





# WBS DICTIONARY DEVELOPMENT/DECOMPOSITION INSTRUCTIONS AND GUIDANCE

- CA WBS levels may not have CA specific assumptions or exclusions; therefore, for CA WBS elements, enter 'See individual WP level WBS elements for specific assumptions and/or exclusions.'
- Include the estimated/assumed duration for the WBS element in this section, typically in months (e.g. Duration: ## months)
  - Can refer to project-level WBS for duration assumptions

## Inputs/Outputs

- Inputs (I) are specific work activities or documents that are needed to perform the work activities identified in the WBS element
- Outputs (O) are specific work activities or documents that are completed or developed as an outcome of the scope in the WBS elements
- Control Account (CA) WBS levels may not have control account specific I/Os; therefore, for CA WBS elements, enter 'See individual WP level WBS elements for specific inputs and/or outputs.'
- If there are no I/Os, then simply indicate 'None' or NA'
- *I/Os are typically needed more for the project schedule than for cost estimating*

## Basis of Estimate

- BOE should include the anticipated resources (positions) and the level of support needed
  - List resources to be used to perform the scope of work in the WBS element
    - List of resources is available at the end of this document
    - DO NOT use or include labor/resource codes as they will be determined by Cost Estimating
  - Level of effort (LOE) support not required; however, you can include the % time by indicating ## FTE, which can range from 0.1 FTE - ## FTE
- CA WBS levels may not have CA specific BOE details; therefore, for CA WBS elements, enter 'See individual WP level WBS elements for specific BOE detail.'

## End State Description

- Enter the end state (ES) of the work activity in the WBS element
  - This can be a simple statement (e.g. Building construction complete) or multiple statements or additional detail
- For Class 4 estimates, ES is only provided at the project WBS level
- CA WBS levels may not have CA specific end states; therefore, for CA WBS elements, enter 'See individual WP level WBS elements for specific end states.'
- Include ES for Engineering Design, Construction Execution, and Subcontract Execution CAs
- If there is no ES for the specific WBS element, then indicate 'None' or 'NA' or only include when required

# WBS DICTIONARY DEVELOPMENT/DECOMPOSITION INSTRUCTIONS AND GUIDANCE

## **WBS Organization**

At the end of the WBS Dictionary Template, there is a WBS organizational chart that matches the WBS Dictionary template elements and content. Perform the following before finalizing the WBS:

- Update the WBS organization
- Delete any CAs or WPs that are not used
- Add any CAs or WPs that were created
- The chart will automatically adjust for sizing

*Recommend not using 'MSTS' in CA or WP titles as the M&O contractor changes periodically. Recommend using 'M&O' if you need to distinguish these activities.*

Below are some changes/modifications to specific CAs that you may consider depending on your project:

### CA Modifications

- Can add a 'Subcontractor Design Support' CA if a subcontractor will provide this support – this ensures subcontractor costs are captured separately as well as the subcontractor design element is its own schedule item. You'll need to add a corresponding 'Subcontractor design WP' as well.

### WP Modifications

#### *Engineering Design and Support*

- Configuration Management occurs in both Design Engineering Support CA and the Project Close-out CA; therefore, this WP can be put in either depending on where the majority of the work will be performed.

#### *Construction Execution*

- Can use/add the following WPs: Concrete, Earthwork
- Can split up the Construction Field Supervision and Support WBS WP into multiple WPs if needed (Construction Supervision, ES&H Support, QC Support) only if costs need to be tracked separately

#### *Project Close-out*

- Configuration Management occurs in both Design Engineering Support CA and the Project Close-out CA; therefore, this WP can be put in either depending on where the majority of the work will be performed.

# WBS DICTIONARY DEVELOPMENT/DECOMPOSITION INSTRUCTIONS AND GUIDANCE

*NOTE: Please ensure that subcontractor work activities are separate CAs and WPs from M&O contractor work activities and that M&O contractor work activities (CAs and WPs) do not have subcontractor resources included in the WBS element.*

## **Reviews**

Prior to sending your WBS dictionary to Estimating, perform the following:

- Update the Table of Contents (TOC)
- Have a technical SME for the project review and provide comments (Track changes) and incorporate any required updates and changes.
- Have another PPD PjM perform a peer review of the WBS (recommended for quality check and learning)
- Email Suzann Smith and request a review of the WBS to determine if it is adequate for the class of estimate you are requesting.

