

ENGINEER'S AGENDA
City of Mapleton Council Meeting
Tuesday, October 4, 2011 at 6:00 pm

1.0 City Engineer

1.1 Meridian Grove Draintile

- 1.1.1 Project Update
- 1.1.2 Engineering Invoice #2058 - \$290.35
- 1.1.3 Engineering Invoice #2057 - \$846.25

1.2 Levee Recertification

- 1.2.1 On hold until Base Flood Elevation is established

1.3 Cass County Highway 11 Reconstruction

- 1.3.1 Project Update
- 1.3.2 Concrete Cores

1.4 Ashmoor Glen 2nd Addition – Street Improvement District No. 2010-1

- 1.4.1 Project Update
- 1.4.2 Engineering Invoice #2055 - \$23,447.90

1.5 Carl Olsen Street Repairs

- 1.5.1 Recommend City to accept low bid
- 1.5.2 Engineering Invoice #2053 - \$1,656.60

1.6 Plan of Operation – Flood Preparation document

- 1.6.1 Elevation Revisions and new structure revisions

1.7 Ashmoor Glen 1st Addition – Street Improvement 2012

- 1.7.1 Set up Improvement District?



Shaping the Region for 50 Years.

925 10th Avenue East • West Fargo, ND 58078
 T: 701.282.4692 F: 701.282.4530

City of Mapleton
 P O Box 9
 Mapleton, ND 58059-0009

Invoice number 2058
 Date 09/30/2011

Project **15535 Mapleton Storm Sewer
 Improvement District #2011-1 Meridian
 Grove Addition**

Professional Services

300 Basic Services - Phase 300

Labor

	Hours	Rate	Billed Amount
Administrative Assistant	8.50	55.00	467.50
CADD Technician II	2.00	90.00	180.00
Professional Engineer	4.75	125.00	593.75

Expense

	Units	Rate	Billed Amount
Miles			
Non Vendor Expense	13.00	0.65	8.45
Phase subtotal			1,249.70

Invoice subtotal	1,249.70
Not to Exceed	-959.35
Invoice total	290.35

Invoice Summary

Description	Contract Amount	Prior Billed	Total Billed	Current Billed
300 Basic Services - Phase 300	5,000.00	4,709.65	5,959.35	1,249.70
Total	5,000.00	4,709.65	5,959.35	1,249.70



Shaping the Region for 50 Years.

925 10th Avenue East • West Fargo, ND 58078
 T: 701.282.4692 F: 701.282.4530

City of Mapleton
 P O Box 9
 Mapleton, ND 58059-0009

Invoice number 2057
 Date 09/30/2011

Project **15535 Mapleton Storm Sewer
 Improvement District #2011-1 Meridian
 Grove Addition**

Professional Services

621 Easements - Phase 621

Labor

	Hours	Rate	Billed Amount
CADD Manager	0.50	105.00	52.50
CADD Technician III	5.00	100.00	500.00
Professional Engineer	0.75	125.00	93.75
Phase subtotal			646.25

640 Assessment Calculations - Phase 640

Labor

	Hours	Rate	Billed Amount
CADD Technician III	2.00	100.00	200.00

Invoice total **846.25**

Invoice Summary

Description	Contract Amount	Prior Billed	Total Billed	Current Billed
621 Easements - Phase 621	750.00	0.00	646.25	646.25
640 Assessment Calculations - Phase 640	750.00	0.00	200.00	200.00
Total	1,500.00	0.00	846.25	846.25



Shaping the Region for 50 Years.

925 10th Avenue East • West Fargo, ND 58078
 T: 701.282.4692 F: 701.282.4530

City of Mapleton
 P O Box 9
 Mapleton, ND 58059-0009

Invoice number 2055
 Date 09/30/2011

Project **15583 Ashmoor Glen 2nd Addition Street
 Imp. Dist. #2010-1**

Professional Services

Ashmoor Glen 2nd Addition
 Street Improvement District #2010-1

Lump Sum	Contract Amount	Percent Complete	Total Billed	Prior Billed	Current Billed
320 Final Design	20,000.00	100.00	20,000.00	0.00	20,000.00
410 Residential Project Review	15,000.00	0.00	0.00	0.00	0.00
440 Construction Contract Admin	10,000.00	0.00	0.00	0.00	0.00
Subtotal	45,000.00	44.44	20,000.00	0.00	20,000.00

