

10/1/2021 ORD Update

Audience: Consultants

Questions and Answers

1. Q: Will TxDot provide the workspace for the ORD – drainage & utility workflow such as the DRN Library for storm drain?

A: Yes. It will be posted around the deployment date of 10/25. Communication will be sent out via PEPS global email distribution list once it's posted.

2. Q: Since it was mentioned that the 3D model would be used for construction, how will the electronic model be sealed and signed by the licensed engineer? Will TxDOT have a process that would need to be approved by the TBPE?

A: A process will be developed by Design Division for TxDOT based on previous collaboration with, and guidelines provided by, the TBPE.

3. Q: Should consultants start investing in ORD? and if so which version to be compatible to TxDOT's version?

A: TxDOT will be migrating to version 10.10, R1 2021. In the not-too-distant future, all PS&E design will be required to be completed in ORD and the deliverables provided in ORD.

4. Q: Will TxDOT post ORD Training on Youtube like other DOTs do?

A: Design Division is still vetting this, but it is a possibility. Bentley Communities may also be adopted for this purpose as well as for knowledge-sharing and collaboration.

5. Q: Will the 3D model be part of the milestone submittals of PSE plan development? 30%, 60%, 90%, 100%...will TxDOT require the 3D model be part of those milestone submittals

A: This is still being vetted. It is important for the model to be at a level comparable to the plans at each milestone and once digital delivery is adopted in the future, the 3D model will be required as part of all milestone submittals.

6. Q: Is TxDOT looking into iTwins for design review of 3D models?

A: Correct. We will be evaluating iTwin as well as other alternative software options for this purpose.

7. Q: Will each phase of TCP need to be modeled once we move to digital delivery? What is the level of effort expected on these?

A: This still remains to be determined and will be vetted as part of the next phase in this process of moving towards Digital Delivery. Pros and cons will be identified and weighed, as well as research into options and successes/lessons-learned from other DOT's.

8. Q: How does someone get added to the e-mail distribution list for news and update about ORD?

A: All pre-certified consultants should already be included on the PEPS email distribution group. If someone is not receiving them that would like to be, please contact PEPS Division.

9. Q: Which type of projects are going to be selected by TxDOT as "pilot projects" for digital delivery?

A: To be determined. Early ideas are an acceleration lane project or off-system bridge replacement. Construction Division has a pilot project underway utilizing the Bentley Synchro software. Design Division is coordinating with Construction Division on this item.

10. Q: Did TxDOT encounter any issues with the ORD Plan production...references, container files, labeling, etc?

A: We did at the beginning of the testing process, but all issues we encountered and identified have now all been addressed.

11. Q: When will we follow suit with OBD?

A: OpenBridge Designer is on roughly the same deployment schedule as the ORD deployment.

12. Q: Will plan sets be completely removed as a deliverable? If so, what will 30, 60, 90 submittals look like?

A: Eventually plan sets will be removed completely. It will most likely be a phased process. One of the first steps may be making plans a deliverable, but for informational purposes only. This will be fully determined after the review process of 3D models is better defined.

13. Q: When will the workspace and training be loaded on the website?

A: The goal is on or near 10/25. Communication will be provided.

14. Q: How will standard drawings be delivered with this 3D delivery method?

A: There is the ability to attach the Standard to the corresponding item within the model in various file formats. For instance, a PDF of a metal beam guard fence Standard can be attached to the metal beam guard fence in the model.

15. Q: Will the need to provide contractors cross-section reports still be needed after ORD is being used?

A: TxDOT is encouraging the contractors to adopt the use of surfaces instead. Legacy XSR's will no longer be available in ORD, but there are similar reports available. Cross sections also must be provided to contractors in native format.

16. Q: What happens when Bentley changes ORD versions?

A: TxDOT won't necessarily adopt the new version. Different ORD versions are compatible with each other and can also be installed side-by-side on the same device. There is no predetermined interval for TxDOT to upgrade the software.

17. Q: How will QC look like for digital delivery?

A: Still being vetted but there will be a model review process. It could potentially include reviewing reports generated in ORD from the model, amongst other steps.

18. Q: Is ORD and SS10 on the same workstation compatible?

A: Yes. They can be installed side-by-side. ORD will not open SS10 files unless the SS10 files are upgraded. ORD files can't be opened in SS10.

19. Q: The manual is called ORD 750? and when will it be released?

A: The TxDOT internal class is called DES 750. The workbook for this class will be posted on or near 10/25.

20. Q: Will TxDOT also post the Workspace configuration for ProjectWise?

A: There are no plans to do so at this time, but this will be discussed and evaluated.

21. Q: How often will template drop intervals be required for a given project.

A: This will be up to the engineer responsible for the project to determine. Guidelines regarding level of accuracy will be provided in the future.

22. Q: Will standards for the Content and Format of deliverables be standardize across Districts?

A: That is the tentative plan. Research and collaborative work groups with the Districts will be conducted in the future.

