

Review of FDOT's Response to the Summary of Concerns

The following outlines the review of the FDOT's Response Letter sent on July 21, 2023 alongside the Summary of Concerns sent to FDOT on May 9, 2023. Each concern has been broken down into three sections: Response Review / Evaluation, the FDOT Response as presented in their letter and the original concern as presented in the FUCC Letter. The original documents have been attached herein for review.

Note: Each of the concerns in the Summary of Concerns letter has been footnoted to include a "(*)". This footnote will direct you to the meeting summary that the concern originated from. If the concern was brought up to the group in multiple meetings, the concern will reflect multiple footnotes. The legend for the footnotes are as follows:

- (*) January 11, 2023 (1/11/2023) Meeting
- (*) February 8, 2023 (2/8/2023) Meeting
- (*) March 8, 2023 (3/8/2023) Meeting

List of Concerns:

1) Not many NexGen projects to date

a) Response Review / Evaluation

- i) With the limited number of projects being received to date in the NexGen Format, industry has indicated a concern that additional issues or needs will be identified beyond those presented to date. Industry would like to ensure that the discussion of what may be needed to be an on-going discussion with FDOT to work towards an agreeable format.

Example plans from FDOT have not been provided at this time.

Additional working groups will need to occur to discuss this issue further.

b) FDOT Response to FUCC Letter (dated 7/21/2023)

- i) The use of FDM 900 Series (Model-centric) for plans production has been required for project developed using Bentley's Open Roads Designer (ORD) CADD platform for more than 4 years. What is called "NexGen Plans" have been making their way to construction on increasing numbers over the last year. Examples of these plans will be provided.

c) FUCC Summary of Concerns (email dated 5/9/2023)

- i) Some UAOs have had limited experience with the NexGen Plans to properly evaluate them and their concerns. (*)
- ii) Worried there will be more concerns before resolution (*)
- iii) Need a real-world example of NexGen Plans – physical print (*)

2) Large Format Paper Size – 3 ft by 4 ft, 3 ft by 6 ft

a) Response Review / Evaluation

- i) Industry has requested that the Utility Adjustment Sheets be provided at 11"x17" scale, which have not consistently provided to date. Please refer to the Utility Work Sheets concern section for additional information regarding the Utility Adjustment Sheets.

When in the field, field personnel need a manageable size to complete their reviews and may require the use the roadway sheets for better details on design elements.

Some UAO Partners utilize Roadway Sheet in lieu of UTADs as they need the details

b) FDOT Response to FUCC Letter (dated 7/21/2023)

- i) FDM Table 900.3.1 provides a summary of allowable sheet sizes for each sheet used in the Contract Plans. When multiple sizes are allowed, the designer is to select the size that will most efficiently display the information. The information is complete and to the same scale regardless of sheet size selected.

When the large format size is selected for the Contract Plans, and the UAO has expressed the need for 11"x17" paper prints, the Department can provide Work Sheets. These Work Sheets have the same content and accuracy as the contract plan sheet.

c) FUCC Summary of Concerns (email dated 5/9/2023)

- i) Change in plans - margin of error significantly increased. (*1)
- ii) The small utilities are where the biggest challenge comes into play as the utility coordinators can't get them to provide what is needed today before the introduction of large format. (*1)
- iii) Concern that this may create more delay claims if the UAO is not able to mark-up plans correctly. This will cause more time and money to be spent. Need accurate 11x17 plans. (*1)
- iv) Concern in regard to marking up transmission poles on large format plans is difficult. (*1)
- v) 6 ft roll plot is too big for truck and field personnel to use in the field (*2)
- vi) Tile printing does not help (*2)
- vii) No easy way to scale down (*2)
- viii) Large Format Roll Plot not useful (*2)

3) Costs associated with purchasing technology to support NexGen.

