CITY OF LONGMONT
APPENDIX C - REPORT TEMPLATE AND CHECKLISTS

CITY OF LONGMONT

APPENDIX C1.1 (DRAFT)

Drainage Report Checklist – Conceptual

The listed requirements apply to all Conceptual Drainage Reports.

Yes = Provided **No** = Not Provided

Yes	No	Requirement
☐	☐	1. Subdivision Name.
☐	☐	2. Address.
☐	☐	3. Property Owner & Property Jurisdiction.
☐	☐	4. Developer/Project Owner.
☐	☐	5. Engineer.
☐	☐	6. Submittal date and revision dates, as applicable.
☐	☐	7. State if site is in the floodplain.
☐	☐	8. Acknowledge offsite flows and/or existing master drainage reports.
☐	☐	9. State intent to follow City of Longmont drainage and water quality standards.
☐	☐	10. Location of existing discharge locations and the area currently draining to those discharge locations.
☐	☐	11. Overall existing land cover (e.g. undeveloped grass land, previously developed unincorporated county).
☐	☐	12. Existing drainage infrastructure, irrigation facilities & Canals.
☐	☐	13. If bubble map is provided with concept plan / annexation, show anticipated allotted space for detention and water quality facility.
☐	☐	14. Exhibit showing proposed discharge location.
☐	☐	15. Exhibit showing floodplain (if applicable).

CITY OF LONGMONT
APPENDIX C1.2 (DRAFT)

Drainage Report Checklist – Preliminary

The listed requirements apply to all Preliminary Drainage Reports. This list is the m

Yes = Provided **No** = Not Provided

A. Title Page

Yes	No	Requirement
☐	☐	1. Subdivision Name.
☐	☐	2. Address.
☐	☐	3. Property Owner & Property Jurisdiction.
☐	☐	4. Developer/Project Owner.
☐	☐	5. Engineer.
☐	☐	6. Submittal date and revision dates, as applicable.

B. General Location and Description – 1. Location of Project

Yes	No	Requirement
☐	☐	1. Site Vicinity Map.
☐	☐	2. Township, Range, Section, and ¼ Section.
☐	☐	3. Streets, roadways, and highways adjacent to the proposed development, or within the area served by the proposed drainage improvements.
☐	☐	4. Names of adjacent developments and jurisdictions.

C. General Location and Description – 2. Description of Property

Yes	No	Requirement
☐	☐	1. Total developed area and disturbed area in acres. Existing imperviousness of project site and proposed imperviousness of project site.
☐	☐	2. Ground cover, vegetation, site topography and slopes.
☐	☐	3. NRCS Soils Classification Map and description.
☐	☐	4. Major and minor drainageways (ditches, drainageways and creeks that the site contributes flows to in the major and/or minor event).
☐	☐	5. Existing irrigation ditches.
☐	☐	6. Existing and proposed land use.
☐	☐	7. Groundwater investigations and results including relevant excerpts from or references to the Geotechnical Report or Groundwater Report. Identify potential groundwater issues and remediation measures.

D. General Location and Description – 3. Floodplain

Yes	No	Requirement
☐	☐	1. Discuss resources and methodology for delineation of floodplain (if applicable).
☐	☐	2. Discuss the source of the floodplain information and the level of detail.
☐	☐	3. Discuss details of floodplain modifications, including level of encroachment, velocities, depths, stabilization measures, water surface elevations, etc.
☐	☐	4. Discuss floodplain modification studies, including Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) requirements.
☐	☐	5. Discuss floodplain development regulations and Floodplain Development Permit.

E. Drainage Basins and Sub-Basins

Yes	No	Requirement
☐	☐	1. Historic/Existing Major Drainage Basins: On-site and off-site major drainage basin characteristics for historic/existing flow patterns and paths.
☐	☐	2. Proposed Major Drainage Basins: On-site and off-site major drainage basin characteristics for proposed flow patterns and paths.
☐	☐	3. Discuss any phasing of the improvements.

F. Drainage Design Criteria – 1. Regulations

Yes	No	Requirement
☐	☐	1. Discuss the criteria used in drainage design (City of Longmont Storm Drainage Criteria Manual, City of Longmont Standards and Specifications Section 300, Mile High Flood District (MHFD) Urban Storm Drainage Criteria Manual (USDCM), Federal Emergency Management Agency (FEMA) regulations, United States Army Corp of Engineers (USACE) regulations, State of Colorado regulations and other provisions selected where applicable).
☐	☐	2. Discuss previous drainage studies for the site in question that influence or are influenced by the drainage design and how the plan will affect drainage design for the site.
☐	☐	3. Discuss any deviations from this Criteria if any.

