

**SOAH DOCKET NO. 582-22-0585
TCEQ DOCKET NO. 2021-1001-MWD**

**IN THE MATTER OF THE
APPLICATION BY THE CITY OF
GRANBURY FOR
TPDES PERMIT NO.
WQ0015821001**

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**BEFORE THE STATE OFFICE

OF

ADMINISTRATIVE HEARINGS**

**DIRECT EXAMINATION OF CHRIS HAY, P.E.
BY THE CITY OF GRANBURY**

FEBRUARY 18, 2022

DIRECT EXAMINATION OF
CHRIS HAY, P.E.

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1 I. INTRODUCTION

2 **Q. Mr. Hay, please state your full name and professional designation.**

3 A. Christopher S. Hay. I am a registered professional engineer in the State of
4 Texas. I typically go by Chris.

5 **Q. How long have you practiced as a professional engineer?**

6 A. Since May of 2012.

7 **Q. Where do you practice?**

8 A. I'm an Associate Vice President and Senior Project Manager at Enprotec /
9 Hibbs & Todd, Inc. The firm is also commonly known as eHT.

10 **Q. What are your duties as a Senior Project Manager at eHT?**

11 A. My duties are to build and maintain client relationships while providing
12 planning, design, construction administration, and regulatory assistance on
13 public works projects.

14 **Q. Describe your professional history before joining eHT.**

15 A. I started my career with TCB|AECOM in 2007. I mainly worked on drainage
16 and utility projects in the Public Works group. I later joined Adams
17 Engineering where I served as a Project Engineer for Land Development,
18 mostly for commercial developments including big box retail projects. In 2012,
19 I joined Johnson and Pace, Inc. in the role of Project Manager for residential
20 and commercial land development projects. I left to join eHT in 2013 and have
21 worked at eHT since, or for approximately the last 9 years.

1 **Q. What, if any, professional organizations or associations do you have**
2 **involvement with in connection with your engineering practice, or**
3 **otherwise with your work in the engineering industry?**

4 A. I am a member of the American Water Works Association.

5 **Q. Have you attended any seminars, conferences, classes, or courses**
6 **that relate to your work as a professional engineer?**

7 A. Yes, I have attended numerous seminars and conferences in engineering, water
8 resources, water planning, and water infrastructure development throughout
9 my career.

10 **Q. I'm handing you a document that has been marked as COG Exhibit**
11 **401. Can you please describe this document?**

12 A. This is my professional resume.

13 **Q. Is COG Exhibit 401 a true and correct copy of your professional**
14 **resume?**

15 A. It is.

16 **Q. Does COG Exhibit 401 fairly and accurately summarize your**
17 **professional and educational experiences that you just described in**
18 **your testimony?**

19 A. It does, yes.

20 **Q. Describe your areas of focus as an engineer, particularly with**
21 **respect to projects like the wastewater treatment plant development**

1 **project that is the subject of the City of Granbury’s TPDES permit**
2 **application.**

3 A. For projects like the one that is subject of the application, my main focus is on
4 the wastewater collection system surrounding the wastewater treatment plant,
5 to make sure it is sized appropriately to handle the anticipated flows and is
6 configured to work in conjunction with the treatment plant. I also work on site
7 development aspects of the project, which may include utility, site access,
8 grading, and drainage design associated with project. I typically also am
9 involved in a project management role to assist our process design group with
10 client coordination and to serve as our client’s point of contact.

11 **Q. Take a look at Tab D in Admin Record Exhibit A, which begins on the**
12 **page labeled Admin Record 0209. Is this the application you’re**
13 **referring to?**

14 A. It is, yes.

15 **Q. Over the course of your career, have you developed the ability to**
16 **review, interpret, and apply federal, state, and local statutes, rules,**
17 **and regulations?**

18 A. Yes, I have. I’ve dealt with various statutes, codes, and rules throughout my
19 career that are relevant to water and wastewater system design, wastewater
20 treatment plant siting, construction, permitting, etc.

