

**SOUTHWEST GAS CORPORATION**

**BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA**

In the Matter of the Application of  
Southwest Gas Corporation for Authority to  
Increase its Retail Natural Gas Utility  
Service Rates in its Southern and Northern  
Nevada Rate Jurisdictions.

Docket No.: 20-02023

**CERTIFICATION FILING**

**VOLUME 3 OF 34**

**Prepared Certification Testimony of**

**Gregory K. Waller**

**Frederica Harvey**

**Byron C. Williams**

**Ryan A. Kimball**

**Robert B. Hevert**

**Carla Ayala**

**Timothy S. Lyons**

**William Brincefiled**

**Jose L. Esparza, Jr.**

IN THE MATTER OF  
SOUTHWEST GAS CORPORATION  
DOCKET NO. 20-02023

PREPARED CERTIFICATION TESTIMONY  
OF  
GREGORY K. WALLER

ON BEHALF OF  
SOUTHWEST GAS CORPORATION

JUNE 26, 2020

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Prepared Certification Testimony  
of  
Gregory K. Waller

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BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Certification Testimony  
of  
Gregory K. Waller

**I. INTRODUCTION**

**Q. 1 Are you the same Gregory K. Waller who presented direct testimony on behalf of Southwest Gas Corporation (Southwest Gas or Company) in this proceeding?**

A. 1 Yes.

**Q. 2 What is the purpose of your testimony in Southwest Gas' certification filing?**

A. 2 The purpose of my certification testimony is to: (1) provide an updated summary of results of operations for the Company's Southern Nevada rate jurisdiction (Southern Nevada) and Northern Nevada rate jurisdiction (Northern Nevada), including the determination of margin deficiencies, as presented in Statement I; (2) describe the overall presentation of certification schedules; and (3) provide updates to Schedule Nos. H-C2; H-C3; H-C4; H-C5; H-C6; H-C7; and H-C8 to reflect actual costs. These schedules are presented in Schedule Nos. I-C2; I-C3; I-C4; I-C5; I-C6; I-C7; and I-C8 of this filing. In addition, I am sponsoring the same Statements and Schedules in the Company's certification filing that I sponsored in my direct testimony.

**Q. 3 Do other witnesses sponsor certification testimony, Statements and Schedules regarding Southwest Gas' revenue requirement?**

A. 3 Yes. Regarding the Company's certification filing, each Company witness

1 sponsors the same Statements, Schedules and issues that he or she sponsored  
2 in direct testimony.

3 **Q. 4 What Certification Period adjustments were referenced in your prepared**  
4 **direct testimony?**

5 A. 4 My direct testimony beginning with question and answer 52 through question and  
6 answer 59 addressed seven certification adjustments - Schedule H-C2  
7 (Adjustment No. C2), Labor and Benefits; Schedule H-C3 (Adjustment No. C3),  
8 Regulatory Commission Expense; Schedule H-C4 (Adjustment No. C4),  
9 Annualization of Depreciation and Amortization; Schedule H-C5 (Adjustment No.  
10 C5), Rate Base and Property Tax Annualization; Schedule H-C6 (Adjustment No.  
11 C6), Regulatory Amortizations; Schedule H-C7 (Adjustment No. 7), Customer Data  
12 Modernization Initiative; and Schedule H-C8 (Adjustment No. 8), Payment  
13 Remittance Processing.

14 **II. SUMMARY OF RESULTS OF OPERATIONS**

15 **Q. 5 Please explain Statement I, Sheet 1, Summary of the Overall Results of**  
16 **Operations.**

17 A. 5 Statement I, Sheet 1 provides a comprehensive overview of the Company's results  
18 of operations and overall rate of return for the test year ended November 30, 2019  
19 and the certification period ended May 31, 2020 (Certification Period). It also  
20 presents the Company's proposed revenue requirement and margin deficiency.  
21 The following table provides a summary of the Certification Period results for  
22 Statement I, including the Company's requested margin deficiency:  
23  
24

CERTIFICATION PERIOD RESULTS		
Description	Southern Nevada	Northern Nevada
Net Operating Income	\$63.2M	\$9.0M
Rate Base	\$1.33B	\$156.5M
Overall ROR	4.77%	5.77%
Margin Deficiency	\$35.8M	\$2.7M

The margin deficiency is approximately \$0.6 million higher for Southern Nevada and \$0.5 million lower for Northern Nevada compared to the estimates made at the time of the initial filing. The drivers of the variances are discussed throughout the Company's certification testimony.

### III. OVERALL SCHEDULE PRESENTATION

**Q. 6 Please describe the overall presentation of the schedules in the certification filing.**

A. 6 All of the Statements and Schedules that were filed in the Company's original filing are filed in this certification filing with the exception of Statements A through E, Statements K-3 through K-7, and Statements N<sup>1</sup>, N-1, and Q, since they are unchanged from the original filing.

**Q. 7 Please explain Statement I.**

A. 7 Statement I and the supporting I Schedules contain the schedules that were presented in Statement H and the supporting H Schedules in the original filing. Statement I differs from Statement H because Schedules I-C1 through I-C9 are updated to reflect actual amounts at the May 31, 2020

<sup>1</sup> With the exception of Statement N, Sheet 8 (Computation of 4-Factor and A&G Allocation Rates) which was updated to reflect the A&G Transfer Rate at November 30, 2019.

1 certification date, conforming changes to income taxes and working capital, cost  
2 of capital at certification, and margin at present rates at certification.

3 **Q. 8 Has the Company made any changes that affect Test Year Recorded**  
4 **amounts on Statement I, Sheet 1, column c?**

5 A. 8 Yes. The Company made the following changes resulting from further evaluation  
6 through the discovery process:

- 7 • Corrected the A&G transfer rate on Sheet 8 of Statement N
- 8 • Reclassified amounts recorded to transmission expense in Northern  
9 Nevada to distribution expense. The reclassification has no impact on  
10 total O&M expenses
- 11 • Removed on-call and standby expenses improperly charged to Northern  
12 Nevada

13 **Q. 9 Has the Company made any changes that affect within Test Year**  
14 **Adjustments on Statement I, Sheets 2 through 4?**

15 A. 9 Yes. The Company made the following changes resulting from further evaluation  
16 through the discovery process:

- 17 • Removed certain Board of Director expenses that the Company is not  
18 including for purposes of ratemaking which affects Adjustment No. 5
- 19 • Reclassified amounts related to advertising (customer notices) which  
20 affects Adjustment No. 8
- 21 • Corrected the Self Insurance Retention amount which affects Adjustment  
22 No. 9 for Southern Nevada
- 23 • Corrected the A&G transfer rate on Sheet 8 of Statement N which affects  
24 Adjustments No. 3 and No. 10

- Corrected Adjustment No. 20 for Company-owned aircraft
- Removed additional rate base amounts identified through discovery that the Company is not including for purposes of ratemaking which affects Adjustment No. 26
- Excluded SPI awards from inclusion in Adjustment No. 28
- Removed on-call and standby expenses improperly charged to Northern Nevada from inclusion in Adjustment No. 28

**Q. 10 Please discuss the updates to Statement G.**

A. 10 Statement G is updated to include actual plant balances as of May 31, 2020. Net plant in service is \$6.7 million higher in Southern Nevada and \$2.7 million lower in Northern Nevada when compared to the certification forecast in the initial filing. Company witnesses William Brincefield, Thomas W. Cardin, Matthew A. Helmers and Jose L. Esparza, Jr. sponsor the capital investments placed in service during the Certification Period in each of their respective areas of responsibility.

**Q. 11 Has the Company made any adjustments that affect the amounts in Statement G?**

A. 11 Yes. The Company made a journal entry in June 2020 to transfer \$900,000 of plant-in-service (meters) from the Carson district in Northern Nevada to the South Lake Tahoe district in California. Although the journal entry was made after the end of the Certification Period in the instant docket, the Company included a ratemaking adjustment to Statement G to reflect the transfer and avoid overstating the revenue requirement for Northern Nevada.

**Q. 12 Please discuss the updates to Statement L.**

A. 12 Statement L is updated based on the actual plant balances reflected in Statement



1 G and discussed above.

2 **IV. CERTIFICATION ADJUSTMENTS**

3 **Q. 13 Please describe Schedule No. I-C2, Labor and Benefits.**

4 A. 13 Schedule No. I-C2 reflects the overall general wage increase of approximately 2.0  
5 percent that became effective during the Certification Period. Since the effective  
6 date for these changes in expenses was after the end of the November 30, 2019  
7 test year but prior to the end of the Certification Period of May 31, 2020, this  
8 adjustment is included as a certification adjustment. In addition, conforming  
9 adjustments are made to benefits based on salaries, including 401K match and  
10 payroll taxes.

11 **Q. 14 Was the general wage increase adjustment applied to any new hires?**

12 A. 14 No. The general wage increase adjustment was only effective for those employees  
13 who were employed by Southwest Gas at the end of the test year.

14 **Q. 15 What is the amount certified for wages and benefits?**

15 A. 15 The certified adjustment for wages and benefits is an increase in expense of  
16 \$1,981,519 in Southern Nevada and an increase of \$546,754 in Northern Nevada.

17 **Q. 16 Please describe Schedule No. I-C3, Regulatory Commission Expense.**

18 A. 16 Schedule No. I-C3, Regulatory Commission Expense includes the incremental  
19 cost to process this rate filing paid through the end of the Certification Period of  
20 May 31, 2020.

21 **Q. 17 What is the difference between filed amounts and amounts certified for  
22 regulatory commission expense?**

23 A. 17 While Southwest Gas estimated approximately \$750,000 in total incremental costs  
24 to process this rate filing, only \$142,309 was paid through the end of the

1 Certification Period.

2 **Q. 18 Please describe Schedule No. I-C4, Annualization of Depreciation and**  
3 **Amortization.**

4 A. 18 Schedule No. I-C4, Depreciation and Amortization calculates the annualized  
5 depreciation expense as of the end of the certification period for Southern and  
6 Northern Nevada direct as well as system allocable gas plant in service at  
7 currently-authorized depreciation rates. The differences in this adjustment from  
8 the initial filing are directly related to changes in the respective gas plant in service  
9 balances.

10 **Q. 19 Please describe Schedule No. I-C5, Rate Base and Property Tax**  
11 **Annualization.**

12 A. 19 This adjustment accounts for the changes in rate base for the certification period  
13 and annualizes property tax accordingly. The adjustment is an increase to  
14 operating expenses of \$301,559 in Southern Nevada and \$36,582 in Northern  
15 Nevada.

16 **Q. 20 Please describe Schedule No. I-C6, Regulatory Amortizations.**

17 A. 20 Schedule No. I-C6 Regulatory Amortizations includes the amortization of costs for  
18 regulatory assets identified in within test year adjustment No. 18 on Schedule H-  
19 18 of the original filing (Schedule I-18 of the certification filing). The certified  
20 adjustment for the regulatory amortizations is unchanged from the original filing.

21 **Q. 21 Please describe Schedule No. I-C7, Customer Data Modernization Initiative.**

22 A. 21 Schedule No. I-C7 Customer Data Modernization Initiative updates previously  
23 estimated incremental O&M costs related to the CDMI project with actual costs  
24 recorded during the Certification Period. The adjustment also removes additional

1 amounts identified through discovery that the Company is not including for  
2 purposes of ratemaking.

3 **Q. 22 Please describe Schedule No. I-C8, Payment Remittance Processing.**

4 A. 22 Schedule No. I-C8 Payment Remittance Processing updates previously estimated  
5 costs with actual costs recorded for the Certification Period associated with  
6 outsourcing the payment remittance processing function.

7 **V. CONCLUSION**

8 **Q. 23 Does this conclude your certification testimony?**

9 A. 23 Yes.

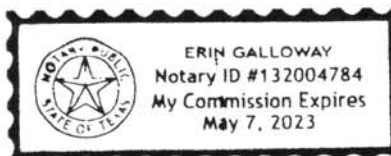
**AFFIRMATION**

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STATE OF TEXAS )

: SS.

COUNTY OF DENTON )



Gregory Waller being first duly sworn, deposes and says:

That I am the person identified in the Prepared Certification Testimony, and the exhibits applicable to my testimony; that such testimony and exhibits were prepared by me or under my direction; and that the answers and information set forth therein are true to the best of my own knowledge and belief.

Waller

Signed and sworn to before me on  
this 24 day of June, 2020.

Erin Galloway  
Notary Public

IN THE MATTER OF  
SOUTHWEST GAS CORPORATION  
DOCKET NO. 20-02023

PREPARED CERTIFICATION TESTIMONY  
OF  
FREDERICA HARVEY

ON BEHALF OF  
SOUTHWEST GAS CORPORATION

JUNE 26, 2020

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Prepared Certification Testimony  
of  
Frederica Harvey

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Certification Exhibit No. \_\_\_\_ (FH-1)

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Certification Testimony  
of  
FREDERICA HARVEY

**I. INTRODUCTION**

**Q. 1 Are you the same Frederica Harvey who presented direct testimony on behalf of Southwest Gas Corporation (Southwest Gas or Company) in this proceeding?**

A. 1 Yes.

**Q. 2 What is the purpose of your testimony in Southwest Gas' certification filing?**

A. 2 The purpose of my certification testimony is to provide an update on the wage and salary adjustments that were applied to test year employees in May 2020. Company witness Gregory K. Waller discusses the difference between the filed amounts and certified amounts for labor and benefits as it relates to the amount included in the proposed revenue requirement in his prepared certification testimony.

**II. CERTIFICATION ADJUSTMENT**

**Q. 3 Please describe the wage and salary adjustment Southwest Gas has included in its certification filing.**

A. 3 The Company granted a wage and salary adjustment to employees in the nonexempt and exempt employee groups effective May 11, 2020. Eligible nonexempt employees received a wage adjustment of 2.74%, comprised of a

1 2.0% base wage increase and a step increase amount of 0.74%. Eligible  
2 exempt employees were granted base salary increases of 2.0%. Because some  
3 exempt employees received prorated increases based on hire date, the overall  
4 budget amount granted was 1.9%.

5 **Q. 4 Did the Company's executives receive a salary increase during the**  
6 **certification period?**

7 A. 4 No. Neither the Named Executive Officers (NEO) group nor the non-NEO officer  
8 group received a salary increase during the certification period.

9 **Q. 5 Based on the 2020 external market projections evaluated by the Company,**  
10 **were the wage and salary adjustments granted in May 2020 to the**  
11 **nonexempt and exempt employee groups reasonable?**

12 A. 5 Yes. Certification Exhibit No.\_\_(FH-1)<sup>1</sup> was presented to and approved by the  
13 Employee Resource Committee in February 2020. It summarizes the analysis  
14 that was conducted to support the Company's 2020 wage and salary  
15 adjustment. When the Company made the decision to grant the wage and salary  
16 adjustments, the average projected salary increase, as reported from seven  
17 different national salary survey sources used by the Company, was 3% for each  
18 employee group (nonexempt and exempt) as shown in Q&A 20 of my prepared  
19 direct testimony. Additionally, the data supported a 2.1% exempt salary  
20 structure adjustment, also shown in Q&A 20 of my prepared direct testimony.  
21 However, based on current market conditions, the Company granted a wage  
22 and salary adjustment lower than the survey projections. Further, the Company  
23 did not adjust the salary structure for exempt positions.

24 \_\_\_\_\_  
25 <sup>1</sup> NEWA refers to Non-Exempt Wage Adjustment and ESA refers to Exempt Salary Administration, collectively referred to as the wage and salary adjustments.



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**Q. 6 Was the wage & salary adjustment included in the instant docket applied to any new hires?**

**A. 6** No. The wage & salary adjustment was only included for those employees who were employed by Southwest Gas at the end of the test year.

**III. CONCLUSION**

**Q. 7 Does this conclude your prepared certification testimony?**

**A. 7** Yes.

# 2020 NEWWA & ESA

## **Salary Budget**

# Agenda

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**Exempt Compa-Ratios**

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**Survey Information**

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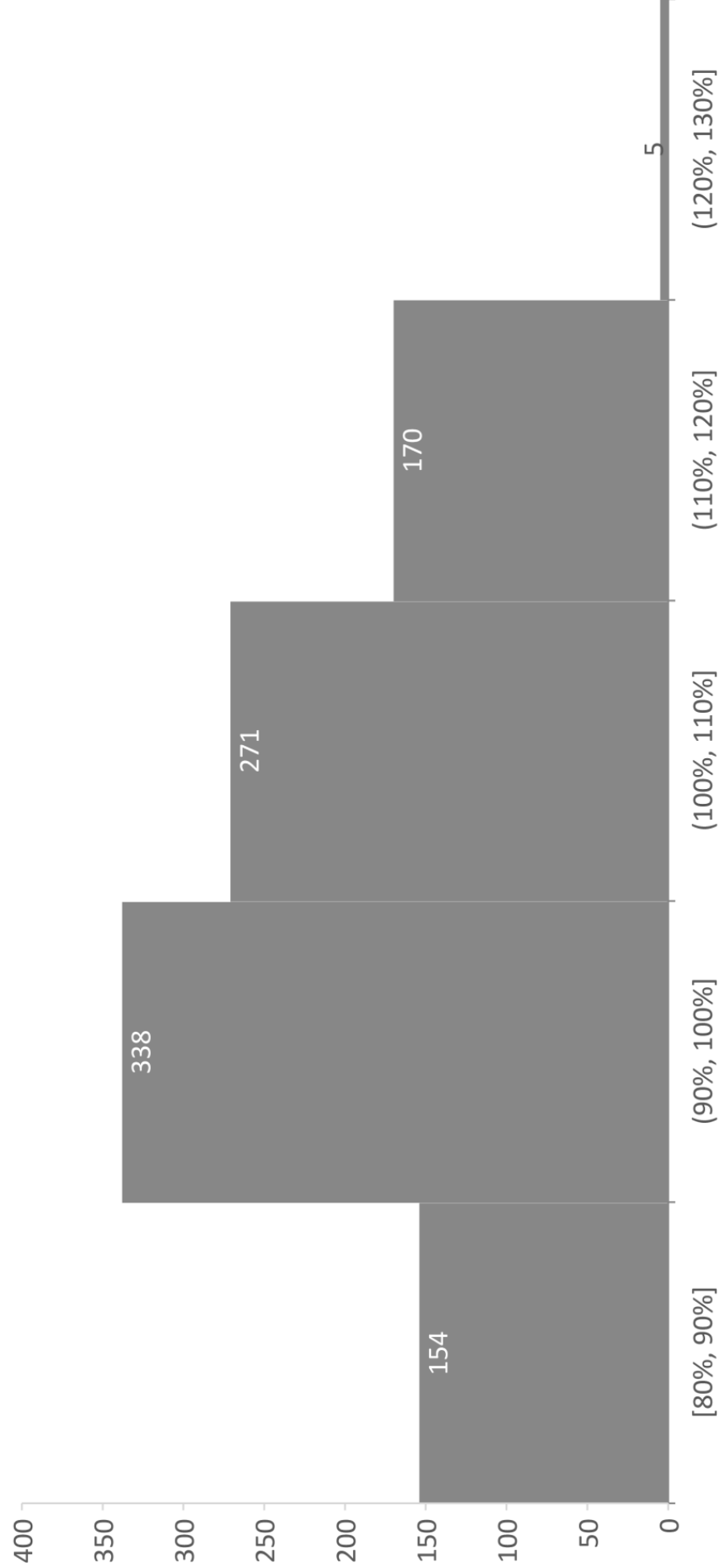
**Historical Salary Increases**

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**Wage and Salary Adjustment Recommendation**

# Exempt Compa-ratios

Exempt Compa-ratios



# 2019 Projected versus Actual

2019 Projected Salary Increase		2019 Actual Salary Increase	
Exempt	Non-exempt	Exempt	Non-exempt
3.0%	2.9%	3.0%	2.9%

2019 Projected Structure Adjustment		2019 Actual Structure Adjustment	
Exempt		Exempt	
2.0%		2.1%	

# 2020 Structure Adjustments - Budgets - Projected

National Survey Source	Scope	Exempt
Conference Board	Utilities	2.0%
Compensation Resources	National	2.1%
Korn Ferry	Energy	2.0%
Mercer	Utilities	2.0%
PayFactors	Utilities	2.0%
Towers Watson	Utilities	2.3%
World@Work	Energy	2.2%
<b>Survey Average</b>		<b>2.1%</b>

*Propose to move the exempt structure (midpoints) by 2.0%*

# 2020 Salary Increase Budgets - Projected

National Survey Source	Scope	Exempt	Non-exempt
Conference Board	Utilities	3.1%	3.1%
Compensation Resources	National	3.0%	2.8%
Korn Ferry	Energy	3.0%	3.0%
Mercer	Utilities	3.0%	3.0%
PayFactors	Utilities	3.0%	2.9%
Towers Watson	Utilities	3.1%	3.0%
World@Work	Energy	3.1%	3.0%
<b>Survey Average</b>		<b>3.0%</b>	<b>3.0%</b>



<b>Year</b>	<b>Exempt (Base + Discretionary)</b>	<b>Non- Exempt (+ Step Increase)</b>
2014 [1]	2.0% + 1.0% = 3.0%	2.7% (+.33%)
2015	2.0% + 1.0% = 3.0%	2.2% (+.36%)
2016	2.2% + 1.3% = 3.5%	2.2% (+.45%)
2017	2.3% + 1.3% = 3.6%	2.3% (+.56%)
2018	2.3% + 1.3% = 3.6%	2.3% (+.61%)
2019	2.3% + 1.0% = 3.3%	2.3% (+.70%)
[1] 2014 non-exempt increase was in the form of a lump sum		

## SWG Historical Salary Increases



# Wage and Salary Adjustment Recommendation

(thousands of dollars)

	Total Salaries 1/1/20	Total Cost	2020 Year End Cost (7 months)	Budgeted Dollars * (6 months)	Variance	Adjusted Variance **
<b>Non-exempt 2.0% base and 0.74% step increase; Exempt 2.0% base, 0% discretionary</b>						
Nonexempt	\$89,751	\$2,459	\$1,434			
Exempt	\$93,159	\$1,863	\$1,087			
<b>Total</b>	<b>\$182,910</b>	<b>\$4,322</b>	<b>\$2,521</b>	<b>\$3,072</b>	<b>\$551</b>	<b>\$491</b>

**AFFIRMATION**

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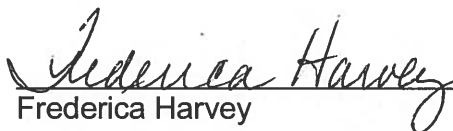
STATE OF NEVADA )

: ss.

COUNTY OF CLARK )

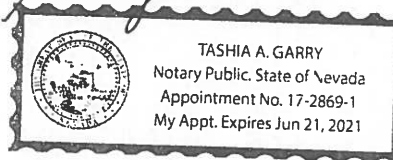
Frederica Harvey being first duly sworn, deposes and says:

That I am the person identified in the Prepared Certification Testimony, and the exhibits applicable to my testimony; that such testimony and exhibits were prepared by me or under my direction; and that the answers and information set forth therein are true to the best of my own knowledge and belief.

  
Frederica Harvey

Signed and sworn to before me on  
this 24<sup>th</sup> day of June, 2020.

  
Notary Public



IN THE MATTER OF  
SOUTHWEST GAS CORPORATION  
DOCKET NO. 20-02023

PREPARED CERTIFICATION TESTIMONY  
OF  
BYRON C. WILLIAMS

ON BEHALF OF  
SOUTHWEST GAS CORPORATION

JUNE 26, 2020

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of  
BYRON C. WILLIAMS

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BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Certification Testimony  
of  
Byron C. Williams

**I. INTRODUCTION**

**Q. 1 Are you the same Byron C. Williams who presented direct testimony on behalf of Southwest Gas Corporation (Southwest Gas or Company) in this proceeding**

A. 1 Yes.

**Q. 2 What is the purpose of your testimony in Southwest Gas' certification filing?**

A. 2 The purpose of my testimony is to support Statement M, Sheet 1, Income Taxes; Schedule M-4, Sheet 4, Deferred Tax Summary, Schedule I-C5, Property Tax Adjustment and I-C9 Commerce Tax Adjustment.

