



# Introduction to Environmental Project Management Part 2 – Post Tender

Presented by: Jim Taylor, P. Eng.  
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# Presentation Content

- Introduction to Project Management
- Common steps in a project
- PMI/PMBOK – 5 processes
  - Executing
  - Monitoring and Controlling
  - Closing
- PMI/PMBOK – 10 Knowledge Areas

# Introduction

- PMI ( <http://www.pmi.org/> )
  - Project Management Institute
  - Certification body
- PMP ( <http://www.pmi.org/Certification/Project-Management-Professional-PMP.aspx> )
  - Project Management Professional
  - Certification process
- PMBOK ( <http://marketplace.pmi.org/Pages/ProductDetail.aspx?GMProduct=00101388701> )
  - Project Management Body of Knowledge
  - Provides knowledge for basis of certification

# Introduction

- Plan to Plan
- Concept of a Project
- 5 W's & How
- Apply to this conference
- Triple constraint
  - Time & Scope & Cost
- Plan > Do > Check > Act



# Common Steps in a Project

- Identify/Initiate project – Owner/Proponent
- *Perform feasibility study - Consultant*
  - *Approve study recommendations*
- Perform design - Consultant
- Tender - Consultant
- Construct - Contractor
- Close out project – Owner/Proponent

# PMBOK 5 Processes

- Experts in project management have identified 5 major processes that assist delivering a successful project.
  - Initiating
  - Planning

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  - Executing
  - Monitoring and Controlling
  - Closing

# 5 Processes - Executing

- Uses 6 knowledge areas
  - “Work the Plan” concept
  - Where one
    - builds the new waste disposal site,
    - holds the conference,
    - teaches the workshop
  - Direct and manage the work
  - Perform quality assurance
  - HR, Communications, procurement and stakeholder management

# 5 Processes - Executing

- Not every project advances according to plan
  - During execution, some components may have to be re planned.
    - Start excavation and find archeological site – may have to delay project; move site, halt the project.
    - Funding may cease to flow
    - Regulatory change in effluent quality

# 5 Processes - Monitoring and Controlling

- Major task using 9 knowledge areas
- Scope, time, cost and quality
  - Change one then the others will change
  - Change control process is needed
    - Change order process
    - Work order, CCO
  - Recommend corrective action



# 5 Processes - Monitoring and Controlling

- Monitor against the original plan.
  - Are team members, sub consultants / contractors performing acceptably?
  - Use to identify areas that need more help or time
    - If procurement is falling behind you may have to intervene.
      - Purchasing agent vs expeditor
    - If schedule is slipping
      - More workers? Longer days?
  - Monitor risks
    - Is bad weather approaching?

# 5 Processes – Closing

- The project ends
  - Close procurements
  - Get final drawings
  - Get shop drawings
  - Get maintenance manuals
  - Get operation manuals
  - Make final payments
    - Deficiency correction, warranty, holdback payments

# 5 Processes – Closing

- Obtain acceptance from client / customer
- Conduct post project review
  - Document the lessons learned
- Assess the team members performance
- Release project resources

# 10 Knowledge Areas – Project Integration Management

- Used in:
  - Execution – direct and manage the work
    - Lead and direct the team
    - Make decisions based on review of situation
  - Monitoring and Controlling
    - Conduct project meetings
    - Review and approve/recommend changes
    - Analyze data from other knowledge areas
  - Closing

# 10 Knowledge Areas – Project Scope Management

- Used in the Monitoring and Controlling process
  - Verify
    - Use project documentation (plans and specifications)
    - Inspection of components and full project
    - Site inspection
      - Compaction, concrete, structure,
      - May be by an outside agency and lab
      - Silt control measures