101 City Engineer Review - Hourly

Labor

	Hours	Rate	Billed Amount
Professional Engineer	14.50	125.00	1,812.50
Project Engineer	11.25	110.00	1,237.50
Senior Project Manager	2.00	145.00	290.00

Expense

	Units	Rate	Billed Amount
Miles	166.00	0.65	107.90

Invoice total **23,447.90**

Invoice Summary

Description	Contract Amount	Prior Billed	Total Billed	Current Billed
101 City Engineer Review - Hourly	3,450.00	0.00	3,447.90	3,447.90
320 Final Design	20,000.00	0.00	20,000.00	20,000.00
410 Residential Project Review	15,000.00	0.00	0.00	0.00
440 Construction Contract Admin	10,000.00	0.00	0.00	0.00
Total	48,450.00	0.00	23,447.90	23,447.90



Shaping the Region for 50 Years.

925 10th Avenue East • West Fargo, ND 58078
T: 701.282.4692 F: 701.282.4530

City of Mapleton
P O Box 9
Mapleton, ND 58059-0009

Invoice number 2053
Date 09/30/2011

Project **14407 Mapleton Cass County Highway
#11 Reconstruction**

Professional Services

Carl Olsen Road Repairs/Improvements

691 Additional Services - Carl Olsen Road Repair/Improvements

Labor

	Hours	Rate	Billed Amount
CADD Manager	1.00	105.00	105.00
CADD Technician I	10.00	85.00	850.00
Graduate Engineer	4.00	95.00	380.00
Professional Engineer	2.50	125.00	312.50

Expense

	Units	Rate	Billed Amount
Miles			
Non Vendor Expense	14.00	0.65	9.10

Phase subtotal 1,656.60

Invoice total **1,656.60**

**Carl Olsen Street
Mapleton, ND**

Proposal

ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL
1. Aggregate Surface Course - Class 5	Ton	550	\$ 13.00	7150.00
2. Shaping & Grading	S.Y.	9,550	\$.80	7640.00

Handwritten notes and scribbles, possibly including "13.00" and "0.80".

TOTAL 14,790.00
 BY Don Hollen
 TITLE Owner
 FIRM Double D Blasting & Trucking

Measurement & Payment

- Aggregate Surface Course - Class 5 The unit price bid shall be considered full payment for furnishing all labor, materials, and equipment to place Class 5 Aggregate Surface Course. Aggregate Surface Course shall be measured by mass (Ton) of aggregate deposited on the project. Weight shall be provided from calibrated, approved scales. The Aggregate Surface Course shall be placed in such an order as specified on the plans.
- Shaping & Grading The unit price bid shall be considered full payment for all labor, materials, and equipment necessary to fine grade and recompact one (1) square yard of the gravel base and bring it to the proper line and grade as per plan and specified herein. Measurement will be made of each square yard of gravel base prepared and accepted by the engineer within the specified pay limits. Payment will be made at the unit price bid per square yard of gravel subgrade prepared and accepted by the engineer.

Additional Construction Notes

- Contractor shall submit a work schedule and shall be completed with all work by 11/15/2011. Contractor agrees that liquidated damages of \$100 per day will be assessed to the contractor for each day past the completion date for loss of service and inconvenience of extended construction, not as a penalty.
- The contractor shall provide, implement, install, maintain, and remove all necessary traffic control devices as required by his construction means and methods. All traffic control shall meet MUTCD standards.
- Payment will be made on the first Tuesday of every month for work completed up to the previous Wednesday.

**Carl Olsen Street
Mapleton, ND**

Proposal

ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL
1. Aggregate Surface Course - Class 5	Ton	550	<u>21.75</u>	<u>11,962.50</u>
2. Shaping & Grading	S.Y.	9,550	<u>1.00</u>	<u>9,550.00</u>

TOTAL \$ 21,512.50
 BY [Signature]
 TITLE VICE PRESIDENT
 FIRM NORTHERN IMPROVEMENT CO.

