DTE Energy®

DTE Gas
Single Source Systems
June 25, 2018

Overview

- DTE Gas is developing a transmission pipeline risk mitigation strategy that includes pipelines with higher integrity risks and high outage potential
- Today's discussion will focus on DTE Gas's single source transmission systems, where a high number of customers would be impacted in the event of an outage
- The Lincoln-Traverse City and Alpena have been identified to be among the top transmission pipelines requiring outage risk mitigation
- A major incident on these pipelines would result in unprecedented outages with unacceptable impacts to DTE Gas customers
- Various risk mitigation options have been considered. Only looping and/or an alternative supply options address both integrity risks and outage potential. Mitigation plan alternatives are being developed

Failure on single feed DTE Gas Transmission Systems could result in significant customer outages

- Today's discussion focuses on Lincoln-Traverse City and Alpena, highest risk single source pipelines
- We are currently reviewing alternatives to the Lincoln-Traverse and Alpena pipelines to ensure integrity and reliability

Rank	System	Outages	Time
1	Traverse City	51,000	Year-round
2	Alpena	35,000	Year-round
3	Belle River–Detroit	50,000	Winter
4	Manistee	5,400	Year-round
5	Petoskey	18,000	Year-round

Single feed system risk was assessed using six key categories

Lincoln-Traverse City / Alpena risk results

Category	System Characteristics	Impact
• Age	• Pre-1970	• Pre Gas Safety Code
• Stress level	• ~50% SMYS	• Failure mode-rupture
• Assessment type	• DA	• Limited anomaly detection
• Customer count	• 85,600 total	• Catastrophic
• Outage recovery	• 15 days	• Exceeds customer expectations
• Pressure test	• 1.25 x MAOP *(L-TC)*	• Unstabilized seam threat *(L-TC)*

Pipeline System	Year Installed	Size (in)	Wall (in)	MAOP (psig)	TEST (psig)	TEST / MAOP	% SMYS @ MAOP	ILI Inspected	Maximum Outages	Peak Hr. MMCFH
10"/8" Lincoln-Traverse City	1956	10	0.250	812	960	1.18	49.9%	NO	51,000	3.0
16"/12"/8" Alpena	1964	16	0.250	811	1287	1.59	49.9%	NO	34,600	2.2
					Total Customers on these pipelines				85,600	5.2

Note: Pipelines details shown are the oldest and highest stress segments in each system

DTE Gas's largest outage, 6,000 customers, curtailed non-emergency work and stretched resources to the limit

- **Location**: Walker (Grand Rapids area)
- **Date**: Monday October 17, 2011
- **Weather**: 48-56 deg. F., partly sunny, no need for warming centers and no risk of freezing pipes
- **Outages**: 6,000 with 1,100 CGI's
- **Area**: approx. 3 miles by 3 miles
- **Customers**: residential/small businesses including restaurants and a nursing home
- **Recovery Period**: 4 days (plus more for CGI's)
- **Resources**: 145 (70 from GR, 75 from other DTE Gas locations across the state)
- **Statewide workload curtailment:** Emergency work only
- **Resources** were stretched to limit across all areas
- **Media attention**: Yes
- **Recovery Cost**: $700,000

A single failure on the Traverse City system could result in an outage eight times larger than DTE Gas has ever experienced

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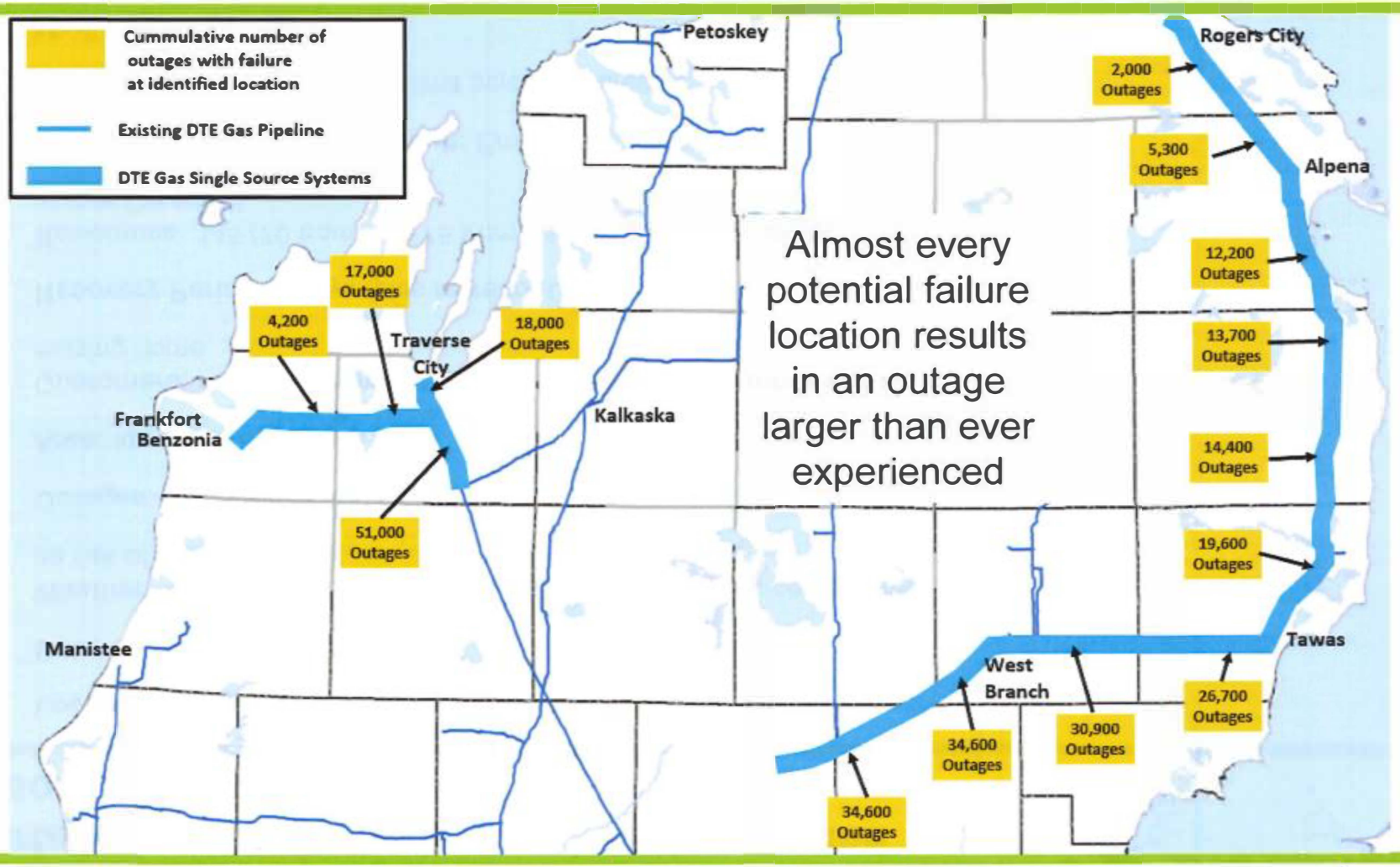

A 51,000 customer outage in the Traverse City area would have a significant impact on the entire region

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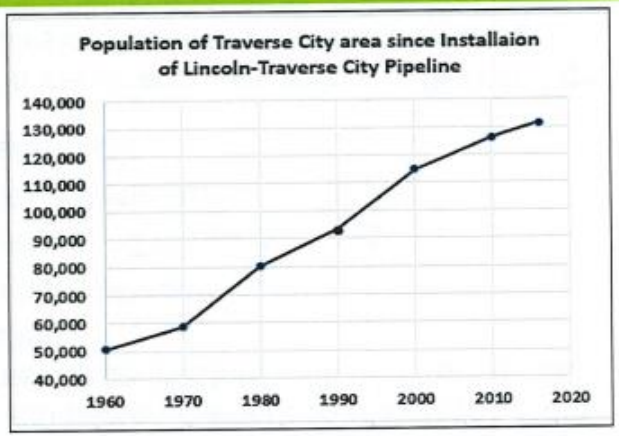
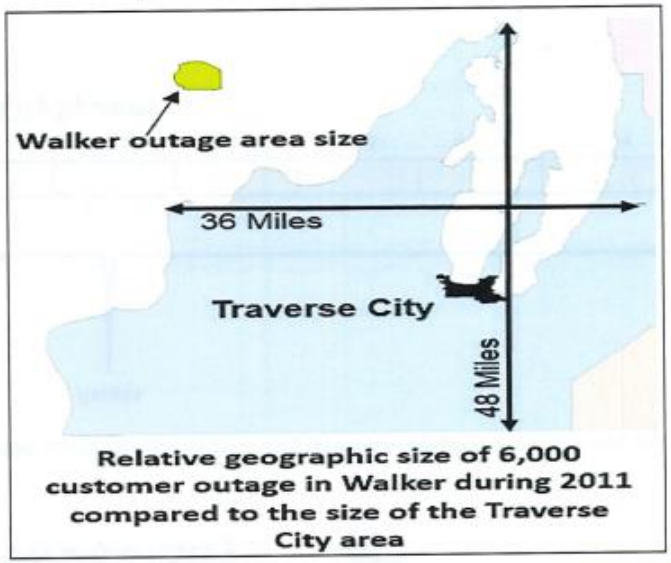
- **Customers:** 51,000
- **Counties:** Grand Traverse, Leelanau, Benzie
- **Population 2016:** 130,000
- **Population 1960:** 51,000 (4 years after gas brought to TC)
- **Other customers:** Emergency work only
- **Major customers:** Munson Medical Center, Elmers Crain & Dozer, Graceland Fruit, Traverse City Public Schools, Sara Lee Bakery
- **Hospitals:** 2
- **Nursing/assisted living:** 36
- **Geographic span:** 36 x 48 mile area
- **Recovery time:** 15 days
- **Media coverage:** Extensive-Nationwide
- **Financial impact:**

Restoration costs[1]	$7 million (est. from Walker outage)
Potential freezing damage[2]	$128 million or more
Potential Lost wages[3]	$83 million (2 weeks)





Relative geographic size of 6,000 customer outage in Walker during 2011 compared to the size of the Traverse City area

1. Restoration cost for Traverse City was estimated by scaling up the $700,000 cost for the 6,000 customer Walker outage to 51,000.
2. Potential freezing damage = 51,000 (customers) x 25% (of customers w/ damage) X $10,000 (damage per customer)= $128 million
3. 2016 U.S. Census data

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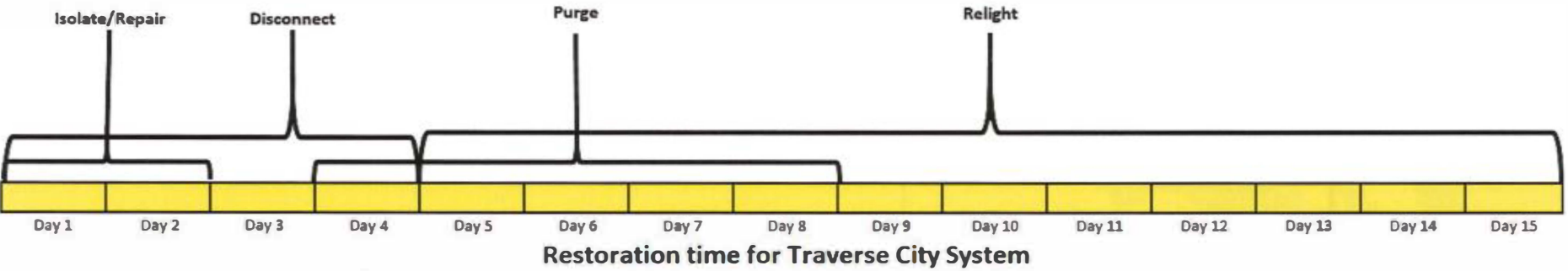
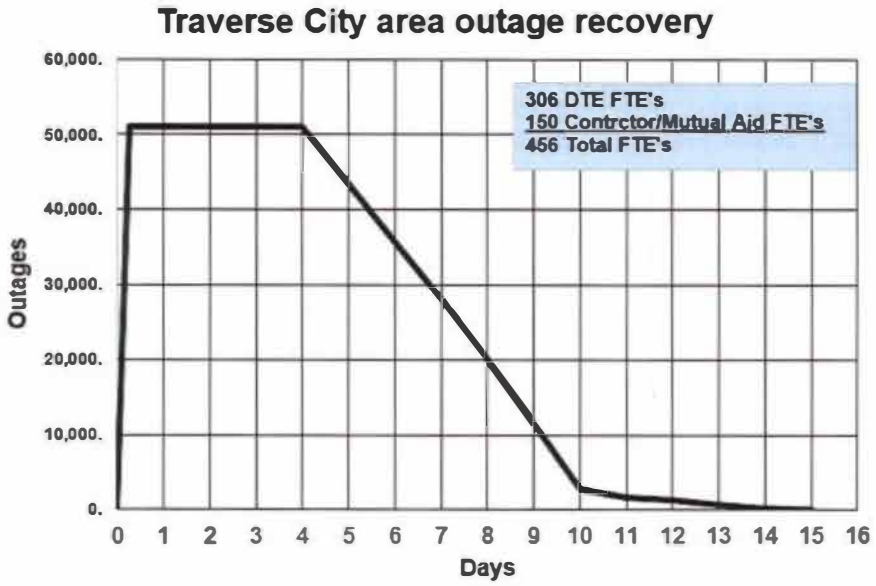
Time to restore gas service could reach well beyond what would be considered reasonable, especially during the winter



Restoration time for Traverse City System



- Based on a 450 person distribution restoration team (300 DTE Gas, 50 contractors, and 100 from mutual aid agreements)
  - Work shift - 14 hours
  - Disconnect - 15 minutes
  - Relight – 25 minutes
  - CGI rate – 10%
- Depending on the location and extent of the damage to the transmission line along with the prevailing weather conditions, time to repair, purge and restore the transmission system would vary.

Several factors could complicate the restoration of gas service to the Traverse City area

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- **Weather Conditions:**
  - Slowed travel
  - Lodging for restoration team would have to be more than 50 miles away
  - Entire region would be without heat
  - Warming centers would be heated with alternate fuel or require a 50 mile trip to areas with gas service
  - Extra efforts to assure safety of elderly and those needing assistance to relocate
  - Lack of heat for hospitals and nursing homes would make care difficult
  - CGI may be much higher if customers leave homes for hotels and warming centers
- **Distance to other major DTE Gas operating stations**
- **Number of district regulators:**
  - 140 total (15 located below grade, 125 above grade)
  - Limited qualified crews to operate these facilities
- **Mutual assistance agreements are in place but they have never been used in response to a DTE Gas outage**

Of the risk mitigation options, only the Loop/Alternate supply option addresses both outage and integrity risks

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#	Risk Mitigation Option:	Addresses? Integrity	Addresses? Outage	Comments:
1	Continue current operating practices	NO	NO	• Does not address integrity of entire pipeline
2	Derate pipeline MAOP	NO	NO	• Lowers pipe stress level
3	Perform additional risk mitigation activities (increased patrols, etc.)	NO	NO	
4	Conduct In line inspection (ILI) w/ LNG backup	YES	NO	• LNG vendors have not provided service this large • LNG equipment does not support full market backup • DTE Gas does not have experience with LNG • Benchmarked operators are not comparable to DTE Gas
5	Replace pipelines	YES	NO	• Addresses current integrity risks at a high cost
6	Loop/Alternate supply	YES	YES	• Would mitigate risk from ILI on current pipelines

DTE Gas is exploring and evaluating various options including looping DTE Gas pipelines and interconnections with GSP pipelines

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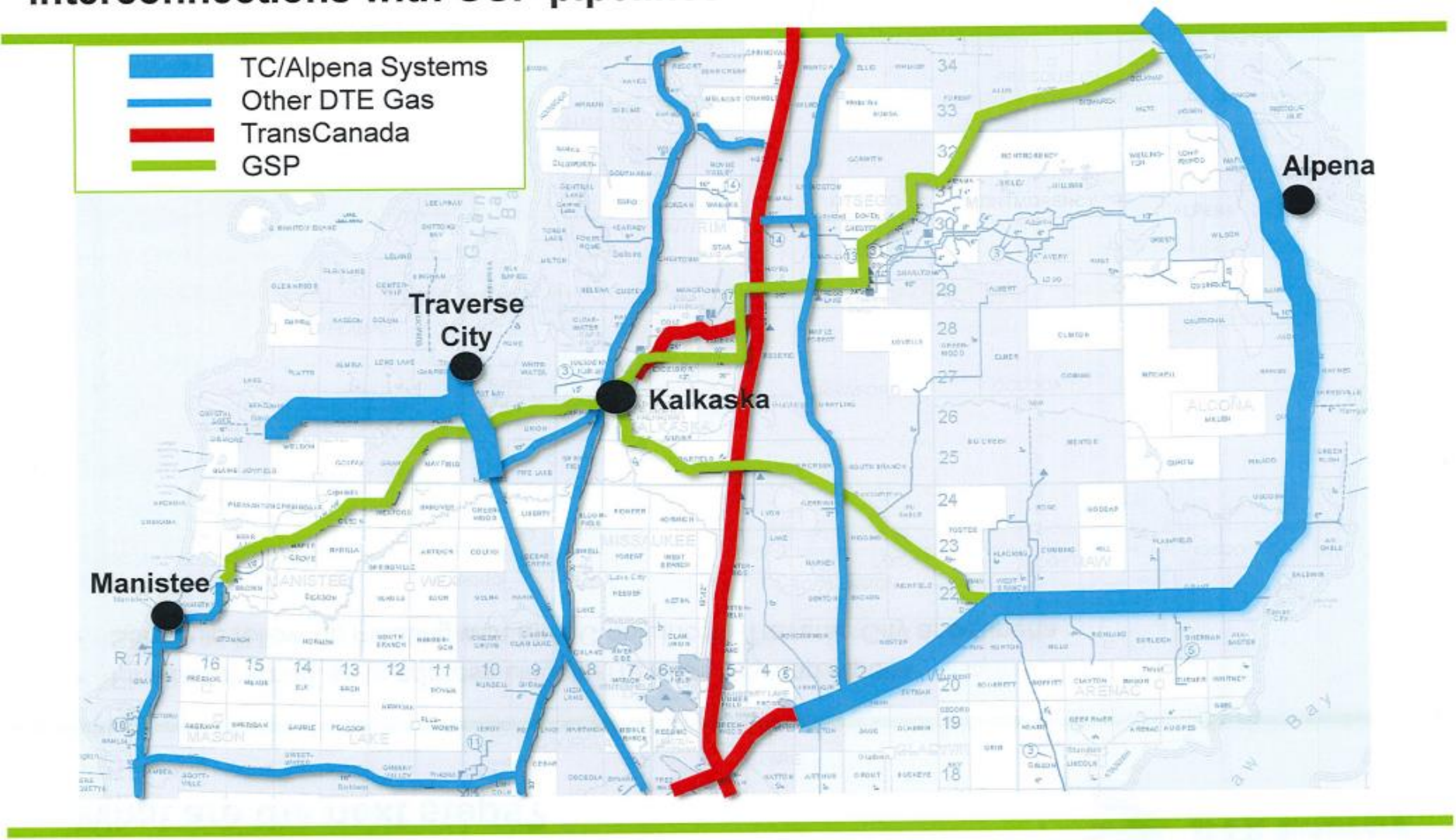

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What are the next steps?

- Finalize alternatives to address Lincoln-Traverse City and Alpena
- Schedule follow up meeting with MPSC on Lincoln-Traverse City and Alpena

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DTE Gas
Single Source Systems
September 10, 2018

Executive Summary

- On June 25, 2018, we discussed the risk of failure on DTE Gas's single source systems and identified potential risk mitigation actions
- The Lincoln-Traverse City and Alpena systems rank as the top single source transmission pipelines requiring risk mitigation. A major incident on these pipelines would result in unprecedented outages with unacceptable impacts to DTE Gas customers
- Of the various risk mitigation options considered, only looping and/or alternative supply solutions address ***both*** integrity risks and outage potential. DTE Gas has reviewed a number of loop/alternate supply options, including solutions with TransCanada and GSP
- The DTE Gas/GSP (Blair, Pigeon River, Saginaw Bay) solution provides the most cost effective means of mitigating both outage potential and integrity risks on the Lincoln-Traverse City and Alpena systems
  - *Cost estimate - $58 million capital and $7.7 million annual O&M demand charges*
  - *Preliminary timeline – Q1 2021 in-service, including MAOP records review and integrity assessments of GSP assets to assure safe and reliable service*
- Next steps include completion of preliminary design with refined cost estimates, final decision to proceed with GSP/DTE Gas solution and obtaining DTE Gas internal approvals

At our meeting in June with the MPSC, we discussed the risk of failure on DTE Gas single source systems and identified potential risk mitigation actions

Category	System Characteristics	Impact
Age	Pre-1970	Pre Gas Safety Code
Stress level	~50% SMYS	Failure mode-rupture
Assessment Type	DA	Limited anomaly detection
Pressure test	<1.25 x MAOP (L-TC)	Unstabilized seam threat (L-TC)
Customer Count	85,600 total	Catastrophic
Single Failure Outage	51,000	Unmanageable
Outage Recovery	15 Days	Exceeds Customer Expectations

- DTE's largest outage, 6,000 customers, curtailed non-emergency work and stretched resources. A single failure on the Traverse City system could result in an outage eight times larger and impact as many as 120,000 people
- Of the various risk mitigation options discussed, **only** looping and/or alternative supply options address ***both*** integrity risks and outage potential

Risk Mitigation	Integrity	Outage
Derate pipeline	✗	✗
Perform additional risk mitigation activities (patrols, etc.)	✗	✗
Perform ILI assessment with LNG backup	✓	✗
Replace pipelines	✓	✗
Loop/alternate supply	✓	✓

ILI Inspection alone is not a sufficient risk mitigation action for three primary reasons

1) ILI assessment utilizing LNG backup has risk implications:
   - In a recent 2016 AGA SOS survey, no operators with one way feeds had a comparable outage potential and only one used ILI with LNG backup

Respondents w/one way feeds	Outage Potential <15K[1]	Outage Potential 15K-45K[2]	Outage Potential >45K
14	13	1	0

   - Only two of eight LNG companies contacted could meet supply requirements
     - *Both indicated this would represent the largest effort they had undertaken and were reluctant*
     - *100% redundancy could not be provided in the event of equipment failure*
   - DTE does not have <u>any</u> experience with LNG, especially with supply and logistics of this magnitude
   - The potential for a pig getting stuck and causing a major outage is significant
     - *Pigs have stopped for long periods due to heavier wall fittings/valves . The pressure build up can cause pig cups to flip, stopping the pig and shutting off flow*
     - *The single feed section of LTC contains 10 farm taps*
     - *Despite a mechanical feasibility study having been conducted, there is the possibility that a feature exists (stopple fitting, short radius bend) that is not in the records*
2) ILI methodology does not detect all pipeline anomalies
3) Excavation damage is one of the top risks to DTE Gas's transmission systems

1. Respondents did not utilize LNG backup while performing ILI assessment
2. Respondent utilized LNG backup with ILI. Operator owned their equipment and operated it routinely

DTE Gas reviewed a number of Loop/Alternate supply options that addresses both outage and integrity risks

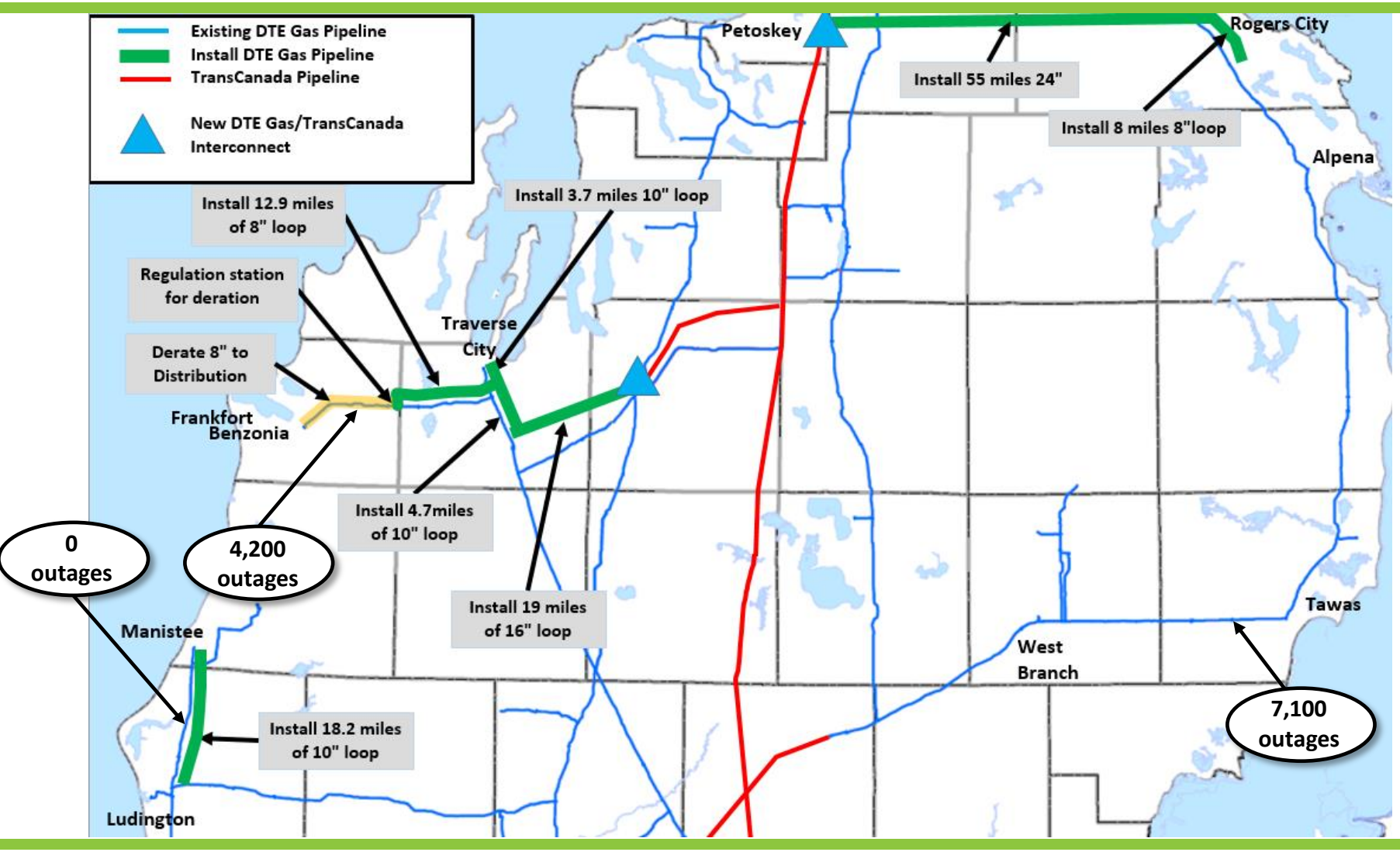
- Various options were considered, including those with:
  - *DTE Gas / TransCanada*
  - *DTE Gas / GSP (Chester)*
  - *DTE Gas / GSP (Blair, Pigeon River, Saginaw Bay)*
- All solutions:
  - Reduce the maximum outage potential from 51,000 outages to 7,100 on the Alpena and Lincoln-TC systems
  - Involve constructing pipelines, interconnect stations, and related gas facilities
  - Solve for the Manistee single source system; ranked fourth highest
- The DTE Gas (Blair, Pigeon River, Saginaw Bay) option, C ,is the recommended solution

		$ Millions		$ Dollars	Miles
	Option	DTE Gas Capital	Annual Demand (O&M) Charges	1st year annual customer bill increase[1]	DTE Gas pipeline installed
A	DTE Gas / TransCanada	$365	$6.0	$ 30.95	121.5
B	DTE Gas / GSP (Chester)	$189	$0.0	$ 14.29	107.1
C	DTE Gas / GSP (Blair, Pigeon River, Saginaw Bay)	$ 58	$7.7	$ 9.09	21.3

1. Reflects first full year of cost of service

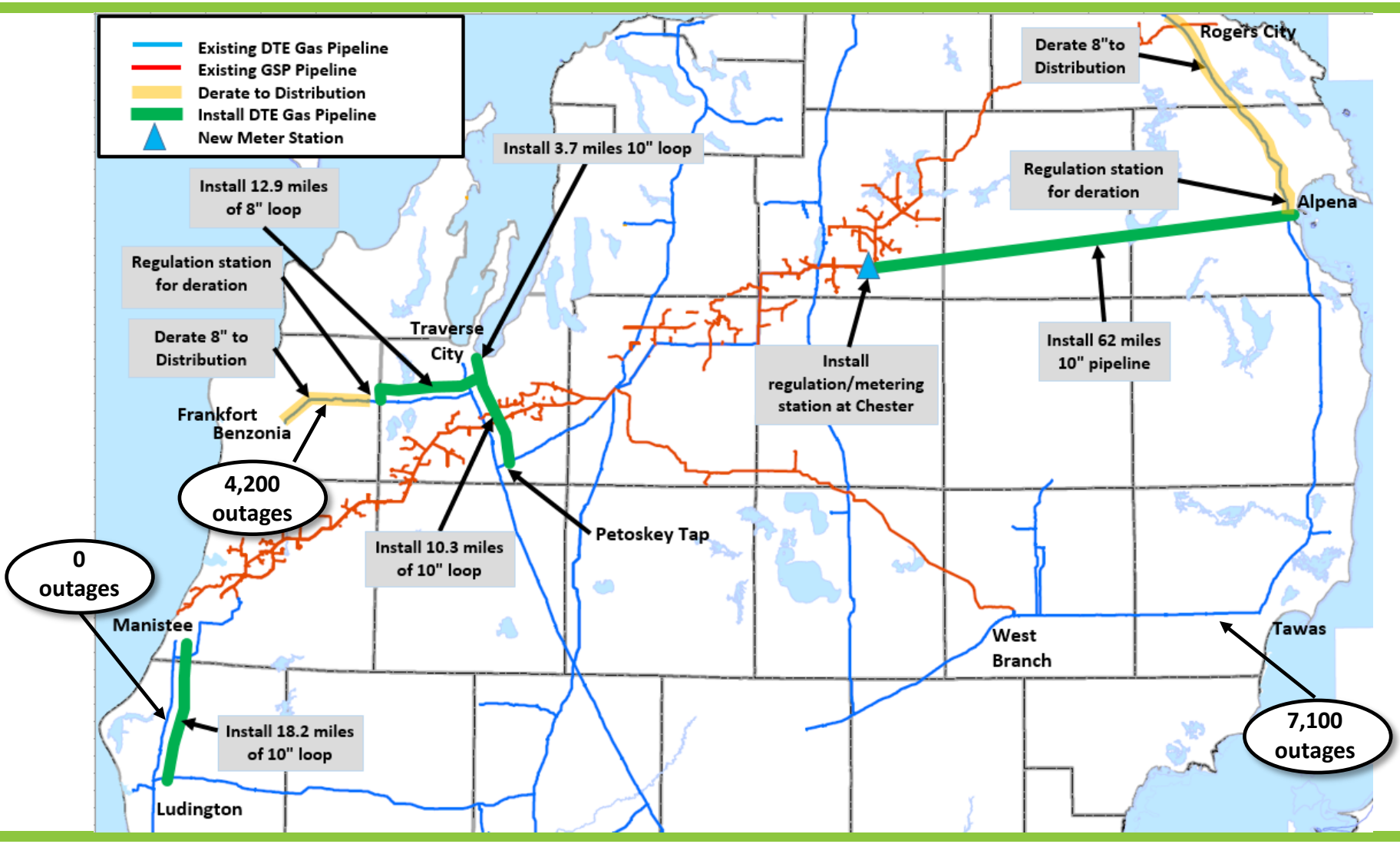
A

Transcanada/DTE Gas Solution: DTE Gas invests $365 million plus $6.0 Million annual demand charges



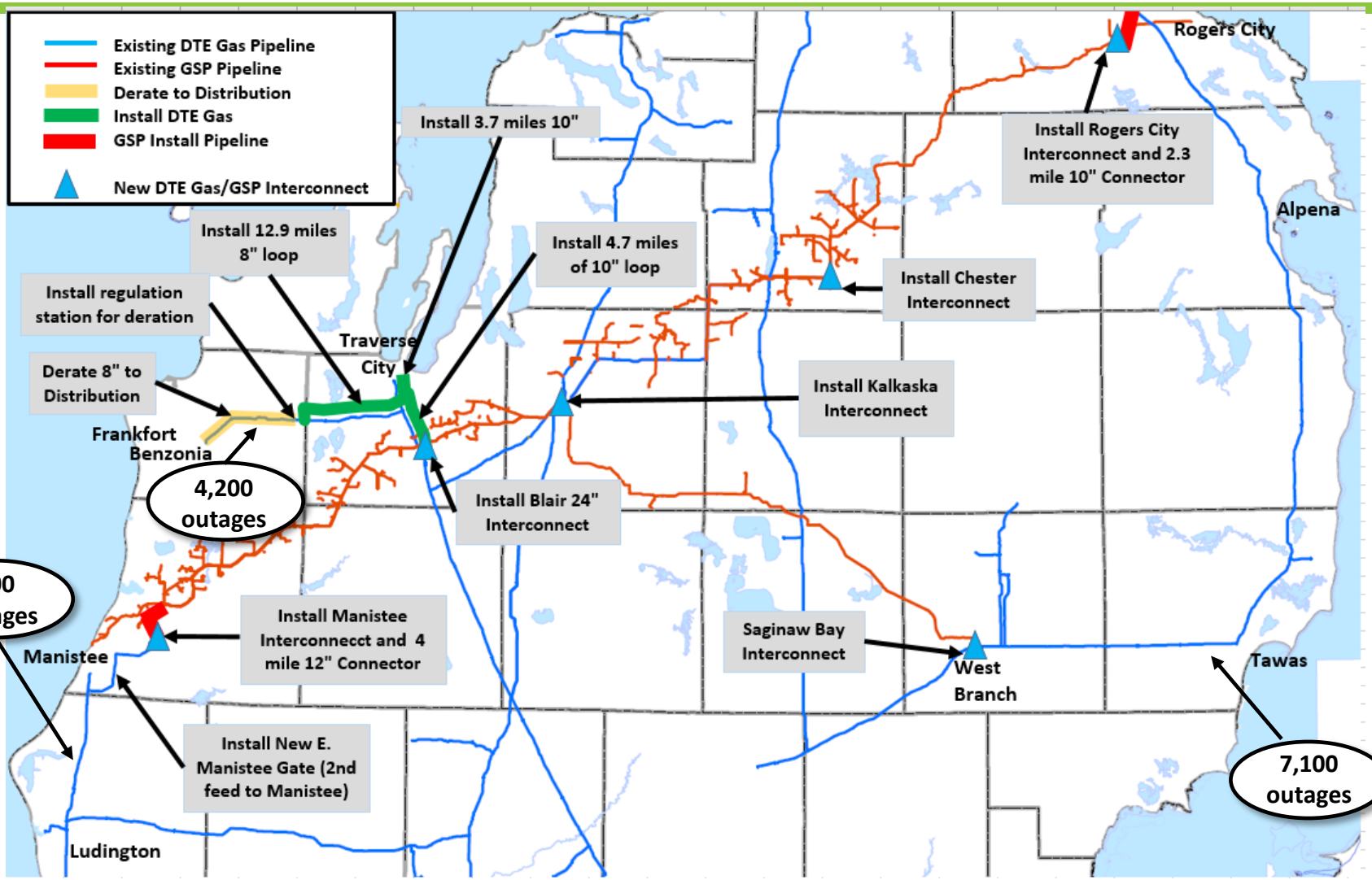
B

DTE Gas with GSP at Chester Solution: DTE Gas invests $189 million plus no annual demand charges



C

GSP/DTE Gas solution: DTE Gas invests $58 million & GSP receives $7.7 million in annual demand charges



C

The DTE Gas/GSP option provides the most cost effective solution to mitigate the single source risk for both the Traverse City and Alpena systems

Costs

Interconnects/Looping

Traverse City System:	$32.2M
Manistee System:	$2.9M
Alpena System:	$7.2M
Other Costs[1]:	$15.9M
Total:	$58.2M

Annual Cost of Service

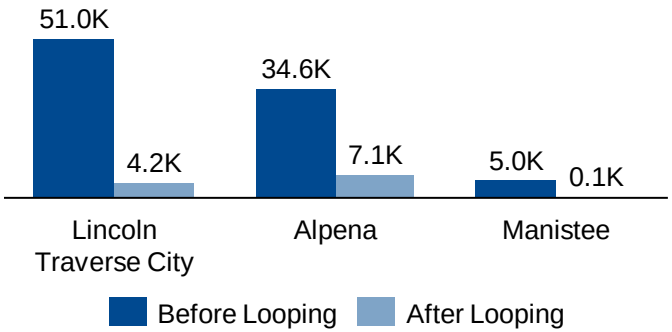
DTE Gas Facilities:	$7.8M	
GSP:	$5.8M	$7.7M additional costs outside of DTE Gas[2]
Saginaw Bay:	$1.9M	
Annual Total:	$15.5M	

Annual customer bill increase: $9.09 [3]

Benefits

- Reduces maximum outage from single failure
- Allows ILI inspection of Alpena, Traverse City, and Manistee pipelines
- Facilitates ease of repair work due to looped lines in Traverse City
- Provides back feeds to the Alpena and Manistee transmission system

Maximum Outages From Single Failure
(Customers Impacted)



1. Includes 30% O and C and 7.5% AFUDC
2. Annual demand charge from GSP which will flow through O & M
3. Reflects first full year of cost of service

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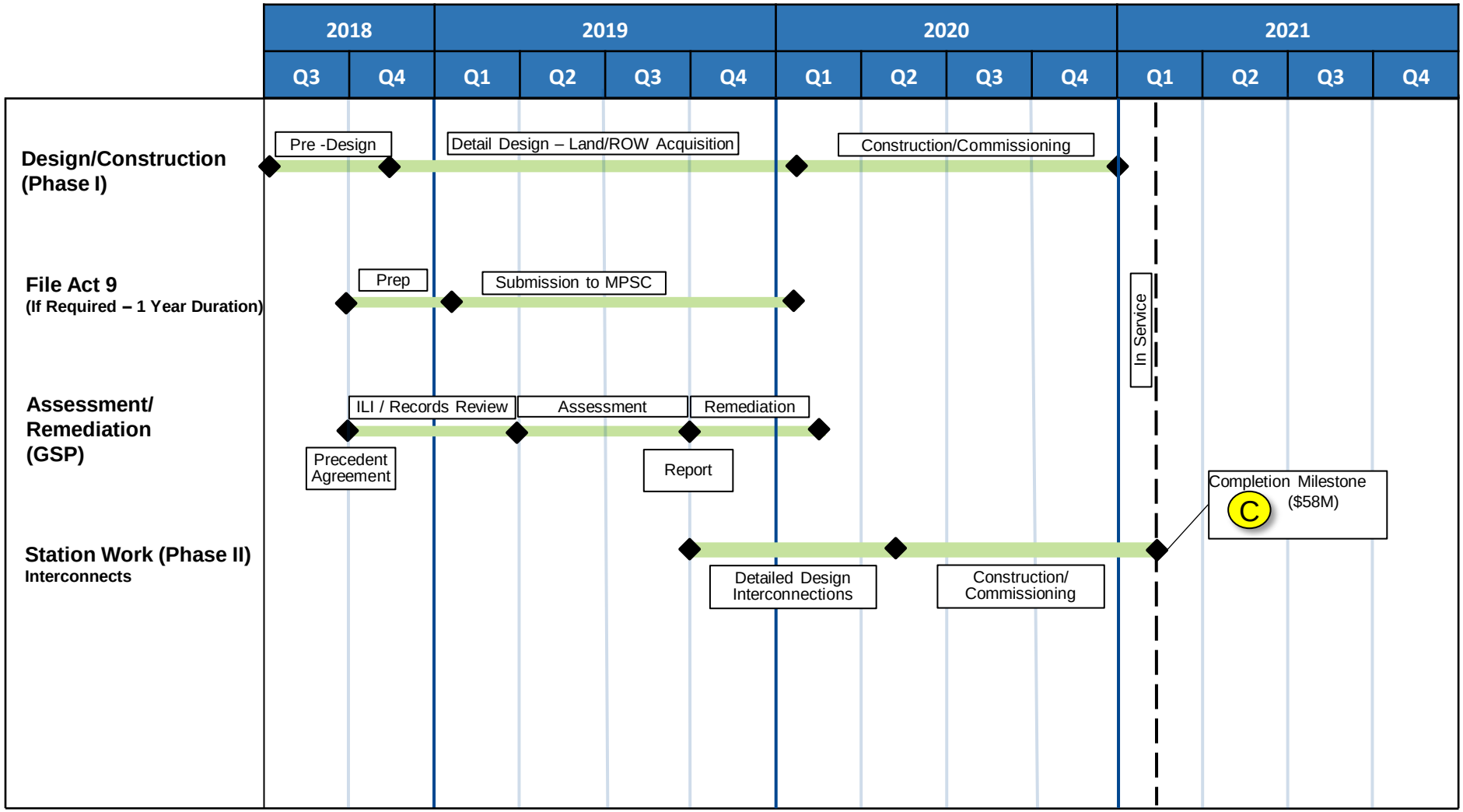
The project timeline includes an integrity assessment and remediation of involved GSP pipelines and a 1st Quarter 2021 in service date



