Town of Superior
Utility Infrastructure
GPS/GIS Technology Project

MT Land Information Act Grant Application

Town of Superior
105 Cedar St
PO Box 729
Superior, MT 59872

February 12, 2015

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APPLICATION FOR GRANT FUNDING

Applicant and Partner Information

Primary Applicant (Required):
Name of principle individual: **Roni K. Phillips, Mayor**
Name of agency\entity: **Town of Superior, MT**
Street: **105 Cedar Street**
City: **Superior**
County: **Mineral**
State: **MT**
Zip Code: **59872**
Contact email address: **townofsuperior@blackfoot.net**
Contact fax address: **406-822-3594**
Contact phone: **406-822-4672**
Organizational Unit (if applicable)
Department:
Division:

Other Project Partners – complete for each partner (copy box as needed):
Name of contact: Tim Read
Name of Agency: Director, Environmental Health & Planning
Street: 300 River St
City: Superior
County: Mineral
State: MT
Zip Code: 59872
Contact email address: tread@co.mineral.mt.us
Contact phone: 406-822-3525

Date Submitted (Required): 2/12/2015 **Date Received by State:**

Descriptive Title of Applicant's Project (Required):

Town of Superior Utility Infrastructure GPS/GIS Technology Project

Relevance and Public Benefit

The purpose of the Montana Land Information Act is to develop a standardized, sustainable method to collect, maintain and disseminate information in digital formats about the natural and artificial land characteristics of Montana. Land information changes continuously and is needed by businesses, citizens, governmental entities, and others in digital formats to be most effective and productive. MLIA ensures that digital land information is collected consistently, maintained accurately in accordance with standards, and made available in common ways for all potential uses and users, both private and public.

The Town of Superior (the Town) is applying for funding to supplement existing GIS data covering the community by locating and GPS mapping the water utility infrastructure for the community, including residential and commercial curb stops/water shut-offs, metering pits and gate valves. The Town is also requesting funding for GPS mapping of sewer and storm water infrastructure, including sewer manhole access covers and storm water drains. Subsequent GIS processing will result in a highly accurate data points and a generalized buried/underground pipe network for the Town's water, sewer and storm water infrastructure.

The Town understands the benefits of Geographic Information System (GIS) data to support decision making and efficiency in local government and would like an opportunity to build upon the extensive GPS mapping efforts and GIS data development already completed in the area. Having accurate GPS locations for critical infrastructure available to Water Dept. staff will greatly assist rapid response and service to the residents of Superior (e.g. quickly shutting off water during seasonal breaks with snow or leaves obscuring the shut-off or access points). Understanding the connectivity of the Town's storm drainage system to the Clark Fork River may increase the potential of stopping contamination from ever reaching it. The Town wishes to develop a digital dataset that can be used now and in the future by subsequent Town stewards.

GPS/GIS in Mineral County and the Town of Superior

Mineral County's Environmental Health and Planning Office (EH&PO) and Sheriff's Office, through their E-911 and GPS/GIS consultant, Mapping and Planning Specialists, Inc. (MaPS, Inc.), began development of a GIS for Enhanced 9-1-1 starting in 2004, in which all the roads and structures in the County were mapped and addressed, including the Town. In 2007, the County went live with their E-911 System and contracted with MaPS, Inc. for ongoing GIS data maintenance, including GPS data collection and GIS integration of new construction.

The Town of Superior contracts with the Sheriff's Office for law enforcement and works closely with the EH&PO to coordinate local construction and sanitation issues. Because the E-911 project covered the entire Town, in 2013, with the support and approval of the County, the Town contracted with MaPS, Inc. to install ArcReader software and load the

County's E-911/GIS data on a number of Town office computers, including the Clerk, Fire Dept. and Public Works.