Measurement & Payment

- Aggregate Surface Course - Class 5 The unit price bid shall be considered full payment for furnishing all labor, materials, and equipment to place Class 5 Aggregate Surface Course. Aggregate Surface Course shall be measured by mass (Ton) of aggregate deposited on the project. Weight shall be provided from calibrated, approved scales. The Aggregate Surface Course shall be placed in such an order as specified on the plans.
- Shaping & Grading The unit price bid shall be considered full payment for all labor, materials, and equipment necessary to fine grade and recompact one (1) square yard of the gravel base and bring it to the proper line and grade as per plan and specified herein. Measurement will be made of each square yard of gravel base prepared and accepted by the engineer within the specified pay limits. Payment will be made at the unit price bid per square yard of gravel subgrade prepared and accepted by the engineer.

Additional Construction Notes

- Contractor shall submit a work schedule and shall be completed with all work by 11/15/2011. Contractor agrees that liquidated damages of \$100 per day will be assessed to the contractor for each day past the completion date for loss of service and inconvenience of extended construction, not as a penalty.
- The contractor shall provide, implement, install, maintain, and remove all necessary traffic control devices as required by his construction means and methods. All traffic control shall meet MUTCD standards.
- Payment will be made on the first Tuesday of every month for work completed up to the previous Wednesday.

**Carl Olsen Street
Mapleton, ND**

Proposal

ITEM	UNIT	QUANTITY	UNIT PRICE	TOTAL
1. Aggregate Surface Course - Class 5	Ton	550	<u>25⁹⁰</u>	<u>14,245⁰⁰</u>
2. Shaping & Grading	S.Y.	9,550	<u>3²⁵</u>	<u>31,037⁵⁰</u>

TOTAL 45,282⁵⁰

BY JEFFERY WOODS

TITLE EST / PROJ MGR

FIRM BORDER STATES PAVING, INC.

Measurement & Payment

- Aggregate Surface Course - Class 5 The unit price bid shall be considered full payment for furnishing all labor, materials, and equipment to place Class 5 Aggregate Surface Course. Aggregate Surface Course shall be measured by mass (Ton) of aggregate deposited on the project. Weight shall be provided from calibrated, approved scales. The Aggregate Surface Course shall be placed in such an order as specified on the plans.
- Shaping & Grading The unit price bid shall be considered full payment for all labor, materials, and equipment necessary to fine grade and recompact one (1) square yard of the gravel base and bring it to the proper line and grade as per plan and specified herein. Measurement will be made of each square yard of gravel base prepared and accepted by the engineer within the specified pay limits. Payment will be made at the unit price bid per square yard of gravel subgrade prepared and accepted by the engineer.

Additional Construction Notes

- Contractor shall submit a work schedule and shall be completed with all work by 11/15/2011. Contractor agrees that liquidated damages of \$100 per day will be assessed to the contractor for each day past the completion date for loss of service and inconvenience of extended construction, not as a penalty.
- The contractor shall provide, implement, install, maintain, and remove all necessary traffic control devices as required by his construction means and methods. All traffic control shall meet MUTCD standards.
- Payment will be made on the first Tuesday of every month for work completed up to the previous Wednesday.

CITY OF MAPLETON “PLAN OF OPERATION”

For PROTECTION MAINTENANCE FLOOD PREPARATION AND EMERGENCY PROCEDURES

This Plan of Operation serves as an addendum to and in specific reference to *THE CITY OF MAPLETON OPERATION AND MAINTENANCE MANUAL for the FLOOD PROTECTION LEVEE SYSTEM – MAPLE RIVER – MAPLETON, NORTH DAKOTA* prepared by Moore Engineering, City Engineer dated January 2000. Preliminary format submitted to the City of Mapleton on February 25, 2000 as evidenced by signatures of City Engineer and Mayor.

PREFACE: “Construction of the Flood Protection Levee System under the Direction of Moore Engineering, City Engineer has been completed. With acceptance of the completed project, the City of Mapleton agrees to assume responsibility for operation and maintenance of the levee. Under the direction of the City of Mapleton, the City Engineer has prepared a manual to assist our maintenance personnel in complying with the regulations for operation and maintenance of levee systems as prescribed in 44 CRF Ch. 1, paragraph 65.10 (c) and 65.10 (d) of the NFIP regulations.