## **Approvals**

- Approval of the WBS is not required; however, it is recommended
- A section for approvals and concurrences is provided in the template – delete if not needed
- Recommend that the PjM and Program Manager review and approve WBS prior to submission to Cost Estimating to avoid issues and rework
  - This also helps to confirm/validate scope of work and deliverables
- Recommend signatures for high-rigor projects from the PjM and the Program Manager/Sponsor

## **Labor Resource Library**

See table below for a list of management / supervisory, technical, first responder, business support, administrative, and other labor resources for use in the BOE section of the WBS. Use the resource name or resource name – average rate.

## WBS DICTIONARY DEVELOPMENT/DECOMPOSITION INSTRUCTIONS AND GUIDANCE

### Labor Resource Listing

Labor Resource	Type
Administrative Specialist	Administrative
PROFESSIONAL ADMIN & RELATED	Administrative
Accountant	Business Support
Applications Analyst	Business Support
Auditor	Business Support
Business Assistant	Business Support
Business Process Analyst	Business Support
Business Specialist	Business Support
Communications Specialist	Business Support
Cyber Security Analyst	Business Support
Human Resources Specialist	Business Support
Infrastructure Analyst	Business Support
Intelligence Analyst	Business Support
Prime Contract Administrator	Business Support
Procurement Specialist	Business Support
Project Control Specialist	Business Support
Property Specialist	Business Support
Quality Assurance Specialist	Business Support
Regulatory Compliance Spec	Business Support
Safeguards & Security Specialist	Business Support
Technical Writer	Business Support
Tour Guides	Business Support
Traffic Specialist	Business Support
Training Specialist	Business Support
Work Control Coordinator	Business Support
Aircraft Mechanic	Craft
Asbestos Worker	Craft
Bootman Foreman	Craft
Bootman General Foreman	Craft
Butcher	Craft
Carpenter	Craft
Carpenter Foreman	Craft
Carpenter General Foreman	Craft
Carpenter Welder Foreman	Craft
Cement Mason	Craft
Cement Mason Foreman	Craft
CFC Cert. Refer Mechanic 4MN	Craft

## WBS DICTIONARY DEVELOPMENT/DECOMPOSITION INSTRUCTIONS AND GUIDANCE

Labor Resource	Type
CFC Cert. Refer Mechanic General Foreman	Craft
CFC Certified Refer Mechanic	Craft
Chef	Craft
Clark County Certified Welder	Craft
Comb Heavy Duty Repairman-Welder	Craft
Comb Heavy Duty Repairman-Welder Foreman	Craft
Comb Heavy Duty Repairman-Welder General Foreman	Craft
Custodian	Craft
Dinner Cook	Craft
Eqpt Op App 2	Craft
Equipment Greaser	Craft
Extra Heavy Duty Driver	Craft
Extra Heavy Duty Driver 4mn	Craft
Extra Heavy Duty Driver Genera	Craft
Floor Care Custodian	Craft
Forklift Driver	Craft
Forklift Driver Foreman	Craft
Fry Cook	Craft
General Lead Mechanic	Craft
Groundman	Craft
Guest Room Attendant	Craft
Heavy Duty Repairman	Craft
Heavy Duty Repairman Foreman	Craft
Head Service Attendant	Craft
Heavy Duty Repairperson	Craft
Inspectress/Inspector	Craft
Instrumentman	Craft
Laborer	Craft
Laborer Foreman	Craft
Laborer General Foreman	Craft
LD Repairman	Craft
Lead Maintenance Engineer	Craft
Lineman	Craft
Lineman Foreman	Craft
Lineman General Foreman	Craft
Linen Control Attendant	Craft
Locksmith	Craft

