



May 3, 2022

City of Laramie
P.O. Box C
Laramie, WY 82073
Attention: Mr. Eric Jaap

Re: Proposed Scope and Fee for City-Wide Master Drainage Plan: Develop City Storm Water Regulations and Design Manual

Dear Mr. Jaap:

Wood Environment & Infrastructure Solutions, Inc. (Wood) is pleased to submit this revised proposal to provide professional engineering services to Develop City Storm Water Regulations and a Design Manual.

Scope of Work: Wood's scope of work will include:

1) Develop City Storm Water Regulations and Design Manual

The City does not currently have an adopted Storm Water Design Manual, though a Draft Storm Drainage Criteria Manual was developed in 2013. Wood will prepare a design manual to provide consistent guidelines for private development and public improvement projects, using the following approach:

A. Evaluate Current and Future Regulatory and Other Drivers (WDEQ, MS4, FEMA)

- Compile relevant regulatory documents – We will evaluate current ordinances regarding storm drainage. We will work with City, WDEQ, and other local stakeholders to identify the current and likely future regulatory requirements (for example, an MS4 permit) that the manual should be tailored to meet. The regulatory review will incorporate an evaluation of FEMA floodplain requirements, including Laramie's current Community Rating System (CRS) status and recommended improvements.
 - While the City of Laramie does not currently require coverage under a National Pollutant Discharge Elimination System-Municipal Separate Storm Sewer System (NPDES-MS4) permit, previous discussions with the Wyoming Department of Environmental Quality (WDEQ) have indicated that future permit requirements could be accelerated if stream segments through communities become impaired, with sediment as a likely pollutant of concern. Wood will coordinate and attend a meeting with WDEQ Stormwater Permit Manager Barb Sahl, or other pertinent WDEQ staff, to discuss the potential municipal stormwater permit requirements for the City of Laramie.
 - Wood will evaluate the City of Laramie's current floodplain ordinance for compliance with FEMA standards regarding the regulation of development in special flood hazard areas and make recommendations for any changes required to meet the standards.

- The City of Laramie is currently not a participant in the CRS program. The CRS is “a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements (www.fema.gov).” Property owners in participating communities receive discounted (up to 45%) flood insurance premium rates to reflect the reduced flood risk. Wood will evaluate the City of Laramie’s current floodplain management program to identify management activities that the City is already conducting and could obtain credit for and provide recommendations for additional activities to be completed if the City were to join the CRS program. Wood will provide the city with an outline of the steps required to join the CRS program and will prepare the paperwork to join the CRS program. For the activities the City is already conducting, Wood will prepare and submit the documentation required to verify these efforts.
- Review applicable documents, including the 2013 Draft Storm Drainage Criteria Manual.
- Interview appropriate City staff regarding known problems, opportunities and needs for the current land development process and stormwater conditions, and on their perceptions of manuals used by other municipalities.
- Identify changes needed to current ordinances and draft new/revised ordinances related to stormwater management. Drafting of new/revised ordinances will be limited to storm water-related requirements for new development or public works projects. Wood will evaluate potential code conflicts with other land development codes and will provide recommendations for potential changes to address conflicts but will not draft new ordinances and codes in these areas.

Wood’s deliverable for this task will be a memorandum summarizing current and potential regulatory drivers related to stormwater. The memorandum will provide new/revised ordinances related to stormwater management and list any recommendations for changes or additions to other existing regulations.

Two meetings are associated with this task: a WDEQ coordination meeting, and a meeting with City staff to review the regulatory memorandum.

B. Framework Development

- Evaluate the use of existing manuals (UDFCD, etc.) for potential use by reference and adaptations that would be required to address local factors, to include:
 - Rainfall – Wood will evaluate the adaptations required to account for Laramie’s rainfall characteristics, including rainfall depths, storm durations, rainfall intensity vs. duration curves, and design storm distribution (how the rainfall intensity varies during storm event).
 - Aquifer Protection – Wood will evaluate the need for special stormwater requirements for development in the Casper Aquifer Protection Area (CAPA). The Casper Aquifer Protection Plan (Wittman Hydro Planning Associates, 2008) recommends that “stormwater management and engineering become part of

development standards in the CAPA.” Wood will make recommendations for stormwater management requirements within the CAPA. For example, certain types of development could be incentivized to utilize stormwater management practices that emphasize infiltration (to aid in aquifer recharge), while other types of development may require stormwater management practices that prevent storm runoff from infiltrating (to protect aquifer quality).