This manual and its appendices contain the latest approved flood control regulations, maps, drawings, tables and references pertinent to the operation and maintenance of the project.

The project as designed and construction will greatly reduce the possibility of flooding from the Maple River. However, continued successful functioning of the project will depend on the manner in which the City of Mapleton maintains the levee. Careful inspections, proper maintenance, and establishment of effective operations procedures can prevent serious flood damages which could result from failure of any part of the project.”

Annually in August this Plan of Operation, the Operation and Maintenance Manual(s), Levee and Equipment Inspection Log(s) and any applicable updates are to be reviewed by the City of Mapleton and its’ trained and capable operation personnel to ensure that it is kept current. Signatures affixed below serve as evidence that review and updates have been communicated and that all parties accept responsibility for the levee system(s), equipment and emergency operations for the protection and safety of the City of Mapleton and its’ citizens.

Mark Anderson, Mayor	date	Mary Hinchberger, City Auditor	date
Duane Klatt, Public Works	date	Jon Warner, Fire Chief	date
City Council			
Larry Dell, Council	date	Carlita Dietz, Council	date
Dale Kartes, Council	date	Eric Hillman, Council	date

I. PROTECTION MAINTENANCE

RESPONSIBILITY

PRIMARY: The City of Mapleton under the direction of a City Council form of government assumes responsibility for the operation and maintenance of this levee.

The City employs a full time **Public Works** employee who is specifically assigned the ongoing inspections, operations and maintenance as required.

The **City Auditor** will monitor and assist in scheduling the completion of monthly site checks, semi-annual levee and structure inspections as well as annual inspections of mechanical, electrical, & grounds of all pump stations and city equipment.

Two (2) City Council members serve as the **Public Works/Safety Committee** and along with the Mayor accept the responsibility to assure that the Public Works Employee and Auditor carry out the duties in a timely and responsive manner to assure safety of the community and its' citizens. Two (2) City Council members serve as the **Building and Grounds Committee** and along with the Mayor accept the responsibility to assure that the Public Works Employee and Auditor carry out the duties in a timely and responsive manner to assure all assets of the City of Mapleton are protected.

SECONDARY: In the event of employee changes or in an emergency the City of Mapleton will request the assistance of the volunteer **Fire Department** which must maintain a minimum member roster of 17 at all times. The Fire Chief will schedule accordingly the volunteer services needed to assist the City and its' Public Works employee with compliance and completion of routine tasks and emergency preparedness as needed or requested.

INSPECTIONS and REQUIRED REPORTS

All reports and findings will be listed in the *Levee and Equipment Inspection Log*. The City Auditor will submit required reports and maintain copies for public review as requested.

The Public Works employee shall review and have a basic understanding of the Operations and Maintenance Manual as provided by City Engineer. Guidelines for inspections and completion of reports are contained in this manual and specific reference can be made to Appendix G for inspections.

1) *VISUAL SITE CHECKS*

A minimum of once a month visual site checks of the levee and closure structures will be performed. These visual site checks are of a routine nature and neither specific guidelines nor reports will be required. The Public Works employee is to report to the City Auditor the specific area reviewed and his/her findings. The City Auditor will maintain a log by area to include dates and findings. From time to time, citizens living near the levees and/or utilizing the area surrounding the levees for recreational purposes will report concerns to the City Auditor. The Auditor will log these citizens' reports in the Visual Site Check log and contact the Public Works employee immediately to conduct a thorough site check as soon as possible. The Public Works employee and City Auditor will schedule needed remedial work considered necessary.

The Monthly Visual Site Checks will be utilized to assist in the accurate completion of the Semi-Annual and Annual Report.

I. PROTECTION MAINTANENCE (continued)

2) SEMI-ANNUAL REPORT

The Public Works employee will conduct a thorough inspection on a semi-annual basis utilizing the format provided by Flood Control Regulations. All findings will be maintained at the City Office along with the Visual Site Check log. A general visual inspection of the Pump stations and grounds should be conducted at this time. This semi-annual report shall also include the review of city owned equipment for manual pumping needed in the event of emergency:

1 –6” Gorman Rupp PTO driven pump	1 - 3” Gorman Rupp 1108736 Portable gas pump
1 - 3” Gorman Rupp 1108767 Portable gas pump	1 – 3” Homelite Gas Pump on Utility Pickup
1 – 4020 John Deere Tractor	1 – 920 Cat Loader
2 – additional smaller gas pumps	

The Public Works employee and City Auditor will schedule needed remedial work and equipment maintenance considered necessary.