The Town was designated an Environmental Protection Agency (EPA) Super Fund site in 2009 due to high levels of lead, arsenic and other hazardous contaminants present in the soils as a result of the Iron Mountain Mine that operated north of Town from the early 1900s to the 1950s. The tailings from the mine were disposed of along Flat Creek, which drains to the Clark Fork River at Superior. Mine waste was also imported into Superior by local government and individuals as fill material for yards, roads, etc. The EH&PO worked with MaPS, Inc. and the EPA's sampling data in 2013-2014 to utilize the Montana Cadastral parcel data and the County GIS data to identify parcels/addresses/structures that had contaminated soil in the Superior area. MaPS, Inc. assisted the County and Town to link initial EPA testing documents to parcels, including post-remediation testing results. The County and Town utilize this GIS information regularly to make informed decisions regarding land use – and the data is available for residents or potential residents to access for review of clean-up and sampling records and assist in future property transactions.

In 2013, the Town contracted with MaPS, Inc. to locate and GPS map the Town's fire hydrant locations to support the Fire Dept.'s needs for insurance rating coverages. The GIS data demonstrated that the Town's infrastructure was adequately served by its network of fire hydrants and the insurance rating was significantly reduced.

As identified in the Land Plan priorities – **B1 – MSDI Land Records, Addressing and Water Information Partner Support**, the Town of Superior believes that mapping of the sewer system and storm water drainage is critically important to support effective stewardship of the Clark Fork River, a large river system that serves a much larger downstream area. The Town has received a letter of support from Troy Blandford, the Theme Lead for the MSDI Hydrography dataset, indicating his interest in GIS data in Superior as it relates to the surface drainage network in the surrounding rural areas.

As identified in the Land Plan Priorities – **B2 – Local and Regional Capacity Building**, this investment will take advantage of local, regional and state funding, using available expertise to strengthen the Montana GIS system. The result will be improved quality of life for Superior, Mineral County and Montana citizens. GIS technology will help us make better decisions, improve our ability with others on a global basis for economic development, while at the same time facilitating the decision making process in connection with local infrastructure far more efficient and effective..

A prerequisite to achieving needed growth of our residential and commercial enterprise districts is accurate mapping locating/mapping of the Town's water, sewer and storm water infrastructure. This technology is essential for land use in municipal and economic development planning. It is critical in the engineering design, financial estimates and bidding process for public improvement and private development projects within the Town. The project improves fire protection. It is used by the Town's water utility staff to locate critical infrastructure for repair and replacement and to plan future projects. It helps telecommunications and electric utility companies in line location and provides efficient

and exact information for homeowners as well as commercial enterprises for repairs, replacements and new projects.

Public and private use of GIS data is growing and the availability of this kind of information is coming to be expected. The collection of Superior's land information beginning with water and sewer utilities will create a consistent, maintainable and accessible format critical to the users both utilities. GPS/GIS technology in verifying and mapping the water and sewer utilities and storm water infrastructure supports future economic growth prospects and current development projects. It will also prove to be a vital tool when these systems are stressed or overwhelmed in times of emergency.

The Town has also received a letter of support from Mineral County's Director of Environmental Health and Planning, Tim Read, indicating his support for the project to supplement his stewardship of the County's E-911/GIS data.

Scope of Work Narrative

Scope of Work (Required) – *Provide a detailed narrative (up to 4 pages) of the work that needs to be accomplished in order to complete a successful project. The statement must include:*

TASK 1 – Scheduling & Town Locates/Marking

The Town has estimated that there are approximately 600 water and sewer infrastructure points that they would like to have mapped. These points include gate valves (water main shut-offs under metal covers in the street surfaces), residential and commercial customer meter pits (at grade access boxes with covers) and curb stops (shut off valves on water service lines), as well as sewer access manhole covers and storm drains.

Based on the Town's estimates of the infrastructure points and their experience with similar previous projects, MaPS, Inc. anticipates the GPS field data collection effort will require one (1) week on-site (4-5 collection days). To reduce expenses and costs, MaPS, Inc. and the Town will work closely to collect all the field data in one (1) week-long session (Monday through Friday, if possible, weather permitting).

MaPS, Inc. and the Town will schedule a mutually agreeable field data collection window (e.g. in late July or early August). Prior to Task 2's GPS field data collection, the Town Water Dept. personnel will canvass the scheduled field data collection unit/area to locate and clearly pre-mark (e.g. blue and/or green paint) any water or sewer utility infrastructure that is not currently evident or previously located.

