private MAN fiber optic infrastructure system.

It was determined that the Village would like our assistance in gathering information regarding this solution, compare it to the needs of the Village and provide a budget to properly plan and fund the project.

To that end, we have developed this proposal that describes our approach and the work-steps associated with this engagement:

Project Approach

Based on the objectives listed above and our previous discussions, the following work-steps will be performed during this project.

1. Review Current Technical Environment

- We will meet with you and your staff to familiarize ourselves with the hardware and network design that is currently in place. We will also work with your staff to determine an estimated bandwidth requirement for the MAN links/connections. Projections will be made based on anticipated new services and additional bandwidth needs that will increase on the overall network system.
- We will also work with you to determine timing of projected requirements in order to establish an implementation guide and timeline.

2. Develop a Budgetary Estimate for Construction of the MAN Fiber Optic System.

- We will develop a budgetary estimate and a high level design for the planned MAN Fiber Optic System. Our process will include the feasibility of various methods of installation including directional boring as well as the use of other existing pathways along the various routes.
- We will also provide a high level site plan drawing showing the planned fiber optic pathway and an estimate of the strand count of the fiber cables, its protection and termination costs. Future needs of the system and expansion will be accounted for in the design to provide a system that will be versatile and allow for growth in bandwidth and users.

3. Conduct Feasibility Analysis

- Based on the information gathered above, we will conduct a feasibility analysis and comparison of the various alternatives as compared to the operational requirements developed earlier. In this way, the Village can determine the specific direction and the best alternative to provide services between the various sites.

4. Develop a Report of Findings and Recommendations.

- Following our analysis, we will develop a report of our findings and recommendations. This report will compare the various vendor offers against the construction of a private fiber optic network. This report will form the basis for cost justification of the best MAN alternative for the Village.

5. *Report Presentation.*

- We have allocated time in our work plan to review our completed report with you and your staff.

Project Staffing

Mr. Brett Mersch, Tom Jakobsen and Larry Gunderson will perform this engagement. Each of these individuals have deep knowledge of the telecommunications industry and specific experience in the design/engineering of cable systems, network designs, telecommunications, construction, and feasibility analysis of Metropolitan Area Networks (MAN). TDSi has worked on design projects of similar nature with the Village in the past and are familiar with your staff, some of the facilities within the Village and many of the Village procedures. Professional resumes are included within Exhibit A of this proposal.

Project Timing

We understand the timing issues related to this project and will work with you to meet your needed time frames. We are available to start immediately upon acceptance of our proposal. We anticipate we will require no more than four (4-6) weeks to complete our report. We will keep you informed of any schedule changes that may result from gathering information and pathway investigation. Following completion of the report, final meetings can be scheduled for report review and discussion.

Project Fees

Our fees reflect the experience and expertise of each individual that will be assigned to the project. The time and resources allocated are determined based upon our understanding of the specific requirements of the project, as explained in the project approach. Minor changes to the Project Scope and Project Methodology stated above will not result in a change in our fees. Should there be more significant changes in the scope or required methodology, we will inform the Village of Orland Park of the required change in our fees before proceeding. Direct expenses such as express postage, mileage and travel related expenses will be billed in addition to our fees.

Project Investment Summary		
Metropolitan Area Network (MAN) Feasibility Analysis & Planning Report		
MAN Feasibility Analysis and Planning Report		\$9,850
Total Project Investment for Selected Services (plus expenses)		\$9,850

Notes:

Payment terms: Unless mutually agreed upon otherwise, we will issue monthly invoices for our services rendered. The fees will be payable upon receipt.

Client Acceptance

If these arrangements are acceptable, please sign a copy and return to us. Once authorization is received, we will establish a project schedule with you and proceed with the project. We appreciate this opportunity and look forward to working with you.

Should you have any questions or require any additional information, please contact me directly at (630) 388-6580 or bmersch@tdsinc.biz.

Sincerely,

TECHNICAL DESIGN SERVICES, INC.



