2018 Preconstruction Conference

Interacting with MDT for Consultants

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Presentation Outlines

• Why Consultants & Team Responsibilities
• Consultant Selection
• Expectations
• Q & A
Why does MDT use consultants on certain projects? Why has there been a sudden increase in consultant projects over the last 9 months or so?

MDT does not have the capacity to deliver all of the projects in the program. This was compounded recently by action taken by the 2017 Legislature. MDT simply does not have the capacity to handle all work in house. As we look at projects at all project schedules in our entire preconstruction program, we can see projects that are often late due to the simple lack of resources. Traditionally, project schedules have slipped to match the resources available. Another approach is to increase resources by adding consultants to the design team.

Consultants can add a new perspective as well. Consultants often have experiences and resources with different expertise that MDT can effectively use to deliver projects.

MDT relies on consultant services for specialized services that are beyond the level of expertise within MDT. Waste water treatment for Rest Areas is an example of this.

It is important for everyone to understand that Consultants are simply an extension of the MDT team and are important to delivering a transportation system to the users of Montana’s highways.
Consultant Selection

• Request for Proposals (RFP’s)
  – Getting work with MDT
  – Hints, tips, tricks

Most often-asked **questions** heard from Consultants seeking work with MDT:
1. **How do I break in?** *(How do I get MDT experience if I can’t get MDT experience?)*
2. **How do I continue to get work?** *(How do I prevent new firms from breaking in and taking potential work?)*
3. **What are the raters looking for in a proposal?** *(What’s the silver bullet?)*

**TIPS**
1. Debrief, debrief, debrief!
2. Look at other proposals
3. Make proposal very specific to project
   i. How the firm, personnel, and subs, are best qualified for the specific requirements of that project
      • Back up claims of experience with example projects, and how those example projects are relative to the project you’re submitting for
      • Example: Is the 10-years of experience you’ve stated a true 10 years, or is it 1 year of experience 10 times over?
   ii. Project Approach: Identify specific challenges, how you plan to mitigate those challenges, and your experience in those mitigation measures (proof is in the pudding)
   iii. Like hiring an employee – make ask candidate why they’re best for the job, but you’re looking for they’re real-world experience in handling the challenges that will face them in the position you’re hiring them for.
4. You’re competing against firms that are all qualified to do work for an MDT. We need to find the firm that is best-qualified to do the work necessary for **that specific project**.
Responsibilities

• MDT obligations
  o Set clear expectations
  o Clearly define scope, schedule, and budget
  o Assign an appropriate level of delegation

• Consultant obligations
  o Complete scope within schedule and budget
  o Contract obligations

• Everyone’s obligations
  o Teamwork!

When MDT hires a consultant, what’s our responsibility? MDT has the responsibility to help ensure the success of the project and the team. We need to set expectations for the project and to communicate those expectations clearly, to set the scope, schedule, and budget, to delegate effectively, and to provide an appropriate level of guidance. We don’t just hire you and walk away expecting a finished product at the end. We stay actively involved to make sure the scope, schedule, and budget are achieved.

When you as a consultant take on a project, what are your responsibilities? The Consultant also has the responsibility to help ensure the success of the project and the team. This includes putting the success of these before themselves. And you have contractual requirements to complete the scope of the task within the schedule and budget.

Everyone is obligated to do their part to maximize the potential for the project and the team to be successful!
Communication..... the key to it all

Communication is the key to not only getting what you want, but also to giving the other party the best chance to succeed.

Reading minds is a difficult task. It is imperative that we all bear the burden to actively and effectively articulate what we want, and what we understand the other party is expecting.

Always be asking yourself..... do I understand what does the other person is expecting? And more importantly...... How do they know I do?
Successful Team Communication
- Communicate expectations up front
- Actively listen and reaffirm what you heard
- Recognize everyone as equal team members
- Allow for creativity and innovation
- Provide frequent, constructive feedback
- Check in regularly
- Don’t make assumptions

• Communicating expectations up front – don’t expect others to simply know what you want.
• MDT has the overall responsibility of the owner which includes construction, maintenance, and so on. We set policy, determine scope, schedule, budget and required quality. And it’s critical we communicate those requirements early.
• Delegation: Appointing a person to act on one’s behalf. For them to act on your behalf, you need to be clear what you want if you have specific needs or requirements.
• Allow for creativity, professional judgement, and yes….. opinions. They may very well have experiences that we don’t.
• People thrive on the ability to be creative and use judgement, and with it comes increased ownership and pride in the work.
• Consultants are an extension of team – not an outsider that should know everything.
• Provide feedback regularly. Is consultant still on scope? Are MDT expectations met? And don’t wait until the end to do so.
• Practice active listening. They should be reaffirming what they heard. If they aren’t….. remind them to.
• As for feedback frequently. Check in. If they aren’t…… remind them to.
Expectations

a) Scoping
b) Schedule
c) Budget
d) Project Communication Plan
e) Quality
Scope, Schedule and Budget. You can’t have one without the other. All of these topics are interconnected as you’ll see in the slides ahead. Our goal for each project is to achieve a balanced scope, schedule, and budget.