TASK 2 - GPS Field Data Collection

MaPS, Inc. will then come on-site and canvass the Town with the direct assistance of Town Water Dept. personnel to verify and map the water utility infrastructure (commercial and residential curb stops/water shut-offs, gate valves and metering pits), sewer system (manhole covers, lift stations and sewage lagoon buildings, including the dike/access road) and storm drains.

The GPS field data collection will be done on foot utilizing a sub-meter DGPS receiver (GPS unit with external antenna mounted on a range pole/tripod) paired with a mobile field data collection software system (mapping software and data loaded to the GPS receiver and/or mobile computing device). Town Water Dept. personnel will guide the MaPS, Inc. staff to each point location.

At each point location, MaPS, Inc. will collect an averaged GPS point (averaged over the duration of attribution entry; most points will involve a 20-30 second data collection timeframe), including preliminary attribution. The initial GPS points collected will contain attribution as preliminarily defined in the attached GIS data specification sample. Infrastructure that cannot be occupied by the GPS set-up (e.g. the point is inside a hedge or under dense tree canopy or in the middle of a dangerous intersection) will be offset using an approximate bearing and distance. The Town will be canvassed in a systematic

fashion (e.g. all E/W streets and alleys first, then N/S streets and alleys) until the entire Town has been verified and all known infrastructure collected. MaPS, Inc. will rely on the Water Dept. staff to ensure no points are missed.

TASK 3 – GIS Processing & Data Coordination

The raw GPS data will be post-processed into shapefiles and loaded to a Town geodatabase (e.g. file management structure that contains all of the GIS data) as another feature dataset. Using the Town's current CAD and other engineering data for reference, MaPS, Inc. staff will create a generalized set of pipe network lines (e.g. by snapping lines between gate valves and fire hydrants and bisecting lateral lines between the mains and meter pits and curb stops) for the recently collected/mapped water utility point data. Manhole covers will be snapped point-to-point to create a generalized sewer system pipe network. Storm drains also will be snapped one to another to create a set of lines representing a generalized pipe network (terminating at the outflow culvert ends at the Clark Fork River or drainage ditches).

The generalized pipe network created by MaPS, Inc. will contain fields as preliminarily defined in the attached GIS data specification/sample. The initial pipe data, however, will need to be attributed with specific data (e.g. size/diameter, type, age, condition, etc.). MaPS, Inc. will perform this attribution effort using the existing CAD and other engineering maps and data for reference.

After data processing, the generalized pipe network data will be presented on-site to the Town Water Dept. staff for an in-depth discrepancy and QA/QC review and discussion, including gate valve control of water flow/directionality. One (1) on-site meeting is anticipated (approximately 2-3 hours). The initial dataset will also be loaded to the Town's current ArcReader dataset to allow additional review/use. MaPS, Inc. staff will then finalize (off-site) any points and lines needing to be modified based on the results of the initial discrepancy/review meeting. The corrected data will be loaded to the geodatabase remotely (or on-site if MaPS, Inc. is working for the Town or County on other tasks). The Town Water Dept. staff will be active participants in the quality assurance/quality control (QA/QC) process.

TASK 4 – Project Reporting & Data Deliverables

The Town will provide the State with quarterly grant status reports as required to support the project. MaPS Inc. will deliver the final GIS dataset to the State by June 30, 2016, including valid metadata. The Town will deliver to the State a Final Project Report including a financial status report by September 30, 2016, or as contractually negotiated.

TASK 5 - Ongoing Maintenance Mapping & Technical Support

The Town intends to contract with MaPS, Inc. directly for ongoing GPS maintenance mapping and GIS integration of new water, sewer and storm water infrastructure on an as needed basis. MaPS, Inc. will also provide the Town with ongoing Technical Support for the proposed GIS solution at our current standardized hourly rates and expenses. At

the Town's expense, via MaPS, Inc. Technical Support, annual updates to the Town's water and sewer infrastructure will be made available to the State MSDI stewards.

