

**Lake County Dept. of Public Works Project Management**  
**Expected Deliverables Guidelines**

| PROJECT MANAGEMENT   | Project Definition and Summary   | Project Startup   | Geometric Review (30%)  | General Plans Review (60%)   | Preliminary Contract Review (90%)   | Final Contract Review (100%)  | Bid Review  | Out To Bid   |
|--|--|---|---|--|---|---|---|--|
| <b>Purpose / Milestone</b>                                 | <ul style="list-style-type: none"> <li>Documents the project purpose, type, strategy, phase durations, budget, and recommended ad date.</li> <li>Identified in the Transportation Construction Program.</li> <li>PD&amp;E and Environmental Reviews have been completed.</li> </ul>  | <ul style="list-style-type: none"> <li>Provides basis to project team to determine levels of review documentation.</li> <li>Documents the key project criteria, assumptions, and deliverable format.</li> <li>Team assignment Roles &amp; responsibilities established</li> <li>Major Milestones established</li> <li>Boundaries of project identified</li> <li>Project Management Plan completed, including: Baseline schedule Budget</li> </ul> | <ul style="list-style-type: none"> <li>Documents design criteria and major design decisions.</li> </ul>   | <ul style="list-style-type: none"> <li>Design of major project elements completed</li> <li>Review for constructability</li> <li>Conformance with standards</li> </ul>  | <ul style="list-style-type: none"> <li>On small projects, this may be combined with the final Contract Review.</li> <li>This is intended to be a near-final review.</li> <li>Items missing from design should be minor and should be documented by reviewers</li> </ul>   | <ul style="list-style-type: none"> <li>Plans are bid ready.</li> <li>All previous comments have been addressed.</li> <li>Minor changes if any.</li> </ul>   | <ul style="list-style-type: none"> <li>Submittal of all final deliverables. Minor changes to review left over from 100%.</li> </ul> | <ul style="list-style-type: none"> <li>Final Checklist Sign Off by County Engineer</li> <li>All documents to Bid Folder</li> <li>Evaluation of team/ consultant performance completed</li> </ul> |
| <b>Decisions Frozen and Milestones Completed</b>           |  | <ul style="list-style-type: none"> <li>Milestone dates set</li> <li>Design criteria set.</li> <li>Expected level of effort</li> <li>Authorized budget</li> <li>Deliverable list</li> </ul>  | <ul style="list-style-type: none"> <li>Design concept fixed</li> <li>Design features defined</li> <li>Type size and location of all structures fixed</li> <li>Approval to begin ROW acquisition process</li> <li>Approval of geometric design</li> <li>Design Concurrence/ Approval</li> </ul>  | <ul style="list-style-type: none"> <li>All key project elements and features that drive the project outcome and costs are defined.</li> <li>Type, size and location of key elements and features fixed.</li> <li>Geometric Review comments resolved and documented</li> </ul>  | <ul style="list-style-type: none"> <li>The deliverables are substantially complete</li> <li>Review and acceptance of design detail of key elements and features</li> <li>Permits Obtained.</li> <li>All environmental permits are approved, verified, and accepted for inclusion into the plans</li> <li>General Plans Review comments resolved &amp; documented.</li> </ul>  | <ul style="list-style-type: none"> <li>The Deliverables are Complete.</li> <li>All Review Comments adjudicated.</li> <li>Plans and specs sealed at end. ROW certification.</li> <li>Final Project Approval</li> </ul> | <ul style="list-style-type: none"> <li>Owner accepts design Approval to advertise</li> <li>ROW is clear</li> </ul>                  |  |