Often times if the scope, schedule, and budget are not aligned from the beginning, it causes frustration, delay, and additional cost. An example of this is a project we had in Livingston where the scope didn’t align with the budget from the beginning.

In this project the County applied for a TA project that included about a mile of shared-use path. Part of the project is next to a very high slope that has had a history of moderate rock fall. The application accounted for a barrier rail between part of the path and the roadway, but neglected to include any scope or budget for dealing with the rock slope. Once we got further into the design it was determined that we were going to include some mitigation features for this slope, and we ended up needing a whole lot of scaling to create a safe condition, as well as grading of the ditch for catchment, tall concrete barrier rail and some specialized rock rail. Getting to my point was that the budget that was initially presented did not align with the scope the project team determined was necessary.

In other words, the project scope requirements far outweighed the cost estimate and funding available. In this example, no one necessarily was at fault - some of the scope
items were found out as the scope was being developed and the cost estimate was not completely accurate up front, but the point is, the project was in jeopardy until this was resolved. It turned out that we were able to pull in funding from a different funding source – luckily it was an on-system route and that made it possible to do this, which aligned the budget with the scope, which brought the project into balance and it went on to be a success.

If a project continues where the Scope, Schedule, and Budget are not balanced, it can result in a Lose-Lose for the PROJECT, which could be considered a project failure for the team. In addition, projects generally become stuck and go nowhere when the scope, schedule, and budget are not aligned.

We realize that a way to mitigate this is the OT phase where we can explore a project more and develop a better scope and budget when we know more information. We’ll talk more about the OT Phase later.
The Team includes both the Consultant and MDT. It is important for all parties to remember this when we’re scoping projects. **We’re all on the same team** working towards the end goal of delivering a project to the intent of the objectives of the project sponsor, who is the nominating entity, which could be a District, Traffic & Safety Bureau, Bridge Bureau, TA Section, or a local government.

MDT recently added an activity which is the project charter activity. The activity consists of MDT Consultant Design interviewing the project sponsor and we believe that this charter will help develop the project vision, goals, and helps determine the needs of the project team, and reduces the overall risk. This activity occurs before a consultant is selected and will help us more accurately scope the project.

Another important aspect related to the charter is the Team. It is crucial that the MDT Project Manager and the Consultant’s Project Manager assemble the correct project team. MDT is responsible for involving the appropriate Functional Managers and the Consultant is responsible for the technical expertise to develop the project.

MDT is responsible for clarifying the project charter and communicating the project intent, objectives, and purpose and need to the design team. And the consultant is responsible for ensuring that they understand these goals for the project.
Phase Scoping. We first need to define which phase is being scoped. It can be: the OT (Other) phase, PE, R/W, or CE. MDT has various strategies to use for developing a project such as scoping through AGR, OT phase, or through the complete project development. Of course, the R/W and CE phases will be scoped later in the development of the project as these tasks are needed. For instance, if we can’t tell what the scope of the project is, we will scope an initial phase to start with. This is dependent on the complexity of the project being developed.

Who is responsible for making this determination? Responsibility is a combination: MDT’s responsibilities as the owner are to clearly define expectations, schedule, scope and budget. If this cannot clearly be done for the entirety of the project development this is when we consider phase scoping. An example of this is an intersection improvement project. If we don’t know if the project will be a roundabout or a signal, or some other improvement option, this is when we scope the project out to a point where the solution can be clearly defined. This avoids guess work regarding the level of effort for design and right-of-way activities.

Your responsibilities as a consultant are not only the design, QA and QC. They also include that you have clear direction in the scope to complete the requested tasks. For example, if you are unsure if a project is going to have a large rock cut or not, the idea is to avoid
guessing. Be very specific in **what is**, and just as importantly, **what is not** scoped.

As a rule of thumb, the more ambiguous a task or project is, the higher the odds are that we will phase scope those tasks. This isn’t to be confused with complexity. If the task is very complex, but we clearly know what is needed, we can confidently scope that work.
A picture is worth 1000 words....

