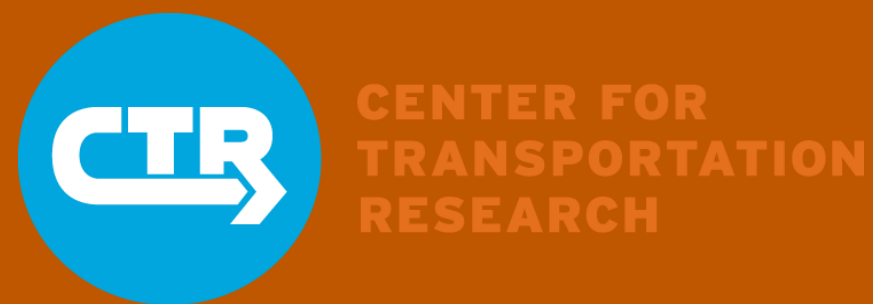




CONSTRUCTION MANAGEMENT PLAN (CMP) BEST PRACTICES & RECOMMENDATIONS

0-7182 Research Project, | August 2025



CONTENTS

- **CMP Definition and Components**
- **CMP Development Best Practices**
- **Key Findings from 0-7182 Determine Effectiveness of CMPs**
- **Recommendations on CMP Format and Content Aligned with the CMP SOP and CMP Development Best Practices**
- **Additional Recommendations**

CMP DEFINITION AND COMPONENTS



CMP Definition and Components

- Construction Management Plan (CMP) is the step that has been developed in the PS&E to mitigate the risk of delays in construction due to unclear project certificates including: right-of-way acquisition (ROW), ROW encroachment, ROW relocation, utility conflicts (UTL), railroad agreement (RR), and environmental (ENV) conflicts.
- A complete CMP includes the following documents in predefined formats:
 - Cover Memo (signed)
 - Certifications (signed)
 - Construction Time Determination (CTD) (signed)
 - Traffic Control Plan (TCP) Phase Narrative (signed & sealed)
 - Conflict Layout (signed & sealed)
- CMP must be completed for every project with unclear certification(s), clearing after letting to ensure compliance with 23 CFR §635.309. The CMP must be reviewed by the DE or District TP&D Director. The TxDOT Administration reviews/approves CMP when conflicts clear more than three months after letting.

Cover Memo

- The cover memo is an executive summary prepared for TxDOT's Administration describing the steps that will be shown in the plans to mitigate the risk of delays in construction due to unclear certifications. It should summarize the plan but not duplicate the data that will be provided in the appendices. Cover memos must be signed by the District Engineer (D.E.) or the District TP&D Director.
- The cover memo must include:
 - General project information.
 - A statement whether there is a convenience or compulsory delayed start, the length of delay, and the reason for the delay.
 - A summary of each certification type.
 - Relevant details of the plan to clarify level of risk, complexity, and how the plan mitigates possible delays from unclear certifications.
 - Any other information describing why the CMP is necessary.

Certifications

- Certifications are required on every statewide let project, not just when there are conflicts.
- Certifications should succinctly provide all pertinent information regarding the status of unclear ROW acquisition, ROW encroachments, ROW relocations, UTL relocations, state-owned utility conflicts, railroad agreements, and environmental surveys/permits. Details required in every certification include conflict location, estimated clearance date, affected construction phase and/or step, affected construction phase/step start date, buffer, and a description of construction.
- Certifications are submitted at least twice during the PS&E development process as draft certifications and final certifications and must utilize the certification templates.
 - ✓ Draft Certifications: Draft Certifications must include all conflicts present at the time of creating the document. Draft certifications are due four months before letting.
 - ✓ Final Certifications: Final certifications are signed and required to be included in every statewide construction PS&E submittal.

