CITY		ENGINEER	
CITY OF JOPLIN 602 S. MAIN STREET JOPLIN, MO 64801		Name: Olsson Address: 702. S. Main Joplin, MO 64801	
Attention: David Hertzberg		Attention: Ron Mersch Jack Schaller	
Department: Public Works Department		Phone: 417-781-0643	Fax: 417-781-4714
Phone: 417-624-0820	Fax:		

WORK AUTHORIZATION NUMBER Stormwater Masterplan
TO AGREEMENT FOR PROFESSIONAL ENGINEERING CONSULTING SERVICES

City and Engineer agree to amend their Agreement for Professional Engineering Consulting Services to include a scope of work and fees for engineering services, by adding the following terms to their Agreement.

1. **Services**. The City agrees to engage the services of the Engineer and the Engineer agrees to perform the services hereinafter set forth in connection with projects described in ***Exhibit A***.

2. **Addition to Services**. The City may add to the Engineer services or delete therefrom activities of a similar nature to those set forth in ***Exhibit A***, provided that the total cost of such work does not exceed the total cost allowance as specified in Paragraph 5 hereof. The Engineer shall undertake such changed activities only upon the direction of the City. All such directives and changes shall be in written form and prepared and approved by the City and shall be accepted and countersigned by the Engineer.

3. **Term**. The services of the Engineer shall commence as soon as practicable after the execution of this contract, unless otherwise directed in writing, and shall be undertaken and completed in such sequence as to assure their expeditious completion in the light of the purposes of the contract, but in any event, all of the services required hereunder shall be completed as set forth in the schedule for the project which is attached hereto as ***Exhibit A***.

4. **Costs not to Exceed**. The City of Joplin is limited by law with respect to the amount of money it can pay. Therefore, the City has established a fixed sum for this contract, which cannot be exceeded unless this contract is amended. The Engineer providing services hereunder shall be required to keep track of the amount of hours billable under this contract at all times; and any work in excess of the fixed sum shall not be eligible for payment. The Engineer shall notify the City if Engineer anticipates that the contract amount may be exceeded, in order to determine whether or not the City is prepared to increase the total compensation. The Engineer shall establish a billing system showing the amount of money remaining on the contract, which shall be shown in each monthly billing.

5. **Payment**.

a. **Conditioned upon acceptable performance**. The City agrees to pay the Engineer in accordance with the terms set forth in ***Exhibit A***, which shall constitute complete compensation for all services to be rendered under this contract; provided, that where payments are to be made periodically to Engineer for services rendered under this contract, the City expressly reserves the right to disapprove in whole or in part a request for payment where the services rendered during the period for which payment is claimed are not performed in a timely and satisfactory manner in accordance with the schedule and description of services set forth in ***Exhibit A***.

b. **Total compensation not to exceed**. It is expressly understood that in no event will the total compensation and reimbursement to be paid to the Engineer under the terms of this work Authorization Number Stormwater Masterplan exceed the sum of Three Hundred Twenty Three Thousand Nine Hundred Sixty One Dollars ($ 323,961.00).

6. **Insurance**. Without limiting any of the other obligations or liabilities of the Engineer, the Engineer shall secure and maintain at its own cost and expense, throughout the duration of this Contract and until the work is completed and accepted by the City of Joplin, insurance of such types and in such amounts as may be necessary to protect it and the interests of the City of Joplin against all hazards or risks of loss as hereunder specified or which may arise out of the performance of the Contract Documents. The form and

limits of such insurance, together with the underwriter thereof in each case, are subject to approval by the City of Joplin. Regardless of such approval, it shall be the responsibility of the Engineer to maintain adequate insurance coverage at all times during the term of the Contract. Failure of the Engineer to maintain coverage shall not relieve it of any contractual responsibility or obligation or liability under the Contract Documents.