**II. CERTIFICATION ADJUSTMENTS**

**Q. 3 Please describe the changes Southwest Gas is making in its certification filing.**

A. 3 Income tax expense on Statement M, Sheet 1 has been updated for certification adjustments and incorporates the amount of federal income taxes at the certification date. Schedule M-4, Sheet 4 has been updated to reflect changes to deferred taxes impacting rate base during the certification period. The property tax adjustment on Schedule I-C5 and the Commerce Tax adjustment

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on Schedule I-C9 reflect changes that occurred during the certification period  
and the adjustments necessary as of the certification date.

**III. CONCLUSION**

**Q. 4 Does this conclude your prepared certification testimony?**

A. 4 Yes.

AFFIRMATION

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STATE OF NEVADA )

: ss.

COUNTY OF CLARK )

Byron C. Williams being first duly sworn, deposes and says:

That I am the person identified in the Prepared Certification Testimony, and the exhibits applicable to my testimony; that such testimony and exhibits were prepared by me or under my direction; and that the answers and information set forth therein are true to the best of my own knowledge and belief.

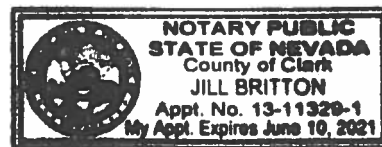
*Byron C. Williams*

Byron C. Williams

Signed and sworn to before me on  
this 15 day of June, 2020.

*Jill Britton*

Notary Public



IN THE MATTER OF  
SOUTHWEST GAS CORPORATION  
Docket No. 20-02023

PREPARED CERTIFICATION TESTIMONY  
OF  
RYAN A. KIMBALL

ON BEHALF OF  
SOUTHWEST GAS CORPORATION

June 26, 2020



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Prepared Certification Testimony  
of  
Ryan A. Kimball

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Certification Exhibit No.\_\_(RAK-1)

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Certification Testimony

of

Ryan A. Kimball

**I. INTRODUCTION**

**Q. 1 Are you the same Ryan A. Kimball who presented direct testimony on behalf of Southwest Gas Corporation (Southwest Gas or Company) in this proceeding?**

A. 1 Yes.

**Q. 2 What is the purpose of your testimony in Southwest Gas' certification filing?**

A. 2 The purpose of my certification testimony is to: (1) provide an updated requested rate of return based on the Company's actual capital structure and embedded cost of debt for the Certification Period ended May 31, 2020, and (2) provide the average variable interest rate (AVIR) for the variable rate debt under the variable interest expense recovery (VIER) mechanism for the Southern Nevada rate jurisdiction.

**Certification Period**

**Q. 3 Are you sponsoring any certification schedules and exhibits in support of your prepared certification testimony?**

A. 3 Yes. I am sponsoring Statement F, Schedules F-1 through F-4 for the Northern Nevada and Southern Nevada rate jurisdictions, and Certification Exhibit No.\_\_(RAK-1), which is attached. The schedules and exhibits were prepared by me or under my supervision.

1 **II. CERTIFICATION ADJUSTMENTS – REQUESTED RATES OF RETURN**

2 **Q. 4 What are the updated rates of return necessary for Southwest Gas to have**  
3 **an opportunity to earn a fair and reasonable return on its Nevada distribution**  
4 **properties?**

5 A. 4 Southwest Gas' proposed overall rates of return, which are displayed in Statement  
6 F for the Company's Southern Nevada and Northern Nevada rate jurisdictions for  
7 the Certification Period ended May 31, 2020, are 6.89 percent and 7.12 percent,  
8 respectively, which are developed as follows:

9  
10 Southwest Gas Corporation

11 Southern Nevada Rate Jurisdiction

<u>Component</u>	<u>Ratio</u>	<u>Cost</u>	<u>Weighted Cost</u>
Total Debt	50.74%	3.87%	1.96%
Common Equity	<u>49.26%</u>	10.00%	<u>4.93%</u>
Total	<u>100.00%</u>		<u>6.89%</u>

16  
17 Southwest Gas Corporation

18 Northern Nevada Rate Jurisdiction

<u>Component</u>	<u>Ratio</u>	<u>Cost</u>	<u>Weighted Cost</u>
Total Debt	50.74%	4.32%	2.19%
Common Equity	<u>49.26%</u>	10.00%	<u>4.93%</u>
Total	<u>100.00%</u>		<u>7.12%</u>

23  
24 **Q. 5 Please discuss the updated rates of return in comparison to the previously**  
25 **filed projected certification rates of return.**

26 A. 5 For the Southern Nevada rate jurisdiction, the updated rate of return decreased  
27 by 9 basis points, from 6.98 percent to 6.89 percent. For the Northern Nevada

1 rate jurisdiction, the updated rate of return decreased by 10 basis points, from 7.22  
2 percent to 7.12 percent.

3 **III. CERTIFICATION ADJUSTMENT – REQUESTED AVIR**

4 **Q. 6 For the Clark County IDRBs proposed under the VIER mechanism for the**  
5 **Southern Nevada rate jurisdiction, please describe the development of the**  
6 **updated AVIR for the Certification Period ended May 31, 2020.**

7 A. 6 For the Certification Period ended May 31, 2020, the updated 12-month weighted  
8 AVIR for the Clark County variable rate IDRBs was 0.2537 percent. Certification  
9 Exhibit No.\_\_(RAK-1), Sheet 1 of 2, displays the calculation of the new AVIR as  
10 follows:

$$\begin{aligned} \text{AVIR} &= (\text{Clark County Variable Rate IDRB/Rate Base}) \\ &\quad \times \text{Embedded Cost of Clark County Variable Rate IDRB} \\ &= (\$144,854,747/\$1,325,568,328) \times 2.3212\% \\ &= 0.2537\% \end{aligned}$$

15 The variable rate 2003 Clark County Series A, 2008 Clark County Series A, and  
16 the 2009 Clark County Series A IDRBs had a 12-month average effective cost rate  
17 of 2.3212 percent for the Certification Period ended May 31, 2020.<sup>1</sup>

18 **Q. 7 Does this conclude your certification testimony?**

19 A. 7 Yes.

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27 <sup>1</sup> See Certification Exhibit No.\_\_(RAK-1), Sheet 2 of 2, for the monthly and average effective rate calculation for the Certification Period.

**SOUTHWEST GAS CORPORATION  
 SOUTHERN NEVADA  
 VARIABLE INTEREST EXPENSE RECOVERY MECHANISM  
 WEIGHTED AVERAGE VARIABLE INTEREST RATE ("AVIR") CALCULATION**

Line No.	Description (a)	Amount (b)	Line No.
<u>AVIR(new) - Certification Period Ended May 31, 2020</u>			
1	Average Net Proceeds Variable Interest IDRBs[1]	\$ 144,854,747	1
2	Requested Rate Base[2]	\$ 1,325,568,328	2
3	Percent Variable Interest IDRBs	10.9277%	3
4	Average Effective Cost Variable Interest IDRBs[3]	2.3212%	4
5	Average Variable Interest Rate(new)	<u>0.2537%</u>	5

AVIR = Net Proceeds Variable Rate IDRB Debt / Rate Base X Effective Cost  
 Variable Rate IDRB Debt

[1] Certification Exhibit No.\_\_(RAK-1), Sheet 2 of 2, Ln 14, Col (d)

[2] Rate Base for Southern Nevada at end of certification period, May 31, 2020.

[3] Certification Exhibit No.\_\_(RAK-1), Sheet 2 of 2, Ln 14, Col (e)

Annual Authorized	3,362,306.98
Monthly Authorized	280,192.25

**SOUTHWEST GAS CORPORATION  
 SOUTHERN NEVADA  
 VARIABLE INTEREST EXPENSE RECOVERY MECHANISM  
 WEIGHTED AVERAGE VARIABLE INTEREST RATE  
 CERTIFICATION PERIOD ENDED MAY 31, 2020**

Line No.	Year (a)	Month (b)	Monthly Interest <sup>[1]</sup> (c)	Net Proceeds <sup>[2]</sup> (d)	Effective Rate <sup>[3]</sup> (e)	Rate Base (f)	AVIR <sup>[4]</sup> (g)	Line No.
1	2019	June	\$ 315,669	\$ 144,684,800	2.62%	\$ 1,325,568,328	0.2858%	1
2	2019	July	298,344	\$ 144,715,699	2.47%	\$ 1,325,568,328	0.2701%	2
3	2019	August	307,221	\$ 144,746,599	2.55%	\$ 1,325,568,328	0.2781%	3
4	2019	September	279,692	\$ 144,777,498	2.32%	\$ 1,325,568,328	0.2532%	4
5	2019	October	291,084	\$ 144,808,398	2.41%	\$ 1,325,568,328	0.2635%	5
6	2019	November	259,172	\$ 144,839,297	2.15%	\$ 1,325,568,328	0.2346%	6
7	2019	December	284,643	\$ 144,870,197	2.36%	\$ 1,325,568,328	0.2577%	7
8	2020	January	250,319	\$ 144,901,096	2.07%	\$ 1,325,568,328	0.2266%	8
9	2020	February	240,862	\$ 144,931,996	1.99%	\$ 1,325,568,328	0.2180%	9
10	2020	March	477,723	\$ 144,962,895	3.95%	\$ 1,325,568,328	0.4325%	10
11	2020	April	215,690	\$ 144,993,795	1.79%	\$ 1,325,568,328	0.1953%	11
12	2020	May	141,890	\$ 145,024,694	1.17%	\$ 1,325,568,328	0.1284%	12
13	12-Month Total		\$ 3,362,307			\$ 1,325,568,328	0.2537%	13
14	12-Month Average			\$ 144,854,747	2.3212%			14

[1] Certification Workpaper No. 1, Sheet 5 of 10, Col (o)

[2] Certification Workpaper No. 1, Sheet 7 of 10, Col (l)

[3] Effective Rate = ( Column (c) X 12 ) / Column (d) = (Monthly Interest X 12 ) / Net Proceeds.

[4] AVIR = Column (e) X Column (d) / Column (f)

**AFFIRMATION**

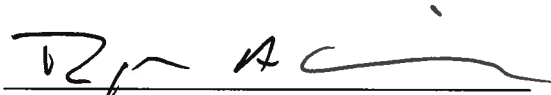
STATE OF NEVADA )

: ss.

COUNTY OF CLARK )

Ryan A. Kimball being first duly sworn, deposes and says:

That I am the person identified in the Prepared Certification Testimony, and the exhibits applicable to my testimony; that such testimony and exhibits were prepared by me or under my direction; and that the answers and information set forth therein are true to the best of my own knowledge and belief.

  
\_\_\_\_\_  
Ryan A. Kimball

Signed and sworn to before me on  
this 11<sup>th</sup> day of June, 2020.

  
\_\_\_\_\_  
Notary Public



IN THE MATTER OF  
SOUTHWEST GAS CORPORATION  
DOCKET NO. 20-02023

PREPARED CERTIFICATION TESTIMONY  
OF  
ROBERT B. HEVERT

ON BEHALF OF  
SOUTHWEST GAS CORPORATION

JUNE 26, 2020



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Prepared Certification Testimony  
of  
Robert B. Hevert

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Certification Exhibit No.\_\_(RBH-1)

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Certification Testimony  
of  
Robert B. Hevert

**I. INTRODUCTION**

**Q. 1 Are you the same Robert B. Hevert who presented direct testimony on behalf of Southwest Gas Corporation (Southwest Gas or Company) in this proceeding?**

A. 1 Yes.

**Q. 2 What is the purpose of your testimony in Southwest Gas' certification filing?**

A. 2 The purpose of my certification testimony is to provide an updated requested capital structure for the Certification Period ended May 31, 2020.

**II. CERTIFICATION ADJUSTMENTS**

**Q. 3 Please describe the changes Southwest Gas is making in its certification filing.**

A. 3 Southwest Gas is updating its requested capital structure from 50.03 percent common equity and 49.97 percent long-term debt to 49.26 percent common equity and 50.74 percent long-term debt.

**Q. 4 Does Southwest Gas' updated capital structure remain consistent with the capital structures in place at the proxy group companies?**

A. 4 Yes, it does. As shown in Certification Exhibit No.\_\_\_\_(RBH-1), the mean of the proxy group capital structures is 57.98 percent common equity and 42.02

1 percent long-term debt. The common equity ratios range from 49.20 percent to  
2 63.27 percent. As such, the Company's updated capital structure continues to  
3 remain consistent with the capital structures of the proxy group companies.

4 **III. CONCLUSION**

5 **Q. 5 Does this conclude your certification testimony?**

6 **A. 5 Yes.**

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Proxy Group Capital Structure

Company	Ticker	% Common Equity								Average
		2019Q4	2019Q3	2019Q2	2019Q1	2018Q4	2018Q3	2018Q2	2018Q1	
Atmos Energy Corporation	ATO	57.36%	61.97%	60.69%	60.12%	59.37%	60.85%	60.80%	60.61%	60.22%
New Jersey Resources Corporation	NJR	58.13%	56.30%	61.04%	62.20%	60.65%	58.80%	57.86%	57.73%	59.09%
Northwest Natural Holding Company	NWN	49.26%	47.95%	48.60%	50.22%	49.36%	47.70%	50.03%	50.45%	49.20%
ONE Gas, Inc.	OGS	61.72%	61.40%	61.44%	61.38%	61.38%	62.81%	62.88%	62.87%	61.99%
South Jersey Industries, Inc.	SJI	53.03%	54.41%	54.40%	54.36%	53.01%	54.70%	54.62%	54.59%	54.14%
Spire Inc.	SR	58.62%	62.98%	63.51%	62.78%	64.37%	65.26%	64.34%	64.32%	63.27%
Mean		56.35%	57.50%	58.28%	58.51%	58.02%	58.35%	58.42%	58.43%	57.98%
Median		57.74%	58.85%	60.87%	60.75%	60.01%	59.82%	59.33%	59.17%	59.65%

Operating Company Capital Structure

Operating Company	Parent	% Common Equity								Average
		2019Q4	2019Q3	2019Q2	2019Q1	2018Q4	2018Q3	2018Q2	2018Q1	
Atmos Energy Corporation	ATO	57.36%	61.97%	60.69%	60.12%	59.37%	60.85%	60.80%	60.61%	60.22%
New Jersey Natural Gas Company	NJR	58.13%	56.30%	61.04%	62.20%	60.65%	58.80%	57.86%	57.73%	59.09%
Northwest Natural Gas Company	NWN	49.26%	47.95%	48.60%	50.22%	49.36%	47.70%	50.03%	50.45%	49.20%
ONE Gas, Inc.	OGS	61.72%	61.40%	61.44%	61.38%	61.38%	62.81%	62.88%	62.87%	61.99%
South Jersey Gas Company	SJI	53.03%	54.41%	54.40%	54.36%	53.01%	54.70%	54.62%	54.59%	54.14%
Elizabethtown Gas Company	SJI	NA	NA	NA	NA	NA	NA	NA	NA	NA
Elkton Gas Company	SJI	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spire Alabama Inc.	SR	61.67%	66.82%	67.20%	67.05%	71.53%	71.48%	71.95%	71.98%	68.71%
Spire Gulf Inc.	SR	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spire Mississippi Inc.	SR	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spire Missouri Inc.	SR	55.56%	59.15%	59.81%	58.50%	57.20%	59.03%	56.73%	56.67%	57.83%
Mean		56.68%	58.28%	59.03%	59.12%	58.93%	59.34%	59.27%	59.27%	58.74%
Median		57.36%	59.15%	60.69%	60.12%	59.37%	59.03%	57.86%	57.73%	59.09%

Source: S&P Global Market Intelligence

Proxy Group Capital Structure

Company	Ticker	% Long-Term Debt								Average
		2019Q4	2019Q3	2019Q2	2019Q1	2018Q4	2018Q3	2018Q2	2018Q1	
Atmos Energy Corporation	ATO	42.64%	38.03%	39.31%	39.88%	40.63%	39.15%	39.20%	39.39%	39.78%
New Jersey Resources Corporation	NJR	41.87%	43.70%	38.96%	37.80%	39.35%	41.20%	42.14%	42.27%	40.91%
Northwest Natural Holding Company	NWN	50.74%	52.05%	51.40%	49.78%	50.64%	52.30%	49.97%	49.55%	50.80%
ONE Gas, Inc.	OGS	38.28%	38.60%	38.56%	38.62%	38.62%	37.19%	37.12%	37.13%	38.01%
South Jersey Industries, Inc.	SJI	46.97%	45.59%	45.60%	45.64%	46.99%	45.30%	45.38%	45.41%	45.86%
Spire Inc.	SR	41.38%	37.02%	36.49%	37.22%	35.63%	34.74%	35.66%	35.68%	36.73%
Mean		43.65%	42.50%	41.72%	41.49%	41.98%	41.65%	41.58%	41.57%	42.02%
Median		42.26%	41.15%	39.13%	39.25%	39.99%	40.18%	40.67%	40.83%	40.35%

Operating Company Capital Structure

Operating Company	Parent	% Long-Term Debt								Average
		2019Q4	2019Q3	2019Q2	2019Q1	2018Q4	2018Q3	2018Q2	2018Q1	
Atmos Energy Corporation	ATO	42.64%	38.03%	39.31%	39.88%	40.63%	39.15%	39.20%	39.39%	39.78%
New Jersey Natural Gas Company	NJR	41.87%	43.70%	38.96%	37.80%	39.35%	41.20%	42.14%	42.27%	40.91%
Northwest Natural Gas Company	NWN	50.74%	52.05%	51.40%	49.78%	50.64%	52.30%	49.97%	49.55%	50.80%
ONE Gas, Inc.	OGS	38.28%	38.60%	38.56%	38.62%	38.62%	37.19%	37.12%	37.13%	38.01%
South Jersey Gas Company	SJI	46.97%	45.59%	45.60%	45.64%	46.99%	45.30%	45.38%	45.41%	45.86%
Elizabethtown Gas Company	SJI	NA	NA	NA	NA	NA	NA	NA	NA	NA
Elkton Gas Company	SJI	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spire Alabama Inc.	SR	38.33%	33.18%	32.80%	32.95%	28.47%	28.52%	28.05%	28.02%	31.29%
Spire Gulf Inc.	SR	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spire Mississippi Inc.	SR	NA	NA	NA	NA	NA	NA	NA	NA	NA
Spire Missouri Inc.	SR	44.44%	40.85%	40.19%	41.50%	42.80%	40.97%	43.27%	43.33%	42.17%
Mean		43.32%	41.72%	40.97%	40.88%	41.07%	40.66%	40.73%	40.73%	41.26%
Median		42.64%	40.85%	39.31%	39.88%	40.63%	40.97%	42.14%	42.27%	40.91%

**AFFIRMATION**

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COMMONWEALTH OF MASSACHUSETTS )

: ss.

COUNTY OF WORCESTER )

Robert B. Hevert being first duly sworn, deposes and says:

That I am the person identified in the Prepared Certification Testimony, and the exhibits applicable to my testimony; that such testimony and exhibits were prepared by me or under my direction; and that the answers and information set forth therein are true to the best of my own knowledge and belief.



Signed and sworn to before me on  
this 26th day of June, 2020.



Notary Public



IN THE MATTER OF  
SOUTHWEST GAS CORPORATION  
DOCKET NO. 20-02023

PREPARED CERTIFICATION TESTIMONY  
OF  
CARLA AYALA

ON BEHALF OF  
SOUTHWEST GAS CORPORATION

JUNE 26, 2020

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Prepared Certification Testimony  
of  
CARLA AYALA

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BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Certification Testimony  
of  
Carla Ayala

**I. INTRODUCTION**

**Q. 1 Are you the same Carla Ayala who presented direct testimony on behalf of Southwest Gas Corporation (Southwest Gas or Company) in this proceeding?**

A. 1 Yes.

**Q. 2 What is the purpose of your testimony in Southwest Gas' certification filing?**

A. 2 The purpose of my certification testimony is to discuss Southwest Gas' certification period annualized billing determinants (number of bills and therms) for both the Southern Nevada and Northern Nevada rate jurisdictions.

**II. CERTIFICATION ADJUSTMENTS**

**Q. 3 Please describe the changes Southwest Gas is making in its certification filing.**

A. 3 For the certification filing, the forecasted customers through May 2020 were replaced with actual billed customers for the single-family and multi-family residential rate schedules, the small commercial customers within the general service rate schedules, and the apartment customers within rate schedule SG-G1. This resulted in changes to the monthly therms for each of the affected rate schedules. The SG-G4 Large Commercial rate schedule was also updated to

1 include estimated usage for Allegiant Stadium<sup>1</sup>, which started service on  
2 January 22, 2020. All other customers and rate schedules were held constant to  
3 the November 2019 test period.

4 **III. CONCLUSION**

5 **Q. 4 Does this conclude your certification testimony?**

6 **A. 4 Yes.**

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<sup>1</sup> Generally referred to as Raiders Stadium.

**AFFIRMATION**

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STATE OF NEVADA )

: ss.

COUNTY OF CLARK )

Carla Ayala being first duly sworn, deposes and says:

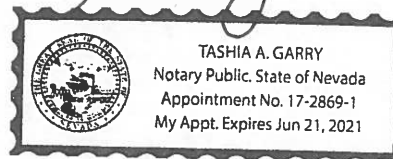
That I am the person identified in the Prepared Certification Testimony, and the exhibits applicable to my testimony; that such testimony and exhibits were prepared by me or under my direction; and that the answers and information set forth therein are true to the best of my own knowledge and belief.

*Carla Ayala*  
\_\_\_\_\_

Signed and sworn to before me on  
this 23<sup>rd</sup> day of June, 2020.

*Tashia Garry*  
\_\_\_\_\_

Notary Public



IN THE MATTER OF  
SOUTHWEST GAS CORPORATION  
DOCKET NO. 20-02023

PREPARED CERTIFICATION TESTIMONY  
OF  
TIMOTHY S. LYONS

ON BEHALF OF  
SOUTHWEST GAS CORPORATION

JUNE 26, 2020

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Prepared Certification Testimony  
of  
TIMOTHY S. LYONS

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BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Certification Testimony  
of  
TIMOTHY S. LYONS

**I. INTRODUCTION**

**Q. 1 Are you the same Timothy S. Lyons who presented direct testimony on behalf of Southwest Gas Corporation (Southwest Gas or Company) in this proceeding?**

**A. 1 Yes.**

**Q. 2 What is the purpose of your testimony in Southwest Gas' certification filing?**

**A. 2** The purpose of my certification testimony is to present the Company's updated rate design (presented in Statement J schedules) and Class Cost of Service Study (CCOS) (summarized in Schedule N-2) for both the Southern Nevada (SNV) and Northern Nevada (NNV) rate jurisdictions. The updates include: (1) revised revenue requirements and billing determinants for the Certification Period (12 months ended May 31, 2020); and (2) refinements to the CCOS for items identified after the Company's application filing.

**II. CERTIFICATION ADJUSTMENTS**

**Q. 3 Please describe the updates to Company's CCOS and rate design to reflect the certification period.**

**A. 3** The Company's CCOS and rate design were updated for the certification period (12 months ended May 31, 2020).

1 First, the CCOS and rate design were updated to reflect revised revenue  
2 requirements for the certification period. The revised revenue requirements are  
3 provided in the Certification Testimony of Company Witness Gregory K. Waller.

4 Second, the CCOS and rate design were updated to reflect revised billing  
5 determinants for the certification period, including the number of customers and  
6 sales volumes. The updated billing determinants have an impact on three CCOS  
7 allocation factors: 1) coincident peak month (Allocator 1.0), 2) annual throughput  
8 (Allocator 3.0), and 3) number of customers (Allocator 5.0).