Certifications

When unclear conflicts are not expected to clear before letting, the following project certifications are required:

- ROW – A ROW certification is required when there are pending acquisitions, demolitions, relocations, or active encroachments within the project limits.
- Environmental Surveys/Permits – While all projects must receive environmental clearance to be ready to let, this certification captures any pending environmental activities necessary for construction.
- Railroad – A railroad certification is required when an agreement between TxDOT and the railroad(s) has not been executed. Maintenance notifications count as "agreements" and should be documented in the certifications the same as formal railroad agreements.
- Utility – The utility certification is required for all unclear publicly and privately owned utility conflicts, including, but not limited to pedestals, manholes and water valves. The utility certification must identify all known utility conflicts that are present at the time of producing the document.
- Districts should scrutinize clearance dates provided by the utility companies. The estimated clearance dates in the certifications and CMP must be the date that the district thinks the utilities will clear, not necessarily when the utility company has certified that they will clear. If a particular utility is notoriously late completing their work, the district should add additional time to the clearance date so that it is more realistic. Joint-bid utilities do not need to be included in the certifications.
- State-Owned Utility – A State-Owned Utility certification must list any state-owned utility conflicts that are present. Identifying state-owned utilities in the certification ensures the conflicts are accounted for and cleared during construction, if needed.
- CMP Approval – A CMP approval certification is required on all CMPs to certify that all unclear conflicts are accurately identified in the certifications.

Construction Time Determination (CTD)

- The CTD is a logical critical-path method schedule including all construction activities in the project. All unclear conflicts must be included in the CTD as activities. Refer to the DES-FPP website for CTD guidance and Delayed Start provisions. An example is provided in Appendix A – Sample Construction Management Plan.

TCP Phase Narrative

- The TCP Phase Narrative provides an overview of the sequence of work shown in the traffic control plans. When a CMP is required, a note must be added to the TCP Phase Narrative restricting the contractor from working in any areas where conflicts have not been resolved and included in the plan set for the 100% PS&E submittal. An example is provided in Appendix A – Sample Construction Management Plan.