| <b>Environmental Review, Permitting, and Documentation</b> | <ul style="list-style-type: none"> <li>PD&amp;E Study is the basis for the alignment of the project.</li> <li>PD&amp;E will also document environmental issues.</li> <li>In the absence of a PD&amp;E establish environmental issues in the project startup.</li> </ul>  | <ul style="list-style-type: none"> <li>Verify Environmental Documentation and permits needed .</li> <li>Wetland areas delineated for survey Scope of work</li> </ul>  | <ul style="list-style-type: none"> <li>Agency and public coordination conducted</li> <li>Permits needed verified and begin submitting applications</li> <li>Environmental Studies initiated</li> </ul>  | <ul style="list-style-type: none"> <li>All environmental permit applications submitted</li> <li>Permits conditions coordinated with the design team and incorporated into the plans</li> </ul>   | <ul style="list-style-type: none"> <li>All environmental permits approved, verified, and accepted for inclusion into the plans</li> <li>All environmental special provisions approved and included in the PS&amp;E plan set</li> <li>All permits and environmental requirements completed</li> </ul>  | <ul style="list-style-type: none"> <li>Environmental Commitment File completed</li> </ul>   | <ul style="list-style-type: none"> <li>Environmental Permits in the Bid Docs Folder</li> </ul>                                      |  |
| <b>Estimates</b>   | <ul style="list-style-type: none"> <li>Preliminary cost estimate developed if project is not in the Transportation Construction Program</li> </ul>   | <ul style="list-style-type: none"> <li>Budget assumptions communicated.</li> </ul>  |   | <ul style="list-style-type: none"> <li>Construction cost estimate updated.</li> <li>RW cost estimate calculated (once areas of acquisition provided).</li> </ul>   | <ul style="list-style-type: none"> <li>Construction cost estimate completed.</li> <li>Summary of quantities completed.</li> </ul>   | <ul style="list-style-type: none"> <li>Construction cost estimate finalized</li> </ul>  | <ul style="list-style-type: none"> <li>Construction cost estimate updated if needed.</li> </ul>                                     |  |
| <b>Intersection Plans</b>                                  | <ul style="list-style-type: none"> <li>Traffic Safety Study if available used as basis for scope of work.</li> <li>Intersection issues and deficiencies identified.</li> </ul>   | <ul style="list-style-type: none"> <li>Intersection improvement recommendations reviewed</li> </ul>   | <ul style="list-style-type: none"> <li>Intersection Plans approved</li> <li>Signal Plan initiated (if required)</li> <li>Confirm Turn Lane Queue Lengths and number of lanes</li> <li>Verify RW accurate on intersection streets.</li> </ul>  |  | <ul style="list-style-type: none"> <li>Signal Poles layout completed</li> </ul>   | <ul style="list-style-type: none"> <li>Final Plan Review</li> </ul>   | <ul style="list-style-type: none"> <li>Final Plan Update</li> </ul>   |  |
| <b>Right of Way (RW)</b>                                   | <ul style="list-style-type: none"> <li>Requirements for Right of Way documented</li> <li>Look at quotes &amp; calculate # of L&amp;S needed (owners impacted x 2)</li> </ul>   | <ul style="list-style-type: none"> <li>Preliminary RW needs identified.</li> <li>Title reports ordered</li> <li>RW Package Prepared &amp; Ready</li> </ul>  | <ul style="list-style-type: none"> <li>Schedule review with RW Team at the request of the County Engineer (Alignment, Ponds &amp; impacts)</li> <li>Right of Entries for project investigations obtained at the request of the Project Manager</li> </ul>   | <ul style="list-style-type: none"> <li>Submit preliminary RW I.D. maps showing existing and proposed right of way with 60% plans.</li> <li>RW schedule meeting w/County Engineer to review alignment &amp; limits of construction.</li> <li>County Engineer to sign off on Plan set before proceeding with plans, etc.</li> <li>Legal description &amp; sketches (L&amp;S) will be requested under direction of the County Engineer.</li> <li>Pre-acquisition initiated.</li> <li>Relocation issues discussed &amp; relocation plan initiated on Federally funded projects.</li> </ul> | <ul style="list-style-type: none"> <li>Final RW ID maps submitted for review (final S&amp;S copies (2 each) provided after review)</li> <li>L&amp;S submitted for review (final S&amp;S copies provided between 90% &amp; 100% plans)</li> <li>RW negotiations initiated.</li> <li>Relocation continues on Federally funded projects.</li> <li>Eminent Domain initiated on parcels unable to be secured.</li> </ul> | <ul style="list-style-type: none"> <li>RW negotiations complete before going to bid.</li> <li>Eminent Domain complete through O.T. (Order of Take) before going to bid.</li> </ul>                                    | <ul style="list-style-type: none"> <li>Right of Way certified if DOT Project.</li> </ul>  |  |
