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SOAH DOCKET NO. 473-20-1554.WS
DOCKET NO. 49225

PETITION BY OUTSIDE CITY RATEPAYERS APPEALING THE WATER RATES ESTABLISHED BY THE CITY OF CELINA	§ § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

CITY OF CELINA'S RESPONSES TO OUTSIDE CITY RATEPAYERS' SIXTH REQUEST FOR INFORMATION

Now comes CITY OF CELINA ("CELINA" or "City") and serves its Responses to the Outside City Ratepayers' Sixth Request for Information.

These responses are timely filed. CELINA stipulates that responses to requests for information can be treated by all parties as if the answers were filed under oath. CELINA reserves the right to amend or supplement its responses.

Respectfully submitted,
DAVIDSON TROILO REAM & GARZA, P.C.
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Austin, Texas 78701
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By: /s/ Scott Smyth
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State Bar No. 12367850
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ATTORNEYS FOR CITY OF CELINA

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing document has been served on all parties of record on this 29th day of April, 2020, in accordance with 16 Tex. Admin. Code § 22.74.

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Scott Smyth

SOAH DOCKET NO. 473-20-1554.WS
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PETITION BY OUTSIDE CITY RATEPAYERS APPEALING THE WATER RATES ESTABLISHED BY THE CITY OF CELINA	§ § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-1

RATEPAYERS' REQUEST TO CITY 6-1. Please identify and produce all water/ wastewater impact fee studies conducted in the past five years.

Response:
All water/wastewater impact fee studies conducted in the past five years are attached.

Sponsor: Jason Gray

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PETITION BY OUTSIDE CITY	§	
RATEPAYERS APPEALING THE	§	**PUBLIC UTILITY COMMISSION**
WATER RATES ESTABLISHED BY	§	
THE CITY OF CELINA	§	**OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-2

RATEPAYERS' REQUEST TO CITY 6-2. Please identify and produce all water/ wastewater impact fee studies used to establish any impact fees currently in effect.

Response:
The impact fee studies used to establish the impact fees currently in effect are attached.

Sponsor: Jason Gray

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PETITION BY OUTSIDE CITY RATEPAYERS APPEALING THE WATER RATES ESTABLISHED BY THE CITY OF CELINA	§ § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-3

RATEPAYERS' REQUEST TO CITY 6-3. Please describe in detail how debt service coverage is calculated for each of the following:

a. budget purposes,

b. financial statement purposes, and

c. rate setting purposes.

Response:
For rate setting purposes, the City has previously provided the comprehensive rate model that was used in the rate study, which clearly demonstrates how debt service coverage is calculated. Please refer to the previously provided rate model, tab "Revenue Expense Summary", Line 111.

For budget and financial statement purposes, the City follows its bond covenants for each individual series of obligations, its internal financial policies, the Governmental Finance Officers Association guidelines and best practices and Governmental Accounting Standards Board pronouncements and best practices. These documents are voluminous and may viewed by the requesting parties at Celina City Hall at a mutually convenient time.

Sponsor: Jason Gray

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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-4

RATEPAYERS' REQUEST TO CITY 6-4. Please identify and produce all studies conducted since 2015 that compare the costs of the Water/Sewer Fund transfers and payments to other city departments to the costs of the same services and functions performed by unrelated third parties.

Response:
No such studies were performed.

Sponsor: Jason Gray

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THE CITY OF CELINA	§	**OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-5

RATEPAYERS' REQUEST TO CITY 6-5. Please confirm that the payroll included in the Willdan Rate Study does not include costs for any position that was vacant at the end of the fiscal year 2018. If this cannot be confirmed, please provide a detailed schedule showing (a) the vacancies included and (b) the payroll costs associated with each of those vacancies.

Response:
All known payroll costs at 9/30/2018 are included in the Willdan Rate Study.

Sponsor: Jason Gray

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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-6

RATEPAYERS' REQUEST TO CITY 6-6. Please describe in detail and identify and produce all documents concerning any incentive compensation plan that was in effect during fiscal year 2018 and was available to the employees of the Water/Sewer utility. Please provide the total number of Water/Sewer Fund eligible for each incentive compensation plan, including a list of performance metrics that would render an employee eligible for an award under each incentive compensation plan, and the method of evaluation that was used to determine if an employee would receive an award under each incentive compensation plan.

Response:
There was no incentive compensation plan available to employees of the Water/Sewer utility during fiscal year 2018.

Sponsor: Jason Gray

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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-7

RATEPAYERS' REQUEST TO CITY 6-7. Please provide an index to the 24,907-page response to the City's Responses to Ratepayers' First Request for Information.

Response:

027 - 066	2018 07 10 Celina Staff Presentation 2.0
067 – 103	2018 08 27 Celina Staff Presentation
104 – 205	2028 09 06 Celina Water Watewater Rate Study—DRAFT
206 – 230	2018 10 09 Celina Council Presentation 2.0
231 – 234	2018 11 13 Rate Plan Scen 1
235 – 238	2018 11 13 Rate Plan Scen 2
239 – 259	2018 11 14 Celina Council Presentation
260 – 293	2018 11 14 Celina Rate Model Scen 1
294 – 309	2018 11 14 Celina Rate Model Scen 2
310 – 313	2018 11 14 Celina Rate Ordinance Scen 2 2.0
314 – 317	2018 11 14 Celina Rate Schedule Scen 1
318 – 321	2018 11 14 Celina Rate Schedule Scen 2
322 – 450	2018 11 14 Celina Rate Study Report FINAL
451 – 560	2019 03 05 Celina Water Wastewater Rate Study – FINAL
561 – 594	Appendix A
595 – 607	Appendix B
608 – 609	2018 Rate Schedules
610 – 611	2019 03 05 Revised Water Rates
612 – 613	2019 03 06 Revised Water and WW Rate Schedule
614 – 617	Celina Utility Rates NEEDS UPDATE
618	Exhibit A
619 – 623	Population Lot Absorption 2018-2022
624 – 626	Asset listing Water Sewer Asset Depreciation listing 2018
627	Celina WS – Asset Depreciation Report
628 – 933	December 2014 – Bill Consumption Report
934 – 1234	November 2014 – Bill Consumption Report
1235 – 1533	October 2014 – Bill Consumption Report
1534 – 1660	2015 2018 Celina Volume Data

1661 – 1978	April 2015 – Bill Consumption Report
1979 – 2321	August 2015 – Bill Consumption Report
2322 – 2681	December 2015 – Bill Consumption Report
2682 – 2992	February 2015 – Bill Consumption Report
2993 – 3298	January 2015 – Bill Consumption Report
3299 – 3632	July 2015 – Bill Consumption Report
3633 – 3961	June 2015 – Bill Consumption Report
3962 – 4274	March 2015 – Bill Consumption Report
4275 – 4598	May 2015 – Bill Consumption Report
4599 – 4952	November 2015 – Bill Consumption Report
4953 – 5302	October 2015 – Bill Consumption Report
5303 – 5647	September 2015 – Bill Consumption Report
5648 – 6022	April 2016 – Bill Consumption Report
6023 – 6482	August 2016 – Bill Consumption Report
6483 – 6963	December 2016 – Bill Consumption Report
6964 – 7331	February 2016 – Bill Consumption Report
7332 – 7694	January 2016 – Bill Consumption Report
7695 – 8149	July 2016 – Bill Consumption Report
8150 – 8597	June 2016 – Bill Consumption Report
8598 – 8969	March 2016 – Bill Consumption Report
8970 – 9412	May 2016 – Bill Consumption Report
9413 – 9887	November 2016 – Bill Consumption Report
9888 – 10359	October 2016 – Bill Consumption Report
10360 – 10827	September 2016 – Bill Consumption Report
10828 – 11338	April 2017 – Bill Consumption Report
11339 – 11897	August 2017 – Bill Consumption Report
11898 – 12482	December 2017 – Bill Consumption Report
12483 – 12972	February 2017 – Bill Consumption Report
12973 – 13457	January 2017 – Bill Consumption Report
13458 – 14004	July 2017 – Bill Consumption Report
14005 – 14538	June 2017 – Bill Consumption Report
14539 – 15040	March 2017 – Bill Consumption Report
15041 – 15562	May 2017 – Bill Consumption Report
15563 – 16141	November 2017 – Bill Consumption Report
16142 – 16711	October 2017 – Bill Consumption Report
16712 – 17274	September 2017 – Bill Consumption Report
17275 – 17898	April 2018 – Bill Consumption Report
17899 – 18513	March 2018 – Bill Consumption Report
18514 – 19115	February 2018 – Bill Consumption Report
19116 – 19709	January 2018 – Bill Consumption Report
19710	Water-service table code description
19711	Sewer Service table code description
19712 – 19838	2015 2018 Celina Volume Data
19839 – 20033	City of Celina FY 218 Annual Budget
20034 – 20167	FY 2017 CAFR
20168 – 20171	CIP Master List
20172 – 20176	Five Year CIP Master List – Final
20177 – 20178	2018 02 Celina Current Rate

20179	Celina WS – Projected Series 2018
20180 – 20204	Celina WS System Net Revenue GO Debt as of FY 2017
20205 – 20229	Water Wastewater Debt Schedule
20230	Copy of Debt Broken down by Water Sewer
20231 – 20269	Development Agreement – 2007
20270 – 20273	Ordinance 12122011-2011-45
20274 – 20279	Ordinance 122017-2017-137
20280	Summary 07-17
20281 – 20304	Celina Photos
20305	010-38175 – Invoice
20306	107658 Celina 6-18-18
20307	107658 Celina 7-11-18
20308	107658 Celina 10-12-18
20309 – 20313	2018 02 16 Willdan Celina Rate Study Engage Ltr
20314	WFS W9 2018
20315 – 20319	Willdan Financial Services – Water & Wastewater Rate Studies 4-10-18
20320 – 20322	2018 02 15 Celina Meeting
20323 – 20326	2018 05 01 Celina Meeting
20327	2018 07 06 Celina Review
20328 – 20329	2018 07 10 Celina Staff Meeting
20330 – 20331	2018 08 27 Celina Staff Meeting
20332 – 20336	Upper Trinity Contracts
20337	Amortization Schedule Total W&S
20338 – 20362	Amortization Schedules-up to 2016 CO
20363 – 20365	Answers to Jasons Questions
20366 – 20709	Billed Consumption Report Dec 2015 – Residential
20710 – 21054	Billed Consumption Report Jan 2016 – Residential
21055 – 21404	Billed Consumption Report Feb 2016 – Residential
21405 – 21408	Celina RFI
21409 – 21412	Celina RFI – Updated
21413	Chart Example
21414	DoeBranchStmt
21415	DoeBranchStmt2
21416 – 21417	Handouts_Draft_8-24-17
21418 – 21436	NewGenScenarios 8-25-17 Charts
21437 – 21438	NewGenScenarios 8-25-17
21439 – 21440	Outstanding Debt as of 9-30-15
21441 – 21444	Request for Information
21445 – 21468	Upper Trinity Invoices 06-25-15 through 05-2016
21469 – 21470	UTRWD Debt Service
21471 – 21472	UTRWD FY 2017 Preliminary fees charges
21473	Impact Fees Ordinance
21474	Rate Table screenshot
21475	Stormwater Drainage Amended Ordinance
21476	Stormwater Drainage Ordinance
21477	UB screen shot
21478	2017 CO Project List
21479 – 21481	Copy of Outstanding Debt-Answers to Questions

21482 – 21486	Copy of Questions 8-23-16 (2)
21487 – 21488	Debt Broken down by Water Sewer
21489 – 21495	FY2013 W-S Final Budget-Detail
21496 – 21503	FY2014 W-S Final Budget-Detail
21504 – 21508	FY2015 W-S Final Budget Detail
21509 – 21511	FY2016 W-S Budget Detail
21512 – 21516	GL Detail Listing Water Sales 9-30-15
21517	May 31, 2016 Bank Balances
21518 – 21521	Outstanding Debt
21522 – 21525	Questions_8-23-16-Answers
21526 – 22607	UB Sales Report 9-30-15
22608 – 23390	UB Sales Variance Explanation
23391 – 23392	UTRWD DOE Branch Breakdown
23393 – 23394	Water and Sewer Sale Revenue Since 2012
23395 – 23413	NewGenScenarios 8-25-17
23414 – 23415	Kick-Off Meeting Questions_Celina-Answers
23416 – 23449	2002 RSY Rate Study
23450 – 23714	City of Celina, Texas Water & Wastewater Rate Study 2018
23715 – 23794	2019 04 CCI Rate Appeal
23795 – 23800	49225-PUCT Staff 3rd RFI's and RFA to Celina
23801 – 23806	49225-PUCT Staff 5th RFI's to City of Celina
23807 – 23812	49225-PUCT Staff 4th RFI
23813 – 23818	DOCS1-#263460v3-List of Issues DVJ
23819 – 23823	DOCS1-#263460-v3-List of Issues
23824 – 23826	Asset Listing water Sewer Asset Deprecation listing 2018
23827 – 23863	AWWA Manual M-1 Section VI
23864 – 23997	FY 2017 CAFR
23998 – 24139	Celina 2018 CAFR
24140 – 24141	Census Bureau Celina HH Income
24142 – 24146	Light Farms Demographics
24147 – 24148	Light Farms Home Sales
24149 – 24154	Light Farms Homes Values
24155 – 24160	Weston Celina HH Income
24161	Light Farms Agreement Language—Water Rates
24162 – 24171	2nd Amendment LightFarms 12612009
24172 – 24176	3rd Amendment LightFarms 05092011
24177 – 24211	4th Amendment LightFarms 10082012
24212 – 24242	5th Amendment LightFarms 05132014
24243 – 24345	6th Amendment LightFarms 09112015
24346 – 24437	7th Amendment LightFarms 11102015
24438 – 24548	8th Amendment LightFarms 01192016
24549 – 24588	9th Amendment LightFarms 12132016
24589 – 24666	Amended LightFarms 3122007_78pages
24667 – 24705	Development Agreement – SIGNED COPY – Submitted by MUD to PUC
24706 – 24728	Light Ranch 380 Agreement
24729 – 24740	2019 Raftelis Rate Survey
24741	2019 10 11 Outside City Premiums
24742 – 24744	Outside City Comps

24745 – 24798	2020 03 0-3 Max YrMoodys Baa Rate
24799 – 24801	PUC Class B Utility Rates of Return
24802 – 24806	TWC Appellate Jurisdiction
24807	LF Sewer Customers
24808	Celina project detail report
24809	2020 03 10 Rate Case Expenses
24810	108788 Celina – through 2-29-2020
24811	108788 Celina – through 3-6-2020
24812 – 24819	108788 Celina Invoices
24820 – 24823	2019 02 27 Willdan Celina PUC Engage Ltr Executed
24824 – 24827	2019 02 27 Willdan Celina PUC Engage Ltr
24828	WFS W9 2019
24829 – 24832	2019 02 27 Willdan Celina PUC Engage Ltr
24833 – 24834	24.29 – Interim Water Rates
24835 – 24840	2019 07 09 PUC Staff RFI 2
24841 – 24843	49225-City of Celina's Rule 11 Agreement for Extension of Time
24844 – 24848	49225-PUCT Staff Motion to Compel 5th RFI Responses
24849 – 24850	Appeal
24851 – 24852	Order requiring responses
24853	AP016Procedural Schedule Draft – revised
24854 – 24855	Revised – Proposed Agreed Procedural Schedule – Msg.
24856 – 24880	2018 10 09 Celina Council Pres 2.0
24881 – 24901	2018 11 14 Celina Counsel Pres.
24902 – 24907	2019 3 19 Celina Council Pres Utility Rate Update

Sponsor: Jason Gray

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PETITION BY OUTSIDE CITY	§	
RATEPAYERS APPEALING THE	§	**PUBLIC UTILITY COMMISSION**
WATER RATES ESTABLISHED BY	§	
THE CITY OF CELINA	§	**OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-8

RATEPAYERS' REQUEST TO CITY 6-8. Please identify the preparer and the sponsoring witness for each document in the City's Responses to Ratepayers' First Request for Information.