Conflict Layout

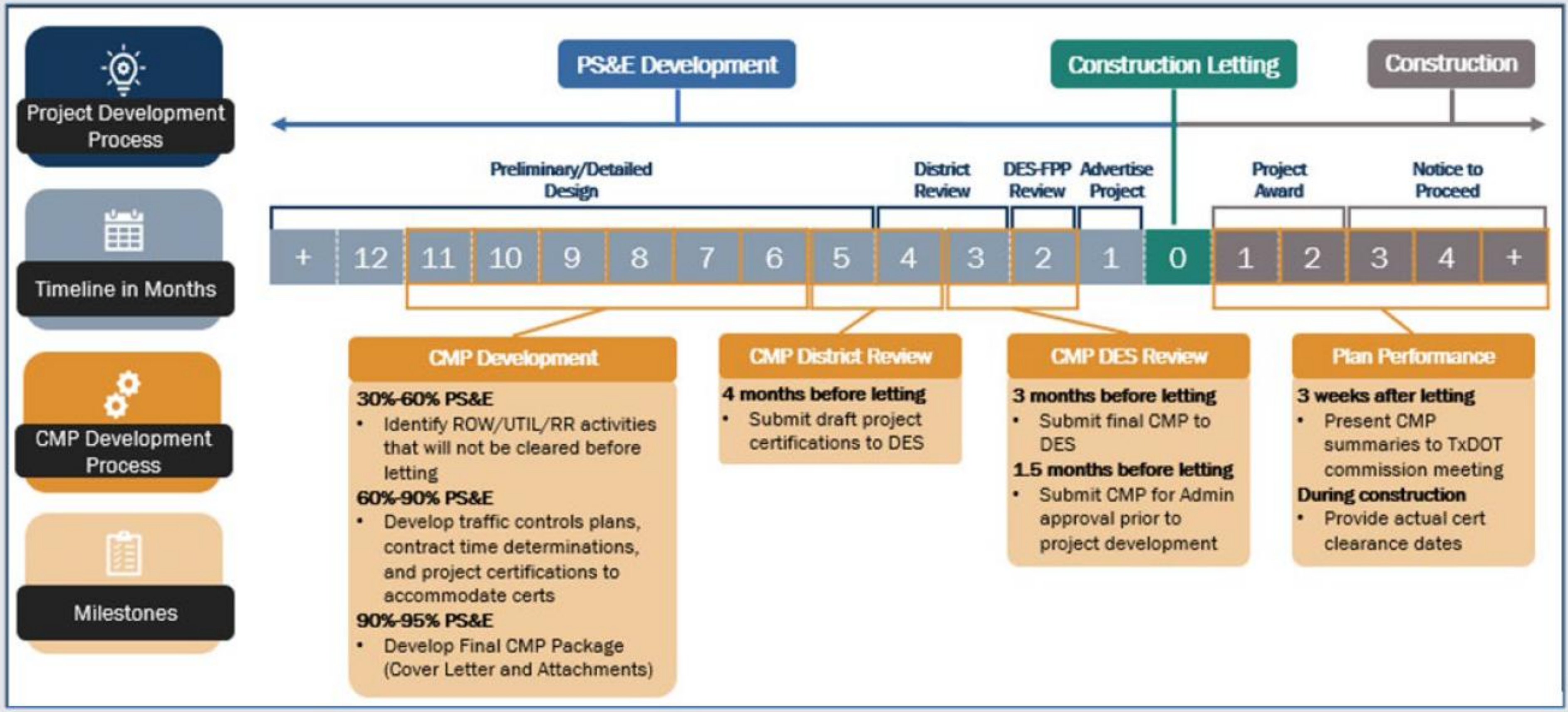
- The conflict layout sheet depicts all phases of construction and identifies all conflicts at the time letting. Depending on the project scope or length, multiple conflict layout sheets may be appropriate. The sheet(s) must be included in the plan set for the 100% PS&E submittal and include the following note:
 - THE PURPOSE OF THESE PLANS IS TO PROVIDE AN OVERVIEW OF THE EXPECTED UTILITY ACCOMMODATIONS ON THIS PROJECT. THESE PLANS SHOW, WHAT TXDOT BELIEVES TO BE, THE APPROXIMATE LOCATIONS AND ESTIMATED CLEAR DATES OF THE EXISTING UTILITIES, AND PROPOSED RELOCATIONS, OR ADJUSTMENTS. THESE PLANS ARE PROVIDED FOR INFORMATION PURPOSES ONLY AND SHOULD NOT BE SOLELY RELIED UPON WITHOUT FIELD VERIFICATION. ALL PROPOSED UTILITY ADJUSTMENTS TO BE INCLUDED IN THE HIGHWAY CONTRACT ARE IDENTIFIED WITH AN ASTERISK (*) TO DENOTE JOINT BID UTILITY WORK. THE JOINT BID UTILITY PLANS AND SPECIFICATIONS ARE TO BE PROVIDED BY THE UTILITY OWNER AS PART OF THEIR PS&E SUBMITTAL.
 - THE LOCATIONS OF EXISTING AND PROPOSED WATER MAINS, GAS MAINS, STORM SEWERS, SANITARY SEWERS, ELECTRIC, FIBER OPTICS LINES AND OTHER UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE TO TXDOT AND MAY NOT INCLUDE ALL UTILITIES ACTUALLY LOCATED WITHIN THE PROJECT. THE INFORMATION SHOWN CONCERNING TYPE AND LOCATION OF UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL EXACT UTILITY TYPES AND LOCATIONS PRIOR TO PERFORMING THE WORK.
- Notations for unclear conflicts must contain the utility name, parcel owner or ID, railroad name, etc., and clearance date. An example is provided in Appendix A – Sample Construction Management Plan.

Sample, Guide and Templates

Walkthrough CMP-SOP Appendices

- Appendix A – Sample Construction Management Plan
- Appendix B – CMP Best Practices and Certification Guide
- Appendix C – Cover Memo Template
- Appendix D – Certification Templates
- Appendix E – 000SP Template

Development and Review Process



All draft certifications and final CMPs, needing TxDOT Administration approval, must be sent to DES_FPP_ePS&E@txdot.gov.

CMP DEVELOPMENT BEST PRACTICES



CMP Development Best Practices

General

1. Have a good plan for every project. Clearance dates often change at the last minute, so make sure that once a conflict is identified, you have a contingency plan for avoiding it if it is delayed.
2. As soon as it's determined that the project has conflicts clearing after letting, the district should begin drafting a CMP.
3. The district review process should include District Utility, ROW, and Railroad coordinators, as well as the District Construction Area Office.
4. Any conflict that is not clear should be included in the certifications, even if it will be clear prior to letting.
5. The district should verify ROW, utility, and railroad information in TxDOT CONNECT is complete and correct.
6. Complete the TxDOT CONNECT Ready to Let Checklist for all items related to project certifications and the CMP.
7. If conflicts are added to the CMP after it is approved, the CMP must be re-reviewed and possibly sent through the approval process again.
8. Districts should review consultant CMPs thoroughly before forwarding them to DES-FPP.
9. Ensure conflict clearance dates and phase dates are consistently referenced throughout the CMP and match the certification.
10. Submit one CMP document per CCSJ with all the necessary supporting documents attached.