Another Michigan gas utility, SEMCO identified similar actions to mitigate a similar threat impacting 34,800 customers in western UP

SEMCO

- Western UP including City of Marquette
- 34,800 Customers Impacted
- Single Source Pipeline
  - built in 1960's
  - Operated by Northern Natural Gas
- Outage Impact-Single failure could result in long-lasting and potentially dangerous outage for 34,800 customers
- Will also address supply deliverability, reliability & diversity concerns and support future growth
- Mitigation Plan:
  - Second feed from Great Lakes Gas Transmission
  - 36.2 miles 20", 6.4 miles 10" pipeline
- Cost: $140 million in capital plus unknown transport/demand charges on Great Lakes
- Cost per customer $47.88 per year[1]

DTE Gas

- Traverse City, Alpena and Manistee areas
- Customers Impacted by area:
  - Traverse City – 51,000
  - Alpena – 35,000 and Manistee – 5,000
- Single Source Pipelines
  - built in 1950's and 1960's
  - Operated by DTE Gas
- Outages Impact - A major incident on these pipelines would result in unprecedented outages (up to 51,000 customers) with unacceptable impacts to DTE Gas customers
- Mitigation Plan use 2nd feeds from GSP (Blair, Pigeon River, Saginaw Bay)
  - 8.4 miles 10",12.9 miles 8" Pipeline
  - 5 GSP/DTE Gas interconnects
- Cost: $58 million in capital plus annual transportation charges of $7.7 million
- Cost per customer $ 9.09 per year[2]

(1) From Marquette Connector Overview dated February 2017
(2) Reflects first full year of cost of service

Next Steps

- Complete preliminary design and refine cost estimate
- Finalize decision to proceed with GSP/DTE Gas Solution
- Obtain internal DTE Gas approval

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Traverse City-Alpena Reinforcement Project (TCARP) Update

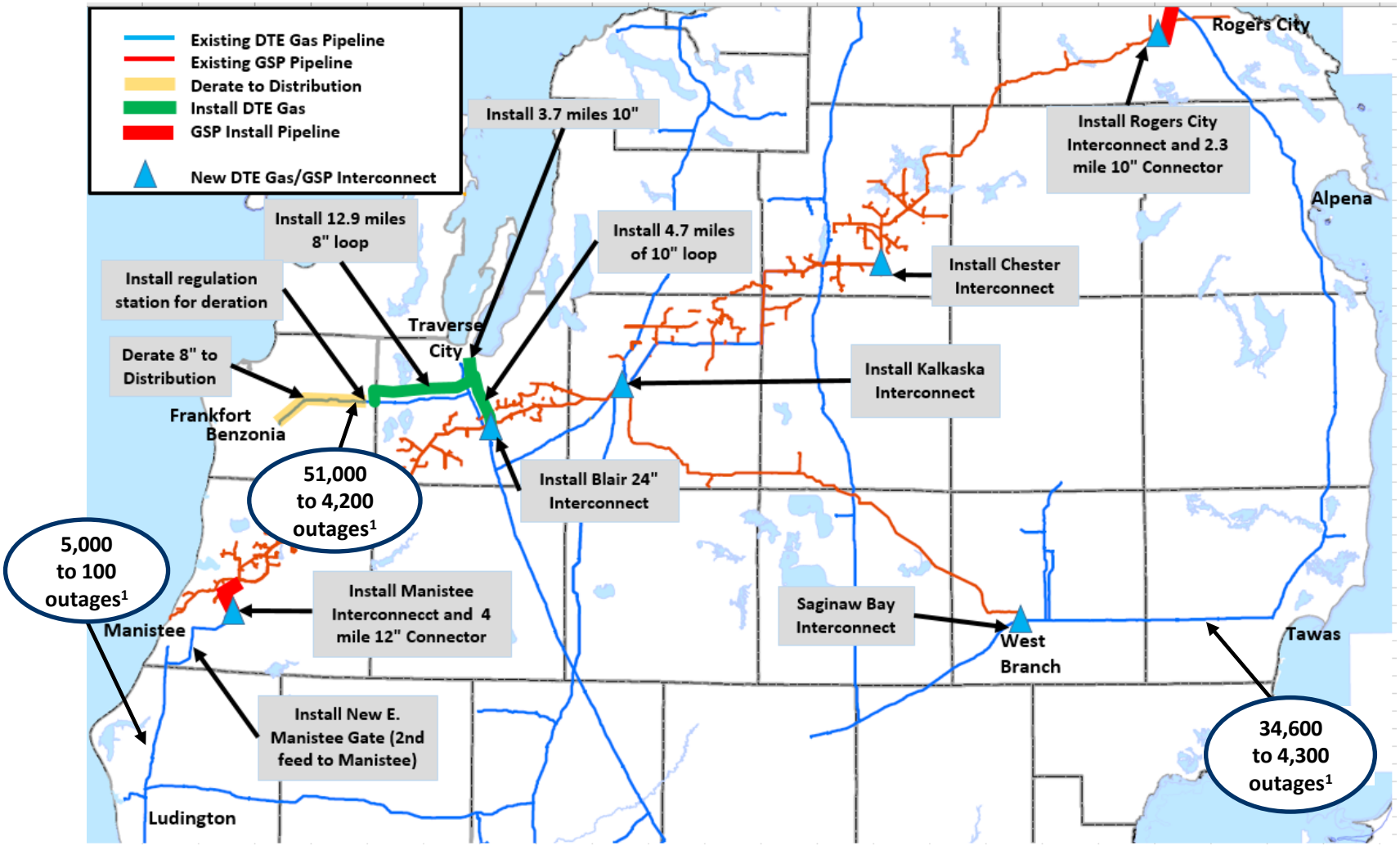
September 16, 2019

Executive Summary

- On September 10, 2018, DTE Gas met with Staff to review proposed options to mitigate outage and integrity risks to 51,000 Traverse City area customers and 35,000 Alpena area customers. A solution utilizing interconnections with GSP assets was selected
- Since that update, DTE Gas performed preliminary engineering and the refined cost estimate is approximately $100M[1] over the next 3 years
- DTE Gas is currently preparing two Act 9 filings; one for the Lincoln-Traverse City Loop and one for the Frankfort Loop to be submitted by the end of October
- DTE Gas has completed informational meetings with the affected elected officials, and the response has been positive
- When the integrity assessment of the GSP gathering pipe is complete, DTE Gas will submit an Act 9 filing for the interconnects and GSP for their pipeline extensions. The timing will coordinate with the construction schedule with submission expected in early Q3 2020
- The planned in-service date for the LTC pipeline loop will be Q1 2021 which provides an opportunity for an ILI inspection in 2022 without outage concerns, two years earlier than the regulatory required assessment
- Frankfort and Alpena pipeline loops / interconnects planned in-service dates are Q1 2022

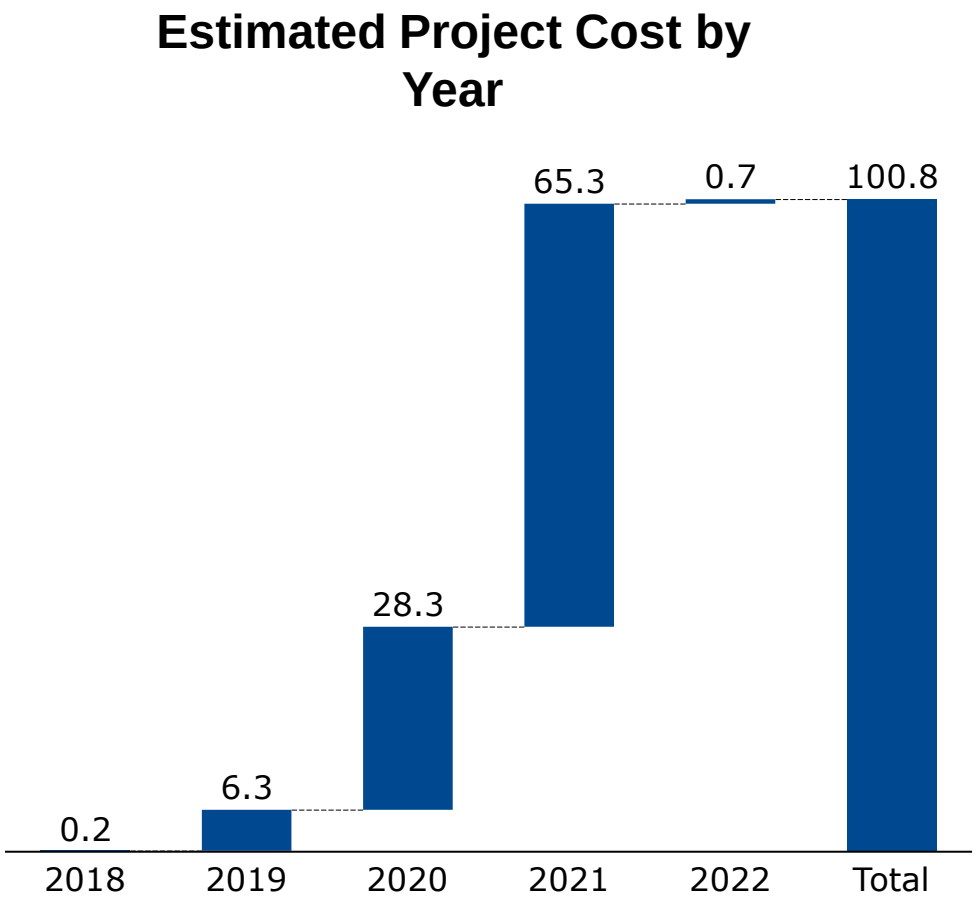
1. LTC (~$40M), Frankfort (~$40M), and Interconnects (~$20M) make up the cost estimate of $100M

The DTE Gas/GSP solution reduces the maximum outage potential from 51,000 to 4,200 customers



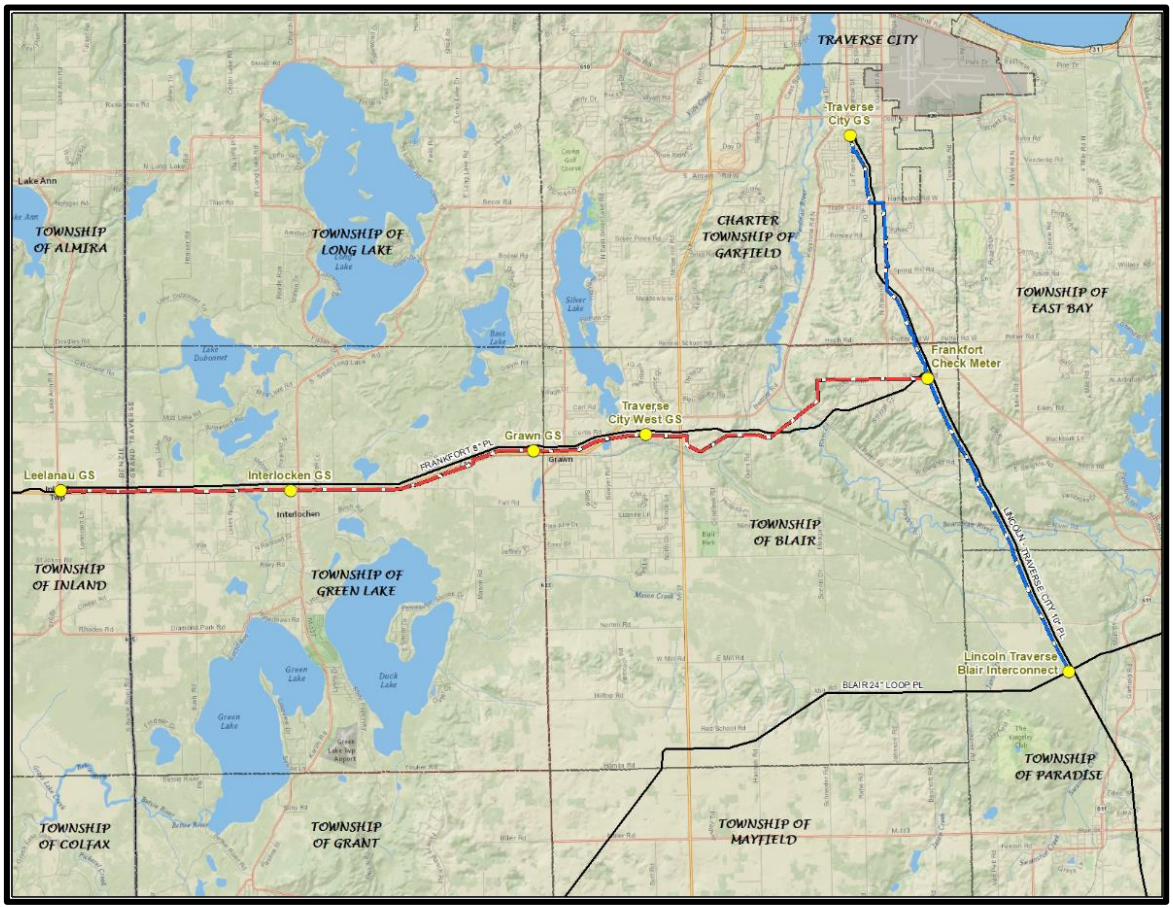
Note 1 – Maximum outage potential post project

The refined capital cost estimate for the DTE Gas/GSP solution is approximately $100M



- DTE Gas engaged an external engineering firm to perform the preliminary engineering and solicit budget estimates from construction contractors in order to refine the conceptual cost estimate
- The increase from our conceptual estimate of $58M was driven by the completion of preliminary engineering including a refined route analysis and front-end engineering design (FEED) of the stations
- The annual O&M demand charge to GSP for transport services is estimated to be $8M
- The first year cost of service is $21.2M and the annual bill increase is approximately $12 per customer

DTE Gas will be submitting separate Act 9 Filings to complete the Lincoln-Traverse City Loop and Frankfort Loop



Legend

- Stations
- Blair to Traverse City 10in Loop
- Frankfort 8in Loop
- Existing Lines
- County Boundary

DTE Gas has conducted informational meetings regarding the project with affected local elected officials, which have been positively received

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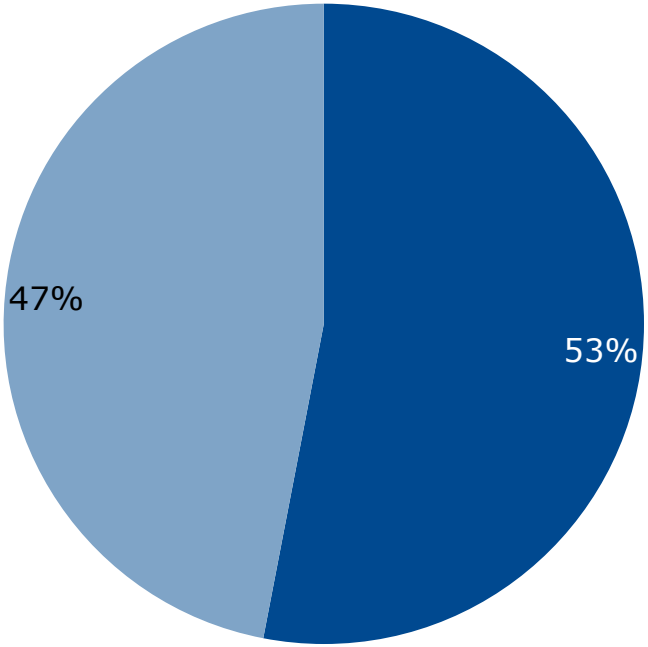
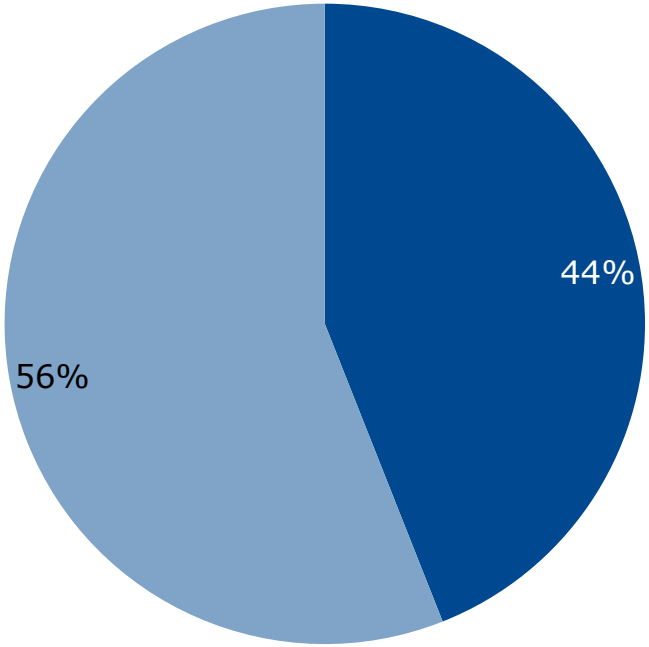
For the 10” Lincoln-Traverse City Loop and 8” Frankfort Loop, 100% of the parcels are either acquired or in negotiation. DTE Gas plans to submit an Act 9 Filing by the end of October

Lincoln-Traverse City Loop
Land Acquisition Progress by Parcel



~$40M

Frankfort Loop
Land Acquisition Progress by Parcel

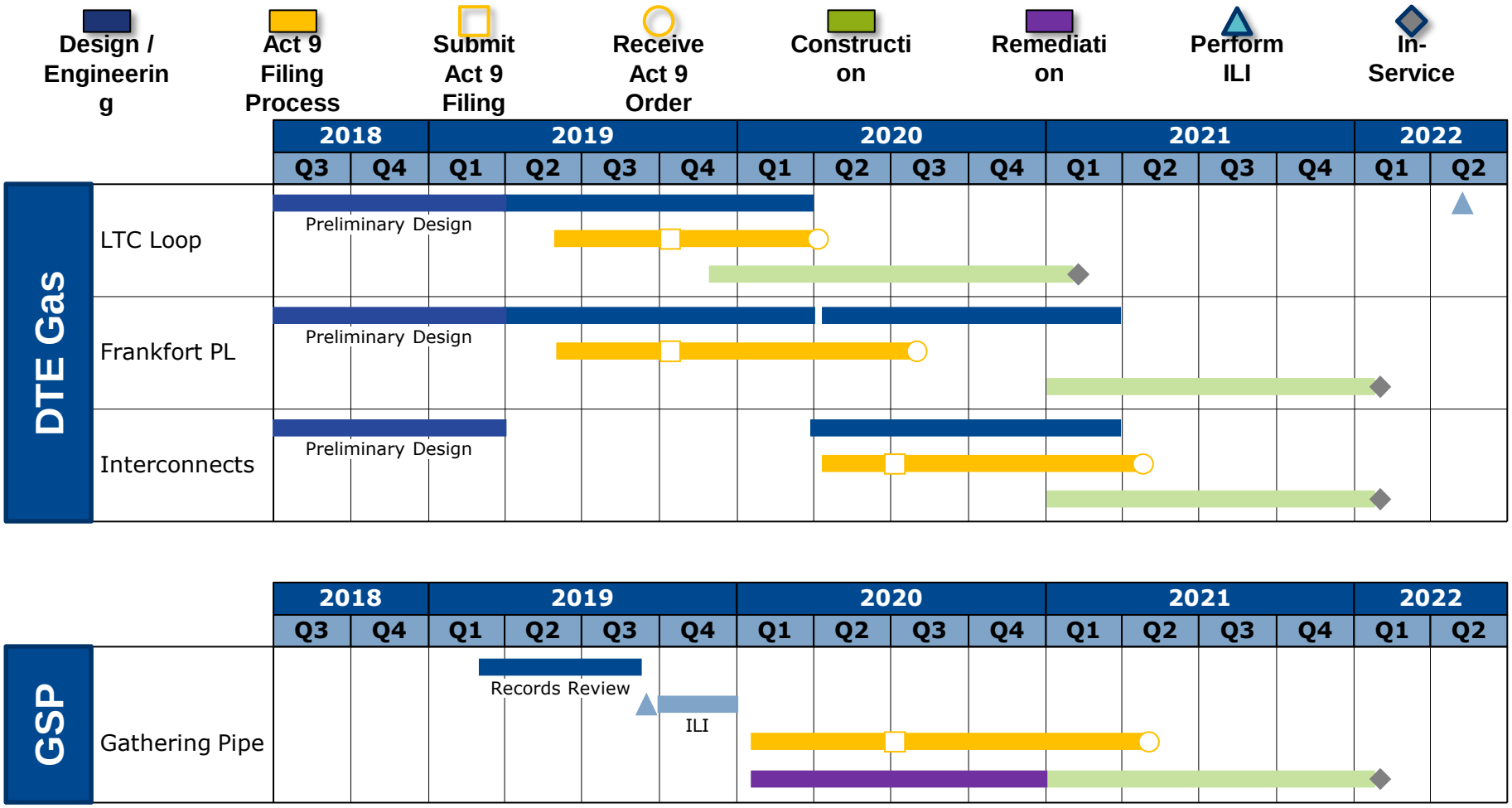


~$40M

Acquired In Negotiations

Note: Status of land acquisition as of 09-13-19

DTE Gas plans to In-Line Inspect (ILI) the Lincoln-Traverse City pipeline loop in Q2 of 2022; two years ahead of the regulatory required assessment



Next Steps

- Submit two Act 9 filings; one for the Lincoln-Traverse City Loop and one for the Frankfort Loop to be submitted by the end of October

- Solicit bids for the 2020 Lincoln-Traverse City Loop construction during Q1 2020

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Traverse City-Alpena Reinforcement Project (TCARP) Update

October 5, 2020

Executive Summary

- On September 16, 2019, DTE Gas met with Staff and provided an update on our plans to submit Act 9 filings for the Lincoln-Traverse City (LTC) and Frankfort Pipeline Loops and on our plans to utilize interconnections with certain GSP assets.
- In April 2020, DTE Gas received certificates of public convenience and necessity for the two Act 9 filings[1]
- In June 2020, construction of Phase 1, the 10" LTC Pipeline Loop and associated station modifications commenced
- The in-service date for the LTC Pipeline Loop is Q1 2021 which mitigates an outage risk to 18,000 customers in the Traverse City Area and in Q1 of 2022 when the LTC Loop is tied into the GSP Wet Header, it will provide the ability to ILI inspect the existing LTC pipeline without outage concerns; two years earlier than the regulatory required assessment
- The pipeline integrity assessment of the GSP wet headers is complete and DTE Gas has accepted the results which will provide a reliable source of redundant gas to the DTE Gas system[2]
- Construction of the Frankfort Pipeline Loop and the GSP interconnects is planned to begin in May 2021 with projected in-service dates in Q1 2022

1. LTC was Case No. U-20640 and Frankfort was Case No. U-20641
2. See Appendix for summary of assessment acceptance

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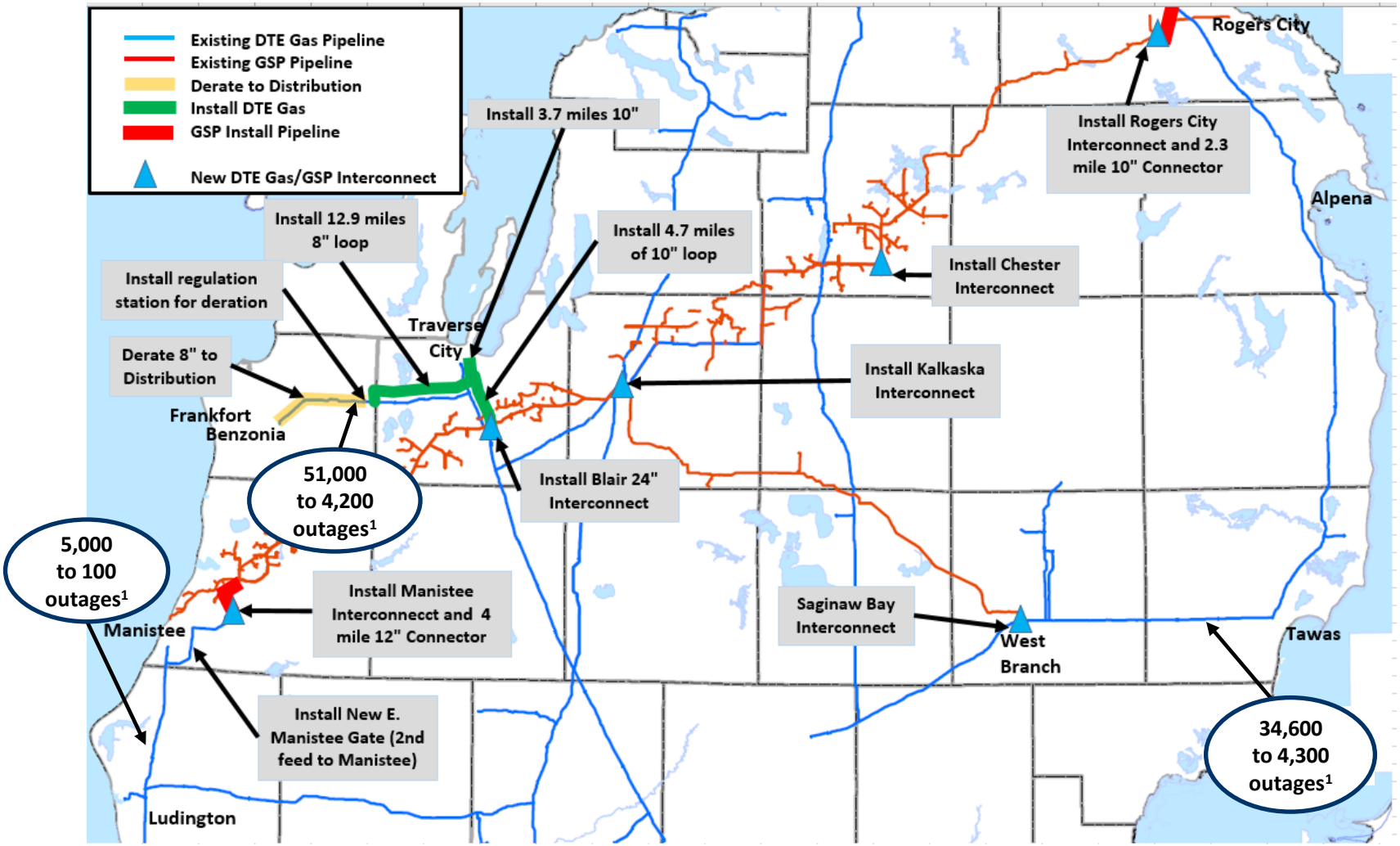
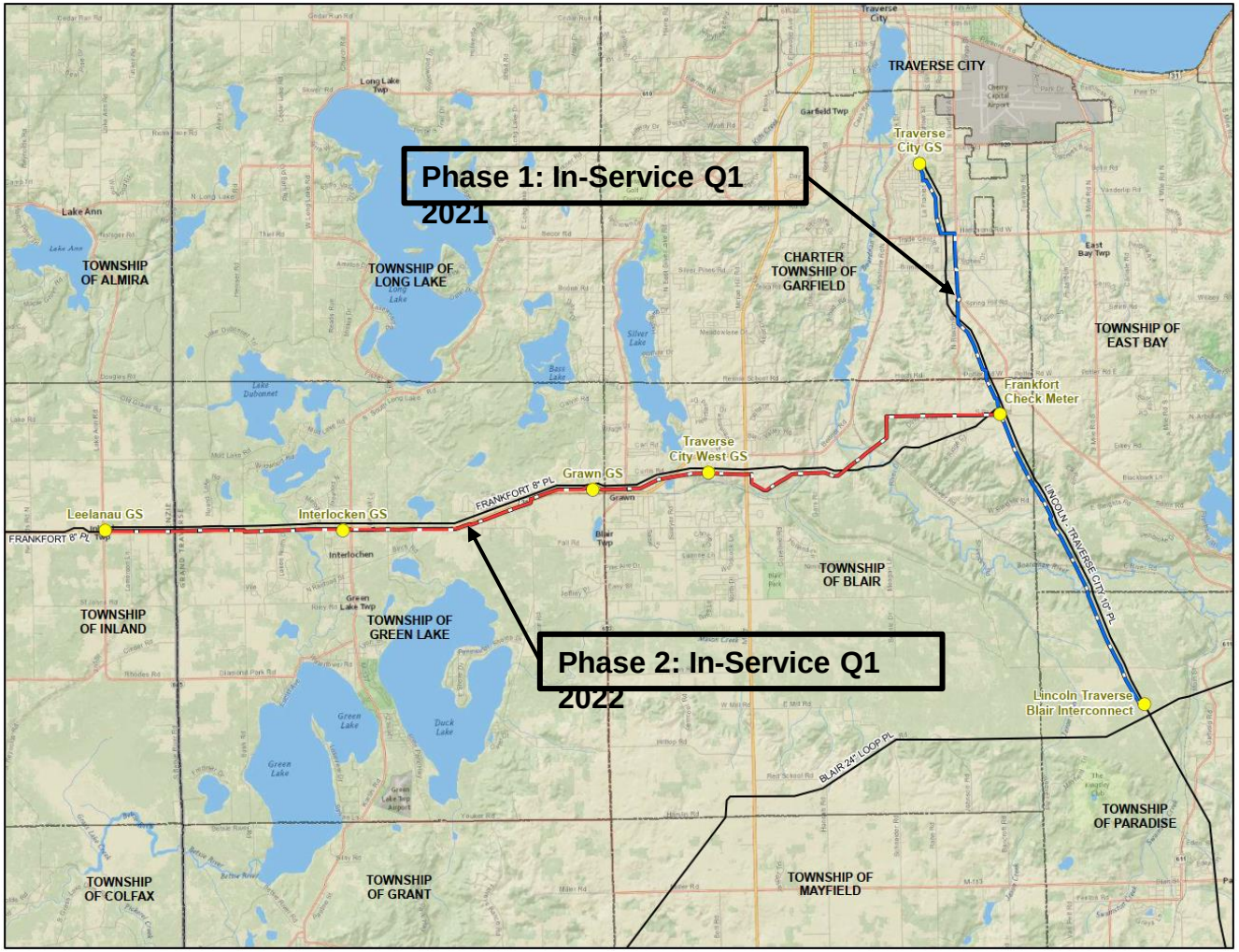
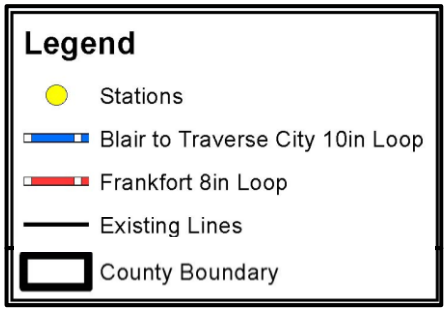
The DTE Gas/GSP solution reduces the maximum outage potential from 51,000 to 4,200 customers



Note 1 – Maximum outage potential post project

DTE Gas received Act 9 Certificates to construct the 10" Lincoln-Traverse City Loop and 8" Frankfort Loop





The construction of the 10” LTC Pipeline Loop and associated station modifications commenced in June 2020

- Mainline construction began at the south end of the line near the future Blair Interconnect and has proceeded north
- Safety of our customers, employees and contractors is our number one priority
  - The project team incorporated lessons learned from previous projects in the design, planning, construction and execution phases of the project including:
    - During design, minimized number of tie-in welds[1]
    - Hired a company retiree with extensive transmission construction experience to observe the project
    - Utilized in-house resources for 4th party quality oversight of critical construction tasks
  - There have been zero OSHA recordable incidents and the construction site has utilized full COVID protection procedures throughout the project including initial contractor testing when arriving in the area and everyone wearing masks while on the jobsite

1. Welds not subjected to a pressure test

The construction of the 10” LTC Pipeline Loop and associated station modifications commenced in June 2020 (continued)

- Weld quality has been better than industry average of 3%
  - Mainline; 1,085 welds and 6 repairs (0.5%)
  - Stations; 581 welds and 7 repairs (1.2%)
- The Act 9 Settlement Agreement includes
  - *any environmental impairment caused by the proposed pipeline is “de minimis”* (Item #12)
    - DTE Environmental team worked closely with EGLE to ensure all the HDD Inadvertent Returns were properly addressed
  - *The Parties further agree that not later than three months after the in-service date of the 10” Lincoln-Traverse City Pipeline Loop, an above-ground electrical survey of the pipeline will be performed.* (Item #17)
    - Upon installation of the pipeline, an ACVG survey was conducted to identify coating issues prior to performing the pressure test and all identified defects were repaired. A post installation is also planned.

Next Steps

- Commission line and place into service the LTC Pipeline Loop in Q1 2021
- Begin construction of the Frankfort Loop in Q2 2021 consisting of:
  - Approximately 14 miles of 8” pipeline loop
  - Modifications of 4 gate stations to accommodate the new loop
- Begin construction of the interconnections with GSP in Q2 2021

Appendix

DTE Energy

GSP Wet Header ILI Inspection Reports have been accepted by DTE Gas Pipeline Integrity Group

Segment	System Required For	ILI Pig Run	In-Line Inspection Results		DTE Gas Accepted	Comments and Results
		Completion	Final Report delivered for Integrity review	Final Report reviewed by Integrity Group		
24" Blair	Lincoln-TC	05/15/20	07/17/20	08/14/20	✓	Pipeline Integrity Group has found the report acceptable with recommeded verification digs and an 80' pipeline section replacement
16" Blair	Manistee	05/25/20	07/31/20	08/20/20	✓	Pipeline Integrity Group has found the report acceptable with the recommeded verification digs and one additional dig location
12" North Chester	Alpena	Sep 2019	10/29/19	12/08/19	✓	Pipeline Integrity Group has found the report acceptable with the recommeded verification digs
10" Pigeon River	Alpena	Oct 2019	12/12/19	01/06/20	✓	Pipeline Integrity Group has found the report acceptable with the recommeded verification digs
10" Presque Isle	Alpena	06/07/20	08/07/20	09/02/20	✓	Pipeline Integrity Group has found the report acceptable provided the MAOP is lowered from 1,440 to 1,050 psig and verification digs performed

Michigan Public Service Commission
DTE Gas Company
DTE Gas Project Detailed Cost Estimates

Case No.: U-21291
Exhibit: A-12
Schedule: B5.9
Witness: K. M. Fedele

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Michigan Public Service Commission
DTE Gas Company
DTE Gas Detailed Routine Capital Project List for 2023 - 2025
($000)

Case No.: U-21291
Exhibit: A-12
Schedule: B5.11
Witness: E. Abona

Line No.	Sub Line No.		(a) Description	(b) 12 mos. ending 12/31/2023	(c) 12 mos. ending 12/31/2024	(d) 12 mos. ending 12/31/2025
1			**Routine Capital Requirements**			
2			**Distribution Plant**			
3			Main Renewals 1/	$ 5,771	$ 8,669	$ 4,921
4			Public Improvements 2/	32,162	24,869	19,454
	4.1	*Top 25*	*East Jefferson*	*8,297*		
	4.2	*Top 25*	*Conner and I94*	*1,566*	*5,414*	-
	4.3		*Springfield and I94*	*456*	*2,959*	-
	4.4		*8 Mile and US 24*	*2,338*	-	-
	4.5		*Hagerty Rd*	*50*	*1,837*	-
	4.6		*US 24 and Grand River*	*1,682*	-	-
	4.7		*US12 W US23 JN200202*	*431*	*1,208*	-
	4.8		*GLWA Bayside 24"*	*477*	*1,155*	-
	4.9		*McClellan and I94*	*486*	*819*	-
	4.10		*Allen Rd. Lowering*	-	*1,158*	-
	4.11		*W Jefferson and Payne*	*123*	*716*	-
	4.12		*Barrett and I94*	*474*	*345*	-
	4.13		*Southfield bridge over Ecorse Creek*	*813*	-	-
	4.14		*5 Mile over Bell Creek*	*419*	*354*	-
	4.15		*Reeck Road over Sexton-Kilfoil Drain*	*417*	*285*	-
	4.16		*Beard Rd and I75 16"*	*393*	*117*	-
	4.17		*Industrial Rd over Dix Ave Bridge Replacement*	*20*	*477*	-
	4.18		*N County Line Intercounty Drain*	*250*	*218*	-
	4.19		*Elba Drive over Elba Canal*	*445*	-	-
	4.20		*S Huron River and I-275*	*315*	*126*	-
	4.21		*Ford Lake Dam*	*69*	*353*	-
	4.22		*I375*	-	*400*	-
	4.23		*I94 Service Drive*	-	*400*	-
	4.24		*Mill Lake Drain*	*376*	-	-
	4.25		*N Parker Culvert Replacement*	*361*	-	-
	4.26		*Design*	*306*	*46*	-
	4.27		*Campbell and W Jefferson*	*264*	-	-
	4.28		*Springfield 2" Service*	-	*237*	-
	4.29		*State Street and Liberty*	*196*	-	-
	4.30		*Stony Creek over Paint Creek*	-	*194*	-
	4.31		*Wayne Ecorse Rd Reconstruction*	*184*	-	-
	4.32		*M102 and Ryan*	*182*	-	-
	4.33		*GHIB Storm Outfall Relocation*	*147*	-	-
	4.34		*US 12 and American Rd*	*137*	-	-
	4.35		*Willis & Whittaker*	*13*	*112*	-
	4.36		*Washtenaw and Geddes*	*121*	-	-
	4.37		*Birch Hollow and Chelsea Cr*	*99*	-	-
	4.38		*Beech Daly and Five Mile*	*96*	-	-
	4.39		*Prospect and Cherry Hill*	*91*	-	-
	4.40		*GLWA Bayside 2"*	*6*	*72*	-
	4.41		*Clay and Cameron*	*66*	-	-
	4.42		*Meridian Rd over Thorofare Canal*	*64*	-	-
	4.43		*Whittaker and Bemis Roundabout*	*56*	-	-
	4.44		*Kercheval Pl and Cadieux*	*56*	-	-
	4.45		*Van Horn and Emily Dr*	*56*	-	-
	4.46		*N Territorial Rd and Donovan*	*56*	-	-
	4.47		*I-94BL - Dexter St*	*44*	-	-
	4.48		*US 23 and Bemis (210085)*	*29*	-	-
	4.49		*E Cross and Huron*	*22*	-	-
	4.50		*I94 and Cass*	*21*	-	-
	4.51		*4514 First St, Ecorse*	*20*	-	-
	4.52		*Huron St at 7th Street*	*3*	-	-
	4.53		*Burnette St & Grand River*	*2*	-	-
	4.54		*GRRSC-Bristol Ave High Pressure MAOP*	*298*		
	4.55		*GRRSC-Milton St CSO*	*195*		
	4.56		*GRRSC-Calhoun Water Upgrade*	*67*		
	4.57		*GRRSC-Pineway Water Upgrade*	*29*		
	4.58		*GRRSC-Signel Water Upgrade*	*41*		
	4.59		*GRRSC-10 Mile / Pine Island Renewal*	*419*		
	4.60		*GRRSC-Sharon St Abandonment*	*2*		
	4.61		*GRRSC-Pettis Offset*	*10*		
	4.62		*GRRSC-Lyon and Barclay CC*	*8*		
	4.63		*GRRSC-84th and Hanna Lake*	*321*		
	4.64		*GRRSC-Bond St CC*	*3*		
	4.65		*GRRSC-Weirsma Renewal*	*44*		
	4.66		*GRRSC-Pearl St Vault Removal*	*75*		
	4.67		*MSKSC-Black Creek*	*10*		

