

Consultant Fee Independent Cost Estimating Processes Peer Exchange

Minnesota Department of Transportation

PreConstruction Services Estimating

Discussion Topics

What We Do

- History of Practice

Why We Do It

- Resourcing

- Delivery Timelines

- Financial Management

How We Do It

- Estimate Internal and External Costs and Time

Continued Efforts – Resource Management, Project Scheduling

History of Estimating Preconstruction Services Costs

Purpose –

- Predict and plan staffing/ financial resourcing
- Develop and manage project schedules

Development of the “Production Rate” Philosophy

District Design Groups and Bridge Office

- Developed production rate and calendar duration ranges for projects based on size and complexity

Taxpayers’ Transportation Accountability Act (TTAA)

- Minn. Stat. §161.3203 Contracts for Work for Trunk Highway
- Effective August 1, 2008

History of Estimating Preconstruction Services Costs

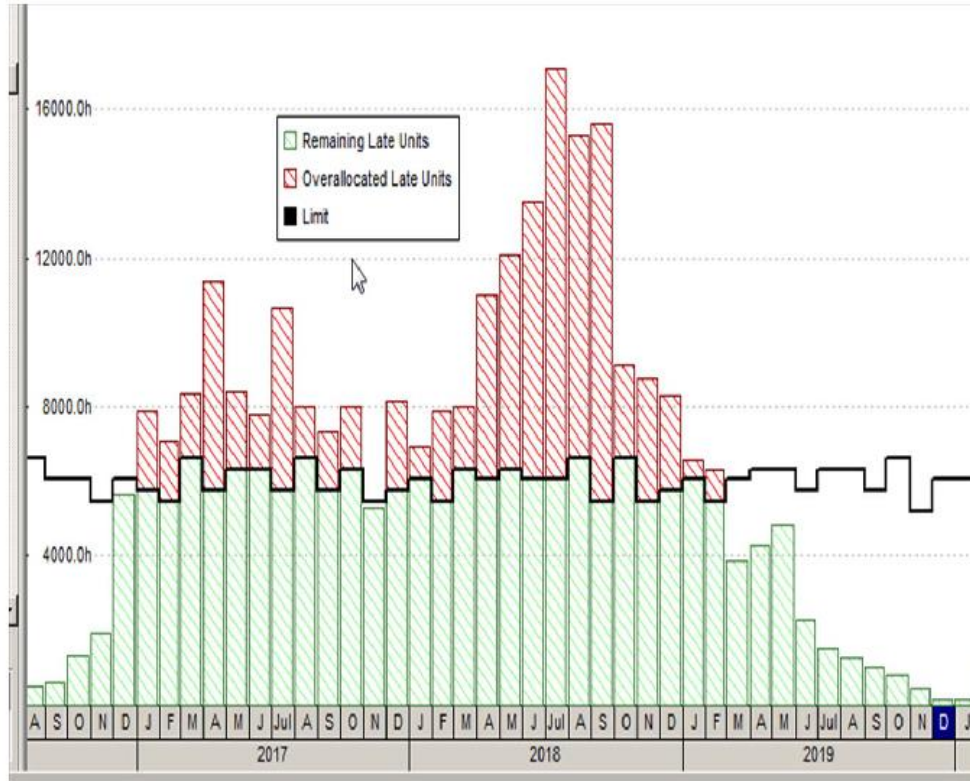
Detail Design focus on work group and activities

- Compared bid cost to work effort from time sheet data
- Used calculation to develop ranges based on project size and complexity

Bridge Design focus by Bridge component parts

- Substructures, Piers, Abutments, Superstructure
- Tracked work effort using timesheet data for workload planning
- Used calculation to develop ranges based on project size and complexity

Development of the “Production Rate” Philosophy



Taxpayers' Transportation Accountability Act (TTAA)

Minn. Stat. §161.3203 Contracts for Work for Trunk Highway
Effective August 1, 2008

This law requires MnDOT completes an estimate of in-house efforts when considering a consultant contract greater than \$100,000 for certain work types.

Primarily required for design and construction oversight contracts.

Taxpayers' Transportation Accountability Act (TTAA)

Requires the estimated costs to perform the work in-house must be greater than the estimated costs for a consultant to perform the work + plus the cost for MnDOT to monitor the consultant's work to enter into this contract if over \$250,000.

If contract is between \$100,000 - \$250,000, MnDOT may choose to enter into the contract regardless of which estimate is lower.

All MnDOT costs to perform the work must be included in the in house estimate.

TTAA Process Steps (Slide 1 of 3)

In House Estimate Development – Project Manager

Determine work tasks that will be performed

Assess level of expertise needed to complete each task

Determine level of effort (hours by employee classification)
needed to complete each task

Determine required direct expenses

Determine Equipment needs

Input to standard form, send to Consultant Services/Office of
Finance

TTAA Process Steps (Slide 2 of 3)

In House Estimate Development – Office of Finance:

Average salaries and fringe benefits are calculated for each MnDOT position

Standard overhead cost rates are developed each fiscal year

TTAA form is received and an in house cost estimate is calculated from hours and other estimates included.

