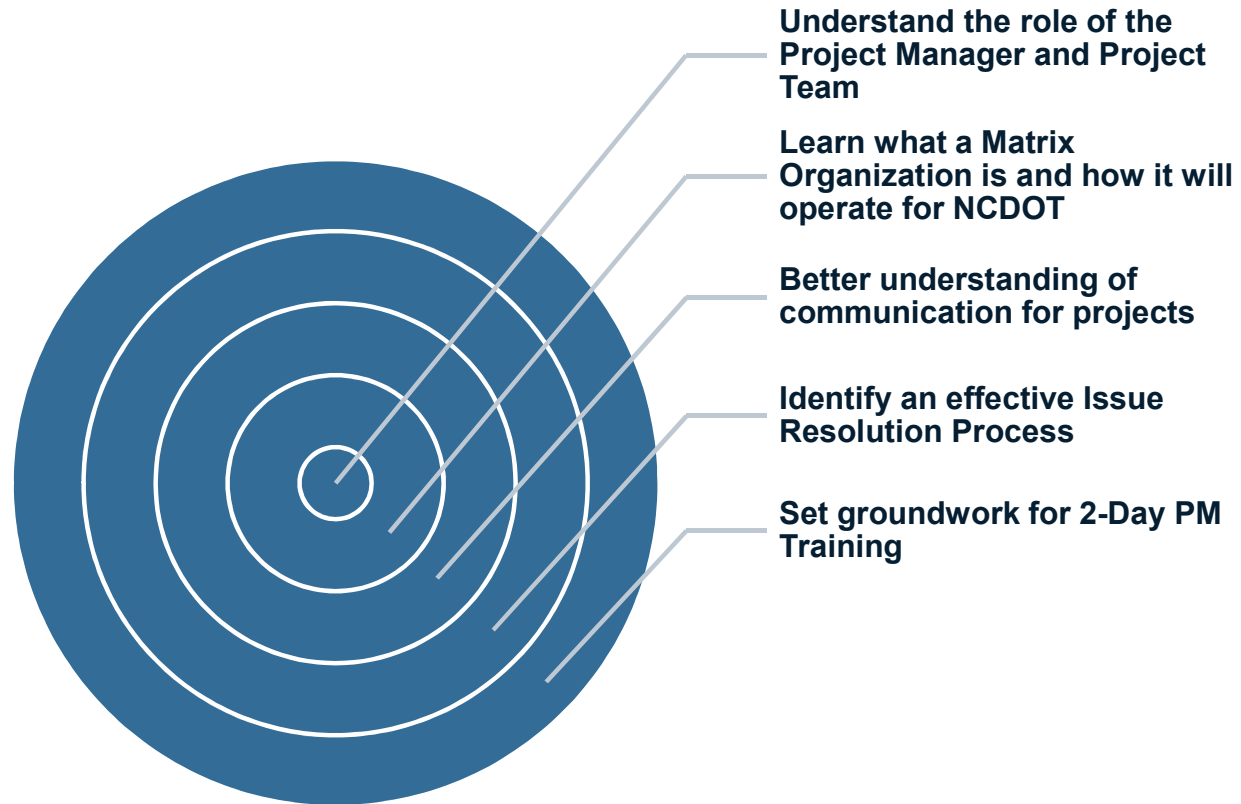# Roles and Responsibilities in Project Delivery

Welcome

"If you always do what you've always done, you'll always get what you've always got."

-Tony Robbins

Objectives for the Day

Understand the role of the Project Manager and Project Team

Learn what a Matrix Organization is and how it will operate for NCDOT

Better understanding of communication for projects

Identify an effective Issue Resolution Process

Set groundwork for 2-Day PM Training

Agenda

Welcome & Introductions

Session 1: Integrated Project Delivery at NCDOT

Session 2: NCDOT Project Team and the Matrix Org

Session 3: Improving Project Delivery

Lunch

Session 4: Project Delivery Roles at NCDOT

Session 5: Project Team Communications & Issue Resolution
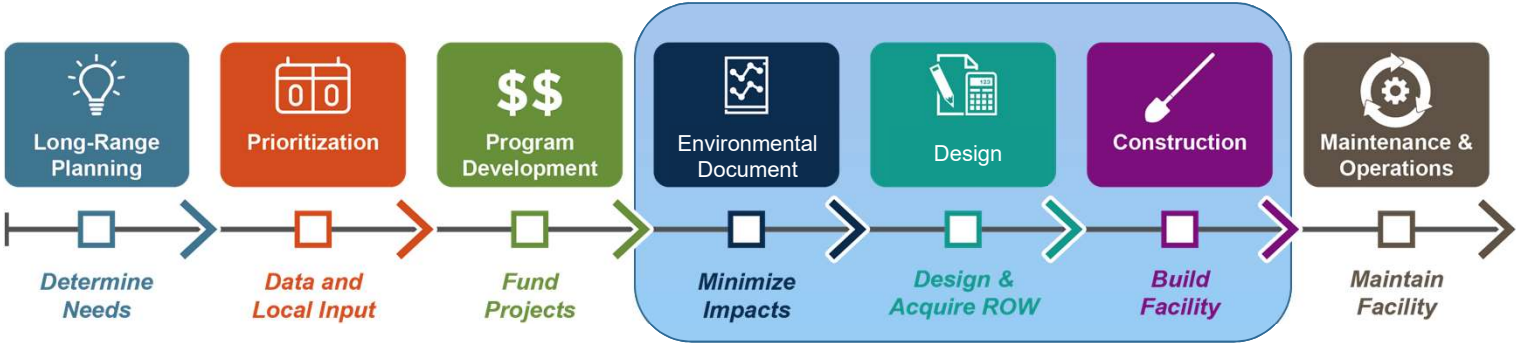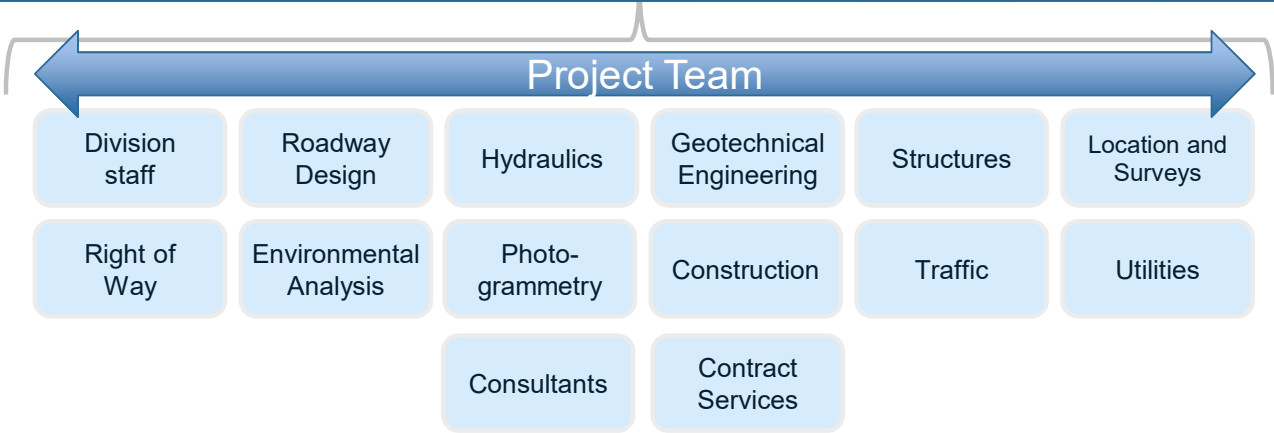
Final Feedback & Wrap-up

Adjourn

Introductions

Session 1: Integrated Project Delivery (IPD) at NCDOT

Roles & Responsibility Training

NCDOT Program Delivery

Long-Range Planning	Prioritization	Program Development	Environmental Document	Design	Construction	Maintenance & Operations
Determine Needs	Data and Local Input	Fund Projects	Minimize Impacts	Design & Acquire ROW	Build Facility	Maintain Facility

Project Managers
(Constant communication, coordination, and reporting)

Project Team

Division staff	Roadway Design	Hydraulics	Geotechnical Engineering	Structures	Location and Surveys
Right of Way	Environmental Analysis	Photo-grammetry	Construction	Traffic	Utilities
		Consultants	Contract Services		

Secretary Trogdon on IPD

Priorities for NCDOT were defined over two years ago, including improvements to the project delivery process and overall program delivery.

November 2018: "This process will require each of us to be fully invested in developing and implementing an Integrated Project Delivery process that will serve this Department well into the future."

"A good plan violently executed now is better than a perfect plan executed next week."