Response:
This information has previously been provided by the City. Please see City of Celina's Response to Ratepayers' First Request for Information, and specifically, Request for Information Ratepayers' 1-23.

Sponsor: Jason Gray

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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-9

RATEPAYERS' REQUEST TO CITY 6-9. Please identify any customer types (e.g., government, schools, non-profit, etc.) eligible for discounts and/or exemptions from water/sewer impact fees.

Response:
Under Article 10.02 of the City's Code of Ordinances, all customer types are eligible for discounts and/or exemptions from water/sewer impact fees where not inconsistent with state law or City ordinances and policies.

Sponsor: Jason Gray

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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-10

RATEPAYERS' REQUEST TO CITY 6-10. Please identify and describe in detail the value of any discounts and/or exemptions from water/sewer impact fees from the date impact fees were first implemented to 9/30/18.

Response:
No single comprehensive and aggregate report on the value of any and all discounts and/or exemptions from water/sewer impact fees from the date impact fees were first implemented to 9/30/2018 (or any other date) exists. This information is voluminous and is contained in a wide variety of documents, including annual budgets, development agreements, Chapter 380 economic development agreements, audits, and comprehensive annual financial reports. The City provides for annual accounting of impact fees in its audited financial statements. The City will provide any of these documents as requested at Celina City Hall at a mutually convenient time for the requestor to review.

Sponsor: Jason Gray

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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-11

RATEPAYERS' REQUEST TO CITY 6-11. Please identify any customer types (e.g., government, schools, non-profit, etc.) eligible for discounts and/or exemptions from water or sewer rates.

Response:
The only customer class that is eligible to receive a discount or exemption from water or sewer rates are the residents of the Light Farms Development. The Development Agreement previously provided in City of Celina's Response to Ratepayers' First Request for Information at Bates #24161 limits the rate charged to residents of the Light Farms development to a rate multiplier of 150% of the rates charged for inside city customers, regardless of whether a higher rate may be reasonable and justified.

Additionally, the same Development Agreement limits the City to charging the same wastewater rates to residents of the Light Farms development as the rates the City establishes for inside city customers regardless of whether a higher rate may be reasonable and justified.

Sponsor: Jason Gray

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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-12

RATEPAYERS' REQUEST TO CITY 6-12. Please identify and describe in detail the value of any discounts and/or exemptions from water or sewer rates in fiscal year 2017 and fiscal year 2018.

Response:
See Response to 6-11. The financial and risk benefits received by the residents of the Light Farms development is outlined in detail in Dan V. Jackson's direct testimony.

Sponsor: Dan V. Jackson

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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-13

RATEPAYERS' REQUEST TO CITY 6-13. For each type of water/sewer impact fee collected, please reconcile all impact fee monies collected and dispersed from the original inception of the fee to 9/30/18.

Response:
The City does not maintain a comprehensive and aggregate reconciliation report for impact fees, but rather provides an annual reconciliation of impact fees and all other funds in the annual audited financial statements and Comprehensive Annual Financial Reports. As these documents, from the original inception of the impact fees to 9/30/2018, are voluminous, the City will make these documents available for review at Celina City Hall at a mutually convenient time.

Sponsor: Jason Gray

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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-14

RATEPAYERS' REQUEST TO CITY 6-14. For each capital project funded partially or entirely by water/sewer impact fees:

a. Please identify the project,

b. State the total cost of each project,

c. State the amount of each project funded by impact fees,

d. State the date each project was placed in service, and

e. State the depreciable life of each project.

Response:
The City does not maintain a comprehensive and aggregate project report for all projects funded partially or entirely by impact fees. Capital projects funded partially or entirely by water/sewer impact fees are outlined in detail in the annual budgets, audited financial statements, and Comprehensive Annual Financial Reports of the City, including, but not limited to the identification of the projects, total cost of the projects and the amount of each project funded by impact fees. As these documents, from the original inception of the impact fees to 9/30/2018, are voluminous, the City will make these documents available for review at Celina City Hall at a mutually convenient time.

Sponsor: Jason Gray

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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-15

RATEPAYERS' REQUEST TO CITY 6-15. Please identify and describe in detail the depreciation methods used to calculate the fiscal year 2018 annual depreciation amounts and depreciation reserves and identify and explain the factors that were considered in arriving at estimates of service life and dispersion by account.

Response:
The City has previously provided the requested information. Please see the Asset Depreciation Short Report as of 9/30/2018 at Bates # 624 of the City of Celina's Responses to Outside City Ratepayers' First Request for Information. Further, the depreciation methods used to calculate annual depreciation amounts are clearly delineated in the previously provided rate model and work papers of Dan V. Jackson.

Sponsor: Jason Gray, Dan V. Jackson

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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-16

RATEPAYERS' REQUEST TO CITY 6-16. Please produce a complete copy of depreciation studies used. For each depreciation study produced:

a. Please set forth, in exhibit form, charts depicting the original and estimated survivor curves and a tabular presentation of the original life table plotted on the chart for each account where the retirement rate method of analysis is utilized.

b. Provide the surviving original cost at historic test year-end by vintage by account and include applicable depreciation reserves and accruals.

These calculations should be provided for plant in service as well as other categories of plant, including contributions in aid of construction and customers' advances for construction.

Response:
The City does not have depreciation studies that show the breadth of information requested. All depreciation methods and application are clearly detailed in the previously provided audited financial statements, Comprehensive Annual Reports, the rate model, and the work papers of Dan V. Jackson.

Sponsor: Jason Gray

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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-17

RATEPAYERS' REQUEST TO CITY 6-17. Please identify and produce copies of all compensation studies that were reviewed in setting base salaries, short-term incentive compensation, and long-term incentive compensation for each Water/Sewer Fund employee position during the fiscal year 2018 test year and from the test year through March 2019.

Response:
While the City does periodic internal compensation analysis, the City did not rely on any compensation studies for setting base salaries, short-term incentive compensation, and long-term incentive compensation for each Water/Sewer Fund employee position during the fiscal year 2018 test year or from the test year through March 2019.

Sponsor: Jason Gray

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DOCKET NO. 49225

PETITION BY OUTSIDE CITY	§	
RATEPAYERS APPEALING THE	§	**PUBLIC UTILITY COMMISSION**
WATER RATES ESTABLISHED BY	§	
THE CITY OF CELINA	§	**OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-18

RATEPAYERS' REQUEST TO CITY 6-18. Please produce the City Council meeting notes, presentations, or other documents related to the approval of any Water/Sewer Fund compensation adjustments during the fiscal year 2018 through March 2019.

Response:
The City Council reviews and approves the Water/Sewer Fund at a Fund level and reviews information corresponding to the expenditure categories of each department. The City Council reviewed, considered, and acted upon the FY2018 and FY2019 budgets through multiple public hearings and agenda items. All budget presentations reviewed by the City Council in their consideration are attached.

Sponsor: Jason Gray

SOAH DOCKET NO. 473-20-1554.WS
DOCKET NO. 49225

PETITION BY OUTSIDE CITY RATEPAYERS APPEALING THE WATER RATES ESTABLISHED BY THE CITY OF CELINA	§ § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-19

RATEPAYERS' REQUEST TO CITY 6-19. Please identify where in the Willdan Rate Study that water usage is annualized and describe the annualization process.

Response:
The City has previously provided its water usage analysis in the volume model and the rate model. The calculations for the annualization of test year and forecast usage are also included in the previously provided volume model and rate model, specifically the volume input page. The calculations within the volume input page are clear and self-evident.

Sponsor: Jason Gray, Dan V. Jackson

SOAH DOCKET NO. 473-20-1554.WS
DOCKET NO. 49225

PETITION BY OUTSIDE CITY RATEPAYERS APPEALING THE WATER RATES ESTABLISHED BY THE CITY OF CELINA	**§**	**PUBLIC UTILITY COMMISSION OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-20

RATEPAYERS' REQUEST TO CITY 6-20. Please identify where in the Willdan Rate Study that water customer numbers are annualized and describe the annualization process.

Response:
The City has already responded to this request. See response to 5-6. The City has also provided its volume model and rate model which contains its analysis of water customers, specifically the volume input page. The calculations within the volume input page are clear and self-evident.

Sponsor: Jason Gray, Dan V. Jackson

SOAH DOCKET NO. 473-20-1554.WS
DOCKET NO. 49225

PETITION BY OUTSIDE CITY RATEPAYERS APPEALING THE WATER RATES ESTABLISHED BY THE CITY OF CELINA	**§**	**PUBLIC UTILITY COMMISSION OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-21

RATEPAYERS' REQUEST TO CITY 6-21. Please identify where in the Willdan Rate Study that water usage is normalized and describe the normalization process.

Response:
The City has previously provided its water usage analysis in the volume model and the rate model. The calculations for the normalization of test year and forecast usage are also included in the previously provided volume model and rate model, specifically the volume input page. The calculations within the volume input page are clear and self-evident.

Sponsor: Jason Gray, Dan V. Jackson

SOAH DOCKET NO. 473-20-1554.WS
DOCKET NO. 49225

PETITION BY OUTSIDE CITY	§	
RATEPAYERS APPEALING THE	§	**PUBLIC UTILITY COMMISSION**
WATER RATES ESTABLISHED BY	§	
THE CITY OF CELINA	§	**OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-22

RATEPAYERS' REQUEST TO CITY 6-22. Please identify where in the Willdan Rate Study that water revenue requirements are annualized and describe the annualization process.

Response:
The City has previously provided its water revenue requirements calculations in the comprehensive rate model contained in the testimony of Dan V. Jackson. The model contains an extensive, line by line calculation of all revenue requirements, including operating and non-operating costs. The formulas used, the accelerators, and the calculations are self-evident in the model.

The City further notes that its revenue requirements are based on the City's adopted budget, which was reviewed extensively by City staff, subject to multiple public hearings, and approved by a vote of the City Council. The City has noted in previous RFIs that for the period 2018 – 2019, the City's actual water and wastewater operating expenditures were within 1% of the adopted budget. The City has received the Government Finance Officers Association Distinguished Budget Award, reflecting its meeting of the highest principles of governmental budgeting. In order to receive the award, the City satisfied nationally recognized guidelines regarding its budget's ability to serve as a policy document, financial plan and operations device.

Sponsor: Jason Gray, Dan V. Jackson

SOAH DOCKET NO. 473-20-1554.WS
DOCKET NO. 49225

PETITION BY OUTSIDE CITY RATEPAYERS APPEALING THE WATER RATES ESTABLISHED BY THE CITY OF CELINA	**§**	**PUBLIC UTILITY COMMISSION OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-23

RATEPAYERS' REQUEST TO CITY 6-23. Please identify where in the Willdan Rate Study that water revenue requirements are normalized and describe the normalization process.

Response:
The City has previously provided its water revenue requirements calculations in the comprehensive rate model contained in the testimony of Dan V. Jackson. The model contains an extensive, line by line calculation of all revenue requirements, including operating and non-operating costs. The formulas used, the accelerators, and the calculations are self-evident in the model.

The City further notes that its revenue requirements are based on the City's adopted budget, which was reviewed extensively by City staff, subject to multiple public hearings, and approved by a vote of City representatives. The City has noted in previous RFIs that for the period 2018 – 2019, the City's actual water and wastewater operating expenditures were within 1% of the adopted budget. The City has received the Government Finance Officers Association Distinguished Budget Award, reflecting its meeting of the highest principles of governmental budgeting. In order to receive the award, the City satisfied nationally recognized guidelines regarding its budget's ability to serve as a policy document, financial plan and operations device.

Sponsor: Jason Gray, Dan V. Jackson

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RATEPAYERS APPEALING THE	§	**PUBLIC UTILITY COMMISSION**
WATER RATES ESTABLISHED BY	§	
THE CITY OF CELINA	§	**OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-24

RATEPAYERS' REQUEST TO CITY 6-24. Please identify where in the Willdan Rate Study that wastewater usage is annualized and describe the annualization process.

Response:
The City has already responded to this request. See responses to 5-6, 5-7, 5-8, 5-9, 5-10, 5-11 and 5-12. Wastewater is based on water and therefore uses similar calculations. The City has also provided its volume model and rate model which contains its analysis of water customers, specifically the volume input page. The calculations within the volume input page are clear and self-evident.

Sponsor: Jason Gray, Dan V. Jackson

SOAH DOCKET NO. 473-20-1554.WS
DOCKET NO. 49225

PETITION BY OUTSIDE CITY RATEPAYERS APPEALING THE WATER RATES ESTABLISHED BY THE CITY OF CELINA	**§ § § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-25

RATEPAYERS' REQUEST TO CITY 6-25. Please identify where in the Willdan Rate Study that wastewater customer numbers are annualized and describe the annualization process.

Response:
The City has already responded to this request. See responses to 5-6, 5-7, 5-8, 5-9, 5-10, 5-11 and 5-12. Wastewater is based on water and therefore uses similar calculations. The City has also provided its volume model and rate model which contains its analysis of water customers, specifically the volume input page. The calculations within the volume input page are clear and self-evident.

Sponsor: Jason Gray, Dan V. Jackson

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THE CITY OF CELINA	§	**OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-26

RATEPAYERS' REQUEST TO CITY 6-26. Please identify where in the Willdan Rate Study that wastewater usage is normalized and describe the normalization process.

Response:
The City has already responded to this request. See responses to 5-6, 5-7, 5-8, 5-9, 5-10, 5-11 and 5-12. Wastewater is based on water and therefore uses similar calculations. The City has also provided its volume model and rate model which contains its analysis of water customers, specifically the volume input page. The calculations within the volume input page are clear and self-evident.

Sponsor: Jason Gray, Dan V. Jackson

SOAH DOCKET NO. 473-20-1554.WS
DOCKET NO. 49225

PETITION BY OUTSIDE CITY	§	
RATEPAYERS APPEALING THE	§	**PUBLIC UTILITY COMMISSION**
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THE CITY OF CELINA	§	**OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-27

RATEPAYERS' REQUEST TO CITY 6-27. Please identify where in the Willdan Rate Study that wastewater revenue requirements are annualized and describe the annualization process.

Response:
The City has previously provided its wastewater revenue requirements calculations in the comprehensive rate model contained in the testimony of Dan V. Jackson. The model contains an extensive, line by line calculation of all revenue requirements, including operating and non-operating costs. The formulas used, the accelerators, and the calculations are self-evident in the model.

The City further notes that its revenue requirements are based on the City's adopted budget, which was reviewed extensively by City staff, subject to multiple public hearings, and approved by a vote of City representatives. The City has noted in previous RFIs that for the period 2018 – 2019, the City's actual water and wastewater operating expenditures were within 1% of the adopted budget. The City has received the Government Finance Officers Association Distinguished Budget Award, reflecting its meeting of the highest principles of governmental budgeting. In order to receive the award, the City satisfied nationally recognized guidelines regarding its budgets ability to serve as a policy document, financial plan and operations device.

Sponsor: Jason Gray, Dan V. Jackson

SOAH DOCKET NO. 473-20-1554.WS
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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-28

RATEPAYERS' REQUEST TO CITY 6-28. Please identify where in the Willdan Rate Study that wastewater revenue requirements are normalized and describe the normalization process.