Memo

11. Only pick one paragraph per certification type.
12. Discuss buffers of four months or less and specify how construction won't be delayed (Memo template, paragraph 8).

CMP Development Best Practices

Certifications

13. Buffers greater than four months are recommended for all conflicts.
14. Scrutinize estimated clearance dates received from utility owners.
15. Certification dates don't have to match the utility owner dates if they are not realistic. District is responsible for meeting the clearance dates in the certifications.
16. Attach all certifications, even if they are clear.
17. Maximize buffers.
18. Clearance dates on final certifications and CMPs must be shown on or after the 1st of the month following the commission meeting.
19. Convenience delays should not be calculated in the buffer. (See Delayed Start SOP.)
20. Round buffers to the nearest whole month.
21. Identify critical dates with an "*". The critical date is the date work can be done within the affected phase up until the conflict exists.
22. Cross-reference conflicts if any conflicts are dependent on other conflicts clearing.
23. Sort conflicts chronologically by phase.
24. Dates should include the month, day, and year.
25. "None," "No effect on construction," or the like is not allowed in the effect on construction column.
26. Encroachment certification should identify whether the encroachments will remain in place or be adjusted.

CMP Development Best Practices

CTD

- 27. Include conflicts as activities.
- 28. Conflicts should be identified by name.
- 29. Convenience delays should not be included in the schedule.

TCP Narrative

- 30. Include a note in the TCP Phase Narrative restricting the contractor from working where conflicts have not been resolved.
- 31. Consider including language like:

Working within the vicinity of known utility conflicts prior to the respective dates listed on Special Provision 000-XXX is solely the risk of the contractor. The Department will not consider either monetary or time relief for inefficient work or any other impacts prior to the respective utility relocation dates.

CMP Development Best Practices

Conflict Layout

32. Conflict layout must be in the final PS&E submittal and include the following note:

NOTES:

THE PURPOSE OF THESE PLANS IS TO PROVIDE AN OVERVIEW OF THE EXPECTED UTILITY ACCOMMODATIONS ON THIS PROJECT. THESE PLANS SHOW, WHAT TXDOT BELIEVES TO BE, THE APPROXIMATE LOCATIONS AND ESTIMATED CLEAR DATES OF THE EXISTING UTILITIES, AND PROPOSED RELOCATIONS, OR ADJUSTMENTS. THESE PLANS ARE PROVIDED FOR INFORMATION PURPOSES ONLY AND SHOULD NOT BE SOLELY RELIED UPON WITHOUT FIELD VERIFICATION. ALL PROPOSED UTILITY ADJUSTMENTS TO BE INCLUDED IN THE HIGHWAY CONTRACT ARE IDENTIFIED WITH AN ASTERISK (*) TO DENOTE JOINT BID UTILITY WORK. THE JOINT BID UTILITY PLANS AND SPECIFICATIONS ARE TO BE PROVIDED BY THE UTILITY OWNER AS PART OF THEIR PS&E SUBMITTAL.

THE LOCATIONS OF EXISTING AND PROPOSED WATER MAINS, GAS MAINS, STORM SEWERS, SANITARY SEWERS, ELECTRIC, FIBER OPTICS LINES AND OTHER UTILITIES AS SHOWN ON THESE PLANS ARE BASED ON THE BEST INFORMATION AVAILABLE TO TXDOT AND MAY NOT INCLUDE ALL UTILITIES ACTUALLY LOCATED WITHIN THE PROJECT. THE INFORMATION SHOWN CONCERNING TYPE AND LOCATION OF UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY ALL EXACT UTILITY TYPES AND LOCATIONS PRIOR TO PERFORMING THE WORK.

33. The conflict layout can be created by using the project layout sheet, overlaying the project phasing, and adding callouts for all conflicts.