The Semi-annual report will be utilized to assist in the accurate completion of the Annual Report to be submitted per regulations.

3) ANNUAL INSPECTION REPORT OF PUMP STATIONS

Mechanical, Electrical, and Station inspections shall be conducted on an annual basis. ND Sewage Pump and Lift Station has been contracted to conduct these inspections. The Public Works employee with the assistance of the City Auditor shall monitor and schedule these inspections. A copy of these inspections will be maintained with the Visual Site Checks and Semi-Annual Report for inclusion in the Annual report.

4) FLOOD CONTROL REGULATION ANNUAL REPORT

The Public Works employee and City Auditor shall prepare an Annual Report to be submitted as required. This report will include the Semi-annual Inspection Data and other findings throughout the 12 month period recorded in the Levee and Equipment Inspection Log.

Each Annual report will summarize:

- The condition of the maintenance work done in the past 12-month period
- Action taken on measures which the City have considered necessary
- Maintenance work scheduled for the next 12-month period
- How the project functioned during any period of high stream flow in the last 12 months

GENERAL MAINTENANCE

The Public Works employee will provide general maintenance of the levee berm and side slopes proper maintenance is required to assist in prevention of washouts during flooding and heavy rains. Measures will be taken to promote the growth of sod, exterminate burrowing animals and to provide for routine mowing of grass and weeds, removal of wild growth and drift deposits and repair damage caused by erosion or other forces. The Public Works Employee will examine and grease all flap gates at least once every year.

II. FLOOD PREPARATION

RESPONSIBILITY

PRIMARY: The City of Mapleton under the direction of a City Council form of government assumes responsibility for flood preparation and anticipated heavy rains.

The City employs a full time **Public Works** employee who is specifically assigned the ongoing inspections, operations and maintenance as required. The Public Works employee will assure that necessary supplies are on hand and a contact list is established for emergency needs. The Public Works Employee will act as the coordinator and ensure the availability of materials, equipment and manpower needed in preparation for impending flood.

The **City Auditor** will monitor and assist in coordinating supply and equipment needs and mobilization of personnel. The City Auditor will assure that all manufacturers' operation manuals are on hand and a contact list is available in the event of equipment failure.

Two (2) City Council members serve as the **Public Works/Safety Committee** and along with the Mayor accept the responsibility to assure that the Public Works Employee and Auditor carry out the duties in a timely responsive manner to assure working conditions and safety of the community and its' citizens. Two (2) City Council members serve as the **Building and Grounds Committee** and along with the Mayor accept the responsibility to assure that the Public Works Employee and Auditor carry out the duties in a timely and responsive manner to assure all assets of the City of Mapleton are protected.

SECONDARY: In the event an impending flood or expected heavy rains the City of Mapleton will request the assistance of the volunteer **Fire Department** which must maintain a minimum member roster of 17 at all times. The Fire Chief will schedule accordingly the volunteer services needed to assist the City and its' Public Works employee with completion of emergency preparedness as needed or requested.

SUPPLIES AND INVENTORY OF EQUIPMENT

The City of Mapleton will maintain an adequate stock of equipment, supplies, and materials to be self-sufficient in flood emergencies. The City **Auditor** will maintain and update a listing of sources for emergency contact. The **Public Works Employee** will inventory supplies on hand on a regular basis and coordinate needs and updates to the source listing with the City Auditor.

- A minimum of 15,000 sandbags will be on hand at all times.
- 10 – 12 yards of sand or suitable fill material will be readily available
- Riprap and embankment materials will be readily available
- Polyethylene 12 feet wide and 4 to 6 mils thick will be readily available.
- Construction Equipment to include city owned inventory will be readily available.
 - Fuel filters, road closures for roads & signs, orange safety cones

The Source List and inventory of emergency supplies and equipment will be maintained in the *Levee and Equipment Inspection Log*.