9 **Q. 4 Please describe the refinements to the CCOS.**

10 **A. 4** There were certain refinements to the CCOS for items identified after the  
11 Company's application filing. The refinements include:

- 12 1. Corrected classification of FERC Account 903 Customer Records &  
13 Collections – Key Account Management (KAM) in the SNV CCOS.
- 14 2. Revised allocation of FERC Account 861 Maintenance Supervision and  
15 Engineering in the SNV CCOS.
- 16 3. Added late fees for negotiated rate customers in the SNV and NNV  
17 CCOS studies.<sup>1</sup>
- 18 4. Adjusted FERC Accounts 851 and 852 in the NNV CCOS studies  
19 consistent with the Certification Period revenue requirements.
- 20 5. Corrected allocation of directly assigned costs for the on-system  
21 negotiated rate customer in the NNV CCOS.

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25 <sup>1</sup> The Company developed two CCOS studies. Version 1 includes all tariff rate customer classes, and  
Version 2 includes all tariff rate customer classes plus the negotiated rate customers.

1 6. Assigned additional costs to the on-system negotiated rate customer in  
2 the NNV CCOS based on plant-in-service work orders that closed during  
3 the Certification Period.

4 7. Corrected the number of SNV Street and Outdoor Lighting Gas Service  
5 (SG-L) customers in the certification period.

6 8. Refined the CCOS studies by removing allocation factors not currently  
7 utilized.

8 **Q. 5 Do you provide discussion on any other issue?**

9 A. 5 Yes. I discuss the Company's review of customers and usage under the SG-  
10 AC/NG-AC schedules.

11 **Q. 6 Please describe the correction to classification of FERC Account 903**  
12 **Customer Records & Collections (KAM) in SNV CCOS.**

13 A. 6 Through discovery, the Company determined that FERC Account 903 Customer  
14 Records & Collections (KAM) in the SNV CCOS study was inadvertently  
15 classified as commodity-related instead of customer-related for the G-4 rate  
16 class. The Company made this correction in the certification filing.

17 **Q. 7 Please describe the revised allocation of FERC Account 861 Maintenance**  
18 **Supervision and Engineering expenses in the SNV CCOS?**

19 A. 7 Through discovery, the Company determined that Allocator 17.1 (composite  
20 allocation of operations expenses) was inadvertently used to allocate Account  
21 861 Maintenance Supervision and Engineering expenses in the SNV CCOS  
22 study rather than Allocator 17.2 (composite allocation of maintenance  
23 expenses). The Company used Allocator 17.2 in the certification filing.



1 **Q. 8 Please describe the addition of late fees for negotiated rate customers in**  
2 **the SNV and NNV CCOS studies.**

3 A. 8 Through discovery, the Company provided late fees charged to negotiated rate  
4 customers in SNV and NNV. The late fees were not included in the CCOS  
5 studies in the Company's application filing. The late fees charged to the  
6 negotiated rate customers were included in the certification filing.

7 **Q. 9 Please describe adjustment to FERC Accounts 851 and 852 in NNV CCOS**  
8 **studies.**

9 A. 9 Through discovery, the Company determined that the amounts charged to FERC  
10 Accounts 851 and 852 in NNV rate jurisdiction should have been charged to  
11 Account 871. The amounts were appropriately included in Account 871 in the  
12 certification filing.

13 **Q. 10 Please describe the correction in the allocation of directly assigned costs**  
14 **for the on-system negotiated rate customer in NNV rate jurisdiction.**

15 A. 10 In the NNV CCOS study (Version 2), the Company directly assigned \$6,196 to  
16 the on-system negotiated rate customer (Customer 1) as Account 380 Services  
17 rather than Account 381 Meters. The amount was assigned as Account 381  
18 Meters in the certification filing.

19 **Q. 11 Were there any additional costs assigned to NNV Customer 1 as part of**  
20 **certification filing?**

21 A. 11 Yes. The Company closed two plant-in-service work orders for NNV Customer  
22 1 during the certification period. The work orders were recorded in Account 378  
23 (\$406,215), Account 381 (\$82,858), and Account 385 (\$75,115). The additional  
24 costs were directly assigned to Customer 1 in the certification filing CCOS  
25 (Version 2).

1 In addition, the Company's proposed recourse rates<sup>2</sup> in the certification  
2 filing reflect the additional costs.

3 **Q. 12 Please describe the correction to the number of SG-L customers in SNV**  
4 **rate jurisdiction CCOS model.**

5 A. 12 Through discovery, the Company determined the number of SG-L customers  
6 incorrectly increased from 590 in the test year to 602 in the Certification Period.  
7 The Company has revised the number of SG-L customers in the certification  
8 filing.

9 **Q. 13 Please describe any other refinements in the CCOS study.**

10 A. 13 Through discovery, the Company determined that Allocator 16.0 was included  
11 in the CCOS study despite not being utilized to allocate any costs. The Company  
12 has refined the CCOS study in the certification filing to remove allocators not  
13 utilized to allocate costs.

14 **Q. 14 Was there discussion regarding SG-AC/NG-AC schedules during**  
15 **discovery?**

16 A. 14 Yes. BCP asked why annualized demand for the SG-AC/NG-AC schedules was  
17 equal to 90 percent of the annual throughput if service for any use other than for  
18 installed gas-fired air conditioning system is prohibited under the schedules.

19 **Q. 15 What was the Company's response?**

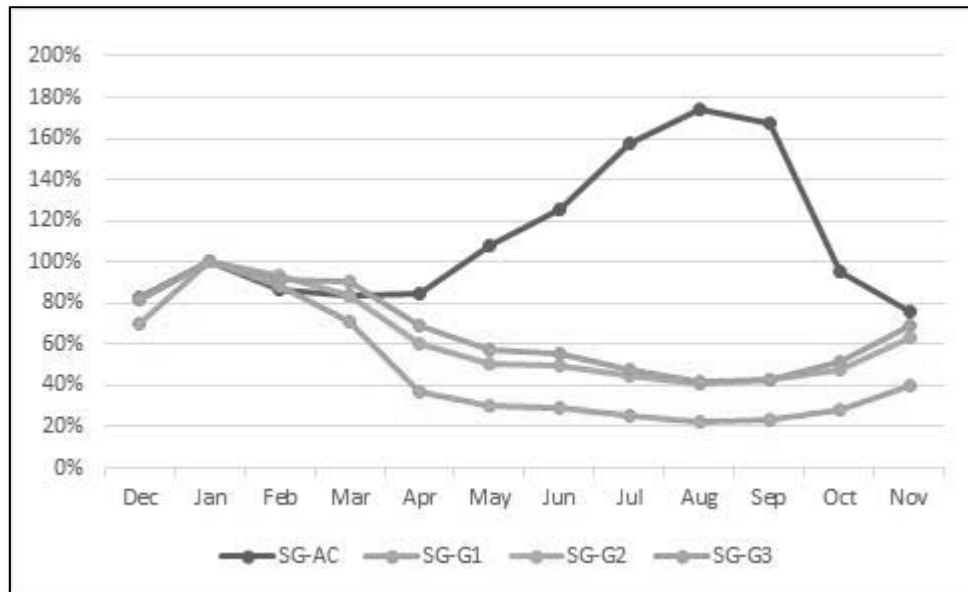
20 A. 15 The Company discussed a review of customers served on Schedules SG-  
21 AC/NG-AC (Air Conditioning Gas Service) and to move customer usage to their  
22 appropriate general service rate schedules if it was determined that the usage  
23 no longer qualified for service under the schedules. Following its initial review of

24 \_\_\_\_\_  
25 <sup>2</sup> Please see Direct Testimony of Timothy S. Lyons, pgs. 21-27, for discussion on the development of  
Company's proposed recourse rates for its negotiated rate customers.

1 the SG-AC/NG-AC schedules, the Company found no evidence that customer  
2 usage does not qualify for the applicable rate schedules.

3 Notably, analysis of SG-AC and general service usage suggests that SG-  
4 AC usage is summer-peaking, consistent with air conditioning usage, while  
5 general service usage is winter peaking, as shown in Figure 1 (below).

6 **Figure 1: Monthly Usage as % of January Usage**



16 The Figure shows that the portion of SG-AC usage in the summer months is  
17 substantially higher than the portion of general service usage in the summer  
18 months. The higher summer usage is substantially similar to customers who  
19 have air conditioning usage.

20 The Figure also suggests that SG-AC usage reflects a different cost of  
21 service than generally service usage.

22 **Q. 16 What did the Company find in its review of Schedule NG-AC?**

23 **A. 16** There is one customer in NG-AC class. The Company has not found definitive  
24 support indicating the customer should be moved to general service class.  
25

1 | **Q. 17 Has the Company updated its calculation of the cash working capital**  
2 | **requirement in the certification filing?**

3 | A. 17 Yes, the Company updated its calculation of the cash working capital  
4 | requirement resulting from the proposed Certification Adjustments and other  
5 | working capital requirements. In addition, the Company updated the lead days  
6 | related to an interest expense item.

7 | **Q. 18 Does this conclude your certification testimony?**

8 | A. 18 Yes.

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AFFIRMATION

STATE OF VERMONT )

: ss.

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Timothy S. Lyons being first duly sworn, deposes and says:

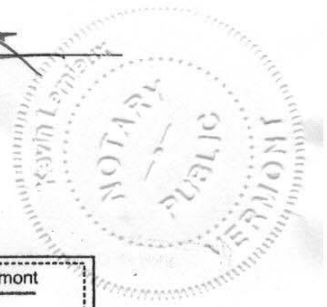
That I am the person identified in the Prepared Certification Testimony, and the exhibits applicable to my testimony; that such testimony and exhibits were prepared by me or under my direction; and that the answers and information set forth therein are true to the best of my own knowledge and belief.

Timothy S. Lyons *[Signature]*

Signed and sworn to before me on  
this 26 day of JUNE, 2020.

*[Signature]*

Notary Public



Notary Public State of Vermont  
Kevin Lemieux  
Commission \* No. 157.0008207 \*  
My Commission Expires January 31, 2021

IN THE MATTER OF  
SOUTHWEST GAS CORPORATION  
DOCKET NO. 20-02023

PREPARED CERTIFICATION TESTIMONY  
OF  
WILLIAM BRINCEFIELD

ON BEHALF OF  
SOUTHWEST GAS CORPORATION

JUNE 26, 2020

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Prepared Certification Testimony  
of  
WILLIAM BRINCEFIELD

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III. CONCLUSION .....	5

Certification Exhibit No.\_\_\_\_(WB-1)

BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Certification Testimony  
of  
William Brincefield

**I. INTRODUCTION**

**Q. 1 Are you the same William Brincefield who presented direct testimony on behalf of Southwest Gas Corporation (Southwest Gas or Company) in this proceeding?**

A. 1 Yes.

**Q. 2 What is the purpose of your testimony in Southwest Gas' certification filing?**

A. 2 The purpose of my prepared certification testimony is to provide an updated summary of the Company's investment in facilities-related capital projects that were placed in service during the Certification Period (December 1, 2019 through May 31, 2020) (Certification Period) and support the reasonableness and prudence of these investments that are included in the revenue requirement.

**II. PROJECTS CLOSED TO PLANT DURING THE CERTIFICATION PERIOD**

**Q. 3 Please describe the scope of the facilities-related capital investment projects discussed in your prepared certification testimony.**

A. 3 I support all facilities-related capital investment projects in Southern Nevada, Northern Nevada and corporate (System Allocable) placed in service during the Certification Period. Attached as Certification Exhibit No.\_\_(WB-1) is a list of all facilities-related capital work orders greater than \$100,000 in total that closed to plant in service during the Certification Period. Each of those projects were prudent



1 and reasonable. My prepared certification testimony below specifically discusses  
2 the 5 individual projects that cost \$1 million or more.

3 **1. Building A Systems Upgrade**

4 **Q. 4 Please describe the Building A Systems Upgrade.**

5 A. 4 The Building A Systems Upgrade project (0057W0003216) included the  
6 replacement of the HVAC system controls, a complete ceiling tile replacement and  
7 the addition of a fire suppression system at the Company's corporate office located  
8 at 5241 Spring Mountain Road in Las Vegas, Nevada.

9 **Q. 5 Why was the Building A Systems Upgrade project necessary?**

10 A. 5 The Building A Systems Upgrade project was necessary for several reasons. First,  
11 at the time Building A was commissioned in 1974 a fire suppression system was  
12 not installed because code requirements did not require installation of such safety  
13 mitigation facilities. Subsequent to the construction of Building A, fire suppression  
14 systems became standard, code-required facilities for similar buildings. Southwest  
15 Gas chose to install a fire compression system so that Building A would have  
16 appropriate safety mitigation facilities in the building and to provide a safe working  
17 environment for employees, contractors and visitors.

18 Second, the HVAC controls were pneumatic, antiquated, and did not provide  
19 the degree of control needed to adequately heat and cool the space. Moreover,  
20 the lack of adequate control resulted in higher utility usage. The replacement of  
21 the pneumatic controls with electronic controls that more efficiently control and  
22 regulate the heating and cooling of the space was warranted.

23 Finally, in order to access the HVAC controls and install the fire suppression  
24 system the Company was forced to remove the current ceiling tiles, and thus  
25 reconstruct the ceiling grid.

1 **Q. 6 What was the total cost of Building A Systems Upgrade?**

2 A. 6 The Building A Systems Upgrade project cost as of May 31, 2020 was \$2,649,516.  
3 The project was placed in service in January 2020.

4 **2. Durango Building Construction**

5 **Q. 7 Please describe the Durango Building Construction project.**

6 A. 7 The Durango Building Construction project (0057W0004991) involves the  
7 renovation of the first floor of the Durango Building located at 8360 Durango Road  
8 in Las Vegas, Nevada.

9 **Q. 8 Why did Southwest Gas undertake the Durango Building Construction project?**

10 A. 8 As described at Q&A 11 in my prepared direct testimony, the first floor of the  
11 Durango building is being used for the Customer Data Modernization Initiative  
12 (CDMI) project team which at any given time needed to accommodate up to 200  
13 employees and contractors working on the project. The Durango Building  
14 Construction was necessary to reconfigure the first-floor interior to support the  
15 requirements of the project team such as collaborative work areas and conference  
16 rooms.

17 **Q. 9 What was the total cost of Durango Building Construction project?**

18 A. 9 The Durango Building Construction project cost was \$1,535,124 as of May  
19 31,2020. The project was placed in service in January 2020.

20 **3. Durango Furniture**

21 **Q. 10 Please describe Durango Furniture.**

22 A. 10 The Durango Furniture work order (0057W0004941) includes the purchase of the  
23 furniture required for the first floor of the Durango Building and includes items such  
24 as office spaces, desks, chairs and conference room tables.  
25

1 **Q. 11 Why was the purchase of the Durango Furniture necessary?**

2 A. 11 Southwest Gas did not possess the furniture required for the first floor of the Durango  
3 Building, therefore the purchase of the furniture was required for employees and  
4 contractors to work on site and perform their job functions.

5 **Q. 12 What was the total cost of Durango Furniture?**

6 A. 12 The Durango Furniture cost as of May 31, 2020 was \$1,315,981. The work order  
7 was placed in service in February 2020.

8 **4. ONGUARD Card Access System**

9 **Q. 13 Please describe ONGUARD Card Access System.**

10 A. 13 The ONGUARD Card Access System project (0057W0003576) involved the  
11 replacement of the existing security card access system (Facility Commander) at  
12 Company facilities. The ONGUARD Card Access System provides entry to  
13 Company facilities to only those that have been granted access by authorized  
14 Company personnel.

15 **Q. 14 Why did Southwest Gas undertake ONGUARD Card Access System?**

16 A. 14 The Facility Commander system was obsolete and could no longer be supported  
17 from a software or parts perspective. The Company replaced the system to  
18 maintain control of access in and out of Company facilities to authorized card  
19 holders. Limiting access to the building is critical for not only employee, contractor  
20 and authorized visitor safety, but also for the protection of Company and customer  
21 data.

22 **Q. 15 What was the total cost of ONGUARD Card Access System project?**

23 A. 15 The cost of the ONGUARD Card Access System project was \$1,303,648 as of May  
24 31, 2020.

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1 **III. CONCLUSION**

2 **Q. 16 Does this conclude your certification testimony?**

3 A. 16 Yes.

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**SOUTHWEST GAS CORPORATION  
 NEVADA  
 FACILITIES-RELATED WORK ORDERS GREATER THAN \$100,000 IN TOTAL COST  
 CLOSED TO PLANT IN SERVICE DECEMBER 2019 - MAY 2020**

Line No.	Work Order Number (a)	Work Order Description (b)	Date First Transferred to Plant (c)	Total Amount Excluding CIAC (d)	CIAC (e)	AFUDC (f)	Line No.
<u>Northern Nevada</u>							
1	0022W0004566	Metershop Remodel	Dec-19	\$ 154,860	\$ 0	0	1
2	0024W0005587	Carson City Remodel	Feb-20	432,215	0	0	2
<u>Southern Nevada</u>							
3	0021W0004975	North Ops Dispatch Remodel	Jan-20	210,363	0	0	3
4	0021W0005347	SOC-Construction for Furniture Repl	Feb-20	234,319	0	0	4
<u>System Allocable</u>							
5	0057W0003216	Bldg A Systems Upgrade	Jan-20	2,649,516	0	0	5
6	0057W0003576	ONGUARD Card Access System	May-20	1,303,648	0	0	6
7	0057W0004551	Building B Furniture	Jan-20	193,196	0	0	7
8	0057W0004777	Office Furniture	Jan-20	120,450	0	0	8
9	0057W0004941	Durango Furniture	Feb-20	1,315,981	0	0	9
10	0057W0004991	Durango Building Construction	Jan-20	1,535,124	0	2,616	10
11	0057W0004992	Durango AV Equipment	Jan-20	212,281	0	0	11
12	0057W0005464	Corporate Bldg B and C Fire Alarm S	Mar-20	317,264	0	0	12
13	0061W0004127	NOC & SOC Remodel - Bldg C	Mar-20	229,394	0	0	13
14	0061W0004515	Help Desk Furniture	Mar-20	133,654	0	0	14
15	0061W0004516	Help Desk Build Out	May-20	212,874	0	0	15

**AFFIRMATION**

STATE OF NEVADA )

: ss.

COUNTY OF CLARK )

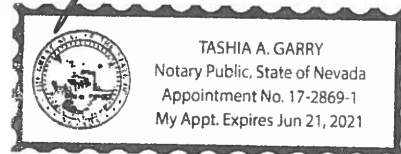
William Brincefield being first duly sworn, deposes and says:

That I am the person identified in the Prepared Certification Testimony, and the exhibits applicable to my testimony; that such testimony and exhibits were prepared by me or under my direction; and that the answers and information set forth therein are true to the best of my own knowledge and belief.

  
William Brincefield

Signed and sworn to before me on  
this 24<sup>th</sup> day of June, 2020.

  
Notary Public



IN THE MATTER OF  
SOUTHWEST GAS CORPORATION  
DOCKET NO. 20-02023

PREPARED CERTIFICATION TESTIMONY  
OF  
JOSE L. ESPARZA JR.

ON BEHALF OF  
SOUTHWEST GAS CORPORATION

JUNE 26, 2020

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Prepared Certification Testimony  
of  
JOSE L. ESPARZA JR.

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 Certification Exhibit No.__(JLE-2)	
 Certification Exhibit No.__(JLE-3)	
 Certification Exhibit No.__(JLE-4)	
 Certification Exhibit No.__(JLE-5)	



BEFORE THE PUBLIC UTILITIES COMMISSION OF NEVADA

Prepared Certification Testimony  
of  
JOSE L. ESPARZA JR.

**I. INTRODUCTION**

**Q. 1 Are you the same Jose L. Esparza Jr. who presented direct testimony on behalf of Southwest Gas Corporation (Southwest Gas or Company) in this proceeding?**

**A. 1 Yes.**

**Q. 2 What is the purpose of your testimony in Southwest Gas' certification filing?**

**A. 2** The purpose of my certification testimony is to provide an updated summary of the Company's investment in technology-related capital projects that were placed in service during the Certification Period (December 1, 2019 through May 31, 2020) (Certification Period) and support the reasonableness and prudence of these investments that are included in the revenue requirement.

**II. TECHNOLOGY-RELATED PROJECTS/PURCHASES IN EXCESS OF \$1 MILLION CLOSED TO PLANT DURING THE CERTIFICATION PERIOD**

**Q. 3 Please describe the scope of the capital investment projects discussed in your prepared certification testimony.**

**A. 3** I support all capital investments for technology-related capital investment projects and general plant projects and purchases placed in service during the Certification Period. Attached as Certification Exhibit No.\_\_(JLE-1) is a list of all

1 capital work orders greater than \$100,000 in total that closed to plant in service  
2 during the Certification Period. Below, I provide discussion on the individual  
3 projects that closed to plant in service during the Certification Period where the  
4 costs incurred were greater than \$1 million.

5 **The Enterprise Data Warehouse (EDW) Project**

6 **Q. 4 Please describe the EDW Project.**

7 A. 4 Southwest Gas initiated the EDW Project (0061W0003978) to create a centrally  
8 located repository of Company data with the intent of leveraging analytics and  
9 business intelligence for operational enhancements and reporting capabilities.  
10 Data is one of the Company's most vital assets; therefore, the ability to assess  
11 and leverage that information to advance strategic objectives is essential. The  
12 EDW Project provided a modern and robust digital platform that could be used  
13 for strategic planning and business analytics. The EDW Project is the foundation  
14 for building a long-term business intelligence and analytics strategy. The initial  
15 rollout of the EDW platform focused on restructuring and migrating customer  
16 information from the legacy 30-year old Customer Service System (CSS) into a  
17 new platform that could be leveraged to assist with innovation through data  
18 modeling and analytics in advance of the Customer Data Modernization Initiative  
19 (CDMI). An EDW expansion strategy is in development to explore benefits to  
20 business processes across the entire organization. A copy of the Charter for the  
21 EDW Project is attached hereto as Certification Exhibit No. \_\_ (JLE-2)

22 **Q. 5 Why did Southwest Gas undertake the EDW Project?**

23 A. 5 Southwest Gas implemented the EDW Project to optimize Company operational  
24 assets and gain business efficiencies through a flexible and expandable tool that  
25

1 could be leveraged to provide decision-making capabilities through data  
2 analytics in order to quickly adapt to rapidly changing customer expectations  
3 and regulatory demands. The EDW platform provides quicker access to data,  
4 enhanced query and system performance, improved business intelligence, and  
5 superior data quality and consistency to support customer services and reduce  
6 response times to customer inquiries requiring detailed investigations.  
7 Additionally, it allows for data modeling and analysis to identify and mitigate  
8 trends of potential challenges within the system.

9 The primary objectives of the EDW were to:

- 10 • Provide an extensible enterprise data warehouse foundation for the  
11 integration of and expansion of multiple data sources
- 12 • Develop a robust and sustainable solution containing quality data that  
13 could be leveraged for reporting and other ad hoc business needs
- 14 • Implement a tool that could be leveraged to exploit data for decision-  
15 making purposes
- 16 • Deliver a repository of customer information that can be leveraged in  
17 advance of the two-year implementation for CDMI and utilized a with  
18 the CDMI software upon completion of the CDMI project.

19 **Q. 6 What was the total cost of the EDW?**

20 **A. 6** The total cost of the EDW Project was approximately \$2.3 million, and the  
21 amortized net balance being proposed for recover in this case is approximately  
22 \$2.1 (before allocation). This project was placed in service in February 2020.  
23  
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1 **The NEXUS Tech en Route Project**

2 **Q. 7 Please describe the NEXUS Tech en Route functionality.**

3 A. 7 As described in my prepared direct testimony, the Nexus Project was a series of  
4 system improvements designed to enhance the customer experience. The  
5 NEXUS Project launched in early 2018 with a focus of providing the customer  
6 with a variety of communication channels to obtain the latest account and  
7 customer appointment information. The NEXUS project provided enhanced  
8 communications and by expanding preference channels via options such as  
9 voice, email, and text.