21 **CITY OF GRANBURY OFFERS COG EXHIBIT 401 FOR ADMISSION INTO**
22 **EVIDENCE.**

1 **Q. You mentioned a wastewater system collection project. Is that part**
2 **of the City's work to expand its wastewater treatment capacity?**

3 A. Yes, it is. The City came to realize they had some issues in the wastewater
4 collection system, specifically in the eastern portion of the system, which
5 initiated the development of the wastewater collection system hydraulic model
6 I mentioned earlier. The model indicated that the issues in the system were
7 due to the increased demand from growth in the eastern portion of the system.
8 The capacity issues were masked in the system by a large storage volume in the
9 Lift Station 23 wet well. The system continues to experience problems
10 downstream of Lift Station 23 due to the increased demand from growth,
11 including sanitary sewer overflows at a bottleneck in the system. The city has
12 worked very hard to manage the capacity limitations in the system to minimize
13 the overflows, but significant infrastructure improvements are the only
14 practical solution to the problem. The east plant site is located adjacent to the
15 main wastewater interceptor for the eastern portion of the city, making it an
16 ideal location to divert and treat flow from the east side of the system. It is also
17 located upstream of Lift Station 23 and the other downstream capacity
18 restraints. So, the East Wastewater Treatment Plant will not only provide the
19 treatment capacity to accommodate growth, its location will resolve the existing
20 wastewater collection system issues as well.

21 **Q. You are also call Granbury home, don't you?**

22 A. Yes, my wife and I moved to Granbury in February of 2013. We have two kids
23 who both attend Granbury public schools. We love the community.

1 **Q. So as a member of the community you've witnessed first hand the**
2 **rapid growth in the area?**

3 A. Yes, I have. You can see new housing developments being constructed in nearly
4 every area of the City, in addition to the numerous restaurants and retail
5 businesses that have moved into town. I can also see evidence of the rapid
6 growth in our kid's schools. The school district is calling a bond election this
7 year to help address existing and continuing growth.

8 **Q. How has that growth that you've witnessed impacted the availability**
9 **of wastewater services in and around the community?**

10 A. The growth has resulted in increased demand on the City's existing wastewater
11 infrastructure. Areas in the City's wastewater collection system are not sized to
12 handle flows that are currently going to them. There is no easy solution to this
13 problem. The City has been proactive in mitigating the effects of the capacity
14 issues they are experiencing, not only through operations, but with the
15 initiation of the wastewater treatment plant and collection system
16 improvements I previously mentioned. They are taking steps to resolve the
17 current issues while also accounting for future growth.

18 **Q. You understand that the City has designated you as an expert**
19 **witness who has formed opinions, and who is prepared to testify**
20 **about those opinions, regarding whether the TCEQ Commission**
21 **should deny or alter the terms and conditions of the draft permit**

1 **based on the consideration of need under Texas Water Code section**
2 **26.0282?**

3 A. Yes.

4 **Q. Have you developed opinions as an expert in the field regarding**
5 **whether the TCEQ Commission should deny or alter the terms and**
6 **conditions of the draft permit based on the consideration of need**
7 **under Texas Water Code section 26.0282?**

8 A. I have.

9 **Q. Before we talk about what those opinions are, first describe what**
10 **you did and what you've experienced that led you to form your**
11 **opinions about considerations of need.**

12 A. As I mentioned earlier, I am the lead consultant for planning and design on the
13 wastewater collection portion of the wastewater system improvements project.
14 I assisted the city in the site selection process and in consideration of the best
15 options for addressing the city's need for additional wastewater treatment plant
16 capacity and collection system improvements. Through development of the
17 wastewater system hydraulic model, I have an in depth understanding of how
18 the system works, its operation, and its limitations. I've worked closely with
19 city staff on investigating system capacity for new developments and growth. I
20 reviewed and was part of correspondences to and from the TCEQ staff during
21 the application process. I reviewed the draft permit. I participated in multiple
22 public presentations and presentations to the City Council about the project.
23 I've reviewed the protestants' testimony and depositions, and I've reviewed

1 documents that they've provided through discovery. I'm familiar with the Lake
2 Granbury Watershed Protection Plan and the recommendations and results of
3 efforts made associated with the WPP. In addition, I live and work in the
4 community. I've witnessed first-hand the challenges that the community faces
5 because of the city's urgent need for the additional treatment capacity that the
6 East Wastewater Treatment Plant will provide. And as a professional in this
7 field of work, I see the tangible impacts of the stresses from the increased
8 demand on the system.

9 **Q. Can you explain what you mean by "impacts of the stresses" from**
10 **increased demand?**

11 A. As I mentioned earlier, the system has experienced sanitary sewer overflows
12 due to the capacity limitations in the collection system. While sanitary sewer
13 overflows are certainly not unique to the City's system, the complexity of the
14 city's overtaxed collection system, which has over 40 lift stations, makes it
15 difficult to manage. I don't think most people understand how difficult of a job
16 the Public Works department has to manage this challenge. Their ability to
17 recognize problems in the system is what initiated the planning for necessary
18 improvements. But also, I'm referring to the impact this wastewater treatment
19 capacity issue is having on the ability of the community to grow and develop.
20 Currently, new development is on hold until the capacity issues can be resolved.