- General George S. Patton

Integrated Project Delivery

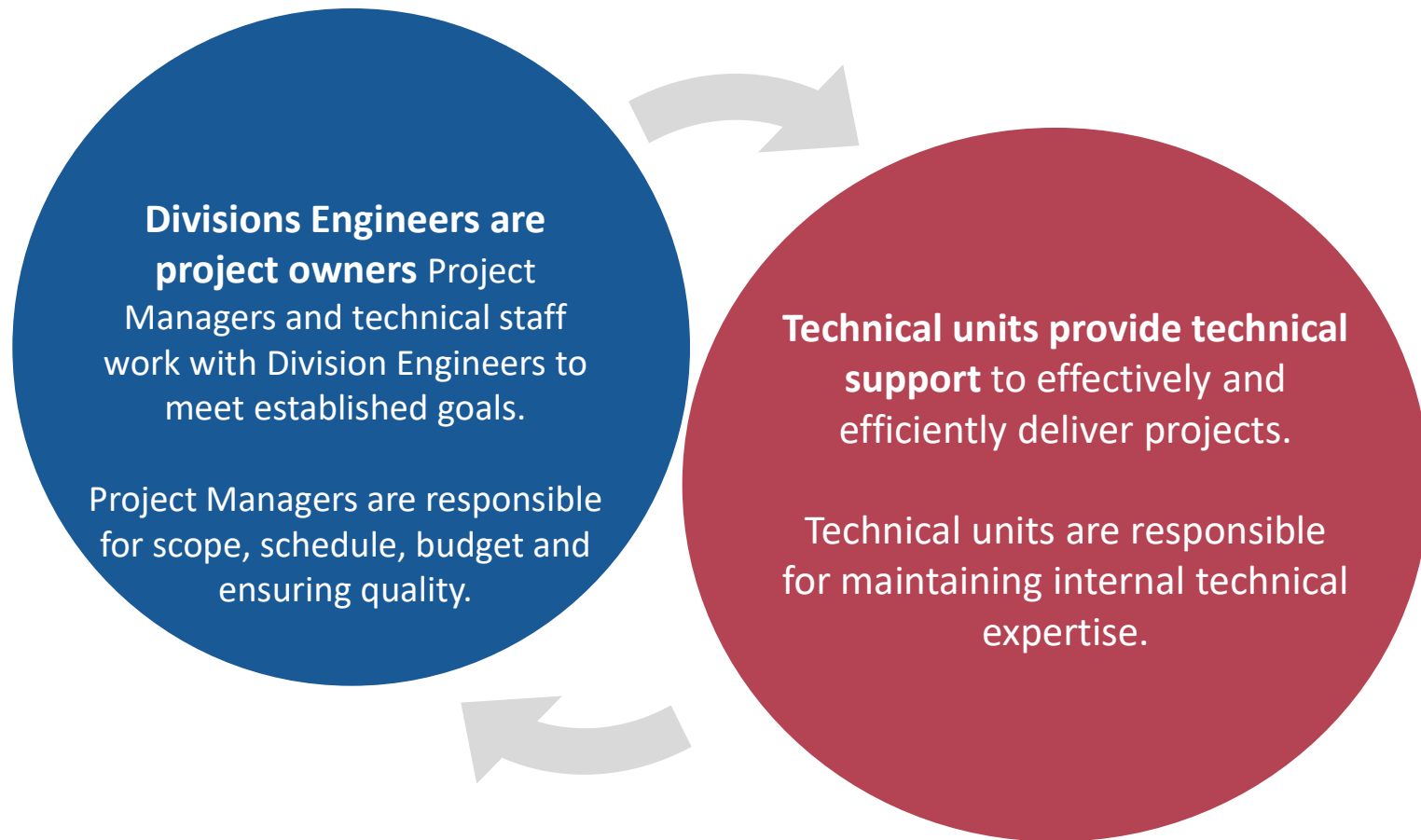|	
Project Delivery Vision	A CULTURE where we PROMISE WHAT WE ARE GOING TO DO and DELIVER WHAT WE PROMISE
Commitment	Developing IPD Business Practices that can withstand changing workforce dynamics and transportation needs well into the future
Delivery Improvement Key	Implementation of transparent, repeatable and accountable processes that are effective and efficient

Integrated Project Delivery Means…

Divisions Engineers are project owners Project Managers and technical staff work with Division Engineers to meet established goals.

Project Managers are responsible for scope, schedule, budget and ensuring quality.

Technical units provide technical support to effectively and efficiently deliver projects.

Technical units are responsible for maintaining internal technical expertise.

Roles & Responsibilities Introduction

R&R
Section 1.1

Goals of the Roles & Responsibilities for Project Delivery Document

Implement	Ensure	Achieve	Establish
Implement an integrated approach toward project delivery and management	Ensure project delivery and management processes are repeatable and regularly evaluated for improvements in collaboration with the Department's technical units	Achieve efficiency, consistency, a customer service culture and extraordinary stakeholder communication	Establish principles and implement techniques to manage project risks proactively and identify opportunities to advance projects

Roles & Responsibilities Document Review

|	
Section 1	• **Project Delivery in a Matrix Organization**
Section 2	• **Roles and Responsibilities of Project Teams**
Section 3	• **Project Management Plan Guidelines**
Section 4	• **Project Reporting**
Section 5	• **External Stakeholder Coordination and Agreements**
Section 6	• **Project Development Filing System**
Section 7	• **Key Performance Indicators**

Session 2: NCDOT Project Team & the Matrix Organization

Roles & Responsibility Training

NCDOT Project Manager and Matrix Organization

Technical manager provides technical staff for project team (internal or external)

Project Manager focuses on scope, schedule, budget, quality along with their team

Technical Manager

Technical Manager

Technical Manager

Project Manager

Project Manager

Project Manager
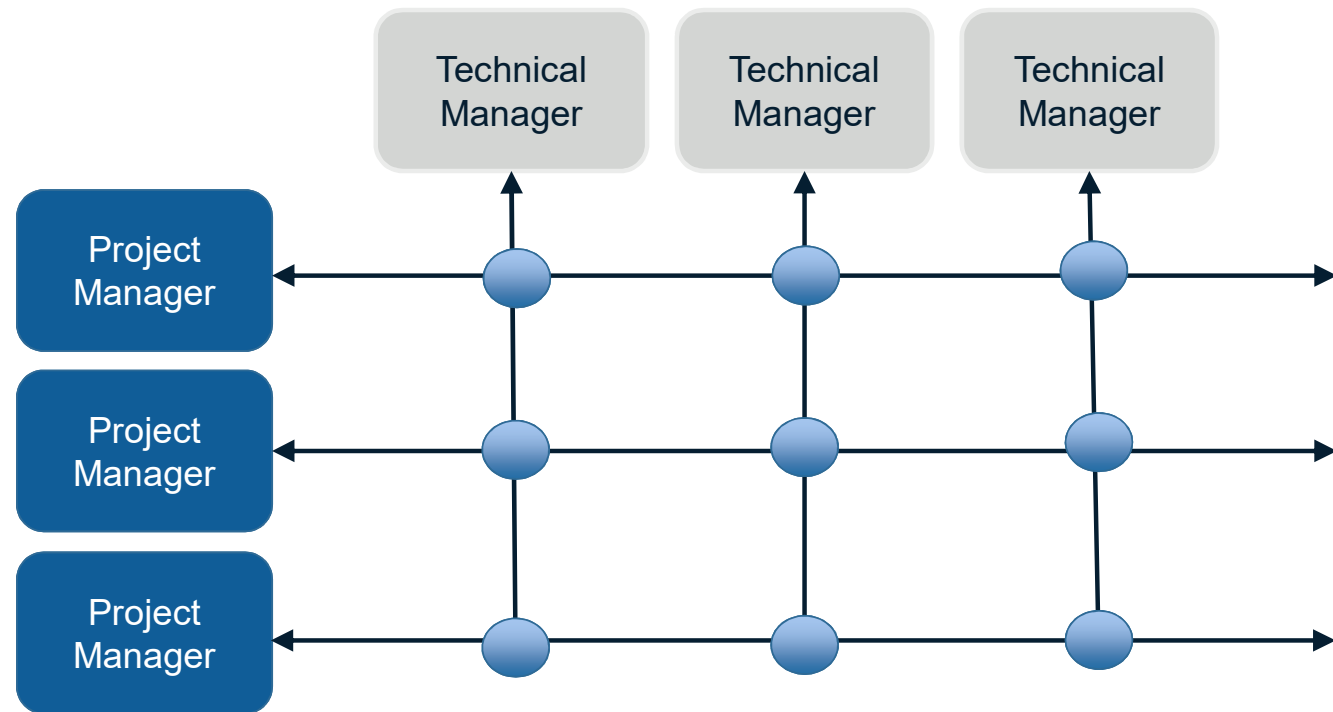
● Represents a team member from a Technical Unit assigned to a project

16

What is a Matrix Organization?

The Matrix Organization Structure

What
- Multidisciplinary team with members drawn from various technical units
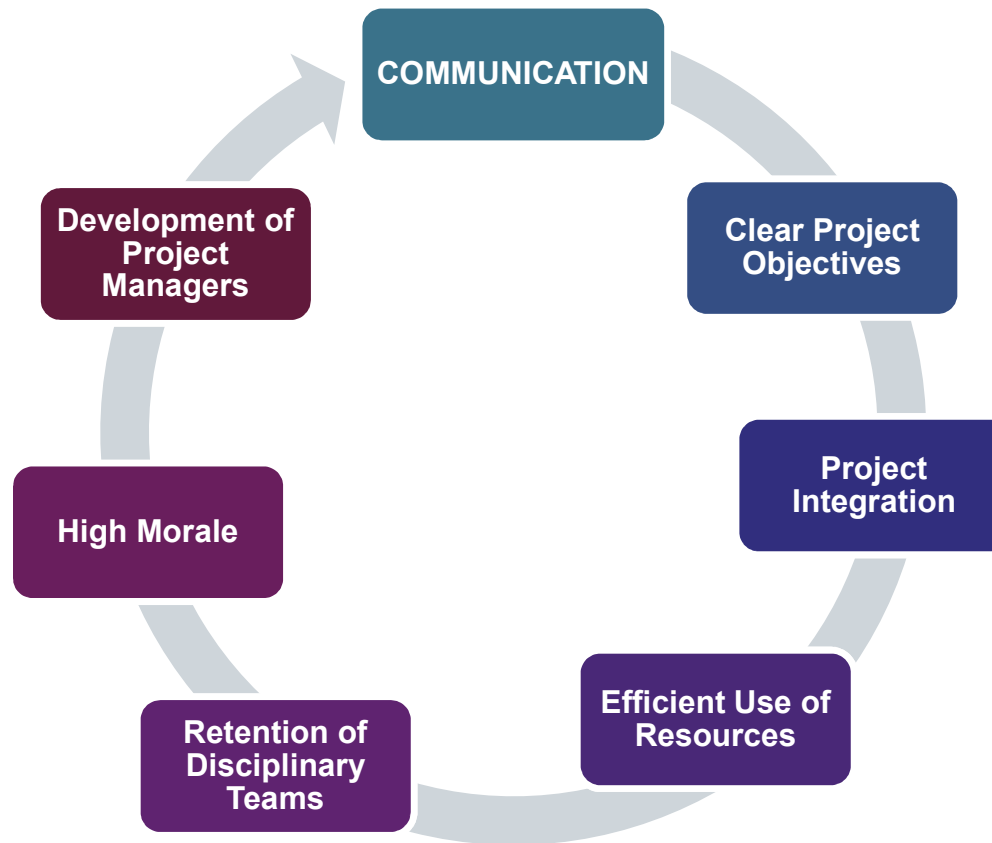- Two chains of command, one functional, one project
- Built around the project