The certificates of insurance, including evidence of the required endorsements hereunder or the policies, shall be filed with the City at the time that this contract is signed by the Engineer. All insurance policies shall provide thirty (30) days written notice to be given by the insurance company in question prior to modification or cancellation of such insurance. Such notices shall be mailed, certified mail, return receipt requested, to:

City of Joplin - Public Works, 602 S. Main, Joplin, MO 64801; and

Such policies shall name the City as an additional insured with limits of liability not less than the sovereign immunity limits for Missouri public entities calculated by the Missouri Department of Insurance as of January 1 each calendar year and published annually in the Missouri Register pursuant to Section 537.610, RSMo.
(See, http://insurance.mo.gov/industry/sovimmunity.php).

As of January 1, 2020, the minimum coverage for the insurance referred to herein shall be as set out below:

a. Workers' Compensation….Statutory coverage per RSMo 287.010 et seq.
Employer's Liability……. $1,000,000.00

b. Commercial General Liability Insurance, including coverage for Contractual Liability and Independent Contractors Liability. Such coverage shall apply to bodily injury and property damage on an "Occurrence Form Basis" with limits of Two Million Nine Hundred Five Thousand Six Hundred Sixty-four and no/100 Dollars ($2,905,664.00 for all claims arising out of a single accident or occurrence and at least Four Hundred Thirty-five Thousand Eight Hundred Forty-Nine and no/100 Dollars ($435,849.00) with respect to injuries and/or death of any one person in a single occurrence and an amount not less than at least $1,000,000 for all claims to property arising out of a single occurrence and at least $100,000 to any one owner with respect to damages to property. Engineer agrees that the proceeds of such insurance policy shall first be used to pay any award, damages, costs, and/or attorneys' fees incurred by or assessed against City, its employees, officers and agents, before payment of any award, damages, costs or attorneys fees of Engineer, its employees, officers or agents. Engineer agrees to cause its insurer to name City as an additional insured on such insurance policy, including the City as an additional insured for coverage under its products-completed operations hazard, and said policy shall be primary and noncontributory.

c. Automobile Liability Insurance covering bodily injury and property damage for owned, non-owned and hired vehicles, with limits of at least Two Million Nine Hundred Five Thousand Six Hundred Sixty-four and no/100 Dollars ($2,905,664.00 for all claims arising out of a single accident or occurrence and at least Four Hundred Thirty-five Thousand Eight Hundred Forty-Nine and no/100 Dollars ($435,849.00) with respect to injuries and/or death of any one person in a single accident or occurrence.

d. Errors and Omissions Insurance. The Engineer shall maintain a professional liability insurance policy in the amount of $1,000,000.00. This policy shall remain in full force and effect for a period of one year after completion and acceptance by the City of the construction of the project.

e. Subcontracts. In case any or all of this work is sublet, the Engineer shall require the subcontractor to procure and maintain all insurance required in subparagraphs (A), (B) and (C) hereof and in like amounts. Engineer shall require any and all subcontractors with whom it enters into a contract to perform work on this project to protect the City of Joplin through insurance against applicable hazards or risks and shall, upon request of the City, provide evidence of such insurance.

f. Notice. The Engineer and/or subcontractor shall furnish the City prior to beginning the work satisfactory proof of carriage of all the insurance required by this contract, with the provision that policies shall not be canceled, modified or non-renewed without thirty (30) days written notice to the City of Joplin.

g. Legislative or Judicial Changes. In the event the scope or extent of the City's tort liability as a governmental entity as described in Section 537.600 through 537.650 RSMo is broadened or increased during the term of this agreement by legislative or judicial action, the City may require Engineer, upon 10 days written notice, to execute a contract addendum whereby the Engineer agrees to provide, at a price not exceeding Engineer's actual increased premium cost, additional liability insurance coverage as the City may require to protect the City from increased tort liability exposure as the result of such legislative or judicial action. Any such

additional insurance coverage shall be evidenced by an appropriate certificate of insurance and shall take effect within the time set forth in the addendum.

7. All other terms and conditions of the original Agreement shall remain in effect.

IN WITNESS WHEREOF, the parties hereto have set their hands and seals on the day and year herein stated.