a) Response Review / Evaluation

- i) The industry uses a mixture of technology to review the plans and it is acknowledged that the industry has been using PDFs for many years. The concern is the lost of ability to print out the plans in-house and take them to the field. The additional costs are being born by the industry for those without plotters. Since plotters are no longer in the office, the use of outside reprographics companies is a significantly larger cost than printing 11"x17" prints in-house.
- ii) As stated in concern #2, the need for other sheets in the set other than the Utility Adjustment Sheets (if provided in 11"x17" format) is the concern.
- iii) As for the number of large format sheets, the number of sheets are not limited to just the Roadway Sheets, but other sheets like the Roadway Cross Sections, Signing, Lighting, etc.
- iv) There have been projects with more than 15 large format sheets. If you apply the middle price range from the prices provided by FDOT at \$5 per sheet, that would be \$75 per project. If you are averaging 3 – 10 pages per project, then that equates to \$15-\$50 per project.
- v) Field Personnel does not have tablet/laptop and software to mark-up in the field electronically – if you can print.
- vi) How to scan – share – no jump drives

b) FDOT Response to FUCC Letter (dated 7/21/2023)

- i) Plans have been delivered to UAO as PDFs for more than 15 years. UAO staff should be familiar opening and viewing these files on a computer (desktop or laptop) using a free PDF Reader. PDF Readers also provide the ability to measure, markup, provide comments, and zoom in to get a better view of areas of concern.

It is acknowledged that some UAOs that are not as advanced with technology and require paper plans for field work. As stated above, 11"x17" Work Sheets can be provided for large format contracts plan sheets.

For a project requiring utility coordination, it is expected that a plan set would have no more than three large format sheets. The approximate cost to plot a black & white large format sheet at a reprographics company (Staples, Kinko, Blueprint Printing) is as follows:

(1) 24"x36"	\$2-\$3
(2) 36"x48"	\$4-\$8
(3) 36"x72"	\$6-\$10

- c) FUCC Summary of Concerns (email dated 5/9/2023)
 - i) Cost prohibitive for UAOs to purchase tablets or laptops (*2)
 - ii) Costs associated with training UAO personnel on how to use equipment (*2)
 - iii) Costs associated with technology savvy personnel (*2)
 - iv) UAOs do not have plotter (*2)
 - v) Cost prohibitive to send to printing company for UAO (*2)
 - vi) UAOs are burdened with these additional costs (*2)

4) FDOT has not provide documentation, mandate or State Statute

a) Response Review / Evaluation

- i) With the requirements of the UAM 5.1.2, an agreeable format will need to be worked toward.

In the interim, accommodations from the FDOT to ensure industry can continue to respond on these projects is critical.

Additional working groups will need to occur to discuss this issue further.

How many projects are in construction and are their issues

b) FDOT Response to FUCC Letter (dated 7/21/2023)

- i) The transition from legacy plan sets (FDM 300 series) to model-centric plan sets (FDM 900 series) began in fall of 2018. This transition was caused by a change in the CADD application used to produce the plan sheets. As part of the transition, large format plans were introduced to support the Department's digital initiatives, increase plan production efficiencies, and adapt to the new workflows required by the new CADD Platform.

It is acknowledged that the UAM 5.1.2 states that "project drawings are provided to the UAO for markup in an agreeable format". Additional discussions are needed to jointly determine what is needed for UAOs to complete their work.

c) FUCC Summary of Concerns (email dated 5/9/2023)

- i) No documentation has been provided requiring the UAO to mark-up large format (*2)
- ii) No documentation has been provided with format change (*2)
- iii) Insufficient notification to UAOs (*2)
- iv) UAOs not consulted in change (*2)
- v) No opportunity to review the change and provide input (*2)

- vi) No time provided for transition for UAOs (*2)
- vii) UAO industry not consulted on the change (*1)
- viii) In UAM 5.1.2, it states that the project drawings are provided to the UAO for markup in an agreeable format. (*1)
 - (1) This is not a format that was agreed on by everyone
 - (2) This was not discussed with the UAOs prior to implementation
 - (3) There was not understanding of what is needed to properly coordinate a project by the FDOT

5) Utility Work Sheets

a) Response Review / Evaluation

- i) The primary issue with the Utility Work Sheets as they have been presented to date is that they do not have the same information has previously provided in the FDM 300 Series Utility Adjustment Sheets.