Are we scoped to build a bridge, or are we scoped to build a signature bridge? One is ambiguous while the other is complex yet well defined. One we can scope, and the other we need more information.

A well defined scope ensures success and the scope needs to be detailed. A good starting point is our activity descriptions, and it is important to keep in mind that each project and activity are unique.

If the scope is specific to say “design a single-span bridge” then the scope and budget will reflect that scope accordingly. The more specific the scope is the better. If it is determined that it needs to be a multi-span bridge, then the scope needs to be amended down the road, which will also affect schedule and budget. If the scope is not specific, then it is difficult to amend in the future, such as if the scope were to just generically say “design a bridge.” This is an oversimplified example, but it makes an important point about a well defined scope.

The scope should also address the complexity of the project. How complex is this project, task, or activity? Is it low, medium or high complexity. Again, it comes down to being
specific with assumptions and clearly scoping each activity.
So, let’s talk about delegation. There are 5 different levels. During scoping, the discussion needs to address the level of which MDT is delegating tasks.

1. Do as I Say
2. Give me your Advice, I’ll Decide
3. Explore, Decide and Check with Me
4. Explore and Decide within these limits
5. Take care of it for me.

Too often we task the consultant at a level 4 and then we review at level 2. MDT is becoming more cognizant of this and we need to be sure that we are reviewing to the same level that we are delegating. Most often we are delegating to a 3 or a 4 in our contracts. Each project is unique and the level of delegation should carefully be considered and decided upon at the scoping meeting and included in the project scope.

Let me emphasize the importance of this. For each activity we need to determine the level of delegation and it needs to be part of the scope. There isn’t one level that is going to fit an entire project. For example the level of delegation for a wetland delineation is likely going to be different than the level of delegation for determining the alignment and grade for the AGR submittal. In this example we would expect the level of delegation for the
wetland delineation to be higher than determining the alignments.
Here is a snapshot of our website where many tools are available to help with project scoping. A few examples are: the Consultant Services Manual, Design Manuals, Activity Descriptions, Cost Estimating, Work Zone Safety and Mobility, and Templates.

If you’re not seeing a tool that you need – Please let us know! We want to be sure that you have every resource available to successfully complete the project.
The project schedule starts before a consultant is even selected... MDT expects consultants to work with MDT to develop a contract within a timely fashion. Our goal is to hit the ground running – we need additional resources – this is why we’ve hired a consultant. Often times we can’t get our of our own way. We realize this and are taking steps to meet this goal. This all comes down to communicating expectations. There are some things out of our control such as certain regulations. There isn’t a “one size fits all.” Generally a less complex project will take less time to develop a contract and a more complex project will take more time.

A new process we’re implementing is for the MDT Project Manager and the Consultant Project Manager to create a schedule for developing and executing a contract. We believe this will help keep the contract negotiations moving forward to maintain the schedule. It’s imperative to put specific milestones in the schedule such as when meeting minutes are due, when the scope is due, the fee estimate, how long MDT will have to review and respond, estimated negotiation time period, and estimated approval time period.

What about how the Consultant Activities tie in with the overall project? This ties back to what Ryan was talking about which is: communication is critical. We need to ensure that we are communicating the overall schedule to be sure that everyone is getting what they need when they need it.
Projects are typically scope driven up until SOW and then the project ideally becomes schedule driven.

MDT is moving towards a philosophy of locking in a project schedule at a certain point. We’ve always had this, but it’s becoming more formalized. This ties in with the OT phase projects that tend to be scope driven up until about Alignment & Grade, and once we know that the project is viable - we move into the PE phase, then we want to turn that project to be more schedule driven, since we know what the scope will be.

A case where this is becoming increasingly important is a new rule requiring that right-of-way acquisition be complete by October in order to be included in the following fiscal years letting plan.
To wrap up this discussion of the scope and schedule, I want to emphasize this graphic. As we’ve discussed it’s imperative that we scope projects as best we can. And when we do this we should be able to rely on the schedule being accurate because the schedule generally follows the scope. As you can see in the graphic that once we have a balanced scope, schedule, and budget, a project can move forward and has a much better chance of staying on schedule, on scope and on budget and in the end should result in the project’s success.
Budget is really the first question that comes up with new projects. Who is paying for this project? How much is the work going to cost? Is there a cap on the funding available?

Managing a budget is making sure we get what we want.

However, it’s difficult to develop a good budget when you don’t have a clear scope of work or don’t know what we really want. That is why we started with discussing scope previously. A clear scope of work is essential to a successful budget.