REVIEWED FOR APPROVAL

_____

Name & Title of Staff Project Manager

CERTIFICATE OF DIRECTOR OF FINANCE

I certify that the expenditure contemplated by this document is within the purpose of the appropriation to which it is to be charged and that there is an unencumbered balance of appropriated and available funds to pay therefore.

_____

Leslie Haase, Director of Finance

APPROVED AS TO FORM

_____

Peter Edwards, City Attorney

Engineer: Olsson

By: Ronald L. Mersch

Printed Name: Ron Mersch

Title: Vice President

Date: 07/27/2020

By: Jack Schaller

Printed Name: Jack Schaller

Title: Vice President

Date: 07/27/2020

CITY OF JOPLIN, MISSOURI

By: _____

David Hertzberg, P.E.
Public Works Director

Date: _____

SCOPE OF SERVICES

Olsson shall provide the following services (Scope of Services) to Client for the Project:

1) Project Management and Public Involvement - $20,804

Close collaboration between Olsson, City staff, the public, cooperative agencies, and other stakeholders are essential to the success of this effort. This task includes coordination meetings with staff, Council and applicable agencies, as well as assisting City staff with publicity and outreach efforts, including public/stakeholder meetings.

a) Hold kick-off meeting with City staff to develop project goals, vision, objectives, and criteria at the outset of the project. Determine applicable project stakeholders and outreach methods.
b) Facilitate (eight) monthly coordination meetings throughout the project with:
    (1) Public Works staff
    (2) Other City Departments and other appropriate public agencies
c) Attend may attend up to two (2) public meetings if requested by Client to gather information from the public concerning existing drainage problems throughout the city. City staff to set up, coordinate meetings, and prepare necessary meeting materials such as exhibits. Olsson will provide three staff members to assist the city with conducting the meeting.

2) Collate and Prioritize Stormwater Improvement Projects (target end of October 2020) - $63,523

The City has collected and identified approximately 80 project locations as potential stormwater improvement projects to complete. Olsson will be responsible for:

a) Reviewing the current list of projects provided by the city. Identify infrastructure deficiencies, drainage and flooding concerns, erosion or water quality issues at each location.
    i) Utilizing prior experience in the disaster recovery area, advise on additional projects that may be needed in that area.
    ii) Categorize the projects as either “high priority” or “low priority” based on the review of potential issues at each project location. Low priority projects could be maintenance projects that can be completed in-house by city staff and no further engineering analysis is needed.
b) Prepare conceptual solutions for 20 high priority locations (estimated to be 1/4 of the total locations reviewed). Locations will be agreed upon by city staff prior to concept development and the number of project locations may fluctuate depending on the size and complexity of the projects selected.
c) Based upon the alternative solution development and evaluation process for each problem area, develop final recommendations and associated costs for design, construction, inspection, permitting, utility relocation, and right-of-way acquisition.
d) In collaboration with City staff, develop a problem severity scoring system that forms the basis for a project benefit in a cost-benefit analysis for each project. Project needs may be based upon flooding, erosion, water quality, maintenance, or any combination thereof.
e) Rank projects and develop an optimized capital improvement plan (CIP) with approximately 30 million dollars of construction projects including structural components,

public and private detention facilities, and improved and natural open channels considering:

i) hydraulic performance
ii) capital costs
iii) annual O&M costs
iv) Problem severity and project benefit
v) Required permitting and agency coordination
vi) Overlap with other city projects

Deliverables:

- Provide one-page exhibit for each project.
- Provide updated cost estimates for each high priority project
- Provide recommendation for economic development/emergency funds to be reserved within stormwater budget.
- Develop schedule for implementing the capital improvements plan.