| <b>Roadway Geometrics and Plans</b>                        | <ul style="list-style-type: none"> <li>Project limits identified.</li> <li>Preliminary Design Criteria established.</li> <li>PD&amp;E or Preliminary Engineering Report reviewed for alignment and all issues.</li> <li>Affected alignments identified</li> <li>New versus existing alignment determined</li> <li>Lane/shoulder widths determined</li> <li>Design matrix identified</li> <li>Design speed defined.</li> <li>Traffic Studies Provided.</li> </ul> | <ul style="list-style-type: none"> <li>New Alignment identified</li> <li>Design criteria/ parameters approved</li> <li>Preliminary footprint designed</li> <li>Accident &amp; crash history reviewed</li> <li>Conflicting traffic movements (diverging, merging, weaving, crossing) identified</li> <li>Pedestrian &amp; bicycle needs identified</li> <li>Structural identified</li> <li>Access review completed</li> </ul>                      | <ul style="list-style-type: none"> <li>Typical roadway section(s) completed, identifying station to station roadway geometrics, surfacing type &amp; depth, slope information, guardrail, vertical cut locations, and construction notes</li> <li>Clear Zone Inventory &amp; Evaluation</li> <li>Mainline and major horizontal &amp; vertical alignments designed.</li> <li>Geometric Check completed – Intersections, horizontal, vertical sight distances</li> <li>PROFILE AND CROSS SECTION INITIAL REVIEW AND ROW IMPACTS</li> <li>Plan Baseline and Survey Baseline Shall Match</li> </ul> | <ul style="list-style-type: none"> <li>All horizontal &amp; vertical alignments &amp; superelevations completed</li> <li>Cross Sections Reviewed for ROW Impacts</li> <li>Design criteria/ parameters approved</li> <li>Hazard Mitigation completed– i.e. barrier length of need, fixed objects, attenuator design, drainage structures</li> <li>ADA requirements completed</li> </ul>   | <ul style="list-style-type: none"> <li>All geometric plans completed (alignment, profiles, roadway sections, interchange contours, site preparation, road approach plans, etc.)</li> <li>Design compared to endorsed design criteria/ parameters</li> </ul>   | <ul style="list-style-type: none"> <li>Final Plan Review</li> </ul>   | <ul style="list-style-type: none"> <li>Final Plan Update</li> </ul>   |  |
| <b>Signals, Street Lighting, and ITS</b>                   | <ul style="list-style-type: none"> <li>Need for new Signals or Signal modifications identified</li> </ul>  | <ul style="list-style-type: none"> <li>Signal design methodology completed.</li> <li>ITS design methodology for review completed</li> <li>Type, size, and location completed</li> <li>Decision made on design standards, equipment</li> </ul>   | <ul style="list-style-type: none"> <li>Soils analysis</li> </ul>  | <ul style="list-style-type: none"> <li>Preliminary Signal Plan submitted</li> </ul>  | <ul style="list-style-type: none"> <li>Final Signal Plan submitted</li> </ul>   |   | <ul style="list-style-type: none"> <li>Final Plan Update</li> </ul>   |  |

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|--|--|--|---|---|--|---|--|--|
| <b>Signing &amp; Striping</b>  |  | <ul style="list-style-type: none"> <li>• Passing / No Passing Zone study</li> </ul>  | <ul style="list-style-type: none"> <li>• Sign layout completed</li> <li>• Existing signs to reuse, and relocate determined</li> <li>• Potential conflicts between signal poles and utilities</li> </ul>   | <ul style="list-style-type: none"> <li>• Signing plans, notes, sign specifications completed</li> <li>• Conflicts with signals, poles, or utilities identified</li> <li>• Coordination with luminaries on structures or walls identified and mounting/foundation details completed</li> <li>• Utility Agreement and Utility Relocation Requests submitted</li> <li>• Preliminary Striping Plan</li> </ul> | <ul style="list-style-type: none"> <li>• Signing detail sheets completed</li> <li>• Final Striping Plan</li> </ul>   |   | <ul style="list-style-type: none"> <li>• Final Plan Update</li> </ul>  |  |