G. Drainage Design Criteria – 2. Hydrological Criteria

Yes	No	Requirement
☐	☐	1. Identify design storm recurrence intervals for the minor and major events.
☐	☐	2. Identify design rainfall depths (NOAA Atlas 14 required).
☐	☐	3. Identify runoff calculation method, runoff coefficients, percent imperviousness (see USDCM Chapter 6).

H. Drainage Design Criteria – 3. Hydraulic Criteria

Yes	No	Requirement
☐	☐	1. Discuss any specialized hydraulic structures (e.g. weirs, dams, bridges) if necessary.
☐	☐	2. Discuss any facilities needed offsite for the conveyance of minor and major flows to the major drainageway or the conveyance of any offsite flows through or around the project.

I. Stormwater Management Facility Design – 1. Low Impact Development (LID)

Yes	No	Requirement
☐	☐	1. Summary of implementation and calculations for Low Impact Development (LID) strategies, including measures to "minimize directly connected impervious areas" (MDCIA).
☐	☐	2. Justification for impervious areas not disconnected.
☐	☐	3. Reference to the four-component land use model schematic for LID implementation.

J. Stormwater Management Facility Design – 2. Water Quality

Yes	No	Requirement
☐	☐	1. Discuss the total disturbed area, summarizing the total treated and untreated areas including the water quality design standard being met for the treated areas.
☐	☐	2. Discuss the design of all stormwater quality PSCMs, including tributary areas, sizing, treatment volumes or rates, design features, and reference to the MHFD SCM-Design spreadsheets.
☐	☐	3. Discuss any additional source controls that are necessary to prevent the potential for illicit discharge from site activities.

K. Stormwater Management Facility Design – 3. Detention

Yes	No	Requirement
☐	☐	1. Provide narrative and calculation pertaining to allowed release rate for the 100-yr event.
☐	☐	2. Provide a description of the methodologies applied for determining detention pond's approximate size. This should include explicit references to the appropriate MHFD spreadsheets (e.g., CUHP/SWMM, WQCV and detention calculator tools) or other recognized model documentation utilized in the analysis. Clearly identify how each referenced tool informed the project-specific calculations and design assumptions.
☐	☐	3. State the EURV and the approximate volume to be detained at the 100-yr event.

L. Stormwater Management Facility Design – 4. Maintenance

Yes	No	Requirement
☐	☐	1. Discuss any easements or outlots required for stormwater conveyance or management.
☐	☐	2. Statement of maintenance responsibilities of the PSCM permittee upon acceptance of the constructed facility.

M. Conclusion

Yes	No	Requirement
☐	☐	1. Conclusion section states: "This report has been prepared using the methods and concepts for calculating rainfall data and runoff outlined in the Urban Storm Drainage Criteria Manual, City of Longmont Storm Drainage Criteria Manual, and all other applicable local, state and federal requirements. This report meets the Environmental Management Goals and adheres to floodplain policy. In addition, no adverse impacts on downstream infrastructure will result from the proposed development of this project site."
☐	☐	2. Summarize any offsite obligations or restrictions for future development.
☐	☐	3. Summarize any design exceptions requested for the development.

N. References

Yes	No	Requirement
☐	☐	1. Reference all criteria, master plans, reports, or other technical information used in development of the concepts discussed in the drainage report.

O. Appendices – 1. Maps

Yes	No	Requirement
☐	☐	1. NRCS Soils Map.
☐	☐	2. FIRMette and other floodplain exhibit.
☐	☐	3. Rainfall Information.

P. Appendices – 2. Hydrological Computations

Yes	No	Requirement
☐	☐	1. Runoff coefficients, % imperviousness, and times of concentration (all onsite and offsite basins).
☐	☐	2. Peak flow rate calculations for the minor and major storms.

Q. Appendices – 3. Hydraulic Computations

Yes	No	Requirement
☐	☐	1. Open channel or swale capacities.

R. Appendices – 4. Stormwater Management Facility Computations

Yes	No	Requirement
☐	☐	1. MHFD spreadsheet for detention calculations (first sheet / pond sizing only).