Assumptions:

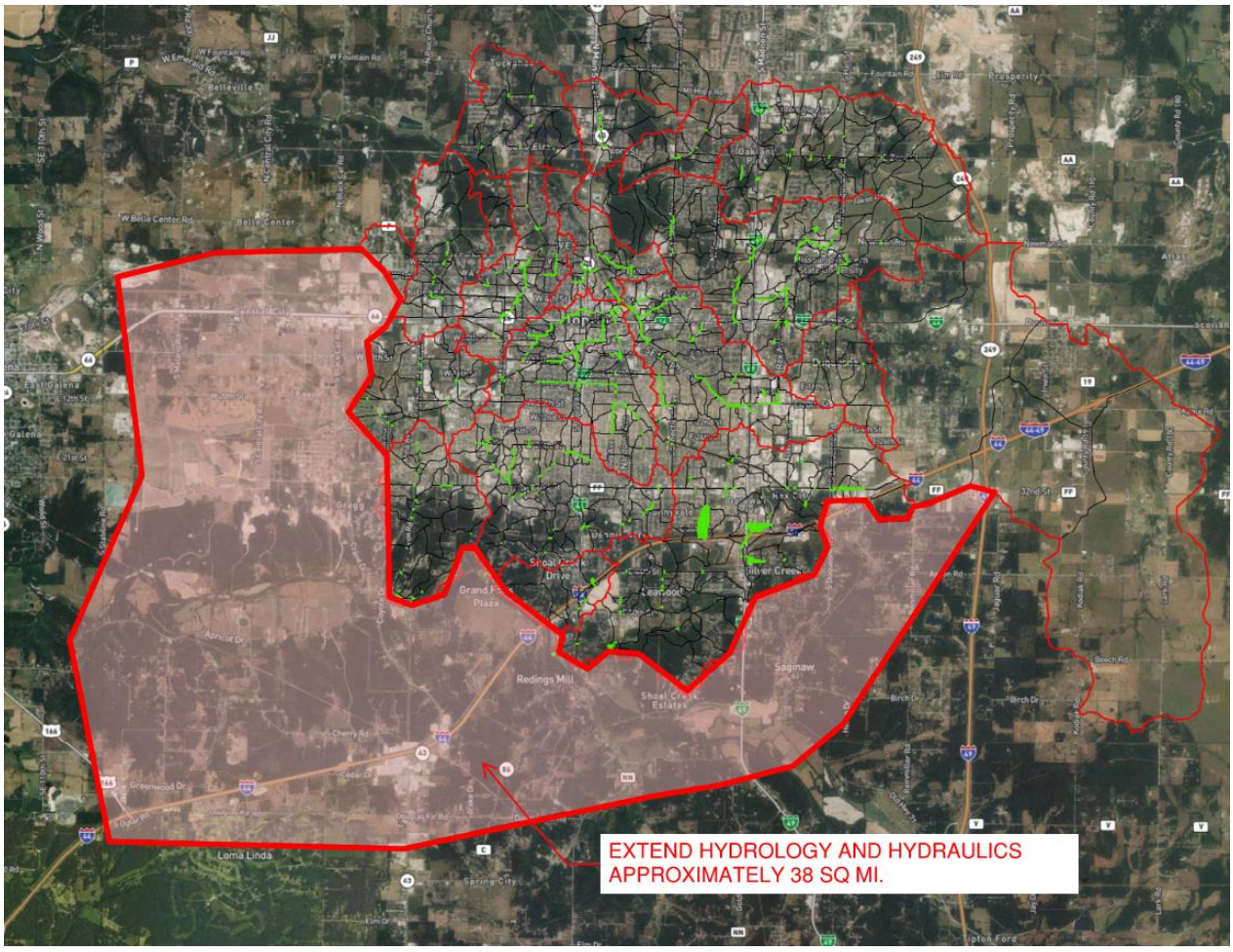
- Project evaluation list may include 80 projects to start, with an estimated 20 project locations to be included on the CIP for a total of $30 million.
- Detailed hydrologic and hydraulic modeling and design will not be completed for each project location.