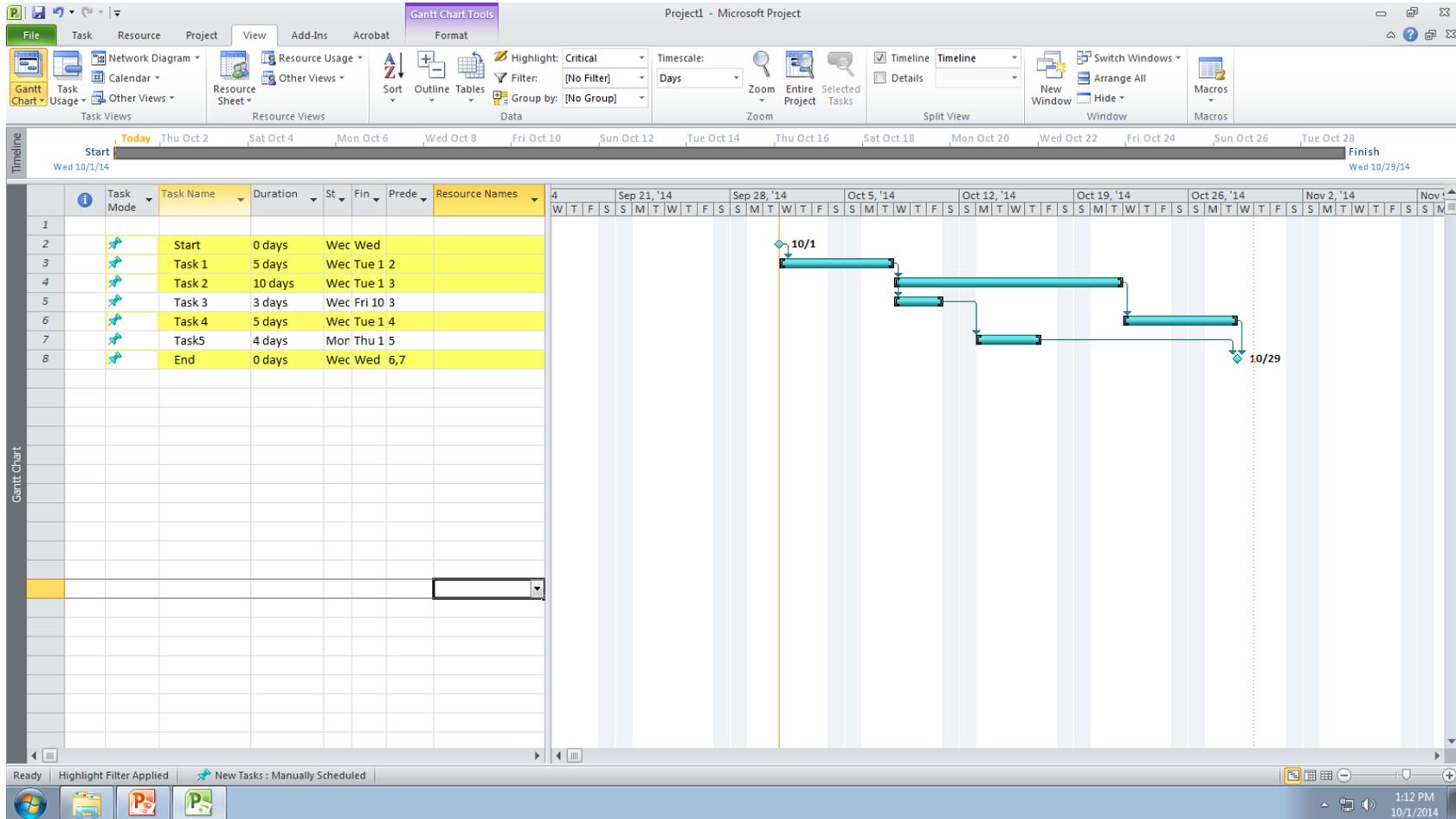
# 10 Knowledge Areas – Project Scope Management

- Control
  - Change order process
  - Work Order or CCO, if accepted becomes change order
  - Needs to be recorded to keep financial group happy
  - Fixed price – for the original scope
    - Additions / deletions to scope need to be documented