| <b>Soils &amp; Paving</b>  | <ul style="list-style-type: none"> <li>• See PD&amp;E or Preliminary Engineering Study</li> </ul>  | <ul style="list-style-type: none"> <li>• Soils investigation initiated</li> <li>• Preliminary Pavement Design</li> <li>• Historical Data/Maintenance Projected</li> <li>• Traffic Type/Usage Existing Conditions</li> <li>• Field and Core Investigation completed</li> <li>• Draft Pavement Design Typical</li> <li>• Borings coordinated with signals, high mast &amp; sign structures,</li> </ul> | <ul style="list-style-type: none"> <li>• Soils and Geotechnical Report completed</li> <li>• Pavement Resurfacing Report completed</li> <li>• Pavement Design Report</li> <li>• Foundation Design checked for signals/illumination</li> </ul>  | <ul style="list-style-type: none"> <li>• Final Pavement Design Document</li> <li>• Foundation Design for signals/illumination completed</li> </ul>  | <ul style="list-style-type: none"> <li>• Final Pavement Design</li> </ul>  | <ul style="list-style-type: none"> <li>• Boring logs submitted</li> </ul>   | <ul style="list-style-type: none"> <li>• Geotechnical Report compiled for contractor review</li> <li>• Geotechnical Report &amp; cross-sections posted on website</li> <li>• Pavement Repair quantities and locations reviewed with Construction for verification of field accuracy</li> </ul> |  |
| <b>Specifications</b>  |  |  |   |   | <ul style="list-style-type: none"> <li>• Prepare summary of quantities</li> <li>• Determine item prices All special provisions submitted for review and approval</li> </ul>  | <ul style="list-style-type: none"> <li>• Approved Specifications</li> </ul>   | <ul style="list-style-type: none"> <li>• Specifications updated if needed for Bid.</li> </ul>  |  |
| <b>Stormwater Ponds and Hydraulics</b>   | <ul style="list-style-type: none"> <li>• Design criteria identified</li> <li>• Drainage Deficiencies identified in accordance with Maintenance</li> <li>• Water quality requirements identified</li> </ul>         | <ul style="list-style-type: none"> <li>• Hydraulic and Water Quality issues identified.</li> <li>• Deficiencies confirmed with Maintenance</li> <li>• Deficiencies confirmed with Project/Design Team</li> <li>• Storm water Management and Report Requirements and type documented</li> </ul>   | <ul style="list-style-type: none"> <li>• Drainage facilities determined.</li> <li>• Preliminary Hydraulic Report completed, including: <ul style="list-style-type: none"> <li>o Documentation of deficiencies</li> <li>o Existing basins and flows</li> <li>o Storm Water Report</li> </ul> </li> <li>• Preliminary Stormwater Management options to identify Right of Way needs completed</li> </ul>   | <ul style="list-style-type: none"> <li>• Pond Design Ready for Permitting</li> </ul>  | <ul style="list-style-type: none"> <li>• Approved Hydraulic Report</li> <li>• Storm water details completed</li> </ul>   | <ul style="list-style-type: none"> <li>• Pond Final Layout</li> <li>• Storm Sewer and Culverts finalized</li> </ul>   | <ul style="list-style-type: none"> <li>• Final Plan Update</li> </ul>  |  |
| <b>Structures (Bridges, Retaining Walls, Noise Walls, high mast lighting, sign structures)</b> | <ul style="list-style-type: none"> <li>• Identified Bridges, Culverts, Walls, structures reviewed.</li> </ul>  | <ul style="list-style-type: none"> <li>• Bridge &amp; Special Structure scope and RFP</li> </ul>   | <ul style="list-style-type: none"> <li>• Bridge and Structures initial review</li> </ul>  | <ul style="list-style-type: none"> <li>• Structural layouts completed</li> <li>• Continue Review</li> </ul>   | <ul style="list-style-type: none"> <li>• Bridge Plan &amp; Culverts review</li> </ul>  | <ul style="list-style-type: none"> <li>• Final Bridge, Culverts and Structures Plans</li> </ul>   | <ul style="list-style-type: none"> <li>• Final Plan Update</li> </ul>  |  |
| <b>Survey &amp; Mapping</b>  | <ul style="list-style-type: none"> <li>• Project Survey &amp; Mapping limits identified.</li> <li>• Review and County approval of consultants approach to establishing Horizontal and Vertical control.</li> </ul> | <ul style="list-style-type: none"> <li>• Project Horizontal and Vertical Control Networks completed.</li> <li>• Control Networks approved by County before data collection.</li> <li>• ROW Package received from County and reviewed</li> <li>• Any areas offsite to be included reviewed.</li> </ul>  | <ul style="list-style-type: none"> <li>• Baseline of Survey coordinated with Design Team</li> <li>• Topographic Survey performed including location of designated utilities, wetlands and flood zones.</li> <li>• Design level mapping completed.