3) Hydrologic Evaluation of Major/Minor Watersheds (areas not included in previous masterplans) - $53,445

a) Provide hydrologic delineation and analysis of major and minor watershed for approximately 38 square miles located to the south and west of city limits. Area identified in figure 1 below. Sub-basins will be around 100 acres in size on average, with a range typically between 40 to 200 acres. Analysis will be based on future land use.
b) Provide hydrologic summary information for each sub-basin including drainage area, peak flow rates, etc. Utilize HEC-HMS for hydrologic modeling. Expand on major/minor watershed shapefile and provide updated shapefile to city.
c) Perform field evaluation and hydraulic capacity calculations of culverts within hydrology expansion area (figure 1) that are greater than 36” in height, greater than 100 acres in drainage area, and outside of the floodplain/floodway. Culverts/bridges in floodplain are assumed to be modeled in existing FEMA models. Bridge survey and modeling is not included in this scope of work. 114 Pipes are assumed and included in this scope based on 3 structures per square mile. If the total number of pipes identified is greater than 114, the threshold for hydraulic modeling may be increased from 100 acres to limit the number of pipes modeled to 114.
d) GIS attribute table to include drainage area and peak runoff rates. Match column headings to 1998 master plan.
e) Review existing drainage system maps from the 1998 masterplan and the 2007 masterplan. Update to include newly evaluated watersheds. Maps to include:
    i) Watershed and sub-watershed boundaries
    ii) Existing major drainage system components
    iii) Known drainage problem locations
    iv) Proposed system capital improvements plan.

f) Perform hydraulic evaluation of major conveyance structures within newly evaluated watershed using field measurements of culvert size and cover. Use HY-8 to calculate hydraulic capacity of culvert prior to overtopping roadway.
g) Basin and structure number to follow numbering convention from 1998 masterplan.
h) Trace stream centerlines for streams with greater than 100 acres of tributary area.
i) Identify existing detention basins within 38 square mile area of study and update city's detention basin shapefile.

Figure 1. HYDROLOGY AND HYDRAULICS AREA EXHIBIT



4) Update Existing GIS Storm Sewer Inventory - $128,995

The city has an established GIS database of storm sewer infrastructure for a portion of the city. The data has been collected at various times and varies with its completeness. Olsson's task will be to update portions of the existing database and expand the database to cover areas not previously inventoried.

a) Olsson will begin by importing and reviewing Bartlett and West Storm Sewer data from 2015.
   i) Surveyed Data within the tornado recovery area is satisfactory and only needs only to be supplemented by updated as-builts for the tornado recovery projects. (Blue data in Figure 2) (assumed 200 structures)
   ii) B&W shapefile based on as-builts and aerials is considered satisfactory and will not be updated with this scope. (Purple data in Figure 2)

b) Import city of Joplin storm sewer network which was based on as-builts and aerials and field verified locations. Field visit and update inlet information that is missing (shown in yellow areas in Figure 2) to include correct pipe and invert information. Add pipe information to the storm sewer shapefile where missing from Joplin storm sewer network (Red data in Figure 2) (assumed 1,800 structures).

c) Take a picture of each inlet a provide a general description of condition (i.e. good, poor, damaged, etc.). Coordinate picture filename to match inlet ID number.