10 The NEXUS Tech en Route functionality (0061W0004361), is a mobile  
11 application with a web-based geographical feature for the customers to obtain  
12 real-time status information on the location of service technicians in scheduling  
13 appointments. The NEXUS Tech en Route solution allows the service  
14 technicians to provide a text notification to the customer when they are on their  
15 way to the customer's home for a scheduled appointment. The customers can  
16 access a geographical map via the internet to see the physical location of the  
17 service technician's truck as they are driving to the customer's house.

18 A copy of the Charter for Project NEXUS is attached hereto as Certification  
19 Exhibit No. \_\_ (JLE-3)

20 **Q. 8 Why did Southwest Gas undertake the NEXUS Tech en Route project?**

21 A. 8 As stated above, the NEXUS Tech en Route was developed to improve the  
22 customer experience by providing the customer with real-time information on the  
23 status of their scheduled appointments to help lessen the inconvenience of  
24 waiting for a service technician to arrive at their home. The enhanced  
25

1 communication helps to reduce the number of missed accounts that require  
2 rescheduling. This will help drive service efficiencies and improve customer  
3 satisfaction.

4 The NEXUS Tech en Route feature also enhances the Company's  
5 commitment to safety. The feature allows our customers to be notified that a  
6 representative of the Company is on their way to the house and allows  
7 customers to access a geographical map via the internet to see the physical  
8 location of the service technician's truck as they are driving to the customer's  
9 house. This mitigates the risk of customers opening the door to individuals  
10 falsely posing as Company employees with the intent of criminal activity.

11 The NEXUS Tech en Route functionality also provides our front-line field  
12 personnel with the tools to perform their job functions safely and effectively. This  
13 notification tool alerts customers so that they can be prepared for their service  
14 appointment by being readily available when the service technician arrives and  
15 allowing time to secure potentially dangerous pets. This project is in direct  
16 alignment with the Company core values of safety, excellence, quality, and  
17 partnership.

18 **Q. 9 What was the total cost of the NEXUS Tech en Route functionality?**

19 **A. 9** The total cost of the NEXUS Tech en Route project was approximately  
20 \$1.1 million, and the amortized net balance being proposed for recovery in this  
21 case is approximately \$1 million (before allocation). The project was placed in  
22 service in February 2020.  
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24  
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1 **The Strategic Financial / Regulatory Planning (SFRP) Phase I Project**

2 **Q. 10 Please describe the SFRP Phase I Project.**

3 A. 10 The SFRP Phase I project (0061W0004958) provides a robust and agile long-  
4 range financial planning system to support strategic financial planning and  
5 analyses. The SFRP Phase I provides a tool to assist the Company with the  
6 development of financial projections and analysis needed to support the  
7 Company's investments in its natural gas systems and to maintain the  
8 Company's investment-grade credit ratings and minimize borrowing costs

9 The strategic financial planning system, which is foundationally aligned with  
10 the Company's budgeting/forecasting system (Adaptive Insights), extends and  
11 enhances the Company's ability to forecast and analyze the financial and  
12 regulatory impact of planned investments and rate actions in a timely and  
13 accurate manner.

14 A copy of the Charter for the SFRP Phase I Project is attached hereto as  
15 Certification Exhibit No. \_\_ (JLE-4).

16 **Q. 11 Why did Southwest Gas undertake the SFRP Phase I Project?**

17 A. 11 The SFRP Phase I project was undertaken in response to increased complexity  
18 in the Company's business environment and the need for more timely and  
19 granular financial forecasting and analysis to assist with regulatory requirements  
20 and management decision-making. Southwest Gas makes continuing and  
21 substantial long-term investments to provide reliable and safe service to its  
22 customers. The regulatory and business environments for making such  
23 investments is rapidly changing, particularly with respect to the replacement of  
24 aging infrastructure, pipeline safety regulation, environmental regulation,  
25

1 technology, and energy efficiency adoption. Adding to this complexity is the  
2 volume and variation of rate recovery in each of the Company's rate jurisdictions.  
3 Existing financial forecasting processes are manually intensive and heavily  
4 dependent on separate spreadsheet models which are unable to accommodate  
5 the increased complexity and demands for more timely and sophisticated  
6 financial forecasting and analysis.

7 The SFRP Phase 1 project replaced multiple existing Excel models with a  
8 single, robust financial model that utilizes a common set of criteria, data and  
9 assumptions. The project also standardized and streamlined financial planning  
10 processes across stakeholder departments. The development and  
11 implementation a strategic planning system enhances the Company's ability to  
12 develop accurate and timely long-term financial plans for managing capital  
13 investments, rate case planning, and maintaining or improving credit ratings, all  
14 of which support the Company's ability to provide reliable and safe service to  
15 customers in a cost-effective way over the long-term.

16 **Q. 12 What was the total cost of the SFRP Phase I Project?**

17 A. 12 The total cost of the SFRP Phase I Project was approximately \$1.9 million,  
18 and the amortized net balance being proposed for recovery in this case is  
19 approximately \$1.8 million (before allocation). The project was placed in service  
20 in March 2020.

21 **The Supervisory Control and Data Acquisition (SCADA) Upgrade Project**

22 **Q. 13 Please describe the SCADA Upgrade Project.**

23 A. 13 A Supervisory Control and Data Acquisition (SCADA) system is comprised of a  
24 collection of software and hardware logic components used to transmit  
25 information regarding pipeline conditions to a central location in order to monitor

1 and control gas-flow throughout the Company's service territories. The SCADA  
2 system promotes safety by providing visibility into pipeline operating conditions  
3 and is a core system utilized in the operation of the Company's natural gas  
4 systems.

5 In October of 2018, Southwest Gas launched the SCADA Upgrade Project  
6 (0061W0003542) to update the existing SCADA product solution called OASyS  
7 DNA 7.5, to the latest release called OASyS DNA 2018. In addition to upgrading  
8 the product solution to a current release, the SCADA project included an  
9 enhanced front-end interface to increase user capabilities and enhance system  
10 visibility.

11 A copy of the Charter for the SCADA Upgrade Project is attached hereto as  
12 Certification Exhibit No. \_\_ (JLE-5).

13 **Q. 14 Why did Southwest Gas undertake the SCADA Project?**

14 **A. 14** Southwest Gas updated the SCADA solution for several reasons. OASYS DNA  
15 2018 provides enhanced system capabilities to comply with the latest regulatory  
16 mandates in the industry including Title 49 Code of Federal Regulations (Title  
17 49 CFR) regarding Control Room Management as well the American Petroleum  
18 Institute Recommended Practice 1165 (API RP 1165) for enhanced pipeline  
19 SCADA displays. In addition, upgrading to OASys DNA 2018 alleviates security  
20 concerns by leveraging the Purdue Cybersecurity model and adhering to the  
21 latest Transportation Security Administration (TSA) and National Institute of  
22 Standards and Technology (NIST) guidelines for pipeline security. The SCADA  
23 Upgrade Project also replaced end-of-life infrastructure hardware including  
24 outdated servers.

25



1 | **Q. 15 What was the total cost of the SCADA Upgrade Project?**

2 | A. 15 The total cost of the SCADA Upgrade Project was approximately \$2.5 million,  
3 | and the amortized net balance being proposed for recover in this case is  
4 | approximately \$2.4 million (before allocation). The project was placed in service  
5 | in April 2020.

6 | **III. CONCLUSION**

7 | **Q. 16 Does this conclude your certification testimony?**

8 | A. 16 Yes.

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**SOUTHWEST GAS CORPORATION**  
**NEVADA**  
**TECHNOLOGY-RELATED WORK ORDERS GREATER THAN \$100,000 IN TOTAL COST**  
**CLOSED TO PLANT IN SERVICE DECEMBER 2019 - MAY 2020**

Line No.	Work Order Number (a)	Work Order Description (b)	Date First Transferred to Plant (c)	Total Amount Excluding CIAC (d)	CIAC (e)	AFUDC (f)	Line No.
	<u>System Allocable</u>			[1]			
1	0061W0003622	Video Conferencing Equipment	Sep-19	150,968	0	0	1
2	0061W0004766	GTS Purchasing Project Phase II	Dec-19	460,000	0	0	2
3	0057W0004993	Durango Computer Equipment	Jan-20	805,208	0	0	3
4	0061W0003978	Data Warehouse Project	Jan-20	2,287,598	0	0	4
5	0061W0004358	SAS Forecast Software	Jan-20	713,427	0	0	5
6	0061W0005357	SAP Non-prod servers at H1	Jan-20	320,760	0	0	6
7	0061W0004361	NEXUS Tech En Route	Feb-20	1,067,555	0	0	7
8	0061W0003101	Design Data Collection Application	Apr-20	252,724	0	0	8
9	0061W0003542	Scada Upgrade Project	Apr-20	2,472,042	0	0	9
10	0061W0004958	Strategic Financial Planning PH 1	Apr-20	1,871,247	0	13,494	10
11	0061W0005380	WCM Enhancements	Apr-20	294,820	0	0	11
12	0061W0005414	SAP automated provisioning software	Apr-20	194,280	0	0	12
13	0061W0005497	Computer Equipment for Project Hori	Apr-20	228,556	0	0	13
14	0061W0005354	Network Attached Storage for H1	May-20	192,048	0	0	14
15	0061W0005419	Additional RAM for dev/test - H1	May-20	169,581	0	0	15
16	0061W0005478	Refresh of storage at H1	May-20	567,069	0	0	16

[1] Before allocation

Data Warehouse Project Phase 1  
Revised Project Charter (2.0)



**SOUTHWEST GAS CORPORATION**

# Data Warehouse Program Phase 1

## Project Charter (Revision 2.0)

Southwest Gas Corporation [Confidential if applicable]

[For Internal Use Only if applicable]

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September 25, 2018

## Document Control

### Document Information

	Information
Prepared by	Greg Robleski
File Name	Project Charter Data Warehouse Program – Phase 1
Project ID	P18005
Copyright Notice	Method 123 owns the copyright for the use of this document template

### Document History

Version	Date	Changes
Draft 0.1	05/14/2018	Initial Draft
1.0	05/16/2018	<ul style="list-style-type: none"> <li>Section 1 (Executive Summary) pg. 1 – added “reporting, and Business Intelligence” to sentence re: platform construction.</li> <li>Section 2.3 (Scope) pg.2 – added “KPIs” to sentence re: migration of reports.</li> <li>Section 3.3 (Stakeholders) – added call center to Customer Engagement interest; updated interest description for Operations</li> <li>Section 4.1 (Implementation) pg. 6 and Section 5.1 (Assumptions) pg. 10 – added comment regarding data governance.</li> </ul>
1.1	05/25/18	<ul style="list-style-type: none"> <li>Updated CSS Interfaces Diagram</li> </ul>
2.0	09/15/2018	<ul style="list-style-type: none"> <li>Updated project scope, timelines, oversight, and costs.</li> </ul>

### Document Review

Version	Review Date	Reviewer
2.0		Ken Briggs
2.0		Greg Robleski
2.0		Eric DeBonis
2.0		Carl Landre
2.0		Reagan Monroe
2.0		Ngoni Murandu
2.0		Anita Romero
2.0		Craig Sisco
2.0		Preston Weaklend

Data Warehouse Project Phase 1  
 Revised Project Charter (2.0)

**Document Approvals**

Role	Name	Signature	Date
Project Sponsor	Ngoni Murandu		
EDM Program Steering Committee	Eric DeBonis		
	Ngoni Murandu		
	Anita Romero		
Project Oversight Committee	Ken Briggs		
	Denise DiTrapani		
	Carl Landre		
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	Preston Weaklend		
Project Manager	Greg Robleski		

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## 1 Executive Summary

The vision of the Southwest Gas (SWG) Enterprise Data Warehouse (EDW) Program is to create a living, clearly defined source of truth about what is happening in our business that can be disseminated to internal and external parties in an agile manner; using available modern analytics and business intelligence reporting tools. The program mission is to deliver an extensible and flexible data warehouse solution that supports the Company's digital strategy for strategic, operational and tactical decision making. A key objective of this project, Phase 1, is the delivery of an extensible, flexible data warehouse platform including a governance framework that will protect corporate data assets and ensure data integrity. The platform will be constructed to allow for later iterations to be added as the need arises for enterprise planning, reporting and Business Intelligence (BI).

Phase 1 scope will be limited to the delivery of a repository with a customer-focused data model containing only Customer data from CSS. All data to be cleansed and migrated currently resides in the CSS IMS files.

## 2 Project Definition

### 2.1 Background

The improved profitability and efficiency needed to be successful in today's competitive and changing market is dependent on quicker access to data, better query and system performance, improved business intelligence, and superior data quality and consistency afforded by a data warehouse. The optimization of the business operations, assets and compliance activities of SWG is also dependent on the availability of useful and meaningful integrated transactional and operational data for informed decision making. The data warehouse will serve as a centralized repository for the data in support of SWG's digital strategy for strategic, operational and tactical decision making. SWG is seeking a data warehouse partner to design, build and implement an extensible, scalable and flexible enterprise data warehouse solution.

### 2.2 Business Objectives

- Construct an extensible enterprise data warehouse foundation that allows for the integration of additional data sources as the need arises.
- Develop and implement a robust and sustainable enterprise data warehouse solution containing profiled, cleansed, and transformed data that can be used for reporting, KPIs, dashboards, and other ad hoc business needs.
- Implement an enterprise data warehouse solution that will collect, and store information needed by the Company for decision making, store it in a way that facilitates decision making, and allows for convenient reporting and dissemination of information.
- Deliver a scalable, flexible, and extensible enterprise data warehouse platform that will allow for easy integration of advanced analytical and BI tools in the future.
- Create an enterprise data warehouse governance framework that will protect corporate data assets and ensure data integrity.
- Deliver a repository with Customer- and premise-related information.

### **2.3 Scope**

- In Scope:
  - CSS Customer-related data.
  - Migration of select current reports and Key Performance Indicators (KPIs) sourced from Customer and premise related data.
  - Planning for future expansion of the Enterprise Data Warehouse.
  - Up to 44 retrofitted, existing management and investigative reports.
  
- Out of Scope:
  - Integration of data from sources other than CSS and other non-customer data.
  - New reports.

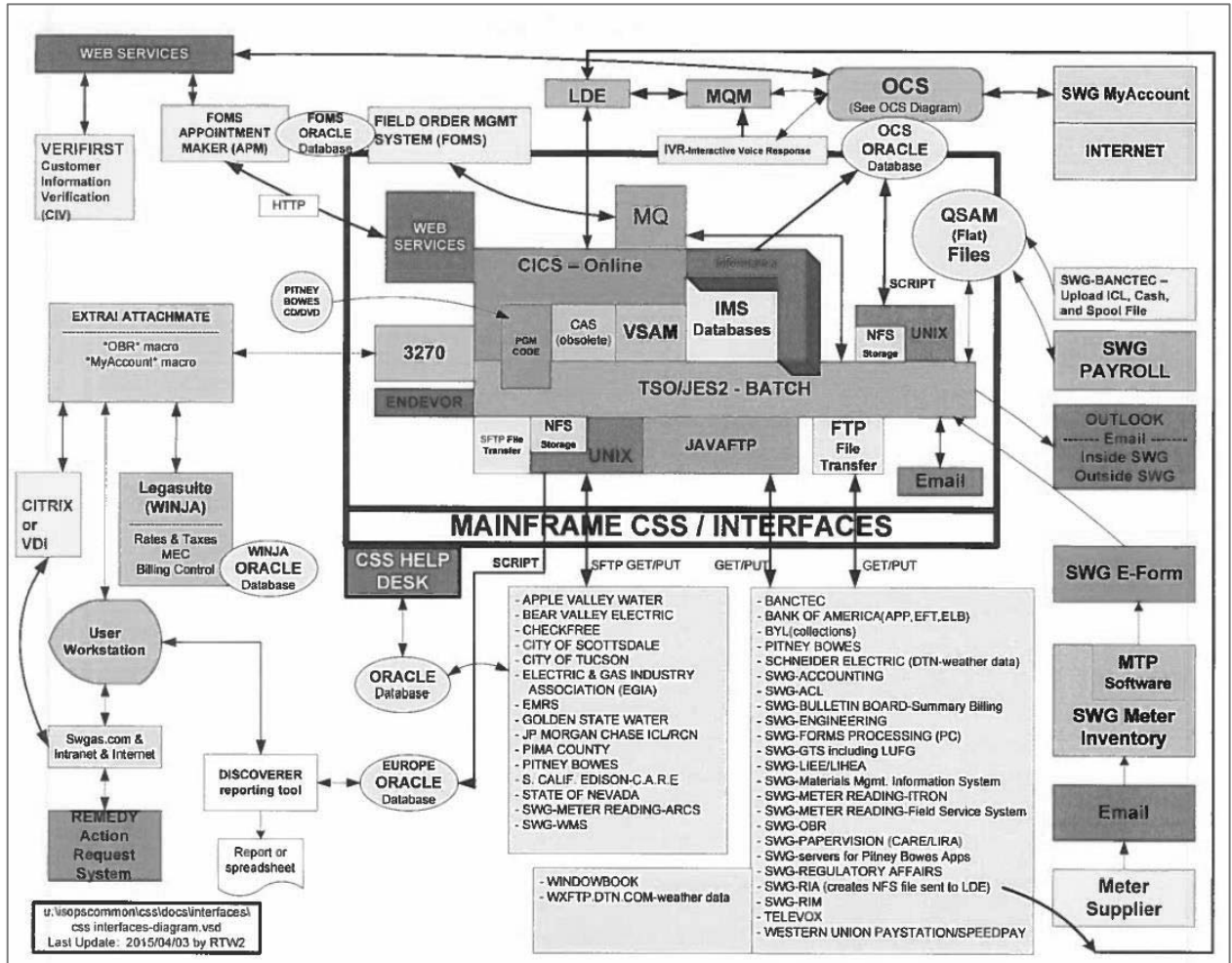
### **2.4 EDW Scope/Cost /Schedule Change Control**

Any changes in the baselined project scope, budgets, and schedule will be negotiated between the project manager, Infosys, and/or the eventually selected data base vendor, with input from SWG Legal and Contracts departments, the Project Executive, and the Project Sponsor. Any changes in project scope, budget, and/or timelines must be shared with, and approved by, the Project Oversight Committee before any changes are implemented by the project team, Infosys, and/or the eventually selected data base vendor.



Data Warehouse Project Phase 1  
 Revised Project Charter (2.0)

2.5 High Level Application or Business Process Diagrams



2.6 Key Deliverables and Approvers

Deliverable	Components	Approval
Project Charter Memo	Project Charter Memo	Sponsor
Charter	Identifies the overall project management processes for the project. The document represents all known elements of the project at the time of Sponsor approval.	Oversight & Steering Committees and Sponsor.
Request for Proposal (RFP)	RFP including high level, best practice EDW requirements.	Contracts Administration, Oversight & Steering, and Project Sponsor.
Supplier Selection	A System integrator and Data Warehouse (DW) Partner/Vendor will be selected.	EDW Oversight & Steering Committees and Sponsor.

Data Warehouse Project Phase 1  
 Revised Project Charter (2.0)

**2.7 Financial Plan**

Phase	Description	Completion Date	%	Total Amount USD
<b>0.A</b>	Initiation	05-Oct-18	15	\$255,764.00
<b>0.B</b>	High Level Design (HLD) / Foundation	30-Nov-18	17	\$296,749.00
<b>1</b>	Detailed Level Design (DLD)	08-Feb-19	16	\$266,823.00
<b>2</b>	Completion of Build	19-Apr-19	17	\$287,734.00
<b>3</b>	Completion of Test	14-Jun-19	18	\$303,721.00
<b>4</b>	Deployment and Go-Live	22-Jul-19	7	\$111,897.00
<b>5</b>	Stabilize / Warranty	23-Oct-19	10	\$175,838.00
	<b>Total</b>		<b>100</b>	<b>\$1,698,526.00</b>

Phase	Description	Completion Date	Total Amount USD
<b>0.A</b>	Initiation	05-Oct-18	\$23,478.00
<b>0.B</b>	High Level Design (HLD) / Foundation	30-Nov-18	\$23,478.00
<b>1</b>	Detailed Level Design (DLD)	08-Feb-19	\$23,478.00
<b>2</b>	Completion of Build	19-Apr-19	\$23,478.00
<b>3</b>	Completion of Test	14-Jun-19	\$23,478.00
<b>4</b>	Deployment and Go-Live	22-Jul-19	\$23,478.00
<b>5</b>	Stabilize / Warranty	23-Oct-19	\$23,478.00
	<b>Total</b>		<b>\$164,346.00</b>

### 3 Project Organization

#### 3.1 Roles

Role	Name	Title	Department
Sponsor	Ngoni Murandu	VP/Information Services/CIO	Information Services Mgt.
EDM Steering Committee	Eric DeBonis	SVP/Operations	Division Operations V/P
	Ngoni Murandu	VP/Information Services/CIO	Information Services Mgt.
	Anita Romero	SVP/Staff Ops & Technology	Staff Operations
EDW Oversight Committee	Ken Briggs (Project Executive)	Dir/Application Services	Application Services
	Carl Landre	Dir/Technology SIO	Technology SIO
	Chris Madsen	Mgr./Corporate Planning	Corp Plng Financial Svcs
	Reagan Monroe Jr	Dir/Business Technology Supp	Business Technology Support
	Craig Sisco	Dir/System Integrity	System Integrity
	Denise DiTrapani	Mgr./Call Center	Customer Engagement
	Preston Weaklend	Mgr./Ops Planning & Analysis	Division Operations V/P
Legal	Keith Brown	Associate General Counsel	General Counsel's Office
Contracts	Julie Andersen	Analyst II/Contract Admin	Contract Administration
EDW	Crystal Broome	Contractor/LBMR, NV	Operations/Office
	Jeff Burns	Sr Analyst/Systems	Operations/Office
	Chris Dubose	Analyst II/Programmer	Operations/Office
	Karin Fastow	Sr Analyst/Support	Enterprise Systems Support
	Gloria Garcia	Analyst III/Cust Engagement	Cust Engagement

#### 3.2 Responsibilities

Role	Name	Title	Department
	Kevin Halloran	Analyst/Systems	Operations/Office
	Tina Johnson	Analyst II/Business Tech Supp	Customer Assistance Support Training
	Ken Kudlak	Mgr./Application Services	Operations/Office
	Suzann Lindquist	* Contractor/Fiala Project Resources	Project Management
	Peyush Chandra	Sr Analyst/Technical Infrastructure	Oracle Systems Services
	Ken Rohan	Mgr./Systems Architecture	Technical Architecture Services
	Eric Valentine	Mgr./Technical Services/IS	Oracle Systems Services
Project Manager	Greg Robleski	*Contractor/IT Strategies	Project Management
Systems Integrators	Anant Lokapur	Project Executive	Infosys
	Kyung (John) Kam	Project Manager	Infosys
Data base Vendor/Supplier	TBD	Data base Specialist	TBD

**EDW Project Sponsor**

The Project Sponsor will be primarily responsible for:

- Overall leadership for the project to ensure the Company's needs are met
- Executive communication to the Company about the project as needed
- Removal of obstacles and constraints
- Review and approval of final deliverables
- Authorization of scope changes

**EDM Program Steering Committee**

The EDW Project will not have its own Steering Committee. Instead the EDW Project will report into the Enterprise Data Management (EDM) Steering Committee. The EDM Steering Committee will be primarily responsible for:

- Approving the project scope.
- Approving resources and funding for the project.
- Providing financial oversight.
- Providing direction for escalated issues.
- Providing direction for go/no-go decisions.
- Ensuring coordination and planning between the many projects within the EDM Program.

**EDW Project Oversight Committee**

The EDW Project Oversight Committee will be primarily responsible for:

- Providing direction and oversight.
- Attending regular status meetings.
- Responding to issues requiring resolution.
- Review and approval of scope change requests.
- Communication to/from business area counterparts regarding the project.
- Representing division/business area interests.
- Providing project resources and commitment to meet deadlines.
- Upward and downward communication regarding the project status or issues.