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	4.68	*MSKSC-Densmore Grid*	*430*		
	4.69	*MSKSC-Lake and Lawrence*	*6*		
	4.70	*MSKSC-Mears*	*80*		
	4.71	*MSKSC-North Peterson MR*	*130*		
	4.72	*MSKSC-40th and Crouton*	*38*		
	4.73	*MSKSC-White Lake Abandonment*	*23*		
	4.74	*MSKSC-Whitehall Lakeshore MR*	*120*		
	4.75	*MSKSC-East Center West - Huge Grid Renewal*	*2,400*		
	4.76	*MSKSC-Apple Ave Offets for MDOT*	*200*		
	4.77	*GRRSC-Pull Ahead MAOP Material - Rouge River PI*	*150*		
	4.78	*LUDSC-Maple St, Merkey St, & 17th*	*244*		
	4.79	*TRCCT-Randolph St & Madison St*	*46*		
	4.80	*PETCT-Alanson - US 31*	*992*		
	4.81	*PETCT-North Shore & E Bluff Rd*	*189*		
	4.82	*PETCT-Elm St*	*15*		
	4.83	*PETCT-Mackinaw City US 23 Phase 1*	*167*		
	4.84	*ESCSC-Gwinn M-35*	*79*		
	4.85	*SSMSC-Ashmun & Easterday (Service Renewals)*	*267*		
	4.86	*SSMSC-Ashmun, Easterday, & M-129*	*207*		
	4.87	*BGRCT-Kendaville Rd*	*70*		
	4.88	*TRCCT-Dunns Farm Rd*	*60*		
	4.89	*LUDSC-Lakeshore Dr*	*33*		
	4.90	*MPLSC-E Pickard St*	*380*		
	4.91	*TRCCT-Grandview Parkway*	*248*		
	4.92	*TRCCT-Diamond Park Rd*	*37*		
	4.93	*TWSSC-West Branch M-55*	*780*		
	4.94	*PETCT-Mackinaw City US 23 Phase 2*	*314*		
	4.95	*KNGSC-Kingsford Heights (Service Renewals)*	*345*		
5		Service Abandonments 1/	6,702	6,248	6,202
6		Service Alterations 1/	27,025	26,011	24,563
7		Service Renewals 1/	12,301	11,319	11,810
8		System Reliability	35,901	40,213	34,200
	8.1	*Textile and Stoney Creek*	*1,782*	-	-
	8.3	*Carpenter and Packard*	*1,604*	-	-
	8.4	*Waterloo, Stonehill to Lingane*	*1,273*	-	-
	8.5	*St Aubin (Lumpkin) and Holbrook*	-	*1,202*	-
	8.6	*8 Mile / Kelly - Eastland Mall*	*1,050*	-	-
	8.7	*Southfiled & Michigan*	-	-	*953*
	8.8	*John Hauk and Merriman*	*828*	-	-
	8.9	*Geddes and Huron Parkway*	*804*	-	-
	8.10	*8 Mile & Evergreen*	-	*724*	-
	8.11	*Conant and Denton*	-	*724*	-
	8.12	*Annapolis & Telegraph*	-	*724*	-
	8.13	*Green & Larchmont*	-	*724*	-
	8.14	*Forest & Huron*	-	*724*	-
	8.15	*Gibraltar & Omstead*	-	*724*	-
	8.16	*Harvard & Waveney*	-	*724*	-
	8.17	*Bagley & Cass*	-	*724*	-
	8.18	*5th and St. Joseph*	-	*724*	-
	8.19	*Beech Daly and Ford*	-	*724*	-
	8.20	*Textile and Deer Creek*	*723*	-	-
	8.21	*Huron River and Chalmers*	*692*	-	-
	8.22	*Jos Campau and Denton*	-	*689*	-
	8.23	*Textile and Lake Dr.*	*688*	-	-
	8.24	*Gulley and Wilson*	*687*	-	-
	8.25	*Allen and Eureka*	*663*	-	-
	8.26	*Geddes and Huron*	-	*638*	-
	8.27	*Ferry and Russell*	*635*	-	-
	8.28	*Ann Arbor Saline and Tower*	*634*	-	-
	8.29	*Obsolesence 1 - SEMI*	-	-	*600*
	8.30	*Obsolesence 2 - SEMI*	-	-	*600*
	8.31	*Obsolesence 3 - SEMI*	-	-	*600*
	8.32	*Obsolesence 4 - SEMI*	-	-	*600*
	8.33	*Obsolesence 5 - SEMI*	-	-	*600*
	8.34	*Obsolesence 6 - SEMI*	-	-	*600*
	8.35	*Obsolesence 7 - SEMI*	-	-	*600*
	8.36	*Obsolesence 8 - SEMI*	-	-	*600*
	8.37	*Obsolesence 9 - SEMI*	-	-	*600*
	8.38	*Obsolesence 10 - SEMI*	-	-	*600*
	8.39	*OPP Enhance 1 - SEMI*	-	-	*600*

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	8.40	*OPP Enhance 2 - SEMI*	-	-	600
	8.41	*OPP Enhance 3 - SEMI*	-	-	600
	8.42	*OPP Enhance 4 - SEMI*	-	-	600
	8.43	*OPP Enhance 5 - SEMI*	-	-	600
	8.44	*Growth 1 - SEMI*	-	-	600
	8.45	*Growth 2 - SEMI*	-	-	600
	8.46	*Supply 1 - SEMI*	-	-	600
	8.47	*Supply 2 - SEMI*	-	-	600
	8.48	*Supply 3 - SEMI*	-	-	600
	8.49	*Supply 4 - SEMI*	-	-	600
	8.50	*Chrysler Svc Dr. and Clay*	-	600	-
	8.51	*Burt & Joy*	-	103	450
	8.52	*7 Mile/Telegraph*	-	532	-
	8.53	*Plymouth and Nixon*	-	526	-
	8.54	*Ecorse & Pelham*	-	511	-
	8.55	*Green & Plymouth*	-	103	400
	8.56	*Euclid and Hartwick*	-	502	-
	8.57	*Southfield & Michigan*	-	500	-
	8.58	*Plymouth and Nixon*	475	-	-
	8.59	*14255 Warren*	93	361	-
	8.60	*OPP Enhance 6 - SEMI*	-	-	450
	8.61	*OPP Enhance 7 - SEMI*	-	-	450
	8.62	*Michigan Ave and Elm Rd (Brady)*	444	-	-
	8.63	*Holmes and Prospect - NEBelt Valve*	441	-	-
	8.64	*Allen and Superior*	-	436	-
	8.65	*797 Central (Wyandotte)*	72	361	-
	8.66	*Oakwood and Southfield*	402	-	-
	8.67	*Mott - Milford Easement*	399	-	-
	8.68	*Connor / Millbank*	355	-	-
	8.69	*E-Chart Project*	-	345	-
	8.70	*Russell and Fredrick*	333	-	-
	8.71	*Clay and St. Aubin (CDET5)*	-	324	-
	8.72	*Conant / Hamtramck*	309	-	-
	8.73	*Aspen & Gibralter*	-	-	297
	8.74	*Textile and Pineview*	290	-	-
	8.75	*Kercheval and Algonquin*	-	283	-
	8.76	*Aspen & Gibraltar*	-	280	-
	8.77	*Connecticut & Oakland*	195	-	-
	8.78	*Beverly and Inkster*	182	-	-
	8.79	*Pelham and Wick*	168	-	-
	8.80	*Pontiac Station*	121	-	-
	8.81	*Cheyenne and Hannan*	111	-	-
	8.82	*Kercheval and Algonquin*	96	-	-
	8.83	*Pontiac Station*	-	69	-
	8.84	*Warren and Southfield*	63	-	-
	8.85	*7 Mile and Telegraph*	58	-	-
	8.86	*5th / West*	28	-	-
	8.87	*Charlevoix 2nd Feed*	3,417	-	-
	8.88	*Peninsula Supply*	-	65	1,642
	8.89	*205th Ave-Ash Dr & 20 Mile Rd-195th Ave*	-	-	1,051
	8.90	*M-119 SRT Abandonments*	-	981	-
	8.91	*Thumb Lake Rd*	-	-	854
	8.92	*M-55 & Lorenz (Phase 2)*	98	719	-
	8.93	*Monroe & Longbridge (Phase 3)*	796	-	-
	8.94	*East Manistee GS Tie-In*	771	-	-
	8.95	*80th Ave & US-10 Evart*	34	719	-
	8.96	*Leonard & Maryland*	99	589	-
	8.97	*8th & Boardman V-11002*	196	464	-
	8.98	*M-88*	-	-	657
	8.99	*M-46 SRT Retirements*	66	589	-
	8.100	*M-55*	-	-	650
	8.101	*Replace valves/regulators due to corrosion/obselete equipment #1 Grand Rapids*	-	-	650
	8.102	*Replace valves/regulators due to corrosion/obselete equipment #2 Grand Rapids*	-	-	650
	8.103	*Reed City Hospital SRT Upgrade*	59	589	-
	8.104	*US-2 & Kaski*	-	647	-
	8.105	*230th Ave & US 10*	642	-	-
	8.106	*Perkins & Knapp*	629	-	-
	8.107	*Washington & Whittier Vault Retirement*	102	523	-
	8.108	*Take off valve - Kingsford #1*	-	-	624
	8.109	*Take off valve - Kingsford #2*	-	-	624
	8.110	*M-72*	611	-	-
	8.111	*3 Mile & Alpine*	14	589	-

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	8.112	*80th Ave & 85th Ave Evart*	-	-	591
	8.113	*N US 41 (Stephenson to Ingalls)*	-	-	591
	8.114	*Shearer & Shearer*	-	589	-
	8.115	*M-69 & Way Dam Rd*	41	523	-
	8.116	*River Road FTT 30093*	-	65	493
	8.117	*Old US-27 FTT's*	87	458	-
	8.118	*Monroe & Longbridge 2*	151	392	-
	8.119	*Replace valves/regulators due to corrosion/obselete equipment #1 Muskegon*	-	-	525
	8.120	*US-2 & Gorzinski*	-	-	525
	8.121	*LSSU*	-	523	-
	8.122	*Leonard & Diamond*	127	392	-
	8.123	*Millcreek & North Park*	106	392	-
	8.124	*Pine Street Vault*	92	392	-
	8.125	*Millbrook & Whiteville*	475	-	-
	8.126	*W Preuss and Old Maple Rd*	-	-	460
	8.127	*S Mt. Tom Road (1)*	-	65	394
	8.128	*S Mt. Tom Road (2)*	-	65	394
	8.129	*US-2 & Delta*	-	65	394
	8.130	*River & Thompson*	380	-	-
	8.131	*48th & Marlette*	55	392	-
	8.132	*Quinnesec & Margaret*	55	392	-
	8.133	*Cedar & Fairplains*	443	-	-
	8.134	*5 Mile & Northville*	434	-	-
	8.135	*2800 Kimberly Rd*	39	392	-
	8.136	*North 20 & US-2*	21	392	-
	8.137	*Oscoda Farm Tap*	411	-	-
	8.138	*LSSU (partial)*	408	-	-
	8.139	*Boyne City Road*	15	392	-
	8.140	*W County 388 Rd, Hermanville*	406	-	-
	8.141	*Conrad Ind Dr and W 6th St*	-	-	394
	8.142	*Replace FTT 30117*	-	-	394
	8.143	*N Forest Lake*	-	65	328
	8.144	*St Martins Hill Phase 2*	-	65	328
	8.145	*US-31 & Manvel Road*	-	65	328
	8.146	*Section 22 Road*	393	-	-
	8.147	*Cady & Michilinda (SRT Replacement)*	-	392	-
	8.148	*Harwick Pines*	-	392	-
	8.149	*Werth Road*	-	392	-
	8.150	*Whitehall & Bard*	389	-	-
	8.151	*Gladstone Gate SRT*	61	327	-
	8.152	*Camp Sherwood*	54	327	-
	8.153	*East Beltline & Burton*	370	-	-
	8.154	*Deerfield & Lincoln*	41	327	-
	8.155	*M-18 & E Forest FTT's 30108 and 30125*	41	327	-
	8.156	*Cleveland & Bliss*	39	327	-
	8.157	*US-31 & Villa Low Pressures*	350	-	-
	8.158	*10 Mile & Childsdale*	340	-	-
	8.159	*6" Coldwater*	333	-	-
	8.160	*Derenzy Rd*	-	-	328
	8.161	*Dietz Rd*	-	-	328
	8.162	*E West Branch Road*	-	65	263
	8.163	*20 Mile Rd & 40th*	-	327	-
	8.164	*Maple Drive FTT 30033*	-	327	-
	8.165	*Easterday*	42	262	-
	8.166	*Wood & Allen*	299	-	-
	8.167	*44th & Patterson*	291	-	-
	8.168	*Wing Ave & 60th*	288	-	-
	8.169	*E Campus Drive SRT 20088*	25	262	-
	8.170	*US-2 & Hunter*	17	262	-
	8.171	*W Carr St and E 1st St*	14	262	-
	8.172	*Beaver Island FTT 30111*	270	-	-
	8.173	*Lake & Northwood SRT 20175*	-	65	197
	8.174	*North Muskegon Gate (Dist. Tie-in)*	-	262	-
	8.175	*Reed City & Roth*	246	-	-
	8.176	*Mead Paper*	48	196	-
	8.177	*M-115 & Gregory*	243	-	-
	8.178	*V-11013, Grayling*	92	147	-
	8.179	*Take off valve - Grayling #1*	-	-	230
	8.180	*Take off valve - Grayling #2*	-	-	230
	8.181	*Homestead Road SRT 20054 Inlet*	32	196	-
	8.182	*East Lake Trailer Park*	27	196	-
	8.183	*Ball Creek & Muskegon*	209	-	-

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	8.184		*M-32 FTT 30043 Abandonment*	-	*65*	*131*
	8.185		*US-31 & Fochtman*	-	*65*	*131*
	8.186		*9th & Broadwad (Phase 2)*	-	*196*	-
	8.187		*Burgess Rd (Phase 2)*	-	*196*	-
	8.188		*County Rd and W Wonroe Rd Pentwater SRT*	-	*196*	-
	8.189		*2000 Ford*	*185*	-	-
	8.190		*Take off valve - Tawas #1*	-	-	*175*
	8.191		*Take off valve - Tawas #2*	-	-	*175*
	8.192		*Take off valve - Tawas #3*	-	-	*175*
	8.193		*Take off valve - Alpena #1*	-	-	*175*
	8.194		*Take off valve - Alpena #2*	-	-	*175*
	8.195		*Take off valve - Alpena #3*	-	-	*175*
	8.196		*Edson & 18th (Georgetown Station)*	*163*	-	-
	8.197		*Broadway & Richmond*	*157*	-	-
	8.198		*9th & Broadway*	*154*	-	-
	8.199		*Tomkins*	*153*	-	-
	8.200		*Take off valve - Traverse City #1*	-	-	*153*
	8.201		*Take off valve - Traverse City #2*	-	-	*153*
	8.202		*Take off valve - Traverse City #3*	-	-	*153*
	8.203		*Wheeler Lake Road*	*144*	-	-
	8.204		*19 Mile FTT 30073*	*141*	-	-
	8.205		*US-2 & Sturgeon Mill Rd*	*140*	-	-
	8.206		*Marsh Road FTT 30079*	*135*	-	-
	8.207		*Take Off Valve Materials/Design - Escanaba*	-	-	*131*
	8.208		*Take Off Valve Materials/Design - Grand Rapids*	-	-	*131*
	8.209		*Take Off Valve Materials/Design - Kingsford*	-	-	*131*
	8.210		*Take Off Valve Materials/Design - Petoskey*	-	-	*131*
	8.211		*Take Off Valve Materials/Design - Tawas*	-	-	*131*
	8.212		*Take Off Valve Materials/Design - Traverse City*	-	-	*131*
	8.213		*St Martins Hill*	*122*	-	-
	8.214		*Lincoln & Baseline*	*118*	-	-
	8.215		*4 Mile & 70th Ave*	*109*	-	-
	8.216		*Charlevoix Gate Station SRT 20017*	*107*	-	-
	8.217		*Charlevoix (Phase 3)*	*103*	-	-
	8.218		*M-55 & Lorenz (Phase 1)*	*101*	-	-
	8.219		*Take off valve - Kingsford #3*	-	-	*99*
	8.220		*Take off valve - Kingsford #4*	-	-	*99*
	8.221		*Take off valve - Kingsford #5*	-	-	*99*
	8.222		*Take off valve - Kingsford #6*	-	-	*99*
	8.223		*Werth Road Vault*	*98*	-	-
	8.224		*Iverness School*	*94*	-	-
	8.225		*US-31 FTT Project*	*91*	-	-
	8.226		*Stolt Rd (Phase 2)*	*87*	-	-
	8.227		*18657 US-31*	*84*	-	-
	8.228		*Lincoln & 5th*	*77*	-	-
	8.229		*Take Off Valve Materials/Design - Alpena*	-	-	*66*
	8.230		*Take Off Valve Materials/Design - Big Rapids*	-	-	*66*
	8.231		*Take Off Valve Materials/Design - Cadillac*	-	-	*66*
	8.232		*Take Off Valve Materials/Design - Grayling*	-	-	*66*
	8.233		*Take Off Valve Materials/Design - Ludington*	-	-	*66*
	8.234		*Take Off Valve Materials/Design - Mt Pleasant*	-	-	*66*
	8.235		*Take Off Valve Materials/Design - Muskegon*	-	-	*66*
	8.236		*Take Off Valve Materials/Design - Sault Ste. Marie*	-	-	*66*
	8.237		*279-FT053 (Lake Antoine) Inlet Ret*	*62*	-	-
	8.238		*FTT 30171 TOV and US-131 & Villa Low Pressures (Burgess Rd Ph 2)*	*61*	-	-
	8.239		*F-41*	*59*	-	-
	8.240		*Charlevoix (SRT Land)*	*49*	-	-
	8.241		*Sparling Road FTT 30048*	*22*	-	-
	8.242		*County Rd and W Monroe Rd Pentwater SRT*	*15*	-	-
	8.243		*Country Club & Surrey*	*14*	-	-
	8.244		*20 Mile Rd & 40th Ave*	*14*	-	-
	8.245		*US-41, Nadeau*	*10*	-	-
	8.246	*Top 25*	*Northeast Belt Assessment*	*500*	*5,700*	-
9		*Top 25*	Transmission Fittings	3,476	2,250	3,700
10			Cathodic Protection 1/	-	-	-
11			Communications & Control - Meters 1/	21,840	20,304	19,247
12			Advanced Metering Infrastructure 1/	2,389	658	423
13			Revenue Protection 1/	1,723	2,711	2,711
14			New Market Attachments 3/	83,897	97,212	85,112
	14.1	*Top 25*	*Mesick-Buckley*	-	*5,244*	-

Michigan Public Service Commission
DTE Gas Company
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($000)

Case No.: U-21291
Exhibit: A-12
Schedule: B5.11
Witness: E. Abona

Line No.	Sub Line No.	(a) Description		(b) 12 mos. ending 12/31/2023	(c) 12 mos. ending 12/31/2024	(d) 12 mos. ending 12/31/2025
	14.2	*Top 25*	*Peach Ridge*	*4,474*	*-*	*-*
	14.3		*US 2*	*-*	*3,954*	*-*
	14.4		*Stonington*	*2,990*	*-*	*-*
	14.5		*M 72*	*2,897*	*-*	*-*
	14.6		*Ironton*	*-*	*2,579*	*-*
	14.7		*Ashton*	*-*	*2,577*	*-*
	14.8		*Negaunee/Miramichi Lakes*	*2,180*	*-*	*-*
	14.9		*Stone Rd*	*2,116*	*-*	*-*
	14.10		*Green Lake*	*-*	*1,952*	*-*
	14.11		*Hart Rd*	*-*	*1,856*	*-*
	14.12		*Lake George*	*1,706*	*-*	*-*
	14.13		*Bosset Rd*	*-*	*1,485*	*-*
	14.14		*Kalamazoo*	*1,478*	*-*	*-*
	14.15		*Hobbs Highway*	*-*	*1,466*	*-*
	14.16		*Hoxie Rd*	*1,417*	*-*	*-*
	14.17		*S Grayling Rd*	*-*	*1,394*	*-*
	14.18		*Mayfield*	*1,339*	*-*	*-*
	14.19		*Pioneer Rd*	*1,225*	*-*	*-*
	14.20		*Morgan Mills*	*-*	*1,197*	*-*
	14.21		*17 Mile*	*1,102*	*-*	*-*
	14.22		*Heintzelman Ave*	*1,052*	*-*	*-*
	14.23		*17 Mile - Woodlawn - Olin*	*973*	*-*	*-*
	14.24		*Cranberry Lake*	*-*	*779*	*-*
	14.25		*Vining Rd*	*-*	*766*	*-*
	14.26		*Norton Rd*	*687*	*-*	*-*
	14.27		*16 Mile*	*676*	*-*	*-*
	14.28		*18 Mile - Gowen*	*655*	*-*	*-*
	14.29		*12th Rd*	*-*	*600*	*-*
	14.30		*Pine Lake*	*522*	*-*	*-*
	14.31		*Gaunt Rd*	*520*	*-*	*-*
	14.32		*Chestnut Ave*	*505*	*-*	*-*
	14.33		*Atkins Rd*	*277*	*-*	*-*
15			Permits and Other Adjustments	788	724	754
16			Sales and Use Tax Settlement	-	-	-
17			Leak Detection and Repair	-	11,563	4,868
18			**Total Distribution Plant**	233,976	252,750	217,965
19		**Transmission Plant**				
20			Total Capital Expenditures - Transmission Plant	12,678	15,682	15,052
	20.1		*Quality Assurance Program*	*460*	*500*	*536*
	20.2		*MLV7 Replacement*	*-*	*100*	*2,800*
	20.3		*Au Gres tributary pipe replacement.*	*-*	*-*	*2,350*
	20.4		*West Branch Drain pipe replacement*	*2,112*	*-*	*-*
	20.5		*Willow Gate Station: Replace Regs 97 and 98*	*-*	*-*	*2,000*
	20.6		*MLV 5C Line Replacment*	*-*	*-*	*1,928*
	20.7		*Rogers Heights Odorizer*	*850*	*850*	*-*
	20.8		*Rapid River heater*	*-*	*672*	*821*
	20.9		*Northwest Gate Station Replace the 2 CCI control valves*	*-*	*-*	*1,400*
	20.10		*MLV11A and MLV11B Replacement*	*925*	*-*	*-*
	20.11		*Vanderbilt Gate Station Heater Overhaul*	*250*	*346*	*200*
	20.12		*Manistee Gate Station Heater Overhaul*	*8*	*360*	*300*
	20.13		*Loreed Combo Pressure Relief Valves*	*615*	*-*	*-*
	20.14		*Sumner Gate Station Odorizer*	*-*	*-*	*602*
	20.15		*Southeast---Union River meter*	*-*	*567*	*-*
	20.16		*Belding Gate Station Valve Replace & Heater*	*250*	*100*	*200*
	20.17		*Scottville Gate Station Filter Separator*	*550*	*-*	*-*
	20.18		*Southeast---Natco heater replacement*	*-*	*-*	*525*
	20.19		*Southeast---NW Gate heater*	*-*	*525*	*-*
	20.20		*Rothbury Gate Station*	*-*	*518*	*-*
	20.21		*UP-All---UP-new buildings at select gate stations*	*-*	*350*	*100*
	20.22		*Central---Manistee Gate Station: Condensate Storage Tank Replacement*	*-*	*-*	*415*
	20.23		*Central---Central region-Building replacement program*	*-*	*200*	*200*
	20.24		*North---Logan-Chuchill RMS:*	*400*	*-*	*-*
	20.25		*Southeast---Willow Gate Station: T-Pole foundation repairs (piping supports)*	*-*	*200*	*200*
	20.26		*North---Whittemore Gate Station: Construct a station bypass*	*365*	*-*	*-*
	20.27		*UP-Kingsford---Loretto Gate Station; heater*	*-*	*350*	*-*
	20.28		*Central--- A & B lines - Install an OPP Pilot*	*305*	*-*	*-*
	20.29		*Southeast---Willow Gate upsize odorant tank*	*-*	*300*	*-*
	20.30		*UP-Esc---Shafer valve at Gladstone GS*	*-*	*300*	*-*
	20.31		*UP-Kingsford---Niagara GS heater*	*-*	*300*	*-*
	20.32		*North---Manton Gate Station: Replace station inlet valve, replace blowoff valve*	*250*	*-*	*-*
	20.33		*North---Indian River Gate Station: Replace regulator building*	*240*	*-*	*-*

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	20.34		*Central---N. Clare Gate Station: Replace regulators & relief valves*	-	226	-
	20.35		*Central---N. Greenville Gate Station: Replace electrical feed into station*	100	100	-
	20.36		*Southeast---At MLV2 on E-Line & F-Line: Install a Huber-Yale closure*	-	80	100
	20.37		*UP-SSM---SSM region; Install Pro-Fire ignitors on heaters*	-	180	-
	20.38		*Central---Carson City Gate Station: Replace NJEX unit*	165	-	-
	20.39		*Central---Wellpad 9: Install Pigging Jumper*	156	-	-
	20.40		*Central---Six Lakes storage field trap door replacements; replace closures*	-	-	150
	20.41		*UP-SSM---Brimley/Bay Mills Gate Station heater*	150	-	-
	20.42		*UP-SSM---Rudyard PMS; install a flow meter*	-	150	-
	20.43		*UP-SSM---Sault Sainte Marie Purchase Meter Station: Replace odorizer building*	150	-	-
	20.44		*UP-SSM---SSM Purchase meter station; install a check valve*	-	150	-
	20.45		*Central---Six Lakes Storage Field: Replace 10" trap-valve at WP8, replace 4" kicker-line valve at WP10.*	147	-	-
	20.46		*Central---Hersey Pipeline*	134	-	-
	20.47		*UP-Esc---Replace regulation at Little Lake GS*	-	125	-
	20.48		*Central---Six Lakes Storage Field Wellpad #10: Replace the closure on the 12" B-Header trap*	115	-	-
	20.49		*Central---Six Lakes Storage Field Wellpad #5: Replace the closure on the 12" B-Header trap*	115	-	-
	20.50		*Central---Six Lakes Storage Field Wellpad #7: Replace the closure on the 20" C-Header trap.*	-	110	-
	20.51		*Southeast---At MLV C9 on ABC Lines: Design & install supports for 2 relief valves*	100	-	-
	20.52		*Southeast---Install Huber Yales on MLV 1.5 on K Line for Milford Junction*	-	100	-
	20.53		*Southeast---Northeast gate station: At valves #80 and #84, install Huber-Yale closure*	-	100	-
	20.54		*Southeast---At MLV2 on the 24" Belle River to Detroit Pipeline: Replace blowoff closures*	98	-	-
	20.55		*Southeast---On the 24" Belle River to Detroit Pipeline: Replace blowoff closures at MLV3*	-	98	-
	20.56		*Central---Central region-Replace fencing and upgrade driveways at MLVS and gate stations*	-	30	50
	20.57		*UP-SSM---SSM GS and Rudyard GS; fencing modifications*	-	60	-
	20.58		*Central---Central region-Replace GS/MLV pipe supports/jack stands*	-	25	30
	20.59		*UP-Kingsford---Iron River Gate Station: Replace ignitor system on heater*	30	-	25
	20.60		*Central---Fencing and driveways at MLVs*	50	-	-
	20.61		*Central---Odorize Austin Taggart 12" at Woolfolk*	-	50	-
	20.62		*Southeast---Ann Arbor Tap: Replace the backup generator*	50	-	-
	20.63		*Southeast---Willow Gate Station: Odorant tank level alarm project*	50	-	-
	20.64		*UP-Kingsford---MLV5 Powers Iron River 8" conduit replacement; Kingsford*	35	-	-
	20.65		*Central---Gate Station/MLV pipe supports*	30	-	-
	20.66		*Central---Shafer pumps, actuators, and controls replacements*	-	-	30
	20.67		*Southeast---At MLV4 on E-Line & F-Line: Install a Huber-Yale closure*	-	-	30
	20.68		*Southeast---At MLV5 on E-Line & F-Line: Install a Huber-Yale closure*	-	-	30
	20.69		*Southeast---At MLV6 on E-Line & F-Line: Install a Huber-Yale closure*	-	-	30
	20.70		*UP-All---Driveway paving, culverts at UP stations*	30	-	-
	20.71		*UP-All---RTU-Sta-3; snow fence/tree barrier*	-	30	-
	20.72		*UP-All---RTU-Sta-4; install driveway paving and culverts*	-	30	-
	20.73		*UP-SSM---Kincheloe Gate Station: Replace ignitor system on heater*	30	-	-
	20.74		*UP-All---Gate station buildings*	20	-	-
	20.75		*UP-All---Snow fence/tree barrier Rudyard GS*	10	-	-
	20.76	*Top 25*	*K-Line*	3,333	7,500	-
21			Sales and Use Tax Settlement	-	-	-
22			**Total Transmission Plant**	12,678	15,682	15,052
		Storage Plant				
23			Gas Storage Capital Expenditures	3,641	4,100	4,100
24			Environmental Projects - Storage Capital Expenditures	-	-	-
25			Compression - Storage Capital Expenditures	18,699	18,402	11,602
	25.1		*BRM---BRM Valves and Actuators*	-	702	5,219
	25.2		*Milford Unit 2200 Turbine Overhaul*	3,288	-	-
	25.3		*Belle River Unit 6 Turbine Upgrade*	3,594	-	-
	25.4		*Milford Unit 2100 Turbine Overhaul*	-	3,467	-
	25.5		*GEN---Early engineering of following year projects*	250	1,000	1,000
	25.6		*BRM_COL Valve & Actuator Upgrade*	1,631	-	-
	25.7		*Columbus Valve & Actuator Upgrades*	-	1,600	-
	25.8		*Milford Unit 501 Engine Overhaul*	-	-	534
	25.9		*Facility - Bathroom Upgrade CE*	-	1,100	-
	25.10		*Taggart Unit 201*	-	-	655
	25.11		*Taggart Unit 202*	561	-	-
	25.12		*Tag Dehy Desiccant replacement*	-	941	-
	25.13		*Milford Unit 504 Engine Overhaul*	784	-	-
	25.14		*TAG T3 Tank replacement*	-	697	-
	25.17		*TAG Plant 2 Used Oil Tank Replacement*	-	-	550
	25.18		*BRM---Valves and Actuators*	524	-	-
	25.19		*BRM--- Actuator Upgrades*	524	-	-
	25.20		*KAL---Fire and Gas Detector Upgrades*	514	-	-
	25.21		*TAG-Control Valve Upgrade C-Lateral*	-	240	270
	25.22		*COL---Heater Inspection and Upgrade*	505	-	-
	25.23		*REL-BRM---BRM Z#5 starter*	-	-	450
	25.24		*REL-MIL---Milford Unit 3100 turbine swap*	-	-	450

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	25.25	*REL-MIL---Milford unit 504 compressor*	-	492	-
	25.26	*BRM---BRM Valve & Actuator Upgrades*	-	472	-
	25.27	*KAL---Kal Pressurizing valves*	-	470	-
	25.28	*REL-MIL---Milford unit 501 compressor*	495	-	-
	25.29	*TAG---J-2 Tank replacement*	495	-	-
	25.30	*BRM---BRM Heater Inspection and Upgrades*	-	495	-
	25.31	*COL---Columbus Heater Fuel Gas Upgrades*	-	495	-
	25.32	*TAG---Tag D Header Scrubber*	-	423	-
	25.33	*KAL---Kal Upgrade dump valves*	-	408	-
	25.34	*BRM---BRM GMVC fuel gas heat exchanger*	240	166	-
	25.35	*TAG---Plant 2 Used Oil Tank Replacement*	403	-	-
	25.36	*GEN---Allowance for unintended carryovers*	-	200	200
	25.37	*TAG---Tag Lead Line Valve Actuator Upgrade*	-	269	120
	25.38	*TAG---D Header Scrubber*	379	-	-
	25.39	*BRM STA---BRM compressor station upgrade*	125	125	125
	25.40	*TAG---Tag Unit jacket water cooler Replacement*	-	190	150
	25.41	*REL-KAL---Kal GMVH #1 compr OH*	-	-	400
	25.42	*REL-KAL---Kal GMVH #3 compr OH*	-	300	-
	25.43	*Tag sta---Taggart compressor station upgrades*	100	100	100
	25.44	*MIL---Add and replace concrete Foundations*	291	-	-
	25.45	*KAL---Kal Fire and Gas Detector Upgrades*	-	286	-
	25.46	*MIL---Mil Add and replace concrete Foundations*	-	286	-
	25.47	*TAG---Lead Line Valve Actuator Upgrade*	278	-	-
	25.48	*TAG---Tag Facility Upgrades*	-	126	250
	25.49	*BRM---BRM Turbine HVAC Boiler Upgrades*	-	264	-
	25.50	*KAL---Kal ESD Vent Isolation*	-	259	-
	25.51	*TAG---Install SSD Vent location*	245	-	-
	25.52	*Rel-Tag-COH1---Taggart U103 compressor overhaul*	-	112	118
	25.53	*COL STA---Col-Landscaping, paving*	75	75	75
	25.54	*TAG---Tag HMI Upgrades Factory Talk*	-	325	-
	25.55	*KAL---Kal Electrical Power Upgrades*	-	322	-
	25.56	*TAG---Control Valve Upgrade*	202	-	-
	25.57	*BRM---BRM Atmospheric Storage Tank Upgrades*	-	-	300
	25.58	*KAL STA---Kal replace chocks*	-	300	-
	25.59	*TAG---Lead line valve replacement*	180	-	-
	25.60	*BRM---BRM Dehy 1 Panel and Processor*	-	275	-
	25.61	*TAG---Unit jacket water cooler Replacement*	174	-	-
	25.62	*WIL---Wil Emergency Lighting Upgrades*	-	263	-
	25.63	*KAL---Electrical Power Upgrades*	155	-	-
	25.64	*KAL STA---Kal station upgrade*	50	50	50
	25.65	*TAG---Facility Upgrades*	149	-	-
	25.66	*KAL---Waste gate automation*	145	-	-
	25.67	*TAG---Backup generator control panel upgrade*	143	-	-
	25.68	*KAL---Yard Electrical Terminations*	137	-	-
	25.69	*ALP---Alpena ESD vent manual block valves*	-	236	-
	25.70	*KAL---Kal Maintenance Oil Tank Upgrades*	-	236	-
	25.71	*COL---Train 2 Contactor Glycol Piping Upgrades*	125	-	-
	25.72	*MIL---Mil Lead Line Valve Replacement*	-	192	-
	25.73	*Rel-Tag-COH2---Taggart U105 compressor overhaul*	-	-	218
	25.74	*Rel-Tag-COH1---Taggart U107 compressor overhaul*	112	-	-
	25.75	*Rel-Tag-COH2---Taggart U108 compressor overhaul*	112	-	-
	25.76	*KAL---Maintenance Oil Tank Upgrades*	110	-	-
	25.77	*KAL---Kal Yard Electrical Terminations*	-	208	-
	25.78	*WIL---20kW backup generator*	107	-	-
	25.79	*BRM STA---BRM Landscaping and paving*	35	35	35
	25.80	*TAG---Tag Lead line valve replacement*	-	-	250
	25.81	*COL---Valves and Actuators*	200	-	-
	25.82	*REL-BRM---Windock replacement*	195	-	-
	25.83	*WIL---Upgrade ESD Valve Indication and Control*	182	-	-
	25.84	*KAL---Fiber Optic Upgrade*	180	-	-
	25.85	*TAG---Taggart Pump House 2*	176	-	-
	25.86	*KAL---Allen Bradley PC's*	175	-	-
	25.87	*MIL---Upgrade ESD Valve Indication and Control*	68	-	-
	25.88	*TAG---Blowdown silencer engineering evaluation*	113	-	-
	25.89	*TAG---Tag Engineering evaluation unit blowdown silencers*	-	144	-
	25.90	*KAL STA---Kal replace pipe saddles*	141	-	-
	25.91	*MIL---Mil HMI Upgrades Factory Talk*	-	56	-
	25.92	*GEN---Compressor Station Operations Manuals*	-	-	84
	25.88	*KAL---Upgraded SCP Controls*	33	-	-
26		**Total Storage Plant - Capital Expenditures**	22,340	22,502	15,702
27		Structures and Improvements	3,757	8,450	8,450
28		Transportation Vehicles and Equipment	12,940	18,258	16,003

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29		Tools and Equipment	1,294	1,177	1,177
30		Communications and Control Equipment	2,241	2,047	1,447
31		**Total General Plant Capital Expenditures**	20,232	29,931	27,076
32		**Total Routine Capital Requirements**	$ 289,226	$ 320,865	$ 275,795

1/ Detailed project lists not available as this is routine unit based work
2/ Detailed Public Improvement project list for 2024 and 2025 is not available.
3/ The Area Expanions Project subset are broken out within the New Markets category

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Michigan Public Service Commission
DTE Gas Company
Traverse City - Alpena Reinforcement Project
Annual Residential Bill Calculation

Case No.: U-21291
Exhibit: A-12
Schedule: B5.14
Witness: K. Fedele

Traverse City - Alpena Reinforcement Project (TCARP)
First Year Annual Residential Bill Calculation

Line No.	Description		First Full Year In-Service 2024
1	Total Projected Return "On" and "Of" Investment, recovery of O&M and property taxes	$	24,989,919
2	Residential Customer Allocation[1]	x	65%
3	Residential Customer Impact	$	16,243,447
4	Residential Customer Impact	$	16,243,447
5	Residential MCF/Year[2]	÷	109,525,000
6	Annual Increase ($)/MCF	$	0.15
7	Residential MCF/Year[2]		109,525,000
8	Residential Customer Count[3]	÷	1,215,517
9	Annual Usage/Customer (Mcf)		90.1
10	Annual Increase ($)/Mcf	$	0.15
11	Annual Usage/Customer (Mcf)	x	90.1
12	Annual Residential Bill Impact	$	13

13 (1) Residential Customer Allocation: Proposed Total Residential Services Revenue $618,010 / 'Total Gas Company Proposed Revenue $947,530 = 65%

14 (Source: Case No. U-20940, Exhibit A-16, Schedule F2)

(2) "Residential Rate A" Volumes = 109,525,000

15 (Source: Case No. U-20940, Exhibit A-16, Schedule F2)

(3) "Residential Rate A" Customer Count = 1,215,517

(Source: DTE Gas Supply and Planning 2022 Markets Forecast - Case No. U-20940)