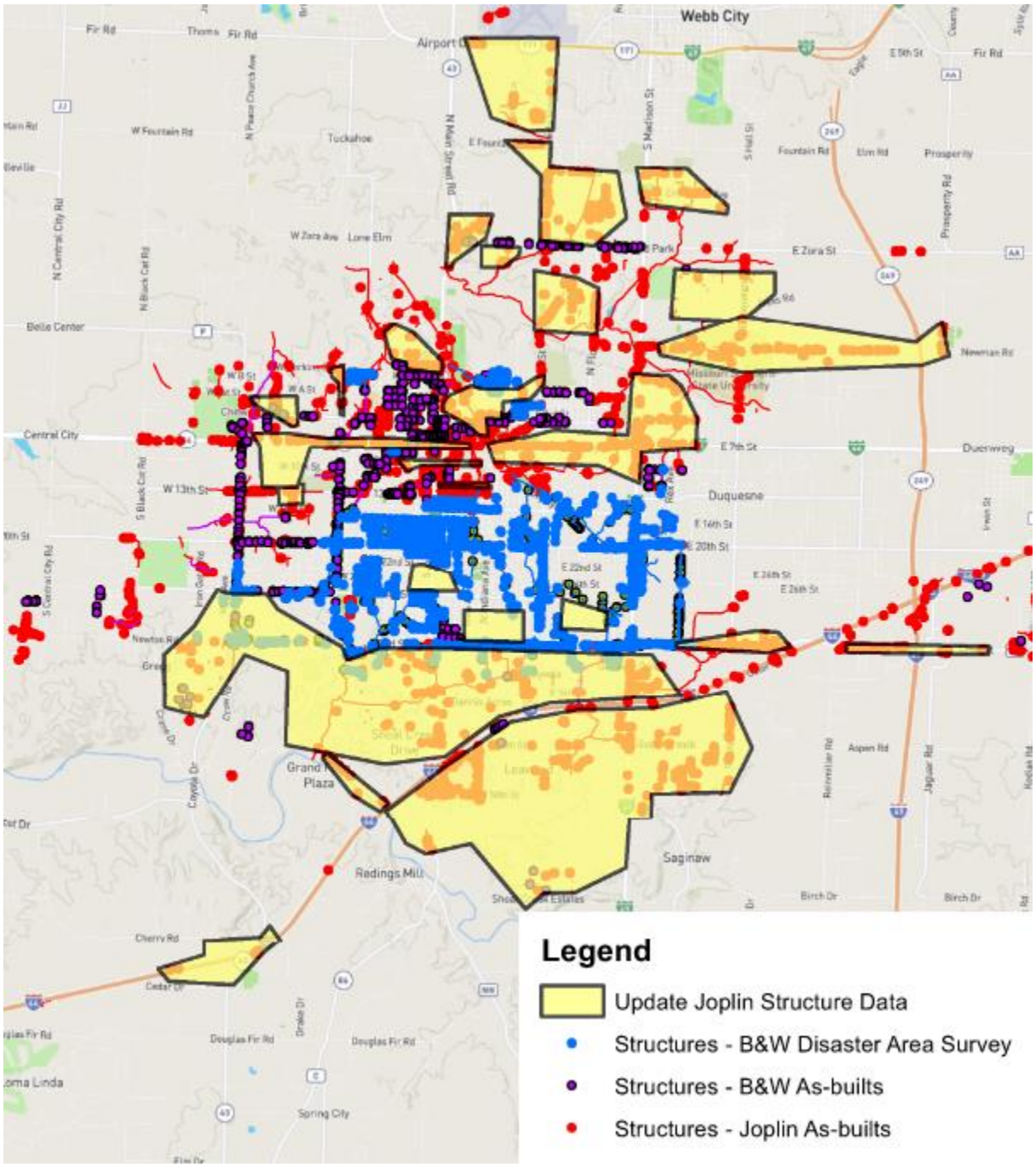
d) Shapefile attribute data columns should match the city's current shapefiles which includes:
   i) Northing, Easting (using tablet pc)
   ii) MH Use, Top Shape, Condition, Type, and Shape
   iii) MH Depth
   iv) MH Size
   v) Picture (interior and exterior)
   vi) Pipes (size, material, depth, and direction)
   vii) Information not included: Elevation

e) Combine and consolidate storm sewer information into one shapefile for inlets and one shapefile for pipes.

Assumptions:

- 1,800 structures are assumed for field investigation.
- New structures from tornado recovery projects will not be visited in the field. Assumed no more than 200 structures.
- Field verify and obtain pipe information yellow update areas shown below for Joplin data based on as-builts.
- Inlet elevations based on Lidar or as-built plans. Tablet PC level accuracy for inlet locations.
- Driveway culverts are not included in structure or pipe inventory.

Figure 2: GIS Update Area Exhibit



5) **Maintenance Plan – Evaluate and update the city's current maintenance plan for its storm drainage system - $10,182**

6) **Operations Plan - $10,182**
   a) Evaluate and update the city's current operations plan for its storm drainage system.
   b) Identify personnel and equipment needed for the maintenance of the city's current storm drainage system.
   c) Gather data from similar communities to compare the size of storm sewer system to the man-hours worked by the city's operations staff.
   d) Identify acceptable staffing range for Joplin stormwater operations based on the size of its storm drainage system.