S. Appendices – 5. Reference Information

Yes	No	Requirement
☐	☐	1. Copies of pertinent sections highlighted in referenced materials or drainage reports.
☐	☐	2. Pertinent grading plan details associated with floodplain mitigation.

T. Overall Drainage Plan (Provide for both existing and proposed condition)

Yes	No	Requirement
☐	☐	1. 24" x 36" in size, 22" x 34" also acceptable when half size sets will be produced.
☐	☐	2. Title block, legend, north arrow.
☐	☐	3. Scale 1"= 20’ to 1"= 100’, as required to show sufficient detail.
☐	☐	4. Property / Project Site boundary line & limits of construction.
☐	☐	5. Existing and proposed streets, roadways, or highways.
☐	☐	6. Basin delineations, including off-site basins when feasible.

Yes	No	Requirement
☐	☐	7. Table summarizing for each basin: design point, basin ID, Q-minor, Q-major.
☐	☐	8. Offsite flow entering project site.
☐	☐	9. Proposed and existing contours (1’ increment). Existing contours shall extend 50’ beyond project site boundary or 50’ beyond the project’s limits of construction.
☐	☐	10. Callouts of existing stormwater management facilities and major water bodies.
☐	☐	11. Overlay or figure showing layout of Detailed Drainage Plan sheets (viewports).
☐	☐	12. Quick Checks / required CAD object/lines.
☐	☐	13. Floodplain linework (if applicable).
☐	☐	14. Pipe and inlet linework.

U. Detailed Drainage Plan (Can be combined with overall drainage plan depending on complexity of project)

Yes	No	Requirement
☐	☐	1. 24" x 36" in size, 22" x 34" also acceptable when half size sets will be produced.
☐	☐	2. Title block, legend, north arrow.
☐	☐	3. Scale 1"= 20’ to 1"= 100’, as required to show sufficient detail.
☐	☐	4. Proposed and existing contours (1’ increment).
☐	☐	5. General labels.
☐	☐	6. Road linework.
☐	☐	7. Basin delineation, basin labels, flow arrows.
☐	☐	8. Design Points.
☐	☐	9. Callout existing stormwater management facilities and major water bodies.
☐	☐	10. Floodplain linework (if applicable).
☐	☐	11. Quick Checks / required CAD object/lines.
☐	☐	12. Pipe and inlet linework.

CITY OF LONGMONT
APPENDIX C1.3

Drainage Report Checklist – Final

The listed requirements apply to all Final Drainage Reports.

Yes = Provided **No** = Not Provided

A. Title Page

Yes	No	Requirement
☐	☐	1. Subdivision Name.
☐	☐	2. Address.
☐	☐	3. Property Owner & Property Jurisdiction.
☐	☐	4. Developer/Project Owner.
☐	☐	5. Engineer.
☐	☐	6. Submittal date and revision dates, as applicable.
☐	☐	7. Include Certification Statement from a Registered Professional Engineer in the State of Colorado and the project Developer (See Section 100 of the City Standards for more information).

B. General Location and Description – 1. Location of Project

Yes	No	Requirement
☐	☐	1. Site Vicinity Map.
☐	☐	2. Township, Range, Section, and ¼ Section.
☐	☐	3. Streets, roadways, and highways adjacent to the proposed development, or within the area served by the proposed drainage improvements.
☐	☐	4. Names of adjacent developments and jurisdictions.

C. General Location and Description – 2. Description of Property

Yes	No	Requirement
☐	☐	1. Total developed area and disturbed area in acres. Existing imperviousness of project site and proposed imperviousness of project site, not including offsite area.
☐	☐	2. Ground cover, vegetation, site topography and slopes.
☐	☐	3. NRCS Soils Classification Map and description.
☐	☐	4. Major and minor drainageways (ditches, drainageways and creeks that the site contributes flows to in the major and/or minor event).
☐	☐	5. Existing irrigation ditches.
☐	☐	6. Existing and proposed land use.

Yes	No	Requirement
☐	☐	7. Groundwater investigations and results including relevant excerpts from or references to the Geotechnical Report or Groundwater Report. Identify potential groundwater issues and remediation measures.
☐	☐	8. Provide separate underdrain report (Refer to Section 300 of the City Standards and the underdrain report checklist).