**EDW Project Manager**

The Project Manager will be primarily responsible for:

- Developing and maintaining the project plan.
- Communicating with and managing oversight of vendors.
- Communicating project status and issues with the Program Manager, Oversight Committee, Steering Committee and Project Sponsor.
- Overseeing task completion and keeping the project progressing.
- Producing project documents.

**EDW Project Team Members**

The Project Team members will be primarily responsible for:

- Providing input and subject matter expertise and advice to the project.
- Participating in the planning, development and execution of the work plan and tasks.
- Participating in project meetings by providing input and statuses.
- Participating in project document creation.
- Assisting with the Statement of Work and contract agreement as needed.

- Creating new procedures, if required.
- Participating in the QC of deliverables.

### EDW Systems Integrator (Infosys)

Infosys will be primarily responsible for:

- Assessing the data cleansing and migration efforts performed by SWG to date.
- Construction of an EDW data model.
- Developing an EDW Data Governance model and structure.
- Developing scripts, process, rules, and models for the data cleansing and eventual migration of the CSS customer-related data into the EDW.
- Developing an EDW technical architecture utilizing either Oracle or SAP/Hana.
- A complete list of the Infosys deliverables for the EDW project is contained in Section 4.4.

### EDW Data Base Supplier/Vendor (TBD)

The eventually selected data base vendor will be primarily responsible for:

- Assisting in the set up and installation of the selected data base platform for the EDW.
- Assisting SWG in data base tuning and operations.
- Providing knowledge transfer around the data base platform to SWG personnel.

## 3.3 Stakeholders

Stakeholder / Group	Stakeholder Interest
Operations	Responsible for developing and executing strategies that ensure operational excellence and lead division operations in providing safe, reliable and affordable customer service.
Engineering	Responsible for the creation of company design standards and procedures associated with operational activities. Utilizes CIS and GTS gas usage data for pipeline system flow studies.
Customer Engagement	Performs marketing research and is responsible for customer satisfaction surveys and communication strategies. Manages the call
Energy Solutions	Communicates with existing and future potential customers and promotes opportunities to expand natural gas service through new business development.
Technology	Provides the technical support of CIS systems and applications for the ongoing operation and profitability of the company.

## 3.4 Resource Plan

Role	Start Date	End Date
Project Manager	04/01/2018	10/31/2019
Project Team	04/27/2018	10/31/2019
Contract Admin	03/01/2018	10/31/2019
Data Warehouse Partner	09/24/2018	10/31/2019

## 4 Implementation Plan/Project Approach

### 4.1 Methodology and approach (if not SWG)

The potential Enterprise Data Warehouse suppliers were asked to include the following in their proposals:

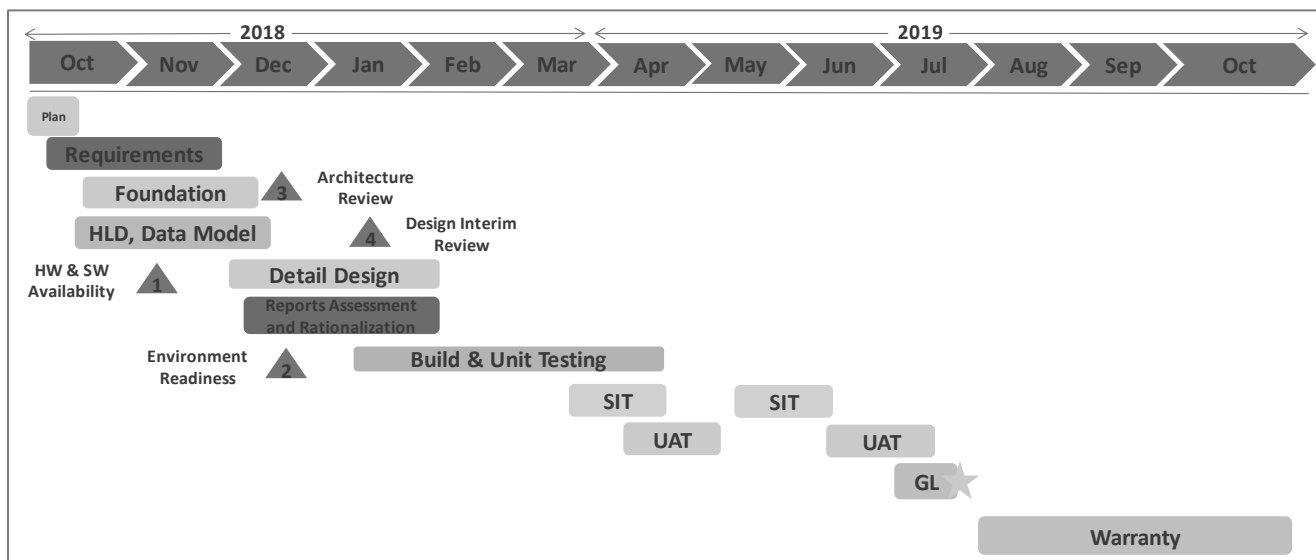
- Description of their methodology for data warehouse implementations.
- Methodology for project management and control of data migration activities and risk management.
- Description of their methodology and experience with data validation and reconciliation including the type of validation that will be performed, type of queries and reports that will be required and the key data elements that must be reconciled.
- Model for data governance including a plan for a data warehouse center of excellence.

### 4.2 Overall Approach

The Selected Data Warehouse Supplier was asked to include a breakdown of tasks by the following phases:

Phase	Phase Gates	Start Date
0.A	Initiation	24-Sep-18
0.B	High Level Design (HLD) / Foundation	08-Oct-18
1	Detailed Level Design (DLD)	03-Dec-18
2	Build	14-Jan-19
3	Test	11-Feb-19
4	Deploy	17-Jun-19
5	Go-Live	22-Jul-19
6	Stabilize/Warranty	23-Jul-19

### 4.3 Project Time Line



Data Warehouse Project Phase 1  
 Revised Project Charter (2.0)

**4.4 Deliverables and Associated Milestones**

Phase	Description	Deliverables	Completion Date	%	Total Amount USD
<b>0.A</b>	Initiation		05-Oct-18	15	\$255,764.00 + \$23,478.00 (Reports) <b>\$279,242.00</b>
	<ul style="list-style-type: none"> <li>Project Plan</li> <li>Establish communication plan</li> <li>Project documentation deliverable(s) templates</li> <li>Review software/tools to be used for project deliverables</li> <li>Final list of Retrofit reports list</li> </ul>				
<b>0.B</b>	High Level Design (HLD) / Foundation		30-Nov-18	17	\$296,749.00 + \$23,478.00 (Reports) <b>\$320,227.00</b>
	<ul style="list-style-type: none"> <li>As-is/To-be Design</li> <li>Project plan (revisions)</li> <li>DR/HA and fail-over strategy (SLD)</li> <li>Data definition</li> <li>DFS/DFD</li> <li>ETL Specifications (Draft)</li> <li>FDS</li> <li>Data Security Framework</li> <li>Testing Strategy (Draft)</li> <li>Technology Recommendation</li> <li>Data Archival/Cleanse Recommendation (Number of Years)</li> <li>Data Governance strategy/framework</li> </ul>				
<b>1</b>	Detailed Level Design (DLD)		08-Feb-19	16	\$266,823.00 + \$23,478.00 (Reports) <b>\$290,301.00</b>
	<ul style="list-style-type: none"> <li>Technical Design specification</li> <li>ETL Specification (revisions)</li> <li>Cutover/Mock plan</li> <li>Data governance – Detail design                             <ul style="list-style-type: none"> <li>Cleansing and migration into the EDW of all CSS data that is easily available in digital format (estimate is 24-36 months)</li> </ul> </li> <li>Data profiling and cleansing</li> <li>Security Design</li> <li>Installation readiness checklist</li> <li>Testing strategy (Revisions)</li> <li>DFD, ERD, API's (Revisions)</li> <li>KPI Metrics catalog</li> <li>Data Gap analysis</li> <li>Reporting roadmap</li> <li>Retrofit 44 reports</li> <li>Data governance standards</li> </ul>				
<b>2</b>	Completion of Build		19-Apr-19	17	\$287,734.00 + \$23,478.00 (Reports) <b>\$311,212.00</b>
	<ul style="list-style-type: none"> <li>EDW configuration document</li> <li>Configuration of system/user security roles</li> <li>Configuration documentation</li> </ul>				

Data Warehouse Project Phase 1  
 Revised Project Charter (2.0)

	<ul style="list-style-type: none"> <li>• Training materials</li> <li>• Customer objects development, reports development</li> <li>• Testing plan</li> <li>• Data and security roles</li> <li>• Cutover/mock planning (revisions)</li> <li>• Data quality/cleansing rules:</li> <li>• Cleansing and migration into the EDW of all CSS data that is easily available in digital format (estimate is 24-36 months) EDW reports (new)</li> </ul>				
<b>3</b>	Completion of Test		14-Jun-19	18	\$303,721.00 + \$23,478.00 (Reports) <hr/> <b>\$327,199.00</b>
	<ul style="list-style-type: none"> <li>• Testing results/output: SIT, PT, Infra</li> <li>• Data profiling and cleansing results</li> <li>• Training content</li> <li>• UAT results, Testing success criteria matrix</li> <li>• Cut-over/Mock plan &amp; results</li> <li>• Remediation plan</li> <li>• Testing results (New reports)</li> </ul>				
<b>4</b>	Deployment and Go-Live		22-Jul-19	7	\$111,897.00 + \$23,478.00 (Reports)) <hr/> <b>\$135,375.00</b>
	<ul style="list-style-type: none"> <li>• Go-live readiness checklist</li> <li>• End user training</li> </ul>				
<b>5</b>	Stabilize / Warranty		23-Oct-19	10	\$175,838.00 + \$23,478.00 (Reports) <hr/> <b>\$199,316.00</b>
	<ul style="list-style-type: none"> <li>• Warranty fixes</li> <li>• Project closure</li> </ul>				
	<b>Total</b>			<b>100</b>	\$1,698,526.00 + \$164,346.00 (reports) <hr/> <b>\$1,862,872.00</b>



## 4.5 Quality Plan

### 4.5.1 Scope Management

Process	Description
Plan Scope Management	The scope of the project is defined in Section 2.4 of this document.
Collect Design Elements	The process of defining and documenting an EDW high-level design that meets the project objectives.
Define Scope	The process of developing a detailed description of the project and product.
Create Work Breakdown Structure/ Project Plan	The process of subdividing project deliverables and project work into smaller, more manageable
Validate Scope	The process of formalizing acceptance of the completed project deliverables.
Control Scope	The process of monitoring the status of the project and product scope and managing changes to the scope baseline. Please refer to Section 2.4.

### 4.5.2 Quality Management

Process	Description
Plan Quality Management	The selection of the quality standards and production of the Quality Management Plan. Infosys is responsible for developing a plan to maintain the integrity, quality and security of the data throughout the project. Infosys is also responsible for providing a Quality Assurance / Audit plan.
Perform Quality Assurance	Change requests will be submitted for review and approval as described in Section 2.4 of this document.
Control Quality	Quality will be managed through rigorous review of the deliverables. Project team members will review all deliverables from Infosys and the eventually selected data base vendor.

### 4.5.3 Risk Management

Risks will be identified through brainstorming, input from the project team, Infosys, the eventually selected data base vendor, committee members, and checklists. Risks will also be identified and captured throughout the life of the project. A risk register, maintained on the project's SharePoint site, has been developed with a list of identified risks. Risks will be assessed for probability of occurrence, and potential impact and a Risk Factor will be calculated. Risks will be sorted based on Risk Factor to determine priority for addressing. Mitigation response will be identified. For High Risk Factor risks, contingency responses will also be identified along with the events which will trigger the contingency response. Actions to implement the identified responses will be identified and monitored. The project manager will review risks with the Project Team and Oversight and Steering Committees on a regular basis.

### 4.5.4 Issue/action item/defect management

- Issues and actions will be identified throughout the life of the project and will be captured in a Risk Register, maintained in the Project SharePoint site. Owners will be identified for each, and due dates agreed for resolution and/or completion. The PM will manage and monitor issues and actions.

- Issues will be reviewed by the PM to determine initial action steps. Issues will be prioritized and assigned to a project team member, or members, for resolution.
- Issues that cannot be resolved by the Project Team will be escalated to the Oversight Committee, Steering Committee, or Sponsor as necessary for their assistance in resolution.

#### 4.5.5 Communication Management

Both formal and informal communications will be used for the duration of the project. The Project Manager and the Customer Engagement department share responsibilities to oversee the Company-wide Communications strategy. The Project Manager will schedule meetings with the Oversight and Steering Committees. The Project Manager will be the primary point of contact for project information both internal to SWG, Infosys, and the eventually selected data base vendor.

Process	Description
Monthly Project Status Report	Summarizes progress against the plan, issue summary, action items review, and upcoming activities.
Project Team Status Meeting	As needed and coordinated with the Data Warehouse Partner
Monthly (or as needed) Oversight Committee Meeting	Review progress against the plan, issue summary, accomplishments/next steps, financial report, and risk report. Minutes distributed.
Quarterly (or as needed) Steering Committee Meeting	Review progress against the plan, issue summary, accomplishments/next steps, financial report, and risk report. Minutes distributed.

#### 4.6 Completion Criteria

Project completion criteria are used to determine the completion of key project activities or tasks and the readiness to initiate subsequent activities or tasks.

The project is considered successfully complete when:

- All issues and action items have been completed and signed off.
- All required work products (includes more than just project deliverables) have been produced.
- Any deficiencies have been logged and signed off.
- The project objectives have been met and the agreed deliverables are approved by the Project Sponsor and other approvers as detailed in Section 2.6 of this document.
- The Lessons Learned meeting has been completed and minutes distributed.
- The Project Completion report is approved by the Project Sponsor.

## 5 Project Considerations

### 5.1 Assumptions

- Users, requirements, data, source systems and technology stacks will change as the project progresses.
- The project team, Infosys, and the eventually selected data base vendor will take an agile approach to planning, design, testing and build.
- Data will be tested with the design as early as possible to reduce rework and gather additional learnings.
- All solution processes will be automated wherever possible.
- An EDW data model will need to be established.
- A EDW data governance model and processes will need to be established.

### 5.2 Constraints

- The quality of the data warehouse solution will be constrained by the availability, amount, granularity, and quality of data.
- Solution delivery will be constrained by availability of resources shared with other high priority SWG projects.

### 5.3 Dependencies

Project /Initiative	Type	Description
Customer Service Modernization (CSM)	Data	The CSM Program includes the implementation of a new Customer Information System (CIS). CSM has a dependency on the implementation of the data warehouse customer focused data model populated with Customer data for testing purposes on/around July 2019.
Enterprise Data Protection Project	Data	This project, within the Enterprise Data Management Program framework, is to determine the appropriate SWG solutions to data access, PII, and other data categorization issues. It may have ripple effects on the EDW project.
SAS Historical Data	Data	This project is to migrate the SWG customer historical data off the mainframe and to rebuild/repoint the existing data access portal. It may have ripple effects on the EDW project.
Enterprise Data Strategy	Strategy	This project, within the Enterprise Data Management Program framework, is to determine the overall Enterprise Data Management Strategy and required projects for SWG. It may have ripple effects on the EDW project.

## 6 Appendix

### 6.1 Supporting Documentation

Data Warehouse Project Charter Memo



EDW MSA

*--- Insert link to final --*

EDW SOW

*--- Insert link to final --*

### 6.2 Project Charter Approvals

*--- Insert links --*



# **Nexus Project**

# **Charter**



## Document Control

### Document Information

	Information
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Copyright Notice	Method 123 owns the copyright for the use of this document template

### Document History

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### Document Review

Version	Review Date	Reviewer

### Document Approvals

Role	Name	Signature	Date
Project Sponsor	Jose Esparza	Approved via email	9/14/2018
Project Steering Committee	Jose Esparza	Approved via email	9/14/2018
	Ngoni Murandu	Approved via email	10/10/2014
	Eric DeBonis	Approved via email	10/3/2018
Project Oversight Committee	Yvonne Low	Approved via email	8/28/2018
	Reagan Monroe	Approved via email	8/8/2018
	Preston Weaklend	Approved via email	8/28/2018
	Denise DiTrapani	Approved via email	8/28/2018



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## 1 Executive Summary

The Nexus Project is being implemented as the result of the Customer 360 and Omnichannel Communication Center Request for Proposal (RFP) Recommendation. SAP was selected as the solution and IBM as the implementer (bringing in Smart Energy Water (SEW) as a sub-contractor).

Phase 1 of the Nexus Project will provide service order notifications to customers via emails, text notifications and robocalls. To further enhance the Customer Experience, the Southwest Gas mobile app will be deployed for iOS and Android containing much of the functionality currently available within MyAccount as well as the capability to pay with a credit or debit card.

To assist the Customer Service Representatives (and other departments) by providing pertinent account information on a single screen, the SAP Service Cloud Agent desktop deployment will improve the customer experience when a customer needs to call Customer Assistance. Service Cloud will provide data for analysis in identifying why customers are contacting Customer Assistance, providing insights for continuous improvement of the Customer Experience.

The final improvement in the Customer Experience from Phase 1 of the Nexus Project will be the launch of an IBM and Apple developed application (Tech En Route) for the Field Technicians to use to indicate when they are on their way to a customer's location. The customer will then receive a notification with the visual map representation of the route the Field Technician is taking along with the name and picture of the Technician. The customer will be able to watch the Tech's route in real time.

The following sections of this document explain how the project will be executed from the Southwest Gas perspective. IBM deliverables are included in the link to the Nexus SharePoint site at the end of this document.

## 2 Project Definition

### 2.1 Background

Southwest Gas launched a Customer Experience Improvement initiative in 2016, focused on improving Customer satisfaction. That initiative began with separate focus areas, one of those being the Texting Notifications Project, which was relaunched in October 2017 as the Customer Communication Center Project. In research gathering, as well as the Request for Proposal (RFP) execution and solution acceptance, additional capability has been acquired that will expand the Customer Experience Capabilities for Southwest Gas (SWG). The newly acquired SAP software solution along with IBM as the implementer, will provide a customer facing Mobile application, an internal use Agent Desktop providing a





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'SuperScreen' for Customer Assistance and other departments, as well as a internal use mobile app for providing 'Tech En Route' capabilities for our customers. The comprehensive solution will be implemented by IBM and managed going forward as the Nexus Project.

## 2.2 Business Objectives

The Nexus Project is being implemented to achieve the following Business Objectives:

1. Improve customer satisfaction by enhancing the customer experience for interactions with SWG to require less effort.
2. Reduce calls to Customer Assistance by providing alternate self-service methods to transact or answer questions.
3. Increase efficiency by reducing occurrences of rescheduling appointments due to the customer not being at the premise when the Technician arrives.
4. Develop and implement continuous improvements to the customer's journey using analytics, surveys and artificial intelligence capabilities.
5. Utilize technology to digitally transform the customer experience.

## 2.3 Scope

The Nexus Project is defined as having two Phases. This Project Charter addresses Phase 1. Phase 2 will be defined as an Addendum to the Nexus Project Charter.

### 2.3.1 Phase 1 Scope

The Initial infrastructure setup requires the following as in scope:

- Procure new infrastructure required to run HANA on-premise.
  - Includes: SAP Cloud Platform Integration (SCP), SAP Cloud Connector (SCC) and Solution manager (Solman)
- Provision servers to support Hybris Self Service Accelerator (ySSA) and Hybris Marketing (yMKT) on-premise.
- Provision and stand up four non-production environments:
  - Development (DEV)
  - Testing (TEST)
  - User Acceptance Testing (UAT)



- Training (TRN)
  - Provision and stand up the Production environment at the Las Vegas Datacenter (H1).
  - Provide for Disaster Recovery/Failover to the Phoenix Data Center (H2).
  - Stand up JIRA for Agile development requirements and Sprint executions
  - Conduct Performance testing
  - Develop automated test scripts to be handed over to SWG for use in HP Application Lifecycle Management (ALM) Quality Center
  - Utilize HP ALM Quality Center (now MicroFocus) for User Acceptance Test script development, testing execution and documentation.

Phase 1 will be delivered in four (4) Releases. The scope of each release is identified below:

#### **Release 1 – ySSA Customer notifications (SMS, Email, Robocall)**

- Stand up the ySSA module
- Implement SMS/Email/RoboCall messaging for service order confirmations, reminders and completions
- Allow customers to opt-in for SMS while creating their order in MyAccount
- Allow the CSR to capture a customer opt-in for SMS via the OCS Operational Tools
- Implement two-way SMS and Robocall providing an opportunity for the customer to 'Reschedule' or 'Cancel'
- Integration between OCS and ySSA – expected to be via web services
- Develop internal application (under OCS) for the Cancel/Reschedule process
- Standing up the Messaging Gateway
  - Amazon SES – Email
  - Twilio – SMS and RoboCall
- Develop/configure reporting/analysis capability of ySSA

#### **Release 2 – Customer Facing Mobile Application**

- Design, build and deploy a customer-facing mobile application for Apple iOS and Google Android using the ySSA platform. The mobile app will leverage the MyAccount functionality using OCS web services. The ySSA platform for mobile apps includes the following customer-facing modules:



- 
- a. Provide thumbprint, or facial recognition log in capability
  - b. Customer profile – customer contact information
  - c. Usage – views into current usage over the past 13-month period
  - d. Billing – bill payment options of ACH and credit card, ability to see outstanding and previously paid bills, bill inserts
  - e. Notifications – customer contact notification preferences and notification history, company letters (pdf's)
  - f. Compare – compare single premise usage over the past 24 month period against itself (bar graph comparing) (i.e. January 2017 to December 2018)
  - g. Outage – view of outages in the area including ability to search by address. Also, includes the ability to see if the address is affected by the outage.
  - h. Service – includes start, stop and move interactions
  - i. Contact Us – provide information to the customer regarding ways to contact SWG
  - j. FAQs – frequently asked questions that can be configured based on SWG needs
  - k. Payment locations
  - l. Voice activated functionality – a microphone feature that includes basic commands that a customer can use, such as “pay bill” or “view bill”
- Implement Billing notifications: bill is ready, payment reminder, payment processed, payment delinquent, and returned payments
  - Deploy Outage notifications
  - Deploy MyAccount update notifications
  - Deploy additional channel for service – push notifications
  - Reporting for the mobile app and customer preference activity
  - Reporting for notifications
  - Integrate with OCS for the MyAccount capabilities selected for the mobile app
  - Implement changes to MyAccount for functionality determined to be included in Release 2 due to the mobile app requirements



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### **Release 3 - Agent Desktop**

- Develop and implement a “Super Screen” to provide CSRs (and other departments) with a 360-degree view of customer interaction and data to aid in servicing customer questions.