Response:
The City has previously provided its wastewater revenue requirements calculations in the comprehensive rate model contained in the testimony of Dan V. Jackson. The model contains an extensive, line by line calculation of all revenue requirements, including operating and non-operating costs. The formulas used, the accelerators, and the calculations are self-evident in the model.

The City further notes that its revenue requirements are based on the City's adopted budget, which was reviewed extensively by City staff, subject to multiple public hearings, and approved by a vote of City representatives. The City has noted in previous RFIs that for the period 2018 – 2019, the City's actual water and wastewater operating expenditures were within 1% of the adopted budget. The City has received the Government Finance Officers Association Distinguished Budget Award, reflecting its meeting of the highest principles of governmental budgeting. In order to receive the award, the City satisfied nationally recognized guidelines regarding its budget's ability to serve as a policy document, financial plan and operations device.

Sponsor: Jason Gray, Dan V. Jackson

SOAH DOCKET NO. 473-20-1554.WS
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THE CITY OF CELINA	§	**OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-29

RATEPAYERS' REQUEST TO CITY 6-29. Please identify and describe the substance of all conversations between you and Commission Staff regarding requests for information in this docket.

Response:
The City of Celina staff has not had conversations with Commission Staff regarding requests for information in this docket.

Sponsor: Jason Gray

SOAH DOCKET NO. 473-20-1554.WS
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CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-30

RATEPAYERS' REQUEST TO CITY 6-30. Please identify and describe the substance of all conversations between you and Commission Staff regarding the City's direct case in this docket.

Response:
The City of Celina staff has not had conversations with Commission Staff regarding the City's direct case in this docket.

Sponsor: Jason Gray

SOAH DOCKET NO. 473-20-1554.WS
DOCKET NO. 49225

PETITION BY OUTSIDE CITY RATEPAYERS APPEALING THE WATER RATES ESTABLISHED BY THE CITY OF CELINA	§ § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-31

RATEPAYERS' REQUEST TO CITY 6-31. Please identify and produce all documents provided by you to Commission Staff regarding requests for information in this docket, other than documents filed on the Commission's Interchange.

Response:
The City of Celina has not received documents from Commission Staff regarding requests for information in this docket, other than documents filed on the Commission's Interchange.

Sponsor: Jason Gray

SOAH DOCKET NO. 473-20-1554.WS
DOCKET NO. 49225

PETITION BY OUTSIDE CITY RATEPAYERS APPEALING THE WATER RATES ESTABLISHED BY THE CITY OF CELINA	§ § § §	**PUBLIC UTILITY COMMISSION OF TEXAS**

CITY OF CELINA'S RESPONSE TO RATEPAYERS' SIXTH REQUEST FOR INFORMATION

REQUEST FOR INFORMATION RATEPAYERS' 6-32

RATEPAYERS' REQUEST TO CITY 6-32. Please identify and produce all documents provided by you to Commission Staff regarding the City's direct case, other than documents filed on the Commission's Interchange.

Response:
The City of Celina has not received documents from Commission Staff regarding the City's direct case in this docket, other than documents filed on the Commission's Interchange.

Sponsor: Jason Gray

CITY OF CELINA, TEXAS

ORDINANCE NO. 2014-58

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF CELINA, TEXAS AMENDING THE CITY'S CODE OF ORDINANCES, CHAPTER 10: SUBDIVISION REGULATION, ARTICLE 10.02: IMPACT FEES, DIVISION 2: WATER AND WASTEWATER FACILITIES BY ADOPTING REVISED WATER AND WASTEWATER CAPITAL IMPROVEMENTS PLANS AND IMPACT FEE ANALYSIS; ADOPTING REVISED WATER AND WASTEWATER IMPACT FEES; ADOPTING A REVISED SCHEDULE 1 ASSESSMENT RATES AND SCHEDULE 2 COLLECTION RATES FOR WATER AND WASTEWATER; PROVIDING A CUMULATIVE REPEALER CLAUSE; PROVIDING A SAVINGS CLAUSE; PROVIDING A SEVERABILITY CLAUSE; PROVIDING FOR PUBLICATION; PROVIDING FOR ENGROSSMENT AND ENROLLMENT; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the City of Celina is a home rule municipality located in Collin County and Denton County, Texas created in accordance with the provisions of the Texas Local Government Code, the Texas Constitution and operating pursuant to the enabling legislation of the state of Texas; and

WHEREAS, the City of Celina, Texas, has previously adopted ordinances establishing impact fees to be assessed by the City of Celina; and

WHEREAS, the City Council desires to amend its current ordinance regarding the amount of impact fees for water and wastewater facilities and has determined that certain restrictions should be adopted in the interest of public safety; and

WHEREAS, the City of Celina has fully complied with Chapter 395, Local Government Code, to approve the proposed impact fees for water and sewer charged per service unit; and

WHEREAS, a periodic update of the Land Use Assumptions and Capital Improvements Plans is required every five (5) years by Section 395.052 of the Local Government Code; and

WHEREAS, the City has retained consultants to prepare updates to the Land Use Assumptions, Capital Improvements Plans, Impact Fees, and ordinance provisions in order to meet the requirements of Chapter 395 of the Local Government Code; and

WHEREAS, notice has been published and public hearings held concerning the revised Land Use Assumptions, Capital Improvements Plans and Impact Fees for water and wastewater facilities, as prepared by a qualified professional engineer; and

WHEREAS, the City's Capital Improvements Advisory Committee has reviewed the proposed updates to the City's Impact Fees Program and found the updated Land Use Assumptions, Capital Improvements Plans and the Maximum Fee Schedule to be accurate projections of growth, development, required public improvements, and associated costs; and

WHEREAS, the City Council of the City of Celina has authorized the City Manager to proceed with revisions and review of the Land use Assumptions and Water and Wastewater Capital Improvements Plans, and providing for hearing to be given, in accordance with the applicable law, and such notices have been given; and

WHEREAS, all of the provisions of Chapter 395 of the Local Government Code, necessary for the approval of the provisions contained herein have been complied with; and

WHEREAS, public hearings were held to receive public input relating to the 2014 Land Use Assumptions, Capital Improvements Plans, and Water and Wastewater Impact Fees; and

WHEREAS, upon full consideration of the recommended changes and updates, and all matters attendant and related thereto, the City Council finds that it is in the best interest of the public health, safety, and welfare of the citizens of Celina to adopt and amend the impact fees for water and sewer.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CELINA, TEXAS:

SECTION 1: THAT the above and foregoing premises are true and correct and are incorporated herein and made a part hereof for all purposes.

SECTION 2: THAT the revised Land Use Assumptions, Water and Wastewater Capital Improvements Plans, and Water and Wastewater Impact Fee Analysis; and Schedule 1 Assessment Rates set forth in Section 10.02.051 of the Celina Code of Ordinances and Schedule 2 Collection Rates for Water and Wastewater Impact Fees set forth in Section 10.02.052 of the Celina Code of Ordinances, which are attached hereto as Exhibits "A" and "B," and incorporated herein by reference, are hereby adopted, replacing and superseding any other Land Use Assumptions, Capital Improvements Plans and Impact Fees for water and wastewater facilities previously approved and adopted by the City Council of the of the City Celina, Texas.

SECTION 3: THAT, if any section, sentence, clause, or phrase of this Ordinance is declared unconstitutional for any reason, such holding shall not affect the constitutionality and the validity of any other section, sentence, clause, or phrase of this Ordinance.

SECTION 4: THAT, any person, firm or corporation violating any of the provisions of this Ordinance shall be guilty of a misdemeanor and upon final conviction therefore shall be in a sum not to exceed the dollar amount established by City Code for ordinance violations, as may be amended from time to time. Each and every day such violation continues shall constitute a separate offense and shall be punishable as such hereunder.

SECTION 5: THAT all rights and remedies of the City of Celina, Texas are expressly saved as to any and all violations of this provision of any other ordinance affecting impact fees, which have secured at the time of the effective date of this Ordinance; and, as to such accrued violations and all pending litigation, both civil and criminal, whether pending in court or not, under such ordinances same shall not be affected by this Ordinance but may be prosecuted until final disposition by the court.

SECTION 6: THAT this Ordinance supercedes all ordinances or parts of ordinances in conflict with the provisions herein stated.

SECTION 7: THAT this Ordinance shall become effective on Dec 9, 2014.

SECTION 8: THAT the City Secretary is hereby authorized and directed to cause publication of this descriptive caption and penalty clause hereof as an alternative method of publication as provided by law.

AND IT IS SO ORDAINED.

PASSED AND APPROVED by the City Council of the City of Celina, Texas this 9 day of December 2014.

Sean Terry
City of Celina, Texas

ATTEST:

Vicki Faulkner, City Secretary
City of Celina, Texas

[SEAL]

APPROVED AS TO FORM:

City Attorney
City of Celina, Texas

EXHIBIT A

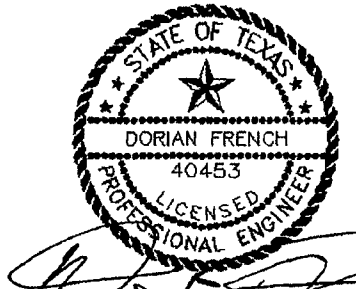
City of Celina

2014 Water and Wastewater Impact Fee Update

December 2014

2014 Water and Wastewater Impact Fee Update

December 2014



Brown & Gay Engineers, Inc.
F-1046

12.18.2014

Prepared for:

The City of Celina
142 North Ohio
Celina, TX 75009
972-382-2682

Prepared by:

Brown & Gay Engineers, Inc.
2595 Dallas Parkway, Suite 204
Frisco, Texas 75034
T (972) 464-4800
F (972) 464-4899

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Executive Summary

The purpose of this report is to update the 2003-2013 Water and Wastewater Impact Fee Update and to calculate new water and wastewater maximum impact fees. Impact fees must be adopted in accordance with the requirements of Chapter 395 of the Local Government Code of Texas (Chapter 395). The title of Chapter 395 is *"Financing Capital Improvements required by New Development in Municipalities, Counties, and Certain Other Local Governments".*

Section 395.52 requires that the Land Use Assumptions (LUA) and Capital Improvements Plan (CIP) be updated at least every five years. The City of Celina first established their Water and Wastewater Impact Fees on March 13, 2001. These fees have been amended since then and the current impact fee ordinance established the water and wastewater impact fees based upon a single-family residence (Service Unit) as follows:

Table 1: Current Impact Fees

	Water	Wastewater
Maximum Impact Fee	$6,553	$9,262
Maximum Allowable Impact Fee	$3,276	$4,631
Impact Fee Collection Rate	$1,300	$1,500

Water Impact Fees

The total recoverable cost (Impact Fee Eligible Cost) of the 2014-2024 capital improvements to the water system is $30,561,735. During this same period, the number of service units is estimated to increase by 5215 units. The following summary shows the recoverable cost calculations that establish the maximum allowable water impact fee:

Total Construction Cost	$30,574,544
Recoverable Financing Cost	$13,503,227
Subtotal	$44,077,771
Impact Fee Eligible Cost	$30,561,735
Increase in Service Units	5215

Maximum Impact Fee = $5,860 per Service Unit

The maximum allowable impact fee per Chapter 395 is 50% of the maximum impact fee. Impact fees can be collected at a higher rate than 50% if a credit is applied for the utility service revenues and a portion of the ad valorem tax increase generated by new service units. If a city decides to charge more than 50% of the maximum impact fee, it must maintain accounting records and prepare financial analyses to support the selected impact fee.

Maximum Allowable Water Impact Fee = $2,930 per Service Unit

Wastewater Impact Fees

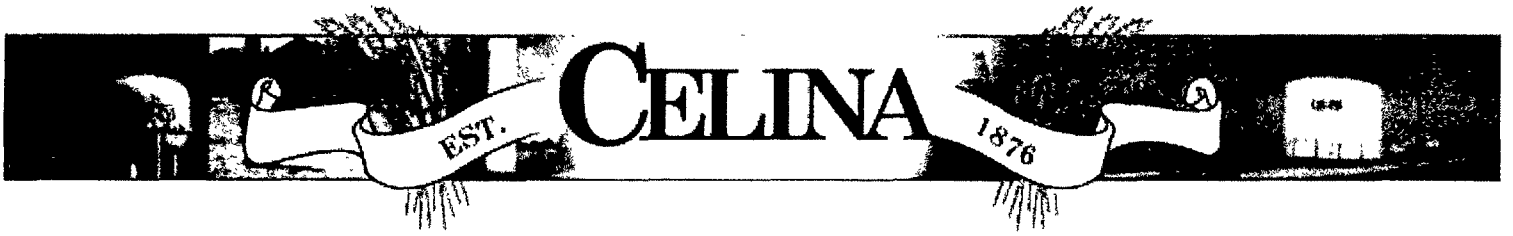
The total recoverable cost (Impact Fee Eligible Cost) of the 2014-2024 capital improvements to the waste water system is $24,579,269. During this same period, the number of service units is estimated to increase by 5215 units. The following summary shows the recoverable cost calculations that establish the maximum allowable water impact fee:

Total Construction Cost	$32,301,917
Recoverable Financing Cost	$15,191,205
Subtotal	$47,493,122
Impact Fee Eligible Cost	$24,579,259
Increase in Service Units	5215

Maximum Impact Fee = $4,713 per Service Unit

The maximum allowable impact fee per Chapter 395 is 50% of the maximum impact fee. Impact fees can be collected at a higher rate than 50% if a credit is applied for the utility service revenues and a portion of the ad valorem tax increase generated by new service units. If a city decides to charge more than 50% of the maximum impact fee, it must maintain accounting records and prepare financial analyses to support the selected impact fee rate.

Maximum Allowable Wastewater Impact Fee = $2,357 per Service Unit



Section 1
Legislative Background

1.1 Chapter 395 of the Local Government Code of Texas

The Local Government Code of Texas Chapter 395 is the enabling legislation that governs impact fees in the State of Texas. This legislation authorizes cities to use impact fees as a source of funding capital improvements primarily related to providing water and wastewater to serve new development.

Impact fees have been allowed in Texas since Senate Bill 336 was enacted by the 71st legislature in 1987. The legislature codified Chapter 395 in 1989. It has been amended seven times by the Texas Legislature, with the last revision by the 77th legislature effective September 1, 2001.

1.2 Impact Fee Definition

The Chapter 395 definition for Impact Fee:

(4) "Impact Fee" means a charge or assessment imposed by a political subdivision against new development in order to generate revenue for funding or recouping the costs of capital improvements or facility expansions necessitated by and attributable to the new development. The term includes amortized charges, lump-sum charges, capital recovery fees, contributions in aid of construction, and any other fee that functions as described by this definition.

Prior to 1987, fees charged by cities to new developments for capital improvements were called Capital Recovery Fees.

1.3 Eligible Costs

The following costs are allowed to be included in calculating impact fees:

Per Section 395.012: ITEMS PAYABLE BY FEE.

(a) An impact fee may be imposed only to pay the costs of constructing capital improvements or facility expansions, including and limited to the:

(1) construction contract price;

(2) surveying and engineering fees;

(3) land acquisition costs, including land purchases, court awards and costs, attorney's fees, and expert witness fees; and

(4) fees actually paid or contracted to be paid to an independent qualified engineer or financial consultant preparing or updating the capital improvements plan who is not an employee of the political subdivision.

(b) Projected interest charges and other finance costs may be included in determining the amount of impact fees only if the impact fees are used for the payment of principal and interest on bonds, notes, or other obligations issued by or on behalf of the political subdivision to finance the capital improvements or facility expansions identified in the capital improvements plan and are not used to reimburse bond funds expended for facilities that are not identified in the capital improvements plan.