34. Accurately call out and redline conflicts and ensure they are consistent with the certifications.

35. Include a legend to denote project phasing.

36. Callouts must contain utility name, parcel owner, railroad name, etc., and clearance date.

CMP Development Best Practices

Utility Adjustment Certification

UID # / UTILITY	LOCATION	PHASE/STEP IMPACTED	PHASE/STEP START DATE	ESTIMATED CLEARANCE DATE	BUFFER	UNCLEAR ROW PARCEL ID #	DESCRIPTION OF CONSTRUCTION
Include the utility name and UID number.	Include the station(s) where the conflict occurs.	Provide the earliest occurring Phase or Step that will be impacted if the conflict is not clear.	Phase or Step start date that will be impacted if the conflict is not clear. Include an "*" with the date if a critical date is used. Example: 1/1/2024*	The estimated clearance date must be the date that the district thinks the utilities will clear, not necessarily when the utility company has certified that they will clear.	Provide the buffer in whole months, rounded to the nearest whole month.	Include the unclear ROW parcel ID number if the unclear utility is delayed/impacted by a ROW or ENV conflict.	Describe the construction that would be delayed if the conflict does not clear on time.

CMP Development Best Practices

State-Owned Utilities Certification				
RESPONSIBLE DEPARTMENT	ASSET DESCRIPTION	LOCATION	PHASE/STEP IMPACTED	DESCRIPTION OF CONSTRUCTION
Department responsible for asset in conflict with construction.	Type of state-owned utility. Examples: ITS, WIMS, etc.	Include the station(s) where the conflict occurs.	Provide the earliest occurring Phase or Step that will be impacted if the conflict is not clear.	Describe the construction that would be delayed if the conflict does not clear on time.

*Refer to the Traffic Data Collection resources page for more information: <https://www.txdot.gov/business/resources/traffic-data-collection.html>

CMP Development Best Practices

ROW Certification

PARCEL ID # AND OWNER	LOCATION	PHASE/STEP IMPACTED	PHASE/STEP START DATE	ESTIMATED CLEARANCE DATE	BUFFER	UNCLEAR UTILITY IMPACTED UID #	DESCRIPTION OF CONSTRUCITON
Include the parcel ID number and parcel owner.	Include the station(s) where the conflict occurs.	Provide the earliest occurring Phase or Step that will be impacted if the conflict is not clear.	Phase or Step start date that will be impacted if the conflict is not clear. Include an "*" with the date if a critical date is used. Example: 1/1/2024*	The estimated clearance date is the date the parcel will be clear for construction (inclusive of acquisition & demolition).	Provide the buffer in whole months, rounded to the nearest month.	Include the utility UID number if the unclear utility is delayed/impacted by a ROW conflict.	Describe the construction that would be delayed if the conflict does not clear on time.

PARCEL ID # AND OWNER	PUA AGREEMENT DATE
Include the parcel ID number and parcel owner.	Include the PUA agreement date.

CMP Development Best Practices

Encroachment Certification							
ENCROACHMENT DESCRIPTION	LOCATION	PHASE/STEP IMPACTED	PHASE/STEP START DATE	ESTIMATED CLEARANCE DATE	BUFFER	UNCLEAR UTILITY IMPACTED UID #	DESCRIPTION OF CONSTRUCTION
Describe the encroachment (ex: fence, sign, parking lot, etc.)	Include the station(s) where the conflict occurs.	Provide the earliest occurring Phase or Step that will be impacted if the conflict is not clear.	Phase or Step start date that will be impacted if the conflict is not clear. Include an "*" with the date if a critical date is used. Example: 1/1/2024*	The estimated clearance date is the date the encroachment will be clear for construction.	Provide the buffer in whole months, rounded to the nearest month.	Include the utility UID number if the unclear utility is delayed/impacted by a ROW conflict.	Describe the construction that would be delayed if the conflict does not clear on time. State whether the encroachment will remain in place or be removed.

CMP Development Best Practices

Relocation Certification

PARCEL ID # AND OWNER	LOCATION	PHASE/STEP IMPACTED	PHASE/STEP START DATE	ESTIMATED CLEARANCE DATE	BUFFER	UNCLEAR UTILITY IMPACTED UID #	DESCRIPTION OF CONSTRUCITON
Include the parcel ID number and parcel owner.	Include the station(s) where the conflict occurs.	Provide the earliest occurring Phase or Step that will be impacted if the conflict is not clear.	Phase or Step start date that will be impacted if the conflict is not clear. Include an "x" with the date if a critical date is used. Example: 1/1/2024x	The estimated clearance date is the date the relocation will be clear for construction.	Provide the buffer in whole months, rounded to the nearest month.	Include the utility UID number if the unclear utility is delayed/impacted by a ROW conflict.	Describe the construction that would be delayed if the conflict does not clear on time.