Why
- Manage large/complex programs with limited resources
- Individual technical departments not staffed to do in-house production for large program

Critical Success Factors
- Active/strong support by top management
- Commitment from technical unit management to success
- Successful project comes first
- PMs have strong communication skills

From LC Struckenbruck, The Matrix Organization, Project Management Quarterly

Matrix Organization Provides…

COMMUNICATION

Clear Project Objectives

Project Integration

Efficient Use of Resources

Retention of Disciplinary Teams

High Morale

Development of Project Managers

Source: Struckenbruck, LD The matrix organization, Project Management Quarterly

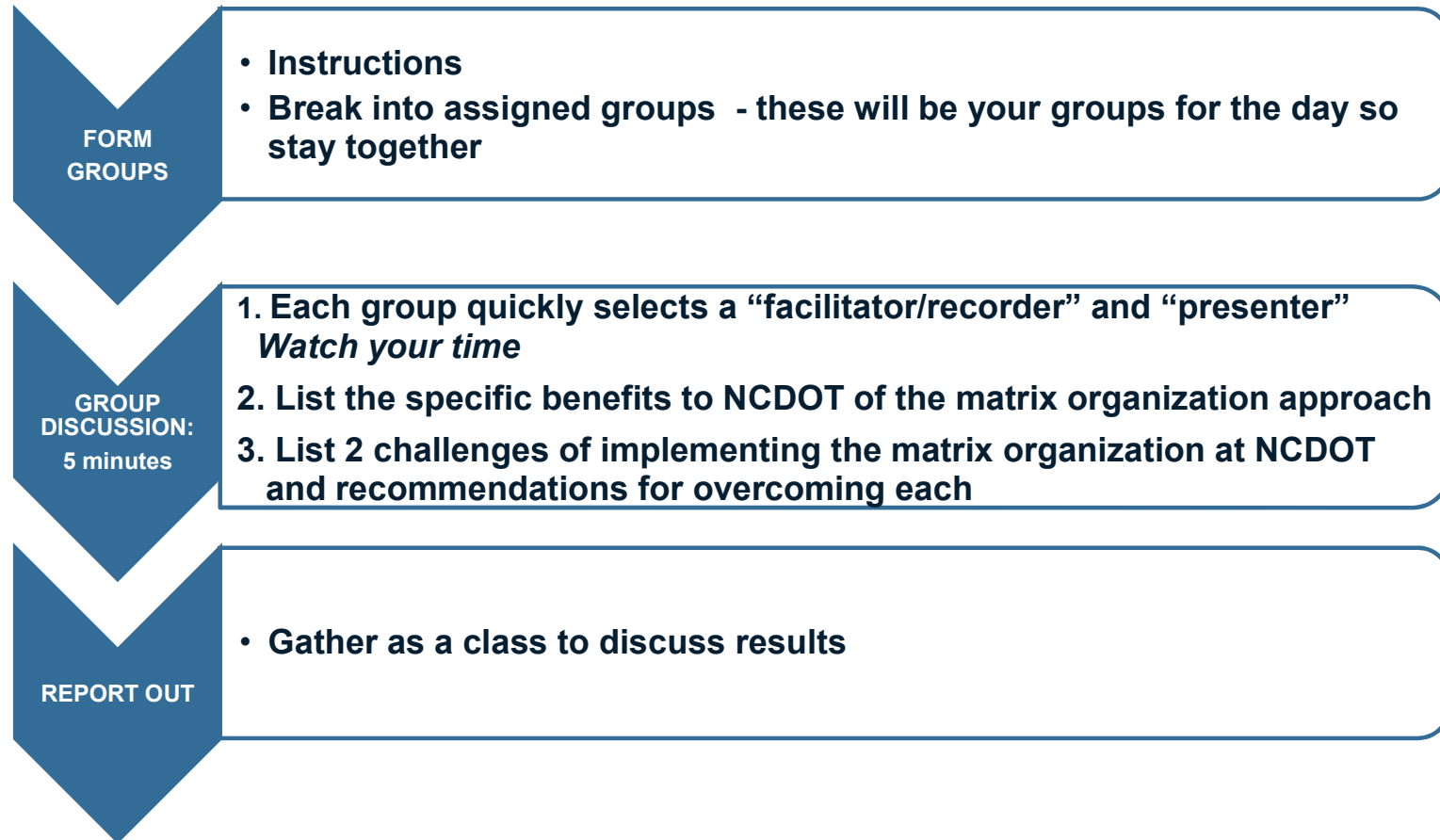"There is a difference between knowing the path and walking the path."

Morpheus

SCOOPWHOOP.com

THE MATRIX ORGANIZATION

Matrix Organization Exercise

FORM GROUPS

- **Instructions**
- **Break into assigned groups - these will be your groups for the day so stay together**

GROUP DISCUSSION: 5 minutes

1. **Each group quickly selects a "facilitator/recorder" and "presenter"** *Watch your time*
2. **List the specific benefits to NCDOT of the matrix organization approach**
3. **List 2 challenges of implementing the matrix organization at NCDOT and recommendations for overcoming each**

REPORT OUT

- **Gather as a class to discuss results**

Matrix Organization Exercise Handout

Session 3: Improving Project Delivery

Roles & Responsibility Training

NCDOT Key Performance Indicators

R&R
Section 7

Major Milestones

Target Success Rate > 90%

Environmental Document Completion Targets (avg)

- **Major Project Milestones**
- **Project Start Date**
- **Final Environmental Document Completion**
- **Right-of-Way Plans Complete**
- **Let**

Categorical Exclusions
< 12 months
Env. Assessments
< 24 months
Env. Impact Statement
< 36 months

Key Performance Indicators Handout

Section 7

7. Key Performance Indicators

7.1. Introduction

The success of any project requires each team member to understand the key performance indicators, why each team member's timely contributions are required and how working together is essential to ensure that these objectives are achieved. As project manager you are ultimately responsible for ensuring that the project team achieves the key performance indicators. This requires the project manager to provide regular communication with all stakeholders both internal and external. It requires the project team to utilize creative problem-solving skills as each project will come with its own unique set of challenges. Finally, it requires each project manager to provide mentoring to develop and encourage project team members who may put the team at risk of achieving the key performance indicators.

7.2. Key Performance Indicators

7.2.1. STIP Project Start Date Success

Metric Definition – Percentage of STIP and Bridge projects with Notice to Proceed milestones completed as compared to the planned milestones at the start of the fiscal year.

Reporting Period – July 1 to March 31 each fiscal year

Target – Greater than 90%

7.2.2. Final STIP Environmental Document Success

Metric Definition – Percentage of STIP and Bridge projects with the final environmental document milestone completed as compared to the planned milestones at the start of the fiscal year.

Reporting Period – July 1 to March 31 each fiscal year

Target - Greater than 90%

7.2.3. STIP Right of Way Plan Success

Metric Definition – Percentage of STIP and Bridge projects Right of Way plan milestones completed as compared to the planned milestones at the start of the fiscal year.

Reporting Period – July 1 to March 31 each fiscal year

Target – Greater than 90%

7.2.4. STIP Let Success

Metric Definition – Percentage of STIP and Bridge projects let and awarded as compared to the planned milestones at the start of the fiscal year.

Reporting Period – July 1 to March 31 each fiscal year

Target – Greater than 90%

7.2.5. Non-STIP Project Success

Metric Definition – Percentage of non-STIP projects let on schedule as compared to the planned let milestones at the start of the fiscal year.

Reporting Period – July 1 to March 31 each fiscal year

Target – Greater than 90%

7.2.6. Environmental Document Completion Time

Metric Definition – Average months to complete a final environmental document.
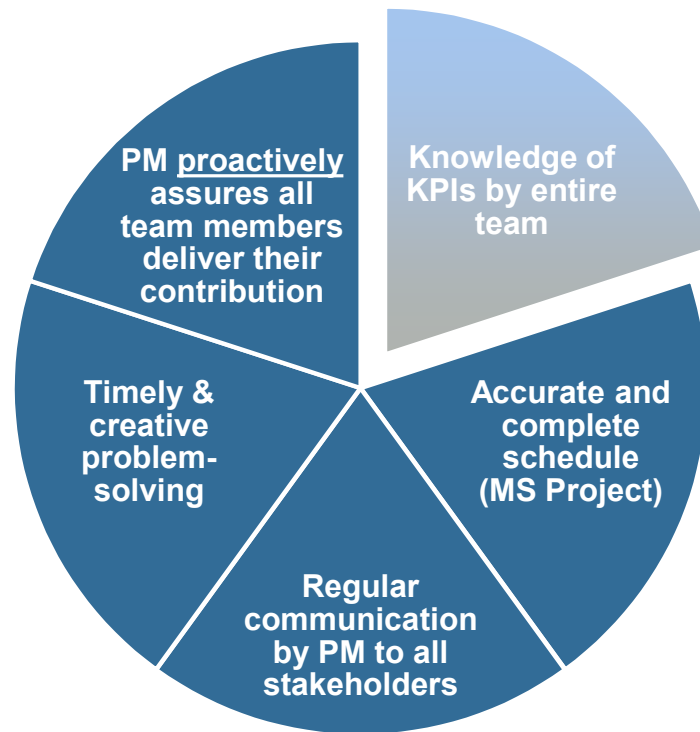
Reporting Period – Rolling twelve-month period

Target – Categorical Exclusions less than 12 months
Environmental Assessments less than 24 months
Environmental Impact Statements less than 36 months

Achieving Key Performance Indicators and Performance Measures requires...

