

Construction Let Budget setting process

One of cornerstones of project management is setting, monitoring, and measuring project budget. As a first step MnDOT will establish project construction let budgets for all projects. In the future, project budgets could also include the other elements of TPCE, including right of way, engineering, agreements, etc. The “construction let” budget represents the cost at the construction contract award point. The construction let budget will be included in the Total Project Cost Estimate.

Level of Project

MnDOT program contains projects of varying degrees of complexity. A project of lower complexity is more straight forward to set a budget on than a project of great complexity. Every project will be categorized into one of the three following levels. The level will be assigned through collaboration between operations division and district leadership. As the project progresses, upon mutual agreement of project staff and leadership, the level of a project may change.

Level 1 – highest level of complexity

Considerations that operations leadership/district leadership may use in determining the level of a project include the following:

- Significant cost implications to the district’s/MnDOT’s annual program (generally in excess of 20% of districts annual construction budget)
- Heavy engagement/involvement from stakeholders and/or elected officials
- Complicated engineering, proposed alternatives that MnDOT doesn’t construct frequently
- Complicated environmental impacts and mitigation, often associated with complicated EAs or EISs., or other technical issues/solutions
- Higher level of involvement needed due to social impacts and mitigation (potential burial mounds, environmental justice, etc.)
- A project from a special funding program (corridors of commerce, 17NEW, Chap 152, etc.)
- Unusual or challenging risks
- Other Characteristics

Level 1 projects will have the highest level of MnDOT leadership involvement through Major Project Leadership Team (MPLT) and periodic check ins. Leadership, through the use of MPLT, will be involved/approved in setting the original and any subsequent changes to scope, schedule, and budget. Types of level 1 projects include;

- Expansion projects (TH 14, TH 23, I94 Monticello to Clear Water, Metro COC projects, etc.)
- Urban reconstruction (Glenwood, Wadena, etc.)
- The biggest of preservation projects (Blatnik Bridge, Dunwoody-394 bridge, I94 east of St Paul UBOL, etc.)
- Unique projects (storm caverns, high bridge redeck, 3rd avenue bridge, stone arch bridge, etc.)

Level 2 – moderate level of complexity

Considerations that district leadership may use in determining Level 2 projects include one or more of the following:

- Moderate cost implications to the district’s program (approximately 5 to 25% of district annual construction budget)
- Moderate Engagement/involvement from stakeholders and/or elected officials – some potential of controversy
- Significant ordinary risks (unsuitable material conditions, big utility impacts, bigger RR agreements)
- Moderate environmental issues/mitigation, often found in EAs and maybe complicated CEs
- Other characteristics?

Level 2 projects will have moderate level of MnDOT leadership involvement. District engineers will be the main point of leadership on level 2 projects with periodic coordination with the division director. The method of keeping the DE informed will be up to the district to determine (the use of POC/MPC in metro might be one way). The DE will be involved in setting the original and any subsequent changes to scope, schedule, and budget. Types of level 2 projects include;

- Major preservation/rehabilitation projects (medium to long UBOL’s, Reclaims, & CIR; larger single bridge replacement projects or multiple medium size bridges bundled together, etc.)
- Bit overlay with ADA projects and/or r/w takings
- Pavement preservation projects with detours or other significant traffic impacts

Level 3 – lowest level of complexity

Considerations that district management may use in determining the level 3 projects include one or more of the following:

- Tend to be lower cost projects (under 5% of district annual construction budget)
- Not likely to have any controversy with stakeholders or elected officials
- Environmental concerns and mitigation are most often addressed in a CE of ordinary to low level of complexity
- Ordinary risks (inflation, uncertainty of bid prices, uncertainty around quantities, etc.)
- Other characteristics?

Level 3 projects will have district level of MnDOT leadership involvement. The ADE/area manager will often be the main point of leadership on level 3 projects with periodic coordination with the DE. The method of keep the ADE/area manager informed will be up to the district to determine. The ADE/area manager will be involved in setting the original and any subsequent changes to scope, schedule, and budget. Types of level 3 projects include:

- Small bridge projects
- Thin to medium mill and overlay projects without ADA or r/w
- Signal/roundabout projects
- Lighting projects
- Guardrail projects

Construction let budget setting and review process

The first step in setting the construction let budget is to develop an approved scope for the project. Once the scope is approved, a solid construction cost estimate is the next step in setting a budget. That estimate needs to be based on the most reasonable method matching the project. For example, a level 1 project should have a line item estimate (lines for each bridge, mainline pavement, drainage, etc.), whereas a level 3 project might be based on historical unit prices or LWD. Over time, the project costs estimates will be refined. For example, going from a planning level cost estimate, to a LWD, to line item estimating to bid cost, etc.

All projects need to have a risk register developed. The extent of the risk register will vary for each level of project depending on the complexity of risks. For level 1 and 2 projects, it is expected each individual projects will have its own qualitative risk register. Level 3 projects can have either its own register or be covered by a programmatic register.