D. General Location and Description – 3. Floodplain – Undesignated

Yes	No	Requirement
☐	☐	1. Discuss resources and methodology for delineation of floodplain.

E. General Location and Description – 3. Floodplain – Designated

Yes	No	Requirement
☐	☐	1. Discuss the source of the floodplain information and the level of detail.
☐	☐	2. Discuss details of floodplain modifications, including level of encroachment, velocities, depths, stabilization measures, water surface elevations, etc.
☐	☐	3. Discuss floodplain modification studies, including Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) requirements.
☐	☐	4. Discuss floodplain development regulations and Floodplain Development Permit.

F. Drainage Basins and Sub-Basins

Yes	No	Requirement
☐	☐	1. Historic/Existing Major Drainage Basins: On-site and off-site major drainage basin characteristics for historic/existing flow patterns and paths.
☐	☐	2. Proposed Major Drainage Basins: On-site and off-site major drainage basin characteristics for proposed flow patterns and paths.
☐	☐	3. Drainage characteristics of each on-site and off-site sub-basin including total area, disturbed area (if not entire basin), imperviousness, flow patterns and paths, design points, and receiving Permanent Stormwater Control Measure (PSCM).
☐	☐	4. Discuss any phasing of the improvements.

G. Drainage Design Criteria – 1. Regulations

Yes	No	Requirement
☐	☐	1. Discuss the criteria used in drainage design (City of Longmont Storm Drainage Criteria Manual, City of Longmont Standards and Specifications Section 300, Mile High Flood District (MHFD) Urban Storm Drainage Criteria Manual (USDCM), Federal Emergency Management Agency (FEMA) regulations, United States Army Corp of Engineers (USACE) regulations, State of Colorado regulations and other provisions selected where applicable).
☐	☐	2. Discuss previous drainage studies for the site in question that influence or are influenced by the drainage design and how the plan will affect drainage design for the site.
☐	☐	3. Discuss any deviations from this Criteria if any.

H. Drainage Design Criteria – 2. Hydrological Criteria

Yes	No	Requirement
☐	☐	1. Identify design storm recurrence intervals for the minor and major events.
☐	☐	2. Identify design rainfall depths (NOAA Atlas 14 required).
☐	☐	3. Identify runoff calculation method, runoff coefficients, percent imperviousness (see USDCM Chapter 6).

I. Drainage Design Criteria – 3. Hydraulic Criteria

Yes	No	Requirement
☐	☐	1. Specify methods and reference MHFD spreadsheets demonstrating street and inlet capacity.
☐	☐	2. Specify methods and reference MHFD spreadsheets demonstrating street and inlet capacity.
☐	☐	3. Specify methods and reference calculations for flow capacity calculations of any open channels, swales or ditches.
☐	☐	4. Discuss any specialized hydraulic structures (e.g. weirs, dams, bridges) if necessary.
☐	☐	5. Discuss any facilities needed offsite for the conveyance of minor and major flows to the major drainageway or the conveyance of any offsite flows through or around the project.

J. Stormwater Management Facility Design – 1. Low Impact Development (LID)

Yes	No	Requirement
☐	☐	1. Summary of implementation and calculations for Low Impact Development (LID) strategies, including measures to "minimize directly connected impervious areas" (MDCIA).
☐	☐	2. Justification for impervious areas not disconnected.
☐	☐	3. Reference to the four-component land use model schematic for LID implementation.

K. Stormwater Management Facility Design – 2. Water Quality

Yes	No	Requirement
☐	☐	1. Discuss the total disturbed area, summarizing the total treated and untreated areas including the water quality design standard being met for the treated areas.
☐	☐	2. Discuss the design of all stormwater quality PSCMs, including tributary areas, sizing, treatment volumes or rates, design features, and reference to the MHFD SCM-Design spreadsheets.
☐	☐	3. Discuss any additional source controls that are necessary to prevent the potential for illicit discharge from site activities.

L. Stormwater Management Facility Design – 3. Detention

Yes	No	Requirement
☐	☐	1. Provide narrative and calculation pertaining to allowed release rate for the 100-yr event.
☐	☐	2. Discuss detention facility designs, including provided release rates, drain down times, storage volumes and applicable water surface elevations for the WQCV, EURV, 100-year, and emergency overflow conditions, outlet structure design, emergency spillway design, etc.
☐	☐	3. Provide a description of the methodologies applied for determining detention pond's approximate size. This should include explicit references to the appropriate MHFD spreadsheets (e.g., CUHP/SWMM, WQCV

Yes	No	Requirement
		and detention calculator tools) or other recognized model documentation utilized in the analysis. Clearly identify how each referenced tool informed the project-specific calculations and design assumptions.
☐	☐	4. State the EURV and the approximate volume to be detained at the 100-yr event.