1.4 Ineligible Costs

The following items are not allowed to be included in calculating impact fees:

Per Section 395.013: ITEMS NOT PAYABLE BY FEE.

Impact fees may not be adopted or used to pay for:

(1) construction, acquisition, or expansion of public facilities or assets other than capital improvements or facility expansions identified in the capital improvements plan;

(2) repair, operation, or maintenance of existing or new capital improvements or facility expansions;

(3) upgrading, updating, expanding, or replacing existing capital improvements to serve existing development in order to meet stricter safety, efficiency, environmental, or regulatory standards;

(4) upgrading, updating, expanding, or replacing existing capital improvements to provide better service to existing development;

(5) administrative and operating costs of the political subdivision, except the Edwards Underground Water District or a river authority that is authorized elsewhere by state law to charge fees that function as impact fees may use impact fees to pay its administrative and operating costs;

(6) principal payments and interest or other finance charges on bonds or other indebtedness, except as allowed by Section 395.012.

1.5 Advisory Committee

It is important to emphasize that the Capital Improvements Advisory Committee (CIAC) is required to be an active committee and that it must meet to review and update the LUA and CIP semi-annually in accordance with:

Section 395.058: ADVISORY COMMITTEE. (c) The advisory committee serves in an advisory capacity and is established to:

(1) advise and assist the political subdivision in adopting land use assumptions;

(2) review the capital improvements plan and file written comments;

(3) monitor and evaluate implementation of the capital improvements plan;

(4) file semiannual reports with respect to the progress of the capital improvements plan and report to the political subdivision any perceived inequities in implementing the plan or imposing the impact fee; and

(5) advise the political subdivision of the need to update or revise the land use assumptions, capital improvements plan, and impact fee.

(d) The political subdivision shall make available to the advisory committee any professional reports with respect to developing and implementing the capital improvements plan.

(e) The governing body of the political subdivision shall adopt procedural rules for the advisory committee to follow in carrying out its duties.

Section 2
Land Use Assumptions

The Chapter 395 definition for Land Use Assumptions:

"includes a description of the service area and projections of changes in land uses, densities, intensities, and population in the service area over at least a 10-year period".

The LUA for Celina are included in the 2013 Comprehensive Plan (Comp Plan) and the 2013 Future Land Use Plan adopted by the City Council of Celina in April 2013. The LUA developed in the Comp Plan provided input to the 2014 Water Master Plan and the 2014 Wastewater Master Plan and associated Capital Improvements Plans (CIP) that were approved by the Capital Improvements Advisory Committee for Celina on May 20, 2014.

2.1 Service Area

The service area for this report includes the existing City of Celina city limits and the extraterritorial jurisdiction (ETJ) as shown on Exhibit 1, the Water and Wastewater Impact Fee Service Area Map. "Service area" means the area within the corporate boundaries or City Limits and the ETJ.

2.2 Historical Population

As shown in Table 2, the existing population numbers are based on US Census numbers for 2000 and 2010; the City of Celina Annual Budget 2013-2014 for 2011-2013 numbers, and 2014 is the projected growth rate at 10.5% per year.

Table 2: Historical Population

Year	Population	Source
2000	1861	US Census
2010	6028	US Census
2011	6424	Celina Budget 2013-2014
2012	6778	Celina Budget 2013-2014
2013	7379	Celina Budget 2013-2014
2014	8154	Projections at 10.5% growth rate

2.3 Projected Population

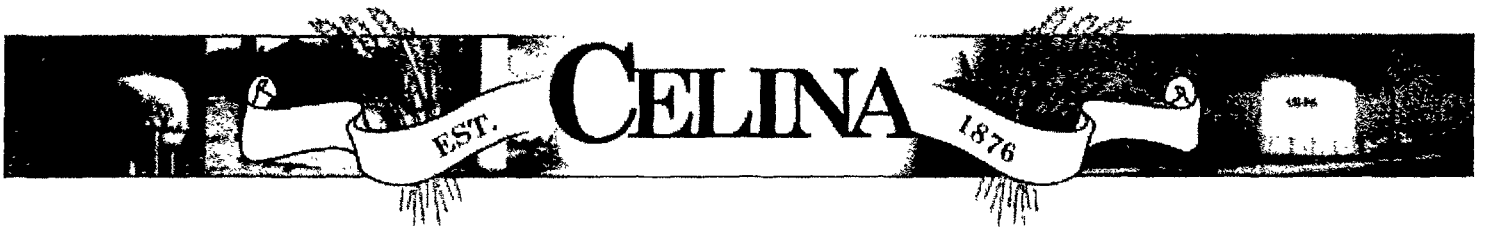
The projected growth rate of 10.5% per year was approved at the Celina CIAC meeting of April 15, 2014, and is used as the basis for growth projections in this report. The information supporting a 10.5% growth rate provided at this meeting was prepared by Freese and Nichols, Inc. related to the planning associated with the Roadway Impact Fee study for the City of Celina.

Table 3: Projected Population

Year	Population
2014	8154
2015	9010
2016	9956
2017	11001
2018	12157
2019	13433
2020	14843
2021	16402
2022	18124
2023	20027
2024	22130

2.4 Land Use

The existing and future land use patterns from the 2013 Future Land Use Plan from the 2013 City of Celina Comprehensive Plan were analyzed to project the demands for this report. For the updates to the Water Master Plan and Wastewater Master Plan, each land use category was inventoried and entered into the water and wastewater models. This information was also derived from the LUA. Celina is currently not a major employment center and almost all of the growth in the next decade that affects water and wastewater impact analysis will come from the projected growth in single family residential land use.



2.5 Service Units

The Chapter 395 definition for New Development:

"means the subdivision of land; the construction, reconstruction, redevelopment, conversion, structural alteration, relocation, or enlargement of any structure; or any use or extension of the use of land; any of which increases the number of service units."

The Chapter 395 definition for Service Unit:

"means a standardized measure of consumption, use, generation, or discharge attributable to an individual unit of development calculated in accordance with generally accepted engineering or planning standards and based on historical data and trends applicable to the political subdivision in which the individual unit of development is located during the previous 10 years."

The increase in service units for 2014-2024 is 5215, as shown in Table 4. This number is used for both water and wastewater impact fee calculations in this report.

Table 4: Projected Service Units

Year	Service Units	Source
2014	3043	City of Celina
2015	3362	Projections at 10.5% growth rate
2016	3715	Projections at 10.5% growth rate
2017	4105	Projections at 10.5% growth rate
2018	4536	Projections at 10.5% growth rate
2019	5013	Projections at 10.5% growth rate
2020	5539	Projections at 10.5% growth rate
2021	6120	Projections at 10.5% growth rate
2022	6763	Projections at 10.5% growth rate
2023	7473	Projections at 10.5% growth rate
2024	8258	Projections at 10.5% growth rate

For Celina, a service unit is based on the typical water usage provided for a single family residential unit, using a 3\4 inch meter. For other meter sizes up to 4 inches, the service unit equivalents are shown on Table 5. These ratios are also used to set the selected impact fee rate for different meter sizes, which are shown in Table 9. These ratios are based on gallons per minute flow rates and are based on Standards C700, C701 and C702 from the American Water Works Association (AWWA).

Table 5: Service Unit Equivalents

TYPE / Description / Class	Meter Size	Safe Maximum Operating Capacity (gpm)	Ratio to 3/4" Meter
Simple Displacement	3/4"	30	1
Turbine - Vertical Shaft - Class I	3/4"	30	1
Simple Displacement	1"	50	1.7
Turbine - Vertical Shaft - Class I	1"	50	1.7
Simple Displacement	1-1/2"	100	3.3
Turbine - Vertical Shaft - Class I	1-1/2"	100	3.3
Turbine - In-Line (High Velocity) - Class II	1-1/2"	120	4.0
Simple Displacement	2"	160	5.3
Low Velocity Horizontal Type	2"	160	5.3
Turbine - Vertical Shaft - Class I	2"	160	5.3
Turbine - In-Line (High Velocity) - Class II	2"	190	6.3
Compound	2"	160	5.3
Turbine - Low Velocity Horizontal Class I	3"	350	11.7
Turbine - Vertical Shaft - Class I	3"	350	11.7
Turbine - In-Line (High Velocity) - Class II	3"	435	14.5
Compound - Class I & II	3"	320	10.7
Turbine - Low Velocity Horizontal Class I	4"	600	20.0
Turbine - Vertical Shaft - Class I	4"	630	21.0
Turbine - In-Line (High Velocity) - Class II	4"	750	25.0
Compound - Class I & II	4"	500	16.7
Turbine - Low Velocity Horizontal Class I	6"	1250	41.7
Turbine - Vertical Shaft - Class I	6"	1300	43.3
Turbine - In-Line (High Velocity) - Class II	6"	1600	53.3
Compound - Class I & II	6"	1000	33.3
Turbine - Low Velocity Horizontal Class I	8"	1800	60.0
Turbine - In-Line (High Velocity) - Class II	8"	2800	93.3
Compound - Class I & II	8"	1600	53.3

Table 5: Service Unit Equivalents			
TYPE / Description / Class	Meter Size	Safe Maximum Operating Capacity (gpm)	Ratio to 3/4" Meter
Turbine - Low Velocity Horizontal Class I	10"	2900	96.7
Turbine - In-Line (High Velocity) - Class II	10"	4200	140.0
Turbine - Low Velocity Horizontal Class I	12"	4300	143.3
Turbine - In-Line (High Velocity) - Class II	12"	5300	176.7
Turbine - In-Line (High Velocity) - Class II	16"	7800	260.0
Turbine - In-Line (High Velocity) - Class II	20"	12000	400.0

Section 3
Water Impact Fee Analysis

3.1 Water Capital Improvements Plan

The Capital Improvements Plan in this report identifies "capital improvements or facility expansions for which impact fees may be assessed". There are currently four major residential developments that are in various stages of planning and development that will require water and wastewater capital improvement projects:

Table 6: Major Developments with Pressure Plane

	Total Lots	Pressure Plane
Light Farms	3151	Low pressure
Creeks of Legacy	2298	Low pressure
Lakes of Mustang Ranch	1950	High pressure
Parks of Wilson Creek	1975	High pressure

The location of these projects, pressure plane and their projected lot absorption provide the major direction and basis of planning and sizing of the Water Capital Improvements Plan and projects forecast in the next 10 years. The capital improvement projects that qualify for impact fee reimbursements are shown on Exhibit 2, Water Capital Improvements. The wastewater projects are discussed in Section 4 of this report.

3.2 Water Capital Improvements Projects

The sizes established for each of the individual components for each project come directly from the model in the 2014 Water Master Plan update. There are four projects in the low pressure plane (L1 though L4) and five in the high pressure plane (H1 though H5). The items to be constructed for each of the nine water projects are described below.

Celina is currently working with North Texas Municipal Water District (NTMWD) to purchase water. It is projected that Celina will be receiving water from NTMWD in 2021. All fees, construction and financing costs for offsite water improvements by NTMWD are not known at this time and are excluded from this report. All fees, construction and financing costs for offsite water improvements by Upper Trinity Regional Water District (UTRWD) are not known at this time and are also excluded from this report.

3.2.1 Project L1 - DNT Light Farms to Legacy

Construction of a 12 inch water line from the Light Farms Elevated Storage Tank (EST) south along the Dallas Parkway and then east along Frontier Parkway to future Legacy Drive.

3.2.2 Project L2 – Legacy North South Connector

Construction of a 36, 24 and 18 inch water line from the Celina Road Pump Station south along Legacy to connect to Project L1.

3.2.3 Project L3 – Celina Road Pump Station Upgrades

Installation of an additional 1340 gpm pump.

3.2.4 Project L4 – Light Farms Transmission Line

This is an existing project that was completed in 2009. Construction of an 18 inch waterline south along Dallas Parkway and the 1.0 million gallon Light Farms EST.

3.2.5 Project H1 –Preston to CR 87

Construction of an 18 inch water line east along County Road 55 (CR 55) from Preston Road to CR 87.

3.2.6 Project H2 – CR 87 South to CR84

Construction of an 18 inch water line from Project H2 south to CR 84 east to Wilson Creek. Construction of the Wilson Creek 2.5 million gallon EST.

3.2.7 Project H3 – CR 87 North to Morgan Lake EST

Construction of an 18 inch water line from CR 55 north to Morgan Lake EST.

3.2.8 Project H4 – High Pressure Plane Pump Upgrades

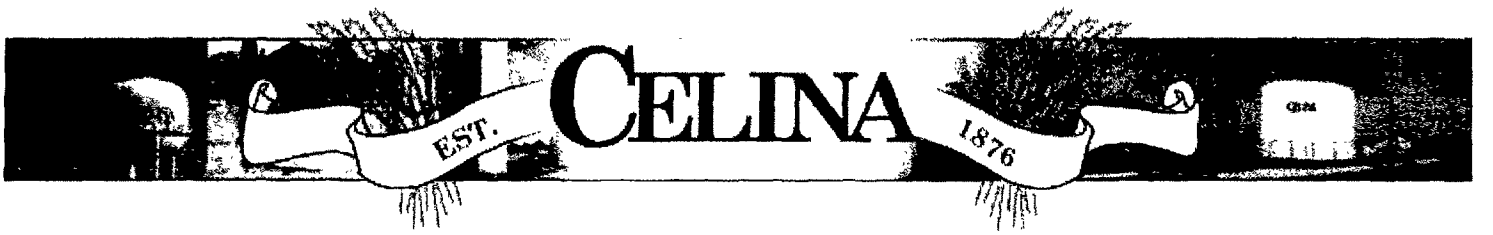
Construction of a 3MGD pump station near CR 84 and CR 87 to serve projects H2 and H3.

3.2.9 Project H5 –NTMWD Point of Entry

Construction of a 4MGD pump station and one million gallon ground storage tank to receive water from NTMWD near FM 2478 and CR 88 in 2021.

Table 7: Water Projects Utilization and Eligible Cost Summary

Project	Project Description	Total Cost	Percent Utilization		Percent Increase	Impact Fee Eligible Cost
			2014	2024		
L1	DNT Light Farms to Legacy	$3,992,163	0%	80%	80%	$3,992,163
L2	Legacy North South Connector	$6,357,504	0%	16%	16%	$1,000,000
L3	Celina Road Pump Station Upgrades	$72,775	0%	100%	100%	$72,775
L4	Light Farms Transmission line	$5,780,000	4%	74%	70%	$4,045,800
H1	Preston to CR 87	$13,039,419	0%	75%	75%	$10,431,536
H2	CR 87 South to CR 84	$5,351,920	0%	75%	75%	$4,281,536
H3	CR 87 North to Morgan Lake EST	$4,227,703	0%	75%	75%	$3,382,163
H4	High Pressure Plane Pump Upgrades	$1,009,957	0%	75%	75%	$807,965
H5	NTMWD Point of Entry	$4,246,329	0%	100%	100%	$2,547,797
TOTALS		**$44,077,771**				**$30,561,735**
					Service units	5215
					Maximum impact fee	$5,860



Section 4
Wastewater Impact Fee Analysis

4.1 Wastewater Capital Improvements Plan

As mentioned above in the Water CIP, there are currently four major residential developments listed in Table 6 above, that are in various stages of planning and development that will require wastewater capital improvement projects:

The location of these projects and their projected lot absorption also provide the major direction and basis of planning and sizing of the Wastewater Capital Improvements Plan and projects forecast in the next 10 years. The capital improvement projects that qualify for impact fee reimbursements are shown on Exhibit 3, Wastewater Capital Improvements.