To help develop a more effective budget, MDT will use the new other phase or OT phase for projects where the scope is uncertain. For these projects we will be able to develop an incremental budget for the initial project development based on what we know. Once we have gathered enough information and developed the project in the OT phase we will be able to determine a clear scope and therefore an effective budget for the project.
Ok - Budget is never easy there are always going to be some necessary changes. Budget changes need to be managed carefully to ensure that we still get what we want in the end.

A good example of this is working through and getting approval for additional budget to cover changes in scope. Contrast this with doing work out of scope and asking for additional budget after the fact.

Funding for highway projects is not keeping up with the needs. This creates more pressure for managing budgets efficiently and a higher level of accountability.
MDT projects are broken into phases. Understand there are two different types of phases. One is a development phase. An example is scoping up through AGR followed by a second phase to complete the project. The other concept of phase refers funding. This is the Other, Preliminary Engineering, Right of way and Construction Engineering funding phases.

It is important to track funding phases separately and charge to the correct phase to meet federal funding requirements.
The Consultant Design flow chart has recently been revised to reflect activities in different funding phases. Here is a picture of the legend for the Consultant Design Flowchart.

Activities within the flowchart have been color coded to represent the different funding phases. This will help track the funding.
Track Separate Phases

Amendment #7

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Here is an example showing tracking of separate PE and CE phase in an amendment.

The bold numbers in the center represent the agreement number used by Accounting to designate the difference between PE and CE funding.
Based on that, you might be asking yourself: What is a good example of an invoice that tracks funding phases separately?

Similar to amendments here is an example of an invoice tracking separate PE and CE charges. Some consultants submit separate invoices for each phase. That seems to work the best to minimize confusion in tracking different funding phases.

MDT’s current invoice process is not as electronic as it may appear. Consultants hear about our electronic CIS system for tracking contracts and invoices and receive an electronic payment. This may give an impression that the invoice process is electronic and seamless. That is not the case. The contract manager receives an paper invoice, inputs the invoice values into CIS, passes the invoice onto someone for review, the invoice is then passed along to our accounting department, the accounting department inputs values off the paper invoice into a separate electronic system for payment. An electronic payment is made. CIS is then manually updated to show that the invoice is paid. Given the process I just described, you can see the importance of submitting a clear paper invoice and the potential for input error.

MDT is in the process of evaluating new programs for accounting that will reduce manual and duplicate inputs by utilizing an electronic invoice in the future.
Invoice Tip: It is nice to have the invoice total on front page.
Now that we have discussed scope, schedule and budget and have laid out clear expectations clearly we will not see any more amendments. Right?

Ok – Even the best laid plans require changes.

Amendments are going to happen on most projects. Amendments can be for changes in any combination of scope schedule and budget. Sometimes we intentionally do not scope an activity until we have more information, and then once we have that information we can determine if it is needed or not.

We have a process in place for approving amendments prior to the work being started:

There are three different methods:

1. Expedited with future Amendment (this is quick days not weeks) Expedited approval has a maximum $20,000 limit. Why would we do an expedited approval? For work that is immediate, clearly required and would delay the project schedule otherwise.

2. Roll up with future Amendment (quicker than a formal amendment but still takes a week or two). When is a rollup appropriate? When there are other amendments in the near future.

3. Formal amendment
Coordination between the consultants PM and MDT’s PM is vital!

There are times where you could be asked to work outside the defined scope of your contract. To proceed working without some sort of agreement creates risk to the scope, schedule and budget.

If you think you are being asked to work outside of your scope – check what you are currently scoped to do, and if it is truly outside of your scope, talk with the MDT Project Manager right away – an amendment may be needed or the task you were assigned could need to be clarified. As soon as you know an amendment is needed, start the process right away to avoid schedule delays.

What is the take away for amendment expectations? To summarize work outside the contract scope is high risk.
Why do we need a Project Communication Plan?
Communication is a team effort. MDT projects encompass a very large team. When we hire consultants to work on projects the team get that much larger. Communication is one of the largest factors of project success or failure. The idea of having a project communication plan is to draw focus to communication. We want the project team to think specifically about communication. MDT is currently increasing our communication effort in public involvement. Successful public involvement starts with good communication at the project team level. As Ryan said earlier communication is the key.

Here are a few things to consider in a project communication plan that focus on the team. The project manager adds value to the project team by facilitating good communication. Consider the PM the communication hub. Keep your project manager informed. Any team member who sees a potential issue or risk that may affect the project schedule, scope, budget or quality should inform the project manager. For consultant design projects, we actually have a project manager team that consist of a MDT and consultant project manager.