Brett Mersch
Senior Consultant

**Village of Orland Park
MAN Feasibility Analysis & Planning Report**

Accepted by:

Authorized Signature:

Name/Title: _____

_____, 2014

Exhibit A

Professional Resumes

Profile

Brett Mersch is a Senior Design Consultant with Technical Design Services, Inc. Mr. Mersch specializes in the design of Structured Connectivity Systems, Audio-Visual Systems and Communication systems. With over 20 years in the industry, Brett's past experience with a wide range of client needs has given him an extensive understanding of cabling systems requirements. Brett's projects have allowed him to design systems for school districts, medical institutions, manufacturing facilities, and commercial institutions. His excellent skill set and knowledge base gained from experience allows him to produce a truly comprehensive design and documentation package. Brett's designs have included the use of Unshielded Twisted Pair, Fiber Optic, and various other media to satisfy client needs for information transmission. His understanding of TIA/EIA and BICSI standards for cabling, pathways, grounding and administration allow him to design standards based cabling systems. His excellent balance of product knowledge and experience gained from working with different clients and designers provides him with the proper skill set to meet client needs.

QUICK LOOK :

- > Senior Technology Design Consultant
- > Over 20 years experience in the industry
- > Over 20 years of AutoCAD experience
- > Member of Building Industry Consulting Service International (BICSI)
- > 15 years with TDSi

Some of Brett's recent project experience includes:

Educational Market

- **Naperville Community Unit School District 203, Naperville, IL** – Design, specify, and issue for bids the structured cabling system, including horizontal, wireless, riser and building backbone cabling, along with audio visual systems for one Elementary School, one Early Childhood Facility and one High School. The scope of these projects consisted of renovation work within existing facilities and new additions.
- **Riverside Brookfield High School, Riverside, IL** – Design, specify, and issue for bids the structured cabling system, including horizontal, wireless, riser and building backbone cabling, along with audio visual systems. The scope of this project consisted of renovation work within the existing facility and new additions.
- **Glen Ellyn School District 89, Glen Ellyn, IL** – Design, specify, and issue for bids the structured cabling system, including horizontal, riser and building backbone cabling, along with audio visual systems for four Elementary Schools, one Middle School and the District Office. The scope of these projects consisted of renovation work within existing facilities.
- **Valley View School District 365U, Romeoville, IL** – Design, specify, and issue for bids the structured cabling system, including horizontal, wireless, riser and building backbone cabling, along with audio visual systems for District wide Elementary, Middle and High Schools. The scope of these projects consisted of renovation work within existing facilities and new additions.
- **Elmhurst School District 205, Elmhurst IL** – Design, specify, and issue for bids the structured cabling system, including horizontal, wireless, riser and building backbone cabling, along with audio visual systems for seven Elementary Schools, three Middle Schools, one High School and the District Office. The scope of these projects consisted of renovation work within existing facilities and new additions.

- **Winnetka School District 36, Winnetka IL** – Design, specify, and issue for bids the structured cabling system, including horizontal, wireless, riser and building backbone cabling, along with audio visual systems for three Elementary Schools and one Middle School. The scope of these projects consisted of renovation work within existing facilities and new additions.
- **New Trier High School District 203, Winnetka IL** – Design, specify, and issue for bids the structured cabling system, including horizontal, wireless, riser and building backbone and wide area network cabling for two High Schools. The scope of these projects consisted of renovation work within existing facilities
- **Oswego School District 308, Oswego IL** – Design, specify, and issue for bids the structured cabling system, including horizontal, riser and building backbone and network cabling for one High School and Bus Transportation facility. The scope of these projects consisted of renovation work within existing facilities