1 **Q. Why is that?**

2 A. The City is currently at approximately 75 percent of its treatment capacity based
3 on existing connections. However, there are a significant number of committed
4 connections that were approved through the platting process some time ago.

5 **Q. What is a committed connection?**

6 A. When the City approves development through the platting process, they are
7 saying they can provide service to the development. The city then considers
8 these committed connections for capacity tracking purposes. For these
9 developments, especially larger ones, a significant amount of time can lapse
10 between planning and approval to lots being ready to build on. Many of the
11 current committed connections within the city have been projects that were
12 approved in planning a number of years ago. A significant number of these
13 developments are nearing the point to be ready to build upon.

14 **Q. What's the significance of these committed connections to**
15 **Granbury's wastewater treatment capacity challenges?**

16 A. These committed connections are projected to take up the remainder of
17 available treatment capacity at the existing wastewater treatment facility.

18 **Q. When you say "the remainder of available treatment capacity", do**
19 **you mean that literally?**

20 A. Yes. If all of the city's committed connections came on line today, the city would
21 be at 100 percent of wastewater treatment capacity. This is why the City of
22 Granbury started implementing building moratoria. The city does not have the
23 capacity to handle wastewater connections from new developments while being

1 able to serve its committed connections. This isn't a sustainable situation,
2 which is why the city needs the East Wastewater Treatment Plant capacity
3 quickly.

4 **Q. Rick Crawford discussed the building ban issued by the Granbury**
5 **City Council. How familiar are you with those moratoria?**

6 A. There have been multiple iterations of the building moratoria over the past
7 couple of years. The first was passed in late 2020 and prohibited new
8 construction on the east part of Granbury. The City Council expanded that ban
9 over the course of three different council actions. Today, a building ban covers
10 all of Granbury. I consulted with staff and the City Council during the process
11 of considering and initiating, and then expanding, the moratoria related to
12 wastewater system capacity.

13 **Q. If you look at COG Exhibits 105 and COG Exhibit 108, there are**
14 **memos attached that you authored. Summarize what you state in**
15 **the memos.**

16 A. They describe my assessments of the city's treatment system capacity issues,
17 the various places within the city's wastewater system where those issues were
18 becoming apparent, and the need for the East Wastewater Treatment Plant. I
19 try to make the point that the capacity issues in the eastern portion of the
20 collection system and any new connections or developments in the eastern
21 portion of the system will continue to exacerbate the issues. My professional
22 opinion at that time, which is still my opinion, was that the city's wastewater
23 system improvements project will resolve the issues, but the project was

1 experiencing delays associated with the East Wastewater Treatment Plant
2 permitting process. I explain that the number of approved developments, along
3 with existing connections, reached the city's available treatment capacity, and
4 I caution against approving new projects until additional wastewater treatment
5 capacity is available.

6 **Q. And to be clear, when you refer to the East Wastewater Treatment**
7 **Plant, you're referring to the facility that is proposed in the city's**
8 **application and that would be authorized by the Executive**
9 **Director's draft permit?**

10 A. That's correct.

11 **Q. What does the current version of the moratorium prohibit?**

12 A. That's the moratorium in COG Exhibit 108. It suspended applications and
13 approvals for development, including all plats to include Record Plats, Final
14 Plats, Preliminary Plats, Replats, Amending Plats, Minor Plats and
15 Development Plats in the eastern portion of the system. Essentially, it prevents
16 all development that would contribute additional flow to the eastern collection
17 system.

18 **Q. Earlier you testified that you assisted the city in its consideration of**
19 **options for addressing the city's need for additional wastewater**
20 **treatment plant capacity and collection system improvements. Do**
21 **you recall that?**

22 A, Yes, I do.

1 **Q. What options did the city consider before arriving at the option that**
2 **includes the construction of the East Wastewater Treatment Plant?**

3 A. The goal of the project included a total treatment capacity of 3 MGD to cover
4 the traditional growth analysis option for a 30-year planning range. We looked
5 at a number of different alternatives to accomplish that goal. The selected
6 alternative for the project was Alternative 5, specifically, Alternative 5a, which
7 you can see on page 8 of COG Exhibit 101. This included 2 MGD at the existing
8 South WWTP and 1 MGD in the interim phase of the proposed East WWTP.
9 This alternative provided significant cost savings over other alternatives, since
10 the East WWTP location allowed significant savings in required collection
11 system improvements, while also providing advanced treatment processes at
12 the WWTP. It was also recognized that due to the existing approved
13 developments, it is likely that additional capacity may be needed prior to the
14 end of the planning range. The selected alternative provided another step to
15 either pull the trigger on the final phase of the East WWTP to 2 MGD or build
16 another Treatment Plant on the North side of the lake at 1 MGD capacity, to
17 push the total treatment capacity to 4 MGD system wide. It does not clearly
18 outline this, but if you look at the alternative cost comparison, the total of
19 alternatives 5a and 5b provide 4 MGD of treatment capacity and collection
20 system improvements for only a relatively small amount of more money (less
21 than 10% more) compared to closest alternative, which only provides 3 MGD
22 of capacity.