4.2 Wastewater Capital Improvements Projects

The sizes established for each of the individual components for each project come directly from the model in the 2014 Wastewater Master Plan update. There are nine capital projects described below. All fees and charges related to future offsite wastewater collection lines and treatment plants to be built and financed by UTRWD or NTMWD are not known at this time and are excluded from this report.

4.2.1 Project #1 – Celina Wastewater Treatment Plant Upgrades

Construction of the improvements to add 0.25 million gallons per day of treatment capacity to the existing treatment plant.

4.2.2 Project #2 – Doe Branch 2

Construction of a 21 inch line from the existing Doe Branch line east past the Dallas Parkway, near Frontier Parkway.

4.2.3 Project #3 – Doe Branch 3

Construction of a 15 through 30 inch interceptor line north from the existing Doe Branch line towards CR 51.

4.2.4 Project #4 – Doe Branch 4

Construction of a 10 through 21 inch interceptor line east from the existing Doe Branch line near Light Farms Way across Preston Road towards CR 83.

4.2.5 Project #5 – Doe Branch 5

Construction of a 12 through 36 inch interceptor line northeast from the upper end of the existing Doe Branch line across Preston Road towards CR 90.

4.2.6 Project #6 – Doe Branch Existing

This is the existing Doe Branch line that was completed in 2009 that connects to the UTRWD for treatment at their Riverbend facilities in Denton County.

4.2.7 Project #7 – Wilson Creek Treatment Plant

Construction of a 0.5 MGD treatment plant north of FM 1461 near Wilson Creek in the far southeast quadrant of Celina.

4.2.8 Project #8 – Wilson Creek 2

Construction of a 15 through 30 inch interceptor line north from Project #7 towards FM 455.

4.2.9 Project #9 –Wilson Creek 3

Construction of a 15 inch sewer line and force main and pump near Wilson Creek in the far southeast quadrant of Celina.

Table 8: Wastewater Projects Utilization and Eligible Cost Summary

Project	Project Description	Total Cost	Percent Utilization 2014	Percent Utilization 2024	Percent Increase	Impact Fee Eligible Cost
1	Celina Wastewater Treatment Plant Upgrades	$3,374,449	0%	60%	60%	$2,024,669
2	Doe Branch 2	$5,391,318	0%	50%	50%	$2,695,659
3	Doe Branch 3	$6,134,116	0%	30%	30%	$1,840,235
4	Doe Branch 4	$3,178,031	0%	30%	30%	$953,409
5	Doe Branch 5	$7,243,111	0%	30%	30%	$2,172,933
6	Doe Branch Existing	$3,450,000	26%	100%	74%	$2,538,000
7	Wilson Creek Treatment Plant	$7,549,747	0%	100%	100%	$7,549,747
8	Wilson Creek 2	$9,494,021	0%	40%	40%	$3,797,608
9	Wilson Creek 3	$1,678,330	0%	60%	60%	$1,006,998
20	Impact Fee Update					$0
	TOTALS	**$474,93,123**				**$24,579,259**
					Service Units	5215
					Maximum Impact Fee	$4,713

Table 9 Maximum Impact Fees by Meter Size for Water and Wastewater has inserted after review and recommendation of the Capital Improvement Advisory Committee of the impact fee calculation for a single service unit in this draft document.

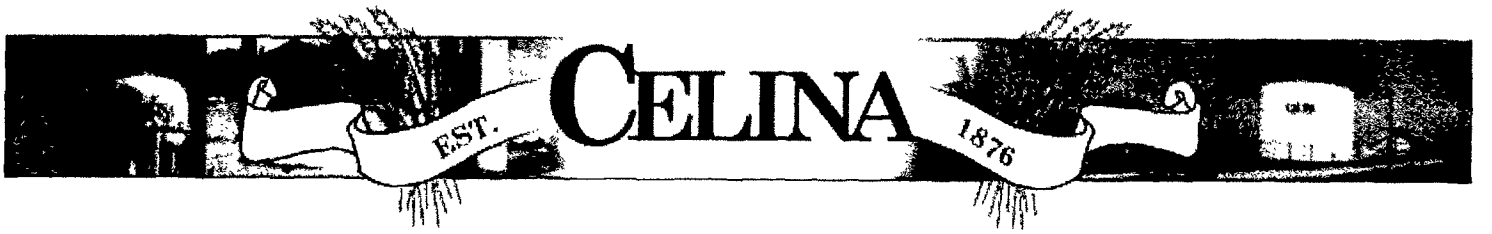


Table 9: Maximum Impact Fees by Meter Size for Water and Wastewater					
TYPE / Description / Class	Meter Size	Ratio to 3/4" Meter	Water	Waste-water	Water & Wastewater Combined
Simple Displacement	3/4"	1	$2,930	$2,357	$5,287
Turbine - Vertical Shaft - Class I	3/4"	1	$2,930	$2,357	$5,287
Simple Displacement	1"	1.7	4,981	$4,007	$8,988
Turbine - Vertical Shaft - Class I	1"	1.7	$4,981	$4,007	$8,988
Simple Displacement	1-1/2"	3.3	$9,669	$7,778	$17,447
Turbine - Vertical Shaft - Class I	1-1/2"	3.3	$9,669	$7,778	$17,447
Turbine - In-Line (High Velocity) - Class II	1-1/2"	4.0	$11,720	$9,428	$21,148
Simple Displacement	2"	5.3	$15,529	$12,492	$28,021
Low Velocity Horizontal Type	2"	5.3	$15,529	$12,492	$28,021
Turbine - Vertical Shaft - Class I	2"	5.3	$15,529	$12,492	$28,021
Turbine - In-Line (High Velocity) - Class II	2"	6.3	$18,459	$14,849	$33,308
Compound	2"	5.3	$15,529	$12,492	$28,021
Turbine - Low Velocity Horizontal Class I	3"	11.7	$34,281	$27,577	$61,858
Turbine - Vertical Shaft - Class I	3"	11.7	$34,281	$27,577	$61,858
Turbine - In-Line (High Velocity) - Class II	3"	14.5	$42,485	$34,177	$76,662
Compound - Class I & II	3"	10.7	$31,351	$25,220	$56,571
Turbine - Low Velocity Horizontal Class I	4"	20.0	$58,600	$47,140	$105,740
Turbine - Vertical Shaft - Class I	4"	21.0	$61,530	$49,497	$111,027
Turbine - In-Line (High Velocity) - Class II	4"	25.0	$73,250	$58,925	$132,175
Compound - Class I & II	4"	16.7	$48,931	$39,362	$88,293
Turbine - Low Velocity Horizontal Class I	6"	41.7	$122,181	$98,287	$220,468
Turbine - Vertical Shaft - Class I	6"	43 3	$126,869	$102,058	$228,927
Turbine - In-Line (High Velocity) - Class II	6"	53.3	156,169	$125,628	$281,797
Compound - Class I & II	6"	33.3	$97,569	$78,488	$176,057
Turbine - Low Velocity Horizontal Class I	8"	60.0	$175,800	$141,420	$317,220
Turbine - In-Line (High Velocity) - Class II	8"	93.3	$273,369	$219,908	$493,277
Compound - Class I & II	8"	53.3	$156,169	$125,628	$281,797
Turbine - Low Velocity Horizontal Class I	10"	96.7	$283,331	$227,922	$511,253
Turbine - In-Line (High Velocity) - Class II	10"	140.0	$410,200	$329,980	$740,180
Turbine - Low Velocity Horizontal Class I	12"	143.3	$419,869	$337,758	$757,627
Turbine - In-Line (High Velocity) - Class II	12"	176.7	$517,731	$416,482	$934,213

G:\Projects\950-01 Celina\WWM Master Plan\03_CAD\IECities\GIS\MXD\Exhibit 1 Service Area Map.mxd

City of Celina 6-1a

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EXHIBIT B

Recommended updates to the Water and Wastewater Impact Fees outlined in Section 10.02.051 and 10.02.052 in the City of Celina Code of Ordinances as follows:

Sec. 10.02.051 Schedule 1: Impact fee assessment rate

Schedule 1. Impact Fee Assessment Rate

(a) Decrease the Water facilities from $3,276.00 to $2,930.00 per service unit (3/4-inch water meter).

(b) Decrease the Wastewater facilities from $4,631.00 to $2,357.00 per service unit (3/4-inch water meter).

Sec. 10.02.052 Schedule 2: Impact fee collection rate

Schedule 2. Impact Fee Collection Rate

(a) Increase Water facilities from $1,300.00 to $2,930.00 per service unit (3/4-inch water meter).

(b) Increase Wastewater facilities from $1,500.00 to $2,357.00 per service unit (3/4-inch water meter).

Water and Wastewater Modeling and CIP Report

City of Celina, Texas

Prepared by:

GARVER

3010 Gaylord Parkway
Suite 190
Frisco, TX 75034

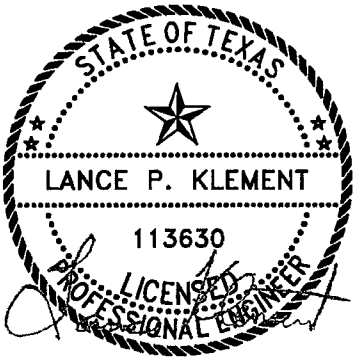
September 2017

Garver Project No.: 16088050

Engineer's Certification:

I hereby certify that this Water and Wastewater Modeling and CIP Report was prepared by Garver under my direct supervision for the City of Celina.

Lance P. Klement, PE
State of Texas PE License 113630



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Glossary

Terms and Abbreviations used in this report are as follows:

AWWA	American Water Works Association
BEP	Best Efficiency Point
CER	Conceptual Engineering Report
CIP	Capital Improvements Plan
EST	Elevated Storage Tank
ETJ	Extraterritorial Jurisdiction
ft.	Feet
GIS	Graphical Information System
GST	Ground Storage Tank
gpcd	Gallons per capita day
gpd	Gallons per day
gpm	Gallons per minute
GST	Ground Storage Tank
HP	Horsepower
I/I	Infiltration/Inflow
LF	Linear Feet
MG	Million gallons
MGD	Million gallons per day
NA	Not Available
NCTCOG	North Central Texas Council of Governance
No.	Number
OPCC	Opinion of Probable Construction Cost
PDR	Preliminary Design Report
PS	Pump Station
psi	Pounds per square inch
RDII	Rainfall-derived infiltration and inflow
SCADA	Supervisory Control and Data Acquisition
Sewer Basin	Sanitary sewer drainage basin
SSO	Sanitary Sewer Overflows
TWDB	Texas Water Development Board
DWU	Dallas Water Utilities

1.0 Executive Summary

This report accomplished the following objectives:

- Projected population growth and water/sewer flow projections
- Developed a water system model, utilizing meter data for both current and buildout
- Developed a wastewater system model, utilizing flow monitoring and temporary rain gauge data for both current and buildout
- Prepared a capital improvements plan (CIP) for identified improvements in the distribution and collection systems

1.1 Population and Flow Projections

1.1.1 Population Projections

The City of Celina served approximately 11,000 residents in 2015. An ultimate buildout projection of population growth based on City development data is shown in Table 1-1. The water and wastewater models were simulated using the ultimate buildout projection of 363,100 people.

Table 1-1: Projection of Population Growth

Year	Population
2015	11,000
5-year (2022)	43,729
Buildout	363,100

1.1.2 Flow Projections

The water demand projections were based on the City of Celina design standards and City of Frisco design criteria for gallons per capita day, along with a component for commercial usage. The demand projection at buildout is expected to be 100 million gallons per day (MGD) on an average day. A peaking factor of 2.0 was estimated to find a ultimate buildout max day demand of 200 MGD. The wastewater system design standard of 102 gpcd is expected to be maintained throughout the planning horizon and to ultimate buildout. The demand projection at buildout is expected to be 45.1 MGD on an average day.

Table 1-2: Average Demand Projections

Year	Water Demand (MGD)	Wastewater Flow (MGD)
2017	3.03	1.22
5-year (2022)	10.20	3.68
Buildout	100	45.1

1.2 Existing Facilities

Facility assessments were conducted on existing water and wastewater facilities to evaluate the current condition of those facilities, and to recommend improvements, if warranted.

1.2.1 Water Facilities

The City's water system consists of the items summarized below in Table 1-3:

Table 1-3: Water Facilities

Items	Number
Connections	3,644
Pessure Planes	2 (high and low)
Pump Stations	3 (Celina Rd, Downtown, Morgan Lake)
Ground Storage Tanks	2 (Celina Rd, Downtown)
Elevated Storage Tanks	3 (Downtown, Light Farms, Morgan Lake)
Standpipe	1 (Morgan Lake)
Wells	4 (2-active, 2-inoperable)

The water facility evaluation is presented as Appendix A of this report.

1.2.2 Sewer Facilities

The City's wastewater system consists of the items summarized below in Table 1-4:

Table 1-4: Sewer Facilities

Items	Number
Gravity Sewer (LF)	407,600
Force Mains (LF)	23,100
Manholes	987
Lift Stations	11
WWTP	1 (Downtown WWTP)
Lines	1 (Doe Branch)

1.2.2.1 Downtown Wastewater Treatment Plant Evaluation

Garver conducted a conceptual evaluation of two alternative concepts to address the identified scope of rehabilitation, replacement, and additional treatment capacity. The capacity and feasibility of improvements to the Downtown WWTP were evaluated, and a conceptual engineering report (CER) was submitted to the City separately from this report on December 6, 2016. A preliminary design of improvements to the Downtown WWTP summarizing findings and recommendations was developed and a preliminary design report (PDR) was submitted to the City separately from this report on June 23, 2017.

1.2.2.2 Lift Station Evaluation

The lift station technical memorandum is presented as Appendix B of this report. Field assessments were undertaken on 10 lift stations and improvements are summarized in Section 11.3.

1.3 Wastewater Flow Monitoring

A wastewater flow monitoring program was conducted from April 27th, 2016 to June 30th, 2016 to evaluate existing flows from the wastewater system. A total of six temporary flow meters and three rain gauges were installed. The flow meter upstream of the Doe Branch entry point was used to compare against billing from Upper Trinity Regional Water District (UTRWD). The results are detailed in Section 9.5.

The following conclusions and recommendations were drawn from the flow monitoring program results:

- Dry weather flows are adequately transported and treated without surcharge. Velocities are adequate to keep solids from settling and debris was not noted at any of the sites during the monitoring period.
- The collected hydraulic data from six metering sites and three rainfall gauges was used for hydraulic model calibration.
- Priority ranking of basins based on RDII provided guidance for analysis of wet weather infiltration/inflow alternatives.

1.4 Models

Full models of existing and future water and wastewater demands were developed and implemented into the City's current water models. These updates are included as digital files. The models implemented usage and future buildout to identify improvement regarding flow rates, pressures, fire flows, and water age for the water system, and capacity and future growth needs for the wastewater system.

1.5 Water System CIP

A list of recommended water improvement projects by priority is identified in Appendix C: Water Capital Improvements Plan. A summary of the projects are shown in Table 1-5.