- Evaluate areas of overlap and coordination with Engineering Design Manual – Wood will review the draft framework description memorandum for agreement/overlap with Engineering Design Manual and include recommendations for integration between the two documents.
- Investigate design approach frameworks:
 - Will include Low Impact Development/Green Infrastructure (LID/GI) approaches and evaluate potential use of incentives to encourage implementation. Wood will work with the City staff to determine the specific drivers/goals for inclusion of LID/GI practices and the specific requirements that would be implemented to meet those goals. For example, LID/GI practices could be used to help the City prepare for compliance with a future stormwater MS4 permit, by requiring post-construction stormwater quality best management practices to improve the quality of stormwater discharges. LID/GI practices, when implemented on a widespread basis, can also decrease the size of traditional downstream flood management infrastructure. Once the City’s goals are defined, Wood will help define the requirements for LID/GI practices, which could include a specific design storm (i.e. 1-year storm) or rainfall depth (i.e. 0.5 inches) that would be required to be captured and infiltrated using LID/GI practices. Wood will also work with the City to identify LID practices that would be acceptable to the City (rain gardens, infiltration swales, green roofs, tree wells, and others).
 - Will guide design options for developers in a manner that makes it easier for City staff to review, including:
 - a. To encourage complete submittals, Wood will develop checklists for items required for applicants to submit.
 - b. Wood will work with the City to determine acceptable design approaches. By limiting the number of acceptable approaches, the City’s review of development submittals will be streamlined, since they won’t have to determine whether an unusual method meets City requirements.
 - ⇨ Engage development community: Will coordinate and lead one stakeholder meeting with local developers to get feedback on design approach frameworks. Wood will prepare a description of the meeting’s goals and types of input desired for distribution to developers prior to the meeting. City to provide assistance in identifying attendees.
- Evaluate Water Quality Requirements:
 - Develop guidance/requirements applicable to a potential future MS4 permit. Wood will provide recommendations for actions by the City to meet the six

minimum control measures required under an MS4 permit, including noting where the City is already completing these measures. Wood will work with the City to determine whether recommended actions should occur before or after a potential permit is enacted. Showing the WDEQ that the City is already enacting or planning actions that improve stormwater quality can itself be a deterrent to the implementation of a stormwater permit.

- a. *Public Education and Outreach – providing educational material about the importance of stormwater quality to residents, industry, commercial, and construction audiences.* Wood will provide recommendations for the types of educational materials that could be produced cost-effectively to reach and impact these audiences. Wood will share examples of educational materials we have produced for other municipalities and will prepare up to two educational flyers/brochures/magnets. (Does not include printing or distribution of materials.)
- b. *Public Participation – provide opportunity for the public to participate in the development/implementation of their stormwater management program.* Wood will provide recommendations for public participation opportunities. These could be public meetings, work sessions, City Council work sessions, or other venues. Wood will conduct one public participation event.
- c. *Illicit Discharge Detection and Elimination (IDDE) – find and eliminate sources of non-stormwater discharges to the storm sewer system through a pro-active search, including development of a system-wide storm sewer system map.* The City is already completing a system-wide storm sewer map. Wood will provide an outline for creating an illicit discharge detection and elimination program. Wood will conduct one outfall screening survey for stormwater outfalls to Spring Creek and the Laramie River to determine the extent of potential non-stormwater discharges. Based on the results of the screening survey, Wood will prepare a budgetary cost estimate for a full IDDE study to find and eliminate non-stormwater discharges.
- d. *Management of Construction Site Runoff – required to have an ordinance for management of stormwater discharges from construction sites that disturb one or more acres of land, including requirements to implement sediment and erosion control practices.* The State of Wyoming currently requires a permit for construction stormwater discharges from sites that disturb one or more acres. If not already present, Wood will draft ordinance language to make sure the City meets this requirement. Wood will make recommendations for the inclusion of specific sediment and erosion control practices in the Drainage Criteria Manual. Wood will also interview WDEQ staff to determine whether MS4 permit holders can rely on the WDEQ permitting and enforcement program to meet this requirement, or whether the City would be required to inventory and inspect construction sites on their own.
- e. *Management of Post-Construction Site Runoff – required to address stormwater runoff from new development and redevelopment projects, including performance and design standards for runoff reduction and pollutant removal.* Wood will present three types of standards often used to

meet this requirement (water quality capture volume, pollutant removal standards, and runoff reduction standards) and will work with the City to select the best type of standard for Laramie. Wood will make recommendations for the types of best management practices to allow in order to meet these standards. The LID/GI best practices selected in the previous task will also be evaluated for their ability to meet this requirement. The selected standard will be incorporated into the Draft and Final Manual.