M. Stormwater Management Facility Design – 4. Maintenance

Yes	No	Requirement
☐	☐	1. Discuss any easements or outlots required for stormwater conveyance or management.
☐	☐	2. Statement of maintenance responsibilities of the PSCM permittee upon acceptance of the constructed facility.

N. Conclusion

Yes	No	Requirement
☐	☐	1. Conclusion section states: "This report has been prepared using the methods and concepts for calculating rainfall data and runoff outlined in the Urban Storm Drainage Criteria Manual, City of Longmont Storm Drainage Criteria Manual, and all other applicable local, state and federal requirements. This report meets the Environmental Management Goals and adheres to floodplain policy. In addition, no adverse impacts on downstream infrastructure will result from the proposed development of this project site."
☐	☐	2. Summarize any offsite obligations or restrictions for future development.
☐	☐	3. Summarize any design exceptions requested for the development.

O. References

Yes	No	Requirement
☐	☐	1. Reference all criteria, master plans, reports, or other technical information used in development of the concepts discussed in the drainage report.

P. Appendices – 1. Maps

Yes	No	Requirement
☐	☐	1. NRCS Soils Map.
☐	☐	2. FIRMette and other floodplain exhibits.
☐	☐	3. Rainfall Information.

Q. Appendices – 2. Hydrological Computations

Yes	No	Requirement
☐	☐	1. Runoff coefficients, % imperviousness, and times of concentration (all onsite and offsite basins).
☐	☐	2. Peak flow rate calculations for the minor and major storms.
☐	☐	3. CUHP/SWMM Input parameter determination (if applicable).
☐	☐	4. Hydrograph data, if applicable (e.g.: CUHP Hydrograph).

R. Appendices – 3. Hydraulic Computations

Yes	No	Requirement
☐	☐	1. CUHP/SWMM or approved equal input and output (if applicable).
☐	☐	2. Storm sewer capacities and hydraulic grade lines, including the loss coefficients and profiles.
☐	☐	3. Street capacities (MHFD Spreadsheet).
☐	☐	4. Inlet capacities (MHFD Spreadsheet).
☐	☐	5. Open channel or swale capacities.
☐	☐	6. Culvert capacities.

S. Appendices – 4. Stormwater Management Facility Computations

Yes	No	Requirement
☐	☐	1. MHFD spreadsheet for detention calculations.
☐	☐	2. Emergency spillway sizing calculations.
☐	☐	3. Stormwater Control Measures design calculations.
☐	☐	4. Run on Ratios for LID design.
☐	☐	5. 4 Component land use model schematic for LID.

T. Appendices – 5. Reference Information

Yes	No	Requirement
☐	☐	1. Copies of pertinent sections highlighted in referenced materials or drainage reports.
☐	☐	2. Pertinent grading plan details associated with floodplain mitigation.

U. Overall Drainage Plan (Provide for both existing and proposed condition)

Yes	No	Requirement
☐	☐	1. 24" x 36" in size, 22" x 34" also acceptable when half size sets will be produced.
☐	☐	2. Title block, legend, north arrow.
☐	☐	3. Scale 1"= 20’ to 1"= 100’, as required to show sufficient detail.
☐	☐	4. Property / Project Site boundary line & limits of construction.
☐	☐	5. Existing and proposed streets, roadways, or highways.
☐	☐	6. Basin delineations, including off-site basins when feasible.
☐	☐	7. Table summarizing for each basin: design point, basin ID, Q-minor, Q-major.
☐	☐	8. Offsite flow entering project site.
☐	☐	9. Proposed and existing contours (1’ increment). Existing contours shall extend 50’ beyond project site boundary or 50’ beyond the project’s limits of construction.
☐	☐	10. Callouts of existing stormwater management facilities and major water bodies.
☐	☐	11. Overlay or figure showing layout of Detailed Drainage Plan sheets (viewports).

Yes	No	Requirement
☐	☐	12. Quick Checks / required CAD object/lines.
☐	☐	13. Floodplain linework (if applicable).
☐	☐	14. Pipe and inlet linework.