Line No.	Spend Year	Business Case Name	IT Portfolio	Witness	Investment Category	Project Synopsis	Value Benefit	Alternatives considered including cloud services	Portfolio Prioritization Score (FPS)	Project Start Year (YYYY)	Project End Year (YYYY)	Planned Implementation Date (MMDDYY)	Demand / BCD ID	Total Projected IT Capital Cost	Projected Labor Cost Capital ($)	Projected Non-Labor Cost Capital ($)	Projected Overhead & Other Costs - Capital ($)	Total Projected IT O&M Cost	Projected Labor Costs O&M ($$)	Projected Non-Labor Costs O&M ($$)	Projected Total Project Cost (Capital + O&M)	Equipment involved and refresh live (if applicable)	Cloud Computing Technology Strategy Alignment (For projects with spend over $100,00, excluding cyber security or transmission control)	Rationale behind the Cloud Strategy Decision
1	2023	Records and Workflow Management	Plant & Field EG	Jaison Busby	Regulatory/Compliance	DTE Gas's Records & Workflow Management Program is a multi-facet program to develop an electronic system for managing pipeline risks and records. It ensures safe archiving and quick retrieval of records, and automatic and frequent updates of threats and relative risks for pipeline segments. The records support the Company's compliance with natural gas codes and regulations that are required for safety of customers and the employees, resilience, and overall sustainability. In 2023, DTE Gas used the existing vendor partners to implement advanced Artificial intelligence tools, which will scan DTE Gas network shared drives and departmental storage devices to locate MAOP and other gas engineering documents, such as Land & Survey, Transmission Integrity Management Program (TIMP), and Geology and Reservoir, to migrate to the new Documentum repository. Custom load programs will be built to support mass uploading of legacy documents. This further requires the build out of new document types, meta data, folder structures, workflows, and retention policies. This will continue to build upon the benefit of centralized records location and search capabilities while ensuring the Company adheres to long-term records management for regulatory compliance requirements.	It ensures safe archiving and quick retrieval of records, and automatic and frequent updates of threats and relative risks for pipeline segments.	Since this is a completion of the initial build out approved in the prior general gas rate case (U-20940), and a continuation of investment in the foundational platform capability to fully extend capabilities and functionality across the Company, alternative solutions were not explored for the continuation of this program. Choosing to not continue investments in this platform and the capabilities it provides to the Company would not have demonstrated reasonableness and prudence in managing this investment and does not align with Enterprise Technology Principles as outlined in the DTE Five-Year IT Plan 2021-2025 filed in Docket No. U-20642 (Section 4.B) Please refer to columns X & Y for cloud considerations.	150	2023	2025	12/31/25	DMND0001421	$ 1,000,000	$ 585,224	$ 355,868	$ 58,908	**$ 118,416**	$ 102,416	$ 16,000	**$ 1,118,416**	No	Not Applicable	There are no cloud components in the current solution. Documentum cloud options may exist, but since we would utilize the existing Enterprise platform
2	2024	Records and Workflow Management	Plant & Field EG	Jaison Busby	Regulatory/Compliance	In 2024, work will continue to build out the repository and capture additional records and department documents. A construction drawing project is underway to establish a centralized repository for drawings and their revisions. Additionally, streamlined workflows will be implemented to effectively document and track approvals. A project for Transmission, Storage, and Integrity Management (TSIM) will replace the manual process of filling out inspection forms by digitizing and routing approvals within Documentum.	It ensures safe archiving and quick retrieval of records, and automatic and frequent updates of threats and relative risks for pipeline segments.	Since this is a completion of the initial build out approved in the prior general gas rate case (U-20940), and a continuation of investment in the foundational platform capability to fully extend capabilities and functionality across the Company, alternative solutions were not explored for the continuation of this program. Choosing to not continue investments in this platform and the capabilities it provides to the Company would not have demonstrated reasonableness and prudence in managing this investment and does not align with Enterprise Technology Principles as outlined in the DTE Five-Year IT Plan 2021-2025 filed in Docket No. U-20642 (Section 4.B) Please refer to columns X & Y for cloud considerations.	150	2023	2025	12/31/25	DMND0001421	$ 750,479	$ 352,529	$ 352,167	$ 45,783	**$ 111,520**	$ 46,587	$ 64,933	**$ 861,999**	No	Not Applicable	There are no cloud components in the current solution. Documentum cloud options may exist, but since we would utilize the existing Enterprise platform
3	2025	Records and Workflow Management	Plant & Field EG	Jaison Busby	Regulatory/Compliance	In 2025 we will continue to build out the new Documentum repository to be able to migrate paper files and legacy SharePoint sites. Distribution documents and material purchase documents are in scope for 2025 which require the build of new document types, meta data, retention policies, folder structures, and the associated workflows.	It ensures safe archiving and quick retrieval of records, and automatic and frequent updates of threats and relative risks for pipeline segments.	Since this is a completion of the initial build out approved in the prior general gas rate case (U-20940), and a continuation of investment in the foundational platform capability to fully extend capabilities and functionality across the Company, alternative solutions were not explored for the continuation of this program. Choosing to not continue investments in this platform and the capabilities it provides to the Company would not have demonstrated reasonableness and prudence in managing this investment and does not align with Enterprise Technology Principles as outlined in the DTE Five-Year IT Plan 2021-2025 filed in Docket No. U-20642 (Section 4.B) Please refer to columns X & Y for cloud considerations.	150	2023	2025	12/31/25	DMND0001421	$ 750,744	$ 346,794	$ 358,167	$ 45,783	**$ 108,350**	$ 45,417	$ 62,933	**$ 859,094**	No	Not Applicable	There are no cloud components in the current solution. Documentum cloud options may exist, but since we would utilize the existing Enterprise platform
4	2023	Gas Application Health	Plant & Field EG	Jaison Busby	Sustainment	This is an ongoing and annual investment to ensure the health and stability of a suite of applications within the portfolio to support Energy Gas Operations. This project will cover regular updates to 36 Applications supporting DTE Gas, as shown in Exhibit A-12 Schedule B5.17 Gas IT Applications List, across 8-12 expected annual releases.	This investment will address security vulnerabilities through approximately 12 expected security update cycles and will monitor and operate the production environment for Gas business units to ensure high availability.	We did not select a "do nothing" alternative as a viable option because this investment is what keeps our 36 applications current, healthy, and useable. Without this preventative effort, we would have a negative impact on performance and lose the ability to resolve infrastructure failures. Choosing to skip or delay required security updates would increase the risk in the Company's cybersecurity posture. Neither of these consequences are acceptable as many of these applications are critical to operations and safety, including EGMS, Corrosion, and OPA . The full list of supported applications is available in the Gas IT Applications List Exhibit A-12 B5.17. Please refer to columns X & Y for cloud considerations.	200	2023	2023	Annual	DMND0001411	$ 1,210,402	$ 591,566	**$ 271,690**	$ 247,146	**$ 162,166**	$ 116,017	$ 46,129	**$ 1,372,568**	No	Not Applicable	There are no cloud components
5	2024	Gas Application Health	Plant & Field EG	Jaison Busby	Sustainment	This is an ongoing and annual investment to ensure the health and stability of a suite of applications within the portfolio to support Energy Gas Operations. This project will cover regular updates to 36 Applications supporting DTE Gas, as shown in Exhibit A-12 Schedule B5.17 Gas IT Applications List, across 8-12 expected annual releases.	This investment will address security vulnerabilities through approximately 12 expected security update cycles and will monitor and operate the production environment for Gas business units to ensure high availability.	We did not select a "do nothing" alternative as a viable option because this investment is what keeps our 36 applications current, healthy, and useable. Without this preventative effort, we would have a negative impact on performance and lose the ability to resolve infrastructure failures. Choosing to skip or delay required security updates would increase the risk in the Company's cybersecurity posture. Neither of these consequences are acceptable as many of these applications are critical to operations and safety, including EGMS, Corrosion, and OPA . The full list of supported applications is available in the Gas IT Applications List Exhibit A-12 B5.17. Please refer to columns X & Y for cloud considerations.	200	2024	2024	Annual	DMND0001411	$ 783,178	$ 577,024	$ 88,580	$ 117,574	**$ 154,467**	$ 122,234	$ 32,233	**$ 937,645**	No	Not Applicable	There are no cloud components
6	2025	Gas Application Health	Plant & Field EG	Jaison Busby	Sustainment	This is an ongoing and annual investment to ensure the health and stability of a suite of applications within the portfolio to support Energy Gas Operations. This project will cover regular updates to 36 Applications supporting DTE Gas, as shown in Exhibit A-12 Schedule B5.17 Gas IT Applications List, across 8-12 expected annual releases.	This investment will address security vulnerabilities through approximately 12 expected security update cycles and will monitor and operate the production environment for Gas business units to ensure high availability.	We did not select a "do nothing" alternative as a viable option because this investment is what keeps our 36 applications current, healthy, and useable. Without this preventative effort, we would have a negative impact on performance and lose the ability to resolve infrastructure failures. Choosing to skip or delay required security updates would increase the risk in the Company's cybersecurity posture. Neither of these consequences are acceptable as many of these applications are critical to operations and safety, including EGMS, Corrosion, and OPA . The full list of supported applications is available in the Gas IT Applications List Exhibit A-12 B5.17. Please refer to columns X & Y for cloud considerations.	200	2025	2025	Annual	DMND0001411	$ 777,294	$ 571,140	$ 88,580	$ 117,574	**$ 120,444**	$ 120,011	$ 433	**$ 897,738**	No	Not Applicable	There are no cloud components
7	2023	DTE Gas Utility Network (UN) Model	Plant & Field EG	Jaison Busby	Return-To-Health	DTE Gas Geographical Information System (GIS) manages two separate models one for transmission assets and one for distribution assets. The current DTE Gas transmission model, ArcGIS Pipeline Data Model (APDM), will no longer be supported by the providing vendor starting February 2028. The current DTE Gas distribution model, Geometric network (GNM), is near end of life and will no longer be supported by February 2028. In 2023, the focus of the project will be a Proof of Concept (POC) to accomplish an assessment of both transmission and distribution data (entire database), integration of transmission and distribution data models (subset of database), configured application pilot (subset of database), creation of ArcPro Projects and configuration of sample editing templates (subset of database). Additionally, as part of the POC, development of high-level milestones for the Utility Network migration of the entire database will begin.	The natural progression of technology from APDM and GN is moving to Utility & Pipeline Data Model (UPDM) and will provide the Company with one unified GIS data model for all DTE Gas assets, station piping modeling, traceable system capabilities from well head to customer meter, and a fully vendor-supported solution via ESRI . Furthermore, this reduces the current operational risk of running critical business processes on the current unsupported end of life applications. All utilities using these solutions will be undertaking the upgrades mentioned above and the Company anticipates supply chain issues resulting in challenges with acquiring hardware as well limited availability of third-party resources to support this implementation. To mitigate this risk the Company will start this project in 2023 to secure the required resources at reasonable costs and within required timelines.	There are no solution alternatives to consider in the industry, and the risk of "do nothing" would leave the Company running on outdated and unsupported applications for critical business processes. Unsupported software additionally increases security risks due to inability to apply security updates. Please refer to columns X & Y for cloud considerations.	100	2023	2024	12/5/2024	DMND0001423	$ 500,000	$ 200,279	$ 263,280	$ 36,441	**$ 73,773**	$ 73,123	$ 650	**$ 573,773**	No	Yes- sol'n is an Industry Specific (core) capability and will use private cloud	This will follow all standard DTE cloud computing guidelines
8	2024	DTE Gas Utility Network (UN) Model	Plant & Field EG	Jaison Busby	Return-To-Health	In 2024, the scope will include the execution of the upgrade to UPDM, new tool integration, and any supporting training & change management. There are no solution alternatives to consider in the industry, and the risk of "do nothing" would leave the Company running on outdated and unsupported applications for critical business processes. Unsupported software additionally increases security risks due to inability to apply security updates.	The natural progression of technology from APDM and GN is moving to Utility & Pipeline Data Model (UPDM) and will provide the Company with one unified GIS data model for all DTE Gas assets, station piping modeling, traceable system capabilities from well head to customer meter, and a fully vendor-supported solution via ESRI . Furthermore, this reduces the current operational risk of running critical business processes on the current unsupported end of life applications. All utilities using these solutions will be undertaking the upgrades mentioned above and the Company anticipates supply chain issues resulting in challenges with acquiring hardware as well limited availability of third-party resources to support this implementation. To mitigate this risk the Company will start this project in 2023 to secure the required resources at reasonable costs and within required timelines.	There are no solution alternatives to consider in the industry, and the risk of "do nothing" would leave the Company running on outdated and unsupported applications for critical business processes. Unsupported software additionally increases security risks due to inability to apply security updates. Please refer to columns X & Y for cloud considerations.	100	2023	2024	12/5/2024	DMND0001423	$ 499,112	$ 86,055	$ 353,659	$ 59,398	**$ 79,770**	$ 79,120	$ 650	**$ 578,882**	No	Yes- sol'n is an Industry Specific (core) capability and will use private cloud	This will follow all standard DTE cloud computing guidelines
9	2023	End of Life (EOL) Gas Device Program	Plant & Field EG	Jaison Busby	Return-To-Health	Network EOL: This effort replaces both EOL network hardware, switches, routers and wireless access points, outside of corporate data centers, as well as additional network expansions. The program will address the components that have reached their end of designed and serviceable life, as well as provide additional network expansions to meet business-partner requirements, expectations, and demand. Endpoint EOL: As with the Network EOL portion of the overall program, DTE Gas works to keep all computing devices, laptops, desktops, MDT, and monitors, within their life expectancy. This requires that DTE Gas routinely replace 20% of the fleet per year and support the 7% growth in newly hired students/contractors/employees. These actions increase the adoption of more mobile devices to support a remote business environment. Newer devices keep pace with the changing technology landscape and assist in keeping employees connected and efficient. DTE IT replaced many DTE Gas desktops with laptops to increase mobility and productivity of the gas teams. This improvement allows the gas teams to perform their work remotely from home or office as opposed to being restricted to a desk to complete work.	The investment is primarily focused on sustaining Endpoint and Network devices to reduce degradation and unplanned failures, in addition to the specialised labor provided within the Master Services Agreement needed for the implementation of the overall program. These endpoints and network devices are critical to daily operations, critical field services and customer engagements, and replacing these when they are at end of life helps avoid unintended consequences of failed devices.	Network EOL: Accepting a technology alternative for this portion of the program would mean a move away from the established IT Cisco platform. This platform has been maintained and developed since its inception in 2005-2006 and continued investment in like-technology provides efficiencies through established technology. Changing this platform would not be a prudent investment decision as numerous dependent devices and systems are architected based on this technology choice. A "do nothing" alternative would mean leaving components in place that are at their end-of-life, instead of mitigating the ongoing risk of failure for both the equipment and business objectives. This option would additionally interrupt normal business operations and would leave the platform untenable. Endpoint EOL : A "do nothing" alternative considered would be to leave these EOL devices in place until they no longer function, increasing the likelihood of system and personnel downtime, causing interruptions to normal business operations. Specialized Labor / Gas EOL MSA: A "do nothing" alternative would result in delays or an inability to execute Endpoint deployments or packages in a timely manner to meet the needs of our organization who directly support our customers. Please refer to columns X & Y for cloud considerations.	100	2023	2023	Annual	DMND0001408, DMND0001409, DMND0001414	$ 1,998,000	$ 1,091,581	$ 645,520	$ 258,899	**$ 19,738**	$ 19,738	$ -	**$ 2,015,738**	Yes	Not Applicable	No Cloud solution required for this effort
10	2024	End of Life (EOL) Gas Device Program	Plant & Field EG	Jaison Busby	Return-To-Health	Network EOL: This effort replaces both EOL network hardware, switches, routers and wireless access points, outside of corporate data centers, as well as additional network expansions. The program will address the components that have reached their end of designed and serviceable life, as well as provide additional network expansions to meet business-partner requirements, expectations, and demand. Endpoint EOL: As with the Network EOL portion of the overall program, DTE Gas works to keep all computing devices, laptops, desktops, MDT, and monitors, within their life expectancy. This requires that DTE Gas routinely replace 20% of the fleet per year and support the 7% growth in newly hired students/contractors/employees. These actions increase the adoption of more mobile devices to support a remote business environment. Newer devices keep pace with the changing technology landscape and assist in keeping employees connected and efficient. DTE IT replaced many DTE Gas desktops with laptops to increase mobility and productivity of the gas teams. This improvement allows the gas teams to perform their work remotely from home or office as opposed to being restricted to a desk to complete work.	The investment is primarily focused on sustaining Endpoint and Network devices to reduce degradation and unplanned failures, in addition to the specialised labor provided within the Master Services Agreement needed for the implementation of the overall program. These endpoints and network devices are critical to daily operations, critical field services and customer engagements, and replacing these when they are at end of life helps avoid unintended consequences of failed devices.	Network EOL: Accepting a technology alternative for this portion of the program would mean a move away from the established IT Cisco platform. This platform has been maintained and developed since its inception in 2005-2006 and continued investment in like-technology provides efficiencies through established technology. Changing this platform would not be a prudent investment decision as numerous dependent devices and systems are architected based on this technology choice. A "do nothing" alternative would mean leaving components in place that are at their end-of-life, instead of mitigating the ongoing risk of failure for both the equipment and business objectives. This option would additionally interrupt normal business operations and would leave the platform untenable. Endpoint EOL : A "do nothing" alternative considered would be to leave these EOL devices in place until they no longer function, increasing the likelihood of system and personnel downtime, causing interruptions to normal business operations. Specialized Labor / Gas EOL MSA: A "do nothing" alternative would result in delays or an inability to execute Endpoint deployments or packages in a timely manner to meet the needs of our organization who directly support our customers. Please refer to columns X & Y for cloud considerations.	100	2024	2024	Annual	DMND0001408, DMND0001409, DMND0001414	$ 2,070,000	$ 545,542	$ 1,392,999	$ 132,059	**$ 18,597**	$ 18,597	$ -	**$ 2,088,597**	Yes	Not Applicable	No Cloud solution required for this effort

Line No.	Spend Year	Business Case Name	IT Portfolio	Witness	Investment Category	Project Synopsis	Value Benefit	Alternatives considered including cloud services	Portfolio Prioritization Score (PPS)	Project Start Year (YYYY)	Project End Year (YYYY)	Planned Implementation Date (MMDDYY)	Demand / BCD ID	Total Projected IT Capital Cost	Projected Labor Cost Capital ($)	Projected Non-Labor Cost Capital ($)	Projected Overhead & Other Costs - Capital ($)	Total Projected IT O&M Cost	Projected Labor Costs O&M ($$)	Projected Non-Labor Costs O&M ($$)	Projected Total Project Cost (Capital + O&M)	Equipment involved and refresh live (if applicable)	Cloud Computing Technology Strategy Alignment (For projects with spend over $100,00, excluding cyber security or transmission control)	Rationale behind the Cloud Strategy Decision
11	2025	End of Life (EOL) Gas Device Program	Plant & Field EG	Jaison Busby	Return-To-Health	Network EOL: This effort replaces both EOL network hardware, switches, routers and wireless access points, outside of corporate data centers, as well as additional network expansions. The program will address the components that have reached their end of designed and serviceable life, as well as provide additional network expansions to meet business partner requirements, expectations, and demand. Endpoint EOL: As with the Network EOL portion of the overall program, DTE Gas works to keep all computing devices, laptops, desktops, MDT, and monitors, within their life expectancy. This requires that DTE Gas routinely replace 20% of the fleet per year and support the 7% growth in newly hired students/contractors/employees. These actions increase the adoption of more mobile devices to support a remote business environment. Newer devices keep pace with the changing technology landscape and assist in keeping employees connected and efficient. DTE IT replaced many DTE Gas desktops with laptops to increase mobility and productivity of the gas teams. This improvement allows the gas teams to perform their work remotely from home or office as opposed to being restricted to a desk to complete work.	The investment is primarily focused on sustaining Endpoint and Network devices to reduce degradation and unplanned failures, in addition to the specialized labor provided within the Master Services Agreement needed for the implementation of the overall program. These endpoints and network devices are critical to daily operations, critical field services and customer engagements, and replacing these when they are at end of life helps avoid unintended consequences of failed devices.	Network EOL: Accepting a technology alternative for this portion of the program would mean a move away from the established IT Cisco platform. This platform has been maintained and developed since its inception in 2005-2006 and continued investment in like-technology provides efficiencies through established technology. Changing this platform would not be a prudent investment decision as numerous dependent devices and systems are architected based on this technology choice. A "do nothing" alternative would mean leaving components in place that are at their end-of-life, instead of mitigating the ongoing risk of failure for both the equipment and business objectives. This option would additionally interrupt normal business operations and would leave the platform untenable. Endpoint EOL - A "do nothing" alternative considered would be to leave these EOL devices in place until they no longer function, increasing the likelihood of system and personnel downtime, causing interruptions to normal business operations. Specialized Labor / Gas EOL MSA: A "do nothing" alternative would result in delays or an inability to execute Endpoint deployments or packages in a timely manner to meet the needs of our organization who directly support our customers. Please refer to columns X & Y for cloud considerations.	100	2025	2025	Annual	DMND0001408, DMND0001409, DMND0001414	$ 2,070,000	$ 545,542	$ 1,392,399	$ 132,059	**$ 17,115**	$ 17,115	$ -	**$ 2,087,115**	Yes	Not Applicable	No Cloud solution required for this effort
12	2023	Field Service Management for GasOps (Clicksoft)	Plant & Field EG	Jaison Busby	Return-To-Health	This project is replacing the Company's EOL work management system (Service Suite) with the modern ClickSoft product which is aligned with the Company's platform strategy.	The benefits of this project include approximately $15,000 in cost avoidance annually through a reduction of planned outages. It is critical that the Company continue with the full implementation of ClickSoft, given the current unsupported system exposes the Company to risk due to the incompatibility of system versions, should new cybersecurity threats emerge. If the system fails or is inaccessible due to cyberattack, the Company will jeopardize the live field dispatch of employees who rely on the dispatching and management system.	A "do nothing" alternative is not acceptable because the previous product is at the end of its useful life, is no longer supported by the vender, and carries significant security and safety risk both in terms of security support and active field activity. An alternative technology solution would include the latest version of the ABB Service Suite; however, it is more costly and delivers fewer features, and hence ClickSoft was selected as the solution and was approved in U-20940. Please refer to columns X & Y for cloud considerations.	100	2023	2023	12/31/2023	DMND0001696	$ 3,700,000	$ 1,952,586	$ 1,344,029	$ 403,375	**$ 1,400,000**	$ 465,270	$ 934,730	**$ 5,100,000**	No	Yes - scI'n is Industry Specific (core) capability- will use public cloud per strategy requirements	The cloud solution is in alignment with technology strategy for cloud computing
13	2024	Gas Scada Upgrade	Plant & Field EG	Jaison Busby	Return-To-Health	The project is a multiyear project to upgrade the Gas SCADA system that has reached end of life and of support. The SCADA (Supervisory Control and Data Acquisition) system is a collection of sequestered, secure IT components, including operator workstations, servers, and software. The proper functioning of these components is critical to the safe operations of natural gas for nearly 7,000 field monitoring devices like Programmable Logic Controllers (PLCs), Remote Terminal Units (RTUs), etc., on the system, which monitor pressures, flow rates, and valve positions. The current system was last upgraded in 2016 and will no longer be supported by the vendor starting in October 2020. In 2024, this investment will support the purchase and installation of the new Gas SCADA hardware in the Data Center(s) and Control Center(s); installation and configuration of the Enterprise SCADA 2024, and the Measurement Advisor software. It also includes the migration of the security configurations/tools, Gas Control Displays, reports, and databases. In 2025, the project will complete the testing (including Point to Point testing) and final deployment.	The new hardware and software will improve the performance of the SCADA system, increase system reliability, and allow updates of the hardware and software to meet TSA cybersecurity compliance. This will allow DTE Gas to provide safe and reliable gas supply to customers by monitoring and controlling the pipeline system 24/7/365 using the Gas SCADA system	An alternate option would be to upgrade the software and hardware in different phases. If we go with this option, the first phase will include only the hardware being upgraded, and the second phase will be upgrading the software. By the time the software is upgraded, the hardware is already 2 years old, using up a portion of the hardware warranty. The off-cycle phases would require DTE to complete configuration, testing, and validation twice. This would cause duplication of work, which is waste and increased warranty costs. Hence, this option is not cost-effective. A do-nothing alternative significantly increases the overall risk for negative outcomes for DTE Gas. Leaving the SCADA system as-is could cause critical system reliability and safety issues for the customers, as well as non-compliance with TSA Security Directive 2 Delta (SD2D). Please refer to columns X & Y for cloud considerations.	100	2024	2025	6/30/25	DMND0002433	$ 2,890,000	$ 507,273	$ 1,924,591	$ 458,136	**$ 95,000**	$ 75,811	$ 19,189	**$ 2,985,000**	Yes	Not Applicable	Solution is not a cloud computing.
14	2025	Gas Scada Upgrade	Plant & Field EG	Jaison Busby	Return-To-Health	The project is a multiyear project to upgrade the Gas SCADA system that has reached end of life and of support. The SCADA (Supervisory Control and Data Acquisition) system is a collection of sequestered, secure IT components, including operator workstations, servers, and software. The proper functioning of these components is critical to the safe operations of natural gas for nearly 7,000 field monitoring devices like Programmable Logic Controllers (PLCs), Remote Terminal Units (RTUs), etc., on the system, which monitor pressures, flow rates, and valve positions. The current system was last upgraded in 2016 and will no longer be supported by the vendor starting in October 2020. In 2025, the project will complete the testing (including Point to Point testing) and final deployment.	The new hardware and software will improve the performance of the SCADA system, increase system reliability, and allow updates of the hardware and software to meet TSA cybersecurity compliance. This will allow DTE Gas to provide safe and reliable gas supply to customers by monitoring and controlling the pipeline system 24/7/365 using the Gas SCADA system	An alternate option would be to upgrade the software and hardware in different phases. If we go with this option, the first phase will include only the hardware being upgraded, and the second phase will be upgrading the software. By the time the software is upgraded, the hardware is already 2 years old, using up a portion of the hardware warranty. The off-cycle phases would require DTE to complete configuration, testing, and validation twice. This would cause duplication of work, which is waste and increased warranty costs. Hence, this option is not cost-effective. A do-nothing alternative significantly increases the overall risk for negative outcomes for DTE Gas. Leaving the SCADA system as-is could cause critical system reliability and safety issues for the customers, as well as non-compliance with TSA Security Directive 2 Delta (SD2D). Please refer to columns X & Y for cloud considerations.	100	2024	2025	6/30/25	DMND0002433	$ 1,240,002	$ 254,919	$ 756,015	$ 229,068	**$ 70,000**	$ 32,905	$ 37,095	**$ 1,310,002**	Yes	Not Applicable	Solution is not a cloud computing.
15	2024	Clicksoft Enhancements	Plant & Field EG	Jaison Busby	IT Enhancements	Post implementation of the ClickSoft project, noted on line 9 of Exhibit A-12 Schedule B5.4.1, the Company has established a plan to continue to enhance and build out the solutions functionality to benefit the business units and our customers. This project will further enhance processes with the Appointment Book and Enterprise Service Bus systems within DTE. The 2024 and 2025 scope will include enhancing the functionality associated with the appointment book, optimization of orders and continued improvement of the timesheet reporting, based on feedback from our field users and guidance from the vendor after our optimization of the system post initial implementation in Q4 2023.	The benefit of this investment is that the Company will be able to improve support for our field leaders, field technicians, and customers by utilizing the ClickSoft system in an efficient manner while extending the flexibility to customers for scheduling appointments.	No new alternative solutions were considered for this additional functionality since ClickSoft was chosen & implemented as our platform solution for field management, and this is a continuation of investment in this platform as approved in U-20940. If we are unable to implement these improvements, we run the risk of inefficiencies in the system that could lead to missed appointments and a reduced customer experience. Please refer to columns X & Y for cloud considerations.	6.2	2024	2025	Annual	DMND0001405	$ 700,041	$ 51,304	$ 602,979	$ 45,758	**$ 150,334**	$ 38,028	$ 112,306	**$ 850,375**	No	Yes - scI'n is Industry Specic (core) capability - will use public cloud per strategy requirements	This will follow DTE Cloud computing guidelines
16	2025	Clicksoft Enhancements	Plant & Field EG	Jaison Busby	IT Enhancements	Post implementation of the ClickSoft project, noted on line 9 of Exhibit A-12 Schedule B5.4.1, the Company has established a plan to continue to enhance and build out the solutions functionality to benefit the business units and our customers. This project will further enhance processes with the Appointment Book and Enterprise Service Bus systems within DTE. The 2024 and 2025 scope will include enhancing the functionality associated with the appointment book, optimization of orders and continued improvement of the timesheet reporting, based on feedback from our field users and guidance from the vendor after our optimization of the system post initial implementation in Q4 2023.	The benefit of this investment is that the Company will be able to improve support for our field leaders, field technicians, and customers by utilizing the ClickSoft system in an efficient manner while extending the flexibility to customers for scheduling appointments.	No new alternative solutions were considered for this additional functionality since ClickSoft was chosen & implemented as our platform solution for field management, and this is a continuation of investment in this platform as approved in U-20940. If we are unable to implement these improvements, we run the risk of inefficiencies in the system that could lead to missed appointments and a reduced customer experience. Please refer to columns X & Y for cloud considerations.	6.2	2024	2025	Annual	DMND0001405	$ 699,888	$ 51,349	$ 602,979	$ 45,758	**$ 149,648**	$ 37,342	$ 112,306	**$ 849,534**	No	Yes - scI'n is Industry Specic (core) capability - will use public cloud per strategy requirements	This will follow DTE Cloud computing guidelines
17	2024	Gas Enhancements	Plant & Field EG	Jaison Busby	IT Enhancements	This project provides the required enhancements and new functionality to the applications in the production environment to align with the technology roadmap and changes from operational process or regulatory requirements. This includes any required server procurement, upgrades to the database systems, server OS, and the physical/virtual hardware systems (such as CPUs, memory, and various hardware components as and when needed) for the applications supported by DTE Gas. In 2024 and 2025 the Company will continue with the required enhancements and upgrades to the applications, to align with the technology roadmap and changes from operational processes or regulatory requirements. This includes any required server procurement, upgrades to the database systems, server OS, and the physical/virtual hardware systems (such as CPUs, memory, and various hardware components as and when needed) for the applications supported by DTE Gas.	These enhancements will improve the capabilities of Gas Operation applications that supports automation and productivity of our business units.	Alternatives considered are specific to each enhancement request. Each enhancement feature request is evaluated to determine if it could be implemented in platform solutions before enhancing as standalone applications. Without this effort to bring in new and improved functionality and/or capacity, the Company risks the potential of degraded performance and lose the ability to resolve infrastructure failures. Neither of these consequences are acceptable, as many of these applications are critical to operations and safety including EGMS, Corrosion, MISS Dig along with the newly implemented platform solution, Field Service Edge. Please refer to columns X & Y for cloud considerations.	3.5	2024	2025	Annual	DMND0001688	$ 197,094	$ 66,347	$ 75,800	$ 54,947	**$ 30,114**	$ 25,914	$ 4,200	**$ 227,208**	No	Not Applicable	There are no cloud components
18	2025	Gas Enhancements	Plant & Field EG	Jaison Busby	IT Enhancements	This project provides the required enhancements and new functionality to the applications in the production environment to align with the technology roadmap and changes from operational process or regulatory requirements. This includes any required server procurement, upgrades to the database systems, server OS, and the physical/virtual hardware systems (such as CPUs, memory, and various hardware components as and when needed) for the applications supported by DTE Gas. In 2024 and 2025 the Company will continue with the required enhancements and upgrades to the applications, to align with the technology roadmap and changes from operational processes or regulatory requirements. This includes any required server procurement, upgrades to the database systems, server OS, and the physical/virtual hardware systems (such as CPUs, memory, and various hardware components as and when needed) for the applications supported by DTE Gas.	These enhancements will improve the capabilities of Gas Operation applications that supports automation and productivity of our business units.	Alternatives considered are specific to each enhancement request. Each enhancement feature request is evaluated to determine if it could be implemented in platform solutions before enhancing as standalone applications. Without this effort to bring in new and improved functionality and/or capacity, the Company risks the potential of degraded performance and lose the ability to resolve infrastructure failures. Neither of these consequences are acceptable, as many of these applications are critical to operations and safety including EGMS, Corrosion, MISS Dig along with the newly implemented platform solution, Field Service Edge. Please refer to columns X & Y for cloud considerations.	3.5	2024	2025	Annual	DMND0001688	$ 197,094	$ 66,347	$ 75,800	$ 54,947	**$ 30,114**	$ 25,914	$ 4,200	**$ 227,208**	No	Not Applicable	There are no cloud components
19	2023	Corrosion Database Upgrade	Plant & Field EG	Jaison Busby	Strategic	DTE Gas is required to collect data regarding Cathodic Protection levels along the Gas pipeline to monitor and prevent corrosion in steel (or metallic) pipelines, which is critical as corrosion can lead to additional leaks and failures if left unnoticed and unchecked. The Corrosion Control regulations are critical for compliance of Pipeline Integrity Management Programs governed by CFR 49 Part 192 Subpart O – Transmission Integrity Management Program (TIMP), and CFR 49 Part 192 Subpart P – Distribution Integrity Management Program (DIMP). Corrosion data is utilized as input to the DIMP and TIMP risk models to identify system segments at risk and help prioritize mitigation actions to avoid failures or abnormal operating conditions, however, the current configuration is not fully compatible with other data sets to maximize the use of all data in analyzing pipeline sections for risk assessment and remedial actions.	To meet the regulatory requirements, the Corrosion Control Department currently collects and processes a total of approximately 102,000 records every year through a set of manual processes and stores all information in an MS (Microsoft) Access Database. Approximately 95,000 (or ~93%) of these records, including cathodic protection survey readings and corrosion remediation orders, are then manually synced with other internal systems ESRI and Maximo to associate the respective corrosion data to the physical pipeline facility assets in ESRI. In turn, ESRI serves as the current geographic information system (GIS) for DTE Energy, and the primary pipeline facility data repository for DTE's gas system. This data is maintained for the life of the pipeline facility, and the Company, therefore, accumulates records in the Access Database year-upon-year.	An alternative would be to "do nothing" and was not considered for this project, since this project will implement new capabilities that will assist the Company in eliminating manual errors and reducing the time and resources associated with adhering to compliance and regulation requirements. Please refer to columns X & Y for cloud considerations.	5.7	2023	2023	12/31/23	DMND0002529	$ 750,000	$ 239,207	$ 423,559	$ 87,234	**$ 886**	$ 886	$ -	**$ 750,886**	Yes	Not Applicable	Corrosion application is an extension of the existing ESRI GIS app which is an On-Prem application, when ESRI GIS upgrades to the cloud then the Corrosion app will also be upgraded to the cloud
20	2024	Gas Construction - As Building	Plant & Field EG	Jaison Busby	Strategic	The current process requires information from a handwritten paper Form 79, in conjunction with a completed data entry into the Clicksoft Work Order, to fully capture the information necessary to update the gas facility main and service updates. When changes are made in the field to gas pipelines, a sketch (as-built) is hand-drawn on the Form 79 by the technician and submitted to the station. The sketches are then scanned into Captiva at the station to be uploaded into Documentum to allow Data Integrity to update the ESRI maps. This is manually intensive and results in a significant (often months) delay in providing updated information to employees who rely on the accuracy of maps when performing their fieldwork. This project will implement a system (Locusview), which integrates with Maximo, ClickSoft, and GIS (Geographic Information System) systems for real time and digital updates in the system based on main and service installations. In 2024, the project will implement the Locusview software with integrations and use of GPS-based As-Building for SEMI, GRP, ICM and Wealthy distribution crews. In 2025, we will implement the capability to digitize the current manual process. The benefits of this implementation include: •Improved data quality and safety because of centimeter grade as-built accuracy which is expected to increase 1st time mapped quality to more than 95%. • Reduce cycle time to mapping from 45-60 days to 30 days.	This project will digitize and partially automate the current paper-based manual process of completing gas construction (pipeline) work orders and mapping as-builts from the job cards and material information. The current process has significant waste, multiple hand-offs, rework due to manual defects, and can lead to regulatory non-compliances due to a long cycle time. Current and real time updates and mapping reduce pipeline risks and hits by contractors.	Other applications such as Click Lemur and Epoch were also considered and evaluated. However, Locusview was selected based on the additional features it provided (Tracking & Traceability, and Remote Inspections) as well as its scalability and ease of use. Doing nothing would mean persisting with the current manual process of getting designs through paper and capturing the field results in Excel and uploading the documents into Documentum, which can result in defects and long cycle time for data validation. Please refer to columns X & Y for cloud considerations.	4.3	2024	2026	12/19/26	DMND0001811	$ 2,500,000	406,150	$ 2,002,400	$ 91,450	**$ 178,200**	$ 165,000	$ 13,200	**$ 2,678,200**	Yes	Yes - scI'n is Market Based Commodity or Supporting Capability (non-core) and will use public cloud	Cloud Platform solution is part of the T&A (Technology and Architecture) roadmap.

Line No.	Spend Year	Business Case Name	IT Portfolio	Witness	Investment Category	Project Synopsis	Value Benefit	Alternatives considered including cloud services	Portfolio Prioritization Score (PPS)	Project Start Year (YYYY)	Project End Year (YYYY)	Planned Implementation Date (MMDDYY)	Demand / BCD ID	Total Projected IT Capital Cost	Projected Labor Cost Capital ($)	Projected Non-Labor Cost Capital ($)	Projected Overhead & Other Costs - Capital ($)	Total Projected IT O&M Cost	Projected Labor Costs O&M ($$)	Projected Non-Labor Costs O&M ($$)	Projected Total Project Cost (Capital + O&M)	Equipment involved and refresh live (if applicable)	Cloud Computing Technology Strategy Alignment (For projects with spend over $100,00, excluding cyber security or transmission control)	Rationale behind the Cloud Strategy Decision
21	2025	Gas Construction - As Building	Plant & Field EG	Jaison Busby	Strategic	The current process requires information from a handwritten paper Form 79. In conjunction with a completed data entry into the Clicksoft Work Order, to fully capture the information necessary to update the gas facility main and service updates. When changes are made in the field to gas pipelines, a sketch (as-built) is hand-drawn on the Form 79 by the technician and submitted to the station. The sketches are then scanned into Captiva at the station to be uploaded into Documentum to allow Data Integrity to update the ESRI maps . This is manually intensive and results in a significant (often months) delay in providing accurate information to employees who rely on the accuracy of maps when performing their fieldwork. This project will implement a system (Locusview), which integrates with Maximo, ClickSoft, and GIS (Geographic Information System) systems for real time and digital updates in the system based on main and service installations. In 2024, the project will implement the Locusview software with integrations and use of GPS-based As-Building for SEMI, GRP, ICM and Wealthy distribution crews. In 2025, we will implement the capability to digitize the current manual process. The benefits of this implementation include: •Improved data quality and safety because of centimeter grade as-built accuracy which is expected to increase 1st time mapped quality to more than 95%. • Reduce cycle time to mapping from 45-60 days to 30 days.	This project will digitize and partially automate the current paper-based manual process of completing gas construction (pipeline) work orders and mapping as-builts from the job cards and material information. The current process has significant waste, multiple hand-offs, rework due to manual defects, and can lead to regulatory non-compliance due to a long cycle time. Current and real time updates and mapping reduce pipeline risks and hits by contractors.	Other applications such as Click Lemur and Epoch were also considered and evaluated. However, Locusview was selected based on the additional features it provided (Tracking & Traceability, and Remote inspections) as well as its scalability and ease of use. Doing nothing would mean persisting with the current manual process of getting designs through paper and capturing the field results in Excel and uploading the documents into Documentum, which can result in defects and long cycle time for data validation. Please refer to columns X & Y for cloud considerations.	4.3	2024	2026	12/19/26	DMND0001811	$ 1,400,000	$ 35,096	$ 1,350,000	$ 14,904	**$ 144,000**	$ 2,223	$ 141,777	**$ 1,544,000**	Yes	Yes - sol'n is Market Based Commodity or Supporting Capability (non-core) and will use public cloud	Cloud Platform solution is part of the T&A (Technology and Architecture) roadmap.
22	2025	Gas Construction - Contractor Inspection	Plant & Field EG	Jaison Busby	Strategic	DTE Gas is implementing a Quality Oversight Program to standardize statewide inspections. While DTE has made significant progress in the past year in its Contractor Oversight Program, much of the current construction inspection process is still manual – with jobs being assigned via email and inspection forms being filled out via a PowerApp. The results are being stored in SharePoint and data is displayed for leaders in a recently developed Power BI dashboard. The Quality Oversight Program currently lacks an advanced technology solution, which can prioritize, schedule, and document quality oversight inspections with an embedded escalation workflow that connects all data to a centralized database with metrics. This project will automate the current manual processes by using a software solution (Locus View) which integrates with ClickSoft, the system of record, to tie the inspections to job cards.	This investment will ensure safety and reliability of the DTE gas system through tracking, trending, standardizing, and improving construction practices. Below are the detailed benefits from this investment: • Improved Inspection Rate: The current Contractor Inspection Rate is at 7.8% of all work orders. With this implementation the inspection rate is expected to increase to more than 10% of all work orders, thereby ensuring more work is being inspected. This will help ensure contractors are meeting quality standards. • Improved Quality: Because the Company will be able to inspect more work, potentially more defects (as measured by comparing field corrections and findings vs. total number of inspections) will be able to be identified and remediated leading to improved quality. • Improved Safety: Currently, approximately 5.5% of the work orders are inspected in the field to specifically identify and address employee safety findings. The ability to perform more inspections with this implementation will help ensure employees are following proper safety protocols.	Alternate solutions included Epoch and EZMAX (Maximo) solutions, but eventually Locus View was chosen as the best final solution given its ease of integration with the Company's current systems, overall ease of use, and embedded workflows available. A "do nothing" alternative is not viable because it would mean continuing with the manual workflows resulting in disconnected processes and increased quality inspection cycle times. Please refer to columns X & Y for cloud considerations.	2.9	2025	2025	12/27/25	DMND0001766	$ 450,000	$ 155,000	$ 275,000	$ 20,000	**$ 130,000**	$ 105,000	$ 25,000	**$ 580,000**	Yes	Yes - sol'n is Market Based Commodity or Supporting Capability (non-core) and will use public cloud	Cloud Platform solution is part of the T&A (Technology and Architecture) roadmap.
23	2023	Leak Survey	Plant & Field EG	Jaison Busby	Strategic	The current Leak Survey Application was built as a standalone home-grown solution in 2017. The existing technology is antiquated and cannot be updated to meet changing needs of the business, which exposes the Company to the potential risk of non-compliance and regulatory fines. Data is not updated in real time and requires a nightly batching process to run. There is not currently an off-line/flat-safe mode to prevent costly work stoppages. The new application, LEMUR, will be linked to ESRI and Maximo in real time. This DTE Enterprise platform IT solution resolves the gaps described in the current solution and provides a single platform that will store, collect, and report on Leak Survey Data. In 2023, this project will develop and implement the Lemur Discover and Lemur Connect modules.	Benefits associated with this investment include the ability to integrate with ClickSoft and reduced operational risk due to moving to a fully supported solution. It will improve employee efficiency, by avoiding the data entry time for 500k service entries. This would help re-align the employees to higher priority/strategic efforts.	The alternative solution considered was ESRI. Both ESRI and Lemur reviewed the functional and technical requirements, gathering input from the Company's architecture, Maximo integration requirements, and then provided their proposed solution via competitive bids. Ultimately, Lemur was selected and is an existing platform in the Company's approved architecture. The Lemur solution best met the Company's leak requirements and can integrate with ClickSoft in the future for integration with Field Service Management. Since this outdated technology cannot be updated to meet the changing needs of the business, a 'Do Nothing' alternative presents a potential risk of non-compliance and regulatory fines. Please refer to columns X & Y for cloud considerations.	7.05	2023	2023	11/28/23	DMND0002199	$ 664,000	$ 60,248	$ 566,000	$ 37,752	**$ 220,000**	$ 180,000	$ 40,000	**$ 884,000**	No	Yes - sol'n is Market Based Commodity or Supporting Capability (non-core) and will use public cloud	Will use public cloud per strategy requirements
24	2025	SEMI Picarro Survey Unit Renewal	Plant & Field EG	Jaison Busby	Strategic	DTE Gas is required per the Michigan Gas Safety Code, to survey the gas pipeline system periodically and after events that could potentially cause leaks. Historically, we have conducted these surveys manually. For example, each year in January and again prior to winter, the Company's field workers take handheld devices and physically walk along the DTE Gas pipeline perimeter to count and categorize the severity of leaks in the pipeline. This process relies on human performance to identify leaks which, if left unchecked, could result in an array of negative impacts, including damage to life, environment and property, lack of distribution reliability, and revenue impact from lost gas along the pipeline system. The 2025 scope of work includes the Renewal of Picarro advanced leak detection devices. The current contract on SEMI Picarro units is set to expire and requires renewal. The renewal will allow DTE Gas to continue its Advanced Leak Detection (ALD) journey, which will transform the outdated manual process that is dependent on human performance to identify leaks and satisfy compliance requirements. Additionally, Picarro as an Advanced Leak Detection device has been identified as a strategic initiative that has been incorporated into previous Rate Cases and the DTE Gas Delivery Plan.	Picarro technology is comprised of high resolution, vehicle-based equipment that captures methane indications and combines readings with atmospheric data, ultimately improving DTE Gas's ability to identify potential leaks and quantify emission levels from those leaks. Non-reactionary emissions data gathering enables holistic assessments, allowing for focus on the largest leaks as priority, and in turn reducing emissions. Additionally, Picarro utilizes more sensitive gas detection technology (parts per billion (ppb) vs. parts per million (ppm)), which will increase DTE Gas's ability to accurately identify existing leaks, particularly those which are smaller than what current equipment can identify. The increase in detection is expected across all leak classifications and remediations will be completed based on the severity of the leak.	DTE reviewed multiple technology options in its search to become more efficient and less reactive in our leak surveys. The alternatives considered included companies like RECONN Services that provide traditional low-tech solutions involving hand-held devices and companies like Heath Consulting, which provide a mobile-based solution. The Company chose Picarro, given the data modeling capabilities offered were more advanced than its competitors. Picarro's data suite allows the Company to conduct a detailed data analysis of our assets at a level that was previously unachievable. A "do nothing" alternative is not viable due to the responsibility the Company has to the communities in which we live and serve. Picarro will allow the Company to find and remediate more hazardous leaks than a traditional survey. Leak mitigation has a direct impact on the safety of our customers and the communities we serve. Picarro is a safe, efficient, innovative, and a proven solution. No other competing technology performs to this degree, which is why other utilities are adopting this system. Please refer to columns X & Y for cloud considerations.	4.8	2025	2025	12/31/25	DMND0002603	$ 2,800,000	$ 175,000	$ 2,400,000	$ 25,000	**$ 60,000**	$ -	$ 60,000	**$ 2,660,000**	Yes	Yes - sol'n is Market Based Commodity or Supporting Capability (non-core) and will use public cloud	This will follow DTE's cloud computing guidelines. Picarro data is stored on Amazon servers with geographically redundant US located servers
25	2023	Surcharge Billing for Natural Gas Installations	Plant & Field EG	Jaison Busby	Strategic	Currently, customers that have natural gas extended to their homes under the Customer Attachment Program (CAP) are not billed for their portion of any construction costs incurred during the service line installation until the customer has their meter set. The Customer Attachment tariff (C.8) allows the Company to bill the construction costs upon completion of the meter set or starting six months after the service line has been installed (whichever occurs first). This project implementation will enable the Company to bill customers immediately upon installation, even if a meter is not set within six months of service installation. As of September 2023, this project has implemented the capability via CRM and SAP ISU to bill these customers for their portion of the construction costs (surcharge) if no meter has been set within six months of the service line installation. This solution also includes a 4th month and 5th month reminder to the customer that they will start receiving this billing going forward.	On average, the Company now installs approximately 4,000 services annually that require a surcharge payment. Of those 4,000 services, approximately 10% do not have their meter set within the six months. With the implementation of this project, we will recover the customer owed portion of the construction costs even if a meter is not installed in support of the service line installs going forward.	An alternative would be to "do nothing" which is not viable because the organization will be unable to collect the construction costs that are owed by the customer. Please refer to columns X & Y for cloud considerations.	3.6	2023	2023	11/30/23	DMND0002733	$ 345,808	$ 34,710	$ 283,000	$ 28,096	**$ 647**	$ 647	$ -	**$ 346,453**	No	No - sol'n is Industry Specific (core) capability and does not follow cloud computing strategy	As the solution is an enhancement to existing On-prem solution

Michigan Public Service Commission
DTE Gas Company
HPP Gas IT Capital Investments Additional Project Details

Case No.: U-21291
Exhibit: A-12
Schedule: B5.15.1
Witness: H. J. Decker

Line No.	Spend Year	Business Case Name	IT Portfolio	Witness	IT Director	Investment Category	Project Synopsis	Value Benefit
1	2023	HPP Customer Relationship and Billing Enhancements	Plant & Field EG	H.J. Decker	Jaison Busby	IT Enhancements	The HPP Customer Relationship and Billing Enhancements were to add functionality to bill and dispatch additional HPP plans which assist customers whose equipment cannot be repaired, improvements in our service order dispatching process to provide our customer service agents with more customer focused messaging and better communication to the customer regarding their upcoming service call. Additional improvements that we made in the application provide us with functionality to better retain customers when they relocate by providing the ability to carry their HPP contract with them. Lastly, we made changes to the system that will give us greater flexibility when introducing new services to customers.	The enhancements made offered greater functionality to improve service to customers on the HPP Program giving them more options on repairing their equipment and better communication with the customer from our call centers when they are placing a service order. By making system enhancements we are able to give customers additional peace of mind in repair service options improving their experience and helping to retain customers on the program. Retaining customers on the HPP Program helps maintain the profitability of the program and as a result DTE Gas customers benefit due to the contribution from HPP on gas affordability.