Project Schedule:
The project is contingent upon the award of Montana Land Information Act funding. The schedule for this project may be implemented as follows:

Scheduled Date	Activity
July 2015	Grant award notification
July 2015	Contractor agreement
July 2015	Town personnel will pre-mark utility infrastructure
Aug. 2015	GPS field data collection
Sept. 2015 – March 2016	GIS processing, pipe network attribution and subsequent QA/QC reviews on initial GPS data and preliminary pipe network
March 2016	Final QA/QC & Town review
April – June 2016	Estimated project completion and closeout

Project Management and Organizational Capability Narrative

It is proposed that this project be contracted to MaPS, Inc. and managed by the Town of Superior. MaPS, Inc. has successfully completed multiple contracts with other Mineral County agencies and has a large local stake in providing quality services to the Town in relation to their larger County projects. The Town believes they have accurate estimates of the infrastructure to be collected. MaPS, Inc. has successfully completed previous projects of similar scope and have demonstrated a thorough understanding of the required GPS/GIS services. The Town believes that MaPS, Inc. has provided a reliable and fair project cost that is a good use of MLIA grant funding.

Brenda Schneider, the Town of Superior's Clerk and Treasurer, will be administering the MLIA grant. Brenda Schneider is a Certified Master Municipal Clerk, Certified Public Finance Administrator, Certified Montana Municipal Clerk/Treasurer, Certified Economic Development Finance Professional, Certified Procurement Professional, and a Certified Contract Officer. She serves as the Education Committee Chair of the Montana Municipal Clerks, Treasurer, and Finance Officers Association. She has recently been appointed to the Mineral County Library Board. She has served in this capacity for 31 years. Brenda oversees the administration of a number of grant-funded projects within the community. She will complete the required reporting and administrative duties in the successful completion of the mapping project.

Roger Wasley, the Town's Public Works Supervisor, will be tasked with field locates and marking of the water utility infrastructure. Roger has worked for the Town for 22 years and oversees the Town's public streets, parks, pool, animal control and water and sewer systems. He is responsible for complete maintenance and repairs as needed and is very knowledgeable with the locations of the Town's curb stops, gate valves, meter pits, fire hydrants, sewer manhole cover locations and storm drains. Roger will support MaPS, Inc. during the field data collection efforts, including QA/QC reviews of the resulting data. Roger is supported by Rodney Goins, his Public Works Assistant, who has worked for the Town for 4 years.

Upon grant award, the Town of Superior will contract with MaPS, Inc. to complete the project. Mapping and Planning Specialists, Inc. (MaPS, Inc.) was organized as a sole proprietorship in 2000 to assist several Counties in Montana to complete their unfinished mapping and E-911 implementations. MaPS, Inc. was incorporated in 2002 and has become a premier provider of professional E-911 and GPS/GIS consulting and implementation services in the region. MaPS, Inc.'s personnel have over 50 years of combined experience in GPS field data collection, GIS development and E-911 implementation and have worked on over forty projects in many states across the nation. MaPS Inc. has been working with Mineral County since 2004, successfully completing their E-911 system in 2007.

Key Personnel for MaPS, Inc. include Matthew Pearce, President and Founder of the company. Matt is a graduate of the University of Minnesota with a B.S. in Geography with GIS/Cartography emphasis. He has been working in the field for over 22 years and is a certified Emergency Numbering Professional (ENP) and a member of the National

Emergency Numbering Association. MaPS, Inc. is currently providing E-911 and GPS/GIS mapping and addressing services for a significant number of MT counties, including Toole, Pondera, Chouteau, Valley, Granite, Anaconda-Deer Lodge, Mineral and Sanders. To service their MT clients, MaPS, Inc. has a local field office in Helena, MT.

MaPS, Inc. also relies on Dylan Berg, Projects Coordinator of the Helena field office. Dylan is an experienced GIS Analyst and will conduct most of the GPS field data collection and GIS processing, including on-site project coordination and training. Dylan has been working in the MT and ID areas in the GPS/GIS industry for over 15 years and has a hard-earned reputation of providing clients with excellent customer service.