Table 1-5: Summary of Proposed Water CIP

Project Identification			Schedule	2017 Cost ($1000)[1]
Project	Group	Description	Trigger Date	OPCC
1	B	Downtown EST shutdown and SCADA switchover	Feb-17	$0
2	A	Capacity upgrades to CRPS and installation of 4 new pumps	Feb-17	$6,305
3	H	Capacity upgrades to DTPS and installation of 3 new pumps	Feb-17	$5,173
4	E	12" line and valves to switch LPP to HPP	Oct-17	$171
5	F	18", 30" and 36" line along Celina Road from CRPS	Oct-17	$7,939
6	G	24" and 30" lines to Downtown GST	Oct-17	$5,588
7	J	24" and 30" discharge lines from DTPS	Oct-17	$3,490
8	D	18" and 24" line to Morgan Lake area	Oct-18	$4,730
9	C	18" line along Cypress Creek Way	Oct-18	$312
10	L	Additional capacity upgrades to CRPS	Oct-18	$536
11	Z	New 6 MG GST at CRPS	Oct-18	$7,619
12	R	Additional capacity upgrades to DTPS	Oct-18	$556
13	K	Decommision Morgan Lake facilities	Mar-19	$145
14	AB	SCADA improvements	Oct-19	$312
15	AA	8" line upgrades in Downtown area	Oct-19	$22,390
16	M	12" line along Settlers Ridge	Oct-19	$3,308
17	Q	Additional capacity upgrades to CRPS	Oct-19	$556
18	AC	2020 5-year Master Plan	Oct-20	$200
19	P	8", 12", and 18" line from Morgan Lake to DC Ranch	Oct-19	$5,119
20	O	24" line to increase capacity in the Low Pressure Plane	Oct-20	$5,340
21	T	18" and 24" lines along Hwy. 455	Oct-20	$2,387
22	S	18" and 24" lines along Legacy Drive	Oct-21	$3,353
23	X	8" and 24" lines to connect Preston Lakes to Preston Road Corridor	Oct-21	$4,175
24	W	8" and 12" line along E. Malone St. and Preston Road	Oct-20	$612
25	V	8" lines in the Low Pressure Plane	Oct-20	$547
26	Y	18" line from the Parks at Wilson Creek to Lakes at Mustang Ranch	Oct-21	$2,939
27	U	12" line from Preston Road to Morgan Lake Estates	Oct-21	$342
		Total 2017 OPCC:		**$94,141,277**

In addition to the recommended water capital improvements, operational recommendations such as water restrictions, tank mixing, and reduction of water age are included in Sections 8.2 and 8.3. Table 1-6 divides up the projects by their subgroupings as described in Section 8.1.1.

Table 1-6: Water CIP – Project Subgroupings

Project Identification			Schedule	2017 Cost ($1000)[1]
Project	Grouping	Description	Trigger Date	OPCC
Development Driven				
1	B	Downtown EST shutdown and SCADA switchover	Feb-17	$0
2	A	Capacity upgrades to CRPS and installation of 4 new pumps	Feb-17	$6,305
3	H	Capacity upgrades to DTPS and installation of 3 new pumps	Feb-17	$5,173
4	E	12" line and valves to switch LPP to HPP	Oct-17	$171
5	F	18", 30" and 36" line along Celina Road from CRPS	Oct-17	$7,939
6	G	24" and 30" lines to Downtown GST	Oct-17	$5,588
7	J	24" and 30" discharge lines from DTPS	Oct-17	$3,490
8	D	18" and 24" line to Morgan Lake area	Oct-18	$4,730
9	C	18" line east of Light Farm EST along Cypress Creek Way	Oct-18	$312
10	L	Additional capacity upgrades to CRPS	Oct-18	$536
11	Z	New 6 MG GST at CRPS	Oct-18	$7,619
12	R	Additional capacity upgrades to DTPS	Oct-18	$556
16	M	12" line along Settlers Ridge	Oct-19	$3,308
17	Q	Additional capacity upgrades to CRPS	Oct-19	$556
18	AC	2020 5-year Master Plan	Oct-20	$200
19	P	8", 12", and 18" line from Morgan Lake to DC Ranch	Oct-19	$5,119
20	O	24" line to increase capacity in the Low Pressure Plane	Oct-20	$5,340
		Development Subtotal =		**$56,940,272**
Operational				
13	K	Decommision Morgan Lake facilities	Mar-19	$145
14	AB	SCADA improvements	Oct-19	$312
15	AA	8" line upgrades in Downtown area	Oct-19	$22,390
22	S	18" and 24" lines along Legacy Drive	Oct-21	$3,353
		Operational Subtotal =		**$26,199,874**
Fire Flow				
21	T	18" and 24" lines along Hwy. 455	Oct-20	$2,387
23	X	8" and 24" lines to connect Preston Lakes to Preston Road Corridor	Oct-21	$4,175
24	W	8" and 12" line along E. Malone St. and Preston Road	Oct-20	$612
25	V	8" lines in the Low Pressure Plane	Oct-20	$547
26	Y	18" line from the Parks at Wilson Creek to Lakes at Mustang Ranch	Oct-21	$2,939
27	U	12" line from Preston Road to Morgan Lake Estates	Oct-21	$342
		Fire Flow Subtotal =		**$11,001,131**
		Total 2017 OPCC =		**$94,141,277**

1.6 Wastewater System CIP

A list of recommended wastewater projects by priority is identified in Appendix D, and summarized in the following Table 1-7.

Table 1-7: Summary of Proposed Wastewater Capital Improvements

Project Identification			Schedule	2017 Cost ($1000)[1]
Project	Grouping	Description	Trigger Date	OPCC
1	AC	WWTP expansion to 0.75 MGD	Oct-17	$8,300
2	B	12" line to replace Carter Ranch LS	Oct-17	$1,502
3	P	6" line to replace Lucy's LS	Oct-17	$120
4	Q	8" and 10" line to replace Shawnee Trail No. 1 LS	Oct-17	$1,172
5	C	8" line to replace Winn Road LS	Oct-17	$486
6	R	10" and 12" line to provide additional capacity for the addition of the Chalk Hill LS	Oct-17	$915
7	AA	Manhole rehabilitation from PK I/I study	Oct-17	$422
8	AB	Pipeline rehabilitation from PK I/I study	Oct-17	$761
9	O	12" line replacement to increase capacity to Heritage	Oct-17	$1,244
10	A	24" line replacement to increase capacity along Light Farms	Oct-17	$1,362
11	AD	WWTP expansion to 0.95 MGD	Oct-18	$3,000
12	N	New 30", 36", 42", and 60" interceptor from Downtown WWTP to future WWTP; 8" interceptor to replace Willock Hills LS	Oct-19	$43,144
13	T	18" line replacement to increase capacity Downtown	Oct-19	$3,066
14	U	15" line along FM 455 across Preston Rd	Oct-19	$734
		Total 2017 OPCC:		**$66,227,007**

Table 1-8 divides up the projects by their subgroupings as described in Section 14.1.1.

Table 1-8: Wastewater CIP – Project Subgroupings

Project Identification			Schedule	2017 Cost ($1000)[1]
Project	Grouping	Description	Trigger Date	OPCC
Development Driven				
1	AC	WWTP expansion to 0.75 MGD	Oct-17	$8,300
6	R	10" and 12" line to provide additional capacity for the addition of the Chalk Hill LS	Oct-17	$915
10	A	24" line replacement to increase capacity along Light Farms	Oct-17	$1,362
11	AD	WWTP expansion to 0.95 MGD	Oct-18	$3,000
12	N	New 30", 36", 42", and 60" interceptor from Downtown WWTP to future WWTP; 8" interceptor to replace Willock Hills LS	Oct-19	$43,144
		Development Subtotal =		**$56,720,948**
Operational				
2	B	12" line to replace Carter Ranch LS	Oct-17	$1,502
3	P	6" line to replace Lucy's LS	Oct-17	$120
4	Q	8" and 10" line to replace Shawnee Trail No. 1 LS	Oct-17	$1,172
5	C	8" line to replace Winn Road LS	Oct-17	$486
		Operational Subtotal =		**$3,279,312**
I/I				
7	AA	Manhole rehabilitation from PK I/I study	Oct-17	$422
8	AB	Pipeline rehabilitation from PK I/I study	Oct-17	$761
9	O	12" line replacement to increase capacity to Heritage	Oct-17	$1,244
13	T	18" line replacement to increase capacity Downtown	Oct-19	$3,066
14	U	15" line along FM 455 across Preston Rd	Oct-19	$734
		I/I Subtotal =		**$6,226,747**
		Total 2017 OPCC =		**$66,227,007**

2.0 Introduction

2.1 City Summary

The City of Celina is a community located primarily in the northwest corner of Collin County, Texas with portions of the City in northeast Denton County. The City is situated north and east to the Dallas/Fort Worth Metroplex, and comprises 22 square miles.

In 2016, the City of Celina water system served approximately 11,000 people with 3,644 connections. The City receives treated water from the Upper Trinity Regional Water District (UTRWD). This accounts for 70% of the water supply in 2016. The other 30% was produced from City owned and operated wells that is then blended with the UTRWD water at the Downtown Pump Station (DTPS) and the Morgan Lake Facility. These wells will begin to be decommissioned in the near future due to condition and maintenance costs.

The City's wastewater is treated by the City, the UTRWD, and onsite sewage systems made up primarily of septic and aerobic treatment systems. Subdivisions less than 1 acre and commercial properties use gravity lines and lift stations to transport wastewater to one of two places: the Downtown WWTP or Doe Branch Interceptor. The Doe Branch Interceptor transports collected wastewater to the UTRWD for processing. The Downtown WWTP currently collects and treats an average of 456,000 gallons of wastewater per day. The DWWTP is permitted for a maximum of 500,000 gallons per day. The larger subdivisions (>1 acre) typically utilize onsite sewage systems.

2.2 Objectives

The City commissioned this Water and Wastewater Modeling and CIP Report in order to evaluate the current condition of the existing infrastructure, and to adequately prepare for future growth and facility maintenance through a 5 year planning period. The modeling and CIP report accomplished the following:

- Developed the water model to adapt dynamically with recent developments
- Developed a wastewater system model, utilizing flow monitoring and temporary rain gauge data
- Prepared a capital improvements plan for identified improvements in the distribution and collection systems

2.3 Acknowledgements

Staff members throughout the City, including the Public Works, Engineering, and Planning and Development departments, were integral to the development of this Water and Wastewater Modeling and CIP Report. Garver and our consultant team is sincerely grateful for their dedication to this effort.

3.0 Population and Flow Projections

This section documents the current, five year, and ultimate buildout planning horizon population and flow projections for the City of Celina.

3.1 Population Trends

The following population projections utilize historical, current, and planned population projections to identify anticipated growth rates and ultimate buildout population. These projections should be reviewed with every Master Plan update to confirm the anticipated growth rates are being met.

3.1.1 Historical Population Trends

Historical population trends and growth rates for the City of Celina, shown in Table 3-1, are based on the U.S. Decennial Census. The City of Celina has historically been a rural community with growth rates near 1%. However, recent development expansion from the Dallas-Fort Worth metroplex has resulted in exponential residential growth over the past fifteen years. As such, the City's current growth rate of 13% is anticipated to increase for the foreseeable future.

Table 3-1: Historical Population and Growth Rate

Year	Population[1]	Growth Rate
1970	1,272	1%
1980	1,520	2%
1990	1,737	1%
2000	1,861	1%
2010	6,028	12%
2015	11,000	13%
[1] U.S. Decennial Census (1970-2010)		

In addition to the growth within the City's existing boundaries, annexation of surrounding areas is expected to increase the City's population. The following sections document the previous projection methods and describe the approach used as the basis for the current water and wastewater system modeling.

3.1.2 Five Year Population Estimate

Five year population projections were based on the City of Celina's July 2015 Development Takedown Schedule, which contains a record of all current and anticipated development. The overall population density (8.4 persons/acre) and the expected area of land developed was used to calculate the estimated populations shown in Table 3-2.

Table 3-2: City-Identified Short Term Population Growth

Year	Total
2015	10,875
2016	12,985
2017	15,585
2018	21,360
2019	27,401
2020	33,138
2021	38,741
2022	43,729

Table 3-2 shows the 5-year population to be approximately 43,729. The City-identified short term growth rate exceeds the current 13% for years 2016-2021, and will be incorporated into model development. Figure 3-1 displays the historical and projected five year growth pattern.

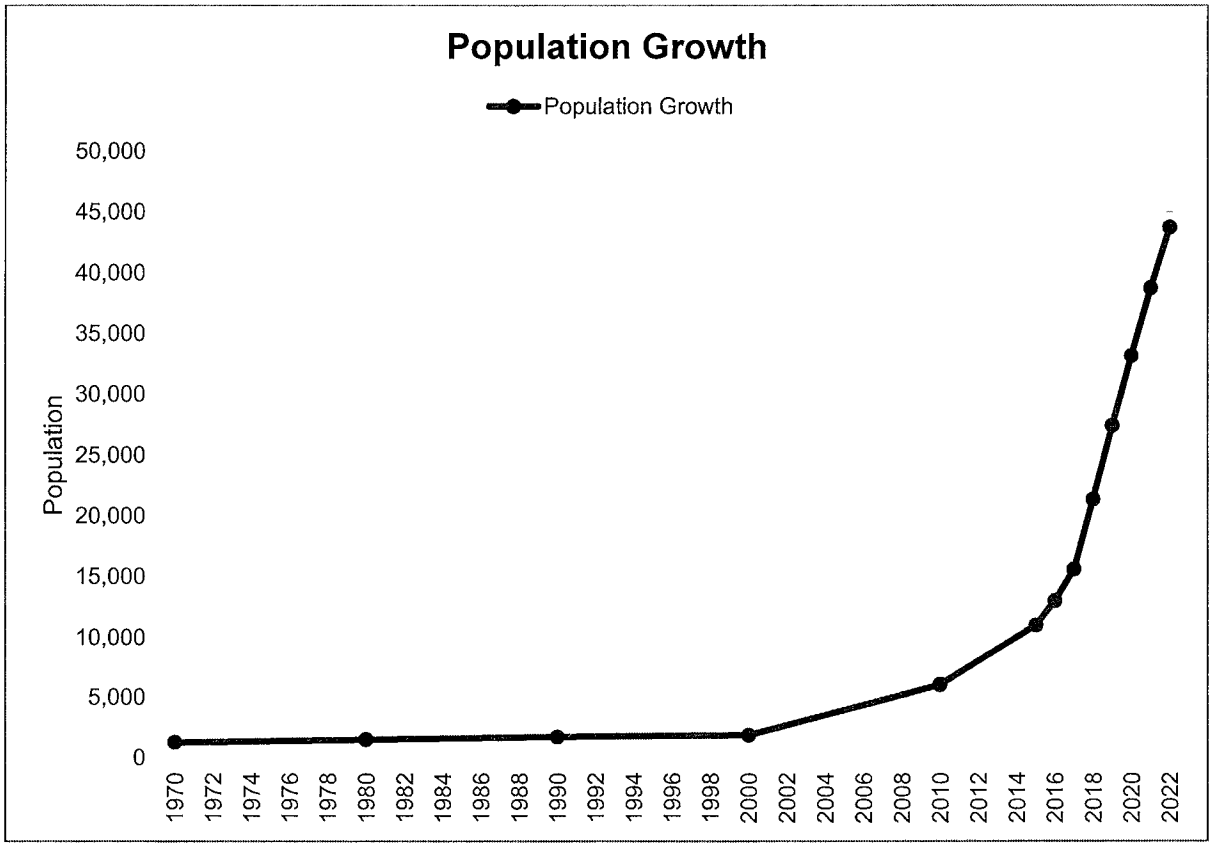

Figure 3-1: Population Growth

3.1.3 Buildout Population Projections

3.1.3.1 Previous Buildout Population Projections

The 2015 Master Plan buildout projections were generated using the 2013 Comprehensive Plan and the 2003 Master Plan for the City to estimate future buildout populations. The calculated populations for the water and wastewater plans are presented in Table 3-3. These projections were based on an ultimate planning area of 77 square miles, which aligned with City zoning and annexation plans. The 2015 Water and Wastewater Master Plan projections assumed that there would be 6.2 and 8 connections per acre for residential and commercial areas, respectively.