The scope of the release includes:

- Implement the SAP Hybris Sales Cloud (ySC) framework and integration capabilities
- Design a “Super Screen” which provides a current view of the account.
- Implement ySC with integration to yMKT, ySSA and OCS
- Develop initial data load for ySC
- Develop synchronization for ySC required data from OCS
- Implement Service Cloud ticket functionality
- Implement integration with CIC
- Implement wrap up code (reason for the call) within ySC
- Configure ySC reporting
- Implement the ability to see all of the communications to the customer
- Implement the Customer Intent and Next Best Action capability
  - Initial capability is configured based on rules, does not use IBM Watson in Phase 1
- Implement the Outage map lookup based on the account
- Implement ability to find payment locations for the customer while on a call
- Ability to see a pending service order based on the premise and/or customer prior to the order completion and account being established for the new tenant in CSS

### **Release 4 – Tech En Route**

- Develop and implement capability to notify the customer when the Tech indicates that he is en route to the customer’s location for a service order.
  - Not all service orders will receive Tech En Route notifications. The business will determine which orders, specifically those where entry to the premise is required. DNP, OFF, and TC 010 orders specifically will not be included.
- Implement a map based solution for the customer to have a visual presentation of the Tech’s route while initiated and until the Tech arrives.
- Provide the Tech’s first name and picture to the customer



- 
- Develop a mobile app for the Tech to select the order and initiate the en route communication
  - Integrate with FOMS-CS for the Tech's service orders

### 2.3.2 Not In Scope

The following have been identified as out of scope for Phase 1 of the Nexus Project:

1. Developing automation behind the 'Cancel' and 'Reschedule' responses. It is expected that the back office (CSRs or CABO) will work these manually; cancelling orders and contacting the customer to reschedule, when 'Reschedule' is provided by the customer as a response to SMS or RoboCall.
2. Handling any customer response to a notification Email. Information will be provided in the context of the email to call Customer Assistance if they need to reschedule or cancel.
3. CARE and LIRA on the mobile app are not in scope.
4. Guest functionality for creating a service order or making payments will not be included in the initial rollout of the mobile app.
5. Any language other than English is out of scope for Phase 1
6. Functionality requiring changes to CSS
7. Allowing credit cards for Automatic Payments
8. Any functionality not identified in the approved Statement of Work
9. Any functionality or data collection where Personally Identifiable Information (PII) would be processed on the mobile app
  - a. Since co-applicant on a start order currently requires PII, it is out of scope for the mobile app
10. Any changes to OCS not required for the Nexus Project functionality directly
  - a. Removing PII from OCS
11. Customer Survey capabilities – expected to be part of Phase 2
12. IVR enhancements not specifically needed for Nexus functionality
13. Interfacing to/from the future SWG Data Warehouse



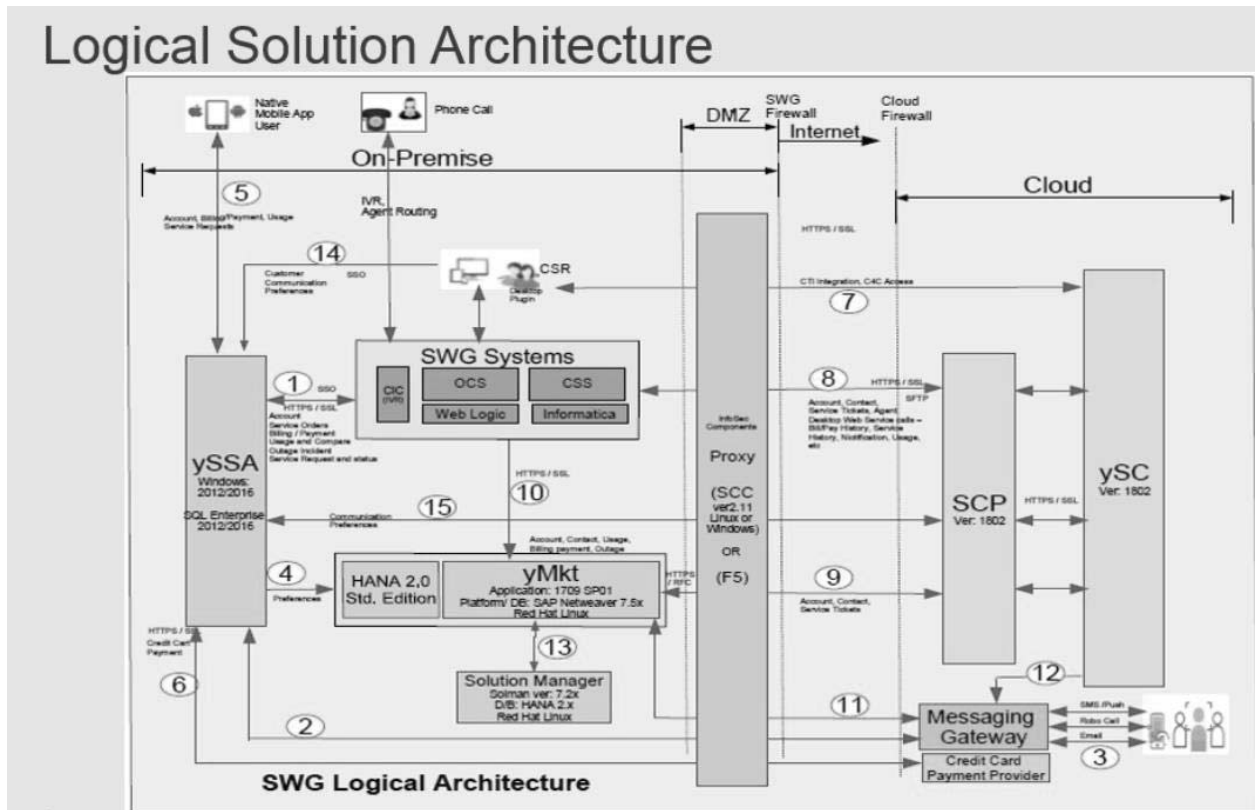
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### **2.3.3 Phase 2 Scope – Customer Communications and Analytics**

Phase 2 will focus on the Hybris Marketing solution and Analytics for continuous improvement of the Customer Experience. The specific requirements and deliverables will be addressed in a subsequent Statement of Work as well as an Addendum to the Project Charter.



## 2.4 High Level Application Diagram



## 2.5 Key Deliverables and Approvers

Deliverable	Approval
Charter Memo	Sponsor
Project Charter Document	Oversight Committee and Steering Committee
Communications Plan	Oversight Committee and Steering Committee
Nexus Support Model	Oversight Committee and Steering Committee
Project Closure Memo	Sponsor
Lessons Learned	None

## 2.6 Financial Plan

Phase 1 of the Nexus Project will be tracked using multiple work orders which distinguish functionality as well as expected implementation targets.

Expenditure Category	Expenditure Item	Expenditure Amount
Capital	Software	\$ 630,000
Capital	Professional Services	\$ 6,870,000



Capital	Hardware	\$ 710,000
O&M	Cloud and on-prem support	\$ 420,000
	<b>Total</b>	<b>\$ 8,630,000</b>

### 3 Project Organization

#### 3.1 Roles

The following table shows the Southwest Gas roles and organization. See IBM SOW #1 for the IBM project support organization.

Role	Name	Title	Department
Sponsor	Jose Esparza	VP	Customer Engagement
Steering	Jose Esparza Ngoni Murandu Eric DeBonis	VP VP/CIO SVP	Customer Engagement Information Services Operations
Oversight	Yvonne Low Reagan Monroe Denise DiTrapani Preston Weaklend	Director Director Manager Manager	Customer Engagement Bus Technology Support Call Center Div Operations
Project Team	Boyan Mihaylov Christopher DuBose Angela Chan Bobbi Sterrett Gloria Garcia Gavin Hastings Levie Carlisle Cindi King Tama Schroder Larretta Mathews	*Tech Lead Developer Admin Manager Analyst *Contractor BA & QA Lead Admin Analyst Supervisor	App Services App Services Customer Engagement Customer Engagement Customer Engagement Customer Engagement PMO BTS BTS Call Center
Project Manager	Cheryl Stavely	Sr Project Manager	PMO
Program Manager	Andrew Hartnett	*Contractor	PMO

#### 3.2 Responsibilities

##### Project Sponsor

The Project Sponsor will be primarily responsible for:

- Overall leadership to the project to ensure the Company's needs are met
- Executive communication to the Company about the project as needed
- Removal of obstacles and constraints
- Review and approval of final deliverables





- 
- Authorization of scope changes
  - Approve long term application support structure

### **Project Steering Committee**

The Project Steering Committee will be primarily responsible for:

- Approving the project scope
- Approving resources and funding for the project
- Providing financial oversight
- Providing direction for escalated issues
- Providing direction for go/no-go decisions

### **Project Oversight Committee (CEC Working Group)**

The Project Oversight Committee will be primarily responsible for:

- Providing direction and oversight
- Attending regular Oversight Committee meetings
- Responding to issues requiring resolution
- Review and approval of scope change requests
- Communication to/from business area counterparts regarding the project
- Representing division/business area interests
- Providing project resources and commitment to meet deadlines
- Upward and downward communication regarding the project status or issues
- Determine long term application support structure

### **Project Manager**

The Project Manager will be primarily responsible for:

- Develop and assign project roles and responsibilities
- Coordinate with non-core team resources and management for project support
- Collaborating with IBM on developing and maintaining the project plan
- Overseeing SWG resource's task completion and keeping the project progressing

## Nexus Project Charter



- 
- Serving as point person for coordination with IBM
  - Communicating project status and issues with the Program Manager, Oversight Committee, Steering Committee and Project Sponsor
  - Producing project documents (Project Charter, Lessons Learned etc.)
  - Develop preliminary production system responsibility support matrix
  - Validate post project completion application owner and responsibilities
  - Facilitate any Project Change Requests (IBM PCRs)
  - Review and approve vendor invoices and manage project costs

### **Project Team Members**

The Project Team members will be primarily responsible for:

- Provide IBM requirements for the Nexus Project
- Review and approve IBM SOW #1 deliverables
- Provide final copy for all customer notifications and the mobile app
- Develop OCS/MyAccount Functional and Technical documentation for Nexus changes
- Develop and implement any OCS/MyAccount changes
- Develop test scenarios and scripts for OCS/MyAccount changes
- Participate in Performance testing
- Accept and migrate IBM developed test cases into HP Quality Center
- Participate in User Acceptance testing
- Develop new/modified business processes for SWG resources impacted by the Nexus Project
- Develop training specific to OCS changes
- Conduct application user training (includes Service Cloud/Agent Desktop and Tech En Route )
- Working with IBM to manage testing activities (SWG QA Lead)

### **Project Subject Matter Experts**

The Subject Matter Expert members will be primarily responsible for:

- Serving as expert in their functional process area.



- Participating in business process analysis including attending meetings and workshops, identifying requirements, and reviewing the design of the to-be processes, UAT test plans, and training materials.
- Assisting with implementing improvements and other related process changes in their departments.
- Consulting with and involving other key resources or SMEs as needed.
- Raising potential issues and risks to the business analyst and project manager.
- Communicating project status to their department and/or management as appropriate.

### 3.3 Stakeholders

Stakeholder / Group	Stakeholder Interest
Customer Engagement	Customer Communications
Lori Gallear (CAST)	Mobile app functionality, OCS/MyAccount changes, credit card payments, Call Center changes
Ken Kudlak (Application Services)	OCS/MyAccount changes, CIC interface, Twilio and Amazon SES support
Eric Valentine (I/S)	SAP Infrastructure
Ken Rohan (I/S)	System Architecture
Denise DiTrapani (Call Center)	Agent desktop, mobile app and OCS/MyAccount changes
Preston Weaklend (Operations)	Tech En Route application for Service Techs
Customer Service	Tech En Route application for Service Techs
SWG IT resources (Core Infrastructure and MSS)	Provide SWG expertise to IBM (and SEW) on infrastructure and oversee contractor access to SWG infrastructure

### 3.4 Resource Plan

Role	Start Date	End Date
SMEs	5/1/2018	6/1/2018
Tech Lead	5/1/2018	6/30/2019
Business Analyst/QA Lead	5/1/2018	6/30/2019
MyAccount Developers	5/1/2018	6/30/2019
CIC Developer	2/1/2019	5/31/2019
BTS – CAST	5/1/2018	6/30/2019
Call Center – Core team support	5/1/2018	6/30/2019
Call Center – Testers	2/1/2019	4/30/2019
IT Infrastructure resources	6/1/2018	9/30/2019
Customer Engagement	5/1/2018	4/28/2019

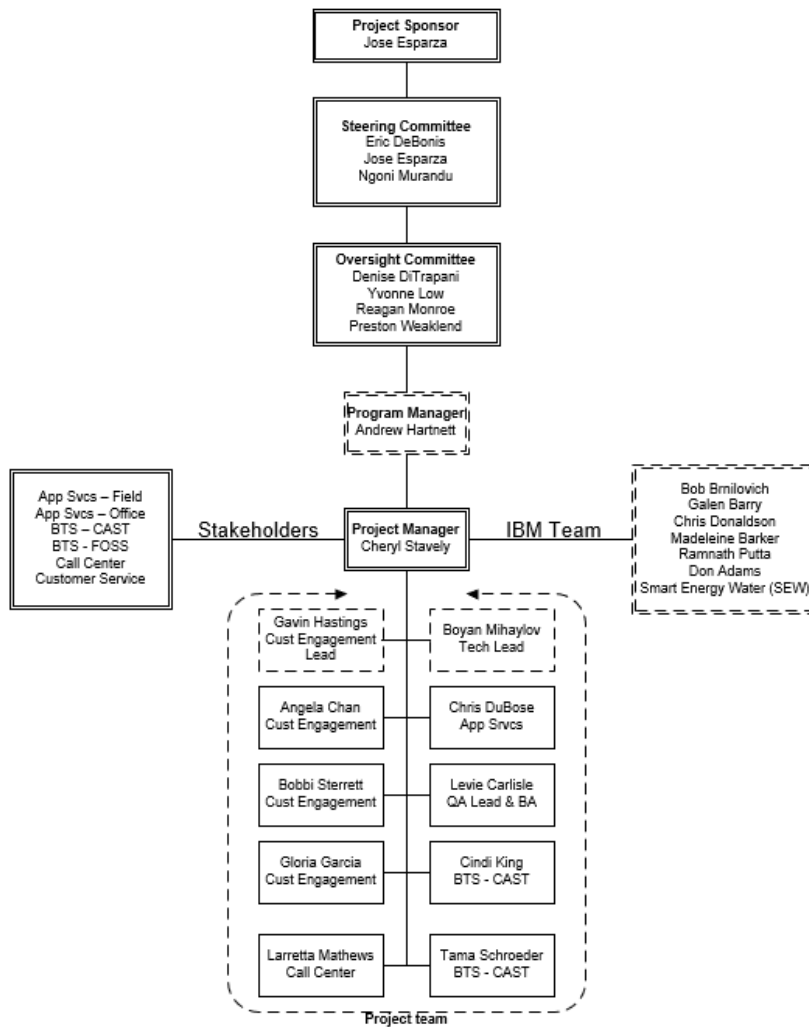
**Nexus  
 Project Charter**



FOMS-CS Developer	2/1/2019	6/30/2019
FOMS-CS Support	2/1/2019	6/30/2019
Customer Service	2/1/2019	6/30/2019

**3.5 Structure**

**Nexus Project  
 Organization Chart**  
 as of July 24, 2018





## 4 Implementation Plan/Project Approach

### 4.1 Methodology and approach (IBM Ascend)

This project is leveraging the IBM Ascend project methodology which breaks the project down into the following stages: Plan, Explore, Realize, Deploy and Sustain. Within these stages IBM and the client agree to completing deliverables within each stage to progress the project.

The IBM Ascend method is based on a combination of SAP & IBM methods and approaches to deliver a project with success. This method is a structured approach to the delivery process. It allows work to be divided into distinct phases, with deliverables and tasks, that help project teams to better plan, execute and manage their work.

IBM Ascend Method aims to assist by providing implementation project teams with recommendations in each phase, a practice description (the how) with list of deliverables (the what), and accelerators (such as templates, examples, guides and web links) in a user-friendly format.

The IBM Ascend Method powered by SAP Activate supports implementation projects of SAP implementations to:

- Manage risk proactively
- Provide a sustainable foundation through transparency of all implementation activities
- Support for Hybrid/Agile and Waterfall delivery approaches

Ascend leverages elements of the IBM Global Business Services (GBS) Agile framework to define a common hybrid approach for implementing package applications in an Agile way. It acknowledges that a pure Agile approach cannot be applied due to the integrated nature of package applications, but that Agile concepts can be used to achieve implementation benefits

Before exiting a stage, there will be a stage gate review which will review deliverables for each stage, ensure sign-off and appropriate approvals have been received and formally document the end of the stage. The Project Nexus Project Plan outlines these deliverables and will be updated as they are approved. If approvals for the stage's deliverables have not been obtained, but project leadership is willing to progress, IBM will develop a plan to close out deliverables in the next stage. This plan will be tracked as part of the Project Nexus Risks, Issues, Decisions and Action log.



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## 4.2 Overall Approach

The Nexus Project will rely heavily on the implementer, IBM, to provide expertise and resources for the Agile Methodology, Automated testing and QA testing. SWG will conduct the User Acceptance Testing for each release.

SWG will need to bring on additional resources for the new SAP skillset requirements for the Hybris Marketing on-premise solution. The ySSA module and the customer facing mobile app are expected to be supported via a Managed Services Agreement with a third-party provider.

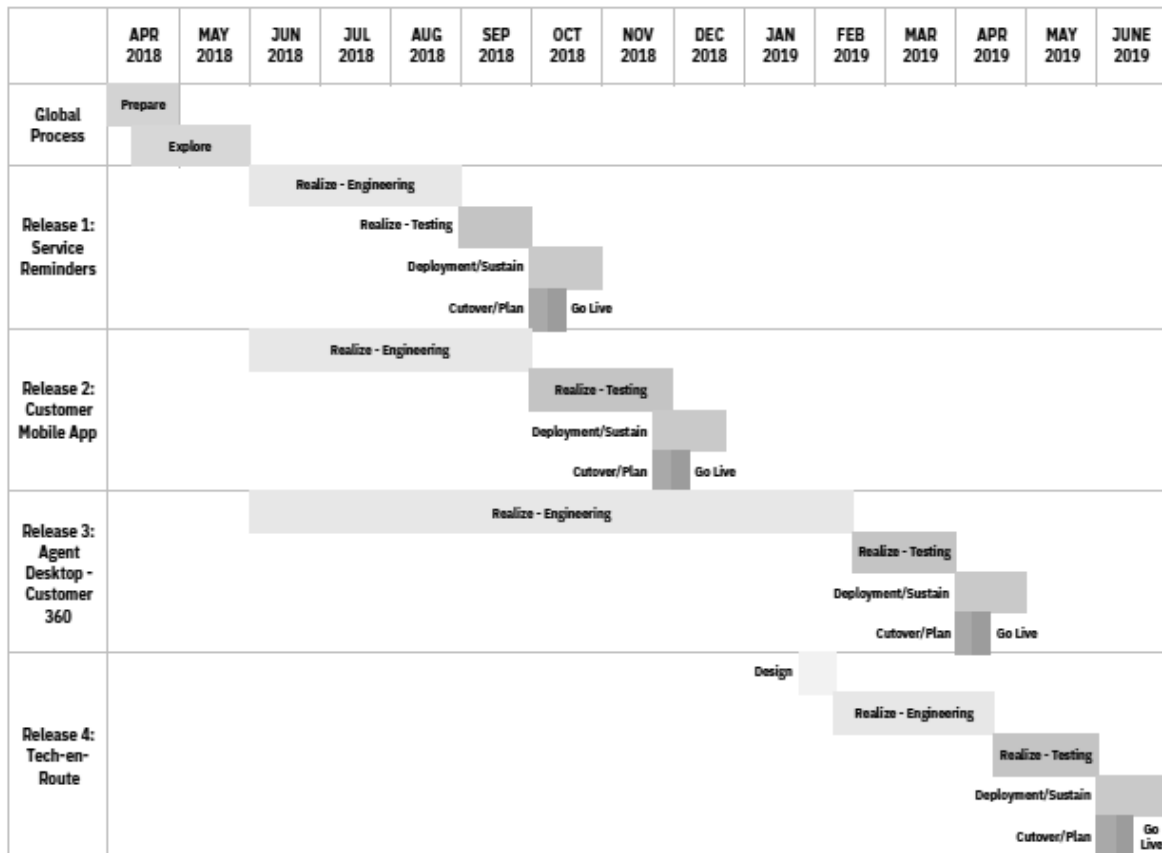
The overall implementation approach is to leverage and utilize the OCS web service capability as well as the previously built OCS integration to the Customer Service System (CSS) using Legasuite. This approach reduces data needed in the new applications as well as reducing time to develop the business rules regarding CSS data, as OCS has already performed this work. As CSS is expected to be replaced, it was agreed upon to not update CSS directly from the new applications, for this project.

## 4.3 Project Time Line

The project schedule will be developed using Microsoft Project listing the key activities and timescales involved in implementing this project.

The following shows the initial timeline per IBM SOW #1.

Nexus  
 Project Charter



**4.4 Milestones**

The milestones listed below include schedule as well as SOW #1 specific milestones.

Milestone	Target
Completion of the Prepare and Explore Stages	6/2018
50% Completion of Release 1 & 2 Build	8/2018
Release 1 Go-Live	10/2018
Release 2 Go-Live	12/2018
Release 3 Go-Live	4/2019
Release 4 Go-Live	6/2019
Project Completion	7/2019



## 4.5 Quality Plan

### 4.5.1 Change Management

Process	Description
Scope changes	Will be addressed with an approved Scope Change Request document and an IBM Project Change Request (PCR) as needed.
Process/organizational change management	Customer Engagement will collaborate with the Project Management Office and external vendor for Organizational Change Management(OCM) for SWG notifications regarding the Nexus project.

### 4.5.2 Quality Management

Process	Description
Testing strategy	IBM is responsible for the Testing Strategy and Testing plans for SOW #1.
Data conversion/synchronization	OCS developers will develop and maintain the process to synchronize the limited data needed for ySC, yMKT and ySSA..  OCS developers will create a customer id for all CSS contacts and as new ones are added to CSS/OCS.

### 4.5.3 Risk Management

Risks will be tracked and managed using IBM's Risks, Actions, Issues Decisions (RAID) log.

The following identify some specific risks known at this time:

- Physical Meeting and Testing room constraints. Several projects are underway concurrently impacting the limited space at the corporate campus.
  - Mitigation is to use IBM office space for workshops, while it is available.
- Other projects such as the Data Warehouse and Bill Print projects may result in resource conflicts which could impact deliverable dates. The Project Managers will work together to coordinate, where possible.
- The introduction of credit/debit cards as payment options on the mobile app increases the complexity of delivering the mobile app on the aggressive timeline established. The credit/debit card processor and implementation approach, for taking those payment types, has not been finalized at this time.

### 4.5.4 Decision Tracking

Major decisions will be tracked separately from minor requirements and scope decisions in the IBM RAID log.





#### 4.5.5 Issue/Action Item/Defect Management

Issues and Action Items will be tracked on the RAID log. Once the Explore Stage is complete then the Nexus Project Plan will be used to track action items as tasks.

Defects will be tracked in one of two places depending on when the defect is identified.

- (1) JIRA will be used to track defects identified in unit testing.
- (2) HP Quality center will be used to identify defects during User Acceptance Testing.

#### 4.5.6 Communication Management

Process	Description
Weekly IBM Project Status	Weekly meeting held with the core IBM and SWG teams. Presentation summarizes progress against the plan, issue summary, action items review, and upcoming activities.
Nexus Bi-weekly update meetings	Updates to the Sponsor and CIO, CEC directors are also included. Minutes distributed.
SWG Project Team Meetings	As needed, SWG only team meetings to review SWG tasks, issues, action items etc.
Monthly Oversight Committee Meeting (CEC)	Nexus project updates are provided to the CEC Working Group (aka Nexus Oversight Committee)
Monthly Steering Committee Meeting	Review progress against the plan, issue summary, accomplishments/next steps, financial report, and risk report. Minutes distributed.

#### 4.6 Completion Criteria

Criteria	Description
User Acceptance Testing Signoff	For each release the User Acceptance Testing results must be accepted prior to moving toward implementation. No SEV 1 or SEV 2 defects remain for either Functional or Visual defects.
Go/No go Decisions	The Steering Committee will provide Go/No go decision for each release prior to it being deployed into production and/or activated.
Final Acceptance and Sign off	Each Release will have a Final Acceptance and Sign off for IBM milestones.
Lessons Learned	Lessons Learned are documented prior to closing the project.
Project closure memo	Required to close out the project.