Budget Justification Narrative and Tables

The proposed project costs for contracted services includes the following:

Task 1 – Scheduling & Town Locates/Marking

Upon grant award, the Town will begin locating and marking water, sewer and storm water infrastructure. The Town and MaPS, Inc. will jointly schedule a week long field data collection effort.

Task 2 – GPS Field Data Collection

MaPS, Inc. will conduct the on-site GPS field data collection for the estimated 600 infrastructure points for $9 per point, or **$5,400**. MaPS, Inc.'s proposed Task 2 costs include all labor and expenses (travel time, mileage, lodging, per diem, etc.).

Task 3 – GIS Processing & Data Coordination

MaPS, Inc. will load the daily field collection data into a geodatabase with a feature dataset for the Town water, sewer and storm water features. MaPS Inc. will use the current/existing CAD and engineering data and the field points to create an generalized pipe network. The initial pipe network will contain data fields as preliminarily defined in the GIS data specification/sample. Using the current/existing CAD and engineering data, MaPS, Inc. will attribute the initial pipe network with specific data including the pipe type, the size/diameter of each pipe section, age (e.g. when the pipe was installed, if known), etc.

MaPS, Inc. will present the initially processed field data on-site to the Town for discrepancy review and discussion. MaPS, Inc. staff will then finalize the mapped points and initial pipe network based on that meeting. MaPS, Inc. will then update the initial geodatabase on the Town computers (either on-site or remotely). MaPS, Inc. will conduct the GIS processing, including data coordination with the Town (exchange of initial data, data review, discrepancy identification, discrepancy resolution and final data update), for the proposed cost of $12 per point, or **$7,200**.

Task 4 – Project Reporting & Data Deliverables

MaPS Inc. will deliver the final GIS dataset to the State, including valid metadata, for the proposed cost of **$680**.

Town (In-kind) Contributions

The Town expects to provide a considerable in-kind contribution of $5,164 in labor to the project effort, including grant administration from Brenda Schneider and field data collection support and QA/QC reviews from Roger Wasley and his assistant, Rodney Goins.

Roger Wasley will directly support the project effort by conducting a thorough sweep of the community to locate and mark all water, sewer and storm water infrastructure, expending an estimated 35-40 hours prior to field data collection. Roger will also support MaPS, Inc. during the week long field data collection effort, supplying 35-40 hours of direct labor. Roger will also likely expend 10-15 hours reviewing the initially processed field data and preliminary pipe network and 4-5 more hours reviewing the pipe network attribution. Overall, Roger may expend up to 100 hours over the course of the project. Roger's hourly rate (salary and benefits) is $29.77 per hour, so his contribution totals $2,977.00.

Roger's assistant, Rodney Goins, will also support the pre-locating/marking (35-40 hours) and field data collection (35-40 hours) and data coordination efforts (6-10 hours) with an estimated total of 90 hours of labor. Rodney's rate (salary and benefits) is $20.16 per hour, so his contribution will be an estimated $1,814. The total estimated contribution from the Water Dept. staff will be $4,791.

Brenda Schneider anticipates 2-3 hours per quarter for MaPS, Inc. coordination and State progress reporting, equaling 8-12 hours over the course of the project for administration. Brenda's hourly rate (salary and benefits) is $26.89, so her contribution to the overall project will be $323. Supplies/copies are anticipated at $50.00 during the project period.

The Town of Superior anticipates contracting directly with MaPS, Inc. on an ongoing basis for all ongoing Technical Support and Ongoing Maintenance of data resulting from this project in future water department budgeting.

Applicant budget summary

-

Category	MLIA Share	Applicant Share	Other Share	Total
a. Personnel		$3,995.62		
a.1 Fringe Benefits		$1,118.46		
b. Travel				
c. Equipment				
d. Supplies		$50.00		
e. Contractual	$13,280.00			
f. Other				
Totals	$13,280.00	$5,164.00		$18,444

STEP 6 – Statements of Support

Statements of support must be included from any party listed as a project partner (see page six for the definition of a project partner). DO NOT include other statements of support as they will not be evaluated.