7) **Rapid Geomorphic Assessment - $15,425**

   The following is an estimate of the hours and cost for the Olsson Project Geomorphologist to conduct a limited geomorphic assessment of principal streams within the city limits of the City of Joplin, MO.

   a) Compile and review all available aerial photography and relevant data and information associated with the streams within the city limits.
   b) Review of the shapefile of streams within the city limits. Identify the streams or stream segments that are not well defined or have no evident channel, those that are concrete lined or have an armored bed and banks, and those that have been contained in pipes or culverts underground. These areas will not be assessed. The remaining streams and stream segments will be considered the principal streams and segments to be assessed.
   c) Review available historic and current aerial photography. Aerial photography is available from the USGS EarthExplorer website as well as from Google Earth. If additional aerial photography is available from the City, it will be obtained and reviewed as well. The aerial photo analysis will be used to document readily evident historic and recent changes in stream banklines, channel planform and meander migration, channel width, and sedimentation patterns. The assessment will also document, where evident, the locations of any channel change that are currently threatening or may threaten in the near future public and private structures and infrastructure.
   d) Compile georeferenced list or KMZ file of existing or potential future problem sites.
   e) Provide a written section on the Limited Geomorphic Assessment for the Stormwater Masterplan summarizing the work completed and highlighting the findings of the assessment.

8) **Final Master Plan - $21,405**

The Final Master Plan will provide a summary of all findings and recommendations developed under this scope and culminate in a master recommended action plan to address the City's immediate and long range needs. The action plan will include capital improvement projects, maintenance and operations efforts. The action plan will be organized and presented in a concise manner whereby actions are prioritized, assigned to appropriate staff with recommended timelines/schedules, budgets and expected benefits.

   a) Prepare Draft Report and Plan for review by City staff, Council and other project stakeholders.
   b) Prepare Final Draft Report and Plan for approval and adoption.

All modeling and mapping files will be provided in electronic formats that can be easily edited by the City in the future.

9) **Funding Requirements:** Compliance and conformance with the requirements of the DNR grant funding the masterplan update. Specifically, the requirements for the grant as outlined per section 10 CSR 20-4.061 (3)(D).
   a) Stormwater management plan should contain at a minimum the following components.
      i) An introduction that defines terms and discusses the purpose, scope, hydrology, and alternatives considered
      ii) A discussion of the data and methodology used in plan development
      iii) A description of the existing system
      iv) A list of proposed storm water projects
      v) A description of the methodology used to evaluate and establish project priority ranking
      vi) Estimates of cost for full implementation of the plan
      vii) A description of the maintenance plan for existing and new systems
      viii) A geomorphological assessment of the plan area
      ix) A description of the rainfall/runoff modeling data for the plan area
      x) Modeling data, structure data and photographs, public survey response forms
      xi) Watershed map, public response map, flood plain map, maps showing project areas.

Data to be Provided by the City:

- As-built plans for projects to be included in the updated GIS storm sewer inventory
- Current GIS information
  - City limits
  - Major watershed
  - Minor watersheds
- Most Recent HEC-1 models
- Most recent GIS storm sewer inventory

SCHEDULE FOR OLSSON'S SERVICES

Unless otherwise agreed, Olsson expects to perform its services under the Agreement as follows:

Anticipated Start Date:	August 4, 2020
Completion of Project List for Capital Improvement Plan:	October 31, 2020
Anticipated Completion Date:	April 30, 2021

Olsson will endeavor to start its services on the Anticipated Start Date and to complete its services on the Anticipated Completion Date. However, the Anticipated Start Date, the Anticipated Completion Date, and any milestone dates are approximate only, and Olsson reserves the right to adjust its schedule and any or all of those dates at its sole discretion, for any reason, including, but not limited to, delays caused by Client or delays caused by third parties.

PAYMENT

The owner shall make payment to the engineer in accordance with section 34.057, RSMo.