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## 5 Project Considerations

### 5.1 Assumptions

- SWG will not have access to the ySSA code or the code developed for the mobile app (iOS and Android). It is expected that Managed Services will be procured for support prior to go-live.
- The Mobile app cannot go to production unless credit card capability is ready.
- A short code will be acquired for SMS communications. This is needed for mass communications to mitigate being blacklisted and messages not being sent as expected.
- A “Train the Trainer” process will be used. IBM will train resources designated by SWG on ySC (SuperScreen and Service Cloud functionality)
  - BTS and/or the Call Center will train end users
- Active Directory Authentication and Single Sign On capability will be used for SWG Users in the new applications.
- The IBM team will need AD credentials and VDI access to the SWG network.
- JIRA (hosted Nexus Project) will be used for all SWG and IBM developer resources through unit testing and QA activities. Many of the JIRA users will be off-shore resources and will not have Active Directory credentials or access to the SWG network.
- A VPN tunnel will be needed for Smart Energy Water (SEW) resources to test the OCS Web Services.
- OCS/MyAccount changes will be implemented in the code base that includes the two-hour appointments (FOMS-CS initiative).
- FOMS-CS software (ARM 1.4.1) will not be upgraded to ARM 2.0 during the timeframe of the Nexus Project.
- The Customer Service Modernization project (CSM) CIS implementation will not ramp up to where the Nexus core team resources are heavily impacted (though May 2019).

### 5.2 Constraints

The following constraints have been identified for the Nexus Project:

- No Personally Identifiable Information (PII) is allowed to either reside or traverse through the new applications.



- The PII identified as included in the PII restriction has been identified as follows:
  - Social Security number (last 4 is also restricted)
  - Driver’s License number
  - Passport ID
  - U.S Government-issued ID
  - State or Country-issued ID
- The Project should not result in data being replicated unless deemed necessary. Attempts to restrict data replication will be part of the project.
- Go-Live target dates for Release 3 (Agent Desktop) and Release 4 (Tech En Route) are restricted to not occur during the busy season, identified as October 1<sup>st</sup> through April 1<sup>st</sup>.

**5.3 Dependencies**

Project /Initiative	Type	Description
FOMS-CS	Integration	Nexus is dependent upon the FOMS-CS two-hour appointment initiative being implemented as planned in August 2018.

**6 Appendix**

**6.1 Supporting Documentation**

All project documentation may be found on the Nexus Project SharePoint site using the link below:

[Nexus Project Sharepoint site](#)



# **Strategic Financial & Regulatory Planning Phase 1 – Financial Planning Model Project Charter**

Phase 1 – Strategic Financial Planning Model  
 Project Charter



## Document Control

### Document Information

	Information
Prepared by	Rebecca Evans
Project ID	P17022

### Document History

Version	Date	Changes
Draft 0.1	03/12/2019	Initial Draft
1.0	03/26/2019	Distributed for approval
2.0	04/09/2019	Updated based on feedback from Steering/Oversight

### Document Approvals

Role	Name	Email Feedback/Approval
Project Sponsors	Greg Peterson	04/01/2019
	Justin Brown	03/27/2019
Project Steering Committee	Boyd Nelson	04/04/2019
	Ngoni Murandu	03/26/2019
	Ken Kenny	04/04/2019
	Lori Colvin	04/09/2019
Project Oversight Committee	Amy Timperley	04/09/2019
	Scott Ritter	04/09/2019
	Ken Briggs	04/09/2019
	Byron Williams	03/27/2019
	David Randall	03/23/2019
	Ted Wood	04/09/2019
Project Manager	Rebecca Evans	04/09/2019

Phase 1 – Strategic Financial Planning Model  
 Project Charter



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## 1 Executive Summary

Utilities International, Inc. (UII) has been selected to implement their Strategic Financial Planning Solution for Southwest Gas Corporation (SWG). This is the first phase of this project as the Regulatory Solution has been deferred to 2020.

This will be an on-premise solution that will result in SWG creating and maintaining the environment and installing all software updates.

## 2 Project Definition

### 2.1 Background

The following factors have contributed to a pressing need for a robust and agile long-range financial planning system to support strategic financial analysis:

- The initiation of earnings guidance in 2019
- Increased M&A activity within the power and utilities industry
- The need to provide more timely and sophisticated financial forecasting and analysis
- Heightened focus on strategic initiatives
- The proliferation of regulatory mechanisms designed to mitigate regulatory lag
- The ability to provide longer-term earnings and/or earnings per share growth guidance

Currently, each stakeholder department is responsible for developing its own financial forecasts using separate spreadsheet models, however these stand-alone models are unable to meet the increased demands for more timely and sophisticated financial forecasting and analysis mentioned above. The aim of this project is to replace the current spreadsheet models with a single, flexible system that utilizes a common set of criteria, data and assumptions, and to standardize processes across stakeholder departments for developing long-range financial projections.

This project is being undertaken to implement UI Planner and PlannerDash to enhance the Company's ability to develop accurate and timely long-term financial plans for managing capital investments, rate case planning, and maintaining or improving credit ratings.

## Phase 1 – Strategic Financial Planning Model Project Charter



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### 2.2 Business Objectives

The objectives of the Strategic Financial and Regulatory Planning project are to:

- Procure and develop a long-range financial planning and analysis model that provides timely financial projections and analyses to facilitate strategic decision making (phase 1);
- Procure and develop a regulatory planning solution that facilitates the production of timely and accurate financial projections, and that also facilitates the timely and accurate planning, analysis, and preparation of general rate case and other regulatory filings (phase 2); and
- Modernize and align financial and regulatory planning and forecasting processes, roles and responsibilities across stakeholder departments.

The long-range financial planning model will replace multiple existing Excel spreadsheets with a single system that produces more timely and accurate financial forecasts and projections for the following purposes:

- Analyze the financial impact of capital allocation and investments
- Analyze potential acquisition targets and divestitures
- Evaluate returns and deficiencies in each regulatory jurisdiction
- Develop long-term projections in support of enterprise valuation
- Analyze financial policies related to dividends, earnings guidance, etc.
- Analyze impact of rate cases, changes to regulatory mechanisms, etc.

### 2.3 Scope

In-Scope: A configured financial planning model that produces forecasted consolidated financial statements. General scope includes:

1. New platform
2. Requirements Review/Detailed Design
3. System Setup of environments
  - a. Development
  - b. Test (User Acceptance Testing)
  - c. Production
4. Data Interfaces
  - a. Adaptive



## Phase 1 – Strategic Financial Planning Model Project Charter



- 
- b. GTreasury
  - c. Oracle
  - d. PowerPlan/PowerTax
5. Implementation and Configuration
- a. Scenario definitions
  - b. Legal entity (planning) structure
  - c. Chart of accounts structure
  - d. Financial statements and reports
  - e. Revenues, gas costs, and operating margin
  - f. O&M expenses
  - g. Capital expenses
  - h. Plant accounting
  - i. Tax depreciation
  - j. Capital financing
  - k. Income taxes and other taxes
  - l. Rate relief and regulatory mechanisms
  - m. Mergers and acquisitions
  - n. Financial Ratios and non-GAAP measures
  - o. PlannerDash (management dashboards)
6. Security / data protection based on user permission
7. Quality Test Plan
8. Knowledge Transfer
9. Training

### Out-of-Scope

- 1. The following interfaces are not in scope for the financial solution:
  - a. FOMS
  - b. GTS
  - c. CSS
  - d. COYL

Phase 1 – Strategic Financial Planning Model  
 Project Charter



2.4 High Level Application or Business Process Diagrams

Current State – Financial and Regulatory Planning Processes:

- Separate spreadsheets maintained in silos, owned and understood by 1 or 2 people
- Undefined baseline assumptions and inputs, resulting in high potential for inconsistent results
- Undefined cross-functional ownership and responsibilities
- Limited time for analysis

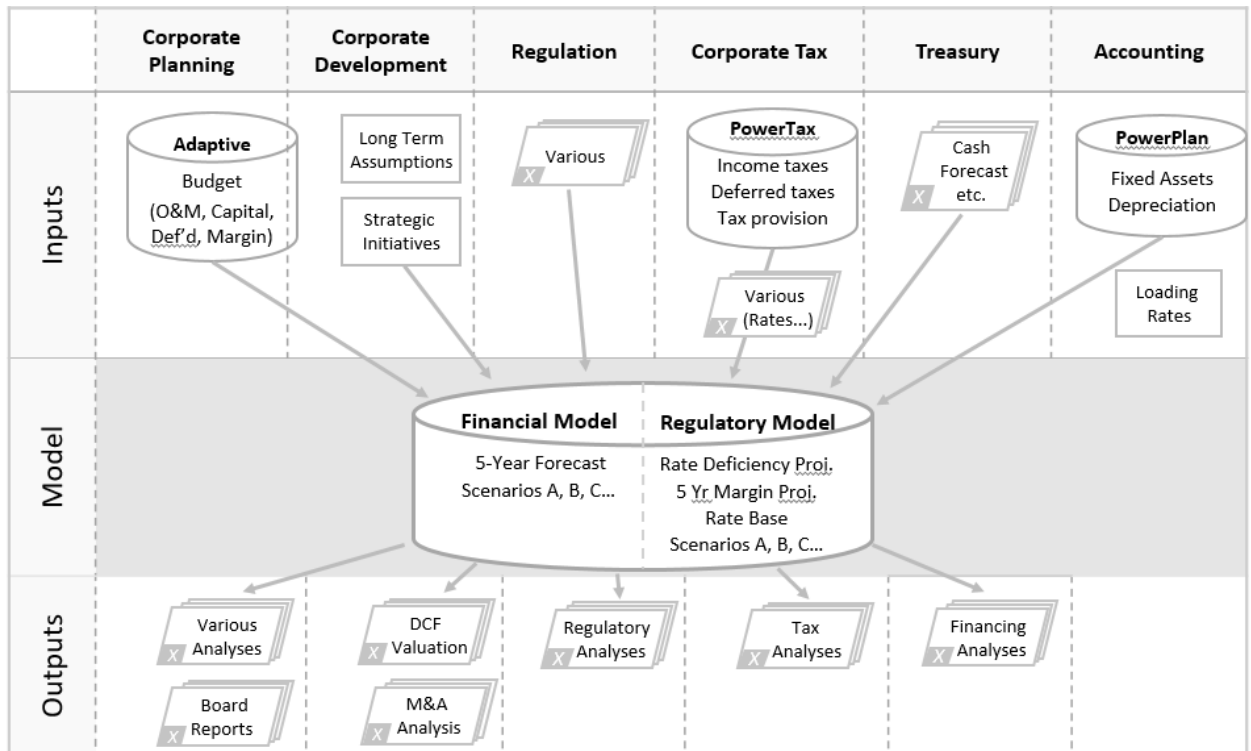
	Corporate Planning	Corporate Development	Regulation	Tax	Treasury	Accounting
Inputs	Adaptive (Budget) Capital Plan Margin Forecast Labor Forecast	Long Term Assumptions Strategic Initiatives	GRC Plan Rate Mechs Net Plant Depr/Amrt Defd Taxes Allocations Rate Base	PowerTax Tax Provision General Taxes	Cost of Capital Capital Structure Cash Forecast	PowerPlan Plant Actuals Depr/Amort Budget Loading Rates
Models	3-Year Forecast Model	Long-Range Financial Model	Rate Deficiency Model	Tax Model	Capital Structure Model	
Outputs	3-Year Plan FSs	Valuation M&A Analysis	Deficiency Projection & Analysis GRC Rate Schedules		Financing Plan	

Phase 1 – Strategic Financial Planning Model  
 Project Charter



**Future State – Financial and Regulatory Planning Processes:**

- ‘Single version of the truth’ baseline forecast with systematic inputs and transparent assumptions
- Facilitates more “what-if” scenario analysis



**2.5 Key Deliverables and Approvers**

Deliverable	Approval
Business Requirements	Business Owner(s)
Project Charter	Project Sponsor, Steering/Oversight
Infrastructure/Architecture	Systems Architecture/Cyber Security
Project Plan/Schedule	Project Team
Closeout/Project Completion	Project Sponsor

Phase 1 – Strategic Financial Planning Model  
 Project Charter



**2.6 Financial Plan**

Expenditure Category	Expenditure Item	Expenditure Amount
Capital	Services (Contractor–Project Manager)	\$80,000
Capital	Services (UII)	\$1,180,000
Capital	Travel Costs (Vendor, Per Diem)	\$180,000
Capital	License Fees	\$450,000
Capital	Services (3 <sup>rd</sup> Party)	\$120,000
Capital	Contingency	\$200,000
<b>Total Capital</b>		<b>\$2,210,000</b>
Expense	Training (2019)	\$20,000
Expense	UI Planner Maintenance (2020-5 years)	\$250,000
Expense	Annual Subscription (Azul Zing)	\$7000
<b>Total Expense</b>		<b>\$277,000</b>

**3 Project Organization**

**3.1 Roles – Phase 1**

Role	Name	Title	Department
Sponsor-Finance	Greg Peterson	SVP/CFO	Accounting
Sponsor-Reg.	Justin Brown	SVP	General Counsel & Regulatory
Steering	Boyd Nelson	VP	Strategy & Corp Development
	Ngoni Murandu	VP/CIO	Information Services Mgmt
	Ken Kenny	VP	Treasury Services
	Lori Colvin	VP/CAO	Controller
Oversight	Amy Timperley	Director	Reg & Energy Efficiency
	Ken Briggs	Director	Application Services
	Scott Ritter	Manager	Strategy & Corp Development
	Byron Williams	Director	Tax
	David Randall	Director	Accounting/Controller
	Ted Wood	Director	Treasury Services
Project Manager	Rebecca Evans	Project Mgr	EPMO
Project Team	Michelle Cienfuegos	Manager	Application Services
	Chris Madsen	Manager	Corporate Planning
	Kris Isom	Analyst II	External Financial Planning
	Elisheba Stallworth	Sr Analyst	Strategy & Corp Development
	Randi Cunningham	Regulatory	Reg & Energy Efficiency
	Ivan Holland	Sr Manager	Tax

**Phase 1 – Strategic Financial Planning Model  
 Project Charter**



Role	Name	Title	Department
	Jamie Cattanach	Manager	Demand Planning
	Andee Hughes	Supervisor	Property Accounting
	Ryan Kimball	Manager	Treasury Services
	Christy Berger	Manager	Gas & Regulatory Accounting
	Mike O'Donnell	Sr Analyst	Application Services
	Carol Milano	Analyst	Application Services
	Ken Rohan	Manager	Architecture
	Luca Cotrone	Manager	Infrastructure
	Stephen Votta	Security Arch	Cyber Security

**3.2 Responsibilities**

**Project Sponsor**

The Project Sponsor will be primarily responsible for:

- Overall leadership to the project to ensure the SWG's needs are met
- Executive communication to SWG about the project as needed
- Removal of obstacles and constraints
- Review and approval of final deliverables
- Authorization of scope changes

**Project Steering/Oversight Committee**

The Project Steering/Oversight Committee will be primarily responsible for:

- Approving the project scope
- Approving resources and funding for the project
- Providing financial oversight
- Providing direction for escalated issues
- Providing direction for go/no-go decisions
- Review and approval of scope change requests
- Communication to/from business area counterparts regarding the project
- Representing division/business area interests
- Determining long term application support structure

**Project Manager**

The Project Manager will be primarily responsible for:

- Developing and assigning project roles and responsibilities
- Developing and maintaining the project plan

## Phase 1 – Strategic Financial Planning Model Project Charter



- 
- Facilitating communication between UII/SWG Core team and external technicians and subject matter experts
  - Communicating with and managing oversight of the vendor
  - Communicating project status and issues with the Oversight Committee, Steering Committee, and Project Sponsor
  - Overseeing task completion and keeping the project progressing
  - Producing project documents
  - Validate post project completion application owner and responsibilities
  - Develop preliminary production system responsibility support matrix

### **Project Team Members**

The Project Team members will be primarily responsible for:

- Providing input and subject matter expertise and advice to the project
- Participating in the planning, development and execution of the work plan and tasks
- Participating in project meetings by providing input and statuses
- Understanding how the project will affect business processes in their department(s)
- Participating in project document creation
- Creating new procedures, if required
- Participating in UAT (user acceptance testing) and product training as needed

### **Project Subject Matter Experts**

The Subject Matter Expert members will be primarily responsible for:

- Serving as expert in their functional process area.
- Participating in business process analysis including attending meetings and workshops, identifying requirements, and reviewing the design of the to-be processes, UAT test plans, and training materials.
- Assisting with implementing improvements and other related process changes in their departments.
- Consulting with and involving other key resources or SMEs as needed.
- Raising potential issues and risks to the project manager.
- Communicating project status to their department and/or management as appropriate.

Phase 1 – Strategic Financial Planning Model  
 Project Charter



**3.3 Stakeholders**

Stakeholder / Group	Stakeholder Interest
Greg Peterson	Project Sponsor
Justin Brown	Project Sponsor
Accounting	Provide input to the financial planning solution
Corporate Planning	User of the financial planning solution
Regulation	User of the financial planning solution
Strategy & Corp Development	User of the financial planning solution
Treasury	User of the financial planning solution
Corporate Tax	User of the financial planning solution
Operations	User of the financial planning solution
Information Services	Reliability of network performance, bandwidth, hardware, and operating systems. Lessen possible system performance issues. Application support.

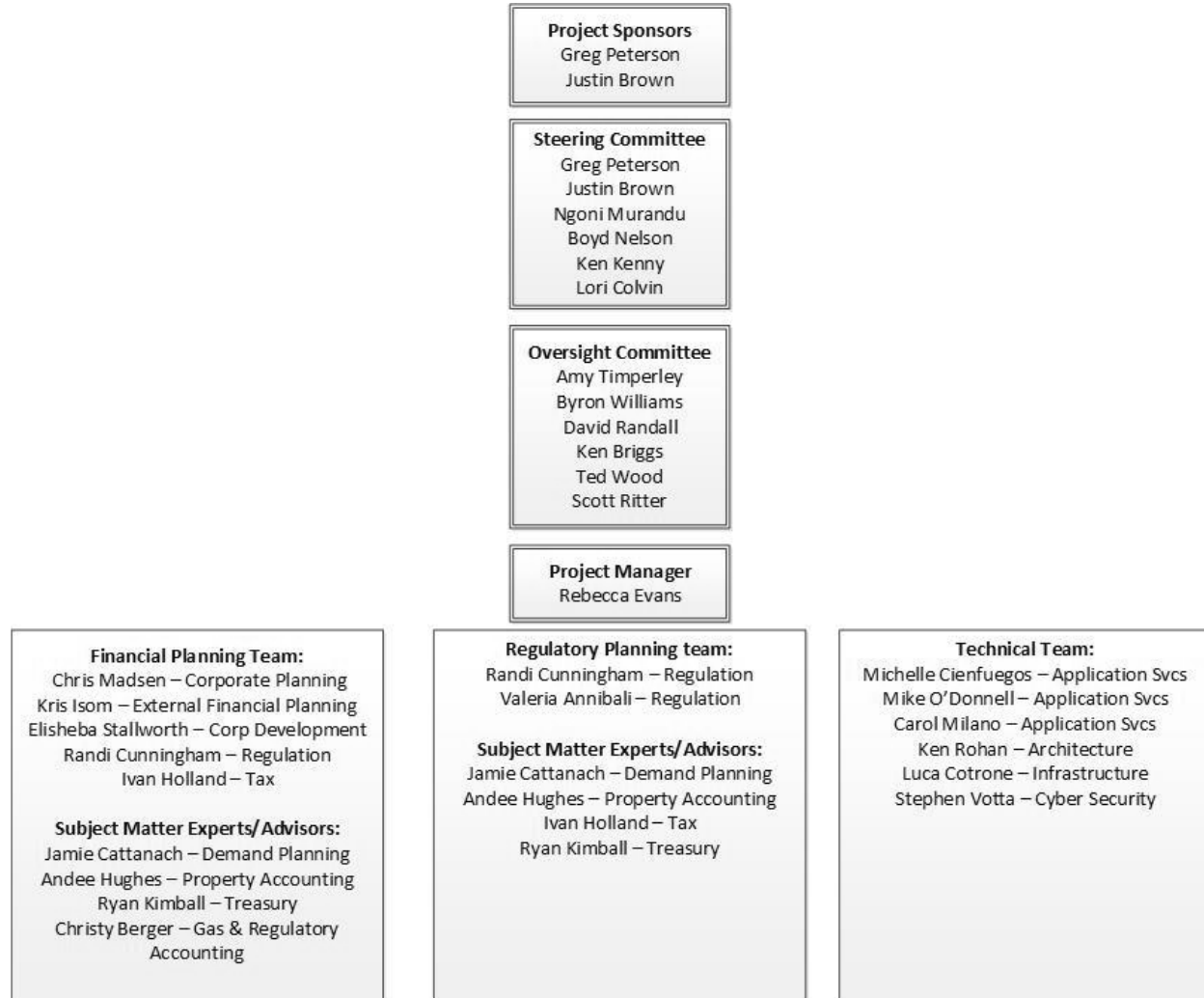
**3.4 High Level Resource Plan**

Role	Start Date	End Date
Project Manager	10/01/2018	12/31/2019
Accounting	10/01/2018	12/31/2019
Corporate Planning	04/01/2019	12/31/2019
Regulatory	04/01/2019	12/31/2019
Strategy & Corp Development	04/01/2019	12/31/2019
Treasury	04/01/2019	12/31/2019
Tax	04/01/2019	12/31/2019
Cyber Security	04/01/2019	09/30/2019
Architecture/Infrastructure	04/01/2019	05/31/2019
Applications Services	10/01/2018	12/31/2019

# Phase 1 – Strategic Financial Planning Model Project Charter



## 3.5 Structure



## 4 Implementation Plan/Project Approach

### 4.1 Methodology and Approach

UII will provide a project manager to oversee the entire UII team and ensure the project is successful. They will also deploy qualified consultants to configure the system. A full list of role and responsibilities will be defined during the initial stages of the project.



## Phase 1 – Strategic Financial Planning Model Project Charter



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SWG will provide Subject Matter Experts (SMEs) who will play a critical part in project success. The SMEs will work with UII consultants learning the system to become comfortable and knowledgeable about its operation.

### 4.2 Overall Approach

The UI Planner and PlannerDash application platform will be an on-premise solution. Resources will be needed from Accounting, EPMO, Corporate Planning, Regulatory, Strategy & Corporate Development, Treasury, Tax, Infrastructure, Architecture, Cybersecurity, and Application Services to assist with setup and testing.

Requirements gathering has been completed. Subject Matter Experts (SME's) have been identified and will provide input to the application setup/configuration, permission business rules, and workflows. Training will occur for all the SME's and additional end-users of the application.

User Acceptance Testing (UAT) will be done to compare and solidify the product against the requirements as defined in the SOW. SWG and UII will collaborate on the best approach to a testing plan to cover system and user acceptance testing of key deliverables and objectives for this project.

### 4.3 Project Time Line

The project schedule will be developed using Microsoft Project listing the key activities and timescales involved in implementing this project.