- f. *Good Housekeeping in Municipal Operations – implement good housekeeping practices in municipal operations such as vehicle maintenance, open space, municipal buildings and infrastructure, including street sweeping and catch basin cleaning.* Wood will compile a list of City operations, facilities, and infrastructure that would fall under these requirements and will interview City staff to determine the level of activities already being completed. Wood will make recommendations for further actions at City facilities to meet this requirement.

The deliverable for this task will be a framework description memorandum. The memorandum will include documentation of tasks already completed by the City and outline the tasks (including frequency) that would be necessary to meet the requirements of a typical MS4 permit.

Two meetings are associated with this task: a work session with City to get input on the framework development, and a stakeholder meeting with local developers.

C. Development of Applicable Approaches

Based on feedback from the City on the framework description memorandum delivered in the previous task, Wood will develop a proposed list of applicable approaches and potential BMP designs, including local design conditions to be considered (i.e. Casper Aquifer Protection Area). Applicable approaches for hydrologic (calculating design runoff values) and hydraulic (routing runoff values through storm water system) analysis that will be evaluated may include:

- Computer models – Wood recommends the use of non-proprietary software so that the City can open, evaluate, and run any models submitted. Wood will evaluate and recommend models to be accepted by the City, including, but not limited to CUHP, EPA SWMM and HEC-HMS.
- Published information – The City could accept published flow values from hydrologic studies, including City master plans.
- Statistical analysis of measured streamflow – this would likely only apply to the Laramie River.
- Rational Method – For certain cases (small, uncomplex watersheds), the City may want to allow the use of the Rational Method, which generates a peak flow rate, but not a full runoff hydrograph. This would allow applicants an option that does not require a computer model. It is generally more conservative than computer model outputs, resulting in oversizing of storm water infrastructure.

- Other spreadsheet tools (UD_Rain, UD_Rational)

We will also evaluate implementation strategies, including incentive programs. Incentive programs could encourage developers to go beyond minimum stormwater management practices in exchange for relief from other requirements (such as landscaping).

The deliverable for this task will be a memorandum describing the approaches that will be developed and written into the manual.

One meeting is associated with this task: a meeting to review comments from the City on the framework memorandum.

D. Table of Contents Development

Wood will work with City to determine the form and format of the manual, based on decisions made in previous tasks. We will collect several examples and meet with City to discuss pros and cons of each one. Out of this discussion, we will work to develop a general table of contents and then refine it to the necessary level of detail to begin the work of specific content development.

The deliverable for this task will be a proposed table of contents.

One meeting is associated with this task: a meeting with the City to discuss manual format.

E. Technical Criteria Development

Wood will develop draft technical criteria/specifications for each design approach and best management practice. Design specifications will address both new development and existing site retrofits. They will also include requirements for an analysis of appropriate soils, geology, and surroundings for infiltration.

Each design specification shall be developed to quantify the storm water runoff volume captured and pollution reductions achieved (e.g. by rainwater harvesting, runoff infiltration, and evapotranspiration) either alone or in conjunction with flow through pollution reduction.

Wood assumes that original, site-specific design tools, figures, and details will not be developed as part of this scope. Instead, previously developed information from other communities or other Wood projects will be referenced.

Example calculations for acceptable approaches to hydrologic and hydraulic analyses will be provided in the Manual.

The deliverable for this task will be draft criteria/specifications.

F. Prepare Draft and Final Manual

This task takes input from previous tasks on incentives and builds the complete manual from the table of contents developed earlier. The bulk of the manual will consist of the framework and technical criteria, but a significant portion will include educational materials as well as a description of incentive programs.

Wood will review the Draft Manual for agreement/overlap with the Engineering Design Manual and include recommendations for integration between the two documents.

The deliverables for this task will include two drafts and a final version of the complete manual. We will also develop a summary presentation of the contents of the Manual to be presented one time.

Two meetings are associated with this task: a meeting to review comments from the City on the draft manual and a summary presentation of the Manual (to council or City staff).