II. FLOOD PREPARATION (continued)

FLOOD WARNING, PREDICTION AND CONTROL ACTIVITIES

The Mayor, City Auditor, Public Works Employee and Fire Chief will coordinate National Weather Service warnings and predictions with the governing board and operation personnel and volunteers.

River elevation @ upstream USGS Gauging Station	River elevation @ south side of RR Tracks	Completed	CITY OF MAPLETON - OPERATION PLAN A "Schedule of Operations by River Elevation" is included in the Operation and Maintenance Manual. Listed below are specific to personnel and recordkeeping.
Prior to Event	Prior to Event		Auditor establishes Log of Operation and ensures all Operations Manuals and emergency supplies and equipment source lists are available.
Prior to Event	Prior to Event		Public Works Employee coordinates personnel to ensure sand, sandbags, supplies and equipment is ready and in good working condition.
Prior to Event	Prior to Event		Public Works Employee coordinates personnel to ensure all flap gate structures along the entire levee system are closed and in good working condition.
Prior to Event	Prior to Event		Public Works Employee coordinates personnel to ensure pumps @ lift station and portable pumps are ready for operation and in good working condition.
900.00	897.00		Mayor, Auditor, Public Works Employee and Fire Chief on alert
900.00	897.00		Public Works Employee coordinates personnel to install sandbags and polyethylene at flap gate closure structures to ensure closure and minimize seepage loss.
900.00	897.00		Public Works Employee coordinates personnel to begin periodic inspection of levees, with increased frequency as river stage rises. Reporting schedule, time of inspection and findings to City Auditor for recording in Log of Operation.
900.50	897.50		Public Works Employee coordinates personnel to close sluice gate on outlet pipe @ storm lift station located west of community center at 2 nd Street and Meridian. Set pumps and controls in operations mode with auto start and shutoff.
901.00	898.00		Public Works Employee coordinates personnel to close gate valve on outlet pipe @ storm manhole located north of tracks and set portable pumps in preparation for operation.
902.00	899.00		Public Works Employee coordinates personnel to close sluice gate on outlet pipe @ storm manhole located at 1 st Street and Meridian. Set portable pumps in preparation for operation.
903.00	900.00		Public Works Employee coordinates personnel to install sandbags and polyethylene at flap gate closure structure to ensure closure and minimize seepage losses at the culvert in the West Levee at Station 33+50.
905.00	902.00		Public Works Employee coordinates personnel to install sandbags and polyethylene at flap gate closure structure to ensure closure and minimize seepage losses at the culverts in the Northwest Levee at Stations 0+30 and 19+00.
907.50	904.50		Public Works Employee coordinates personnel to install sandbags and polyethylene at flap gate closure structure to ensure closure and minimize seepage losses at all culverts located along the North Levee.
908.50	905.50		When river reaches approximately 4 feet below the top of the levees Public Works Employee coordinates personnel to begin uninterrupted patrolling of the levee and continue until water levels start to recede.

909.50	906.50		When river reaches the approximate 3-foot freeboard level below the top of the West and Northwest levees the Mayor, Auditor, Public Works Employee and Fire Chief begin review of Emergency Construction Guidelines for topping. Specific reference is made to Appendix H located in the Operation and Maintenance Manual for the City of Mapleton Flood Protection Levee System.
911.00	908.00		Mayor, Auditor, Public Works Employee and Fire Chief begin preparations to obtain necessary supplies and assistance needed to approve and begin construction of levee topping for flood protection as needed.

It is realized that emergency conditions may arise which are not covered by Appendix H - U.S. Army Corps of Engineers – Field Practices and Emergency Construction During Floods nor covered under the City of Mapleton Operation Plan in Emergency Flooding. Such situations can be met only by individual initiative and prompt action. The City of Mapleton, its’ governing board and its’ personnel are committed to assuring the safety and well being of the community and its’ citizens at all times.

FOLLOWING FLOODING

Immediately following a flood period, or as soon as conditions permit the Public Works Employee will coordinate personnel and volunteers to begin post flood procedures as stated in Chapter 8. INSPECTIONS, TESTS, AND OPERATIONS FOLLOWING FLOODS located in the Operations and Maintenance Manual - Flood Protection Levee System for The City of Mapleton as prepared by the City Engineer.