Line No.	Alternatives considered including cloud services	Portfolio Prioritization Score (PPS)	Project Start Year (YYYY)	Project End Year (YYYY)	Planned Implementation Date (MM/DD/YY)	Demand / BCD ID	Total Projected IT Capital Cost	Projected Labor Cost Capital ($$)	Projected Non-Labor Cost Capital ($$)
1	An alternative considered for this effort was to do nothing to change the structure of our plans or not improving service to our customers. This alternative could erode our customer base resulting in an over decline in margin to the company negatively impacting our ability to provide affordable gas rates to our customers. This is not acceptable since without making modifications to our plans and our approach on how and where we sell certain plans, the Company would continue to see escalations from our customers potentially resulting in further attrition due to lack of coverage the customers expect/ want.	4.2	2022	2023	Annual	DMND0002466	**$ 500,000**	$ 379,510	$ 74,212

Line No.	Projected Overhead & Other Costs - Capital ($$)	Total Projected IT O&M Cost	Projected Labor Costs O&M ($$)	Projected Non-Labor Costs O&M ($$)	Projected Total Project Cost (Capital + O&M)	Equipment involved and refresh live (if applicable)	Cloud Computing Technology Strategy Alignment (For projects with spend over $100,000, excluding cyber security or transmission control)	Rationale behind the Cloud Strategy Decision
1	$ 46,278	**$ 50,000**	$ -	$ 50,000	$ 550,000	No	No- sol'n is Market Based Commodity or Supporting Capability (non-core) and will not use public cloud	All Standard Cloud Computing policies will be followed as part of this implementation.

Line No.	Business Case Name	IT Portfolio	Spend Year	Witness	BCD ID/ Demand Number	Workpaper ID	Workpaper Title	Page Number
1	Records & Workflow Management	Plant & Field EG	2022	Jaison Busby	BCD-PF-21-025	B5.16.1	B5.16.1 Records & Workflow Management	2
2	Records & Workflow Management	Plant & Field EG	2023	Jaison Busby	DMND0001421	B5.16.2	B5.16.2 Records & Workflow Management Program	4
3	Records & Workflow Management	Plant & Field EG	2024	Jaison Busby	DMND0001421	B5.16.3	B5.16.3 Records & Workflow Management Program	4
4	Records & Workflow Management	Plant & Field EG	2025	Jaison Busby	DMND0001421	B5.16.4	B5.16.4 Records & Workflow Management Program	4
5	EGMS Quorum Licensing Renewal	Plant & Field EG	2022	Jaison Busby	DMN0002211	B5.16.5	B5.16.5 Energy Gas Management System (EGMS) Licensing	7
6	Gas Application Health	Plant & Field EG	2022	Jaison Busby	BCD-PF-21-022	B5.16.6	B5.16.6 Gas Application Health	9
7	Gas Application Health	Plant & Field EG	2022	Jaison Busby	BCD-PFG-22-017	B5.16.7	B5.16.7 Gas Application Health	11
8	Gas Application Health	Plant & Field EG	2023	Jaison Busby	DMND0001411	B5.16.8	B5.16.8 Gas Application Health	13
9	Gas Application Health	Plant & Field EG	2024	Jaison Busby	DMND0001411	B5.16.9	B5.16.9 Gas Application Health	13
10	Gas Application Health	Plant & Field EG	2025	Jaison Busby	DMND0001411	B5.16.10	B5.16.10 Gas Application Health	13
11	DTE Gas Utility Network (UN) Model	Plant & Field EG	2023	Jaison Busby	DMND0001423	B5.16.11	B5.16.11 DTE Gas Utility Network Model (UN)	16
12	DTE Gas Utility Network (UN) Model	Plant & Field EG	2024	Jaison Busby	DMND0001423	B5.16.12	B5.16.12 DTE Gas Utility Network Model (UN)	16
13	DTE Gas Utility Network (UN) Model	Plant & Field EG	2025	Jaison Busby	DMND0001423	B5.16.13	B5.16.13 DTE Gas Utility Network Model (UN)	16
14	End of Life (EOL) Gas Device Program	Plant & Field EG	2022	Jaison Busby	BCD-PFG-22-019	B5.16.14	B5.16.14 End of Life (EOL) Gas Device Program	18
15	End of Life (EOL) Gas Device Program	Plant & Field EG	2022	Jaison Busby	BCD-PFG-22-018	B5.16.15	B5.16.15 End of Life (EOL) Gas Device Program	20
16	End of Life (EOL) Gas Device Program	Plant & Field EG	2022	Jaison Busby	BCD-PFG-22-020	B5.16.16	B5.16.16 End of Life (EOL) Gas Device Program	22
17	End of Life (EOL) Gas Device Program	Plant & Field EG	2023, 2024, 2025	Jaison Busby	DMND0001408	B5.16.17	B5.16.17 End of Life (EOL) Gas Device Program	24
18	End of Life (EOL) Gas Device Program	Plant & Field EG	2023, 2024, 2025	Jaison Busby	DMND0001409	B5.16.18	B5.16.18 End of Life (EOL) Gas Device Program	26
19	End of Life (EOL) Gas Device Program	Plant & Field EG	2023, 2024, 2025	Jaison Busby	DMND0001414	B5.16.19	B5.16.19 End of Life (EOL) Gas Device Program	28
20	Field Service Management for GasOps (Clicksoft)	Plant & Field EG	2022	Jaison Busby	BCD-PF-19-116	B5.16.20	B5.16.20 Field Service Management for GasOps (Clicksoft)	31
21	Field Service Management for GasOps (Clicksoft)	Plant & Field EG	2023	Jaison Busby	DMND0001696	B5.16.21	B5.16.21 Field Service Management for GasOps (Clicksoft)	32
22	Gas Scada Upgrade	Plant & Field EG	2024	Jaison Busby	DMND0002433	B5.16.22	B5.16.22 Gas Scada Upgrade	34
23	Gas Scada Upgrade	Plant & Field EG	2025	Jaison Busby	DMND0002433	B5.16.23	B5.16.23 Gas Scada Upgrade	34
24	Clicksoft Enhancements	Plant & Field EG	2024	Jaison Busby	DMND0001405	B5.16.24	B5.16.24 Clicksoft Enhancements	37
25	Clicksoft Enhancements	Plant & Field EG	2025	Jaison Busby	DMND0001405	B5.16.25	B5.16.25 Clicksoft Enhancements	37
26	Gas Enhancements	Plant & Field EG	2022	Jaison Busby	BCD-PFG-22-025	B5.16.26	B5.16.26 Gas Enhancements	39
27	Gas Enhancements	Plant & Field EG	2024	Jaison Busby	DMND0001698	B5.16.27	B5.16.27 Gas Enhancements	41
28	Gas Enhancements	Plant & Field EG	2025	Jaison Busby	DMND0001698	B5.16.28	B5.16.28 Gas Enhancements	41
29	Corrosion Database Upgrade	Plant & Field EG	2022	Jaison Busby	BCD-PF-21-040	B5.16.29	B5.16.29 Corrosion Database Upgrade	43
30	Corrosion Database Upgrade	Plant & Field EG	2023	Jaison Busby	DMND0002539	B5.16.30	B5.16.30 Corrosion Database Upgrade	45
31	DTE Gas Tripwire Program	Plant & Field EG	2022	Jaison Busby	BCD-PFG-21-039	B5.16.31	B5.16.31 DTE Gas Tripwire Program	48
32	DTE Gas Tripwire Program	Plant & Field EG	2022	Jaison Busby	BCD-PF-21-055	B5.16.32	B5.16.32 DTE Gas Tripwire Program	49
33	Gas Construction – As Builting	Plant & Field EG	2024	Jaison Busby	DMND0001811	B5.16.33	B5.16.33 Gas Construction – As Builting	50
34	Gas Construction – As Builting	Plant & Field EG	2025	Jaison Busby	DMND0001811	B5.16.34	B5.16.34 Gas Construction – As Builting	50
35	Gas Construction – Contractor Inspection	Plant & Field EG	2025	Jaison Busby	DMND0001766	B5.16.35	B5.16.35 Gas Construction – Contractor Inspection	52
36	Leak Survey	Plant & Field EG	2022	Jaison Busby	DMND0002199	B5.16.36	B5.16.36 Leak Survey	54
37	Leak Survey	Plant & Field EG	2023	Jaison Busby	DMND0002199	B5.16.37	B5.16.37 Leak Survey	54
38	SEMI Picarro Survey Unit Renewal	Plant & Field EG	2025	Jaison Busby	DMND0002603	B5.16.38	B5.16.38 SEMI Picarro Survey Unit Renewal	57
39	Surcharge Billing for Natural Gas Installations	Plant & Field EG	2023	Jaison Busby	DMND0002733	B5.16.39	B5.16.39 Surcharge Billing for Natural Gas Installations	59

DTE Energy

Executive Summary

Business Case ID	BCD-PF-21-025

Business Case Name	Records Work Flow for Engineering Construction and Gas Integrity & Compliance

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Sponsor	Alida Sandberg
Business Units Impacted	Gas

Project Description

Project Category	Strategic
Project Type	Solutions Delivery - On Prem

Innovation?	No
Strategic Fit	Distinctive Continuous Improvement Capability

Business Outcome

An automated process and management system that will orchestrate a repeatable pattern of workflows for compliance records that will transform forms (from current paper to digital fillable versions), records, handover processes, quality assurance, approvals and escalations that can track status. The solution will be cross departmental and will help ensure 100% regulatory compliance with Engineering Construction and Gas Integrity records.

Key Objectives

1) Primary objective is to determine feasibility of stated objectives and to establish an implementation strategy for Records Work Flow for Engineering Construction, Gas Integrity & Compliance, and to begin the implementation of the strategy.
2) Identification and Selection of product/tool (leverage existing or identify new), identify gaps, determine if a certified bolt on or 3rd party needed to remedy gaps, create design to implement new workflow process to ensure automation for records tracking, approvals, milestone tracking, quality assurance and job status visibility.
3) Records workflow management process should include automated approval and escalation processes
4) Maximo, SAP, and Primavera interfaces will be built to support integration between these real-time data points and the project management tool.
5) Monitor for (a) Project Management (cost, quality, delivery), (b)Project Defects, (c) Financial Metrics (Business Units Capital and Operational expense), (d) Continuous Improvement Metrics, (e) Safety Metrics, (f) Scorecards
6) Solution must have tracking mechanisms that can monitor 1) Forms 2) Documents 3) Tasks and 4) Data Extracts
7) Records workflow processes should be interdepartmental within Engineering Construction and Gas Integrity as well as applicable workgroups.
8) Eliminate multiple copies of the same documents that reside in different departments
9) Digitization of all documents. Please see the requirements document for more detailed requirements and documentation in scope.
10) Benchmarking with other utilities to determine the best possible solution

Start Month	January	2021	
Duration to Complete	Years	11	Months
End Month	December	2021	

Funding Source	Gas IT

Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	**Total**
Capital	$500,000	$0	$0	$0	$0	**$500,000**
O&M	$50,000	$0	$0	$0	$0	**$50,000**
OCM	$80,000	$0	$0	$0	$0	**$80,000**
Total O&M	$130,000	$0	$0	$0	$0	**$130,000**
Total	$630,000	$0	$0	$0	$0	**$630,000**

Hardware/Software/ Cloud	Year 1	Year 2	Year 3	Year 4	Year 5	**Total**
Capital	$30,000	$0	$0	$0	$0	**$30,000**
O&M	$7,500	$0	$0	$0	$0	**$7,500**

BU O&M	$0	Incremental Costs	$71,400

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0001421	Records Work Flow for Engineering Construction and Gas Integrity and Compliance

Stakeholders

Portfolio Category	Business Unit
Plant and Field	Gas Distribution Operations
Portfolio	**Business Unit Director**
Plant and Field: EG	Jaison J Busby
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Dave Molnar
Managed By	**PPS**
IT	150

Project Description

Investment Type	Initiative Type
Regulatory/Compliance	Solutions Delivery - On Prem

What business problem or opportunity are we trying to solve?

High pressure gas pipeline projects require extensive engineering and pressure test documentation, and these documents must be retained for the life of the asset (commonly 50+ years).The process of collecting, storing and retrieving MAOP (Maximum Allowable Operating Pressure) records is currently very labor-intensive which results in excessive annual spend for reviewing, validating and controlling record accuracy.There are no automated workflows to help insure consistent, timely processing and approval of MAOP records. Gas pipeline engineering design and approval processes often involve multiple handoffs between departments which results in multiple versions and stored copies of a document with inconsistent data.The MPSC has very specific rules regarding storage and retention of pipeline engineering and pressure test documents and DTE could be subject to routine audits. Fines and penalties may be assessed if DTE is unable to produce these documents in a timely manner. Most legacy documents are still on paper in scattered locations.When major incidents occur (leak, fire, explosion or loss of use) there are several regulatory agencies (MPSC, FERC, DOT, …) that may demand copies of these engineering and test documents to help determine cause or fault. Delays in producing the documents may result in significant fines and penalties being assessed to DTE.

What functionality or capability is being provided?

An automated process and management system that will orchestrate a repeatable pattern of workflows for compliance records that will transform forms (from current paper to digital fillable versions), records, handover processes, quality assurance, approvals and escalations that can track status.

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

Safety: 5% reduction in recordables due to less field verification Mitigate Enterprise/Operational Risk: 35% reduction in missing records Employee Engagement: 5% increase in staff with standardized processes Operational Excellence: top 5 industry leader in reacords management
• approx. $750k saved annually • IT & BU productivity: approx. 1,200 hours freed up • Inefficiencies due to supporting non-compatible products
The Cost Benefit will be realized as standard document workflows are established across business units. Aligning departments with these standard methods will generate greater efficiency and cross functionality. With established document practices, risk will be greatly mitigated.
Records easily accessible and in one place, greatly improve reliability and safety of gas system
• Expansion of capabilities • Applicability to other business units • Future efficiency gains This is part of a multi-phase project. 2020 is incorporating critical regulatory construction documents, 2021 incorporates Integrity Management records, 2022 incorporates Distribution records, future years will take into account Geology & Reservoir and Corrosion. This will also branch out into several document generating processes, incrementally incorporating most of DTE Gas documents into one easily searchable repository.

Define the Benefit/Value to the Organization, Customer, Employee.

The time it takes to perform current tasks and the amount of labor intensive processes will significantly decrease, improving engagement and productivity with employees. If these processes are improved well, this will lead to automating additional processes in that business unit and beyond, creating a much more aligned business overall. Customers will benefit from quicker turnaround on inquiries and higher reliability. 5% Reduction in MPSC complaints. • Reduction in pain points • 33% improvement in efficiency This project will significantly and positively effect approximately # employees.

How will you monitor and measure expected value?

We will leverage the gas cabinet functionality in Documentum to monitor and measure our benefits and values stated above. The Gas cabinet is structured so that project engineers and their support staff have clearly defined folder structures, naming conventions and attribution requirements for project related documents. The approval workflows are also very robust. These features helps to insure that all required documents for a project are generated and approved, little or no document duplication occurs, and audit and compliance functions can be performed very quickly and efficiently.

What alternatives have been considered?

Multiple iterations of this effort were initiated between 2018 and 2020, and the original business and IT teams did look at alternatives (the SharePoint repository being one of them). However, once the capabilities of the new Documentum version were reviewed and understood that solution was selected. The selection process largely occurred before the current IT and Business team members came aboard so we have little institutional knowledge of the exact processes or decision criteria used by our predecessors.

Start Date	End Date	Shared Asset	Funding Source
2023-01-02	2025-12-31	No	Gas IT

DTE

IT Costs

Type	FY23	FY24	FY25	Total
Capex	$750,948	$750,478	$750,743	**$2,252,169**
Opex	$112,108	$111,520	$108,350	**$331,978**
Total	**$863,056**	**$861,998**	**$859,093**	**$2,584,148**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0002211	EGMS Quorum Licensing Renewal

Stakeholders

Portfolio Category	Business Unit
Plant and Field	DTE Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Jennie A Aud
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Jennifer A Marinelli
Managed By	**PPS**
IT	200

Project Description

Investment Type	Initiative Type
Sustainment	Solutions Delivery - Cloud

What business problem or opportunity are we trying to solve?

Renewal of the EGMS Cloud Hosting Fee
The current Quorum cloud license contract runs through December 2022. If we do not renew the contract the team will not be able to use the EGMS Q(Quorum)Cloud.
EGMS (Electronic Gas Management System) is the electronic nomination system utilized to accept, validate, schedule, and process inbound nominations on DTE Gas and DTE Gathering Pipelines.
A nomination is a request to move gas on the DTE pipeline or into a DTE storage facility. Q- cloud is the

continued vendor cloud hosting services.

The cloud hosting solution provides the following security features:

1) MFA: Multifactor Authentication
2) Single Sign On: Requirement from IPS3) Indirect Access to DTE Network: Only connection to DTE network is an interface for measurement purposes4) SLA's: Service Level Agreement if service is compromised

What functionality or capability is being provided?

With the renewal of these licenses DTE would be able to facilitate daily nomination and confirmation workload for both internal and external business transactions that relate to the transportation and storage of natural gas for DTE.
A nomination is a request to move gas on the DTE pipeline or into a DTE storage facility.

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

It Aligns with the security metric as we have implemented:
MFA: Multifactor AuthenticationSingle Sign On: Requirement from IPS for all Cloud solutions. This will prevent any security vulnerabilitiesIndirect Access to DTE Network: Only connection to DTE network is an interface for measurement purposesSLA's: Service Level Agreement if service is compromised

DTE

Define the Benefit/Value to the Organization, Customer, Employee.
A cost benefit analysis was done on this project and it was determined that the Cloud hosted solution had an O&M cost savings of $1.6M. This encompasses the equipment and licensing fees that DTE would incur with on-premise equipment. Project Benefits: Equipment and Licensing Fees: DTE would not have to incur these fees or maintain on premise equipment Prepaying 3 years in advance qualifies to be paid out of Capital budget instead of paying from O&M budget

How will you monitor and measure expected value?
The contract will be reviewed at every renewal to evaluate the value this solution delivers

What alternatives have been considered?
Purchasing hardware and software for an on-premise system was the alternate solution. A cost benefit analysis was done on this project and it was determined that the Cloud hosted solution had an O&M cost savings of $1.6M. This encompasses the equipment and licensing fees that DTE would incur with on-premise equipment. A "do nothing" alternative would mean DTE will have to incur the O&M expense every year leading to a spending of $2,346,575 for the 3 years

Start Date	End Date	Shared Asset	Funding Source
2022-09-22	2026-12-31	No	Other Business Unit

IT Costs

Type	FY22	FY23	FY24	FY25	FY26
Capex	$797,689	$0	$0	$0	$871,656
Total	**$797,689**	**$0**	**$0**	**$0**	**$871,656**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

DTE Energy

Executive Summary

Business Case ID	BCD-PF-21-022

Business Case Name	Gas Sustainment R01

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Sponsor	Jaison Busby
Business Units Impacted	Gas

Project Description

Project Category	Sustainment
Project Type	Operational

Innovation?	No
Strategic Fit	Distinctive Continuous Improvement Capability

Business Outcome

Dedicated IT staff improves savings opportunities, team engagement and proactive management of DTE Gas Key, Critical and Standard applications. Success can be described as 100% availability and accuracy of all IT assests critical to Gas Operation. Necessary upgrades will keep the systems with less defects and fewer outages. These changes generally require 1 FTE with significant Developer experience, year-round.

Key Objectives

1) Monitor the production environment, to ensure availability and accuracy per the defined SLAs.
2) Ensure and meet business needs through consultation when exploring alternative solutions to problems encountered, trouble shooting production incidents & defects that surface.
3) Minor enhancements and minor upgrades to manage vulnerability issues and validation of Platform solutions that impacts Energy Gas business units.
4) Server patches needed for security, vulnerability and threat remediation.
5) Conduct quarterly reviews of BCP (Business Continuity Plan), participate in annual Tabletop exercise, and perform required tasks in accordance with the BCM (Business Continuity management) process.
6) Ensure SOX (Sarbannes-Oxley) midyear and yearend testing (EGMS), OPA (Order Processing System), which interfaces CR&B (Customer Relationship and Billing) to Service Suite for field order processing, as well as the Outbound Dialing.
7) Support OPA Web as a Business Continuity Management Tier 1 application which is responsible for dispatching within 30 minutes of the initial report per MPSC regulation.
8) TSO (Transmission and Storage Operations) One View for Transmission and Storage; enhancements for the transmission service centers
9) Emergent work as and when requested for MissDig, Predictive Dialer, Certificate expiration, security assessment, Data sharing requests and minor enhancements.
10)

Start Month	January	2021	
Duration to Complete	Years	11	Months
End Month	December	2021	

Funding Source	Gas IT

Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	**Total**
Capital	$810,000	$0	$0	$0	$0	**$810,000**
O&M	$120,000	$0	$0	$0	$0	**$120,000**
OCM	$0	$0	$0	$0	$0	**$0**
Total O&M	$120,000	$0	$0	$0	$0	**$120,000**
Total	$930,000	$0	$0	$0	$0	**$930,000**

Hardware/Software/ Cloud	Year 1	Year 2	Year 3	Year 4	Year 5	**Total**
Capital	$0	$0	$0	$0	$0	**$0**
O&M	$0	$0	$0	$0	$0	**$0**

BU O&M	$0	Incremental Costs	$0

DTE Energy

Executive Summary

Business Case ID	BCD-PFG-22-017

Business Case Name	Gas Application Health

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field PS EG
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Director	Shoshannah Lenski
Business Unit SME	Kutumba R Hanumolu
Business Units Impacted	Gas

Project Description

Initiative Category	Sustainment

Initiative Type	Operational

Business Opportunity	
What business problem are we trying to solve?	DTE Gas currently serves 33 Applications (2 Key, 4 Critical and 27 Standard Applications). Investment in these applications is crucial to match the dynamic business needs. This business case will provide funding for ongoing CI(Continuous improvement) activities, defects resolution as releases, vulnerability management to improve ITS processes and achieve the most efficient execution of Gas Operations Key, Critical and Standard Applications and meet business operational needs effectively.
What system or process is being affected?	This is an ongoing and annual investment to ensure the health and stability of a suite of applications within the portfolio to support Energy Gas Operations; Project Wise, Client Access To Information (CAI), Corrosion Gas, Customer Management Module (CMM), Distribution Integrity Management Program (DIMP), Electronic Gas Performance Management (EGPM), Electronic Flow Measurement (EFM), Electronic Gas Management System (EGMS) Energy Gas PI (PI = Process Information), Gas Measurement Instruments (GMI), Geographics Gas, Meter Management System - GAS (MTM), Order Processing Application (OPA) Web, OPA (Order Processing Application), Optimain, Predictive Outbound Dialer, SENDOUT, Service Bench, SYNERGEE, Transmission Risk Analysis, TSO ONE VIEW, VELOCITY SUITE, VELOCITY SUITE, Urbint Lens, NCIS (NORTHSTAR CUSTOMER INFORMATION SYSTEM), HPP SERVICES, GOT(GAS OUTAGE TRACKER), GAS SCADA, Gas Operations RPA
What functionality or capability is being provided?	This will provide scheduled security patches to the required supported tools on windows and linux servers to mitigate security vulnerabilities through approximately 12 expected security patch cycles. This will include effort necessary for license renewals, and production fixes as and when needed for the 33 DTE Gas Applications and help modify config changes between portfolio of applications. This will also establish monitoring capabilities across Gas Operartions applications as deemed necessary.
What is the customer or employee value?	Dedicated IT staff will contribute towards asset health change management and proactive management of DTE Gas Key, Critical and Standard applications ensuring high application availability and improved user experience.
What alternatives have been considered?	It is best practice to capture business process changes in all associated systems to maintain sustainable productivity and avoid manual workarounds.

Key Objectives
1) Establishing Monitoing criterias, configure and manage asset health.
2) Ensure and meet business needs through consultation when exploring alternative solutions to problems encountered, trouble shooting production incidents & defects reported by end users.
3) Defect resolution for the transmission service centers
4) Unforecasted Demand and support – special support requests and reporting, minor process/initiative efforts, and improvements and scaling of operational processes.
5) Conduct quarterly reviews of BCP (Business Continuity Plan), participate in annual Tabletop exercise, and perform required tasks in accordance with the BCM (Business Continuity management) process.
6) Ensure SOX (Sarbannes-Oxley) midyear and year end testing (EGMS), OPA (Order Processing System) which interfaces CR&B (Customer Relationship and Billing) to Service Suite for field order processing, as well as the Outbound Dialing.
7) Support OPA Web as a Business Continuity Management Tier 1 application which is responsible for dispatching.
8) Address critical emergent requests to support business continuity.
9) Rapid experimentation and proof of concepts to mature functionalities to meet business needs.

Start Month	January	2022
Duration to Complete	Years	11 Months
End Month	December	2022

Funding Source	Gas IT

IT Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	**Total amount is sent for approval on all business cases.** **Total**
Capital	$780,077	$0	$0	$0	$0	**$780,000**
O&M	$122,056	$0	$0	$0	$0	**$120,000**
Total	$902,133	$0	$0	$0	$0	**$900,000**

Business Unit Costs

BU O&M	$0	Trailing BU O&M Costs	$0

Year 1	Year 2	Year 3	Year 4	Year 5	**Total**

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0001411	Gas Application Health

Stakeholders

Portfolio Category	Business Unit
Plant and Field	DTE Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Jaison J Busby
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Shoshannah Lenski
Managed By	**PPS**
IT	200

Project Description

Investment Type	Initiative Type
Sustainment	Operational

What business problem or opportunity are we trying to solve?

DTE Gas currently serves 37 Applications. This business case will provide funding for ongoing CI (Continuous improvement) activities, vulnerability management through releases and patches to improve ITS processes and achieve the most efficient execution of Gas Operations Key, Critical and Standard Applications and meet business operational needs effectively.
Annually, about 5-6 applications related to business process improvements are requested. Common vulnerabilities found are mostly out of supported OS / Java / .NET frameworks and vendor-supported applications that run on older versions impacted by Company Security and business customer processes. Investment in these applications is crucial to match the dynamic business needs and address vulnerabilities which could become a security risk for the company.

DTE

What functionality or capability is being provided?
This will provide scheduled security patches to the required supported tools on windows and linux servers to mitigate security vulnerabilities through approximately 12 expected security patch cycles. This will include effort necessary for license renewals, version upgrades and minor production functional improvements as and when needed for the 37 DTE Gas Applications and help modify config changes between portfolio of applications. This will also establish monitoring capabilities across Gas Operations applications as deemed necessary. The 2023 scope will include: 2022 CAI re=platforming and reports migration carryoverSMS/Text message to the dispatcher for Maximo created orders (P1 & P2 Leak Orders and Emergency MISSDIG orders) SMTP configTransitioning Innovation efforts to Sustainment or Enhancements Enhancement work coming from CI Leadership (FLLE) Work StreamsMulti-Factor authentication (Talon-EFM, EGMS) including TSA DirectiveMigrate LDAP/AD/Application based authentication to Azure AD (OPA , MTM)Gas Choice related enhancementsMISS DIG - Pelican related enhancements (Auto-transmit of Tickets, Re-try mechanism for failed transactions, mapping of additional/changed Ticket Types)MISS DIG issues (smaller defects)Enable DRS user-interface to be able to add users, work orders and locationsDeploy off-line multi-user AutoCAD Platform (on prem)Field Tool (Itron) deployment for Gas Users on mobile devices and Itron ZigBee dongle implementationCross Street functionality enhancements for out of DTE Service Territory addressesFull automation of GRP file transfer (DTE to EcoSys/Hexagon)Move one off local (stand alone) solutions to Platforms and alignment of Gas IT Assets to tech. roadmap strategy Power Apps related work (Power BI, Power Automate etc.) on demand by business.TSO related enhancements (EzMax related , Inspection Forms, PI system configuration' PI system to Maximo Configuration for PM orders) - BC candidate!!ClickSoft related enhancements not covered under Field Service Management project (Quota mgt/Appointment book)OPA Sustainment if Clicksoft gets delayed and all the capabilities are not migrated (Oracle 12 c will have very limited support in 2023)Any Incidental/Emergent WorkVulnerabilities related work with other IT teamsContingency/Reserve and SupportTSA directives related workMTM upgrade 11g to 19cVelocity Suite upgradeSendout retirement and install PlexosPredictive Dialer 2023 Sustainment workCorrosion Support workApplication Monitoring Improvements The scope for 2024 and 2025 will include: -Innovation efforts to Sustainment or Enhancements (Super Dashboards)-Enhancement work coming from CI Leadership (FLLE) Work Streams-Multi-Factor authentication for Field Tools and other stand-alone applications including TSA Directive- MISS DIG - Pelican related enhancements and Business improvement changes.- TSO related enhancements and TSO ONE VIEW Upgrade - Any Incidental/Emergent Work- Vulnerabilities related work with other IT teams- Contingency/Reserve and Support- Synergee upgrade- Velocity Suite upgrade- Potential migration of Velocity Suite to cloud-Corrosion Support work PROJECT WISE Upgrade Predictive Dialer 2024 & 2025 Sustainment work Application Monitoring Improvements

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).
Mitigate Enterprise/Operational Risk: This is an ongoing annual investment to ensure the health and stability of a suite of applications within the portfolio of Energy Gas Operations.

Define the Benefit/Value to the Organization, Customer, Employee.
This will contribute towards asset health, change management and proactive management of DTE Gas Key, Critical and Standard applications ensuring high application availability, improved user experience and improved DTE cybersecurity posture by timely elimination of any security vulnerabilities through regularly scheduled security patches.

How will you monitor and measure expected value?
This will ensure availability of the Key and critical application at 99.9%

What alternatives have been considered?

DTE

The alternatives are:
1) Be proactive and maintain the asset health.
2) Not do anything and be reactive.

Start Date	End Date	Shared Asset	Funding Source
2023-01-02	2025-12-31	No	Gas IT

IT Costs

Type	FY23	FY24	FY25	Total
Capex	$1,088,817	$783,178	$777,294	**$2,649,289**
Opex	$123,378	$154,467	$120,444	**$398,289**
Total	**$1,212,195**	**$937,645**	**$897,738**	**$3,047,578**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0001423	DTE Gas UN(Utility Network) model

Stakeholders

Portfolio Category	Business Unit
Plant and Field	DTE Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Kelly M Fedele
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Barbara Saunders
Managed By	**PPS**
IT	100

Project Description

Investment Type	Initiative Type
Return-to-Health	Solutions Delivery - Cloud

What business problem or opportunity are we trying to solve?

DTE Gas GIS is currently managing two separate GIS Data models, one for the transmission assets, and one for the distribution assets. GIS is a geographic information system that creates, Manages, analyzes and maps all types of data. We have 2 of them one for the Distribution team and one for the Transmission. With this project we will merge them into one.
The current DTE Gas transmission model - ArcGIS Pipeline Data Model (APDM) is no longer supportedThe geometric model used for distribution assets, will not be supported after 2025.
By implementing the UN model, DTE Gas will have all assets in one unified data model, and be able to perform system analytics, from wellhead to customer meter.

What functionality or capability is being provided?

The following functionality will be provided by implementing this project: - One unified GIS data model for all DTE Gas assets - Station piping modeling in UN with assemblies & containers - Traceable system capabilities, from well head to customer meter - UPDM is fully supported by ESRI as an industry standard data model
2023:
Create a master plan with Gas scopeAssign a vendor to identify estimations for the funding and scope of the implementation.Change management impact analysisFuture hosting of GIS (desktop operation or change with interfaces)Identification of replacement products compatible with utility network.
2024 :
Actual work which includes Migration, Execution of the upgrade, change management, new tool, IT integration, training

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

This aligns with Operational excellence
Aligns with DTE IT ESRI GIS short and long-term strategic goalsAligns with Asset Management & Engineering - 2022 Priority Plan, to develop a supported, industry standard GIS platform for gas business

DTE

Define the Benefit/Value to the Organization, Customer, Employee.
Benefits: 1) Fully supported, industry standard GIS platform2) Eliminates waste by not maintaining two separate data models3) Reduction in operational risk with improved data quality4) Enhanced data accuracy 5) Improved risk assessment capabilities for DIMP (Distribution and Integrity Management Program, TIMP (Transmission and Integrity Management Program) & SIMP (Underground storage and Integrity Management Program)6) Improved reporting functions to meet regulatory requirements This will align us with the capability of realtime analysis and visualization of operational assets.

How will you monitor and measure expected value?
Performing adhoc analysis will be used for monitoring and Organizational change management (OCM)will be engaged for any training needs. Mapping efforts will be reduced as this will increase automation and reduce manual entry and inconsistencies

What alternatives have been considered?
No other alternative available. This is the industry standard therefore the following will be impacted: 1) GIS models will be outdated and unsupported. 2) We will still need to maintain two separate data models for DTE Gas.3) Other 3rd party software will become unsupported. 4) Increase security risk as a result of unsupported operating systems. 5) Lack of ability to expand the integration pf GIS systems with other corporate systems.

Start Date	End Date	Shared Asset	Funding Source
2023-01-02	2024-12-05	No	Gas IT

IT Costs

Type	FY23	FY24	Total
Capex	$505,882	$498,112	**$1,003,994**
Opex	$76,973	$76,570	**$153,543**
Total	**$582,855**	**$574,682**	**$1,157,537**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

DTE Energy

Executive Summary

Business Case ID	BCD-PFG-22-019

Business Case Name	Endpoint End of Life GAS Managed Service Agreement

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field PS EG
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Director	Jaison Busby
Business Unit SME	John Steven Bennett
Business Units Impacted	Gas

Project Description

Initiative Category	Sustainment

Initiative Type	Operational

Business Opportunity	
What business problem are we trying to solve?	DTE does not have the internal staffing levels or capacity to perform Endpoint Desktop support sevices in the downtown complex or Application Packaging. Meeting the work requirements with a contractor workforce aligned within a two year commitment schedule is not optimal for continuity of operations within the Endpoint Technology Experience team (ETX).
What system or process is being affected?	To secure the Managed Service Agreement (MSA) resources to support the End of Life process
What functionality or capability is being provided?	Third party personnel support for End Point deployments
What is the customer or employee value?	Provides knowledgable expertise in the deployment of End Point devices
What alternatives have been considered?	Use the equipments until they fail. Replace old equipment with newer approved models

Key Objectives
1) Provide Incident and Request services to over 10,000 enpdoint devices from cradle to grave.
2) Provide End of Life services to approximately 10% of the endpoint fleet annually
3) Walk-up support for mobile electronic devices
4) Develop, test and deploy corporate application packages
5) Provide Incident, Request and Maintenance services and support of those application packages

Start Month	January	2022
Duration to Complete	Years	11 Months
End Month	December	2022

Funding Source	Gas IT

IT Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	Total amount is sent for approval on all business cases. Total
Capital	$321,160	$0	$0	$0	$0	**$320,000**
O&M	$0	$0	$0	$0	$0	**$0**
Total	$321,160	$0	$0	$0	$0	**$320,000**

Business Unit Costs

BU O&M	$0	Trailing BU O&M Costs	$0

Year 1	Year 2	Year 3	Year 4	Year 5	**Total**

DTE Energy

Executive Summary

Business Case ID	BCD-PFG-22-018

Business Case Name	Endpoint End of Life GAS

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field PS EG
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Director	Jaison Busby
Business Unit SME	John Steven Bennett
Business Units Impacted	Gas

Project Description

Initiative Category	Return-to-Health

Initiative Type	Operational

Business Opportunity	
What business problem are we trying to solve?	In order to continue to maintain Asset Standard Compliance of 20% of the fleet per year, support the 7% growth in newly hired students/contractors/employees and increase mobility in the fleet on MDT's/iPads, current connected devices or computers must be replaced.
What system or process is being affected?	Not applicable
What functionality or capability is being provided?	Enhanced business performance
What is the customer or employee value?	Reduced waste and improved efficancy and functionality for employees
What alternatives have been considered?	Reduced Refresh rate: A reduced refresh rate with a corresponding reduction ins Asset Lifecycle Compliance Target. Run to Fail: Replacement of endpoints only upon failure

Key Objectives	
1)	2022 Endpoint End of Life (EOL) Device Replacements - Replace approximately 373 endpoint devices (314 endpoint and 60 MDT's) greater than 5 years old Note Steve to provide updated forecast
2)	Endpoint New Growth Devices: Business unit new hire growth approximately 7% annual (HR estimates 700 new hires in 2022 across the corporation, Verify with Rao)
3)	Mobility Growth Related Devices: Replace a limited number of Non-EOL desktop devices with mobile devices each year
4)	Endpoint Break/Fix: Repair or replace Non-EOL devices which are not covered under warranty
5)	Business unit requests for 5 or more devices will be considered project work and outside the scope of this business case due to the hardware and labor costs involved

Start Month	January	2022
Duration to Complete	Years	11 Months
End Month	December	2022

Funding Source	Gas IT

IT Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	Total amount is sent for approval on all business cases. Total
Capital	$2,097,937	$0	$0	$0	$0	**$2,100,000**
O&M	$0	$0	$0	$0	$0	**$0**
Total	$2,097,937	$0	$0	$0	$0	**$2,100,000**

Business Unit Costs

BU O&M	$0	Trailing BU O&M Costs	$0

Year 1	Year 2	Year 3	Year 4	Year 5	**Total**

DTE Energy

Executive Summary

Business Case ID	BCD-PFG-22-020

Business Case Name	Network End of Life Gas

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field PS EG
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Director	Jaison Busby
Business Unit SME	John Steven Bennett
Business Units Impacted	Gas

Project Description

Initiative Category	Return-to-Health

Initiative Type	Operational

Business Opportunity	
What business problem are we trying to solve?	Network assets supporting Gas Business have a definite end of life, during which time they may also be affected by bugs and vulnerabilities.
What system or process is being affected?	Network Equipments such as switches, routers and WAP (Wireless Access Points)
What functionality or capability is being provided?	Ensures sustainment of Gas operated devices and maintenance of device health. This effort replaces both EOL network hardware outside of corporate data centers, as well as additional network expansions to meet ongoing demand and performance expectations within a changing and aging IT infrastructure.
What is the customer or employee value?	Ensures Gas network device health
What alternatives have been considered?	Accepting a technology alternative for this would mean a move away from the established IT Cisco platform. This platform has been maintained and developed over the years since its inception and continued investment in like-technology provides efficiencies through established technology.