PM proactively assures all team members deliver their contribution

Knowledge of KPIs by entire team

Timely & creative problem-solving

Accurate and complete schedule (MS Project)

Regular communication by PM to all stakeholders

"**Project Management is the application of knowledge, skills, tools and techniques to project activities to meet project requirements.**"
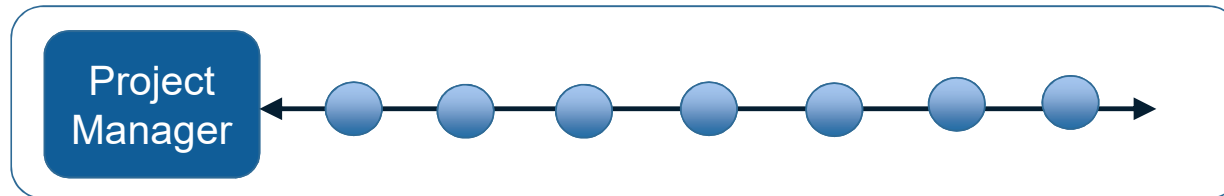from the PMI Institute PMBOK Guide

Project Management involves…

➡ planning, coordinating, tracking, controlling

➡ project scope, schedule, budget, quality

➡ *PLUS* risk, change, communications

➡ from inception through close-out

Scope

Quality

Budget

Schedule

25
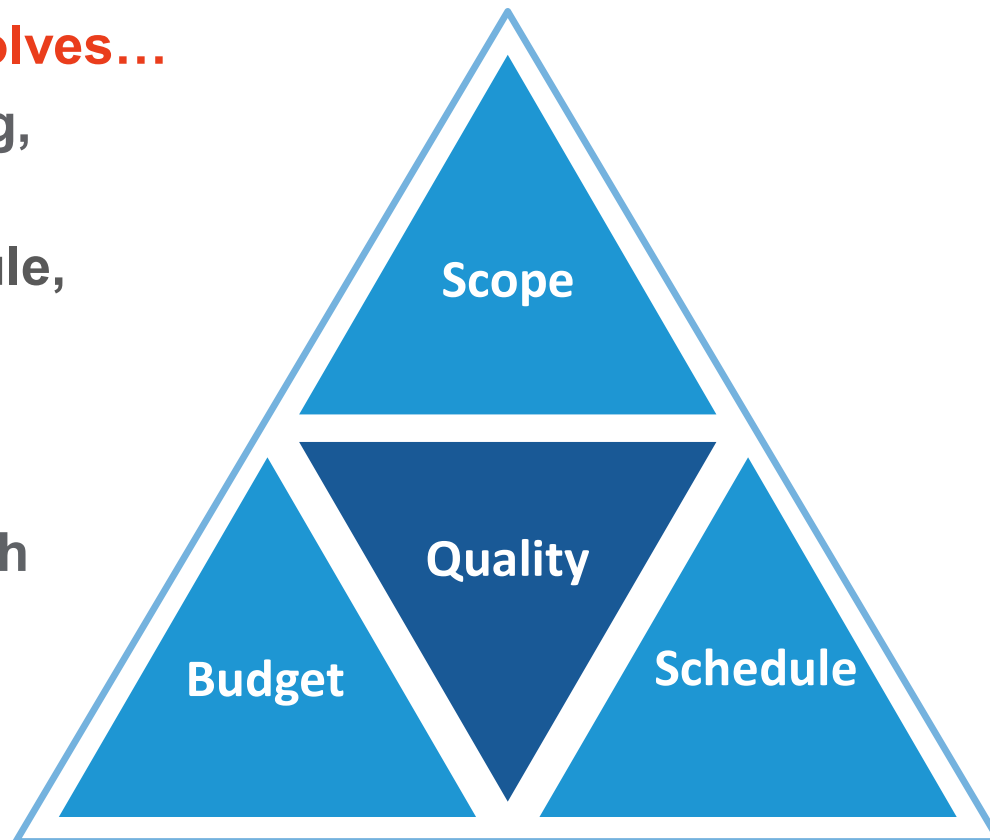
NCDOT Project Team

- **Project Manager** leads the Team, coordinates technical studies, is responsible for project decisions

- **Team members** are both technical specialists in areas such as engineering, environmental and other areas consultants support project managers with production and ensuring project scope, schedule, budget and quality

Represents Team members

NCDOT Project Delivery Guiding Principles

R&R
Section 1.4.2

- Know your Area of Responsibility

- Prepare a Project Management Plan

- Establish Functional and Effective Technical and Stakeholder Teams

- Manage Project Risks to Scope, Schedule and Budget; Measure Progress; Communicate

- Document and communicate important decisions and issues
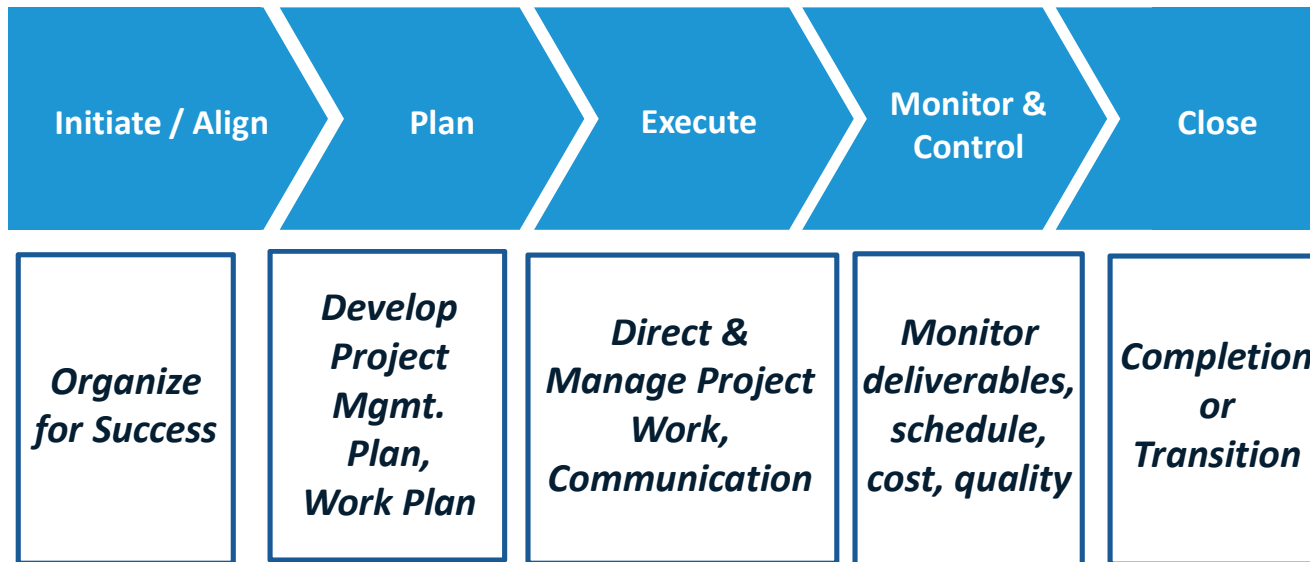
- Be Proactive

- Ensure Customer Satisfaction

- Make Decisions

> **If you can't describe what you are doing as a process, you don't know what you are doing"** – *W. Edwards Deming, American Engineer*

Plan the Work…Work the Plan

R&R
Section 3.1

Initiate / Align	Plan	Execute	Monitor & Control	Close
Organize for Success	*Develop Project Mgmt. Plan, Work Plan*	*Direct & Manage Project Work, Communication*	*Monitor deliverables, schedule, cost, quality*	*Completion or Transition*

"Failing to plan is planning to fail." *– Winston Churchill*

Project Management Institute PMBOK

NCDOT Project Delivery Exercise

FORM GROUPS
- **Instructions**
- **Work with your assigned group**

GROUP DISCUSSION: 5 minutes
1. **Select a "facilitator/recorder" and "presenter"**
2. **Describe briefly the most important current issue of NCDOT project delivery and what changes would be beneficial**