V. Detailed Drainage Plan (Can be combined with overall drainage plan depending on complexity of project)

Yes	No	Requirement
☐	☐	1. 24" x 36" in size, 22" x 34" also acceptable when half size sets will be produced.
☐	☐	2. Title block, legend, north arrow.
☐	☐	3. Scale 1"= 20’ to 1"= 100’, as required to show sufficient detail.
☐	☐	4. Proposed and existing contours (1’ increment).
☐	☐	5. General labels.
☐	☐	6. Road linework.
☐	☐	7. Basin delineation, basin labels, flow arrows.
☐	☐	8. Design Points.
☐	☐	9. Callout existing stormwater management facilities and major water bodies.
☐	☐	10. Floodplain linework (if applicable).
☐	☐	11. Quick Checks / required CAD object/lines.
☐	☐	12. Pipe and inlet linework.

CITY OF LONGMONT
APPENDIX C-4 (DRAFT)

Geotechnical Report Checklist

The City of Longmont requires a geotechnical report for all proposed construction within t2he City's Easements or Right-of-way. The reports are to include information necessary to determine the characteristics of soils encountered within the project limits, and make recommendations on how to deal with problem areas.
Yes = Provided No = Not Provided N/A = Not Applicable

A. Investigation and Recommendation Requirements (by geotechnical engineer)
The soils engineer shall investigate and recommend solutions to problems of:

Yes	No	N/A	Requirement
☐	☐	☐	1. Expansion of cohesive soils
☐	☐	☐	2. Frost heave in silty soils
☐	☐	☐	3. Potential ground water problems
☐	☐	☐	4. Partially constructed streets
☐	☐	☐	5. Use of sub-base filter fabric
☐	☐	☐	6. Any other matter that may adversely affect the project design

B. Soil Sample Requirements

Yes	No	N/A	Requirement
☐	☐	☐	1. Soil samples shall be taken at the proposed subgrade elevation and shall represent the soil of the subgrade.
☐	☐	☐	2. All boring depths shall extend a minimum of three (3) feet below the proposed subgrade elevation.
☐	☐	☐	3. The boring locations shall not exceed a distance of 500 ft. between borings, with a minimum of two (2) borings per roadway.
☐	☐	☐	4. If more than one soil type is encountered in the boring, they shall be logged and tested separately.
☐	☐	☐	5. All design shall be based on the worst soil encountered from the standpoint of subgrade support.
☐	☐	☐	6. All subgrade shall have a minimum of ninety-five percent compaction at ± 2% of optimum moisture content to a depth of twelve inches.
☐	☐	☐	7. The geotechnical report must demonstrate the adequateness of the structural section.

C. Contact Information (Must be included on front page of report)

Yes	No	N/A	Requirement
☐	☐	☐	1. Development/Project Name
☐	☐	☐	2. Location/Address
☐	☐	☐	3. Firm Name
☐	☐	☐	4. Submitted By
☐	☐	☐	5. Contact Person

Yes	No	N/A	Requirement
☐	☐	☐	6. Contact Phone Number
☐	☐	☐	7. Submittal Date – in date order of 1st, 2nd, 3rd, etc. submittal
☐	☐	☐	8. Date Approved

D. Geotechnical Report Requirements and Format

Yes	No	N/A	Requirement
☐	☐	☐	1. The geotechnical report must be prepared by a professional engineer, whose expertise is geotechnical engineering registered in the State of Colorado.
☐	☐	☐	2. The report must be submitted to the City Engineer for review and approval prior to the final approval of any construction drawings.

E. Report Format

Yes	No	N/A	Requirement
☐	☐	☐	1. Title page with project address
☐	☐	☐	2. 8½" x 11" report, bound or in a folder
☐	☐	☐	3. Dated, checked, signed and sealed by a professional engineer
☐	☐	☐	4. Original and revision dates

F. Soils Information

Yes	No	N/A	Requirement
☐	☐	☐	1. Boring locations on site plan
☐	☐	☐	2. Boring logs
☐	☐	☐	3. Gradation tests/Atterberg limits
☐	☐	☐	4. Compaction tests
☐	☐	☐	5. Percent swell (If percent swell exceeds 1.5%, the report shall include the proposed method(s) to deal with swelling soil characteristics)
☐	☐	☐	6. Soil classification (AASHTO)
☐	☐	☐	7. Problem areas on the site
☐	☐	☐	8. Groundwater levels
☐	☐	☐	9. Trenching restrictions