Key Objectives	
1)	SIN-19-001-F001 – Identification of End-of-Life (EOL) Network Infrastructure Corresponding IT Strategic Goal: Sustain and Strengthen the Foundation, Leverage Technology to Deliver Outstanding Business Value. This is in line with the Technology Roadmap Asset Sustainment Plans for 2017-2020.
2)	SIN-19-001-F002 – Implementation of EOL Network Hardware Corresponding IT Strategic Goal: Sustain and Strengthen the Foundation, Leverage Technology to Deliver Outstanding Business Value. This is in line with the Technology Roadmap Asset Sustainment Plans for 2017-2020.
3)	SIN-19-001-F003 - Replace EOL network cabling. Corresponding IT Strategic Goal: Sustain and Strengthen the Foundation, Leverage Technology to Deliver Outstanding Business Value. This is in line with the Technology Roadmap Asset Sustainment Plans for 2017-2020.
4)	SIN-19-001-F004 - Wireless LAN EOL Corresponding IT Strategic Goal: Sustain and Strengthen the Foundation, Leverage Technology to Deliver Outstanding Business Value. This is in line with the Technology Roadmap Asset Sustainment Plans for 2017-2020.

SIN-19-001-F005 - Network WAN Connectivity Improvements

5) Corresponding IT Strategic Goal: Sustain and Strengthen the Foundation, Leverage Technology to Deliver Outstanding Business Value. This is in line with the Technology Roadmap Asset Sustainment Plans for 2017-2020.

Start Month	January	2022	
Duration to Complete	Years	11	Months
End Month	December	2022	

Funding Source	Gas IT

IT Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	**Total amount is sent for approval on all business cases.** **Total**
Capital	$153,350	$0	$0	$0	$0	**$150,000**
O&M	$0	$0	$0	$0	$0	**$0**
Total	$153,350	$0	$0	$0	$0	**$150,000**

Business Unit Costs

BU O&M	$0	Trailing BU O&M Costs	$0

Year 1	Year 2	Year 3	Year 4	Year 5	**Total**

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0001408	Endpoint End of Life GAS

Stakeholders

Portfolio Category	Business Unit
Plant and Field	Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Jaison J Busby
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Daniel G Rose
Managed By	**PPS**
IT	100

Project Description

Investment Type	Initiative Type
Return-to-Health	Operational

What business problem or opportunity are we trying to solve?

In order to continue to maintain Asset Standard Compliance of 20% of the fleet per year, support the 7% growth in newly hired students/contractors/employees and increase mobility in the fleet on MDT's/iPads, current connected devices or computers must be replaced. Typically, the device types have a known "life" or duration for which they can be used before negatively impacting business objectives, and DTE IT replaces enough devices each year to retire those that create risk or cause degradation

Devices Life ExpectancyLaptop5Desktop5MDT5Monitors5

What functionality or capability is being provided?

Newer Endpoints will be provided as replacement for older EOL endpoints which will improve Business Performance. Here is the list of devices replaced per year.
Endpoints202220232024Laptops26170256Desktops11053176MDTs25000Monitors82100100Tablets02640 Used MDTs5200

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

Refresh older endpoint devices in alignment with the Asset Standard Compliance plan for 2023, 2024 and 2025.

Define the Benefit/Value to the Organization, Customer, Employee.

Newer devices will improve the employee experience by reducing downtime and improving performance and productivity.

How will you monitor and measure expected value?

Lifecycle standard compliance is expected to change by 2%

What alternatives have been considered?

Below are the alternatives
Reduced Refresh rate: A reduced refresh rate with a corresponding reduction in Asset Lifecycle Compliance Target. Run to Fail: Replacement of endpoints only upon failure
A "do nothing" alternative considered would be to leave these EOL devices in place until they no longer function, increasing the likelihood of system and personnel downtime, causing interruptions to normal business operations.

DTE

Start Date	End Date	Shared Asset	Funding Source
2023-01-02	2025-12-31	No	Gas IT

IT Costs

Type	FY23	FY24	FY25	Total
Capex	$1,078,105	$1,270,997	$1,439,080	**$3,788,182**
Opex	$17,515	$16,621	$16,374	**$50,510**
Total	**$1,095,620**	**$1,287,618**	**$1,455,454**	**$3,838,692**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0001409	Endpoint End of Life GAS Managed Service Agreement

Stakeholders

Portfolio Category	Business Unit
Plant and Field	Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Jaison J Busby
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Daniel G Rose
Managed By	**PPS**
IT	100

Project Description

Investment Type	Initiative Type
Return-to-Health	Operational

What business problem or opportunity are we trying to solve?

To secure the Managed Service Agreement (MSA) resources to support the End of Life process.

This includes, remote analysis, identification of hardware and software issues, industry and DTE repair solution implementation, data safety and integrity, and accessibility via the DTE Network to maintain security of the devices.

This will secure capital labor supporting deployment of the endpoints purchased under the Endpoint EOL. . The number of new device to deploy changes every year. It would be very costly to hire an entire staff of people to deploy 800 devices 1 year and then 150 the next. This approach maintains budgetary flexability and allows employee to focus on critical work. Meeting these work requirements with a partner-aligned workforce under a fixed price agreement is a more effective way to perform this work. Through this effort, the Company will be able to manage the EOL Endpoint assets in an efficient manner. This includes remote analysis, identification of hardware and software issues, industry and DTE repair solution implementation, data safety and integrity, and accessibility via the DTE Network to maintain security of the devices

What functionality or capability is being provided?

Third party personnel support for End Point deployments

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

Through this effort, the Company will be able to manage the EOL Endpoint assets in a timely manner. This includes, remote analysis, identification of hardware and software issues, industry and DTE repair solution implementation, data safety and integrity, and accessibility via the DTE Network to maintain security of the devices.

Define the Benefit/Value to the Organization, Customer, Employee.

The Company deliberately does not maintain the internal staffing levels/capacity to perform all Endpoint desktop support services in the headquarters complex or to perform application packaging for the newly deployed devices. Meeting these work requirements with a partner aligned workforce under a fixed price agreement is a more effective way to perform this work.

DTE

How will you monitor and measure expected value?
Improved Incident Management5%Improved Request Management 5%Lifecycle standard and schedule Compliance2%

What alternatives have been considered?
If support and maintenance is not available for the devices, end users will have decreased satisfaction due to higher failure rates and reduced performance. A "do nothing" alternative would result in delays or an inability to execute endpoint deployments or packages in a timely manner to meet the needs of our organization who must support our customers, even while remote.

Start Date	End Date	Shared Asset	Funding Source
2023-01-02	2025-12-31	No	Gas IT

IT Costs

Type	FY23	FY24	FY25	Total
Capex	$320,779	$320,491	$320,491	**$961,760**
Opex	$741	$494	$0	**$1,235**
Total	**$321,520**	**$320,985**	**$320,491**	**$962,995**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

Executive Summary

Business Case Number	Business Case Name
DMND0001414	Network End of Life Gas

Stakeholders

Portfolio Category	Business Unit
Plant and Field	Gas Distribution Operations
Portfolio	**Business Unit Director**
Plant and Field: EG	Jaison J Busby
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Saikrishna R Gangeddula
Managed By	**PPS**
IT	100

Project Description

Investment Type	Initiative Type
Return-to-Health	Operational

What business problem or opportunity are we trying to solve?

Network assets supporting Gas Business have a definite end of life. Typically, the device types have a known “life” or duration for which they can be used before negatively impacting business objectives, and DTE IT replaces enough devices each year to retire those that create risk or cause degradation.
Additionally, Wi-Fi infrastructure has long been lagging behind Wired networks and has since become obsolete while the demands/criticality on Wi-Fi has been grown exponentially in the last couple of years. It is critical to bring the WIFI infrastructure to a baseline where it can meet business needs in a more sustainable state. Starting from 2023- 2025 the major focus will be WIFI upgrades needed at the prioritized Gas stations.
Especially during the pandemic, Wi-Fi enabled the resources to work safely maintaining social distancing, rather than being in close quarters. Wi-Fi makes it more feasible to maintain social distancing, than wired networks.

DTE

What functionality or capability is being provided?
The Network EOL project ensures sustainment of Gas operated network assets and maintenance of the asset health. This effort replaces both EOL network hardware outside of corporate data centers, as well as additional network expansions and WIFI infrastructure upgrade to meet ongoing demand and performance expectations within a changing and aging IT infrastructure. 2023 Will replace 0 switches/Routers and 65 Wireless Access Points Will replace 61 additional WAPS (Wireless Access Points) and will complete wiring and parking lot / external at RRORC, BGRCT, COLSC and BRMCS. (BGRCT: Big Rapids Office and service center, COLSC: Coolidge Service Center, BRMCS: Bell River Mills Compression Station, RRORC: River Rouge Operations Resource center) Need additional funding for the WIFI upgrades for 2023 2024/2025 Will replace 0 switches/Routers and 65 Wireless Access PointsNeed additional funding for the WIFI upgrades for 2024/2025 2023 Wi-Fi planning for Gas sites: SiteIndoor APOutdoor AP (Network)Outdoor AP (Conduit/Power)NotesRiver Rouge ORC - RRORC208 Addressing coverage issues inside the building, updating existing layout to meet updated requirement, updating access points to supported models, and adding outdoor coverage in the parking areas and truck bays.-Need prints for outdoor area, building b, building c, and spoiles.Big Rapids - BGRCT206 Addressing coverage issues inside the building, updating existing layout to meet updated requirement, updating access points to supported models, and adding outdoor coverage in the parking areas and truck bays.Coolidge - COLSC3083Addressing coverage issues inside the building, updating existing layout to meet updated requirement, updating access points to supported models, and adding outdoor coverage in the parking areas and truck bays.-Need prints for B Building.Belle River Mills - BRMCS20151Addressing coverage issues inside the building, updating existing layout to meet updated requirement, updating access points to supported models, and adding outdoor coverage in the parking areas and truck bays.-Need prints 2024/2025 Wi-Fi planning for Gas sites: Milford - MILSC156 Addressing coverage issues inside the building, updating existing layout to meet updated requirement, updating access points to supported models, and adding outdoor coverage in the parking areas and truck bays.-Recent upgradesWillow Run Compressor - WRCS146 Addressing coverage issues inside the building, updating existing layout to meet updated requirement, updating access points to supported models, and adding outdoor coverage in the parking areas and truck bays.Citizens Gas - CZGAS16 Addressing coverage issues inside the building, updating existing layout to meet updated requirement, updating access points to supported models, and adding outdoor coverage in the parking areas and truck bays. -No drawings or floorplans.Cadillac - CADSC82 Addressing coverage issues inside the building, updating existing layout to meet updated requirement, updating access points to supported models, and adding outdoor coverage in the parking areas and truck bays.Kingsford - KNGSC82 Addressing coverage issues inside the building, updating existing layout to meet updated requirement, updating access points to supported models, and adding outdoor coverage in the parking areas and truck bays.-No drawings or floorplansSix Lakes - SIXSC84 Addressing coverage issues inside the building, updating existing layout to meet updated requirement, updating access points to supported models, and adding outdoor coverage in the parking areas and truck bays.-Prints for new office only.Columbus - COLCS57 Addressing coverage issues inside the building, updating existing layout to meet updated requirement, updating access points to supported models, and adding outdoor coverage in the parking areas and truck bays. Ludington - LUDSC621Addressing coverage issues inside the building, updating existing layout to meet updated requirement, updating access points to supported models, and adding outdoor coverage in the parking areas and truck bays.
Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

DTE

This effort replaces both EOL network hardware as well as additional network expansions to meet ongoing demand and performance expectations within a changing and aging IT infrastructure. It Aligns with keeping our network assets robust and secure and free of vulnerabilities.

Define the Benefit/Value to the Organization, Customer, Employee.

This effort will improve asset health by remediating end of life devices, bugs, and vulnerabilities and Wifi network upgrade for business continuity. Thus ensuring more reliable, robust and secure networks.

How will you monitor and measure expected value?

Network Asset Health2%

What alternatives have been considered?

Accepting a technology alternative for this portion of the Program would mean a move away from the established IT Cisco (Cisco is a leading manufacturer of Networking equipment) platform. This platform has been maintained and developed over the years since its inception and continued investment in like-technology provides efficiencies through established technology. Changing this platform would be prohibitively expensive as numerous dependent devices and systems are architected based on the continued technology choice developed over the years since its inception and continued

A "do nothing" alternative would mean leaving components in place that are end-of-life instead of mitigating the ongoing risk of failure for both the equipment and business objectives. This alternative is also not selected as the interruption to normal business operations would be untenable.

Start Date	End Date	Shared Asset	Funding Source
2023-01-02	2025-12-31	No	Gas IT

IT Costs

Type	FY23	FY24	FY25	Total
Capex	$576,092	$480,045	$269,026	**$1,325,164**
Opex	$1,482	$1,482	$741	**$3,705**
Total	**$577,574**	**$481,527**	**$269,767**	**$1,328,869**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

DTE Energy

Executive Summary

Business Case ID	BCD-PF-19-116

Business Case Name	Field Service Management for GasOps Y1

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field
IT Director	Jaison Busby
Managed by	MEP

Business Unit	Gas Operations
Business Unit Sponsor	Shoshannah Lenski
Business Units Impacted (multiselect)	☐ Electric ☑ Gas ☐ Corporate ☐ Customer Service ☐ IT

Project Description

Project Category	Strategic
Project Type	Solutions Delivery - Cloud

Innovation?	No
Strategic Fit	Clear Growth & Value Creation Strategy

Business Outcome

1) Productivity / Performance:One dispatching application for entire Gas Operations, Optimized Processes with Artificial intelligence, Improved dispatcher and field crew productivity, Enable storing/viewing of documents from mobile application, Increased workflow efficiency, Automation to drive productivity and customer engagement, Multiple appointment books supporting business unit needs to keep customer commitments. 2) Higher Visibility: All GO crews will be visible to dispatchers, Real time status at point of activity, Predictive traffic with live traffic display using google map, Mobile Contract Management, Enhanced worker safety, Cost elimination by sending right crews to right job. 3) Time Management: Auto Capture of timesheet at POA against correct work order. No need to support stand alone timesheet application, Real time status at point of activity, Predictive traffic with live traffic display using google map, Contractor management with contractor mobile. 4) Application Maintenance: Seamless Upgrade with guaranteed 99.9% uptime, Faster Implementation with immediate access to new features, Reduced TCO (no hardware requirements for DTE), System scalability to support growth

Key Objectives

1) Provide real-time ability to capture work status at the point of activity
2) Empower field technicians by providing mobile experience
3) Increase technician productivity
4) Increase technician's and customer's safety
5) Increase dispatchers and technicians agility to address Field Service Management capabilities like Scheduling & Dispatching
6) Improve communication between field technicians and back office personnel
7) 2019 Scope: Requirement Blueprinting

Start Month	October	2019	
Duration to Complete	1	Years 7	Months
End Month	May	2021	

Funding Source	Other Business Unit

Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Capital	$377,552	$5,002,563	$4,058,683	$0	$0	**$9,438,798**
O&M	$104,488	$976,892	$1,132,307	$0	$0	**$2,220,209**
OCM	$0	$255,750	$127,875	$0	$0	**$383,625**
Total O&M	$104,488	$1,232,642	$1,260,182	$0	$0	**$2,603,834**
Total	$482,040	$6,235,205	$5,318,865	$0	$0	**$12,042,632**

BU O&M	$470,000

Incremental Costs	$3,024,000

Prioritization Score

A higher score is desired for both the benefits and risk score. The sum of the two is the compiled score

Benefits Score		Complexity Score		Compiled Prioritization Score
43.6	+	23.1	=	66.7

Red: 0 - 25
Yellow: 26 - 44
Green: 45 - 100 (max)

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0001696	Field Service Management for GasOps (Clicksoft)

Stakeholders

Portfolio Category	Business Unit
Plant and Field	Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Lance E Esparza
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Andrew T Cairo
Managed By	**PPS**
MEP	100

Project Description

Investment Type	Initiative Type
Return-to-Health	Solutions Delivery - Cloud

What business problem or opportunity are we trying to solve?

The current field service management system (Service Suite) has been deemed end of life by the vendor. Effective December 2019, they would no longer support the product. This poses many risks to DTE, as the vendor will no longer provide enhancements or defect remediation to this product and will no longer invest in ensuring its stability. They will neither provide critical security updates to ensure the safety of the software from new cyber threats nor the current version has any cloud capabilities. It has increasing turnaround time on defects and enhancements, has limited mobile device capabilities and custom interfaces. Moreover the current architecture is also not flexible and prevents scaling.

What functionality or capability is being provided?

The following functionality will be provided by implementing this project: 1) Productivity / Performance: One dispatching application for entire Gas Operations, Optimized Processes with Artificial intelligence, Improved dispatcher and field crew productivity, Enable storing/viewing of documents from mobile application, Increased workflow efficiency, Automation to drive productivity and customer engagement, Multiple appointment books supporting business unit needs to keep customer commitments. 2) Higher Visibility: All Gas Operations crews will be visible to dispatchers, Real time status at point of activity, Predictive traffic with live traffic display using google map, Mobile Contract Management, Enhanced worker safety, Cost elimination by sending right crews to right job. 3) Time Management: Auto Capture of timesheet at POA(point of activity) against correct work order. No need to support stand alone timesheet application, Real time status at point of activity, predictive traffic with live traffic display using Google map, Contractor management with contractor mobile. 4) Application Maintenance: Seamless Upgrade with guaranteed 99.9% uptime, Faster Implementation with immediate access to new features, Reduced TCO (Total cost of ownership) and System scalability to support growth.

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

This implementation aligns with Enhanced worker safety and Improve Communication between customers satisfaction by ensuring timely scheduling and deployment of our field resources in turn allowing us to serve our customers faster and with increased efficiency

DTE

Define the Benefit/Value to the Organization, Customer, Employee.
The value of completing the project is real-time contact center response time reporting vs. hourly reporting, this will provide enhanced user interface, targeted troubleshooting and faster root cause analysis. Moreover the planned outages cost between $10-$15k for the current system but could be completely discontinued with a move to the ClickSoft product. In terms of further benefits, the ClickSoft field service management product is cloud-based and enables configuration within the product as opposed to on the server, eliminating the need for the costly EOL (End of life) equipment supporting the server based Service Suite. Changes, if needed, would be possible again, improving our security posture as well as the reliability of information for our field workers – all contributing to timely reaction to gas leaks, outages, and all other needs in the field. This investment and all the provided efficiencies will therefore ensure the timely scheduling and deployment of our field resources in turn allowing us to serve our customers faster and with increased efficiency.

How will you monitor and measure expected value?
We will monitor and measure our anticipated benefits by tracking the number of planned outages within Service Suite.

What alternatives have been considered?
An alternative technology solution would include the latest version of the ABB Service Suite; however, it is more costly and delivers fewer features. A "do nothing" alternative is not acceptable because the current product is at the end of its useful life, is no longer supported by the vendor, and carries significant security and safety risk both in terms of security support and active field activity. An alternative technology solution would include the latest version of the ABB Service Suite; however, it is more costly and delivers fewer features.

Start Date	End Date	Shared Asset	Funding Source
2023-01-02	2023-12-31	No	Gas IT

IT Costs

Type	FY23	Total
Capex	$3,304,009	**$3,304,009**
Opex	$1,413,978	**$1,413,978**
Total	**$4,717,987**	**$4,717,987**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$283,456
Vendor Support & Licensing		$375,000

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0002433	Gas Scada Upgrade

Stakeholders

Portfolio Category	Business Unit
Plant and Field	DTE Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Jaison J Busby
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Beena Anand
Managed By	**PPS**
IT	100

Project Description

Investment Type	Initiative Type
Return-to-Health	Operational

What business problem or opportunity are we trying to solve?

The SCADA (Supervisory Control and Data Acquisition) system is a collection of sequestered, secure IT components including operator workstations, servers, and software. The proper functioning of these components is critical to the safe operations of natural gas for nearly 7,000 endpoints on the system, which includes pressures, flow rates, & valve positions.
The current SCADA system was last upgraded in 2016; which included upgrading the hardware, supporting software, and the SCADA operating system from AVEVA (vendor).

•The SCADA hardware and software is already or will no longer be supported by vendors starting in 2023
•Hardware: Operator workstations are already out of warranty and the physical servers will not be supported beginning in 2023
•Software: The Windows Server 2012 R2 operating system will be at end of serviceable life starting October 2023

•Aging hardware and software eventually require upgrade or replacement of components, which can be challenging or impossible due to shortage of supplies

•Once hardware and software has reached the end of its support lifecycle, Dell and Microsoft will stop publishing updates (security and non-security), patches, & fixes.

•Cybersecurity compliance requirements (Transportation Security Administration Security Directive 2C) and cybersecurity risks
–New patches are unavailable for hardware and software as described above
–Vulnerability to cybersecurity attacks such as ransomware due to inability to patch
–Possible non compliances that may result in penalties for DTE Gas as TSA SD2C requires patching OT system every 35 days, update Antivirus definition every 2 weeks
For Gas Control to continue monitoring/control of DTE Gas pipeline system, meet existing and emerging cybersecurity compliance requirements (TSA), the Gas SCADA system needs to be upgraded in 2024.

DTE

What functionality or capability is being provided?
The new hardware and software will improve performance of the SCADA system; increase reliability and allow updates and patching of the hardware and software to meet TSA cybersecurity compliance: Scope: •SCADA –DTE Energy (ITS, BRM, GOT, Gas Control) •Purchase of new hardware and software in accordance with vendor recommendation •Installation of hardware and software in Detroit Data Center (DDC), Ann Arbor Data Center (ADC), including workstation rollout at Detroit and Willow gas control facilities •Coordination and administration of changes, communication to all stakeholders •Point-to-point (P2P) parallel testing •Implement new features such as account management (TSA) –AVEVA (vendor) •Migration of Gas Control displays, reports, and databases •Enterprise SCADA System installation and configuration •Training •Project Management services •Testing and validation •Measurement –Installation and configuration of Measurement Advisor software –Migration of existing reports and database –Training –Project Management services –Testing and validation of reporting for impacted business units including Engineering & Gas Nominations –New features including AGA 11 (Coriolis), reporting, & data import/export •Additional features in the new SCADA software can help meet CRM (Control Room Management) requirements •P2P verification •Operator notes (shift changes electronically) •Enhanced HMI features on gas control displays

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).
- Use SCADA system that has current versions of the hardware and software in order to patch and update regularly

Define the Benefit/Value to the Organization, Customer, Employee.
1) Allow DTE Gas to provide reliable gas supply to customers by monitoring the pipeline system 24/7/365 using the Gas SCADA system2) Solution will help DTE Gas with TSA compliance requirements

How will you monitor and measure expected value?
- Project scope includes training, testing and validation that will require documenting new processes, procedures- Project plan and costs include involving MEP and Change management

What alternatives have been considered?
Alternative option would be to upgrade the software and hardware in different phases. The option is not cost effective as it will require configuring, testing and validation twice. The first phase of only the hardware being upgraded and the second phase upgrading the software. Also, by the time software is upgraded the hardware is already 2 years old using up a portion of the hardware warranty.A do nothing alternative can not be seriously considered since leaving the system as-is for the foreseeable future could cause critical system reliability and safety issues for the public.

Start Date	End Date	Shared Asset	Funding Source
2024-01-10	2025-06-30	No	Gas IT

DTE

IT Costs

Type	FY24	FY25	Total
Capex	$2,880,000	$1,240,001	**$4,120,001**
Opex	$95,000	$70,000	**$165,000**
Total	**$2,975,000**	**$1,310,001**	**$4,285,001**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$100,000
Organizational Change Management		$0
Vendor Support & Licensing		$280,000

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0001405	ClickSoft Enhancements

Stakeholders

Portfolio Category	Business Unit
Plant and Field	Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Lance E Esparza
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Andrew T Cairo
Managed By	**PPS**
IT	6.2

Project Description

Investment Type	Initiative Type
IT Enhancements	Solutions Delivery - Cloud

What business problem or opportunity are we trying to solve?

Clicksoft is the new Field service Management toll for Gas Operations which will be implemented in the 4 th quarter of 2023. Post implementation of the ClickSoft project, the Company has established a plan to continue to enhance and build out the solutions functionality to benefit the business units and our customers. This project will further enhance processes with the Appointment Book, MISS DIG, Timesheet interaction with ERP and Enterprise Service Bus systems within DTE.

What functionality or capability is being provided?

The highest priority enhancement will be to implement functionality for the Appointment Book for the purpose of quota management. This was not included in the initial scope not due to it being missed, rather to establish scope boundaries for the initial implementation of Clicksoft. The project would require the integration of ClickSoft with Appointment Book. The increased capability will likely take place with respect to system integration, reporting and analytical tools to be able to maintain the level of detail we have today.
Stabilize the new environment
Experience less downtime
Enhanced reporting and analytics
Improved integration with source systems
Quicker response to emergent issues
Improved capabilities with respect to scheduling and routing work Utilize dashboards for data analytics to improve customer service experience and processes
Improve NPS and Customer Service satisfaction metrics
Improved documentation of Customer Service work

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

Mitigate Enterprise/Operational Risk, Employee Engagement, Close NPS gap, Operational Excellence & Safety

DTE

Define the Benefit/Value to the Organization, Customer, Employee.
Completing this enhancement will allow optimal integration of our tools to meet customer demand and efficiently book appointments for our customers in the interest of maximizing field productivity and minimizing missed customer appointments. Employee value may include faster dispatching and leak response, improve time commitments and greater value provided in the use of analytical tools yielding higher productivity. The most important Customer Service value will include Customer Service safety and a quicker response to emergent and scheduled orders. Additional benefits include greater analytical capability and increased visibility to defects and failures earlier in our processes. Measuring of current vs future state is not applicable at this time since the ClickSoft product hasn't been implemented yet. However past implementations have shown there will be missing features that have been descoped or promised functionality that wasn't able to be delivered due to complexity or new desired ways of using the software that needs some enhancements to function."

How will you monitor and measure expected value?
Reduced time of manual tasks, less rework and productivity improvement: This enhancement will allow us to meet customer demand, and efficiently book appointments for our customers in the interest of maximizing field productivity and minimizing missed customer appointments.

What alternatives have been considered?
Other alternatives were considered but they were technically infeasible to do (Click) or failed to meet the requirements of quota management (CRM), thus why ODM was chosen as a solution path. As for the benefit this will ensure the business meets MPSC mandates of maintenance frequency without overwhelming the work force and maintain availability of customers to schedule appointments. If we are unable to implement this enhancement, we run the risk of overbooking appointments for customers leading to missed appointments and ultimately poor customer satisfaction.

Start Date	End Date	Shared Asset	Funding Source
2024-01-02	2025-12-31	No	Gas IT

IT Costs

Type	FY24	FY25	Total
Capex	$700,042	$699,886	**$1,399,928**
Opex	$150,334	$149,648	**$299,982**
Total	**$850,376**	**$849,534**	**$1,699,910**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

DTE Energy

Executive Summary

Business Case ID	BCD-PFG-22-025

Business Case Name	Gas Enhancements

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field PS EG
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Director	Jaison Busby
Business Unit SME	Kutumba R Hanumolu
Business Units Impacted	Gas

Project Description

Initiative Category	IT Enhancements

Initiative Type	Operational

Business Opportunity	
What business problem are we trying to solve?	Enhancement to the changing needs of business and implementing technology features for all the 33 Gas Operation applications.
What system or process is being affected?	33 Applications (2 Key, 4 Critical and 27 Standard) supported by DTE Gas: Project Wise, Client Access To Information (CAI), Corrosion Gas, Customer Management Module (CMM), Distribution Integrity Management Program (DIMP), Electronic Gas Performance Management (EGPM), Electronic Flow Measurement (EFM), Electronic Gas Management System (EGMS) Energy Gas PI (PI = Process Information), Gas Measurement Instruments (GMI), Geographics Gas, Meter Management System - GAS (MTM), Order Processing Application (OPA) Web, OPA (Order Processing Application), Optimain, Predictive Outbound Dialer, SENDOUT, Service Bench, SYNERGEE, Transmission Risk Analysis, TSO ONE VIEW, VELOCITY SUITE, VELOCITY SUITE, Urbint Lens, NCIS (NORTHSTAR CUSTOMER INFORMATION SYSTEM), HPP SERVICES, GOT(GAS OUTAGE TRACKER), GAS SCADA, Gas Operations RPA
What functionality or capability is being provided?	This will provide required enhancements (between 40-160 hrs of effort) and new fuctionality to the applications in production environment to align with the technology roadmap. This will also include server procurement and upgrades, including upgrades to the databases systems, server OS, and the physical/virtual hardware systems, such as, CPUs, memory and various hardware components as and when needed for the applications supported by DTE Gas.
What is the customer or employee value?	Improving the capabilities of the portfolio of Gas Operation applications that supports automation and productivity of our business units.
What alternatives have been considered?	Continually assess and validate the features if they could be implement in platform solutions before enhancing as Standalone applications.

Key Objectives	
1)	Automating processes and procedures associated with Gas Operation application , hence reducing risk of human performance errors.
2)	Emergent and minor enhancement as and when requested for MissDig, Predictive Dialer, Digital Run sheets and Power Apps. This will also include any transition of application which are production ready from Innovation rapid experimentation.
3)	Necessary upgrades to manage vulnerability issues and validation of Platform solutions that impacts Energy Gas business units.
4)	Server OS upgrades and hardware improvements for system performance and reliability and availability of key systems.
5)	Upgrade and operationalize data storage management of archived data to reduce storage costs and improve operational availability of the critical data sets (purging old data)
6)	TSO (Transmission and Storage Operations) One View for Transmission and Storage; enhancements for the transmission service centers
7)	Support OPA Web as a Business Continuity Management Tier 1 application which is responsible for dispatching within 30 minutes of the initial report per MPSC regulation.
8)	Implementing new features of transforming to platform solution in alignment with technology roadmap

Start Month	January	2022	
Duration to Complete	Years	11	Months
End Month	December	2022	

Funding Source	Gas IT

IT Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	**Total amount is sent for approval on all business cases.** **Total**
Capital	$393,113	$0	$0	$0	$0	**$390,000**
O&M	$56,444	$0	$0	$0	$0	**$60,000**
Total	$449,557	$0	$0	$0	$0	**$450,000**

Business Unit Costs

BU O&M	$0	Trailing BU O&M Costs	$0

Year 1	Year 2	Year 3	Year 4	Year 5	**Total**

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0001698	Gas Enhancements

Stakeholders

Portfolio Category	Business Unit
Plant and Field	Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Julia L Huffman
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Julia L Huffman
Managed By	**PPS**
IT	3.5

Project Description

Investment Type	Initiative Type
IT Enhancements	Operational

What business problem or opportunity are we trying to solve?

We have a list of Gas IT assets such as GT viewer and OPA (Order Processing Application) which are running on unsupported version that are required to transition to platform solutions to address the continued business objectives and align with Technology roadmap. This effort will also include transitioning of innovation effort from proof of concepts/pilot to delivery of production applications. This would proactively meet the business technology needs in a timely manner and stay in par with expected security posture (such as implementation of MFA for cloud solutions).
Some of the Assets have been identified and are in scope for enhancements to meet the Cyber security Compliance are:
i. OPA: This is vulnerable as it is currently residing on the ORACLE 12 C database. We will retire this in 2024.
ii. AutoCAD: Enroll in SSO for AutoCAD cloud solution. Autodesk is using SAML 2.0 and supports Active Directory Federation Service and Azure

What functionality or capability is being provided?

This will provide required enhancements (greater than160 hrs of effort) and new functionality to the applications in production environment to align with the technology roadmap. This will include server procurement, upgrades to the databases systems, server OS, and the physical/virtual hardware systems (such as, CPUs, memory and various hardware components as and when needed) for the applications supported by DTE Gas.

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

The enhancements will help increasing the safety and mitigate operational risks and improve growth opportunities.
Safety: Meeting MPSC commitments on time for MISSDIG
Operational Excellence: 100% availability of our prod systems

DTE

Define the Benefit/Value to the Organization, Customer, Employee.
Improving the capabilities of the portfolio of Gas Operation applications that supports automation and productivity of our business units mitigating operational risks and complying with the cybersecurity and TSA regulations Customer Experience will receive enhanced Caller ID on NICE improving customer response. MISSDIG requirements delivered as required by MPSC Provide 100% availability and accuracy of all IT assets critical to Gas Operations while improving system unplanned outage interruptions.

How will you monitor and measure expected value?
There will be ongoing assessment for the value efficiencies for process changes and technology enhancements. Training and change management processes for any new procedures and processes will be incorporated with the project delivery. Customer Experience 3With the enhanced Caller ID on NICE will improve customer responseatleast by 20%Improving the capabilities of the portfolio of Gas Operation applications that supports automation and productivity of Gas business units. Employee Engagement 310% improvement in efficiencyimprove proactive management of DTE Gas Key, Critical and Standard applications. Affordability 3100% availability and accuracy of all IT assests critical to Gas OperationTarget: 100% availability and accuracy of all IT assests critical to Gas Operation Cost/BenefitCBR value:1Provide CBR and/or IRR valueIRR value: Operational ReliabilitySecurity Patches6• Greater than 5% Reduction in IT system outage duration or interruptions.Acknowledge Incidents < 1 business day (Delivery)Incidents closed or dispositioned < 5 days (Cost)> 95% incidents Closed Confirmed (Quality)Necessary upgrades will keep the systems with less defects and fewer outages.Necessary upgrades will keep the systems with less defects and fewer outages.

What alternatives have been considered?
Continually assess and validate the features if they could be implemented in platform solutions before enhancing as Standalone applications. Without this effort to bring in new and improved functionality, we will have degraded performance and lose the ability to resolve infrastructure failures, Neither of these consequences is acceptable as many of these applications are critical to operations and safety including EGMS, Corrosion, and OPA.

Start Date	End Date	Shared Asset	Funding Source
2024-01-02	2025-12-29	No	Gas IT

IT Costs

Type	FY24	FY25	Total
Capex	$202,093	$202,093	**$404,186**
Opex	$30,114	$30,114	**$60,229**
Total	**$232,207**	**$232,208**	**$464,415**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

DTE Energy

Executive Summary

Business Case ID	BCD-PF-21-040

Business Case Name	Corrosion Database Upgrade

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Sponsor	Olukayode F Dawodu
Business Units Impacted	Gas

Project Description

Project Category	Strategic
Project Type	Solutions Delivery - On Prem

Innovation?	No
Strategic Fit	Distinctive Continuous Improvement Capability

Business Outcome

The new application will be linked to ESRI and Maximo in real time. This will help in 1) reducing the processing time for ESRI (Environmental Systems Research Institute) and Maximo work orders by reducing human errors and 2) will provide reporting specifically to Cathodic Protection and Corrosion Control on the pipeline facilities, which are the required data for Regulatory.

Key Objectives

1) One platform for ESRI and Corrosion Work Management System that serves as a single repository that will store, collect and report Cathodic Protection Data.
2) A technology platform that is supported by internal and/or external resources.
3) Ability to synchronize and update Cathodic Protection Data in real time.
4) Enhance Data storage capability.
5) Robust reporting capabilities; Ability to generate a customized reports or data collection points.
6) Ability to assign work and be compliant with MPSC regulations.
7) Ability to showcase Metric Output.
8) Ability to create administrative controls.
9) Migrate Cathodic Protection Data from current to new platform.
10) Create Auto notification of Cathodic Protection,piping, and facility changes in ESRI.

Start Month	January	2021	
Duration to Complete	Years	11	Months
End Month	December	2021	

Funding Source	Gas IT

Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	**Total**
Capital	$410,000	$0	$0	$0	$0	**$410,000**
O&M	$40,000	$0	$0	$0	$0	**$40,000**
OCM	$80,000	$0	$0	$0	$0	**$80,000**
Total O&M	$120,000	$0	$0	$0	$0	**$120,000**
Total	$530,000	$0	$0	$0	$0	**$530,000**

Hardware/Software/ Cloud	Year 1	Year 2	Year 3	Year 4	Year 5	**Total**
Capital	$50,000	$0	$0	$0	$0	**$50,000**
O&M	$12,500	$0	$0	$0	$0	**$12,500**

BU O&M	$6,000	Incremental Costs	$0

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0002539	Corrosion Database Upgrade

Stakeholders

Portfolio Category	Business Unit
Plant and Field	DTE Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Olukayode F Dawodu
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Frenae F Smith
Managed By	**PPS**
IT	5.7

Project Description

Investment Type	Initiative Type
Strategic	Infrastructure - Cloud

What business problem or opportunity are we trying to solve?

Currently Corrosion Application runs on MS Access Database, which is unsupported and is not synchronized in real-time with ESRI (Environmental Systems Research Institute) and Maximo as a result of which it is creating errors, inefficient processing time and has limited data storage. The automated synchronization will reduce the processing time and the solution will provide accurate reporting on Cathodic Protection and Corrosion Control on the pipeline facilities.
Scope for 2023:
1.New scope added for mandated Mega-Rule and Hot-Spot compliance regulation changes which was not part of 2022 development. 2. Significant design and development rework is required from 2022 developed Survey 123 and Web applications.3.Fixing the System testing generated defects and feature requests."

What functionality or capability is being provided?

The solution will be linked to the existing internal ESRI and Maximo systems in real time. This will help in 1) reducing the processing time for ESRI (Environmental Systems Research Institute) and Maximo work orders by reducing human errors and 2) will provide reporting specifically to Cathodic Protection and Corrosion Control on the pipeline facilities, which are the required data for Regulatory.
Scope for 2023
Read Admin Map Layers: BRIDGE 5-Year Historic Reads Map Layer; Master Meter Survey Area Map Layer; Master Meter 5-Year Historic Reads Map Layer; Rectifier Most Recent Reads Map Layer; Panhandle Eastern Test Map Layer; Troubleshooting Individual Read Points Down
Web Dashboard: Transmission Read Status Dashboard; Station Read Status Dashboard; Master Meters Read Status Dashboard; DOT Read Status Dashboard
Scripted Procedures: Troubleshooting Generation and Automation Processes; CWO Automated Processes; Photo and File Management for Survey 123 View Purposes; Panhandle Eastern Test Generation Program
ETL Data Migration Jobs: STATION Data Migration and Validation; TRANSMISSION Data Migration and Validation; Casings Data Migration and Validation
Common Component: Shared pick-list capability for all work assignments
ETL Data Migration Jobs - Atmospheric Inspection Data Migration and Validation; Main Inspection Data Migration and Validation; Panhandle Eastern Data Migration and Validation; Vault; Inspection Data Migration and Validation; Troubleshooting Data Migration and Validation; CWO Data Migration and Validation; Form H Data Migration and Validation

DTE

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).
This aligns with the business unit's strategic plan for continuous improvement and O&M efficiency.