REPORT OUT
- **Gather as a class to discuss results**

Project Delivery Exercise Handout
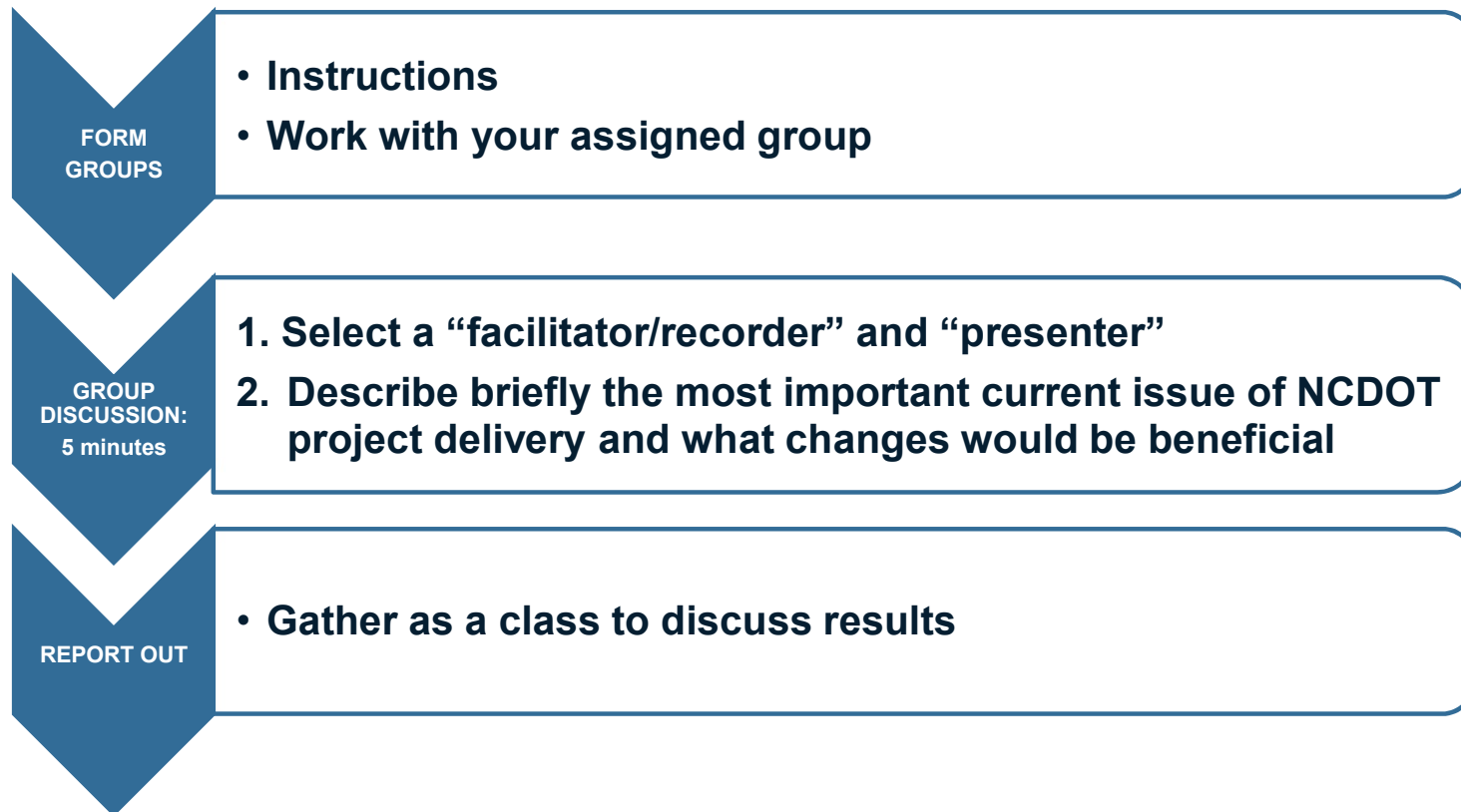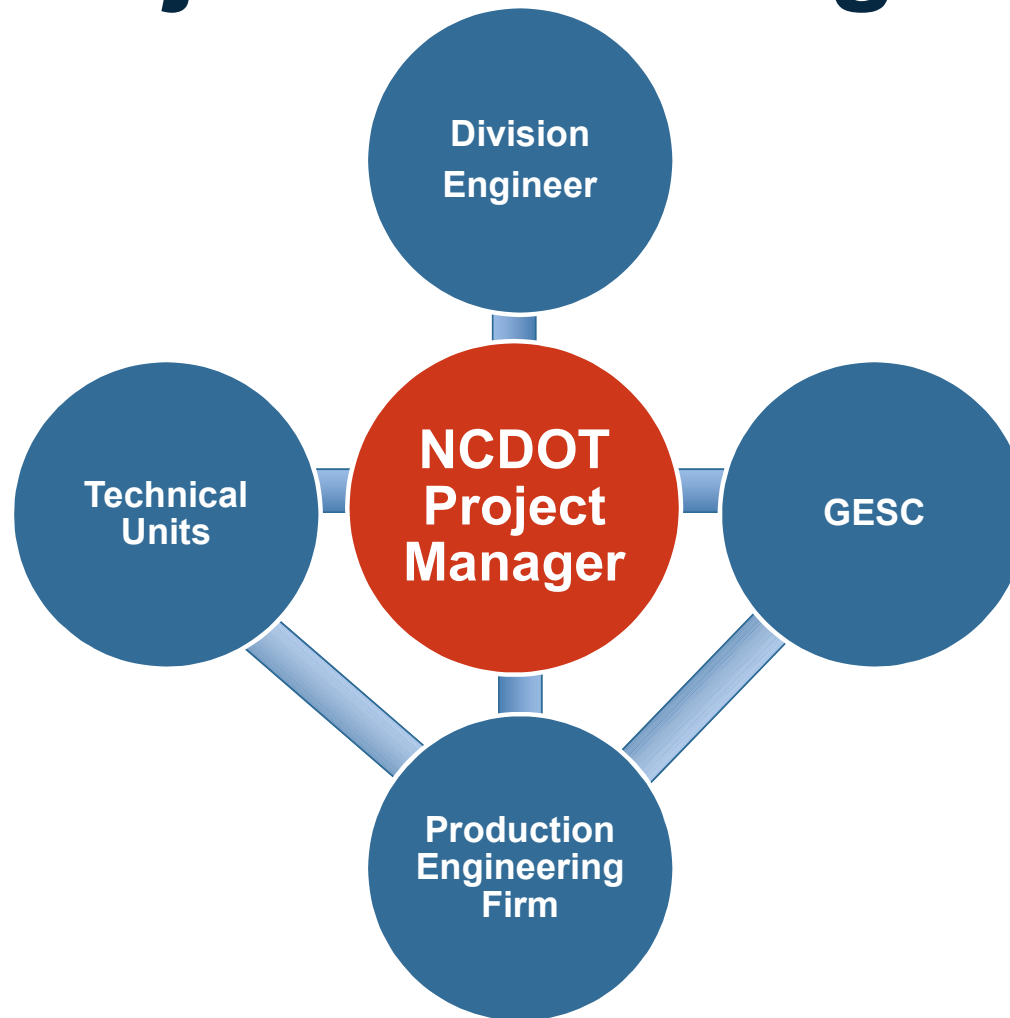
Questions &
Comments on
Sessions 1, 2 & 3

LUNCH BREAK

Session : 4
Project Delivery Roles at NCDOT

Roles & Responsibility Training

NCDOT Project Team Organization

Project Manager

Project Manager Roles

PM role includes...

- Develop and LEAD project team to meet project objectives and stakeholder expectations

- <u>Review</u> work products

- Solicit input then MAKE DECISIONS

COMMUNICATION

SCOPE   **SCHEDULE**

CORE PROJECT MANAGEMENT

STAKEHOLDER INTERFACE

BUDGET   **QUALITY**

LEADERSHIP

REMINDER:
The PM *LEADS* in these Roles. Consultant PM and Project Team provide production work.

38

NCDOT ROLES AND RESPONSIBILITY MATRIX – Project Manager

Project Manager	Produces	Accountable for	Authority for
Role: Core Project Management			
Planning: Overseeing project scoping/developmental planning as assigned; Develop Project Management Plan		X	
Executing: Managing Project to meet cost, scope, schedule, quality	X		X
Managing Project to meet cost, scope, schedule, quality; (2) Project Status Reports; Managing project to attain project goals and achieve customer satisfaction; Maintaining project files and records		X	
Monitoring and Controlling: Monitor, evaluate and report progress of project schedule and project expenditures. Conduct regular project status, design reviews;		X	X
Initiate formal process for change management			X
Risk: Identify and Manage Project Risks; Early ID and resolution of project issues		X	
Quality: Ensuring PEF /Technical Units meeting NCDOT quality standards.		X	
Role: Leadership			
Establishing/Leading Project Team: Consultant Procurement Agreements	X		
Ensure project team is well organized and working well		X	
Negotiating technical resource needs; Conducting consultant procurement/ negotiation; Providing input for evaluation of team members' performance			X
Role: Stakeholder Interface			
Stakeholder Interface: Coordinating/communicating with project customers, technical teams; Conducting public involvement, stakeholder coordination; Reporting project status to their manager and project team; Resolving and/or elevating project issues;		X	
Ensuring timely resolution of conflicts			X

Project Manager Roles

Core Project Mgmt

Project Planning
- Project Management Plan, Project Scoping

Project Executing, Monitoring/Controlling
- Scope, Schedule, Budget Change Management
- Status Updates, Reporting, Project Files
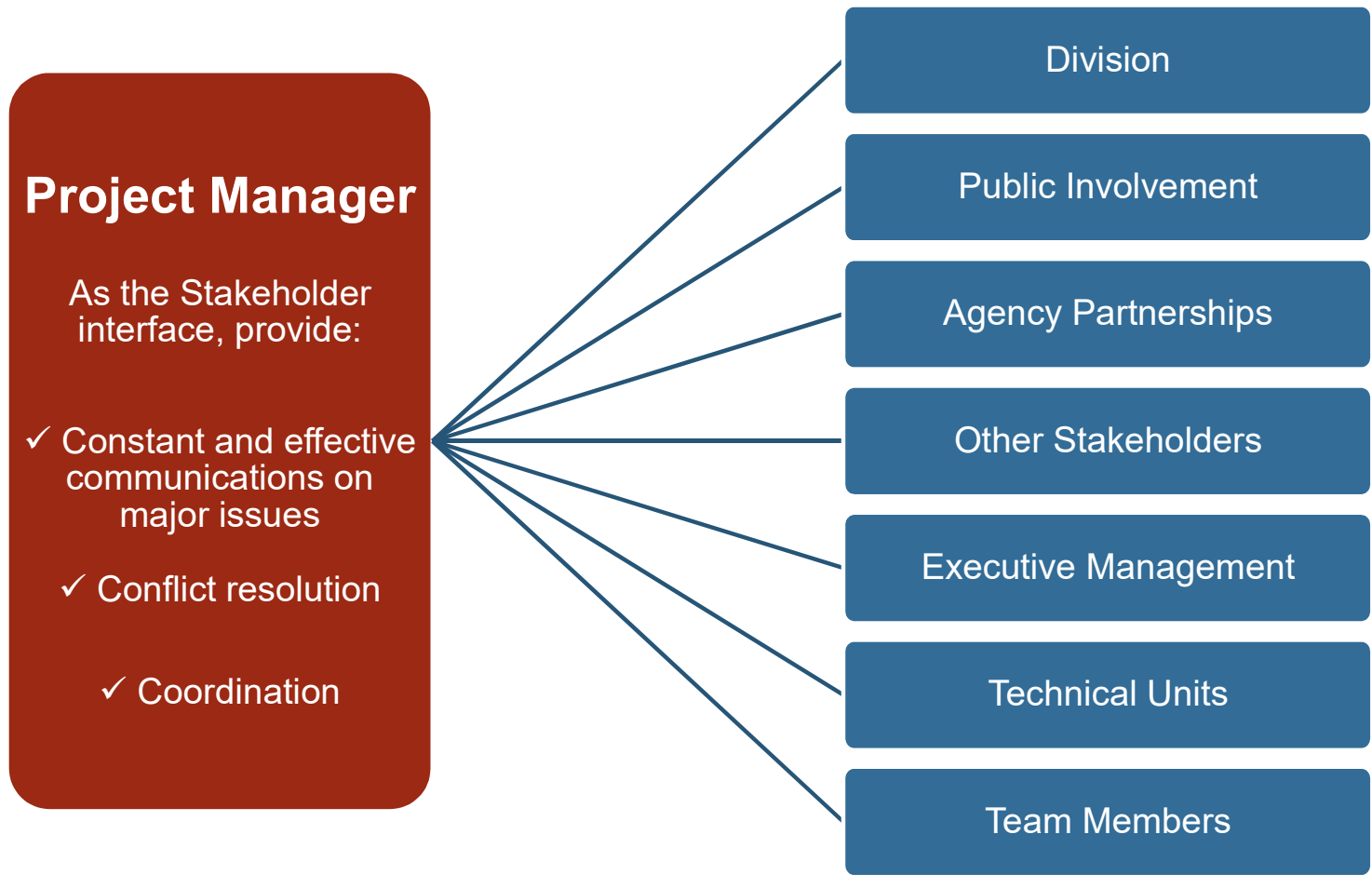
Risk Management