## WBS DICTIONARY DEVELOPMENT/DECOMPOSITION INSTRUCTIONS AND GUIDANCE

Labor Resource	Type
Locksmith Foreman	Craft
M Engineer Apprentice	Craft
Machinist Operator	Craft
Machinist Operator Foreman	Craft
Maintenance Engineer II	Craft
Millwright	Craft
Millwright Foreman	Craft
Millwright Welder	Craft
Miner (Tunnel Worker)	Craft
Miner (Tunnel Worker) MRT	Craft
Painter	Craft
Painter Foreman	Craft
Party Chief Foreman	Craft
Pipefitter	Craft
Pipefitter Foreman	Craft
Pipefitter General Foreman	Craft
Plumber Foreman	Craft
Power Saw Operator	Craft
Power Saw Operator Foreman	Craft
Power Saw Operator General Foreman	Craft
Reinforcing Ironworker	Craft
Reinforcing Ironworker Foreman	Craft
Second Cook	Craft
Shaft Raise & Stope Miner MRT	Craft
Sheet Metal Worker	Craft
Sheet Metal Worker Foreman	Craft
Sheet Metal Worker General Foreman	Craft
Sprinkler Fitter	Craft
Sprinkler Fitter Foreman	Craft
Sprinkler Fitter General 4mn	Craft
Stock/Supply Coordinator	Craft
Storekeeper	Craft
Structural Ironworker	Craft
Structural Ironworker Foreman	Craft
Structural Ironworker General	Craft
Tireman	Craft
Tireman Foreman	Craft
Wireman	Craft
Wireman Foreman	Craft

## WBS DICTIONARY DEVELOPMENT/DECOMPOSITION INSTRUCTIONS AND GUIDANCE

Labor Resource	Type
Wireman General Foreman	Craft
AFC/EMTI/CIC/H/TR3(56)	First Responder
Basic Para/CIC/H(56)ELF/UDBA	First Responder
Basic Para/CIC/H/TR2/ELF/UDBA	First Responder
Bat Ch C/H/TR2(56)ELF/UDBA	First Responder
Captain/C/H/EMTI/TR3(56)	First Responder
Chiefs Aid/EMTI/CIC/H/Tr/TR3	First Responder
CIC Operator	First Responder
Engineer/EMTI/CIC/H/TR2	First Responder
Fire Inspector (4/10)	First Responder
Firefighter/CIC/EMT-1/56	First Responder
Firefighter/EMT/CIC/H/TRII	First Responder
Firefighter/EMT-A (56)	First Responder
Firefighter/EMT-A/HAZ (56)	First Responder
Firefighter/EMTA/TR3 (40)	First Responder
Firefighter/Lead/CIC/EMT	First Responder
FP Tech/EMT-A/TR3 (40)	First Responder
FP Tech1/EMTI/CIC/H/TR1	First Responder
FP Tech1/EMTI/CIC/H/TR3	First Responder
Lieutenant/EMTA/H/TR3	First Responder
Physician Asst, Nurse, Other Medical	First Responder
S&S Business Agent	First Responder
S&S CAS Operator	First Responder
S&S OPS Sergeant	First Responder
S&S Shift Captain	First Responder
S&S SPO	First Responder
S&S SPO - Lieutenant	First Responder
Sr Medic CIC/H/TR2(56)ELF/UDBA	First Responder
Tr Captain/C/H/TR1(56)UDBA	First Responder
Business Manager	Management / Supervisory
Executive	Management / Supervisory
Facility Manager	Management / Supervisory
Manager	Management / Supervisory
Operations Supervisor	Management / Supervisory
Program Manager	Management / Supervisory
Project Manager	Management / Supervisory
Supervisor	Management / Supervisory
Captain Pilot	Other
Chemical Engineer	Other