All projects need to have their construction let budgets set before entering the STIP

Level 1 project budget setting process

- PM, or under their direct supervision, will ensure the construction cost estimate is complete and thoroughly done in a way that is commensurate with the development of the project.
- The estimate should have lines for construction costs, uncertainty due to bid price and quantity uncertainty (based on a Monte Carlo analysis), risks (based on a Monte Carlo analysis), design/delivery costs, construction inspection and administration costs, right of way costs, agreement costs, environmental mitigation and other elements of total project cost estimate. On Projects requiring a Monte Carlo, MnDOT will be using a P70 for the purposes of budget setting.
- The risk based cost estimate will be inflated to mid-point of construction or year of letting, if approved.
- The district will make a construction let budget recommendation based on the information above. MPLT will review the information and the recommendation and ultimately set the budget.
- Any requests for changes in scope, schedule or construction let budget will need to go to MPLT to get an amendment to the scope, schedule, or budget. PM will need to give changes forethought and allow for time to gather approvals. Timeframe for approval may take days or all the way up to months. There are no hard and fast deadlines but the more the MPLT members know of your risks and project, the faster that changes will be approved. Minor changes in scope, schedule, or construction let budget (generally accepted as 2% of previously approved project costs or \$750,000, whichever is less) just need to be noted and approved by District Engineer.

Level 2 project budget setting process

- PM, or under their direct supervision, will ensure the construction cost estimate is complete and thoroughly done in a way that is commensurate with the development of the project.
- The estimate should include a quantitative risk assessment process. This process includes the completion of a risk register. Each risk should be given a likely cost and probability of occurring. The extent of the risk register will vary for each project, depending on the volume of risks. If the sum of expected value (cost of risk multiplied by probability) of the identified risks exceed 40% of the base construction budget a Monte Carlo analysis should be completed. Otherwise the expected value of the risks should be considered the risk component of the cost estimate.
- The estimate should have lines for construction costs, uncertainty due to bid price and quantity uncertainty (based on a Monte Carlo analysis), risks (based on a Monte Carlo analysis), design/delivery costs, construction inspection and administration costs, right of way costs, agreement costs, environmental mitigation and other elements of total project cost estimate.
- The risk based cost estimate will be inflated to mid-point of construction or year of letting, if approved.

- The PM will make a construction let budget recommendation based on the information above. The DE will review the information, consider all the district's needs, and the recommendation and ultimately set the projects construction budget.
- Any requests for changes in scope, schedule, or construction let budget will need to go to the DE to get an amendment to the budget. Moderate to significant changes in scope, schedule or construction let budget will need to have coordination with the Division leadership too.

Level 3 project budget setting process

- PM, or under their direct supervision, will ensure the construction cost estimate is complete and thoroughly done in a way that is commensurate with the development of the project.
- The estimate should have lines for construction costs, program risk factor applied, design/delivery costs, construction inspection and administration costs, right of way costs, agreement costs, environmental mitigation and other elements of total project cost estimate.
- The risk based cost estimate will be inflated to mid-point of construction or year of letting, if approved.
- The PM will make a budget recommendation based on the information above. The ADE will review the information and the recommendation and ultimately set the budget.
- Any requests for changes in scope, schedule, or construction let budget will need to go to the ADE to get an amendment to the budget. Moderate to significant changes in scope, schedule or budget will need to have coordination with the DE too.

Additional Construction Let Budget Guidelines

All projects regardless of level, should need to consider and/or complete the following items:

- The initial construction let budget will be recorded into CHIMES by the District.
- The approved budget should be the construction cost shown in the STIP.
- All approved changes to the construction let budget will be recorded in CHIMES.
- Every time the cost estimate changes does not automatically create the need for an amended budget. The construction let budget should be a target. Small deviations in project cost should be brought back to the budget amount through the project management and enlisting district management as needed.

Construction Let Budget Review Process

- PM, or under their direct supervision, updates the construction cost estimate (these include all revisions such as annual updates, scope changes, risk changes, 30/60/90 updates, one year before letting, etc.) commensurate with the development of the project. Construction cost estimates of Level 1 complexity

projects may need to have more updates than other complexity levels based on their characteristics and statewide risks.

- PM reviews the construction cost estimate to verify the estimate is still within the limits of the established construction let budget. PM's are responsible for managing to the approved budget and documenting changes. Level 1 complexity projects will be reviewed more often than Level 2 projects and Level 2 projects will be reviewed more often than Level 3 projects.
- If, after the review by district leadership and program management/planner, it is determined that a construction let budget change is necessary, then the PM will request approval of a budget amendment based on the complexity level of the project.

Additional information

- All construction let budget recommendations need to be reviewed by district planners and program management for district/state program budget impacts.
- Any budget, cost estimate, risk register is subject to review by program management, district management, portfolio manager, and/or operations leadership at any time.
- Changes in scope, schedule, and construction let budget shall be documented by the District and noted if approved or denied. All denials will shall have documentation too.
- Assistance with cost estimates and risk registers is available through the shared service center personnel and the independent cost estimating personnel. Independent cost estimate verifications and Monte Carlo analysis can be obtained from Operations Division, Cost Estimation Unit.
- After the STIP/CHIP check in meetings each year, the district and operations leadership will review each project and assign a level to the project. The district will document the project's level in CHIMES
- At any time a project can change from one level to another. The change will be reviewed by Operations Division leadership with the District.
- All the above information is guidance, and this guidance may not fit every situation. If a project encounters something out of the ordinary and this guidance doesn't quite fit, please discuss with your DE and/or Operations Division leadership.
- All the construction let budget setting and review process will be documented by the district within CHIMES and will be used for future reporting.
- Project complexity levels should be preliminarily identified as the project enters the CHIP or as a project is first considered. Project levels will be documented in CHIMES by the District.