Quality Management

Project Manager Roles

*Top 2% of PMs have superior **relationship & communication skills along with a positive attitude.***

(PMI PMBOK Guide)

Leadership

- Make timely decisions
- Negotiate Consultant Agreements, Technical resource needs
- Establishing and ensure Team well organized/working
- Input for team performance evaluations

Project Manager Roles

R&R
Sections 1.5, 2, 5

Project Manager

As the Stakeholder interface, provide:

✓ Constant and effective communications on major issues

✓ Conflict resolution

✓ Coordination

- Division
- Public Involvement
- Agency Partnerships
- Other Stakeholders
- Executive Management
- Technical Units
- Team Members
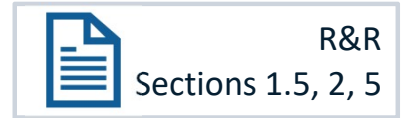
GOOD LEADERS DO NOT TAKE ON ALL THE WORK THEMSELVES; NEITHER DO THEY TAKE ALL THE CREDIT.

Retired USMC warrant officer Woody Williams

ProjectManager.com

The Project Team

The difference between success and failure is a great team!

Roles and Responsibility Matrix - Technical Units	Produces	Accountable for	Authority for
Technical Unit Head			
Initiate: Planning, allocating, controlling technical resources; Committing technical task production resources			X
Execute: Completed technical tasks within the project's cost, scope, schedule and quality requirements;	X		
Lead production of assigned project tasks to meet scope, schedule budget; Providing technical area's assistance to project managers in project scoping, design, and construction		X	
Approving Design Exceptions			X
Quality: Technical task production audits/evaluations for quality assurance/quality control within their functional specialty; Timely and thorough reviews when requested.	X		
Monitoring and auditing technical task production; Developing and enforcing quality control and quality assurance procedures			X
Non-project specific: Optimizing use of technical area resources; Maintaining quality of functional area products and processes; Training technical staff and maintaining their technical expertise		X	
Leading functional area technical managers and technical staff			X
Technical Manager			
Initiate: Negotiating and developing cost, scope and schedule for their technical portion of project. Assigning technical staff to project team.			X
Execute: Plans for technical tasks within project cost, scope, schedule, quality. resource needs; Other contract technical tasks assigned; Information and assistance to PM for scoping projects;	X		
Cost, scope, schedule, quality associated with technical tasks; Other contract technical tasks assigned; Acquiring, managing, coordinating consultant activities within their area of responsibility		X	
Ensuring technical tasks are conducted as identified in project management plan			X
Quality: Professional/technical quality of work consistent with applicable policies, procedures, and standards		X	
Communication: Adequate and timely notice to other technical units and project manager of any necessary changes to project cost, scope, schedule, quality; Reporting status of work on regular basis to PM		X	

	Produces	Accountable for	Authority for
Technical Staff			
Execute: Technical tasks completed based on established policy, procedures, standards, and as identified in the project management plan; Technical tasks status reports; Information and assistance to technical managers for scoping projects	X		
Delivering assigned technical task within the cost, scope and schedule; Assuring transfer of information from technical staff to technical staff across units as required to complete project work ; Reviewing and coordinating their direct consultant's work for tasks assigned by the technical unit		X	
Technical decisions to accomplish technical tasks within scope, schedule, budget			X
Quality: Professional/technical quality of work consistent with applicable standards;		X	
Communications: Adequate & timely notice to Technical Manager of necessary changes to project cost, scope, schedule		X	

NCDOT Technical Units Roles/Responsibilities Review

Initiate

- **Work with PM as a customer**
- **Allocate & commit technical resources**
- **Develop cost, scope, schedule for discussion with PM**
- **Provide advice to PM**

Technical Units R&R Matrix Handout

NCDOT Technical Units Roles/Responsibilities Review

Execute
- Complete technical tasks to the agreed scope, schedule, cost, & quality requirements
- Coordinate with PM and consultants
- Make things happen
- Approve design exceptions

Quality
- Deliver quality work; timely reviews
- Monitor/audit work performed
- Develop/enforce quality procedures for technical unit work

Technical Units R&R Matrix Handout

45

NCDOT Technical Units Roles/Responsibilities Review

Communications

- Communicate and coordinate with PM as a customer

- Provide advice, guidance, recommendations

- Adequate/timely notice of changes

- Regular status reporting

- Interface with other technical team members

Technical Units R&R Matrix Handout

Other NCDOT Roles & Responsibilities

Project Development Committee

Division Staff

Project Management Supervisor

Professional Engineering Firm

Appendix A

Roles and Responsibilities Matrix Handout

NCDOT Roles and Responsibilities Matrix	Produces	Accountable for	Authority for
Project Development Committee: Director of Technical Services, Division Engineers, PMU Manager, Director of Highway Operations, Professional Services Management Unit Manager (non-project specific)			
Standard for project development processes within matrix organization; Amendment to R&RPD Section 2	X		
Providing leadership across the Department to ensure project teams are functioning within the matrix organization.		X	
Holding the appropriate Technical Unit Head, project managers, and project teams accountable for project delivery; Revising programs and projects priorities; Resolving issues between functional units			X
Division			
Quality: Quality Assurance review of project documentation to ensure plans and specifications incorporated meet intent of project purpose and need.	X	X	
Communications: Communicating local information to the project manager that could impact the scope, schedule and budget of the project		X	
Support: Provide assistance to the project manager/technical units regarding local stakeholder concerns and input	X		
Approval: The Division Engineer is the final decision-making authority for issues that cannot be resolved at the project manager/technical staff level with local stakeholders and for program related issues.			X
Professional Engineering Firms			
Initiate: (1) Information/assistance to PM and TM for scoping projects; (2) Cost, schedule, professional services estimates. (3) Developing/negotiating cost, scope, schedule for technical task(s), plans, and reports production.	X (1)(2)	X (2)	X (3)
Execute: (1) Project Management Services; Technical recommendations and solutions; Technical task(s), plans, and reports as assigned; Status reports;(2) Transferring across technical units necessary to complete assignments; Compliance with consultant agreement (3) Technical decisions to accomplish technical task(s)	X (1)	X (2)	X (3)
Quality: Professional/technical quality of work		X	
Communications: Adequate and timely notice to technical and project managers of any necessary changes to project cost, scope, schedule, and quality, and changes to the PEF agreement.		X	
Project Management Supervisor (non-project specific)			
Unit's program goals, objectives, schedules, budget, projects, program status/evaluation reports, policies/procedures and standards for developing project management plans	X		
Unit's program goals, monitoring/evaluating program mgmt. process, ensuring effective communication, provide leadership/coordination and mentoring project managers		X	
Managing assigned projects, approving/prioritizing projects, approval of PMPs, assure transfer of information			X

Team Building vs Team Alignment

Team Building

Building a collaborative and cooperative environment where team members work together effectively

Team Alignment

Ensuring each team member understands and is working toward project goals and objectives

Empower team participation; openly confront & resolve issues

Building the Team: *"None of us is as smart as all of us."* - *Ken Blanchard*

Project Manager Initiates Project, Team Building Begins

Yes, External

Decision on Internal, External Resources

Yes, Internal

Determine PEF Contract(s) or Procurement

Reach out to Technical Unit Head(s) PM Provides Scope and Schedule, Receive Feedback on Availability to Meet Requirements

If Not Available

If Available

PEF Selection / Negotiate Scope, Schedule. Budget

Negotiate Scope, Schedule & Staffing with Technical Manager(s)

If Agreement

Feed to Project Schedule

Document Final Scope, Schedule, Staffing

Begin Team Alignment

Team Building

What

Proactively bringing together a diverse set of individuals and developing them into a motivated team

Why

To achieve improved teamwork, enhanced interpersonal skills, improved overall project performance

Project Manager and Technical Unit Behaviors

- Open/effective communication
- Manage conflict in constructive manner
- Encourage collaborative problem-solving
- Empower and coach team members
- Trust building

The strength of the team is each individual member. The strength of each member is the team.

Phil Jackson

It is amazing what you can accomplish if you do not care who gets the credit.

Harry S. Truman

Team Building Exercise

GROUPS
- Instructions
- Work with your assigned group

GROUP DISCUSSION:
10 minutes
1. Each group selects a "facilitator/recorder" and "presenter" *Watch your time*
2. How are project teams currently formed? What communications occur?
3. What improvements can be made in that process?