CMP Development Best Practices

Railroad Certification

RAILROAD COMPANY	LOCATION	DOT No.	PHASE/STEP IMPACTED	PHASE/STEP START DATE	ESTIMATED EXECUTION DATE	BUFFER	DESCRIPTION OF CONSTRUCTION
Include the railroad company name.	Include the station(s) where the conflict occurs.	A six-digit number with an alpha character at the end assigned to each highway-railroad crossing.	Provide the earliest occurring Phase or Step that will be impacted if the conflict is not clear.	Phase or Step start date that will be impacted if the conflict is not clear. Include an “*” with the date if a critical date is used. Example: 1/1/2024*	The estimated execution date is the date the rail agreement will be completed/finalized.	Provide the buffer in whole months, rounded to the nearest month.	Describe the construction that would be delayed if the conflict does not clear on time.

CMP Development Best Practices

Environmental Certification

PARCEL ID # AND OWNER	LOCATION	PHASE/STEP IMPACTED	PHASE/STEP START DATE	ESTIMATED CLEARANCE DATE	BUFFER	OTHER CERTIFICATION IMPACTED	DESCRIPTION OF CONSTRUCTION
Include the parcel ID number and parcel owner.	Include the station(s) where the conflict occurs.	Provide the earliest occurring Phase or Step that will be impacted if the conflict is not clear.	Phase or Step start date that will be impacted if the conflict is not clear. Include an "x" with the date if a critical date is used. Example: 1/1/2024x	The estimated clearance date is the date the relocation will be clear for construction.	Provide the buffer in whole months, rounded to the nearest month.	If the ENV conflict may impact any other certifications, list them here.	Describe the construction that would be delayed if the conflict does not clear on time.

KEY FINDINGS FROM 0-7182

DETERMINE EFFECTIVENESS OF CMPS



Profile of CMP Projects vs. Non-CMP Projects

- CMP projects are typically higher in value, complexity, and number of conflicts.
- More utility, ROW, and RR interactions than non-CMP projects.
- Statistics confirm TxDOT targets CMP requirements to the most complex work.

Project Type	Total Number of Projects (From 09/01/18 to 09/30/24)		Total Contract Amount (From 09/01/18 to 09/30/24)		Average Contract Amount (\$)	Average Construction Duration (month)
	Count	%	Dollar (\$)	%		
CMP	255	5.2%	18,044,101,328	38%	70,761,182	39
Non CMP	4,695	94.8%	29,614,972,091	62%	6,307,768	22
Total	4,950	100%	47,659,073,419	100%	9,628,096	-

Change-Order Trends Before & After CMP Implementation

- Evaluated 9,871 completed highway projects (From 2009 Q1 to 2024 Q3).
- Cost variation decline: Pre-CMP average cost growth ~5.13%; post-CMP ~2.70% (≈47% drop).
- By project size: Large (\$50–150M) dropped from 7.75% to 3.81%; medium (\$20-50M) from 5.21% to 2.52%; and small (<\$20M) from 3.89% to 2.42%.
- Reason codes: ROW/Utility conflict–related COs decreased notably post-CMP adoption.

CMP Implementation	Total Number of Projects (count)	Total Number of Change Orders (count)	Total Contract Amount	Total Change Order Amount	Project Cost Variation due to Change Orders (%)
			(a)	(b)	b/a
Before	6,979	35,510	64,377,493,233	3,305,372,140	5.13%
After	2,892	9,822	19,623,344,809	529,296,638	2.70%
Total	9,871	45,332	84,000,838,042	3,834,668,778	4.57%

Change Orders on CMP Projects

- The impact of CMP-related change orders was relatively low but can be reduced.
- Although CMP-related change orders represented just 3.82% of total change order occurrences on completed CMP projects and 3.59% on Active-All Cleared CMP Projects, they contributed to 13.5% and 2.16% of the total change order costs in these two groups of projects. This highlights the importance of a better conflict clearance management to prevent CMP-related change orders.
- CMP projects had higher than average project cost variation due to change orders. The vast majority of these change orders were not related to the unclear certifications.