Municipal Market

- **Village of Elwood, Elwood IL** - Design, specify, and issue for bids the structured cabling system, including horizontal, wireless, riser and building backbone cabling, along with audio visual systems for the Village and Police Department. The scope of this project consisted of work for a new facility.
- **City of Bloomington, Bloomington IL** - Design, specify, and issue for bids the structured cabling system, including horizontal, wireless, riser and building backbone cabling, along with audio visual systems for a new Civic Arena. The scope of this project consisted of work for a new facility.
- **Village of Lincolnwood, Lincolnwood IL** - Design, specify, and issue for bids the structured cabling system, including horizontal, wireless, riser and building backbone cabling, along with audio visual systems for structured cabling system upgrades at the Municipal Building, Police Department, Fire Department and Public Works Building. The scope of this project consisted of work within existing facilities. Most recently we designed and specified the underground fiber optic and copper inter-building backbone system between the Village Hall, Pool Building and Public Works facilities.
- **Village of Oakbrook, Oakbrook IL** - Design, specify, and issue for bids an Inter-Building fiber backbone cabling system between their various facilities. The scope of this project consisted of work within existing facilities.
- **Schaumburg Township District Library, Schaumburg IL** - Design, specify, and issue for bids the structured cabling system, including horizontal, wireless, riser and building backbone cabling, along with audio visual systems for the main library and two remote facilities. The scope of these projects consisted of renovation work within existing facilities and new additions.
- **Village of Orland Park Orland Park IL** - Design, specify, and issue for bids the underground fiber optic inter-Building backbone system between the Village Hall and new Police Department facilities. Most recently we designed and specified the underground fiber optic and copper inter-building backbone system between the Village Hall, FLC and Recreation facilities.

Healthcare Market

- **Edward Hospital, Naperville IL** - Design, specify, and issue for bids the structured cabling system, including horizontal, wireless, riser and building backbone cabling, along with audio visual systems. The scope of this project consisted of work for a new cancer center treatment facility.
- **Perry Memorial Hospital, Princeton IL** - Design, specify, and issue for bids the structured cabling system, including horizontal, wireless, riser and building backbone cabling for the 911 Center, Main Hospital and Disaster Recovery Facility. The scope of these projects consisted of renovation work within existing facilities and new additions.
- **Rush Presbyterian Saint Luke's Medical Center, Chicago IL** - Design, specify, and issue for bids the structured cabling system, including horizontal, riser and building backbone cabling for various buildings on the Hospital Campus. The scope of these projects consisted of renovation work within existing facilities and new additions.

Brett's structured cabling system designs have included server rooms, equipment rooms (MDF), telecommunications rooms (IDF), horizontal and vertical riser distribution and data centers. These room layouts designs encompassed placement of racks, cabinets, AC units, Uninterruptable Power Supplies, grounding equipment, and work area outlet configurations. The rack and cabinet details included front and rear elevations of fiber enclosures, patch panels, vertical and horizontal wire management, active and passive electronics, and power requirements. The AC units detail included calculation of the BTU/hr loads within the IT room, placement of the unit for clearances and functionality. The UPS details included calculation of the power consumption of the room's equipment, identification of redundancy requirements, and placement of feed and distribution panels. The grounding details included requirement of grounding to the building ground, identification and placement of telecommunication ground bar(s), ground cable riser distribution, and grounding of telecommunication equipment. The vertical riser distribution designs included core or sleeve locations and sizes, sizing and distribution of singlemode, multimode, multi-pair copper, and coaxial cable. The horizontal distribution designs included the distribution of UTP and coaxial cabling, 90 meter distance checks, conduit and tray layout and sizing, work area outlet configurations, and wireless access points.

The audiovisual systems designs comprised of non-motorized and motorized projection screens, projectors, direct view displays, Blu-Ray players, Digital Video Disk (DVD) players, wired and wireless microphone systems, sound reinforcement systems, analogue and digital control panels, audio and video switchers, audiovisual matrix controllers, and video conferencing.

TOM JAKOBSEN, SENIOR PARTNER – IT INFRASTRUCTURE & OPERATIONS PRACTICE LEADER



Tom Jakobsen is a Senior Partner with *CLIENTFIRST* and is the IT Infrastructure and Support Operations Practice Leader. He has over 25 years of experience in the information technology arena. His interdisciplinary experience has given him a unique understanding of the interrelationship between network infrastructures and the applications they support, as well as the usefulness of project management and system development life cycles for infrastructure-related projects. Mr. Jakobsen's dual roles as an IT Director and Consultant provide clients with a resource of tremendous experience who understands interdepartmental and vendor relationships and the management of those relationships.