REPORT OUT
- Gather as a class to discuss results

Team Building Exercise Handout
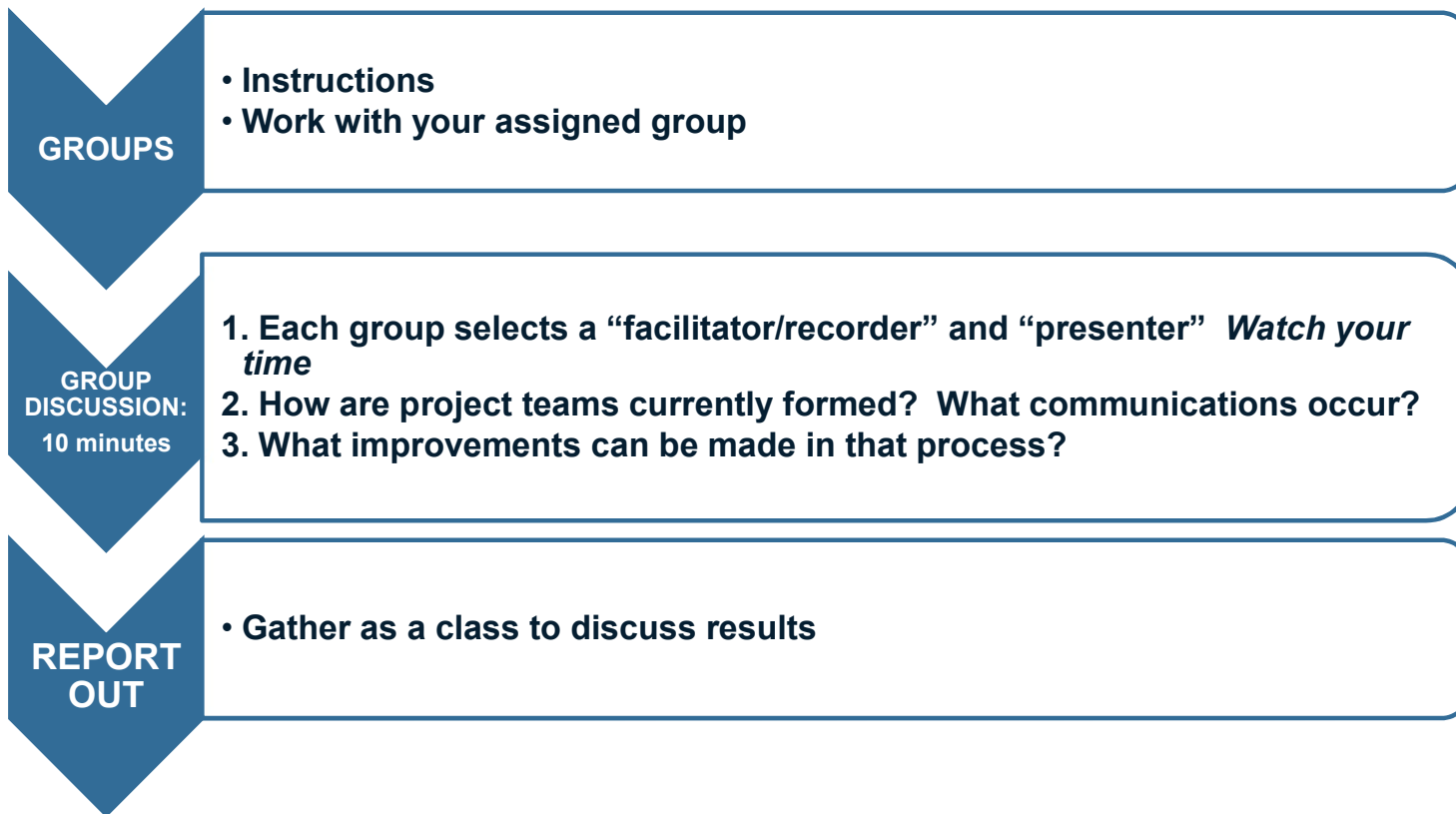
Session : 5
Project Team Communication and Issue Resolution

Roles & Responsibility Training
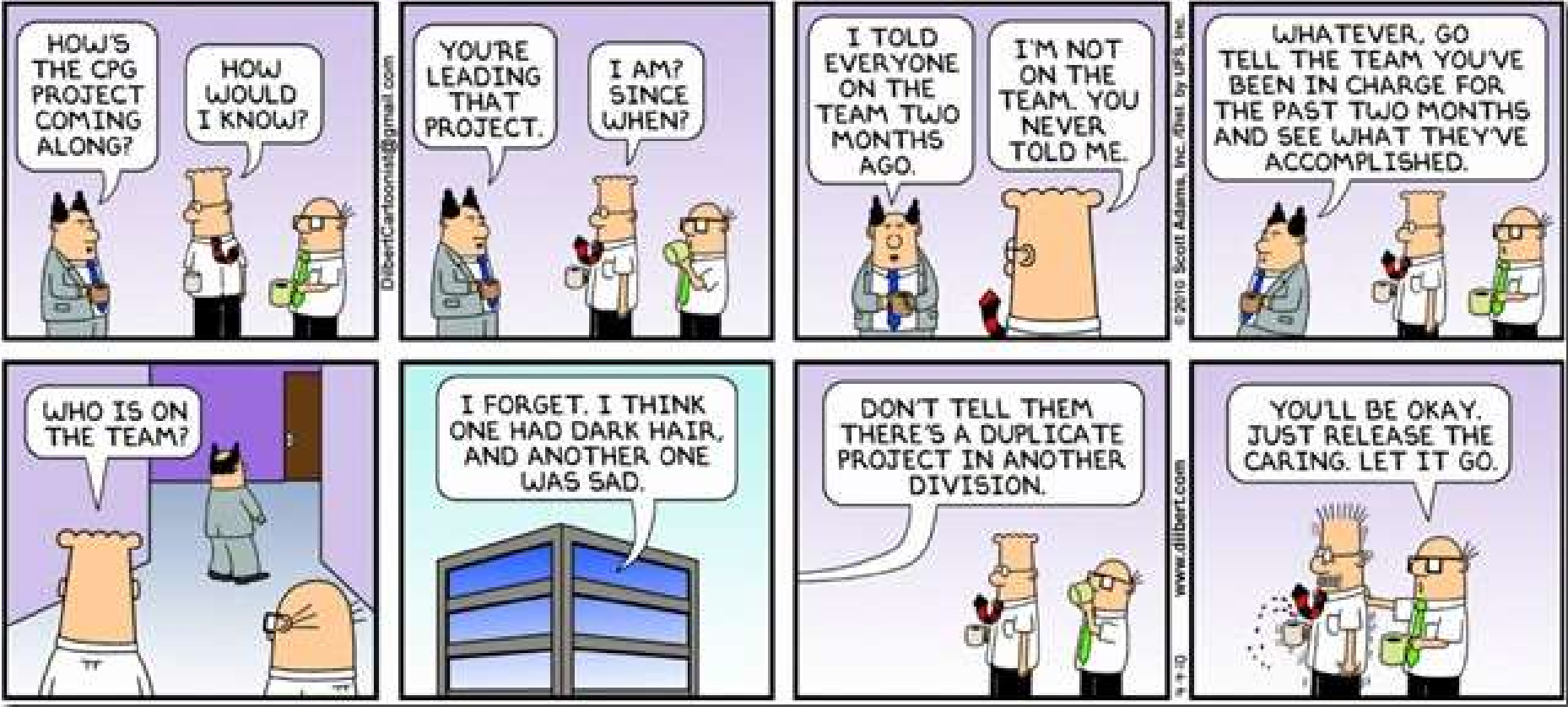
Project Communications

KEY: Communication among all spokes
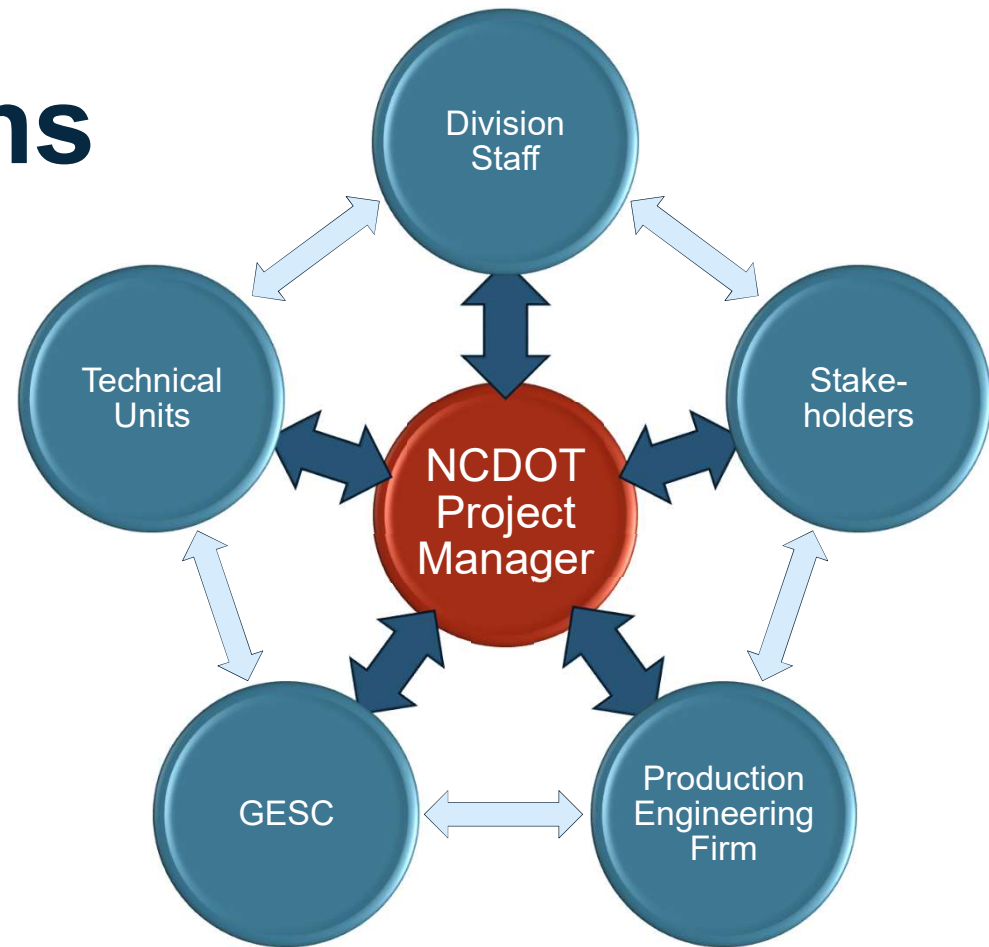
Project Team Communication Methods