G. Construction Methods

Yes	No	N/A	Requirement
☐	☐	☐	1. Retesting after rough grading
☐	☐	☐	2. Construction sequence
☐	☐	☐	3. Lift thickness
☐	☐	☐	4. Recommendations for planned construction

CITY OF LONGMONT
APPENDIX C-5 (RESERVED)

Pavement Design Report Checklist

CITY OF LONGMONT
Appendix C-6 (RESERVED)

Transportation Impact Study

CITY OF LONGMONT
APPENDIX C-7

Statement of Expected Utility Needs

Project Name & Location: _____

Date: _____

Developer: _____

Building Description _____

Code Section: International Plumbing Code, current edition as adopted by the City

DIRECTIONS

Attach fixture count and calculations for both the water and sewer demand. For developments with multiple buildings, complete one form for each building type with all applicable information filled in.

WATER DEMAND

Policy: Water meters and service lines shall be sized in accordance with the following table based on the current City adopted International Plumbing Code. If a combined domestic and irrigation meter are used, the higher water demand shall determine the water meter size.

DOMESTIC WATER DEMAND

Description	Existing Value (if any)	Proposed Value
Water Supply Fixture Units (wsfu)		
Flow Rate (gpm)		
Water Meter Size (in)		
Service Line Size (in)		
Velocity in Service Line (ft/s)		

IRRIGATION WATER DEMAND

Description	Existing Value (if any)	Proposed Value
Irrigated Area (sf)		
Flow Rate (gpm)		
Water Meter Size (in)		
Service Line Size (in)		
Velocity in Service Line (ft/s)		

SANITARY SEWER DEMAND

Policy: Sanitary sewer service lines shall be sized in accordance with the following table based on the current City adopted International Plumbing Code.

Description	Existing Value (if any)	Proposed Value
Drainage Fixture Units		
Flow (gpm)[1]		
Sewer Service Pipe Diameter (in)		
Slope of Service Line (%) (2% min)		
Velocity (ft/s)		

[1] *Flow shall be calculated 70% of the estimated water demand based on IPC calculation for domestic water demand.*

ELECTRIC REQUIREMENTS

Policy: An (ECIF) Electric Community Investment Fee credit, will be given for an existing service and can be applied to an upgraded service at the same location.

Description	Existing Service (if any)	Proposed Service
Residential or Commercial (Res or Com)		
1 Phase or 3 Phase (1ph or 3ph)		
Voltage: (120/240v, 120/208v or 277/480v)		
Main Panel Rating (Amps)		
Main Buss Rating (Amps)		

CERTIFICATION STATEMENT

I hereby certify that the information provided in this Statement of Expected Utility Needs is accurate, meets the requirements of the _____ International Plumbing Code, and was prepared by myself or under my direct supervision.

Name	P.E. Number	Date	Stamp

CITY OF LONGMONT
APPENDIX C-8 (DRAFT)

Underdrain Report Checklist

If based on recommendations made in the geotechnical engineering report for a site, an underdrain collection system is required, then the Developer shall submit an underdrain report for review and approval.

Yes = Provided **No** = Not Provided **N/A** = Not Applicable

A. Title Page

Yes	No	N/A	Requirement
☐	☐	☐	1. Subdivision Name.
☐	☐	☐	2. Address.
☐	☐	☐	3. Property Owner & Property Jurisdiction.
☐	☐	☐	4. Developer/Project Owner.
☐	☐	☐	5. Engineer.
☐	☐	☐	6. Submittal date and revision dates, as applicable.

B. General Location and Description – I. Name of Project

Yes	No	N/A	Requirement
☐	☐	☐	1. Site Vicinity Map.
☐	☐	☐	2. Township, Range, Section, and ¼ Section.
☐	☐	☐	3. Streets, roadways, and highways adjacent to the proposed development, or within the area served by the proposed underdrain collection system.
☐	☐	☐	4. Names of adjacent developments and jurisdictions.