</li> <li>• Record of Survey completed.</li> </ul>   | <ul style="list-style-type: none"> <li>• Field review of proposed features completed</li> <li>• Right of Way mapping plan coordinated through the County Right of Way Section and efforts documented.</li> </ul>  | <ul style="list-style-type: none"> <li>• Updated Survey for Proposed Right of Way</li> <li>• Acquisition Legals and Sketches completed and submitted for review by County Right of Way Section.</li> </ul>   | <ul style="list-style-type: none"> <li>• All previous comments have been addressed.</li> <li>• Minor changes if any.</li> <li>• Updated Survey for Proposed Right of Way</li> </ul> | <ul style="list-style-type: none"> <li>• Final signed and sealed Survey and electronic files in appropriate formats for distribution to County Staff.</li> </ul>   | <ul style="list-style-type: none"> <li>• Right of Way or easement staking coordinated through County Survey and Right of Way section.</li> </ul> |
| <b>Temporary Erosion and Sediment Control (TESC)</b>   |  | <ul style="list-style-type: none"> <li>• Initial discussion and review of special features such as OFW, Streams, and wetlands</li> </ul>   |   | <ul style="list-style-type: none"> <li>• TESC plan submitted for review</li> </ul>  | <ul style="list-style-type: none"> <li>• TESC approved</li> <li>• Water Quality Monitoring Plan submitted</li> </ul>   | <ul style="list-style-type: none"> <li>• Erosion Control Plans and Notes completed</li> </ul>   | <ul style="list-style-type: none"> <li>• NPDES permit identified for contractor to acquire, or supplied by LCPW</li> </ul>   | <ul style="list-style-type: none"> <li>• NPDES Permit in place</li> </ul>  |
| <b>Utilities</b>   | <ul style="list-style-type: none"> <li>• Utilities within the project limits notified</li> <li>• Permit application for railroad crossings submitted</li> </ul>  | <ul style="list-style-type: none"> <li>• Potential utility relocations identified</li> <li>• Responsibility for costs established.</li> <li>• Utility As-Builts requested</li> </ul>   | <ul style="list-style-type: none"> <li>• Utility Plan with as-built information completed and transmitted to Utilities</li> <li>• Preliminary Utility conflicts identified</li> <li>• Project Overview Meeting held with Utility Owners</li> <li>• Subsurface Utility Engineering (SUE) Quality Level C &amp; D completed</li> <li>• Determination of need for SUE Quality Level A &amp; B</li> <li>• Relocation plans and schedule requested from utilities</li> </ul> | <ul style="list-style-type: none"> <li>• Utility relocation meeting held</li> <li>• Utility Relocation Plans and schedules obtained and approved</li> <li>• Utility and railroad agreements completed</li> </ul>  | <ul style="list-style-type: none"> <li>• Utility Relocation Plan information and specifications</li> <li>• Letters of Understanding issued to utilities requiring relocation</li> <li>• Utility, service, and railroad agreements completed</li> <li>• Subsurface Utility Engineering (SUE) Quality Level A &amp; B completed if applicable</li> </ul> | <ul style="list-style-type: none"> <li>• Utility relocation and schedule monitored and coordination completed</li> </ul>  | <ul style="list-style-type: none"> <li>• Utility relocation work completed</li> </ul>  |  |
| <b>Public Involvement Plan</b>   | <ul style="list-style-type: none"> <li>• PIP review of the PD&amp;E or Preliminary Engineering Study</li> </ul>  | <ul style="list-style-type: none"> <li>• Public Involvement Plan completed</li> </ul>  |   | <ul style="list-style-type: none"> <li>• Public Meeting if Required</li> </ul>  | <ul style="list-style-type: none"> <li>• Public Meeting if Required</li> </ul>   | <ul style="list-style-type: none"> <li>• Public Meeting if Required</li> </ul>  |  |  |
| <b>Work Zone Traffic Control</b>   |  | <ul style="list-style-type: none"> <li>• Traffic control strategy discussed</li> </ul>   | <ul style="list-style-type: none"> <li>• Preliminary traffic control layouts completed</li> </ul>   | <ul style="list-style-type: none"> <li>• Traffic control plans showing Construction Sequence and staging completed</li> </ul>   | <ul style="list-style-type: none"> <li>• Final traffic control plans completed</li> <li>• Final detour plans completed</li> </ul>  | <ul style="list-style-type: none"> <li>• Traffic Control Plans Completed</li> </ul>   |  |  |