Assumptions regarding Wood's scope of work:

- Drafting of new/revised City ordinances/code requirements will be limited to storm water-related requirements for new developments or public works projects. Wood will evaluate potential code conflicts with other land development codes and will provide recommendations for potential changes to address conflicts but will not draft new ordinances and codes in these areas.
- Original, site-specific design tools, figures, and details will not be developed as part of this scope. Instead, previously developed information from other communities or other Wood projects will be referenced in the manual or adjusted to apply to Laramie.

Compensation: Wood can complete the described scope of work for a fee of two hundred and seventy-four thousand, six hundred and forty-five dollars (\$274,645). A detailed breakdown of the fee is attached.

Please contact me at 307-460-3249 if you have any questions or if you need additional information. We look forward to working with you on the successful completion of this project.

Sincerely,

Wood Environment & Infrastructure Solutions, Inc.



Aaron Murray, PE
Laramie Branch Manager

Detailed Fee Estimate	City-Wide Master Drainage Study - Develop City Storm Water Regulations and Design Manual												
	Project Manager Murray	Sr. Advisor Halley	Principal McGregor	Civil Professional Davenport	Sr Engineer Loranger	Civil Professional Shields	Civil Intern	Civil Engineer	Admin	Wood Total Labor (\$)	Subconsultant/ Direct Costs	Markup (10% x Expenses)	Total Cost
Hourly Rate	\$ 180.00	\$ 165.00	\$ 210.00	\$ 95.00	\$ 175.00	\$ 80.00	\$ 55.00	\$ 125.00	\$ 70.00				
TASK 1 Develop City Storm Water Regulations and Design Manual													
1.1 Compile Relevant Regulatory Documents (WDEQ, MS4, FEMA)	4		2			16				\$ 2,420	\$ -	\$ -	\$ 2,420
1.2 Review Applicable Documents (City Code, 2013 Manual)	4	2	4			4		24		\$ 5,210	\$ -	\$ -	\$ 5,210
1.3 Interview City Staff Regarding Problems, Opportunities, Current Development Process, and Perceptions of Other Manuals	16	2	4					16		\$ 6,050	\$ -	\$ -	\$ 6,050
1.4 Identify Changes Needed to Current Ordinances	16	2	16		16			32		\$ 13,370	\$ -	\$ -	\$ 13,370
1.5 Provide Memo Summarizing Current and Future Regulatory Requirements	16	2	8			16		40		\$ 11,170	\$ -	\$ -	\$ 11,170
1.6 Evaluate Use of Existing Manuals for Potential Use by Reference and Adaptations for Local Factors	16	2	16			16		40		\$ 12,850	\$ -	\$ -	\$ 12,850
1.7 Evaluate Areas of Overlap and Coordination with Engineering Design Manual	8									\$ 1,440	\$ 6,900	\$ 690	\$ 9,030
1.8 Investigate Design Approach Frameworks (LID/Green Infrastructure, Ease of City Review, Engage Development Community)	30	16	24			24		120		\$ 30,000	\$ -	\$ -	\$ 30,000
1.9 Evaluate Water Quality Requirements (MS4 and Erosion Control during Construction)	16	2	16			40		80		\$ 19,770	\$ -	\$ -	\$ 19,770
1.10 Prepare and Submit Framework Description Memorandum	20	1	4			8		30		\$ 8,995	\$ -	\$ -	\$ 8,995
1.11 Develop Proposed List of Applicable Approaches and BMP Designs	16	8	8			16		40		\$ 12,160	\$ -	\$ -	\$ 12,160
1.12 Develop Table of Contents	4	2	2					8		\$ 2,470	\$ -	\$ -	\$ 2,470
1.13 Develop Technical Criteria and Design Specifications	20	8	20	80		20		80		\$ 28,320	\$ -	\$ -	\$ 28,320
1.14 Develop Draft Technical Criteria Manual	100	24	24	40		40		160	20	\$ 55,400	\$ -	\$ -	\$ 55,400
1.15 Develop Final Technical Criteria Manual	60	16	24	40		40		110	20	\$ 40,630	\$ -	\$ -	\$ 40,630
1.16 Meetings with City Staff and Other Stakeholders (assume 8 meetings)	32	12	16					40	10	\$ 16,800	\$ -	\$ -	\$ 16,800
Subtotal	378	99	188	160	16	240	0	820	50	\$ 267,055	\$ 6,900	\$ 690	\$ 274,645
Total Hours	378	99	188	160	16	240	0	820	50				
Total Fee										\$ 267,055	\$ 6,900	\$ 690	\$ 274,645