1 **Q. You said earlier that you've formed opinions about whether the**
2 **TCEQ Commission should deny or alter the terms and conditions of**
3 **the draft permit based on the consideration of need under Texas**
4 **Water Code section 26.0282. Do you recall that?**

5 A. Yes.

6 **Q. Based on your expertise in this field through your knowledge, skill,**
7 **and training, and based on your personal experience with the issues**
8 **we've discussed so far, do you believe that the TCEQ Commission**
9 **should deny or alter the terms and conditions of the draft permit**
10 **based on the consideration of need?**

11 A. The City of Granbury needs the East Wastewater Treatment Plant. The
12 community needs it. That's made clear in the application. It will also
13 accommodate the current demand and the expected demand we'll see,
14 particularly on the eastern portion of the Granbury area. But its location allows
15 it to address the need for additional treatment capacity and also take a great
16 deal of stress off of other parts of the city's wastewater system.

17 **Q. In your opinion, should the Commission deny the application or not**
18 **issue the draft permit based on the consideration of need, as**
19 **described in section 26.0282 of the Texas Water Code?**

20 A. The Commission should not deny the application, it should grant it, because
21 the city needs the facility.

1 **Q. In your opinion, should the Commission alter any terms or**
2 **conditions of the draft permit based on the consideration of need**
3 **under section 26.0282 of the Texas Water Code?**

4 A. No. There are no terms or conditions in the draft permit that should be changed
5 based on need.

6 **Q. Thank you for that. Let's talk about the proposed plant site itself.**
7 **You understand that the City has designated you as an expert**
8 **witness who has formed opinions, and who is prepared to testify**
9 **about those opinions, regarding whether the proposed location for**
10 **the facility complies with the 100-year flood plain and wetland**
11 **location standards found in title 30, section 309.13(a) of the Texas**
12 **Administrative Code?**

13 A. I do.

14 **Q. Have you developed opinions as an expert in the field of regarding**
15 **whether the proposed location for the facility complies with the 100-**
16 **year flood plain and wetland location standards found in title 30,**
17 **section 309.13(a) of the Texas Administrative Code?**

18 A. Yes, I have.

19 **Q. What work have you done, and what information have you**
20 **reviewed, that has led you to form your opinions about whether the**
21 **proposed facility location complies with section 309.13(a)?**

22 A. I reviewed National Flood Hazard Layer (NFHL) data from FEMA. I also
23 reviewed the survey of the site property that was performed by Timothy Martin,

1 a Registered Professional Land Surveyor. In addition, I reviewed a
2 Conditional Letter of Map Revision, also called a CLOMR, submittal that was
3 prepared on the proposed facility property for a different project. The CLOMR
4 submittal was provided to the City prior to purchase of the property. This data
5 is typical of what is relied upon to make flood plain determinations.

6 **Q. If you look at COG Exhibit 103, which is a survey of the proposed**
7 **East Wastewater Treatment Plant property, it identifies what**
8 **appears to be the 100-year flood plain by a line referred to as**
9 **“approx. flood zone line”. Do you see that?**

10 A. I do.

11 **Q. Is the “approx. flood zone line” in your opinion an accurate**
12 **reflection of the 100-year flood plain delineation?**

13 A. Yes.

14 **Q. Did you also rely on this survey in forming your opinions regarding**
15 **whether the proposed facility complies with the 100-year flood plain**
16 **requirements in section 309.13(a) of the TCEQ rules?**

17 A. I did. The flood plain information shown on it is all derived from the NFHL
18 data I referenced earlier.

19 **Q. Based on your knowledge, skill, training, and experience, and based**
20 **on your review of all the information that you’ve discussed today,**

1 **what opinions do you have about whether the proposed facility**
2 **location complies with section 309.13(a) of the TCEQ rules?**

3 A. The plant that will be authorized in the draft permit, the East Wastewater
4 Treatment Plant, will not be located in the 100-year floodplain. The facility
5 proposed in the application and that would be authorized by the draft permit
6 complies with section 309.13(a) of the TCEQ rules.

7 **THANK YOU, MR. HAY. I HAVE NO FURTHER QUESTIONS OF MR. HAY AT**
8 **THIS TIME.**