20% of projects are unsuccessful due to ineffective Communications – *PMI*

Written (Passive)

- For Documenting
  - Email
  - Reports

Verbal (Active)

- For Understanding/Solving Problems
  - Face to Face meetings
  - Telephone
  - Webinars

Project Team Communication Methods

Verbal (Active)

- Face to Face meetings
- Telephone conference
- Webinars
- Telephone

It's More Than Words…

Words 7%

Body Language 55%

Voice Quality 38%
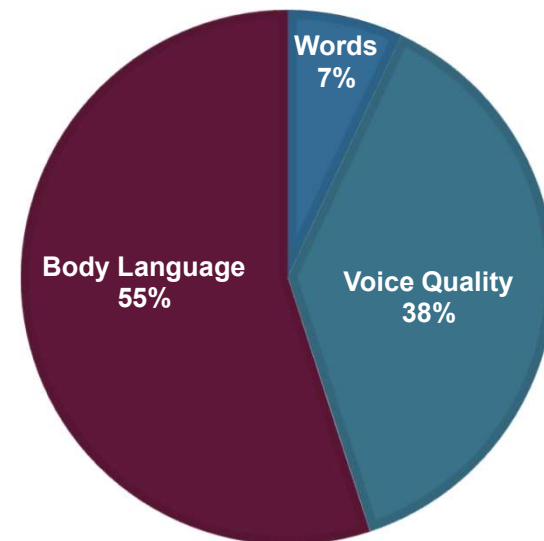
Project Team Communication Methods

Active Listening
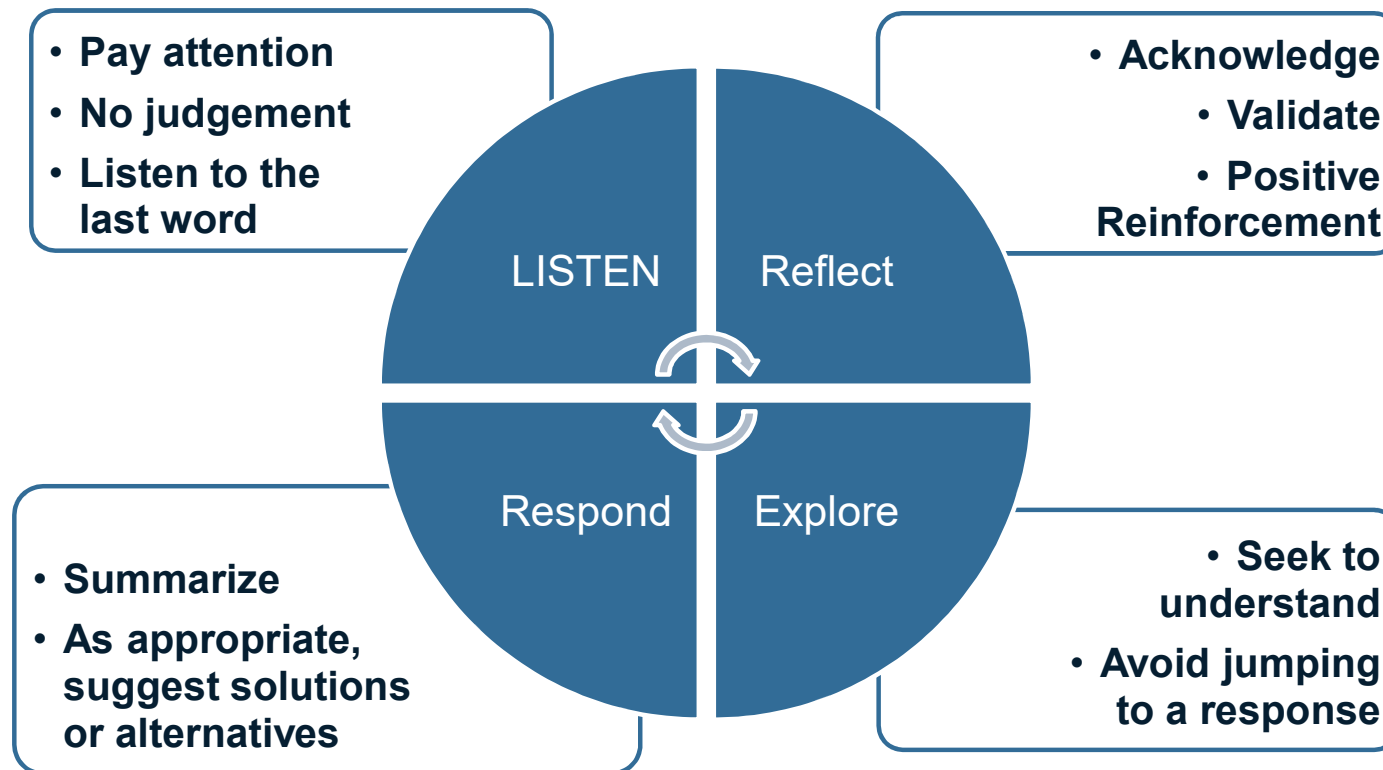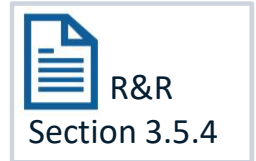
- **Pay attention**
- **No judgement**
- **Listen to the last word**

- **Acknowledge**
- **Validate**
- **Positive Reinforcement**

LISTEN | Reflect

Respond | Explore

- **Summarize**
- **As appropriate, suggest solutions or alternatives**

- **Seek to understand**
- **Avoid jumping to a response**

Team Meetings

Parameters for Team Meetings set in Communication Plan

- **Parameters for Team Meetings set in Communication Plan**
- **Team Meeting Guide provides Standardized Approach (Section 1.7.3)**
- **Define for all meetings:**
  - **Purpose**
  - **Desired Outcome**

Eight Rules of Effective Meetings

1. Email agenda 24 hours in advance
2. Start and finish on time
3. Stay on topic; be brief and concise
4. Share all relevant data
5. No distractions from mobile phones
6. Listen to and respect other people
7. Agree to actions and responsibilities
8. Send out timely meeting minutes

"Time isn't the main thing. It's the only thing." *- Miles Davis*

Issue Resolution

Project Authority

Division Engineer

Final decision-making authority	Address issues not resolved at the PM/Technical staff level	Included in issues with stakeholders	Handles issues regarding the Program

Project Manager

Resolve or elevate project issues and conflicts as necessary	Manage project within established Scope, Schedule, and Budget	Negotiate technical resource needs	Retaining consultants and negotiating contracts

Technical Units

Commit task production resources to project	Identify quality standards	Approve design exceptions	Coordinate with consultants on technical work	Provide direction to technical staff

62

Keys to Successful Issue Resolution

Be open-minded about possible solutions

Be aware of and respectful of differences

Focus on managing and resolving issues in a positive way

Control emotions and behavior

Listen and pay attention to feelings being expressed

NCDOT Issue Resolution Process (Escalation)

R&R
Section 1.3

Between technical units and/or consultant staff, PM informed

Level 1: Technical Issues

Level 2: Cost, Scope, Schedule, Quality, Contractual

Within Project Team, PM Actively Involved in resolving

Moves outside Project Team, PM lead role in resolving

Level 3: Cost, Scope, Schedule, Quality, Contractual

Level 4: Policy/Legal

PM coordinate resolution with Unit Heads or Technical Services Chief, may move to Chief Engineer

✓ **If legal - involve Assistant AG**

Document all Issues Levels 2-4

64

"Exploiting Opportunity" Steps for the Project Team
Technical Units/PEFs bring recommended solutions to the PM

Define the Issue — Start with a succinct factual issue statement including fixed parameters (with backup)

Determine the Causes — Cause/effect analysis: causes = obstacles
Critical to assure addressing cause, not symptom

Generate Ideas — Be opened minded on solutions; consider brainstorming or mind mapping if complex

Select the Best Solution — Consider trade-off analysis

Take Action — Create Action Plan to implement solution

"Results are gained by exploiting opportunities, not by solving problems."
- Peter Drucker

'Steps' from "Project Management Skills for New and Aspiring Project Managers" website

65

Issue Resolution Exercise

FORM GROUPS
- **Instructions**
- **Break into assigned groups**
- **Each group is provided a case**

GROUP DISCUSSION: 10 minutes
1. **Review scenario; quickly select a "Presenter" and a "Facilitator/Recorder" Watch you time.**
2. **Discuss the case and use Exploiting Opportunity Steps on the previous slide to outline the process and who should be involved**

REPORT OUT
- **Report out as a class**

Issue Resolution Exercise Handout

Questions and Comments from Sessions 4, 5

What do you need to be successful in your project delivery role?

Wrap-up

2-Day Project Manager Training

NCDOT PM Training – Project Management 101

Day 1

Welcome & Introductions

Session 1: What is Happening in North Carolina?

Session 2: Working Through Transitions

Session 3: Understanding & Working with Consultants

Session 4: Breakout Session – NCDOT Process Improvements

NCDOT PM Training – Project Management 101

Day 2

Session 1: Being a Successful Project Manager

Session 2: Quality

Session 3: Risk and Change Management

Session 4: Partnering and Working as a Team

Session 5: Communications

Thank you!