# 10 Knowledge Areas – Project Time Management

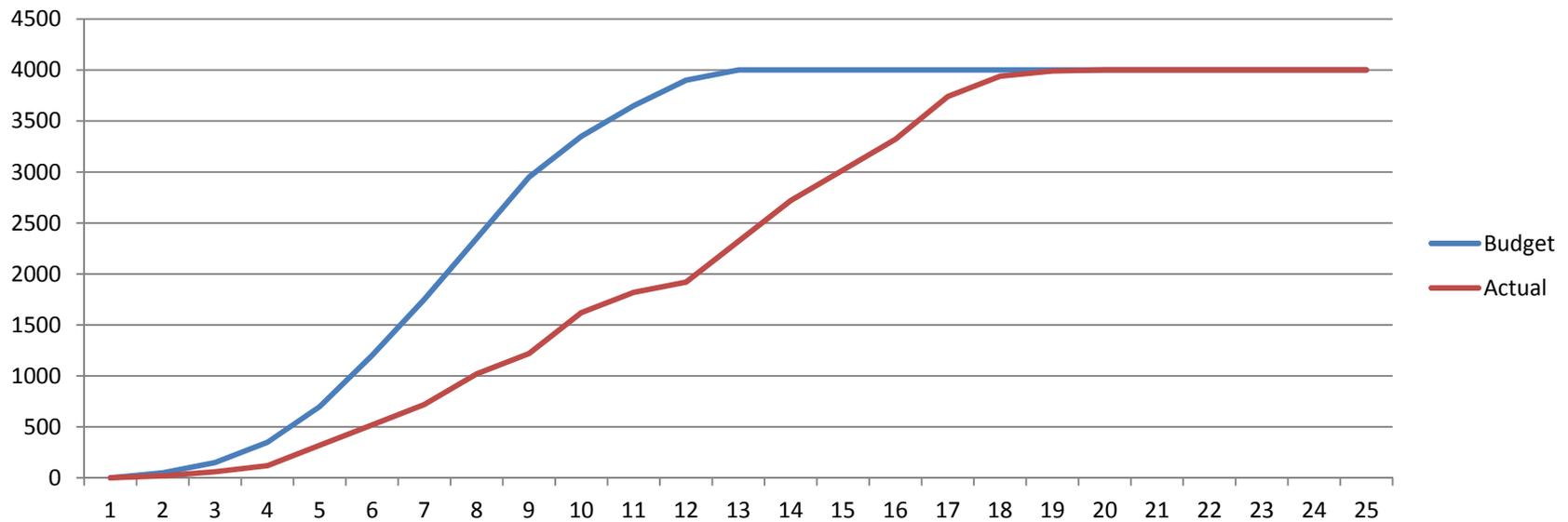
- Monitoring and Controlling Process
  - Record activities
    - Start time
    - Finish time
  - Monitor against baseline schedule
- Software to assist with this
  - MS Project
  - Primavera (high end)
- Critical Path

# 10 Knowledge Areas – Project Time Management



# 10 Knowledge Areas – Project Cost Management

- During Monitoring and Controlling
  - Control costs
  - Forecasting – EV (earned value), CV (cost variance)



# 10 Knowledge Areas – Project Cost Management

- Holdbacks
  - Construction lien act ( [http://www.e-laws.gov.on.ca/html/statutes/english/elaws\\_statutes\\_90c30\\_e.htm](http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90c30_e.htm))
    - For protection of workers
    - Nothing to do with defective work
- Deficiencies
  - Don't pay for defective work
  - Consider the cost to correct or redo
- Incomplete work
  - Don't pay for incomplete work
  - Consider the cost to complete

# 10 Knowledge Areas – Project Quality Management

- Used in
  - Executing
    - Concrete testing, soils analysis, material testing
    - May be done by a 3<sup>rd</sup> party under contract
    - May be the contractors responsibility
  - Monitoring and Controlling
    - Random samples – water testing for bacteria, metals, disinfection
    - Record keeping – location, date, time, weather, tested by

# 10 Knowledge Areas – Project Human Resource Management

- Executing
  - Acquire the team
    - Local team vs virtual team
    - Pre assign members
    - Negotiate on benefits, compensation
    - Subject matter experts
      - Biologists, chemists
      - Survey developers and analysts
      - Financial such as CA, CMA

# 10 Knowledge Areas – Project Human Resource Management

- Develop the team
  - Is some specialized training required?
  - Develop team approach
    - How?
- Manage the team
  - Observe, appraisals, conflict management

# 10 Knowledge Areas – Project Communications Management

- During the Executing process you should:
  - Distribute the information
  - Manage stakeholders expectations
  - Update the project documents
  - Utilize various communications methods
    - Name some
- During Monitoring and Controlling process:
  - Report performance
  - Present change requests to client / owner / funder

# 10 Knowledge Areas – Project Risk Management

- During Monitoring and Controlling
  - Deal with change due to risk event occurring
    - Bad storm damages work
    - Things beyond contractors control
      - Contractor should have insurance
  - Update project documents
  - Reassess risks if needed and update the risk management plan

# 10 Knowledge Areas – Project Procurement Management

- Procurement has involved
  - Materials
    - Need on time delivery
    - Winter road, fly in, barge
    - Has the proper quantity and quality arrived? Checklist is valuable
  - Equipment
    - Control the use, fuel availability so it can be used
  - Human resources
- Close procurement contracts

# 10 Knowledge Areas – Project Stakeholder Management

- Create issue log
  - Identify change requests
  - Update other documents as needed

# Summary

- Project Management requires understanding in 10 knowledge areas
- Applied to 5 processes
- Common sense is critical
- Recording and reporting of activities and events
- Project can be one phase of overall project
  - For you the solid waste site is a project
  - For someone, the required feasibility study is a project

# Closing

## Questions?

## Comments

Jim Taylor, P. Eng.

Senior Engineer, OFNTSC

[jtaylor@ofntsc.org](mailto:jtaylor@ofntsc.org)

Phone: 807-623-9595 (w) and 807-628-2309 (c)