With the large format plans being 2300 feet per sheet verses 560 feet per sheet on 11"x17", a person would have to flip back approximately 4-5 sheets to get a callout.

Items that are critical to be included in the sheet are:

- (1) North Arrow
- (2) Scale
- (3) Baseline/Centerline Callouts
- (4) Street Names
- (5) R/W related callouts
- (6) Design files for all components (i.e. signing, signals,etc.)

Mandate from central office to ensure all district are doing it.

b) FDOT Response to FUCC Letter (dated 7/21/2023)

- i) The information provided in the Work Sheets is mirror copy, and at the same scale as the large format contract plan sheet. Currently, it is not the intent to add call outs to the level required of a contract plan set. There may be Work Sheets that do not have certain call outs. If the user is unsure what the line is representing, they will need to look at previous sheet that has the call out, or the contract plan sheet for clarification, and then note it on the sheet that does not have the call out.

The Department's staff hour forms are being modified to compensate consultants for the development and delivery of Work Sheets.

c) FUCC Summary of Concerns (email dated 5/9/2023)

- i) Labeling issue what the line work represented Existing R/W, Centerlines, north arrow, scales, callouts – concern regarding the higher amount of callouts for the 11x17 utility work sheets (560 ft per sheet) than the large format (2300 ft per sheet) – both from providing a document similar to what has been provided in the past, as well as a level of effort for EOR for units/staff hour concern. Duplicate linework. (*1)
 - (1) Concern that utility worksheets will not contain the same information that was provided previously.

- (2) Need to ensure that the effort for the utility worksheets is there was discussion that utility adjustment sheets is not a Tab 7 unit/staff hours and should be in Tab 5 unit/staff hours

6) Drainage Structure Sheets

a) Response Review / Evaluation

- i) The new drainage structure sheets show the surface grade from the pipe and structures but does not give us definitive details on the size and dimension of the structure or how the structure is laid out. The size and types of structures are not shown on the plans they are only referenced. There is no depiction to state if a structure is 3x5 or 5x3. The structure sheets do not identify the thickness of the structure on the specific plan sheet.

The Structure data only shows the reference point elevation and the sump elevation. The sump elevation is not the bottom invert of the pipe. Utilities do not have access to the SUDA program to find the outside bottom invert of the pipe would have to be calculated. Calculations of this sort will significantly increase a margin of error and the potential of creating a hazardous work environment.

b) FDOT Response to FUCC Letter (dated 7/21/2023)

- i) The Drainage Structure Sheet contains plan view and profile views that show vertical and horizontal relationships between existing utilities and drainage structures. The table data provides flow line and structure bottom elevations. The Department also provides a Utility Conflict Matrix to further identify locations of concern.

The major change is the production of profile views in lieu of drainage cross sections. A profile view of the drainage system is shown from the highest structure elevation to the outfall, illustrating pipe, structures, utilities, and existing and proposed ground.

c) FUCC Summary of Concerns (email dated 5/9/2023)

- i) Concern with change to drainage structures sheet and missing information (*¹ and *²)
ii) No longer able to gauge proximity or constructability concerns with pipes and structures (*¹, *², and *³)
iii) Unable to put together a picture of the proposed drainage structure by only using profile, table and FDOT Standard Plans, which increases the margin of error (*¹, *², and *³)
iv) Utility unable to properly review the plans to determine if conflicts resolved. Most utility owners are not engineers. (*³)
v) Concern with increased liability for the EOR since the Utilities have "less information" that they can review in the plans (*³)
vi) No information for orientation and bottom elevations of structures (*³)

7) Cross Sections Sheets

a) Response Review / Evaluation

- i) The response states that cross sections sheets are generated and delivered separately. However, the limited staff hours provided is not enough to perform this function for all phases of submittal. Consultants are not provided enough hours to perform the service multiple times.

There was an example provided where the roadway cross sections were completely removed from the project at negotiations and were not going to be developed for the project. The utility coordinator had to push to have the roadway cross sections put back into the project for utility coordination purposes. The lack of cross sections would be a significant concern for utility coordination effort, utility relocation planning/design, and later for FDOT permitting.