Table 4.8 CMP-related Change Orders – Completed CMP Projects

Category	Number of Change Orders (count)	Number of Projects (count)	Total Contract Amount (\$)	Total Change Order Amount (\$)	Project Cost Variation due to Change Orders (%)	Total Time Adjustment (day)
(a) All Change Orders	785	58	995,477,036	47,544,763	4.78%	2,231
(b) CMP-related Change Orders	30	16		6,441,956	0.65%	47
Proportion (b/a)	3.82%	27.59%	-	13.55%	-	2.11%

Table 4.12 CMP-related Change Orders – Active All Cleared CMP Projects

Category	Number of Change Orders (count)	Number of Projects (count)	Total Contract Amount (\$)	Total Change Order Amount (\$)	Project Cost Variation due to Change Orders (%)	Total Time Adjustment (day)
(a) All Change Orders	2,309	118	7,570,420,302	543,648,414	7.18%	2,513
(b) CMP-related Change Orders	83	36		11,740,524	0.16%	68
Proportion (b/a)	3.59%	30.51%	-	2.16%	-	2.71%

Cost & Schedule Impacts Linked to Conflict-Clearance Delays

- ROW & Utility clearance delays moderately positively correlated with both cost and schedule growth.
- RR clearance delays showed a strong link to cost escalation (e.g., corr. coef. ≈0.48).
- Each delay category increases the probability of additional scope changes and Cos.
- Conclusion: Early, realistic clearance planning within CMP significantly reduces exposure.

Groups of Projects	Variable 1	Variable 2	p-value	Correlation Coefficient	Result
All	Number of Change Orders	ROW Conflict Clearance Delay (In Days)	0.043	0.3	Moderate Positive
All	Number of Change Orders	UTL Conflict Clearance Delay (In Days)	0.000	0.339	Moderate Positive
All	Project Cost Variation due to Change Orders (In %)	ROW Conflict Clearance Delay (In Days)	0.009	0.382	Moderate Positive
All	Project Cost Variation due to Change Orders (In %)	RR Conflict Clearance Delay (In Days)	0.003	0.534	Moderate Positive
All	Project Cost Variation due to Change Orders (In %)	UTL Conflict Clearance Delay (In Days)	0.000	0.321	Moderate Positive

Guidebook

- Translates 0-7182 research results into an actionable manual for TxDOT practitioners.
- Provides recommendations to:
 - Identify and classify conflicts early
 - Describe conflicts and management plans clearly
 - Size realistic clearance buffers
 - Integrate conflict activities into the CPM schedule
 - Monitor clearance progress after letting

Relationship to TxDOT CMP SOP

- The CMP SOP (Design Division, 2025) is governing policy for CMP development and approval requirements.
- The 0-7182 Guidebook enhances the CMP SOP with: research findings and recommendations.
- Follow the CMP SOP for mandatory steps. Use the guidebook for additional recommendations.
- The 0-7182 Guidebook raises post CMP approval issues (e.g., data management, conflict clearance management, post-approval tracking) not fully addressed in the CMP SOP.

RECOMMENDATIONS ON CMP FORMAT AND CONTENT ALIGNED WITH THE CMP SOP AND CMP DEVELOPMENT BEST PRACTICES



Memo/Cover Page

- Summarize the project and unclear certifications.
- Highlight the main conflicts and items deserving more attention.

Exhibit A - Certifications

- Standardize Conflict Information Table.
- List each conflict individually based on location, and group by type and owner.
- For each conflict, include owner, type, description, location/stationing (or GIS), status, estimated clearance date, buffer duration, and comments.
- Note affected construction phases/activities and anticipated impacts.
- Assign unique conflict IDs to link with other documents.

Exhibit B - Construction Time Determination (CTD)

- Provide guidelines on how to include conflict-related activities in the baseline schedule, prepare contingency plans, and also manage conflict clearance during execution.
- Include the conflict clearance schedule in the overall project schedule showing dates before and after project letting.
- Have separate conflict clearance schedules with agreed-upon buffers to ensure they will be cleared by the estimated clearance dates.
- Add notes on the schedule to highlight major project milestones for better understanding of the key components of the project schedule.

Exhibit C - Traffic Control Plan (TCP) Phase Narrative

- Standardize the notations, identification/coloring schemes, and legends used to show conflicts in the TCP.
- Use colored notations to represent various owners and types since it is more effective to identify conflicts using visual aids.
- Mark conflict locations clearly on the TCP to pinpoint specific areas that are impacted by the conflicts.
- Match the colors of conflicts in the TCP with the Conflict Information Table for consistency and clarity for conflict management and resolution.