Highlights

- Former Network Infrastructure Consulting Practice Leader for RSM McGladrey, the nation's fifth-largest CPA and consulting firm
- Ongoing Contract CIO for multiple municipalities
- Former CIO at Frame Relay Corporation
- Interim CIO at AAA Colorado
- Interim CIO at AAA Arizona
- Two-time Interim CIO at Illinois Action For Children
- Managed hundreds of IT consulting projects with dozens of municipalities and local governments

Specialty Areas

- IT Operations Management
- Network Design, Procurement, Implementation, and Oversight
- IT Security
- Disaster Recovery
- Interim CIO/IT Management
- Project Management
- Assessments, Strategy, and Planning

Education, Credentials, and Affiliations

- Bachelor of Science in Mathematics and Economics from University of Iowa
- Member, Project Management Institute, Midwest Chapter

Similar Clients or Projects

City of Brentwood
City of Burbank
City of Camarillo
City of Dublin
City of Laguna Niguel
City of Murrieta
City of Palm Desert
City of Rancho Cucamonga
City of Rancho Mirage
City of Redlands
City of Rialto
City of San Gabriel
City of Simi Valley
Town of Danville
CA-NV American Water Works Association
Castaic Lake Water Agency

Cucamonga Valley Water District
Jurupa Community Service District
Mesa Consolidated Water District
Lake Elsinore Unified School District
Romoland School District
San Jose Evergreen Community College
City of Bloomington
City of Highland Park
City of Lake Forest
City of Naperville
City of St. Charles
Village of Cary
Village of Glencoe

Village of Kenilworth
Village of Libertyville
Village of Lincolnwood
Village of Northbrook
Village of Northfield
Village of Oak Brook
DuPage County
Glenview Schools
Hampton School District 29
Harrison School District 36
Indian Prairie CUSD 204
Naperville CUSD 203
Naperville Park District
Oak Park Library
Oswego Library District
Oswego School District
Park Ridge Schools

Port Byron Central School District
School District U-46
Sherrard Community Schools
St. Charles School District
Illinois Action for Children
City of Salisbury

LARRY GUNDERSON – IT MANAGEMENT & SUPPORT PRACTICE LEADER



Larry Gunderson has nearly 20 years of IT Management and Geographic Information Systems (GIS) experience. He has managed and directed nearly all aspects of information technology, including system planning, design and implementation, database design, Request for Proposal (RFP) development and system procurement, asset management, GIS, cyber security, eGovernment, and information technology policy and governance. His background has provided him the ability to collaborate with department heads and users on various GIS applications and functions necessary to sustain GIS usability. Mr. Gunderson's broad technical experience is complemented with proficiency in Microsoft applications, including PowerPoint, Visio, and Project.

Highlights

- Former CIO – City of Naperville, IL
- Directed a staff of 18 technology professionals and oversaw a \$5.3 million annual operating budget
- Directed the development of a comprehensive Business Process Management analysis to review over 40 city business processes and recommend technology improvements
- Responded to City Council mandated budget cuts by streamlining information technology operations and reducing the departmental budget by thirty-percent
- Directed a transformation of the City's network infrastructure in response to a need for increased information security
- Developed a Citywide Strategic Technology Plan to provide technical direction for the City's departments
- Implemented Azteca Cityworks Computerized Maintenance Management System (CMMS) in one of the first major installations of the software in the country
- Utilized Arc Macro Language (AML) and UNIX programming skills for environmental GIS analysis and cartographic design projects

Education, Credentials & Affiliations

- Master of Science in Management Information Systems from North Central College, Naperville
- Bachelor of Science in Industrial Education from Western Illinois University, Macomb
- Certificate in Information Systems Project Management from DePaul University, Chicago
- Government Management Information Sciences – Illinois Chapter
- Urban and Regional Information Systems Association (URISA)
- Illinois GIS Association (ILGISA)
 - ♦ Board of Directors, 1998 – 2003
 - ♦ ILGISA President, 2002

Similar Clients or Projects

City of Lake Forest

City of Naperville

Village of Cary

Village of Lincolnwood

Village of Northfield

Naperville CUSD 203

Elgin School District U-46

Oswego School District