## WBS DICTIONARY DEVELOPMENT/DECOMPOSITION INSTRUCTIONS AND GUIDANCE

Labor Resource	Type
Architectural	Technical / Engineering
Chemist	Technical / Engineering
Civil Engineer	Technical / Engineering
Computer Engineer	Technical / Engineering
Cost Estimator	Technical / Engineering
CSE Civil Engineer	Technical / Engineering
CSE Electrical Engineer	Technical / Engineering
CSE Fire Protection Engineer	Technical / Engineering
CSE Mechanical Engineer	Technical / Engineering
Diagnostic Engineer	Technical / Engineering
Diagnostic Scientist	Technical / Engineering
Diagnostic Technician	Technical / Engineering
Digital Imaging Technician	Technical / Engineering
Drafter	Technical / Engineering
Electrical Engineer	Technical / Engineering
Electrical Technician	Technical / Engineering
Electro Mechanical Technician	Technical / Engineering
Electro Optics Scientist	Technical / Engineering
Electro Optics Technician	Technical / Engineering
Electronic & Hardware Design Engineer	Technical / Engineering
Electronic Design Technician	Technical / Engineering
Electronic Engineer	Technical / Engineering
Electronic Technician	Technical / Engineering
Emergency Response Specialist	Technical / Engineering
Engineering Technologist	Technical / Engineering
Environmental Engineer	Technical / Engineering
Environmental Sciences Tech	Technical / Engineering
Environmental Scientist	Technical / Engineering
Facilities Specialist	Technical / Engineering
Fiber Optic Technician	Technical / Engineering
Field Engineers	Technical / Engineering
Fire Alarm Technician	Technical / Engineering
Fire Protection Engineer	Technical / Engineering
Flight Safety Specialist	Technical / Engineering
Geographical System Scientist	Technical / Engineering
Geologist	Technical / Engineering
Graphic Design Technician	Technical / Engineering
Hazards Analyst	Technical / Engineering
Health Physics Technician	Technical / Engineering

## WBS DICTIONARY DEVELOPMENT/DECOMPOSITION INSTRUCTIONS AND GUIDANCE

Labor Resource	Type
Imager Scientist	Technical / Engineering
Industrial Hygienist	Technical / Engineering
Industrial Safety/Health Tech	Technical / Engineering
Instrument Technician	Technical / Engineering
IT Support Specialist	Technical / Engineering
Laboratory Technician	Technical / Engineering
Laser Systems Engineer	Technical / Engineering
Legal Counsel	Technical / Engineering
Life Scientist	Technical / Engineering
Maintenance Specialist Scheduler	Technical / Engineering
Maintenance Specialist	Technical / Engineering
Material Planning & Control Specialist	Technical / Engineering
Material Scientist	Technical / Engineering
Mathematician	Technical / Engineering
Mechanical Engineer	Technical / Engineering
Mechanical Technician	Technical / Engineering
Metrology Technician	Technical / Engineering
Network Engineer	Technical / Engineering
Network Technician	Technical / Engineering
Nuclear Engineer	Technical / Engineering
Nuclear Facilities Ops	Technical / Engineering
Nuclear Physicist	Technical / Engineering
Optical Engineer	Technical / Engineering
Other Engineer	Technical / Engineering
Physicist	Technical / Engineering
Process Control Engineer	Technical / Engineering
Process Control Technician	Technical / Engineering
Project Engineer	Technical / Engineering
Pulse Power Scientist	Technical / Engineering
Pulse Power Technician	Technical / Engineering
Quality Assurance Engineer	Technical / Engineering
Quality Control Engineer	Technical / Engineering
Quality Control Inspector	Technical / Engineering
Radiological Control Tech	Technical / Engineering
Radiological Scientist	Technical / Engineering
Safety Specialist	Technical / Engineering
Senior Scientist	Technical / Engineering
Software Engineer	Technical / Engineering
Software Engineer/Scientist	Technical / Engineering

**WBS DICTIONARY DEVELOPMENT/DECOMPOSITION  
INSTRUCTIONS AND GUIDANCE**

Labor Resource	Type
Structural Engineer	Technical / Engineering
Subcontract Technical Rep (STR)	Technical / Engineering
System Engineer	Technical / Engineering
Technician	Technical / Engineering
TECHNICIANS	Technical / Engineering
Telecommunications Technician	Technical / Engineering
Work Planner	Technical / Engineering