C. General Location and Description – II. Description of Property

Yes	No	N/A	Requirement
☐	☐	☐	1. Total developed area and disturbed area in acres.
☐	☐	☐	2. Ground cover, vegetation, site topography and slopes.
☐	☐	☐	3. NRCS Soils Classification Map and description.
☐	☐	☐	4. Existing irrigation ditches.
☐	☐	☐	5. Existing and proposed land use.
☐	☐	☐	6. Groundwater investigations and results including relevant excerpts from or references to the Geotechnical Report. Identify potential groundwater issues and remediation measures.

D. Underdrain Design Criteria – 1. Regulations

Yes	No	N/A	Requirement
☐	☐	☐	1. Discuss the criteria used in underdrain design (City of Longmont Standards and Specifications Section 300).
☐	☐	☐	2. Discuss previous underdrain studies or geotechnical reports for the site that influence the underdrain design.
☐	☐	☐	3. Discuss any deviations from this Criteria if any.

E. Underdrain Design Criteria – 2. Hydrological / Hydraulic Criteria

Yes	No	N/A	Requirement
☐	☐	☐	1. Identify design groundwater levels.
☐	☐	☐	2. Identify soil characteristics and hydraulic conductivity.
☐	☐	☐	3. Identify underdrain pipe sizing calculations.

F. Underdrain System Design

Yes	No	N/A	Requirement
☐	☐	☐	1. Discuss underdrain layout and pipe sizing.
☐	☐	☐	2. Discuss outlet and outfall locations.
☐	☐	☐	3. Discuss cleanout spacing and locations.
☐	☐	☐	4. Discuss underdrain material specifications.
☐	☐	☐	5. Discuss maintenance access provisions.

G. Conclusion

Yes	No	N/A	Requirement
☐	☐	☐	1. Conclusion section states that the underdrain system is designed per City of Longmont Standards and will effectively manage groundwater for the proposed development.
☐	☐	☐	2. Summarize any offsite obligations or restrictions for future development.

H. References

Yes	No	N/A	Requirement
☐	☐	☐	1. Reference all criteria, geotechnical reports, or other technical information used in development of the underdrain report.

I. Appendices – 1. Maps

Yes	No	N/A	Requirement
☐	☐	☐	1. NRCS Soils Map.

Yes	No	N/A	Requirement
☐	☐	☐	2. Groundwater monitoring data / boring logs.

J. Appendices – 2. Computations

Yes	No	N/A	Requirement
☐	☐	☐	1. Groundwater level calculations.
☐	☐	☐	2. Underdrain pipe sizing calculations.
☐	☐	☐	3. Outfall capacity calculations.

K. Underdrain Plan

Yes	No	N/A	Requirement
☐	☐	☐	1. 24" x 36" in size, 22" x 34" also acceptable when half size sets will be produced.
☐	☐	☐	2. Title block, legend, north arrow.
☐	☐	☐	3. Scale 1"= 20’ to 1"= 100’, as required to show sufficient detail.
☐	☐	☐	4. Property / Project Site boundary line & limits of construction.
☐	☐	☐	5. Existing and proposed streets, roadways, or highways.
☐	☐	☐	6. Underdrain layout with pipe sizes, slopes, and cleanout locations.
☐	☐	☐	7. Outfall location(s) and connection details.
☐	☐	☐	8. Proposed and existing contours (1’ increment).

CITY OF LONGMONT
APPENDIX C-9 (DRAFT)

Water and Wastewater Project Information Report Checklist

On commercial, industrial or mixed use developments over five (5) acres and residential developments over 50 acres or areas of limited capacity, the City Engineer may request a project information report to be submitted with the preliminary construction plans to analyze the ability to provide water and wastewater service to the proposed site.

Yes = Provided **No** = Not Provided **N/A** = Not Applicable

A. Report Information

Yes	No	N/A	Requirement
☐	☐	☐	1. The initial and ultimate area, in acres, to be developed.
☐	☐	☐	2. The estimated population densities and total population to be served.
☐	☐	☐	3. The estimated quality and quantity of any industrial waste to be discharged into the sanitary sewer.
☐	☐	☐	4. Design flow rates, average, maximum, and infiltration allowances for the sanitary sewer.
☐	☐	☐	5. If alternate methods of providing utility services are possible, the report shall give an evaluation of the alternative method.
☐	☐	☐	6. Estimated average daily water usage including landscaping.
☐	☐	☐	7. Estimated amount of water to be used by industrial and commercial facilities.
☐	☐	☐	8. Any other information that would affect the City's ability to service the new area, or any other information requested by the City Engineer.