Please see two (2) attached Letters of Support in Appendix A.

STEP 7 – Renewable Grant Accountability Narrative

If the applicant received a FY2015 MLIA Grant for the same project or purpose, applicant must file a report documenting the progress made toward meeting the requirements of that grant. The report must include a status report on all tasks or deliverables included in the grant.

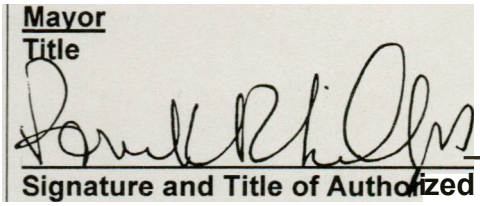
This section is not applicable to this Application.

STEP 8 – Sign the Application

Authorizing Statement
I hereby certify that the information and all statements in this application are true, complete and accurate to the best of my knowledge and that the project or activity complies with all applicable state, local and federal laws and regulations.
I further certify that this project will comply with applicable statutory and regulatory standards.
I further certify that I am (by my signature) authorized to enter into a binding agreement with the Montana State Library to obtain a grant if this application receives approval.

Roni K. Phillips
Name

Mayor
Title



Signature and Title of Authorized Representative(s) of Public Entity Applicant

2-12-2015
Date

Authorizing Statement

I hereby certify that the information and all statements in this application are true, complete and accurate to the best of my knowledge and that the project or activity complies with all applicable state, local and federal laws and regulations.

I further certify that this project will comply with applicable statutory and regulatory standards.

I further certify that I am (by my signature) authorized to enter into a binding agreement with the Montana State Library to obtain a grant if this application receives approval.

Roni K. Phillips
Name

ized Representative(s) of Public Entity Applicant

2-12-2015
Date

APPENDIX A – LETTERS OF SUPPORT

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LIDrary

PO Box 201800 1515 East 6'" Avenue Helena, MT 59620 (406) 444-3115

February 10, 2015

Roni K. Phillips
Mayor
Town of Superior, MT
105 Cedar Street
Superior, MT 59872

Dear Mayor Phillips:

As Montana Spatial Data Infrastructure steward of hydrography data, we highly encourage data contributors to improve the accuracy of the digital representation of water data in their area, such as mapping of water and sewer infrastructure and the connectivity between artificial and natural waterways. Using a local/state partnership approach we can get new water-related spatial data entered into the State's hydrography database and make the data discoverable through the Montana State Library's Water Information System. Mapping ofsewer and storm water infrastructure and how to best incorporate hydrography in urban environments into the MSDI hydrography framework has not been well investigated; therefore, the proposed project, "Town of Superior Water & Sewer Infrastructure GPS/GIS Technology Project" is of great interest as an impetus to begin looking at how municipal-level data may fit into the statewide hydrography database. As the Water Information System Manager representing the MSDI theme lead for hydrography data, I strongly support the Town of Superior's FY 2016 request for MLIA funding.

Sincerely,

::6an or
Water Information System Manager
Montana State Library

MINERAL COUNTY
ENVIRONMENTAL HEALTH and PLANNING

Mineral County

P. O. Box 396
Superior, MT 59872

300 River Street
Phone (406) 822-3525

February 11, 2015

Stewart Kirkpatrick
Geographic Information, Montana State Libfary
1515 E. Sixth Avenue,
Helena, MT 59620-1800

Re: Montana Land Information Act Grant Application -Town of Superior Water & Sewer Infrastructure GPS/GIS Technology Project

Dear Stewart,

In 2005 Mineral County initiated the development of a Geographical Information System to provide data for the Enhanced 911 system. Given the small population of Mineral County and having only one dispatch and law enforcement presence, the GIS system was developed for the entire county. The Town of Superior embraced this process.

Mineral County has provided GIS data for the Town of Superior to assist with reference mapping and Superfund activities within the town boundaries. The Town of Superior has recognized the additional benefits of GIS information. As with many smaller towns, the water system was developed by several entities, and a lack of uniform documentation has resulted.