ADDITIONAL RECOMMENDATIONS



Centralized Data Storage & Tracking

- SOP explains how to develop/approve CMPs, but not how to store approved CMPs and conflict data in TxDOT systems.
- Recommend referencing specific platforms (e.g., SiteManager) to store CMP documents and related data (types, dates, buffers, owners).
- Central storage supports post-approval tracking, visibility of clearance progress, and data-driven evaluation of performance, delays, and change orders.

Standardizing Conflict-Location Documentation

- SOP should add a standard method to note locations (e.g.: stationing, GIS coordinates, plan sheets).
- Consistency improves mapping accuracy, field verification, and tracking of conflict zones.

CMP Risk-Rating System

- CMP approval process is based on when conflict(s) will be cleared - within three months after letting or more than three months.
- SOP doesn't prescribe an assessment method.
- Current CMP format lacks a formal way to rate overall risk/complexity.
- Introduce a method using factors like number/duration of conflicts, agencies involved, ROW litigation status to prioritize reviews and resources.

Documenting Buffer Rationale & Contingency Plans

- SOP defines buffer as clearance date minus phase start, but doesn't require a justification.
- Require a brief rationale for each buffer.
- Optionally include contingency plans to mitigate schedule impacts if clearances slip.

Visual Risk-Zone Mark-ups

- Current layout sheet shows conflicts and dates, but not high-risk areas for unforeseen issues.
- Add color-coded high-risk zones or shaded areas where unexpected conflicts historically arise to anticipate delays.

Owner-Info Legends

- Adopt a standardized legend across districts (e.g.: symbols/line types per conflict category).
- Display conflict owner info to ensure easy interpretation by contractors, designers, and reviewers.

Managing Unforeseen Conflicts Post-Letting

- SOP covers known conflicts at certification but not unforeseen ones (e.g.: abandoned utilities, undocumented ROW).
- Add provisions for field verification notes and a formal protocol to document, track, and resolve new conflicts to maintain accountability and consistency.

Minimum Buffer Requirements Calibrated with Historical Clearance Data

- Set minimum buffers for unresolved utility and ROW conflicts.
- Refine values by conflict type, past performance, and owner reliability based on historical data.

Link Change Orders to Specific Conflicts

- Enhance conflict classification to trace COs by conflict type and reason.
- Link each CO to its specific cause/impact to identify recurring issues accurately.

Early Conflict Identification and Field-Condition Assessment

- In the early phases of CMP development, it is critical to establish a systematic field assessment process to identify potential conflicts before letting.
- This assessment should extend beyond known utility lines to identify other physical obstructions, such as retaining walls, mature trees, drainage structures, and fences, that may interfere with conflict clearance activities.

Early Coordinating Interrelated Utility Systems & Sequencing Responsibilities

- CMPs must state responsible parties, required sequence, and coordination plan.
- Address interdependencies among multiple third parties; specify accountability, sequence, and contingency measures.

Process for Revisiting CMPs After Scope Changes

- When scope/work items change post-approval, formally revisit/update the CMP.
- Reassess impacts on utility/ROW, validate dates/buffers, check for new conflicts.
- Document updates via revised certifications, CTD schedules, and conflict layouts.

Structured Peer-Review / Approval Checklists

- Adopt standardized checklists to verify required items (e.g.: conflict descriptions, timelines, buffers, phase starts).
- For large/complex projects, add independent peer review to catch omissions (e.g.: missing owners, vague sequencing, undocumented assumptions).

Post-Approval CMP Management, Version Control & Conditional Approvals

- SOP lacks guidance on managing CMPs after approval (e.g.: managing conflict clearance, preventing conflict clearance delays, handling unforeseen conflicts, dealing with status changes).
- Include direction on conditional approvals, update procedures, and version tracking to maintain up-to-date oversight.

References

- *TxDOT Standard Operating Procedure for Construction Management Plans (CMP SOP)*
- *TxDOT CMP Development Best Practices and Certification Guide*
- *0-7182 P1 Guidebook for Improving the Effectiveness of CMPs*
- *0-7182 R1 Final Report*

THANK YOU