For Consultant Progress reports, include information on schedule, scope and budget in the report. This information does not have to be consolidated into one report. It could be more effectively accomplished in separate formats. Keep your MDT project manager.
informed. Consultants report progress on what is in their contract. I read progress reports by consultant and often see a gap between the status of what the consultant is contracted to do and the status of the overall project. There is a distinct difference between the consultant’s progress on what they are contracted to complete and the overall completion of the project. It is MDT’s project manager’s responsibility to report progress on the overall project. Put yourself in MDT’s project manager’s (name drop) shoes. Are you giving them all the information necessary to provide project status? We can only let a project if all the required tasks are complete.

When these progress reports are approached independently the design team becomes siloed into Consultant and MDT. People are not getting what they need when they need it!

Why, what, who, where, when and how? Ask yourself these questions when developing a project communication plan.
• What is the standard of care.
• Consultant QC/QA
• MDT QA

Lets discuss Quality.

MDT expects quality consistent with the care and skill ordinarily exercised by members of the Consultant profession.
You are responsible to submit deliverables with the appropriate detail and accuracy.

What is Quality Control?
QC – An independent evaluation to ensure that a product or service satisfies its stated role. Here is where a peer who has not been involved in the design checks that design.

What is Quality Assurance?
QA – Process implemented so that quality requirements for a product or service will be met. Here is where the principle of the firm implements processes to provide quality.

Consultant Peer does QC. Consultant Principle does QA.

What are MDT responsibilities:
MDT performs spot checks of the Deliverables from an Owner’s perspective.
We are responsible to provide timely reviews, decisions and approvals as appropriate for each phase of development.
Does the design meet purpose and need?
Are expectations met?
An effective quality control plan is a systematic approach that documents the QC activities and QA elements that will be followed to deliver quality results. The plan includes the identification of project specific risk elements and activities to reduce or mitigate the risk.

MDT has a formal process in place to help deliver quality projects. This is part of our QA. It is a process implemented so that quality requirements will be met. This process includes milestone reports and reviews such as the AGR, SOW, PIH and FPR.

Developing a project in stages with reviews at the end of each stage helps produce quality and minimize costly changes. It is easier to make changes to the design when you are 30% complete versus 100% complete.

The intent on the AGR review is to review controlling elements of the design that establish the horizontal and vertical alignment along with the typical and surfacing. Design information outside of these controlling elements for the mainline alignment and grade will most likely change due to AGR revisions. Therefore why should we spend time developing and review of this information?

The intent of the PIH review is to review elements of the design that establish the final
construction limits of the project so that we can start the R/W and permitting processes. This is also the time to review the constructability of the design.

The intent of the FPR is to review the bid ability of the design and the completeness of the plans.

Keep in mind MDT’s QA review process when developing your Quality Control Plan. MDT expects you to complete appropriate QC before each submittal.

MDT’s QA process may be misleading for consultant projects. Both consultants and MDT staff may be led to think MDT will complete QC on consultant projects similar to in-house design. MDT is completing a QA review of consultant work. We are not doing QC.

Moving on to Documentation
Documentation is also a requirement of your quality control plan.

When a project is built, MDT receives ownership and has to deal with issues that come up. This occurs with irrigation, maintenance, unexpected impacts and accidents. This is why documentation of the project development is so important. Documentation includes all project reports, meeting minutes, the comment/response matrix, design calculations etc. MDT keeps all project documentation basically forever. Actually we retain project documentation for 3 years after the project has been fully reconstructed.
In Summary

- Budget
- Amendments
- Communication Plan
- Quality
- Documentation

Take-aways:
Budget requires a clear scope. MDT funding phases need to be tracked separately to meet federal funding requirements.

For amendments, get approval for changes in schedule, scope and budget before proceeding with these changes. Remember there are three different types of amendments (expedited, rollup and formal).

Communication is one of the largest factors of project success or failure. Working with MDT’s PM to develop a project communication plan will mitigate this risk.

MDT expects you to complete appropriate QC before each submittal.

Finally, the importance of Documentation is sometimes overlooked but the documentation of the project is maintained for a very long time.
“What can **you do**, as a Consultant, **that will contribute to the success of the MDT project you’re part of?**”

Our call to action is for all of us to consider this question when we get back to it in the office. The next time you participate in a team involving an MDT project, consider asking yourself what specific steps you’re taking to proactively help the project, and just as importantly the overall team, succeed.