Completed In House Estimate certified by District.

Process is in Excel.

TTAA Process Steps (Slide 3 of 3)

When the final proposed budget is received from the consultant:

- A comparison is completed.

- Compares total in house cost to the consultant budget plus the estimate of MnDOT contract monitoring costs.

- The estimate of contract monitoring hours was received and costs applied during the in house estimate costing process.

If in house costs are higher than consultant budget and contract monitoring costs:

- A Commissioner's determination is signed for all contracts over \$250,000 to certify TTAA requirements are met.

- Contract can be executed.

Rate Development (Slide 1 of 3)

Rates used:

Labor additive - rate calculated for actual MnDOT billings.

Previous year's vacation, holiday, sick time, etc. divided by total salaries

Direct overhead additive - rate calculated for actual MnDOT billings.

Previous year's equipment, small tools and supplies, training, supervisor time, etc. divided by total direct expenditures for a specific MnDOT operation

Determined to be reasonable for billing for other MnDOT operations as well

Based on activity codes charged on time sheets.

Rate Development (Slide 2 of 3)

Indirect overhead additive

Previous year's central office expenditures for Finance, Human Resources, Commissioner's Office, etc. divided by total salaries.

Direct and Indirect overhead rates are added together and applied to the total of project salaries and fringe benefits with the labor additive rate applied. This is total employee expense.

Direct equipment rates - rates calculated for actual MnDOT billings.

Typically cars or light trucks – rates by mile based on previous year's actual expenditures for total MnDOT mobile equipment.

Rate Development (Slide 3 of 3)

Construction delay inflation factor rate

Utilized when internal estimate is less than consultant estimate

And: consultant estimate more than \$250,000

And: the Agency exhausts other options to complete the work other than through a contract

Determine the cost of construction of the associated project if delayed for a period of time by calculating: Construction cost X STIP inflation rate for year delayed to X time delayed (typically 1 year)

Added to internal estimate – at times this means estimate is revised

Mn/DOT Contract No.

XXXXX

Nickname

Hwy-Other Design XXXXXXX

IN-HOUSE ("A") ESTIMATE

Employee Expense:

Wages	322,559
Payroll Taxes & Benefits	110,172
Indirect Labor Additive	104,721
Specific Overhead Additive	82,768
Indirect Overhead Additive	89,202

Total Expense before additional addtives: 709,421

Premium Overtime	0
New Employee Additive	0
Construction Delay Inflation Factor	876,000

Total Employee Expense 1,585,421

Other Expense:

Travel	700
Supplies	500

Total Other Expense 1,200

Total In-House ("A") Estimate **\$1,586,621**

Office Director or District Engineer signature indicates the District's/Office's concurrence that the estimate appears to be a comprehensive representation of Mn/DOT's in-house costs.

Office Director/District Engineer	Date
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COMPARISON OF COMPREHENSIVE ESTIMATES OF COSTS

MnDOT Contract XXXXX Hwy-Other Design XXXXX

(in \$000's)

	In-House Cost ("A" Estimate)	Contract Cost ("B" Estimate)	
MnDOT In-House Cost	710,621		
New Employee Additive			
Inflation Delay Additive	876,000		
Premium Overtime			
Responder's Bid Cost		720,578	
Contract Monitoring Cost		11,875	
Total	1,586,621	732,453	
Lowest Cost:	Contract	Variance:	854,168

State Law Compliance

Minn. Stat. §161.3203 (partial below)

*“Subd. 3. **Review of contract costs.** (a) Before entering into a privatization transportation contract, the commissioner of transportation shall prepare a comprehensive written estimate of the cost of having the same work provided in the most cost-effective manner by agency employees. The cost estimate must include all costs of having agency employees provide the work, including the cost of pension, insurance, and other employee benefits. The cost estimate is nonpublic data, as defined in section 13.02, subdivision 9, until the day after the deadline for receipt of responses under paragraph (b), when it becomes public data.”*

Federal Law Compliance

Title 23, Chapter 1, Subchapter 3, Part 172.5

- (2) Establishing a procedure for estimating the level of effort, schedule, and costs of needed consultant services and associated agency staffing and resources for management and oversight in support of project authorization requests submitted to FHWA for approval, as specified in 23 CFR 630.106;

Title 23, Chapter 1, Subchapter G, Part 630.106

- (3) The State's request that Federal funds be obligated shall be supported by a documented cost estimate that is based on the State's best estimate of costs.

Continued Efforts

Resource Management

- Project and Program Level

- Role and Resource assignment

- Continued process improvement

Project Scheduling

- P6 Schedule use

- Schedule management at Project level

- Reporting cycle

Contacts and Information

[TTAA Privatization Contract Process](#)

(www.mndot.gov/consult/internalresources.html)

[TTAA Privatization Contract Form Instructions](#)

(www.mndot.gov/consult/internalresources.html)

[Fiscal Year 2016 Report-Taxpayers' Transportation Accountability Act](#)

(www.mndot.gov/govrel/reports/2016/ttaa-report-2016.pdf)

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