Define the Benefit/Value to the Organization, Customer, Employee.
Several key processes are impacted and will have increased efficiency. The automation of work orders will significantly reduce work order generation time. Automation of test point maintenance will reduce mapping change time. Time per survey will be reduced through improvements on survey performance. Location data and pictures included in the new database will reduce the amount of test points that can't be located. New application runs on ESRI GIS software platform – Supported by ESRI & DTE 1. New Mega-Rule and Unprotected Pipeline compliance features added 2. Synchronization processes being developed for Corrosion GIS data 3. The new application will be linked to ESRI and Maximo in real time. This will help in reducing the processing time for ESRI (Environmental Systems Research Institute) and Maximo work orders by reducing human errors and will provide reporting specifically to Cathodic Protection and Corrosion Control on the pipeline facilities, which are the required data for Regulatory. 4. The project has a positive Net Present Value (NPV) of $281,000 at 20 years and total IRR of 9.91% for the lifetime of the database (60 years) 5. The new database will eliminate daily failure issues. In addition, the database will use spatial information for all work processes. Current production uses data tables and forms. New production will show all data based on GPS coordinates - allowing easier analysis of our cathodic protection system and improving efficiency. Survey rates are projected to increase from 13 reads per hour to 14 reads per hour. Troubleshooting rates are expected to increase from 1200 ft per hour to 14000 ft per hour. In addition, some processes will be automated including mapping form creation for ESRI updates and Maximo work order generation. 6. The improvement in survey read rate from 13 to 14 reads per hour results in annual savings of $50,000 O&M. The improved efficiencies in troubleshooting, mapping improvements, and work order creation will result in annual savings of $45,000 Capital.

How will you monitor and measure expected value?
The end users are engaged in the process of testing the solution to see the value of improved data processing time and management of the Corrosion Work Orders. In addition, the plan is to develop SWIs on how to use the database, host some hands-on training sessions, and have some interactive recorded sessions that users can refer back to after training. Corrosion business will show improved labor cost with annual cost savings of $60K (O&M) and $45K (CAP) after first year

What alternatives have been considered?
Do nothing would be to continue doing the work using access database which is an unsupported tool and unsynchronized with ESRI and Maximo. MS Access is not an efficient WMS (Work Management System); It is creating errors, inefficient processing time and has limited data storage. Additionally, the obselence of the hardware and software is risking failure of the database with no existing backup.

Start Date	End Date	Shared Asset	Funding Source
2023-01-05	2023-12-31	No	Gas IT

DTE

IT Costs

Type	FY23	Total
Capex	$750,397	**$750,397**
Opex	$5,746	**$5,746**
Total	**$756,143**	**$756,143**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

DTE Energy

Executive Summary

Business Case ID	BCD-PF-21-039

Business Case Name	DTE Gas Tripwire Enterprise and IP360

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Sponsor	Olukayode F Dawodu
Business Units Impacted	Gas

Project Description

Project Category	Strategic
Project Type	Solutions Delivery - On Prem

Innovation?	No
Strategic Fit	Clear Growth & Value Creation Strategy

Business Outcome

The implementation of Proper tracking capabilities and addressing the identified vulnerabilites will help ensure there is no unauthorized access to DTE systems. This will significantly enhance the security of DTE Gas and DTE in totality by increasing the level of cyber security measures applied to critical operational technology systems and equipment supporting gas operations.

Key Objectives

1) Install TripWire Enterprise,Tripwire logcenter and TripWire IP360 for utilization at DTE Gas Operational Technology sites including the Gas SCADA system. This Includes central installation of a host server and installation of data collection devices located at: Washington 10, Belle River, Columbus, Milford, Willow Compressor, Willow Gate, Taggart, Kalkaska, and the Gas SCADA network.
2) DTE Gas to Implement patching program based on the results of the monitoring from TripWire to allow for lower frequencies then NERC CIP monthly, which is concurred by DTE Gas to ensure there is no/minimal impact to operation
3) Identified vulnerabilities from the scans are patched or mitigating controls are deployed.

Start Month	March	2021	
Duration to Complete	Years	15	Months
End Month	June	2022	

Funding Source	Other Business Unit

Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	**Total**
Capital	$530,000	$470,000	$0	$0	$0	**$1,010,000**
O&M	$20,000	$20,000	$0	$0	$0	**$40,000**
OCM	$0	$0	$0	$0	$0	**$0**
Total O&M	$20,000	$20,000	$0	$0	$0	**$40,000**
Total	$550,000	$490,000	$0	$0	$0	**$1,050,000**

Hardware/Software/ Cloud	Year 1	Year 2	Year 3	Year 4	Year 5	**Total**
Capital	$291,500	$258,500	$0	$0	$0	**$550,000**
O&M	$7,500	$7,500	$0	$0	$0	**$15,000**

BU O&M	$0

Incremental Costs	$115,000

DTE Energy

Executive Summary

Business Case ID	BCD-PF-21-055

Business Case Name	DTE Gas Tripwire Industrial Visualization (TIV)

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Sponsor	Olukayode F Dawodu
Business Units Impacted	Gas

Project Description

Project Category	Strategic
Project Type	Operational

Innovation?	No
Strategic Fit	Clear Growth & Value Creation Strategy

Business Outcome

This will significantly enhance the security of DTE Gas and DTE in totality by increasing the level of cyber security measures applied to critical operational technology systems and equipment supporting gas operations

Key Objectives

1) Install TripWire Industrial Visualization for utilization at DTE Gas Operational Technology sites including the Gas SCADA system. This Includes central installation of a host server console in the DTE Gas SCADA DMZ on existing Hyper-V host server and installation of data collection devices located at: Washington 10, Belle River, Columbus, Milford, Willow Compressor, Willow Gate, Taggart and Kalkaska. The Gas SCADA network will also require Firewall configuration to allow the data collection devices to be able to communicate with the host console in the Gas SCADA DMZ.
2) Proper tracking capabilities should be in place; There should be no unauthorized access to our systems.
3) DTE Gas to Implement patching program based on the results of the monitoring from TripWire.
4) Patches or mitigating controls shall be deployed to rectify the vulnerabilities identified from the scans.

Start Month	January	2021		Funding Source	Other Business Unit
Duration to Complete	Years	3	Months		
End Month	April	2021			

Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	**Total**
Capital	$270,000	$0	$0	$0	$0	**$270,000**
O&M	$20,000	$0	$0	$0	$0	**$20,000**
OCM	$0	$0	$0	$0	$0	**$0**
Total O&M	$20,000	$0	$0	$0	$0	**$20,000**
Total	$290,000	$0	$0	$0	$0	**$290,000**

Hardware/Software/ Cloud	Year 1	Year 2	Year 3	Year 4	Year 5	**Total**
Capital	$97,500	$0	$0	$0	$0	**$97,500**
O&M	$0	$0	$0	$0	$0	**$0**

BU O&M	$0

Incremental Costs	$57,640

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0001811	Gas Construction -As-Builting

Stakeholders

Portfolio Category	Business Unit
Plant and Field	DTE Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Shoshannah Lenski
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Wayne R Verbeke
Managed By	**PPS**
IT	4.3

Project Description

Investment Type	Initiative Type
Strategic	Solutions Delivery - Cloud

What business problem or opportunity are we trying to solve?

Currently a paper Form 79 in conjunction with a Service Suite Work Order completion data entry is required to share the data necessary to update the facility main, services and transmission updates. When changes are done in the field to gas pipelines, a sketch is hand drawn by the technician and submitted at the station. The sketches are then sent to Data Integrity where they are added to the ESRI data maps. This is manually intensive and results in a considerable (often months) delay in providing accurate information to employees who rely on the accuracy of maps when performing their field work. Digitizing and partially automating the currently paper based manual process of completing construction (pipeline) work orders and mapping As-Built locations and material information. Current process has significant waste, multiple hand-offs, rework due to manual defects and can lead to regulatory non-compliances due to long cycle time.

What functionality or capability is being provided?

More real time (in the moment) updating in the system based on main and service installations and location, materials (CU's) Compatible Units, crew locations, digitally completing blue orders, and availability for records
2024:Software Delployment with integrations and use of GPS-Based As-Builting for SEMI,GRP,ICM and Wealthy distribution crews.2025: Software deployment rollover with integrations to digitize the current manual process.2026: Extend the software deployement for Mains and Third party vendors.

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

Utilizing Locusview/Click Lemur for inspection allows the company and employees to gain familiarity with the product and better understand the full capabilities. This is also a product that is being reviewed for digital As-Builting as well as future Tracking and Traceability needs.

DTE

Define the Benefit/Value to the Organization, Customer, Employee.
Capturing work in the field in real time, able to efficiently recognize customers issues and service infrastructure, quick access for record and material information Productivity: Estimated annaual productivity value of $1M in phase 1 alone, with additional in Phase 2- helping teams achieve capital efficiency task.Data Quality and Defects: Centimeter grade As-Built accuracy, 90% reduction in defects via data Validation and avoided paper-errors, tracking and traceability data captured.Cycle Time: Reduce cycle time to mapping from 45-60 days to 8-10 and virtually eliminate >60days(regulatory misses) Customer Experience: This project focuses on increasing reliability and preventing a customer outage due to an issue during construction. Employee Engagement: Improve employees access to information, by having drawings attached to inspection jobs, and improve the ease of them utilizing the form and extrapolating the information

How will you monitor and measure expected value?
As stated above, Locusview/Click Lemur pro is a platform solution that would allow us to grow in its utilization, it offers ease of use to its users and it will increase the safety and reliability of our construction projects. Improvement opportunities identified where as used for future projects such as Tracking and Traceability and Remote Inspections.

What alternatives have been considered?
Epoch was considered as an alternative solution. Do Nothing will follow current Manual process of getting designs through paper and capturing the field results in Excel and uploading the documents in to Documentum.

Start Date	End Date	Shared Asset	Funding Source
2024-01-03	2026-12-19	Yes	Gas IT

IT Costs

Type	FY24	FY25	FY26	Total
Capex	$2,465,800	$1,581,000	$1,056,000	**$5,102,800**
Opex	$178,200	$144,000	$144,000	**$466,200**
Total	**$2,644,000**	**$1,725,000**	**$1,200,000**	**$5,569,000**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$623,220
Vendor Support & Licensing		$0

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0001766	Gas Construction – Contractor Inspection

Stakeholders

Portfolio Category	Business Unit
Plant and Field	Gas Distribution Operations
Portfolio	**Business Unit Director**
Plant and Field: EG	Kelly M Fedele
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Rachel A Franco
Managed By	**PPS**
IT	2.9

Project Description

Investment Type	Initiative Type
Strategic	Solutions Delivery - Cloud

What business problem or opportunity are we trying to solve?

The current construction inspection process is completely manual with jobs being assigned via email and inspection forms being filled out via a power app and results stored in SharePoint. Business currently do not have meaningful metrics or analysis on what is being found in the field.

What functionality or capability is being provided?

An automated solution that would allow us to track work progress of large construction jobs, provide clarity into how many jobs are inspected each day and what is being found. Also provides the capability to complete remote inspections on low risk work (residential new services and service alterations).Solutions that focus primarily on the as-built process and updating GIS (Geographic Information System), will have core functions for Work Order integration, field data capture utilizing barcode scanning, GPS (Global Positioning System) technology and smart data collection forms and finally will have a mechanism to sync the collected data with the GIS.

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

Utilizing Locusview/Click Lemur for inspection allows the company and employees to gain familiarity with the product and better understand the full capabilities. This is also a product that is being reviewed for digital As-Builting as well as future Tracking and Traceability needs.
Strategic Alignment: This project focuses on providing increased oversight to contractors installing distribution mains and services on behalf of DTE Gas. The intent is to increase reliability of our gas distribution systems and prevent a customer outage due to an issue during construction. We would like the ability to review results by contractor and crew to ensure all crews are observed monthly and adjust frequency based on inspection results.

DTE

Define the Benefit/Value to the Organization, Customer, Employee.
As stated, Locus view/Lemur is a platform solution that would allow us to grow in its utilization, it offers ease of use to its users and it will increase the safety and reliability of our construction projects. Customer Experience: This project focuses on increasing reliability and preventing a customer outage due to an issue during construction. Employee Engagement (High): Improve employees access to information, by having drawings attached to inspection jobs, and improve the ease of them utilizing the form and extrapolating the information Operational Reliability (High): Increase % of construction work that is reviewed in the field by inspectors andreduction in customer outage risk - related to unexpected construction interruptions

How will you monitor and measure expected value?
% of work inspectedQuality of remote inspection formsImprovement opportunities identified where as used for future projects such as Tracking and Traceability and Remote Inspections. Vendor will provide training for the resources. Business unit would begin realizing value as soon as project is operationalized.

What alternatives have been considered?
Epoch and EZMAX solutions are considered as an alternative solution. Maximo is ruled out because it can not provide the functionality that business is looking for where system should have a real-time (dynamic) form that can be fillable for the life of the project. Maximo can not fulfill that function, there are multi pronged solution in Maximo at this time. Do Nothing: Will result in following manual jobs being assigned via email and inspection forms being filled out via a power app and results stored in SharePoint.

Start Date	End Date	Shared Asset	Funding Source
2025-01-04	2025-12-27	No	Gas IT

IT Costs

Type	FY25	Total
Capex	$450,000	**$450,000**
Opex	$130,000	**$130,000**
Total	**$580,000**	**$580,000**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0002199	Leak Survey

Stakeholders

Portfolio Category	Business Unit
Plant and Field	Gas Distribution Operations
Portfolio	**Business Unit Director**
Plant and Field: EG	Jaison J Busby
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Adam J Ray
Managed By	**PPS**
IT	7.05

Project Description

Investment Type	Initiative Type
Strategic	Solutions Delivery - Cloud

What business problem or opportunity are we trying to solve?

Current Leak Survey Application was built as a stand alone home grown solution in 2017. This end of life non-platformed solution presents a risk because it is not able to be supported well by IT due to it being built by an employee who has since retired. Additionally, this out dated technology can not be updated to meet changing needs of the business which opens DTE to the potential risk of non-compliance and regulatory fines. Data is not updated in real time and requires a nightly batching process to run. There is not currently and off-line/fail safe mode to prevent costly work stoppages.

What functionality or capability is being provided?

Platform IT solution provides greater support, an updated application that adheres to current IT architecture standards. One platform for ESRI and Leak Survey application that serves as a single system that will store, collect and report on Leak Survey Data. New software would impatch Dependable and Efficient Service Keys.

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

One platform for ESRI and Leak Survey application that serves as a single system that will store, collect and report on Leak Survey Data.A technology platform that is supported by internal and/or external resources.Ability to synchronize and update Leak Survey Data in real time.Enhance Data storage capability.Robust reporting capabilities; Ability for user to generate compliance and adhoc customized reports.Ability to assign and track work completion to ensure compliance with MPSC regulations.Ability to create administrative controls/workflows.Migrate Leak Survey Data from current to new platform.

Define the Benefit/Value to the Organization, Customer, Employee.

The new application aligns with our leadership principle of 'Innovate' as it will utilize an industry recognized program that is also a platform solution with the upcoming DTE GFO CLICK release. This solution is built on an ESRI platform and serves as a single system that will collect and report on Leak Survey Data. The enhanced data storage and robust reporting capabilities allows DTE Gas to better manage compliance and realize operational efficiencies by better managing our work. Additionally, the new system will integrate with CLICK which also aligns with the DTE Gas IT strategy. The improved operations as a result of the new application aligns with DTE's mission to be the best in the world and best for the world.

DTE

How will you monitor and measure expected value?
The direct impact on Safety and the residual benefit affecting Customer Experience will help to monitor the expected value of implementing this project.MPSC non-compliance typically result in civil fine of 10k, so improving ability to remain compliant reduces likelihood of costly civil fines.Also with this project the order entry time saves up to 30 seconds per service order entry and that spread over nearly 500,000 annual services nets nearly 4,167 hours of time saved. Strategic Alignment-6: Aligns with Safety, Dependable & Efficient - New survey application will track more information and greater visibility to the field work. Aligns with Safety b/c increased quality of survey means more hazardous leaks are found and repaired thus improving safety. There is no current metric to measure the net impact of increased quality's relation to safety. Efficient - Survey will get visibility into progress of work that we don't currently get. Supervisor reporting will give visibility into work productivity and allow that to influence operational and HP decisions. Dependable - ESRI is a platformed solution with great support in DTE, current leak survey application is stand alone and not supported. The new solution is more dependable. Meeting MPSC commitments on time - be able to meet current MPSC commitments and is a platform that can be easily modified/expanded to meet future changes/commitments made to MPSC. MPSC non-compliance typically result in civil fine of 10k, so improving ability to remain compliant reduces likelihood of costly civil fines.Reduction in DTE GHG emissions p.a.Reduction in operational risk - Moving from stand alone non-platform poorly supported solution to an enterprise supported platform tool increase IT support and will reduce support cost. • Integration with CLICK, current application cannot integrate. Customer Experience-3: Better survey application will increase the quality of leak survey which directly impacts Safety and has residual benefit affecting Customer Experience. Employee Engagement- 6: # of Impacted Employees - Approximately 200 • METRIC EFFECTED: Efficiency improvement - New targeted and editable forms will allow for easier capture of information. This will save up to 30 seconds per service order entry and that spread over nearly 500,000 annual services nets nearly 4,167 hours of time saved.• Employee Experience - Much more intuitive format and easier to use technology will increase employee experience while capturing work performed in the field. This improvement will increase engagement and lead to higher GALLUP scores under the "Do you have the tools and equipment to do your job?" because it is a better tool to do the job. Affordability- 3: COST METRIC: At ~:30 per service and a total of ~500k services per year the new application would save ~4,167 labor hours annuallyIT & BU productivity: IT prod increase is unknown. BU prod tied to efficency gains related to workforce planning. Current application offers zero in terms of visibility and planning vs the new application providing dashboards and projections to ensure compliance work is completed by deadline.Eliminates risk of unknown compliance dates and potential non-compliance fines from MPSC.Inefficiencies related to supporting non-compatible products non-platform solutions are eliminated. IT would need to supply that annualized cost because I am not aware of the exact total.Integration with CLICK will provide automated workflows and decrease manual interventions. Cost/Benefit- 3: No CBR or IRR analysis has been completed on this project yet. Operational Reliability- 6: DOWNTIME AVOIDANCE: Reduction in IT system outages - Ability to work online or offline incase of outage provides redundancy we don't have with current application. This decreases chances of downtime due to outage.Integration with CLICK will allow for automated workflows that do not currently exist. This will decrease manual interventions. Currently data is reviewed and orders built. The process to build orders takes 5-10 minutes each. With several hundred to 1,000 orders to build integration would save ~175 hours per year. Cloud based solution will free up Service DCA-Prod 636 that current leak survey application runs on. Foundational Capability- 3: ESRI solution means that tech can be easily leveraged by other BU's relatively easily.Future efficiency gains due to flexibility of system and ability to configure to meet changing business needs.

DTE

What alternatives have been considered?
Without a change, the path forward is continuing to use the outdated, non-supported home grown solution that was developed in 2017. Additionally, multiple vendors have been evaluated and scored against a common template to identify the best possible business solution. Do nothing would be to continue doing the work using existing leak survey application which is difficult to support and doesn't sync in real time with ESRI and Maximo. - Continuing to use an end of life non-platformed solution presents additional risk to IT since it is no longer supported and was built by an employee who has since retired.- There is not currently and off-line/fail safe mode to prevent costly work stoppages and lost productivity. - Additionally, this out dated technology can not be updated to meet changing needs of the business which opens DTE to the potential risk of non-compliance and regulatory fines.

Start Date	End Date	Shared Asset	Funding Source
2023-01-02	2023-11-28	No	Gas IT

IT Costs

Type	FY23	Total
Capex	$1,657,475	**$1,657,475**
Opex	$220,255	**$220,255**
Total	**$1,877,730**	**$1,877,730**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Maintenance/Renewals		$0
Organizational Change Management		$36,000
Vendor Support & Licensing		$0

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0002603	SEMI Picarro Survey unit Renewal

Stakeholders

Portfolio Category	Business Unit
Plant and Field	Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Mark C Johnson
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Adam J Ray
Managed By	**PPS**
IT	4.8

Project Description

Investment Type	Initiative Type
Strategic	Solutions Delivery - Cloud

What business problem or opportunity are we trying to solve?

Current contract on SEMI Picarro units is set to expire and requires renewal. The renewal will allow DTE Gas to continue it's Advanced Leak Detection (ALD) journey which will transform the outdated manual process that is so dependent on human performance to identify leaks and satisfy compliance requirements. Additionally, Picarro as an Advanced Leak Detection device has been identified as a strategic initiative that has been incorporated into previous Rate Cases and the DTE Gas Delivery Plan Picarro utilizes more sensitive gas detection technology (parts per billion vs parts per million), which has increased DTE Gas’s ability to accurately identify existing leaks. The deployment and evaluation plan for Picarro involves it being used to identify high methane emitting potential leaks in off-cycle routine survey areas and will increase customer safety by the identification of potentially larger leaks within the DTE Gas service territory. This program, which began in 2021 and continues to run, resulted in the identification and ultimately remediation of hundreds of large emitting leaks in off-cycle survey areas that would have otherwise gone unidentified until the upcoming leak survey cycle. This proactive approach has positive safety and environmental benefits to our customers. Additionally, the Company plans to integrate the emissions data into its DIMP model to help used to prioritize infrastructure improvements. Picarro will also be used to conduct pre- and post-construction drives to collect total emissions for the area and then compare that to post-construction emissions with the resulting decrease being attributed to the newly installed infrastructure and help support the effectiveness of the GRP program. Additional use cases for Picarro include performing quality checks on traditional leak survey and conducting special surveys, such as high consequence public events and when abnormal conditions are found. Compared to traditional survey methods, Picarro has shown potential to be far more consistent than hand-held survey tools, which are dependent on operator actions and require frequent calibration.

What functionality or capability is being provided?

Leak detection using Picarro technology. Picarro technology itself is comprised of high resolution, vehicle-based equipment that captures methaneindications and couples readings with atmospheric data, ultimately improving DTE Gas’s ability to identify leaks and align with future reporting standards that will require quantification of methane emission levels

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

Aligns with Clean energy initiatives, safety, employee engagement and operational excellence.

DTE

Define the Benefit/Value to the Organization, Customer, Employee.
Picarro utilizes more sensitive gas detection technology (parts per billion (ppb vs parts per million (ppm)) which will increase DTE Gas's ability to accuratelyidentify existing leaks, particularly those which are smaller than what current equipment can identify. Compared to traditional survey methods, Picarro hasshown to be far more consistent than hand-held survey tools currently used which are dependent on operator actions and require frequent calibration. Notably, Picarro is expected to reduce the time taken in surveys to approximately half of the time needed without the technology.

How will you monitor and measure expected value?
Picarro is expected to reduce leak survey time approximately in half. This will provide a more accurate current-state assessment of DTE Gas infrastructure. The increase in detection is expected across all leak classifications and remediation will be completed based on existing DTE Gas Standards.

What alternatives have been considered?
DTE reviewed multiple technology options in an effort to become more efficient and less reactive in our surveys. The alternatives considered includedcompanies like URG (Utility Resource Group) that provide traditional low-tech solutions involving hand-held devices and companies like Heath Consulting which provide a mobile based solution. The Company ultimately chose Picarro software, given the data modeling capabilities offered were more advanced than their competitors. Picarro's data suite allows us to conduct detailed data analysis, quantify emission leak rates, prioritize leak survey areas based on emissions and risk rank of identified leak. Also, moving to Picarro would result in a 15% cost reduction/savings per year. A "do nothing" alternative is unacceptable because of the responsibility we have to the communities in which we live and serve coupled with pending legislation that will require quantification of emissions at a level that is not possible with the continued use of Advance Leak Detection (ALD) technologies. This system will allow DTE to find and remediate more hazardous leaks than any traditional survey method. Leak mitigation has a direct impact on the safety of our customers and the communities associated. Picarro is safe, efficient, innovative, and a proven solution. No other competing technology performs to this degree, which is largely why other utilities are adopting the system.

Start Date	End Date	Shared Asset	Funding Source
2025-01-01	2025-12-31	No	Other Business Unit

IT Costs

Type	FY25	Total
Capex	$2,600,000	**$2,600,000**
Opex	$120,000	**$120,000**
Total	**$2,720,000**	**$2,720,000**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0002733	Surcharge billing for Natural Gas installations

Stakeholders

Portfolio Category	Business Unit
Plant and Field	Gas Distribution Operations
Portfolio	**Business Unit Director**
Plant and Field: EG	Julia L Huffman
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Christine A Cole
Managed By	**PPS**
IT	7.95

Project Description

Investment Type	Initiative Type
Strategic	Solutions Delivery - Cloud

What business problem or opportunity are we trying to solve?

Currently, customers that have natural gas extended to them only begin paying their portion of the construction costs only when they have their meter set. Those that have gas extended to them, but don't have a meter set never pay their portion of the construction cost. Therefore, DTE is losing thousands of dollars(monthly) by not collecting these funds. There is no mechanism in the billing system to start billing these customers 6 months after the line has been laid. Since 1995, our Customer Attachment tariff (C8), has given us the authority to bill homeowners after six months of having a service line installed if the meter has not been set. In the early 2000's the MichCon billing system was set up to start billing, however, when we converted to CSB, this option was not included. Because of other IT priorities and reduction on proactive services in the early 2000's, this project was not pursued. On average we now install 4,000 services annually that require a surcharge payment. Of those 4,000, it is estimated 10% do not have their meter set within the 6 months.

What functionality or capability is being provided?

The following functionality will be provided by implementing this project:
CRM will automatically 1) send out reminder notices to homeowners that have had a service line installed and have not had a meter set. The reminder notices will advise the homeowner that the CAP surcharge billing will be starting and
2) At the six months anniversary of the service line installation, where there is no meter set, will begin billing the BP for the monthly surcharge.
3) CRM billing functionality and Reporting which shows inactive services are build, and the revenue on the inactive lines. To know number of service lines that are cut due to the billling

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

By implementing this solution, for the next 5 to 10 years call for aggressively pursuing home-owners conversions proactively. Because of our aggressive sale goals, it is imperative to ensure homeowners are billed according to a C8 tariff and collect the Contribution in aid of Construction the customer agreed to pay.

DTE

Define the Benefit/Value to the Organization, Customer, Employee.
The value to the business unit is collection of incremental revenue & less inactive service lines. More active meters spinning in our service areas. All homeowners that have received natural gas, where there is an applicable surcharge, will be billed their portion of the construction costs starting no later than 6 months from the installation date.

How will you monitor and measure expected value?
A custom report is part of this project development which will show the force move-in and the Buy-out amount the customer should pay after 6 months. Also, through a monthly Contribution in aid of Construction report the customer contribution can be tracked.

What alternatives have been considered?
Do nothing has caused to lose ~ $2,583,047.65 in revenue. Because of the tariff restrictions the policies on how the Contribution in aid of Construction cost is collected cannot be changed.

Start Date	End Date	Shared Asset	Funding Source
2023-06-12	2023-11-30	No	Gas IT

IT Costs

Type	FY23	Total
Capex	$345,806	**$345,806**
Opex	$647	**$647**
Total	**$346,453**	**$346,453**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

Line No.	Name	Description
1	Bentley Project Wise	Bentley Project Wise is a software application that manages project CAD drawings and other project data. It provides the functionality which allow us to organize and automate the maintenance of our Bentley Microstation CAD files.
2	Corrosion Gas	Corrosion Gas application is used by the corrosion technicians to perform testing of 'test wires' while they are on survey routes. Corrosion consists of multiple Microsoft Access databases where data is entered. There is also an Oracle database used to store data.
3	Customer Management Module (CMM)	Customer Management Module (CMM) provides the capability to calculate each customer's base, cooling and heating gas usage and assigns each customer's load to the closest appropriate pipe or node. CMM is a separate application that uses customer property information (from CRM - Customer Relationship Management) and energy demand level information from the Synergi application for calculation.
4	Distribution Integrity Management Program (DIMP)	Distribution Integrity Manaement Program (DIMP) is a risk modelling tool to measure and manage the risk in our DTE pipeline infrastructure.
5	Energy Gas Performance Management (EGPM)	Energy Gas Performance Management (EGPM) is an adhoc self service reporting database for the Gas business to provide reports on emergency gas leaks via dashboard.
6	Electronic Flow Measurement (EFM) (AKA WHM)	Electronic Flow Measurement (EFM) is also referred to as Well Head Management (WHM) and Talon. EFM acquires and saves data about the flow of gas into and out of storage wells. EFM and WHM are used interchangably as the software system name. Talon is the software supplied by Eagle Research, Inc, which is used by EFM.
7	Energy Gas Management System (EGMS)	Energy Gas Management System (EGMS) is the electronic nomination system utilized to accept, validate, schedule, and process inbound nominations on DTE Gas and DTE Gathering Pipelines DTE Gas is the overall entity responsible for the transmission, storage, and distribution of natural gas. DTE Gathering Pipelines primarily deal with small producers that put gas on to our system.
8	Energy Gas PI (PI = Process Information)	The Energy Gas PI is an application that is installed at DTE Gas Compressor Stations. Energy Gas PI archives compressor data, dehydration plant data, gas quality data, and gas measurement data. This data is then used to monitor compressor health, generate environmental reports, generate station reports, monitor station metrics and for troubleshooting in case of failures. Energy Gas PI is a real-time data historian application with a highly efficient time-series database structured and developed by OSIsoft.
9	Gas Measurement Instruments (GMI)	The Gas Measurement Instrument (GMI), is a vendor product that allows gas field personnel to test and calibrate their portable gas detection instruments.
10	Geographics Gas	Geographics Gas is a Client Server application software. This applications organizes all well data, run log analyses, construct cross sections, and creates all maps for departmental needs (seismic locations, formation structures, cultural and land tract statuses, etc). The Geographics application allows for detailed integrated analysis of multiple well reservoirs.
11	Meter Management System - GAS (MTM)	Meter Management System (MTM) is the home for PowerTrack Gas which is used by gas customers to calliberate gas meters on a periodic basis. We have two versions of PowerTrack from PowerSolve. PowerTrack Electric (PTE) tests electric meters. PowerTrack Gas (MTM) tests gas meters. Prior to Customer 360 MTM was the best source for information about individual meters

Line No.	Name	Description
12	Order Processing Application (OPA)	Order Processing Application (OPA) is a critical application**,** that provides the Gas Appointment Book and CAI Reporting Database functionality.
13	Order Processing Application (OPA) Web	Order Processing Application (OPA) Web interface used by Energy Gas users to configure and manage the Gas Appointment Books for gas field orders.
14	Predictive Outbound Dialer	Predictive Outbound Dialer is a vendor application used by three gas call centers (Outbound Call Center, Gas Re-connect, Alteration and Termination (GRAT) and Greater Michigan (GRMI)) to receive inbound calls, voice mail and place outbound calls.
15	Sendout, Gas Supply Portfolio Optimization	Sendout, Gas Supply Portfolio Optimization is a software that Gas Supply uses to forecast DTE Gas's natural gas demand for Gas Cost Recovery (GCR) and Gas Customer Choice (GCC) customers on a daily, monthly and annual basis.
16	Service Bench	Service Bench is a vendor product to help manage appointmens in assigning and scheduling the work orders to vendors/contractors for Home Protection Plan (HPP) customers.
17	Synergee	Synergee, is a vendor product for the Project Planning and Asset Prioritization group.
18	ACT9MASTER	ACT9Master: Database system for Gas Scada
19	Automated Avamar Back up Solution	Avamar backup solution is used for backing up Gas File/database servers for Gas SCADA. This includes daily incremental backup of Gas SCADA system, weekly full backup with retention of 90days for non-production and 120day for production
20	Codes and Standards Digitization	This is for an user friendly front end application for the field workers that utilizes the existing document management system (Sharepoint) and can be used in the field on their mobile devices. This helps the Field workers to be able to produce the most updated document to the MPSC as and when requested.
21	CSS-CITIZENS (CSS: Customer Service System for Citizens Gas)	Customer Information systems for Citizens Gas
22	Digital Run Sheet	Digital Run Sheet - To gather data about the work done by field crew. This is time tracking system for **ICM** and Coolidge Service center
23	EcoSys Smart Cloud Program	EcoSys Smart Could Program -A program management solution to bring efficiency and new capabilities to the project management team.
24	ENERGY GAS AERIAL PATROL	Energy Gas Aerial Patrol (In OPA db).
25	Field Tools Mobile Application FTMA/FDM	DTE Gas Operations will use this application to connect Mobile Radios to be able to program GAS Meters and Modules.
26	GAS CAD DOCUMENT VAULT	GAS CAD DOCUMENT VAULT (Autodesk Pro Vault) is a software to save the GAS Engineering (Transmation and Distribution) departments cad diagrams when they are finalizing their engineering design diagrams.
27	Gas Operations RPA	BPM, Blue Prism, RPA, Robotic Process Automation 1 Prod Server App and DB are DR and HA 2 Non Prod environments are not. These servers can be restored from daily backups

Line No.	Name	Description
28	GAS SCADA	The Gas SCADA (Supervisory Control and Data Acquisition) system is a collection of sequestered, secure IT components including operator workstations, servers, and software. The proper functioning of these components is critical to the safe operations of natural gas for nearly 7,000 endpoints on the system, which includes pressures, flow rates, & valve positions
29	GASOPS - Documentum D2/AO (**D2/AO** is the Gas instance of Documentum)	New Documentum D2/AO enterprise instance (Re-platform). This is for limited use by the GasOps Engineering business unit only. Will be opened to other business units mid-2022 (DO, Power Supply and others).
30	HPP SERVICES	HPP Services. HPP Customer call center
31	MISSDIG	This is a critical process for the addressing the MISSDIG tickets specifically staking related calls.
32	PCubed (Picarro)	Pcubed is the website that houses survey information. It allows for the tracking of units in the field in real time, stores all completed drives, all compliance reports and field investigation results.
33	Pipeline HUB- Technical Toolboxes	Distribution, Transmission & Pipeline Integrity teams are using this application, which is vendor supported cloud application. The application is used for Engineering calculation and to verify design and calculation of the pipeline in DTE Service territory.
34	PLEXOS software	An optimization software specifically created for utility companies to manage their natural gas demand and supply.
35	PowerSpring	**PowerSpring** is a gas pipeline monitoring system that collects data from field units (Mercury echarts) located in various regions throughout the gas service territory.
36	TIMP Transmission Integrity Management Program	Transmission Integrity Manaement Program (TIMP) is a risk modelling tool to measure and manage the risk in our DTE pipeline infrastructure.

Line No.	Project	U-20940 Witness Busby Testimony Reference	Benefit/Savings Quoted in Gas Rate Case U-20940	Monetary / Non-Monetary Benefits	Benefit Type	Project Start	Project Finish	Savings / Benefits Expected Start Date	Savings / Benefits Expected End Date	Actual Monetary Savings to Date	Current State Synopsis for Expected Benefits and/or Savings
1	Records & Workflow Management Program	JJB-19 line 4-6	The company spends an average $1.7 million yearly ($6.8 million spent from 2016 to 2020) to manually locate, review and verify documents which would be offset by this automation	Non-Monetary	Affordability and Growth	2021	2023	12/2021	01/2025	N/A	Currently, the team spends approximately 250 hrs to search and retrieve documents in the current system. Once legacy records are migrated into the new repository by year end 2023 the company will begin realizing savings of ~170 hrs of time spent on searches for the same activity. Note: The productivity savings will not reduce headcount nor be reflected in projected O&M targets or results.
2	Field Service Management for GasOps	JJB-28 line 9-10	The planned outages cost between $10 - $15k but could be completely discontinued with a move to the ClickSoft product	Monetary	Benefit/Cost	2021	2023	01/2024	Ongoing	N/A	The benefits of this project is future cost avoidance which will be reflected in the O&M budget space. Savings will not be realized until after the project is implemented and active in Q1 of 2024 and beyond. Reduction will reside in Field Service Edge Sustainment project forecast.
3	Corrosion Database Upgrade Project	JJB-33 line 16-19	Replacing the MS Access Database with an application that will programmatically sync the Corrosion Data with ESRI and Maximo, thus eliminating manual errors and reducing the time and resources needed.	Non-Monetary	Affordability and Growth	2021	2022	01/2023	12/2023	N/A	The benefits gained for the project are efficiencies in the Corrosion Control (GRMI and SEMI) capital workload, starting in 2025. This avoids the cost of 1 FTE manually procesing data at a cost of about $100K loaded with benefits.
4	Energy Gas Management System (EGMS)	JJB-34 line 3-6	DTE Gas Nominations business will transition from a passive nominations system (in which the customer requests are received and processed within 24 to 48hrs) to an active nominations system (in which the customer requests are received and processed in real time). Reduction of retroactive request (266 in 2019-2022)	Non-Monetary	Customer Experience	2019	2022	11/2019	01/2022	N/A	The business unit has realized 50.3% in productivity efficiencies in 2022 as compared to 2021. The automation within the system has eliminated manual entry of nominations by DTE staff, resulting in an average reduction of retro nominations to less than 6 per month. Total 2022 retro nominations processed were 66 as compared to the total 2021 retro nominations of 131.
5	Picarro Leak Survey	JJB-40 line 12-13	Moving to Picarro would result in a 15% cost reduction/savings per year (see Exhibit A-12 Schedule B5.19 Picarro Leak Survey Savings).	Monetary	Benefit/Cost	2020	2021	N/A	N/A	N/A	The 15% cost reduction has not been realized to date. The Picarro units have not been fully utilized as a replacement for traditional leak survey. The company has focused on other non-compliance use cases directly related to pipeline and customer safety, such as collecting emissions data, pre and post construction drives necessary to quality control drives conducted on the Gas Renewal plan in order to obtain a total emissions profile. This is allowing end-user adoption of Picarro technology prior to implementation as replacement for traditional survey. In order to complete the roll out plan the company will conduct thorough analysis of potential time and leak quantity/quality impacts vs historical traditional leak survey. Require updating of of DTE Standards and Procedures to allow for the use of Picarro for leak survey. DTE leadership review and acceptance of roll out plan. MPSC review and acceptance of roll ou plan. There is no target date set for the roll out of Leak Survey using Picarro units and until such the planned 15% cost reduction related to leak survey is not forecasted. Once plan is approved it would be forecasted in Gas SEMI Leak Management budget.
6	Gas Renewal Program Project Management Tool	JJB-50 line 20-21	Eliminating manual processing for 1000+ purchase requests, purchase orders, and change orders annually	Monetary	Benefit/Cost	2021	2022	May-22	Ongoing	$30,000	To date the company has realized $30,000 in mis-charged capital as a result of the visibility into project level budgeted cost elements and actuals.
7	Meter Tracking Project	JJB-51 line 15-16	Saving annually as much as $1.5 million (lost gas, excess on hand inventory and truck rolls/office rework) (manual inventory counts, lost meters, excess inventory, and rework)	Monetary	Benefit/Cost	2021	2022	Oct-22	Ongoing	N/A	Due to COVID restrictions the implementation was delayed. Savings will be recognized in October of 2022. Forecasted savings are not reflected to date. In 2022, we have seen a reduction of Consecutive Estimates and improvement in inventory accuracy. Both of the aforementioned benefits are driving overall savings whch are not yet quantifiable at the project level. There are no future savings forecasted at the IT level as this project was reorgnized to be executed by the Supply Chain department hence it is no longer reported out by Witness Busby in testimony or Exhibiti A-12 B5.4.

U-20940 Reference	Project	Investment Category	U-21291 2021 Actuals ($000)
Exhibit A-12 Schedule B5.4.1 Line 1	Records & Workflow Management Program	Regulatory / Compliance	$ 843
Exhibit A-12 Schedule B5.4.1 Line 6	Field Service Management for GasOps_Y2	Return-To-Health	$ 1,534
Exhibit A-12 Schedule B5.4.1 Line 8	Corrosion Database Upgrade Project	IT Enhancements	$ 380
Exhibit A-12 Schedule B5.4.1 Line 9	Electronic Gas Management System (EGMS)	IT Enhancements	$ 107
Exhibit A-12 Schedule B5.4.1 Line 10	Picarro Leak Survey	IT Enhancements	$ 1,328
Exhibit A-12 Schedule B5.4.1 Line 16	Gas Renewal Program Project Management Tool	Strategic	$ 413
Exhibit A-12 Schedule B5.4.1 Line 17	Meter Tracking Project	Strategic	$ -

Michigan Public Service Commission
DTE Gas Company
HPP IT Capital Project Executive Summaries

Line No.	Business Case Name	IT Portfolio	Spend Year	Witness	BCD ID/ Demand Number	Workpaper ID	Workpaper Title	Page Number
1	HPP Check Reimbursement Solution	Plant & Field	2022	H. J. Decker	BCD-PF-21-062	B5.19.1	B5.19.1 HPP Check Reimbursement Solution	2
2	HPP Check Reimbursement Solution	Plant & Field	2022	H. J. Decker	BCD-PF-21-092	B5.19.2	B5.19.2 HPP Check Reimbursement Solution	4
3	HPP Customer Relationship and Billing Enhancements	Plant & Field	2022	H. J. Decker	BCD-PFG-22-026	B5.19.3	B5.19.3 HPP Customer Relationship and Billing Enhancements	6
4	HPP Customer Relationship and Billing Enhancements	Plant & Field	2023	H. J. Decker	DMND0002466	B5.19.4	B5.19.4 HPP Customer Relationship and Billing Enhancements	8

Michigan Public Service Commission
DTE Gas Company
HPP IT Capital Project Executive Summaries

DTE Energy

Executive Summary

Business Case ID	BCD-PF-21-062

Business Case Name	HPP Customer Check Reimbursement Solution

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field PS EG
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Director	Henry Decker
Business Unit SME	Jennifer McAdams
Business Units Impacted	Gas

Project Description

Initiative Category	Return-to-Health

Initiative Type	Solutions Delivery - Cloud

Business Opportunity	
What business problem are we trying to solve?	The Appliance Repair Plan (ARP) Database is used to enter check reimbursement/greenback information for HPP customers. Application failure, which occurs regularly, results in not being able to issue checks, affecting DTE's reputation and the ability to retain customers (see Metrics tab). The MS Access version is no longer supported by Microsoft and uses an old security model. The current process batches the entered daily check requests and submits them to SAP (after approval) to process and post the data. The process is labor intensive and sometimes required several emails and/or phone calls to collect all of the information from the customers. The application is not supported by IT.
What system or process is being affected?	The current check reimbursement/greenback information process is labor intensive and sometimes requires several emails and/or phone calls to collect all the information from the customers. The application is not supported by IT. Application failure, which occurs regularly, results in delays or not being able to issue checks, affecting DTE's reputation and the ability to retain customers.
What functionality or capability is being provided?	A robust multi-user solution, fully supported by DTE, which enables customers and DTE users to enter reimbursement and greenback information that can handle the current volume of transactions and future growth.
What is the customer or employee value?	Customer: Improved user interface, faster processing of refunds, improved customer service Employees: Improved efficiency, reduced waste, ability to focus on growing the business.
What alternatives have been considered?	Building the system in CRM. Architecture recommended that the service cloud is the best solution to host this functionality.