23. Q: The complete models TxDOT intends to deliver to the contractors, what is the definition of complete? Pixar level detail, every aspect; ditch, driveway, headwall, handicap ramp? Will TxDOT contracts have adequate hour for models of this detail?

A: We need to see that all side slopes tie correctly and that there are no gaps in the design, model, or cross-sections. There will be guidance provided in the future regarding this matter based in part on collaboration with the AGC and other stakeholders. One driving factor is providing models that are thorough and accurate enough to reduce change orders, which is one of the primary benefits of 3D modeling.

24. Q: Is there an approx date for Digital Delivery implementation?

A: Not at this time. TxDOT is still in the exploration and R&D phase but a target timeframe is within the next 5 years and desirably well prior to 5 years from today. Several steps are still necessary to diligently vet the process.

25. Q: Is TxDOT going to require bridge design to be developed in OpenRoads Bridge Modeler/Designer

A: Should be confirmed with Bridge Division, but most likely it will be once roadway designs are required to be done in ORD.

26. Q: Will models be locked so contractors don't make modifications to it? How will change orders be handled, will the model need to be revised and the whole thing resubmitted?

A: To be determined. Ideally there will be a model-of-record that will be locked and/or configured so that any changes will invalidate the seal. Change orders will most likely entail model updates with a resubmittal.

27. Q: Will TxDOT be establishing the level of details/completeness for varying types of project stages such as feasibility studies/PELs, schematic/env, and PSE?

A: Most likely. TxDOT will be doing some research and vetting on this item and probably provide guidelines to the Districts.

28. Q: Is the survey module or survey data format be updated as well, and/or be compatible with ORD?

A: Correct, and TxDOT surveying Subject Matter Experts (SME's) are developing a separate training for the surveying side of ORD.

29. Q: Will TXDOT Use Projecwise 365 as well as the projectwise explorer?

A: That is the plan in the future, but it still needs to be vetted to ensure ProjectWise can provide the service and reliability that TxDOT needs.

30. Q: Is TxDOT aware of the official Bentley Training Partners? There are two firms in Texas that are official Bentley Training Partners and offer OpenRoads training.

A: Correct, and TxDOT is partnering with one of them for this project.

31. Q: Will a "CADD Standards Validation Tool" be available (similar to the one UDOT has)?

A: To be determined, but Design Division will research and coordinate with UDOT on this tool.

32. Q: How will we have as-builts plans for historical data?

A: The models will most likely serve as the as-builts once TxDOT adopts Digital Delivery.

33. Q: What about ROW documents ie Exhibit A docs?

A: To be determined, but ideally integrated with the rest of the project model/documents.

34. Q: This conversation is related to PS&E, what does the Preliminary Design look like for submittals to TxDOT?

A: Remains to be vetted and determined. The deliverable could quite possibly be a model. Another item that will be investigated is using 3D models for public meetings rather than roll-plots of schematics.

35. Q: Will ORD be able to attach any calc document to the model? such as SE table

A: Yes. PDF's, Excel files, and other file types can be attached to the model.

36. Q: How can an alignment (horiz or vert) be backed-up to revert back to?

A: One method is to use separate DGN files to house backup data and utilize archiving practices.

37. Q: Will schematic development contracts require a level of 3d modeling?

A: Remains to be confirmed, but most likely. The design work done in ORD to produce a schematic can be used to produce preliminary model.

38. Q: Will other agencies that sometimes TxDOT projects need to coordinate with such as tollway authorities, counties, cities etc be ready to use ORD simultaneously when TxDOT makes it official?

A: ORD files can be downgraded to older versions for shareability. TxDOT will work with other partners and agencies to ensure collaboration can still occur.

39. Q: When we do RFI during construction, do we need to submit the updated model for each RFI?

A: Still remains to be determined. Level of effort vs. benefits will be weighed to guide the decision process.

40. Q: If plan sets will be reference only, will only the model need to be "signed" by the PE?

A: Correct. Most likely it will be analogous to how cross sections are handled today, where they do not require a seal and signature. This will be confirmed in the future.

41. Q: What will earthwork, quantities and estimates look like once we move away from plan set submitting?

A: Earthwork will be similar but more accurate since it will use a prismatic method rather than end-area method. Estimates will work the same as today in the near-term. In the future, TxDOT may adopt item types that enable the software to calculate the quantities in an automated process. Design Division will be evaluating item types in coordination with Bentley during the next phase of this effort.

42. Q: Is there any update to using Projectwise and will this be potentially used for QAQC certifications of the model . will TxDOT "host" projects in certain cases

A: To be determined. We are vetting the best way to give consultant access to TxDOT's ProjectWise and have made progress. The current priority is getting internal TxDOT staff reliable and high-speed service from ProjectWise. ProjectWise could potentially be used for QAQC processes in the future.

43. Q: Will TxDOT be updating the spec book or quantity calculation procedures based on ORD? For example will earthwork be calculated from surface to surface instead of average end area?