The MLIA grant would be of significant assistance in the development of a single reference system for the water and sewer systems that serve Superior. As the Mineral County GIS supervisor, I would support the funding of this grant to provide an up to date utility data base for the Town of Superior.

If you have any questions, please contact this Department.

Sincerely,

A;)· ./(s.

Tim Read, R.S.
Mineral County Environmental Health and Planning Department

APPENDIX B – GIS DATA SPECIFICATION SAMPLE

GIS DATA SPECIFICATION SAMPLE

LAYER	FIELDS	DATA TYPE	LENGTH
CURBSTOP	GEOLINK_ID	DOUBLE	
	DLVRY_ADRS	TEXT	100
	REMARKS	TEXT	250
	DTE	DATE	
	TME	TEXT	8
	LATITUDE	DOUBLE	
	LONGITUDE	DOUBLE	
	LASTUPDATE	DATE	
	LASTEDITOR	TEXT	50
GATEVALVE	GEOLINK_ID	DOUBLE	
	INTRSCTN_1	TEXT	50
	INTRSCTN_2	TEXT	50
	INTRSCTN_3	TEXT	50
	INTRSCTN_4	TEXT	50
	LOCATION	TEXT	50
	DIRECTION	TEXT	50
	REMARKS	TEXT	250
	DTE	DATE	
	TME	TEXT	8
	LATITUDE	DOUBLE	
	LONGITUDE	DOUBLE	
	LASTUPDATE	DATE	
	LASTEDITOR	TEXT	50
METERPIT	GEOLINK_ID	DOUBLE	
	REMARKS	TEXT	250
	DTE	DATE	
	TME	TEXT	8
	LATITUDE	DOUBLE	
	LONGITUDE	DOUBLE	
	LASTUPDATE	DATE	
	LASTEDITOR	TEXT	50
HYDRANT	GEOLINK_ID	DOUBLE	
	REMARKS	TEXT	250
	DTE	DATE	
	TME	TEXT	8
	LATITUDE	DOUBLE	
	LONGITUDE	DOUBLE	
	LASTUPDATE	DATE	
	LASTEDITOR	TEXT	50
MANHOLE	GEOLINK_ID	DOUBLE	
	INTRSCTN_1	TEXT	50
	INTRSCTN_2	TEXT	50
	INTRSCTN_3	TEXT	50
	INTRSCTN_4	TEXT	50

LAYER	FIELDS	DATA TYPE	LENGTH
	LOCATION	TEXT	50
	DIRECTION	TEXT	50
	REMARKS	TEXT	250
	DTE	DATE	
	TME	TEXT	8
	LATITUDE	DOUBLE	
	LONGITUDE	DOUBLE	
	LASTUPDATE	DATE	
	LASTEDITOR	TEXT	50
STORMDRAIN	GEOLINK_ID	DOUBLE	
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	INTRSCTN_2	TEXT	50
	INTRSCTN_3	TEXT	50
	INTRSCTN_4	TEXT	50
	LOCATION	TEXT	50
	DIRECTION	TEXT	50
	REMARKS	TEXT	250
	DTE	DATE	
	TME	TEXT	8
	LATITUDE	DOUBLE	
	LONGITUDE	DOUBLE	
	LASTUPDATE	DATE	
	LASTEDITOR	TEXT	50
DISCHARGEPOINT	GEOLINK_ID	DOUBLE	
	REMARKS	TEXT	250
	DTE	DATE	
	TME	TEXT	8
	LATITUDE	DOUBLE	
	LONGITUDE	DOUBLE	
	LASTUPDATE	DATE	
	LASTEDITOR	TEXT	50
PIPE	FACILITY_ID	TEXT	20
	INSTALLDATE	DATE	
	MATERIAL	TEXT	20
	DIAMETER	DOUBLE	
	WATERTYPE	TEXT	30
	OWNEDBY	TEXT	50
	MAINTBY	TEXT	50
	LASTUPDATE	DATE	
	LASTEDITOR	TEXT	50
	REMARKS	TEXT	250