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b) FDOT Response to FUCC Letter (dated 7/21/2023)

- i) Cross section sheets are required to be generated and delivered separately (outside the plan set) for each design phase submittal. The Department's staff hour forms continue to have line item to produce cross section sheets.

These sheets are batch plotted and most often large format sheets. These sheets are considered informational and not a contract document.

c) FUCC Summary of Concerns (email dated 5/9/2023)

- i) Concern that they are seeing during negotiations that the roadway cross sections (5.16 – Cross Sections) are being removed from the roadway negotiations for projects that are model centric. (*1)
- ii) Concern roadway cross sections are not in final plan deliverable (*1)
- iii) No being provided in final plan set (*2)

8) Concern with electronic format

a) Response Review / Evaluation

- i) The Department is providing a PDF format that lacks sufficient information and data to identify and resolve potential conflicts. Utilities and consultants need more information on the PDF version to make an agreeable format.

Electronic format in the field is challenging. Especially while locating or identifying conflicts. Locating and using an electronic device would require two individuals to be able to complete this task.

b) FDOT Response to FUCC Letter (dated 7/21/2023)

- i) The Department provides all required documents in PDF format. The use of a CADD application is not needed.

c) FUCC Summary of Concerns (email dated 5/9/2023)

- i) Most utilities only use PDF Format, not MicroStation or AutoCAD (*1)
- ii) Typically, FDOT Projects are MicroStation (.DGN) (*3)
- iii) Utilities that use CAD software mostly use AutoCAD (.DWG) or a software other than MicroStation (*3)

9) Large File size of the NexGen Plans

a) Response Review / Evaluation

- i) PDF file versions are significantly bigger. In ORD you may be able to consolidate 2 miles on a single drawing but when it is converted to a PDF that file size is significantly larger. This creates

longer download time and causes the PDF's to glitch. This is also requiring consultants and UAO's to upgrade their current systems to meet the file size requirements.

- b) FDOT Response to FUCC Letter (dated 7/21/2023)
 - i) One large format sheet can display up to 2 miles of the project corridor. That same 2 miles would require 15 11"x17" sheets. The large format sheet is significantly smaller in file size than the equivalent 11"x17" sheets. It is when aerial images are used in a plan set that the file size can be big.
- c) FUCC Summary of Concerns (email dated 5/9/2023)
 - i) Concerns with timing out on uploads to OSP (*3)
 - ii) Concerns with timing out on downloads and uploads to PSEE (*2 and*3)

10) Permitting Requirements per UAM

- a) Response Review / Evaluation
 - i) NexGen final plans do not include or provide roadway cross sections so we will need to hand draw this information to get apply for a permit.

FDOT requires cross-sections sized and bore logs to apply and close out Utility Permit Applications (whenever directional drill method is utilized for install) this can no longer be utilized using the large-scale format.

Utility construction mostly uses Road Plans to complete a relocation effort. Utilities can no longer use this method in the large-scale format.

- b) FDOT Response to FUCC Letter (dated 7/21/2023)
 - i) Profile views of the drainage structure system is provided in the plans. Drainage structure cross sections are no longer produced. Cross Section sheets are provided as a separate PDF. Further discussion is needed to understand the issues with permitting.
- c) FUCC Summary of Concerns (email dated 5/9/2023)
 - i) NexGen Plans do not provide Roadway Cross Sections in Final Plans (*3)
 - ii) NexGen Plans do not provide Drainage Structure Cross Sections in plans (*3)
 - iii) Concern with the Plan Sheet Size (*3)

11) FDOT's Plan Format inconsistent to other agency partners

- a) Response Review / Evaluation
 - i) Response/Evaluation still under development With the limited number of projects being received to date in the NexGen Format, industry has indicated a concern that additional issues or needs will be identified beyond those presented to date. Industry would like to ensure that the discussion of what may be needed to be an on-going discussion with FDOT to work towards an agreeable format.

i)

- b) FDOT Response to FUCC Letter (dated 7/21/2023)
 - i) No response was received from FDOT for this concern.

- c) FUCC Summary of Concerns (email dated 5/9/2023)
 - i) Other agencies like local and county agencies are keeping with their plan size format (*3)

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