Michigan Public Service Commission
DTE Gas Company
HPP IT Capital Project Executive Summaries

Key Objectives	
1)	Implement SAP Service Cloud, automating the customer reimbursement request and approval workflow. Replace SAP BPEM processing with Service Cloud. Ticket business function.
2)	The solution will support an up-to-date security model and will be supported by DTE IT.
3)	Solution will offer a better customer experience by offering self service and automation.
4)	Solution will offer a better and more reliable user experience.
5)	Solution will reduce/minimize MPSC complaints.
6)	Solution will result in a productivity increase.
7)	Solution will leverage additional functionality by providing further automation including workflow, email notifications, dashboards and reports.
8)	Solution will provide expandability for future functionality on the new platform.
9)	Solution will Improve cycle time from request for check to payment processing.
10)	System will result in resource flexibility, the ability to re-assign the work to other people, reducing backlogs.

Start Month	June	2021
Duration to Complete	Years	6 Months
End Month	December	2021

Funding Source	Gas IT

IT Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	**Total amount is sent for approval on all business cases.** **Total**
Capital	$496,002	$0	$0	$0	$0	**$500,000**
O&M	$61,258	$0	$0	$0	$0	**$60,000**
Total	$557,260	$0	$0	$0	$0	**$560,000**

Business Unit Costs

BU O&M	$12,000	Trailing BU O&M Costs	$100,000

Year 1	Year 2	Year 3	Year 4	Year 5	**Total**

Michigan Public Service Commission
DTE Gas Company
HPP IT Capital Project Executive Summaries

DTE Energy

Executive Summary

Business Case ID	BCD-PF-21-092

Business Case Name	SAP commerce cloud for self service YR2

Stakeholders

IT Portfolio	Plant & Field
IT Sub-Portfolio	Plant & Field PS EG
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Director	Henry Decker
Business Unit SME	Jennifer L McAdams
Business Units Impacted	Gas

Project Description

Initiative Category	Return-to-Health

Initiative Type	Solutions Delivery - Cloud

Business Opportunity	
What business problem are we trying to solve?	The Appliance Repair Plan (ARP) Database is used to enter check reimbursement/greenback information for HPP customers. Application failure, which occurs regularly, results in not being able to issue checks, affecting DTE's reputation and the ability to retain customers (see Metrics tab). The MS Access version is no longer supported by Microsoft and uses an old security model. The current process batches the entered daily check requests and submits them to SAP (after approval) to process and post the data. The process is labor intensive and sometimes required several emails and/or phone calls to collect all of the information from the customers. The application is not supported by IT.
What system or process is being affected?	The current check reimbursement/greenback information process is labor intensive and sometimes requires several emails and/or phone calls to collect all the information from the customers. The application is not supported by IT. Application failure, which occurs regularly, results in delays or not being able to issue checks, affecting DTE's reputation and the ability to retain customers.
What functionality or capability is being provided?	A robust multi-user solution, fully supported by DTE, which enables customers and DTE users to enter reimbursement and greenback information that can handle the current volume of transactions and future growth.
What is the customer or employee value?	Customer: Improved user interface, faster processing of refunds, improved customer service Employees: Improved efficiency, reduced waste, ability to focus on growing the business.
What alternatives have been considered?	Building the system in the Customer Relationship Management (CRM) module. Architecture recommended that the service cloud is the best solution to host this functionality.

Michigan Public Service Commission
DTE Gas Company
HPP IT Capital Project Executive Summaries

Key Objectives	
1)	Implement Customer Self-Service Solution Using Commerce Cloud. Enhance the customer experience by providing self service capabilities.
2)	Self service for submitting claims documentation and providing online customer status tracking/reporting. Reduce HPP manual effort.
3)	Provide flexible technology platform for future expanded customer self-service in areas such as service order scheduling (requesting a technician).
4)	Provide flexible technology platform for expansion including new customer self-enrollment in the HPP program, improved tracking of customer interactions, etc.
5)	The solution will support an up-to-date security model and will be supported by DTE IT.
6)	Solution will offer a better and more reliable customer experience by offering self service and automation and reduce/minimize MPSC complaints.
7)	Solution will leverage additional functionality by providing further automation including workflow, email notifications, dashboards and reports.
8)	Solution will provide expandability for future functionality on the new platform and result in a productivity increase.
9)	Solution will Improve cycle time from request for check to payment processing.
10)	System will result in resource flexibility, the ability to re-assign the work to other people, reducing backlogs.

Start Month	January	2022	
Duration to Complete	Years	4	Months
End Month	May	2022	

Funding Source	Gas IT

IT Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	**Total amount is sent for approval on all business cases.** Total
Capital	$0	$536,310	$0	$0	$0	**$540,000**
O&M	$0	$25,442	$0	$0	$0	**$30,000**
Total	$0	$561,752	$0	$0	$0	**$570,000**

Business Unit Costs

BU O&M	$0	Trailing BU O&M Costs	$0

Year 1	Year 2	Year 3	Year 4	Year 5	**Total**

Michigan Public Service Commission
DTE Gas Company
HPP IT Capital Project Executive Summaries

DTE Energy

Executive Summary

Business Case ID	BCD-PFG-22-026

Business Case Name	HPP Customer Relationship and Billing Enhancements

Stakeholders

IT Portfolio	Plant and Field
IT Sub-Portfolio	Plant and Field EG
IT Director	Jaison Busby
Managed by	IT

Business Unit	Gas Operations
Business Unit Director	Henry Decker
Business Unit SME	Jennifer McAdams
Business Units Impacted	Gas

Project Description

Initiative Category	IT Enhancements

Initiative Type	Solutions Delivery - On Prem

Business Opportunity	
What business problem are we trying to solve?	Customer Relationship and Billing (CR&B) enhancements are required to improve the user and customer experience. The technical requirements for CR&B have been fulfilled since implementation of Cr&B in 2017 and we need to make changes to screens by bringing in more data that will allow our Customer representitives to service the customer better. We need to make changes to how reps see plans available so that we can enroll customers on the right plans for the territory where they live and will allow us to roll out new products in a more efficient manner. We need to make changes to background structure in order to serve the "landlord" community by allowing for HPP Contracts to remain active when tenants move in and out of rental homes.
What system or process is being affected?	Enrollment process, service order process and customer communication
What functionality or capability is being provided?	The following functionality will be provided by implementing this project: Customer Relationship and Billing Enhancements(CR&B) messaging, Structuring of landlord Home Protection Plan(HPP) contracts, HPP jurisdiction changes, New screen within HPP flyout and Service order auto population of data from bp screen.
What is the customer or employee value?	Reduction of errors in service order creation, improvement of call handle time by auto populating fields, increased Home Protection Plan(HPP) contracts by allowing us to sell products regionally, reduction in complaints from improper scheduling, reduction of complaints regarding inaccurate enrollments where no vendors are available and improved focus on vendor recruitment.
What alternatives have been considered?	Manual work arounds have been in effect. The alternative is to continue operating with manual work arounds.

Michigan Public Service Commission
DTE Gas Company
HPP IT Capital Project Executive Summaries

Key Objectives	
1)	Give CR's reminder messages when leaving screens and consolidating information relative to HPP experience in one screen minimizing misinformation and improving handle time
2)	Build a process to transfer agreements making it easier for customer to retain HPP contract when relocating
3)	Building product registration at the local level so that we can sell a larger variety of products where vendors are available and ensure customer gets enrolled in correct plan
4)	Improve service order process by allowing for new appointment areas and auto populating screen
5)	Improve landlord tenant structure so that landlords can carry hpp contract at rental properties when tenants change
6)	Data transparency and reporting improvements
7)	
8)	
9)	
10)	

Start Month	January	2022
Duration to Complete	Years	11 Months
End Month	December	2022

Funding Source	Gas IT

IT Financial Impact

	Year 1	Year 2	Year 3	Year 4	Year 5	**Total amount is sent for approval on all business cases.** Total
Capital	$396,700	$0	$0	$0	$0	**$400,000**
O&M	$59,311	$0	$0	$0	$0	**$60,000**
Total	$456,011	$0	$0	$0	$0	**$460,000**

Business Unit Costs

BU O&M	$0	Trailing BU O&M Costs	$0

Year 1	Year 2	Year 3	Year 4	Year 5	**Total**

DTE

Executive Summary

Business Case Number	Business Case Name
DMND0002466	Home Protection Plus (HPP) - CR&B Enhancements

Stakeholders

Portfolio Category	Business Unit
Plant and Field	Gas
Portfolio	**Business Unit Director**
Plant and Field: EG	Julia L Huffman
Portfolio Manager	**Business Unit SME**
Jaison J Busby	Jen McAdams
Managed By	**PPS**
IT	4.2

Project Description

Investment Type	Initiative Type
IT Enhancements	Operational

What business problem or opportunity are we trying to solve?

We need to build more plans in the CR&B system.
The goal is to support gas affordability by contributing $40.7M in margin from the Home Protection Plus program by adding more plans, providing more coverage options for some of our plans and changing the price structure of plans. Customers are demanding more from our programs and we are making changes to the system so that we can add more customers and provide better service to the customers who are already members of the program which helps our overall goal to provide value to all customers and reduce gas rates by providing better margin.

What functionality or capability is being provided?

The functionality in scope are:
1) Introduce new operands and introduce new MAT codes into CR&B.
2) Build Mass Zip code upload
3) Build Table to store Service Order Cost and display in CRM

Describe alignment of project to Business Unit Goal(s) and Strategy(ies).

The project aligns to corporate priorities on Gas Revenue, EPS (Earnings Per Share), and Affordability (rate case)

Define the Benefit/Value to the Organization, Customer, Employee.

The project aligns to the 5-year plan operating plan Home Protection Plus to continue to provide a minimum of $40.M in margin from the program. To execute the plan we need to maintain and grow the existing customer base from 222,000 customers to approximately 230,000 customers over a five year period. By continuing to offer more to Home Protection Plus plan customers we are better positioned to continue to provide affordable gas service to all customers through the $40M in margin that the program consistently delivers.

How will you monitor and measure expected value?

We will measure based on enrollments in the plans that we sell, cancellations in the plans that we are selling, complaints that we receive, and the revenue per contract against the plan.

What alternatives have been considered?

Doing nothing to change the structure of our plans or not improving service to our customers could erode our customer base resulting in an over decline in margin to the company negatively impacting our ability to provide affordable gas rates to our customers. We have considered not making changes to our plans and not modifying our approach on how and where we sell certain plans and we could continue to see escalations from our customers and further attrition by not providing them with coverage that they expect.

Start Date	End Date	Shared Asset	Funding Source
2023-02-14	2023-12-22	No	Gas IT

IT Costs

Type	FY23	Total
Capex	$500,051	**$500,051**
Opex	$49,957	**$49,957**
Total	**$550,008**	**$550,008**

BU Costs

Category	Term of Contract	BU O&M Cost
Business Unit		$0
Cloud Usage Cost		$0
Digital EXP Design Cost Est		$0
Maintenance/Renewals		$0
Organizational Change Management		$0
Vendor Support & Licensing		$0

Michigan Public Service Commission
DTE Gas Company
DTE Gas Detailed Pipeline Integrity Capital Project List for 2023 - 2025
($000)

Case No.: U-21291
Exhibit Supported: A-12
Schedule: B5.20
Witness: E. Janness
Page: 1 of 1

Line No.	sub line no.		(a) Description	(b) 12 mos. ending 12/31/2023	(c) 12 mos. ending 12/31/2024	(d) 12 mos. ending 12/31/2025
1			**Infrastructure Recovery Mechanism**			
2	1		Modified Main Replacement Program	258,266	277,545	-
3	2		MMO MAC Initiative	26,619	-	-
4	3		Subtotal Gas Renewal Program	284,886	277,545	-
5	4		Meter Move-Out Program	35,720	51,600	-
	5		Pipeline Integrity	27,724	22,290	-
	5.1	*Top 25*	*ILI Expansion - Alpena 16"*	*7,025*	-	-
	5.2	*Top 25*	*ILI Expansion - Trufant (12)*	-	*5,500*	-
	5.3	*Top 25*	*ILI Expansion - Muskegon - Ludington (10) (Ludington Gate - Scotville Tie In)/Destec*	-	-	*5,263*
	5.4	*Top 25*	*ILI Expansion - Belle River Field Headers (12, 16)*	-	*4,800*	-
	5.5	*Top 25*	*ILI Expansion - Powers - Gladstone / Munising (08) (Escanaba paper to Rapid River)*	*4,272*	-	-
	5.6	*Top 25*	*ILI Expansion - Belle River Field Headers (24)*	-	-	*4,088*
	5.7		*ILI Expansion - Menominee - Powers (16)*	-	*3,976*	-
	5.8		*ILI Expansion - Alpena 12"*	*3,909*	-	-
	5.9		*ILI Expansion - Lincoln - Traverse City (12)*	-	-	*3,460*
	5.10		*ILI Expansion - Petoskey (8)*	-	-	*2,950*
	5.11		*Testing of previously untested (grandfather rule) transmission lines (LTC)*	-	*2,700*	-
	5.12		*ILI Trap Replacement - Belle River - Detroit*	-	-	*2,633*
	5.13		*ILI Expansion - Powers - Gladstone (Powers Junction to Escanaba Paper Tap)*	*2,574*	-	-
	5.14		*Manistee Records Remediation*	*2,000*	-	-
	5.15		*ILI Expansion - Austin - Taggart*	-	*1,866*	-
	5.16		*Records Remediation - Willow*	-	-	*1,540*
	5.17		*Probabilistic Risk Model - DIMP/TIMP/UNGSIMP*	*1,300*	-	-
	5.18		*ILI Expansion - Engineering for 2024/2025 projects*	*750*	-	-
	5.19		*Columbus Bend Strain*	*502*	-	-
	5.20		*Records Remediation - Greenville 08*	*500*	-	-
	5.21		*Pigging Separator*	-	*500*	-
	5.22		*ILI Expansion - Engineering for 2026/2027 projects*	-	-	*480*
	5.23		*ILI Expansion - Engineering for 2025/2026 projects*	-	*300*	-
	5.24		*Records Management - DIMP Risk Model Updates - 2023*	*200*	-	-
	5.25		*Records Management - DIMP Risk Model Updates - 2024*	-	*200*	-
	5.26		*Records Management - DIMP Risk Model Updates - 2025*	-	-	*200*
	5.27		*Records Management - TIMP Risk Model Updates -2023*	*150*	-	-
	5.28		*Records Management - TIMP Risk Model Updates -2024*	-	*150*	-
	5.29		*Records Management - TIMP Risk Model Updates - 2025*	-	-	*150*
	5.30		*Integrity Building*	*100*	-	-
	5.31		*Records Management*	*4,442*	*2,298*	*2,300*
			check	*(0)*	-	
6			Cathodic Protection	11,165	9,600	-
7			**Total Infrastructure Recovery Mechanism 1/**	359,494	361,035	-

1/ All IRM expenditures through December 31, 2024,included in base rates.

Michigan Public Service Commission
DTE Gas Company
Infrastructure Recovery Mechanism
Target Capital Expenditures 2013 - 2029
($000)

Case No.: U-21291
Exhibit: A-12
Schedule: B6
Witness: E. D. Janness
Page: 1 of 1

Line No.	(a) Description	(b) 2013-15	(c) 2016	(d) 2017-18	(e) 2019	(f) 2020	(g) 2021	(h) 2022-23	(i) 2024	(j) 2025	(k) 2026-27	(l) 2028-29	(m) Incremental Mileage/Meter Goal
1	**Pipeline Integrity** (per Case No. U-16999)	$ 7,818	$ 7,818	$ 11,120	$ 11,120	$ 11,120	$ 11,120	$ 11,120	$ 11,120	$ 11,120	$ 11,120	$ 11,120	
2	Pipeline Integrity (per Case No. U-21291)	-	-	-	-	-	-	-	-	$ 11,940	$ 2,280	-	
	Main Renewal Program												
3	Main Renewal Program - Base (per Case No. U-16407)	17,400	17,400	17,400	17,400	17,400	17,400	-	-	-	-	-	30 Miles (2012)
4	Modified Main Renewal Program (per Case No. U-16999)	29,500	29,500	29,500	29,500	29,500	29,500	-	-	-	-	-	36 Miles (2013)
5	Modified Main Renewal Program (per Case No. U-17701)	-	15,600	31,400	31,400	31,400	31,400	-	-	-	-	-	16 miles (2016)
6	Modified Main Renewal Program (per Case No. U-17999)	-	-	15,500	15,500	15,500	15,500	-	-	-	-	-	41 Miles (2017)
7	Modified Main Renewal Program (per Case No. U-18999)	-	-	-	75,900	99,200	97,200	-	-	-	-	-	83 Miles (2020)
8	Modified Main Renewal Program (per Case No. U-20642)	-	-	-	-	-	41,400	-	-	-	-	-	No additional miles
9	**Meter Move-Out Program** (per Case No. U-16451)	22,700	22,700	22,700	22,700	22,700	22,700	-	-	-	-	-	12,790 inside meters (2013)
10	**Gas Renewal Program** (per Case No. U-20940)	-	-	-	-	-	-	255,100	255,100		-	-	206 miles, 14,790 inside meters (2022)
11	Combined Gas Renewal Program (per Case No. U-21291)	-	-	-	-	-	-	-	21,040	276,140	276,140	276,140	No additional miles, 8,000 Inside meters (2024)
12	Modified Gas Renewal Program (per Case No. U-21291)	-	-	-	-	-	-	-	-	45,405	45,405	45,405	No additional miles, 20,500 Inside meters (2025-2027)
13	Modified Gas Renewal Program (per Case No. U-21291)	-	-	-	-	-	-	-	-	-	-	(30,840)	(12,000) Inside Meters (2028-2029)
14	**MAC Meter Move-Out Program** (per Case No. U-18999)	-	-	-	20,300	20,300	20,300	20,300	-	-	-	-	8,000 inside meters
15	MAC Meter Move-Out Program (per Case No. U-20642)	-	-	-	-	-	(3,800)	(3,800)	-	-	-	-	No additional meters
16	MAC Meter Move-Out Program (per Case No. U-20940)	-	-	-	-	-	-	4,540	-	-	-	-	No additional meters
17	**Cathodic Protection** (per Case No. U-21291)	-	-	-	-	-	-	-	-	9,600	9,600	9,600	
18	**Total IRM**	$ 77,418	$ 93,018	$ 127,620	$ 223,820	$ 247,120	$ 282,720	$ 287,260	$ 287,260	$ 354,205 (1)	$ 344,545 (1)	$ 311,425 (1)	

(1) Total Infrastructure Recovery Mechanism capital costs requested to be recovered through the Infrastructure Recovery Mechanism Recovery Charge as filed in this case.

Michigan Public Service Commission
DTE Gas Company
Actual Capital Cost of IRM
Compared to Targeted Levels 2016-2022
($000s)

Case No.: U-21291
Exhibit: A-12
Schedule: B6.1
Witness: E. D. Janness
Page: 1 of 1

Line No.	(a) Description	(b) Planned	(c) Actual	(d) Variance
	2016			
1	Main Renewal Program	$ 62,500	$ 86,322	$ 23,822
2	Meter Move Out	22,700	26,688	3,988
3	Pipeline Integrity	7,818	11,111	3,293
4	Total IRM	$ 93,018	$ 124,121	$ 31,103
	2017			
5	Main Renewal Program	$ 93,800	$ 124,325	$ 30,525
6	Meter Move Out	22,700	23,172	472
7	Pipeline Integrity	11,110	13,379	2,269
8	Total IRM	$ 127,610	$ 160,876	$ 33,266
	2018			
9	Main Renewal Program	$ 105,650	$ 143,109	$ 37,459
10	Meter Move Out	22,900	24,495	1,595
11	Pipeline Integrity	12,040	13,750	1,710
12	MAC MMO	2,625	5,199	2,574
13	Total IRM	$ 143,215	$ 186,553	$ 43,338
	2019			
14	Main Renewal Program	$ 169,700	$ 200,229	$ 30,529
15	Meter Move Out	22,700	29,694	6,994
16	Pipeline Integrity	11,120	17,139	6,019
17	MAC MMO	20,300	16,352	(3,948)
18	Total IRM	$ 223,820	$ 263,414	$ 39,594
	2020			
19	Main Renewal Program	$ 193,000	$ 228,638	$ 35,638
20	Meter Move Out	22,700	35,929	13,229
21	Pipeline Integrity	11,120	11,659	539
22	MAC MMO	20,300	17,803	(2,497)
23	Total IRM	$ 247,120	$ 294,029	$ 46,909
	2021			
24	Main Renewal Program	$ 232,400	$ 241,969	$ 9,569
25	Meter Move Out	22,700	26,745	4,045
26	Pipeline Integrity	11,120	11,726	606
27	MAC MMO	16,500	22,197	5,697
28	Total IRM	$ 282,720	$ 302,636	$ 19,916
	2022			
29	Gas Renewal Program - Mains	$ 255,100	$ 263,105	$ 8,005
30	Gas Renewal Program - MMO	22,700	30,889	8,189
31	Pipeline Integrity	11,120	20,437	9,317
32	MAC MMO	21,040	23,195	2,155
33	Total IRM	$ 309,960	$ 337,626	$ 27,666

Michigan Public Service Commission
DTE Gas Company
Inside Meter Move-Out History and Projections
For 2021-2035

Case No.: U-21291
Exhibit: A-12
Schedule: B6.2
Witness: E. D. Janness
Page: 1 of 1

Line No.	(a) Description	(b) Actual 2021	(c) Actual 2022	(d) Projected Calendar Year (1) 2023	(e) 2024	(f) 2025	(g) 2026	(h) 2027	(i) 2028	(j) 2029	(k) 2030	(l) 2031	(m) 2032	(m) 2033	(n) 2034	(o) 2035
1	Meter Move Out	12,671														
2	Main Renewal Program	3,074														
3	Routine Activity	845	583													
4	MAC Meter Move Out	8,138	8,353	8,400												
5	Gas Renewal Program		14,565	14,390	22,790	20,500	20,500	20,500	8,500	8,500	4,500	4,500	4,500	4,500	3,500	2,823
6	*SEMI GRP*		*11,973*	*12,000*	*12,790*	*10,000*	*10,000*	*10,000*	*6,000*	*6,000*	*2,000*	*2,000*	*2,000*	*2,000*	*1,000*	*949*
7	*SEMI GRP (Supplemental MMO's)*				*8,000*	*8,000*	*8,000*	*8,000*	-	-	-	-	-	-	-	-
8	*GRMI GRP*		*2,592*	*2,390*	*2,000*	*2,000*	*2,000*	*2,000*	*2,000*	*2,000*	*2,000*	*2,000*	*2,000*	*2,000*	*2,000*	*1,874*
9	*GRMI GRP (Supplemental MMO's)*					*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*	*500*	-
10	**Meter Move Out Activity - Total**	**24,728**	**23,501**	**22,790**	**22,790**	**20,500**	**20,500**	**20,500**	**8,500**	**8,500**	**4,500**	**4,500**	**4,500**	**4,500**	**3,500**	**2,823**
11	**Cumulative move out 2012-2021 w/ MAC MMO**	**236,730**	**260,231**													
12	Cumulative move out 2012-2021 w/o MAC MMO	209,991	227,682													
13	Meter Location Data Adjustment	3,639	3,738													
14	Inside Meter End Balance - SEMI	145,425	117,139	96,739	75,949	57,949	39,949	21,949	15,949	9,949	7,949	5,949	3,949	1,949	949	-
15	Inside Meter End Balance - GRMI	33,856	31,264	28,874	26,874	24,374	21,874	19,374	16,874	14,374	11,874	9,374	6,874	4,374	1,874	-
16	**Inside Meter End Balance - Total**	**175,642**	**148,403**	**125,613**	**102,823**	**82,323**	**61,823**	**41,323**	**32,823**	**24,323**	**19,823**	**15,323**	**10,823**	**6,323**	**2,823**	**-**
17	Inside Meter End Balance - % of Total Meters	14%	11%	9%	8%	6%	5%	3%	2%	2%	1%	1%	1%	0.5%	0.2%	0.0%

(1) Yearly meters moved and end inside meter balance are subject to variance. Does not include a forecast for meters moved out through routine activity.

Michigan Public Service Commission
DTE Gas Company
Main Renewal History and Projections
For 2021-2035

Case No.: U-21291
Exhibit: A-12
Schedule: B6.3
Witness: E. D. Janness
Page: 1 of 1

Line No.	(a) Description	(b) Actual 2021	(c) Actual 2022	(d) Projected Calendar Year (1) 2023	(e) 2024	(f) 2025	(g) 2026	(h) 2027	(i) 2028	(j) 2029	(k) 2030	(l) 2031	(m) 2032	(n) 2033	(o) 2034	(p) 2035
	Legacy Main Miles															
1	Beg. Miles	2,928	2,697	2,442	2,236	2,030	1,824	1,618	1,412	1,206	1,000	794	588	388	195	31
2	**Miles Replaced - Total**	**231**	**256**	**206**	**206**	**206**	**206**	**206**	**206**	**206**	**206**	**206**	**200**	**193**	**164**	**31**
3	End Miles	2,697	2,442	2,236	2,030	1,824	1,618	1,412	1,206	1,000	794	588	388	195	31	-
4	Miles Replaced SEMI GRP	158	164	156	150	150	150	150	150	150	150	150	150	150	121	23
5	Miles Replaced GRMI GRP	56	57	50	56	56	56	56	56	56	56	56	50	43	43	8
6	**Miles Replaced GRP**	**214**	**222**	**206**	**206**	**206**	**206**	**206**	**206**	**206**	**206**	**206**	**200**	**193**	**164**	**31**
7	Unplanned Retirement	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-
8	Public Improvement	3	0	-	-	-	-	-	-	-	-	-	-	-	-	-
9	Special Projects / Other	12	31	-	-	-	-	-	-	-	-	-	-	-	-	-
10	SEMI Beg. Miles			1,800	1,644	1,494	1,344	1,194	1,044	894	744	594	444	294	144	23
11	GRMI Beg. Miles			642	592	536	480	424	368	312	256	200	144	94	51	8
12	End Miles % ofTotal Distribution Mains			11%	10%	9%	8%	7%	6%	5%	4%	3%	2%	1%	0.1%	0.0%
	Legacy Main Miles SEMI															
	Eastern/Central (Allen/Lynch)															
13	Beg			1,546	1,403	1,261	1,132	1,003	874	745	616	487	358	229	100	0
14	Miles Replaced			143	142	129	129	129	129	129	129	129	129	129	100	0
15	End			1,403	1,261	1,132	1,003	874	745	616	487	358	229	100	0	0
	Western (MI Avenue)															
16	Beg			254	241	233	212	191	170	149	128	107	86	65	44	23
17	Miles Replaced			13	8	21	21	21	21	21	21	21	21	21	21	23
18	End			241	233	212	191	170	149	128	107	86	65	44	23	0
19	**Total SEMI**			**156**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**150**	**121**	**23**
	Legacy Main Miles GRMI															
	Western (MSK)															
20	Beg			124	112	98	85	72	59	46	33	20	7	0	0	0
21	Miles Replaced			12	13	13	13	13	13	13	13	13	7	0	0	0
22	End			112	98	85	72	59	46	33	20	7	0	0	0	0
	Southern (GR)															
23	Beg			436	399	363	327	291	255	219	183	147	111	75	39	3
24	Miles Replaced			37	36	36	36	36	36	36	36	36	36	36	36	3
25	End			399	363	327	291	255	219	183	147	111	75	39	3	0
	North/Central (Various)															
26	Beg			82	82	74	67	60	53	46	39	32	25	18	11	4
27	Miles Replaced			1	7	7	7	7	7	7	7	7	7	7	7	5
28	End			82	74	67	60	53	46	39	32	25	18	11	4	0
29	**Total GRMI**			**50**	**56**	**56**	**56**	**56**	**56**	**56**	**56**	**56**	**50**	**43**	**43**	**8**
30	**Total GRP**			**206**	**206**	**206**	**206**	**206**	**206**	**206**	**206**	**206**	**200**	**193**	**164**	**31**

(1) Yearly miles remediated and end miles balance are subject to variance. Does not include a forecast for unplanned main renewal, public improvement or other special projects.

Michigan Public Service Commission
DTE Gas Company
IRM Report Content and Proposed Changes

Case No.: U-21291
Exhibit: A-12
Schedule: B6.4
Witness: E. D. Janness
Page: 1 of 1

Line No.	(a) Description	(b) Currently Supported	(c) Proposed	(d) Commentary
	IRM Report			
1	***MMO Report***			Discontinue: Consolidate data into other exhibits
2	Count of MMO work by zip code	x		Move to GRP Report - Reported by Project ID
3	Cost of inside meter work (MMO, MRP, MAC, Routine)	x		Incorporate IRM IM costs into GRP Report & IRM Capital summary and discontinue routine IM costs
4	Number of theft containing an inside meter	x		Discontinue
5	Count of service lines renewed	x		Incorporate GRP IRM units into the GRP Report and MAC MMO units into the IRM Capital Summary and discontinue routine
6	Number of service lines renewed that remediated leaks	x		Discuss to discontinue otherwise report by project ID in GRP report
7	Internal resource counts	x		Discontinue
8	External resource support	x		Discontinue
9	New hire employees	x		Discontinue
10	Explanation for not achieving goals	x		Move to IRM Capital Expenditure Summary - Include as footnote when necessary
11	Next year unit and expenditure targets	x		Move to IRM Capital Expenditure Summary - Add 2023 Target Column for costs and units
12	***MRP Report***			Renamed: Gas Renewal Program Report
13	***Planned Renewal Report***			
14	Project Details (ID, Muni, Streets, region)	x	x	
15	Project Cost	x	x	
16	Retired footage by pipe type	x	x	
17	Service units by work type	x	x	
18	Leaks remediated on abandoned main	x	x	
19	Main installation footage/mileage by size and type	x	x	
20	Main retested by size and type	x	x	
21	***Unplanned Renewal Report***			
22	Retired footage/mileage by pipe type	x		Summarize in updated Exhibit A-12 B6.3, including public improvement
23	Total capital expenditure	x		Summarize in updated Exhibit A-12 B6.3
24	***Planned Main Exhibit S-2***			
25	MRP mains installed footage/mileage	x		Data summarized in GRP Report
26	MRP Service units and capital expenditures by work type	x		Discontinue MRP breakout of services
27	Total MRP capital expenditures without veh dep and one time costs	x		Discontinue MRP breakout of services
28	Total MRP capital expenditures with veh dep and one time costs	x		Discontinue MRP breakout of services
29	***DTE Gas Main Retirement Summary***			Move yearly totals to the IRM Summary and/or GRP Report, discontinue month-by-month look-back
30	MRP total retired miles of main by pipe type by month vs plan	x		Move yearly totals to the IRM Summary and/or GRP Report, discontinue month-by-month look-back
31	Unp MR total retired miles of main by pipe type by month vs plan	x		Move yearly totals to the IRM Summary and/or GRP Report, discontinue month-by-month look-back
32	Public Improvement total retired miles of main by pipe type by month vs plan	x		Move yearly totals to the IRM Summary and/or GRP Report, discontinue month-by-month look-back
33	DTE Gas total retired miles of main by pipe type by month vs plan	x		Move yearly totals to the IRM Summary and/or GRP Report, discontinue month-by-month look-back
		x		
34	***Pipeline Integrity Report***			
35	Actual expenditures by project w/ program roll-up	x	x	
36	***Cathodic Protection Report***			
37	Total capital expenditures and units breakout for Corrosion Work Order and CP Engineering		x	
38	***IRM Capital Expenditure Summary***			
39	IRM Capital expenditure targets v. actuals by program	x	x	
40	IRM inside meter targets v. actuals by program	x	x	Summarize in updated Exhibit A-12 B6.2
41	Routine Idle/theft/vacant/demo/other inside meter units	x		Discontinue
42	Total inside meters removed	x	x	Summarize in updated Exhibit A-12 B6.2
43	Year-end inside meter balance	x	x	Summarize in updated Exhibit A-12 B6.2

Michigan Public Service Commission
DTE Gas Company
Investment Recovery Mechanism Expenditures History and Projections
For 2020-2029

Case No.: U-21291
Exhibit: A-12
Schedule: B6.5
Witness: E. D. Janness
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Line No.	(a) Description	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)
		Actual			**Projected Calendar Year (1)**						
		2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
	MAIN RENEWAL										
1	Legacy Main Renewal - SEMI (Miles)	151	158	164	156	150	150	150	150	150	150
2	Legacy Main Renewal - GRMI (Miles)	55	56	57	50	56	56	56	56	56	56
3	**Legacy Main Renewal - Total (Miles)**	**206**	**214**	**222**	**206**	**206**	**206**	**206**	**206**	**206**	**206**
4	Main Renewal Costs - SEMI ($K)	$ 175,642	$ 192,290	$ 183,736	$ 204,667	$ 213,545	$ 210,000	$ 210,000	$ 210,000	$ 210,000	$ 210,000
5	Main Renewal Costs GRMI ($K)	$ 40,366	$ 45,079	$ 57,854	$ 56,934	$ 64,000	$ 64,000	$ 64,000	$ 64,000	$ 64,000	$ 64,000
6	**Main Renewal Costs - Total ($K)**	**$ 216,007**	**$ 237,369**	**$ 241,590**	**$ 261,601**	**$ 277,545**	**$ 274,000**	**$ 274,000**	**$ 274,000**	**$ 274,000**	**$ 274,000**
7	$/Legacy Mile Retired - SEMI ($K)	$ 1,163	$ 1,218	$ 1,119	$ 1,312	$ 1,423	$ 1,400	$ 1,400	$ 1,400	$ 1,400	$ 1,400
8	$/Legacy Mile Retired - GRMI ($K)	$ 738	$ 810	$ 1,008	$ 1,138	$ 1,143	$ 1,143	$ 1,143	$ 1,143	$ 1,143	$ 1,143
9	**$/Legacy Mile Retired - Total ($K)**	**$ 985**	**$ 1,029**	**$ 945**	**$ 1,270**	**$ 1,347**	**$ 1,330**	**$ 1,330**	**$ 1,330**	**$ 1,330**	**$ 1,330**
	METER MOVE OUT										
10	Inside Meter Move Outs - MMO *(1)*	11,980	12,671	11,973	12,000	20,790	18,500	18,500	18,500	6,500	6,500
11	Inside Meter Move Outs - MAC MMO	8,016	8,138	8,353	8,400	-	-	-	-	-	-
12	**Inside Meter Move Outs - Total**	**19,996**	**20,809**	**20,326**	**20,400**	**20,790**	**18,500**	**18,500**	**18,500**	**6,500**	**6,500**
13	MMO Costs ($K)	$ 35,929	$ 26,745	$ 30,889	$ 28,725	$ 51,600	$ 47,545	$ 47,545	$ 47,545	$ 16,705	$ 16,705
14	MAC MMO Costs ($K)	$ 17,803	$ 22,197	$ 23,195	$ 22,420						
15	**Meter Move Out Costs ($K)**	**$ 53,732**	**$ 48,942**	**$ 54,084**	**$ 51,145**	**$ 51,600**	**$ 47,545**	**$ 47,545**	**$ 47,545**	**$ 16,705**	**$ 16,705**
16	$/GRP MMO ($K)	$ 3.00	$ 2.11	$ 2.58	$ 2.39	$ 2.48	$ 2.57	$ 2.57	$ 2.57	$ 2.57	$ 2.57
17	$/MAC MMO ($K)	$ 2.22	$ 2.73	$ 2.78	$ 2.67						
18	$/MMO - Total ($K)	**$ 2.69**	**$ 2.35**	**$ 2.66**	**$ 2.51**	**$ 2.48**	**$ 2.57**	**$ 2.57**	**$ 2.57**	**$ 2.57**	**$ 2.57**
19	**Total GRP ($M)**	**$ 269,739**	**$ 286,311**	**$ 295,674**	**$ 312,746**	**$ 329,145**	**$ 321,545**	**$ 321,545**	**$ 321,545**	**$ 290,705**	**$ 290,705**
20	Pipeline Integrity	$ 11,659	$ 11,726	$ 20,437	$ 23,333	$ 19,990	$ 23,060	$ 13,400	$ 13,400	$ 11,120	$ 11,120
21	Cathodic Protection						$ 9,600	$ 9,600	$ 9,600	$ 9,600	$ 9,600
22	**Grand Total IRM ($M)**	**$ 281,398**	**$ 298,036**	**$ 316,111**	**$ 336,079**	**$ 349,135**	**$ 354,205**	**$ 344,545**	**$ 344,545**	**$ 311,425**	**$ 311,425**

(1) Line 10: projection excludes 2,000 yearly inside meter moveouts and costs associated with Main Renewal to align with historical actuals

Michigan Public Service Commission
DTE Electric Company
2022 Historical Spend Variance Recovery
Information Technology
($000)

Case No.: U-21291
Exhibit: A-12
Schedule: B7
Witness: J.Busby
Page: 1 of 1

	(a)	(b)		(d)	(e)	(f)	(g)
Line No.	**Portfolio**	**Description**	**Witness**	**2022 Approved (U-20940)**	**2022 Actual Spend**	**Difference (Recovery)**	**Variance**
1	Plant & Field (Energy Gas)	End of Life (EOL) Gas Device Program	Busby	2,870,000	6,208,870	3,338,870	116%
2	Plant & Field (Energy Gas)	Field Service Management (ClickSoft)	Busby	1,757,000	3,140,893	1,383,893	79%
3	Plant & Field (Energy Gas)	Records & Workflow Management Program	Busby	-	995,947	995,947	100%
4	Plant & Field (Energy Gas)	Corrosion Database Upgrade	Busby	-	810,384	810,384	100%
5	Plant & Field (Energy Gas)	EGMS Licensing	Busby	-	777,586	777,586	-
6	**Total**			**$ 4,627,000**	**$ 11,933,680**	**$ 7,306,680**	**100%**
7		**Total 2022 IT Capital Spend**		**$ 7,457,000**	**$ 14,952,640**	**$ 7,495,640**	

Michigan Public Service Commission
DTE Gas Company
Projected Value of Gas Scheduling Optimizer

Case No.: U-21291
Exhibit: A-12
Schedule: B8
Witness: E. Abona

Line No.	(a) NPV Analysis for Veg Analystics Model	(b) 2022	(c) 2023	(d) 2024	(e) 2025	(f) 2026	(g) 2027	(h) 2028	(i) 2029	(j) 2030
1	Expected Risk-based Cycle Capital Savings				$0.6	$0.8	$1.1	$1.2	$1.2	$1.2
2	Expected Risk-based Cycle O&M Savings				$0.4	$0.6	$0.7	$0.8	$0.8	$0.8
3	Gas Scheduling Optimizer Capital costs	($5.8)	($4.1)							
4	Gas Scheduling Optimizer O&M Costs	$0.0	($0.1)							
5	Net Savings	($5.8)	($4.2)	$0.0	$1.0	$1.4	$1.8	$2.0	$2.0	$2.0
6	NPV	$2.7								
7	Rate of return	6.80%								

Michigan Public Service Commission
DTE Gas Company
Projected Value of Gas Scheduling Optimizer

Case No.: U-21291
Exhibit: A-12
Schedule: B8
Witness: E. Abona

Line No.	(a) Description	(c) 2031	(d) 2032	(e) 2033	(f) 2034	(g) 2035	(h) 2036
1	Expected Risk-based Cycle Capital Savings	$1.2	$1.2	$1.2	$1.2	$1.2	$1.2
2	Expected Risk-based Cycle O&M Savings	$0.8	$0.8	$0.8	$0.8	$0.8	$0.8
3	Gas Scheduling Optimizer Capital costs						
4	Gas Scheduling Optimizer O&M Costs						
5	Net Savings	$2.0	$2.0	$2.0	$2.0	$2.0	$2.0

Michigan Public Service Commission
DTE Gas Company
Gartner Research Article - 'Prioritize Digital Investments that Maximize Business Value'

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