A: Design Division will discuss and collaborate with Construction Division on this item. Most likely when TxDOT goes to Digital Delivery, updates will occur.

44. Q: How will TxDOT address accuracy of existing utility information, in models for utility conflicts with proposed designs?

A: Design Division will be coordinating with ROW Division to determine how to get utilities incorporated into the design models and what levels of SUE should be procured for design projects.

45. Q: Is there any potential to build the design criteria requirements into the model so that "modeling" outside of the parameters of the design criteria for that project can't be done?

A: Design Division can look into this further. Please email Design Division for additional coordination on this item.

46. Q: Will there just be one master model or separate models for roadway, drainage, etc?

A: To be determined. It seems likely that separate models will be created for separate disciplines/assets on a project.

47. Q: Are ORD and OBD two different packages?

A: Correct, but there is a single Workspace for TxDOT that addresses all survey, roadway, drainage, and bridge needs.

48. Q: Is there a plan to scan the project after completion and using that as "as built"? Because the likelihood of the model and what's built matching isn't 100%.

A: Potentially, but it will have to be vetted.

49. Q: Speaking of level names. Is the NCS being considered? This rollout will likely guide many consulting firms in how their level standard will be going forward. National Cad Standard is highly recommended

A: Design Division will research and vet standardization, including soliciting recommendations and lessons-learned from other DOT's and agencies.

50. Q: How can consultants get on the live training schedule?

A: Design Division will send out an email communication, most likely via the PEPS email group, notifying consultants of any availabilities to be filled on a first-come, first-serve basis. However, consultants may be limited to a certain number of spots.

51. Q: Will TxDOT provide documentation of changes when a new version of the ORD workspace is released?

A: Remains to be determined, but most likely a line-item list of changes will not be provided.

52. Q: Do we need a model for each phase of TCP when we go digital?

A: To be determined. This will be researched and vetted during the next phase of this effort.

53. Q: How is TxDOT planning to open 3D Model CADD files 3, 4, 5 years old when the Bentley ORD system progresses so much that they are not compatible with old data?

A: The data can be exported into files of a certain format, such as IFC and XML, then re-imported.

54. Q: How will SW3P be done without plan sheets i.e. in a non-phased 3d model?

A: Remains to-be-determined. It's possible that plan sheets will remain the deliverable for some aspects of a PS&E package.

55. Q: Will ORD - work category be pre certified in the future for engineers

A: Design Division will collaborate with PEPS Division on this item in the future.

56. Q: How would an as built be sent to a party (such as a city) or to satisfy an open record request if they don't have the ability to open/use a model?

A: It can be exported into files of a certain format, printed to a 3D PDF, or other options that remain to-be-determined.

57. Q: Will GEOPAK Drainage be implemented into ORD?

A: No. The Drainage and Utilities (DU) module will replace GeoPak Drainage.

58. Q: Will utility providers be required to use ORD to interact with TxDOT/Consultants?

A: Remains to-be-determined, but may not be necessary because of the export of data functionality in ORD. Design Division will coordinate with ROW Division on this question.

59. Q: Can we do "dual-boot up" or dual setups for viewing ORD verses SS10?

A: Yes, the two software can be installed concurrently on the same device.

60. Q: What does the model look like for a viewer, someone that doesn't have ORD software? what kind of file(s) is there to look at?

A: TxDOT will be deploying Bentley Viewer to internal staff that specializes in user-friendly viewing of 3D model DGN's.

61. Q: Are y'all also looking into any issues with Drainage & Utilities portions of the software?

A: The Hydraulics and Hydrology Section of Design Division has been evaluating the DU module and to our knowledge it has passed all of their testing. Please contact Design Division for specific follow-up questions or concerns.

62. Q: Will the construction contractors be required to hire experts in OpenRoads modeling?

A: TxDOT will remain in coordination with the contractor community via Design Division's collaboration with AGC throughout the duration of this process.

63. Q: Why has TxDOT decided not to use consultants as "beta testers" in regards to the ORD workspace? It seems like a lot of free help would have aided greatly in this rollout..

A: Design Division conducted a User Acceptance Test of ORD in general and the TxDOT Workspace specifically in June of 2021, comprised of volunteer, experienced testers from both the consultant community and TxDOT Districts. The software and the Workspace passed the UAT.

64. Q: TxDOT posts Plans Online each month. Will models be posted in Plans Online?

A: This remains to be determined, but most likely. The specific format of the models for posting will also be evaluated and determined in the future.

65. Q: For PS&E that does not require a 3D model, will we have any plan production tools for clipping sheets, station labeling, cross section tools, etc?

A: Correct. OpenRoads Designer and Microstation CE contain plan production tools that are independent of the corridor modeling tools.

66. Q: What version of the ORD is being Rolled out- "OpenRoads Designer CE 2021- Release 1?"

A: OpenRoads Designer CE 2021, Version 10.10.1.3

67. Q: How will digital delivery be implemented with design build projects?

A: Remains to be determined, but Design Division will coordinate with the Alternative Delivery Division on this item.