Table 3-3: 2015 Water and Wastewater Master Plan Population Projections

Year	2015 Master Plan	
	Water	Wastewater
2015	11,000	11,000
Buildout	339,000	343,267

The difference between the Water and Wastewater Master Plan projections results from the Wastewater Master Plan including drainage basins which extend into nearby jurisdictions (which added approximately 6,143 acres).

However, the City's Certificate of Convenience and Necessity (CCN) boundary has been modified since the 2015 Master Plan, with the new boundary supplied by the City encompassing approximately 67 square miles. The 2015 Master Plan and revised CCN boundaries are shown in Figure 3-2.

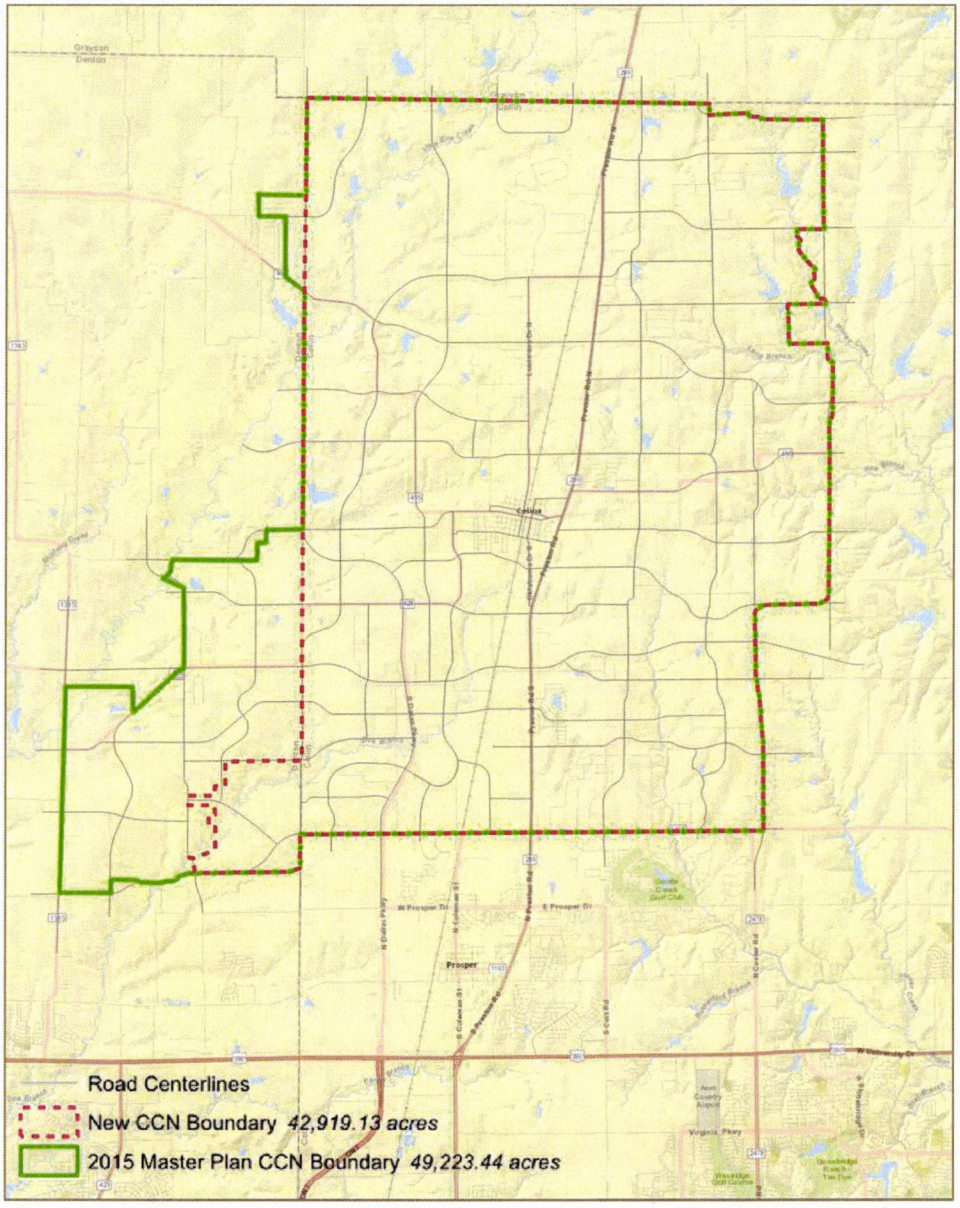

Figure 3-2: 2015 Master Plan and Revised CCN Boundaries for the City of Celina

The City also produces a future land use plan to allocate areas of Celina to specific land use classifications. The land use classifications may be used to predict population projections. The Plan produced by the City is included as Figure 3-3.

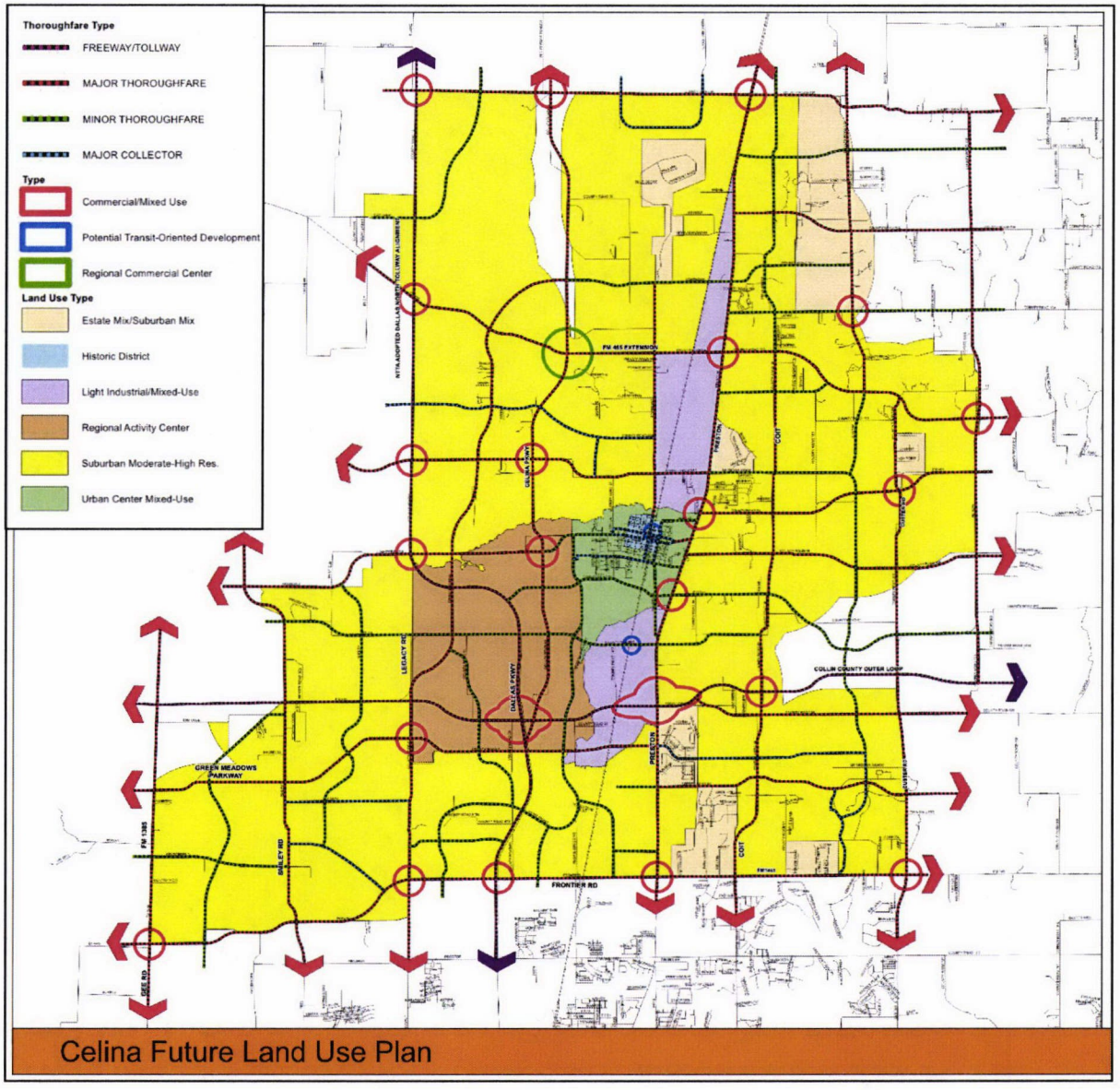

Figure 3-3: Celina Future Land Use Map

Land use within the City's revised CCN is expected to fall into six categories, ranging from residential to light industrial/mixed use. As such, the ultimate buildout population projections were developed using the existing population plus projected growth based on future land use classifications for currently undeveloped areas within the CCN.

Table 3-4: City of Celina Population Growth Based on Land Use Classification

Classification	Acres	Dwellings/ acre	People per Dwelling	Population Growth
Estate Mix/Suburban Mix	4,014	1	3	12,042
Historic District	13	4	3	156
Light Industrial/Mixed Use	2,113	0	0	0
Regional Activity Center	3,533	4	2	28,260
Suburban Moderate-High Residential	29,040	3.5	3	304,917
Urban Center Mixed Use	633	3	2.5	4,748
Total additional population				350,123

Including this future growth, the buildout population was estimated at 363,100, with an overall density of 8.46 persons per acre. The City of Celina has expressed interest in following a similar growth pattern to that of the City of Frisco, and this predicted density is comparable to the planned population density in the City of Frisco (8.34 persons per acre).

3.1.4 Population Projection Summary

Table 3-5 summarizes the population projections utilized for the basis of this report.

Table 3-5: Population Projection

Year	Total
2016	12,985
2017	15,585
2018	21,360
2019	27,401
2020	33,138
2021	38,741
2022	43,729
Buildout	363,100

3.2 Water Flow Projections

Flow demands and projections were developed for current demands, the 5-year CIP planning horizon, and ultimate buildout. The demand analysis and projections utilized a combination of historical water usage data and per unit projected demands. Near-term projections include City-identified growth, and the ultimate buildout considers a population of 363,100, as identified in Section 3.1.3.

3.2.1 Current Demands

Monthly operating reports for the period of January 2013 through June 2016 were provided by the City. The reports documented daily maximums, averages, and minimums for each month during that time period. Figure 3-4 displays this data graphically.

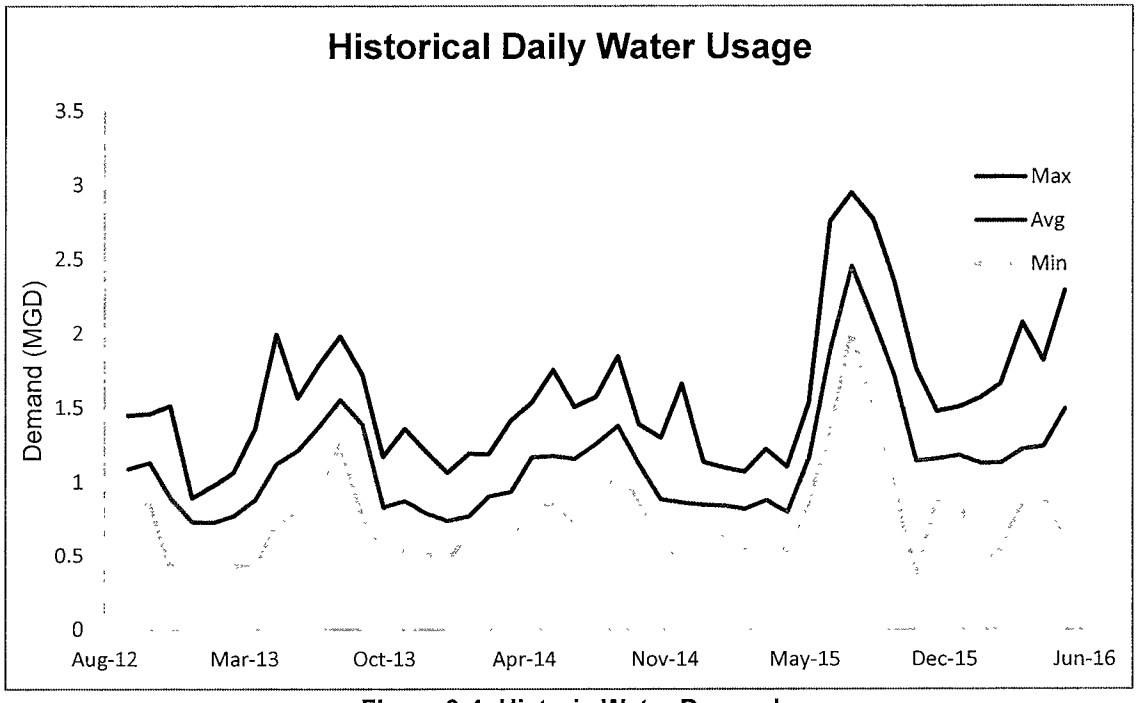

Figure 3-4: Historic Water Demand

Figure 3-5 shows the daily demand over the same time period as production originating from wells in the City of Celina and purchased water from UTRWD.

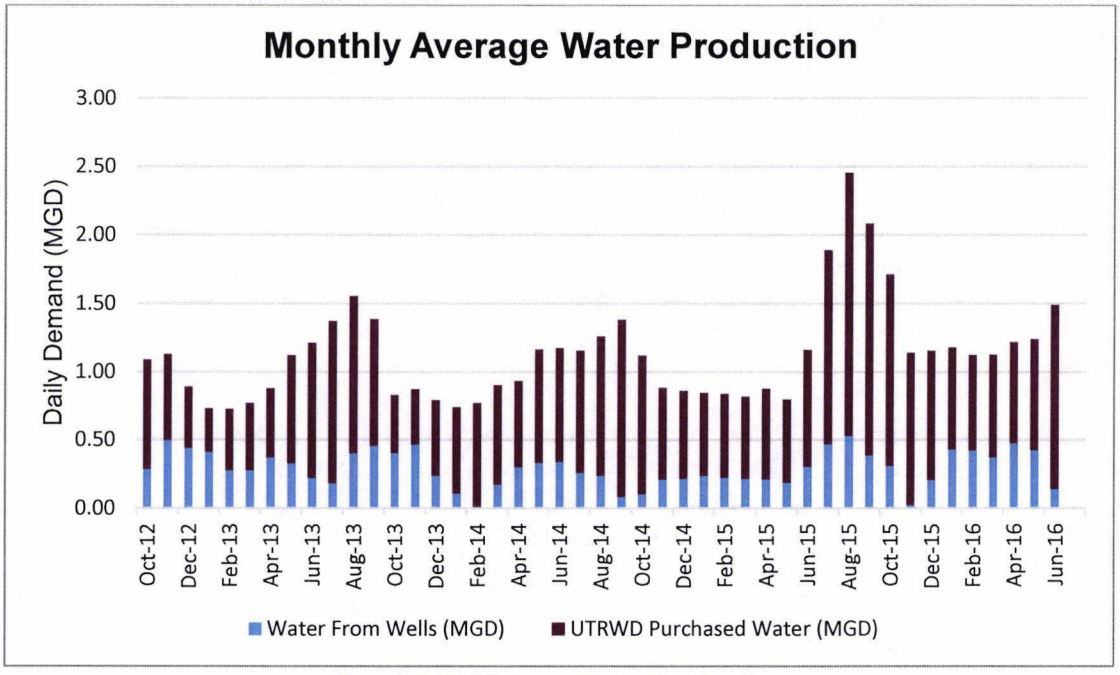

Figure 3-5: Historic Water Production

A summary of the annual average and 2016 planning numbers is shown in Table 3-6. This data indicated that the average number of people per connection was 2.9, and the annual average per capita demand was 141 gpcd. The maximum day per capita demand occurred in August 2015. The 2016 average and maximum day demand values were estimated based on the per capita demand values, average number of people per connection, and the number of connections (3,644 in 2016).

Table 3-6: Summary of Historical Demands

Classification	Average per Capita (gpcd)	Demand (MGD)
Annual Average	141	-
Annual Max Day	323	-
2016 Average Day	-	1.49
2016 Max Day	-	3.40

3.2.2 Flow Projection Design Criteria

Design criteria from five sources, including historical demands, Texas Water Development Board water demand projections, the 2015 Master Plan, City of Celina Engineering Standards, and the 2008 City of Frisco Master Plan, were used in determining per unit projected demands. These design criteria are summarized in Table 3-7.

The Texas Water Development Board (TWDB) estimates future average daily demand based on population projections and historical county water usage. The resulting future average daily demand estimates are 185 gpcd through 2020, and 183 gpcd through 2070 as more efficient household fixtures are anticipated. This may be underestimating the future City demand for multiple reasons. First, these projections only consider the City's current limits and do not account for the projected additional 45 square miles at ultimate buildout. Secondly, these sources distribute projected growth at the county level among cities by comparing historical growth in each city to its county's overall growth. The record growth of surrounding cities has limited the development potential for those respective cities, so their growth rates would be expected to decrease relative to that of the City of Celina. Lastly, new construction is anticipated to use more water per capita due to larger house sizes, automatic irrigation systems, and less use of private wells.

The City of Celina Engineering Standards require that an average daily demand of 230 gpcd be used for future City water planning. This value matches the residential average daily demand documented in the 2008 City of Frisco Master Plan. The City of Frisco also specifies a peaking factor of 2.0 (i.e., 460 gpcd) for calculating peak day demands. Because the City of Celina desires to follow a similar growth pattern to the City of Frisco, and their design criteria are conservative relative to both historical data and TWDB estimates, values of 230 gpcd for average daily demands and 460 gpcd for peak daily demand will be used in the future demand projections.

Table 3-7: Ultimate Buildout Projections by Source

Source	Average Daily Demand (gpcd)	Peak Daily Demand (gpcd)
Historical Data	141	323
TWDB	183	NA
2015 Master Plan	NA	42
Celina Standards	230	NA
Frisco Master Plan	230	460

3.2.3 Five Year Water Demand Projections

Water demand projections for the 5-year planning period were conducted based on the calculated 5-year population projection estimate detailed in Section 3.1.2. Future demand was assigned utilizing the City's July 2015 Development Takedown Schedule and previously detailed population projections.

Average day residential demand projections were based on an average of 230 gpcd and the anticipated population growth. The per acre loading rate for residential areas was estimated by dividing the residential demand by the land area associated with residential growth. This resulted in an average value of approximately 2,336 gpd/ac. The constant 2,336 gpd/ac allows a higher per capita value to be applied in areas with large lots (where irrigation use is typically greater) than in areas with small lots (where population density is greater). The percentage of lots (i.e., land) developed in that subdivision each year was also applied to calculate the total flow based on developed land area. The added maximum day demand for each subdivision was calculated using a 2.0 peaking factor over average day.

Non-residential demands for the planning period were estimated based on assumed development of areas from the Land Use Plan along Preston Road on either side (north and south) of downtown Celina. Specifically, it was assumed that 20% (182 acres) of the 911-acre area south of downtown would be developed, whereas 8% (98 acres) of the 1,225-acre area north of downtown would be developed over the planning period. For each area, it was assumed that the development would be divided equally over the 6-year period from 2016 to 2022. This calculation accounts for a 0.14 MGD/year increase in demand.

Average day non-residential demands were estimated using a value of 3,000 gal/ac for areas classified as light industrial/mixed use, regional activity center, and urban center mixed use. This approximation is preferable to distributing demands based solely on anticipated population growth because there are not currently people in those areas to base demands on.

To summarize, the existing demands associated with the existing population and development were held at the existing demand values and utilized as a baseline. The average day 230 gpcd was not applied to the existing population. The average day residential demand projections were developed as a population growth per year in addition to the current population, and then added to the existing baseline demand. Non-residential demands were estimated utilizing land classifications on a per acre basis, then equally divided over six years. The peak day demand projections were developed in a similar manner utilizing the existing peak demand as a baseline and the 2.0 peaking factor.

Total 5-year demand projections are summarized in Table 3-8, with a historical comparison of past and projected future demands in Figure 3-6.

Table 3-8: Five Year Water Demand Projections

Year	Average Daily Demand (MGD)	Peak Daily Demand (MGD)
2017	3.03	6.48
2018	4.51	9.44
2019	6.06	12.55
2020	7.54	15.50
2021	8.97	18.35
2022	10.20	20.81

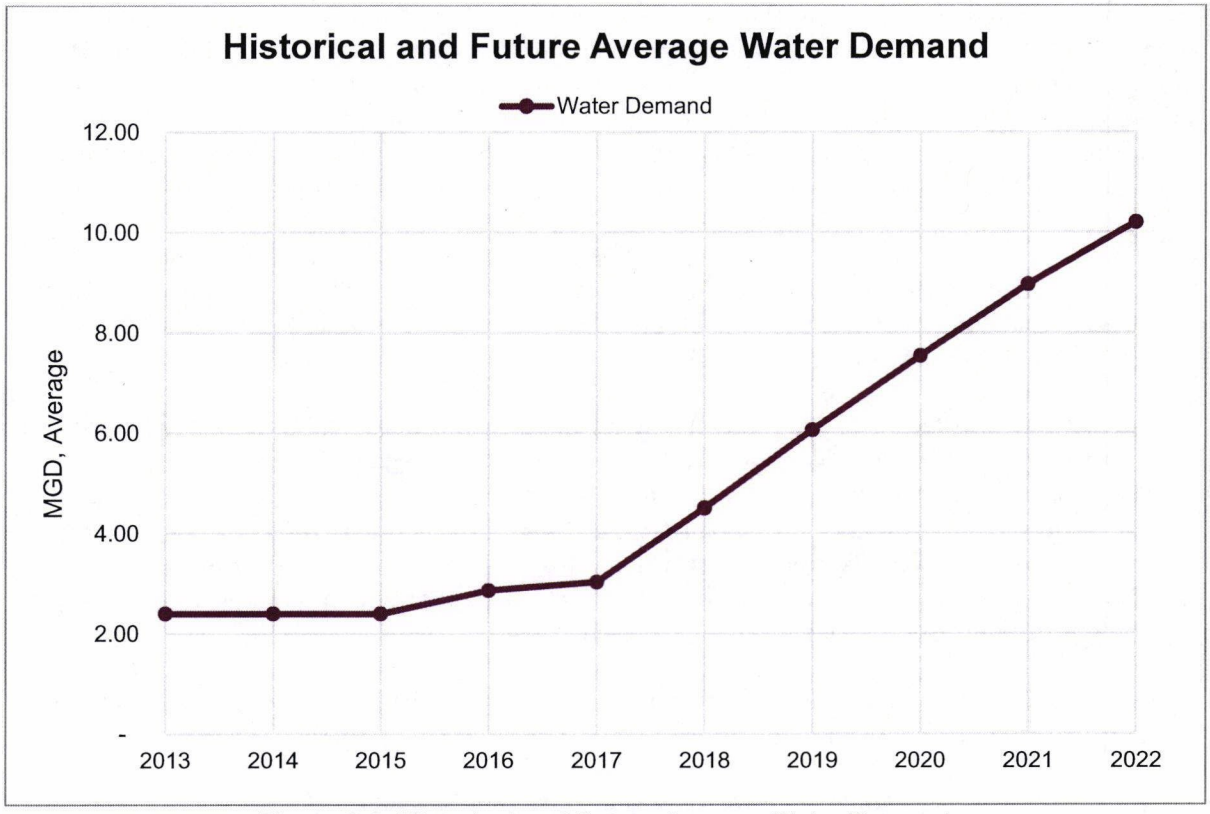

Figure 3-6: Historical and Future Average Water Demand

3.2.4 Ultimate Buildout Water Demand Projections

Ultimate buildout demand projections are summarized in Table 3-9.These demands were calculated based on the land use distribution utilized previously and the City's current Futue Land Use Plan.

Table 3-9: Ultimate Buildout Water Demand Projections

Average Daily Demand (MGD)	Peak Daily Demand (MGD)
100	200

3.2.5 Conclusions

Garver proposes the use of an average daily residential demand of 230 gpcd as identified in the City of Celina Engineering Standards and 2008 City of Frisco Master Plan coupled with a 3,000 gpd/ac average daily commericial demand. A peaking factor of 2.0 per industry standard and the 2008 City of Frisco Master Plan is proposed to determine peak daily demand. The average and peak daily demands are summarized for the five-year and buildout planning periods in Table 3-10.

Table 3-10: Summary of Water Demand Projections

Year	Average Daily Demand (MGD)	Peak Daily Demand (MGD)
2017	3.03	6.48
5-year (2022)	10.20	20.81
Buildout	100	200

3.3 Wastewater Flow Projections

Flow demands and projections were developed for current demands, the 5-year CIP planning horizon, and ultimate buildout. The demand analysis and projections utilized a combination of historical flow data, information gathered from field measurements conducted during the flow testing study, design criteria, and per unit projected demands. Near-term projections include City-identified growth, and the ultimate buildout considers a population of 363,100, as identified in Section 3.1.3.

3.3.1 Current Flow

Monthly operating reports for the period of January 2013 through June 2016 were provided by the City for the Downtown WWTP. The reports documented average daily flows and maximums for each month during that time period. In addition, monthly billing data was provided from UTRWD for the period of January 2016 through April 2016. Figure 3-7 displays this data graphically for the 2015 – 2016 timeframe.

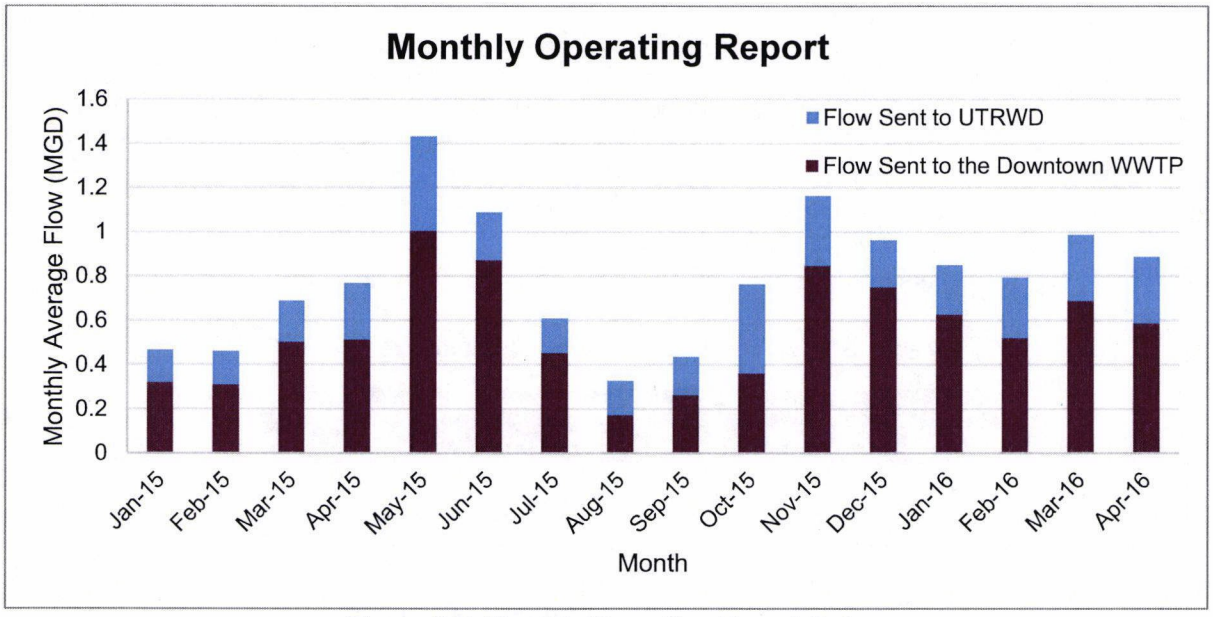

Figure 3-7: Monthly Operating Report Data

Monthly billing data from the City indicates that 84% of the existing water connections are also served by wastewater. This discrepancy is largely due to the use of septic systems on the larger, more rural lots. Assuming the previously detailed connections and current per capita rates, this equates to an average flow of 77.5 gpcd. The existing sewer flows were also compared to the results of flow monitoring conducted by Pipeline Anaylsis, which estimated an average flow of 0.78 MGD, or approximately 71 gpcd.

3.3.2 Flow Projection Design Criteria

A summary of historical, flow test data, the 2015 Master Plan, and Celina Standards are presented in Table 3-11. Due to the variability and fluctuations of the historical and flow testing data, the Celina design standards are recommended for planning purposes.

Table 3-11: Sewer Flow Projections by Source

Source	Average Daily Flow (gpcd)	Max Daily Flow (gpcd)
Historical Data	77.5	NA
Flow Testing	71	196
2015 Master Plan	102	306-408, depending on line size
Celina Standards	102	408

3.3.3 Five Year Wastewater Flow Projections

Wastewater load projections for the 5-year planning period were conducted based on the City's July 2015 Development Takedown Schedule, which lists the anticipated number of connections per subdivision for each year through 2022. Average day demand additions were estimated for each subdivision based on the population based residential demand of 102 gpcd. The added maximum day demand for each subdivision was calculated using a 4.0 peaking factor over average day. Non-residential demands were not explicitly accounted for due to uncertainty regarding the anticipated locations of these loadings. Non-residential loads should be evaluated on a case-by-case basis to determine if adequate capacity exists.

Table 3-12: Five Year Wastewater Demand Projections

Year	Average Daily Flow (MGD)	Peak Daily Flow (MGD)
2017	1.22	11.47
2018	1.72	13.49
2019	2.25	15.60
2020	2.75	17.61
2021	3.24	19.57
2022	3.68	21.31

3.3.4 Future Demand Projections

Average day residential demand projections were based on an average of 102 gpcd and the anticipated population growth. Future land use classifications for currently undeveloped areas within the CCN, as shown in Figure 3-3, were used to develop per acre demands. Average day non-residential demands were estimated using a value of 1,500 gal/ac for areas classified as light industrial/mixed use, regional activity center, and urban center mixed use. Maximum day demands were calculated by using a 4.0 peaking factor to convert average day to maximum day values. Ultimate buildout flow projections are summarized in Table 3-13.

Table 3-13: Ultimate Buildout Wastewater Demand Projections

Average Daily Demand (MGD)	Peak Daily Demand (MGD)
45.1	180.5

3.3.5 Conclusions

2016 flows were based on the flow monitoring results conducted by Pipeline Analysis. Garver proposes the use of an average daily residential demand of 102 gpcd as identified in the City of Celina Engineering Standards plus 1,500 gpd/ac average daily commericial demand for ultimate buildout. The average and peak flows are summarized for the 2016, five-year, and buildout planning periods in Table 3-14.

Table 3-14: Summary of Wastewater Demand Projections

Year	Average Daily Demand (MGD)	Peak Daily Demand (MGD)
2016	0.94	0.9412
5-year (2022)	3.68	21.31
Buildout	45.1	180.5