# Phase 1 – Strategic Financial Planning Model Project Charter



## 4.4 Milestones

#	Milestone	2019									
		MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	
1	Execution of SOW	█									
2	Project Initiation	█									
3	Requirements Review / Detailed Design	█	█								
4	System Setup	█	█								
5	Data Interfaces	█	█	█	█						
6	Implementation										
7	Scenario Definitions	█									
8	Legal Entity (Planning) Structure		█								
9	Chart of Accounts Structure		█								
10	Financial Statements and Reports		█	█	█	█	█	█	█	█	
11	Revenues, Gas Costs and Margin		█	█	█	█	█	█	█	█	
12	O&M Expenses		█	█	█	█	█	█	█	█	
13	Capital Expenses			█	█	█	█	█	█	█	
14	Plant Accounting			█	█	█	█	█	█	█	
15	Tax Depreciation			█	█	█	█	█	█	█	
16	Capital Financing				█	█	█	█	█	█	
17	Income Taxes and Other Taxes				█	█	█	█	█	█	
18	Rate Relief and Other Regulatory Mechanisms				█	█	█	█	█	█	
19	Mergers and Acquisitions					█	█	█	█	█	
20	Financial Ratios and non-GAAP Measures					█	█	█	█	█	
21	Other Configuration					█	█	█	█	█	
22	PlannerDash Configuration				█	█	█	█	█	█	
23	Quality Test / Plan										█
24	Knowledge Transfer		█	█	█	█	█	█	█	█	█
25	Training										█
26	Transition to Support										█
26	Project Management	█	█	█	█	█	█	█	█	█	█

## 4.5 Quality Plan

### 4.5.1 Change Management

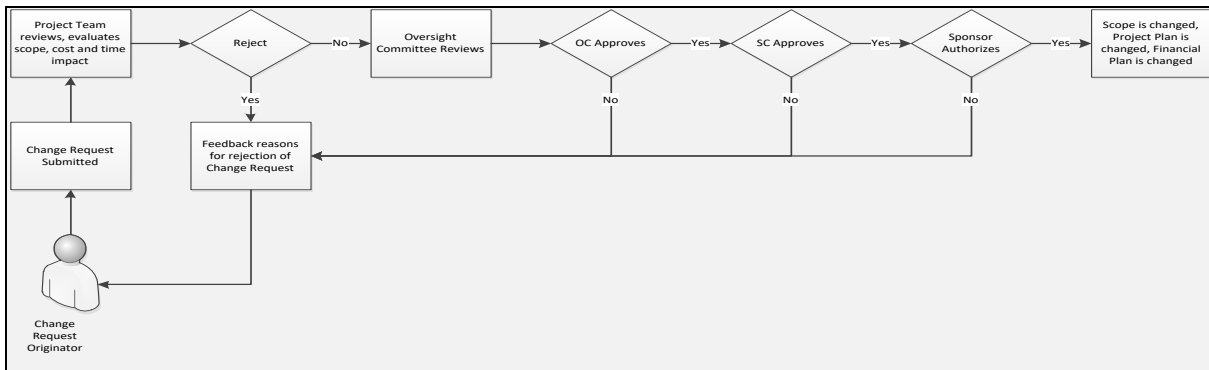


Figure 4: Change Management

The scope of the project has been defined in section 2.3 of this document. The Project team will review Change Requests and their impact on Scope, Cost and Time assessed. The Project team, with support from the Project Manager, will recommend a disposition for each Change Request. If deemed not feasible the Change Request will be rejected, and feedback provided to the originator. If deemed feasible the Change Request and its impact will be reviewed by the Oversight Committee. The Oversight Committee may reject the Change Request or recommend

**Phase 1 – Strategic Financial Planning Model  
 Project Charter**



its acceptance to the Steering Committee and Sponsor. The Sponsor will authorize execution of any approved Change Requests.

If a change to the scope of the Services or Schedule as set forth in the SOW, the change request will be vetted, approved and priced by UII per the change management protocol.

**4.5.2 Quality Management**

Process	Description
Testing strategy	SWG will assume the majority ownership of testing as we have committed resources to the project who will know the most effective testing strategy to implement after participating throughout the build.
Knowledge Transfer	SWG will be working one-on-one with the UII consultants during the implementation phase of the project. By the end of the UII Financial Planning Solution implementation, SWG will be self-sufficient in the operation of the UII Financial Planning Solution so that SWG activities can be modelled using the software without assistance from UII consultants.

**4.5.3 Risk Management**

Risks will be captured, monitored, prioritized and reported on throughout the project. The project team will evaluate each risk to identify processes to avoid or minimize their impact. They will be escalated to management as needed.

**4.5.4 Issue/Action Item/Defect Management**

All deliverables from UII as per the SOW will be tested and inspected by SWG for acceptance. Any issues or defects found will be tracked with the expectation that UII will modify, correct, or refabricate those unacceptable aspects of the work to the satisfaction of SWG.

**4.5.5 Communication Management**

Process	Description
Monthly EPMO Status Report	Summarizes progress against the plan, issue summary, action items review, and upcoming activities.
Weekly Project Status Meeting	Joint meeting with SWG and UII. Review status of actions and issues, check progress of work and risk mitigation. Identify new issues and risks, assign ownership and agree on actions. Minutes published on SharePoint.
Weekly Technical Meeting	Infrastructure and architecture status. Review progress of work and identify remaining tasks and action items. Engage UII for input. Minutes published on SharePoint.

**Phase 1 – Strategic Financial Planning Model  
 Project Charter**



Monthly Steering/Oversight Meeting	Review progress against the plan, issue summary, accomplishments/next steps, financial report, and risk report. Minutes published on SharePoint.
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**4.6 Completion Criteria**

Criteria	Description
Application Components Installed	UII will provide installation instructions, files, database scripts, etc. in support of efforts to install the application.
Permission Groups Setup	Application access based on user role/group
Data Interfaces	UII will work with SWG to determine the most efficient method for interfacing with the source data and at the minimum level of detail that would support logic, analysis, reporting, schedules and strategy.
Implementation and Configuration	Based on final requirements and design documents the application will be configured according to specification details with any revisions made during the requirements review meetings.
Testing	UAT validated application ready for deployment to production.
Production	Application live in production

**5 Project Considerations**

**5.1 Assumptions**

- On premise installation
- SWG SMEs available for requirement/design sessions
- UII to provide project manager to oversee the entire UII team and will deploy qualified consultants to configure the system
- Data for import into the development system to be provided by SWG through spreadsheet or text file
- SWG responsible for developing UAT protocol including test plan, test scenarios, test cases and test data
- UII responsible for development and delivery of training sessions
- UAT environment will be the same as production environment to provide comparable user and performance experiences
- All supporting spreadsheet, calculations and output will be provided to support the primary calculations

## Phase 1 – Strategic Financial Planning Model Project Charter



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### 5.2 Constraints

- Possible deviations from stated requirements that will require updated requirements document
- Resource constraints in Regulation and Corporate Planning due to several rate case filings planned for 2019
- Deployment targeted before end of year 2019

### 5.3 Dependencies

- Interfaces to SWG source systems for data input into the UII Financial Planning Solution
- Design decisions and data interfaces should include consideration for eventual implementation of Regulatory Planning Solution
- Training for all users

## 6 Appendix

### 6.1 Supporting Documentation

[Project Brief](#)

[Project Charter Memo](#)

[Project Schedules](#)



# PROJECT BRIEF

PROJECT BRIEF DETAILS			
<b>Proposed Project Name:</b>	Strategic Financial and Regulatory Planning		
<b>Estimated Duration:</b>	12 months	<b>Estimated Cost:</b>	\$4.0 M
<b>Budgeted: (Yes or No)</b>	Yes	<b>Budget Breakdown (Yrs):</b>	2019 cap: \$4M O&M: TBD
<b>Proposed Start Date:</b>	Q1 2019		
<b>Departments Affected:</b>	Corporate Planning, Strategy & Corporate Development, Regulation and EE, Accounting, Tax, Treasury		
<b>Estimated Work Effort: (# of Dept. Resources)</b>	Corporate Planning: 2 employees (one full-time 40 hrs/week; one part-time 20hrs/week) -1 incremental employee (in process) Corporate Development: 1 employee (20 hours per week) Regulation and EE: 3 employees (20-30 hours per week) Accounting, Tax & Treasury: 1 employee (5-10 hours per week) Information Services: 1 employee (10 hours per week)		
<b>Prepared By:</b>	David Randall	<b>Prepared Date:</b>	12/6/18
<b>Vice President Approval:</b>	Greg Peterson, SVP/Chief Financial Officer Justin L. Brown, SVP/General Counsel		
PROJECT REVIEW DETAILS			
<b>Project Objectives:</b>			
<p>The objectives of the Strategic Financial and Regulatory Planning project are to:</p> <ol style="list-style-type: none"> <li>1) Procure and develop a long-range financial planning and analysis model that provides timely financial projections and analyses to facilitate strategic decision making;</li> <li>2) Procure and develop a regulatory planning solution that facilitates the timely and accurate planning, analysis, and preparation of general rate case and other regulatory filings; and</li> <li>3) Modernize and align financial and regulatory planning and forecasting processes, roles and responsibilities across stakeholder departments.</li> </ol> <p>The long-range financial planning model will replace multiple existing Excel spreadsheets with a single system that produces financial forecasts and projections for the following purposes:</p> <ul style="list-style-type: none"> <li>• Analyze the financial impact of capital allocation and investments</li> <li>• Analyze potential acquisition targets and divestitures</li> <li>• Evaluate returns and deficiencies in each regulatory jurisdiction</li> <li>• Develop long-term projections in support of enterprise valuation</li> <li>• Analyze financial policies related to dividends, earnings guidance, etc.</li> <li>• Analyze impact of rate cases, changes to regulatory mechanisms, etc.</li> </ul> <p>The regulatory planning solution will replace numerous existing spreadsheets and modernize the following regulatory processes:</p> <ul style="list-style-type: none"> <li>• Plan and prepare general rate case (GRC) filings, as well as the required filing schedules and workpapers for Revenue Requirements, Class Cost of Service and Rate Design.</li> <li>• Analyze and model the following scenarios and positions:                         <ul style="list-style-type: none"> <li>• Pre-filing GRC scenarios</li> <li>• Intervenor GRC positions</li> </ul> </li> </ul>			



# PROJECT BRIEF

- Certification/rebuttal GRC positions
- Settlement GRC scenarios
- Authorized GRC
- Projected deficiencies
- Generate responses to commonly-asked data requests from regulators.
- Prepare surcharge calculations for infrastructure tracker mechanisms (e.g. ARA, COYL, VSP, GIR, attrition), including the calculation of related monthly deferral journal entries and forecasted deferrals, and associated regulatory amortizations and margin.
- Project five-year margin forecasts for all surcharges.
- Prepare other analyses, including:
  - Results of Operations studies
  - Interjurisdictional rents
  - Capacity expansion/territory expansion models
  - Floor margin models
  - Various annual filings and reports (ARA, COYL, VSP, GIR, attrition, etc.)

## Business Benefit(s)/Risk(s):

Southwest Gas is required to make continuing and substantial long-term investments to provide reliable and safe service to its customers. The regulatory and business environments for making such investments is rapidly changing, particularly with respect to the replacement of aging infrastructure, pipeline safety regulation, environmental regulation, technology, and energy efficiency adoption. Adding to this complexity, Southwest Gas serves three states with multiple different rate jurisdictions. The development and implementation a strategic planning system will enhance the Company's ability to develop accurate and timely long-term financial plans for managing capital investments, rate case planning, and maintaining or improving credit ratings, all of which support the Company's ability to provide reliable and safe service to customers in a cost-effective way over the long-term.

### Business benefits of financial planning model:

- Enhances the quality and timeliness of financial forecasts, analysis and insights provided to senior management and the BOD in support of strategic decisions related to: capital allocation, potential acquisitions or divestitures, financial policy analysis, regulatory policy, etc.
- Protects shareholder value by supporting and strengthening Corporate Preparedness
- Aligns financial planning processes, roles and responsibilities across Corporate Planning, Corporate Development and Regulation and EE
- Reduces dependency on third parties to perform due diligence and valuation analysis

### Business benefits of regulatory planning model and process modernization:

- Enhances the quality and timeliness of financial projections related to regulatory scenarios and positions.
- Increases efficiency and productivity, enabling more agile responses to requests from management, regulators and other regulatory parties.
- Reduces errors, eliminates the need for much of the repetitive input of data that resides in existing systems, and introduces version control and a single source of the truth.
- Increase accuracy and reduce discrepancies between Financial and Regulatory models by establishing a common technology platform that leverages shared data tables.

### Business risks of financial planning:

- Incremental tasks and responsibilities resulting from the new model and processes will place additional demands on staff and require the development of new skills and knowledge. Lack of available, dedicated departmental resources, particularly in Corporate Planning and Regulation, could impact the ability to implement, operate and maintain the system.



# PROJECT BRIEF

Business risks of regulatory process modernization:

- Potential push-back from regulators: acceptance of output, and inability to perform scenario analysis in the new system.  
 Potential push-back from internal stakeholders: expected to be minimal, since a large portion of the Regulation and EE department is relatively inexperienced and are not invested in current processes.

## Background Information:

Increased M&A activity within the power and utilities industry and intensified attention from shareholder activists (e.g. Scopia) in recent years, combined with a heightened focus on strategic initiatives at SWGH requiring financial analysis, have created a pressing need for a robust and agile long-range financial planning system to support strategic initiatives across Southwest Gas Holdings and its subsidiaries.

Currently, each stakeholder department is responsible for developing its own financial forecasts using separate spreadsheet models, however these stand-alone models are unable to meet the increased demands for more timely and sophisticated financial forecasting and analysis mentioned above. The aim of this project is to replace the current spreadsheet models with a single, flexible system that utilizes a common set of criteria, data and assumptions, and to standardize processes across stakeholder departments for developing long-range financial projections.

Current spreadsheets and processes used to plan for and prepare GRC and other regulatory filings are manual and cumbersome. This project will allow the Company more flexibility in filing general rate cases and allow the Regulation and EE department to redesign many of its processes and redirect its resources from manual data entry to more strategic, value-added activities and analyses, such as “what-if” analyses and utilizing business intelligence provided by dashboards or built-in reports. This project will also result in more timely, accurate and robust responses to regulatory requests by management and regulators.

The project will require a project manager to assist with resource coordination and scheduling, contract management, and to support and coordinate the technical implementation. The technical implementation is expected to include the development of a common data platform with multiple interfaces to existing financial systems (e.g. Oracle and Adaptive Insights) to feed actual and budget information to the new system.

The following planning activities have been completed to date:

- Peer fact finding and discovery
- Evaluated organizational and resource needs
- Identified and secured internal resources
- Evaluated available vendor solutions
- Developed business requirements

## APPROVAL DETAILS – For Portfolio Review Board (PRB) Use Only:

Approved:		Date:		Project ID#:	Provided by PRB
Classification:					
Reason for Rejection:					





## MEMORANDUM

To: **Distribution**

From: Greg Peterson, SVP/Chief Financial Officer  
Justin Brown, SVP/General Counsel

Date: February 25, 2019

Subject: Project Charter Memo for Strategic Financial & Regulatory Project

Please be advised that effective immediately, Rebecca Evans is assigned as the Project Manager of the Strategic Financial & Regulatory Planning (SFRP) Project.

The objectives of this project are to:

1. Procure and develop a long range financial planning and analysis model that provides timely financial projections and analyses to facilitate strategic decision making. (phase 1)
2. Procure and develop a regulatory planning solution to facilitate the timely and accurate planning, analysis, and preparation of general rate cases and other regulatory filings. (phase 2)
3. Modernize and align financial and regulatory planning and forecasting processes, roles and responsibilities across stakeholder departments.

The long-range financial planning model will facilitate financial analysis in the following areas:

- Impact of capital allocation and investments
- Potential acquisition targets and divestitures
- High-level projected returns and deficiencies in each regulatory jurisdiction
- Long-range projections in support of enterprise valuation
- Financial policies related to dividends, earnings guidance, etc.
- High-level impact of rate cases, changes to regulatory mechanisms, etc.

The Regulatory planning solution will automate and improve the following processes:

- Modeling and preparation of general rate cases and other regulatory filings, along with the flexibility to do "what-if" scenarios and projections.
- Generation of responses to commonly asked data requests using financial data housed in existing systems.
- Calculation of monthly deferral journal entries, project monitoring, and forecasted deferrals and associated regulatory amortizations and margin for the Company's various infrastructure mechanisms.
- Projection of five-year margin forecasts for general rate cases and all surcharges.

Page 2

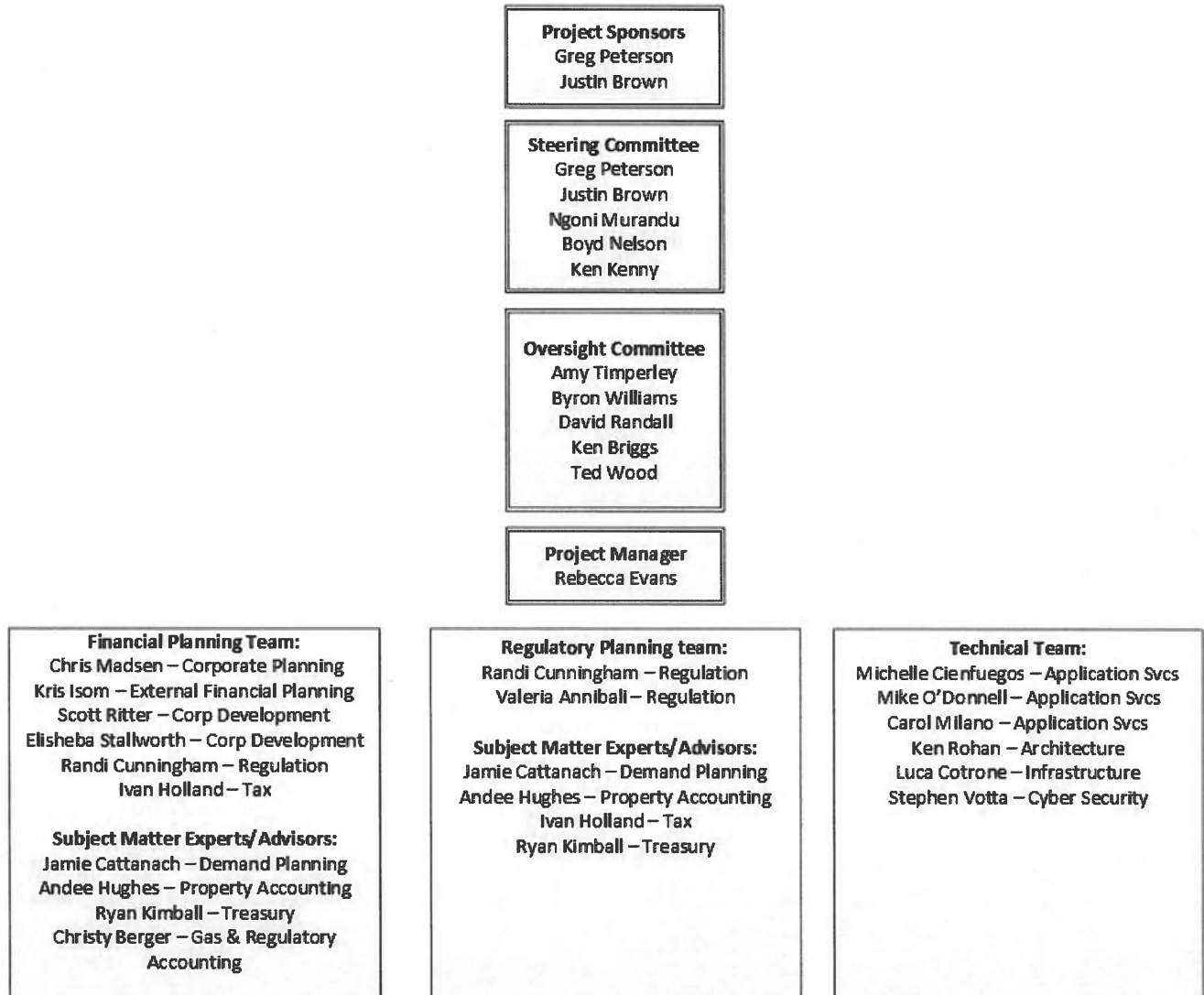
The desired outcome of this project is to enhance the quality and timeliness of financial forecasts, analyses and insights provided to senior management and the BOD, and transform and automate processes related to financial and regulatory planning and the preparation of rate case filings.

Rebecca will work closely with Dave Randall, Chris Madsen and Randi Cunningham to evaluate technology solutions and develop requirements needed to accomplish the objectives of the SFRP project.

We will serve as Project Sponsors. The chart below outlines the project governance and key stakeholders.

Please join me in welcoming Rebecca to this assignment, and providing her with all your support to lead us to a successful project completion.

### Project Governance Chart



































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Ken Rohan  
Keith Sutton  
Andee Hughes  
Elisheba Stallworth  
Michael O'Donnell  
Randi Cunningham  
Eric Valentine  
Stephen Votta

		2019											
#	Milestone	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV			
1	Execution of SOW												
2	Project Initiation												
3	Requirements Review / Detailed Design												
4	System Setup												
5	Data Interfaces												
6	Implementation												
7	Scenario Definitions												
8	Legal Entity (Planning) Structure												
9	Chart of Accounts Structure												
10	Financial Statements and Reports												
11	Revenues, Gas Costs and Margin												
12	O&M Expenses												
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14	Plant Accounting												
15	Tax Depreciation												
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17	Income Taxes and Other Taxes												
18	Rate Relief and Other Regulatory Mechanisms												
19	Mergers and Acquisitions												
20	Financial Ratios and non-GAAP Measures												
21	Other Configuration												
22	PlannerDash Configuration												
23	Quality Test / Plan												
24	Knowledge Transfer												
	Training												
25	Transition to Support												
26	Project Management												

ID	 Task Mode	Task Name	Start	Finish	Physical %
1		<b>Strategic Financial Planning</b>	<b>Mon 4/1/19</b>	<b>Fri 12/20/19</b>	<b>0%</b>
2		Project Initiation	Mon 4/1/19	Fri 4/5/19	100%
3		<b>Requirements Review</b>	<b>Tue 4/2/19</b>	<b>Fri 5/3/19</b>	<b>0%</b>
4		Deliverable - Updated Requirements Document	Tue 4/2/19	Fri 5/3/19	50%
5		Deliverable - Deviations from stated requirements	Tue 4/2/19	Fri 5/3/19	50%
6		<b>Detailed Design</b>	<b>Tue 4/2/19</b>	<b>Fri 5/3/19</b>	<b>0%</b>
7		Deliverable - Design document for major deliverables	Tue 4/2/19	Fri 5/3/19	0%
8		<b>System Setup</b>	<b>Mon 4/1/19</b>	<b>Fri 9/27/19</b>	<b>0%</b>
9		<b>Client Pcs</b>	<b>Mon 4/15/19</b>	<b>Fri 4/26/19</b>	<b>0%</b>
10		Deliverable - Ability to Log into UII Planning Solution (Dev)	Mon 4/15/19	Fri 4/26/19	0%
11		Deliverable - Base Scenarios & Cases set-up	Mon 4/15/19	Fri 4/26/19	0%
12		Deliverable - Shared Tables Structure Setup	Mon 4/15/19	Fri 4/26/19	0%
13		<b>Development Environment</b>	<b>Mon 4/15/19</b>	<b>Tue 4/30/19</b>	<b>0%</b>
14		Database	Mon 4/15/19	Tue 4/30/19	70%
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17		<b>Test Environment</b>	<b>Mon 5/13/19</b>	<b>Fri 8/30/19</b>	<b>0%</b>
18		Database	Mon 5/13/19	Fri 8/30/19	0%
19		Application Server	Mon 5/13/19	Fri 8/30/19	0%
20		Deliverable - Current data and config migrated to Test environment	Mon 5/13/19	Fri 8/30/19	0%
21		<b>Production Environment</b>	<b>Mon 5/13/19</b>	<b>Fri 9/27/19</b>	<b>0%</b>
22		Database	Mon 5/13/19	Fri 9/27/19	0%
23		Application Server	Mon 5/13/19	Fri 9/27/19	0%
24		Deliverable - Current data and config migrated to Prod environment	Mon 5/13/19	Fri 9/27/19	0%
25		<b>Data Interfaces</b>	<b>Mon 5/13/19</b>	<b>Sat 6/29/19</b>	<b>0%</b>
26		Deliverable - Data Interface document listing interfaces, formats & definitions	Mon 5/13/19	Sat 6/29/19	0%
27		Deliverable - Data Interface definitions in UIPlanner	Mon 5/13/19	Sat 6/29/19	0%
28		<b>Implementation</b>	<b>Mon 4/15/19</b>	<b>Fri 11/29/19</b>	<b>0%</b>
29		Scenario Definitions	Mon 4/15/19	Tue 4/30/19	100%
30		Legal Entity (Planning) Structure	Mon 4/15/19	Tue 4/30/19	100%
31		Chart of Accounts Structure	Mon 4/15/19	Fri 5/3/19	100%

ID		Task Mode	Task Name	Start	Finish	Physical %
32			Financial Statements and Reports	Wed 5/1/19	Fri 11/29/19	0%
33			Revenues, Gas Costs and Margin	Wed 5/1/19	Fri 6/28/19	0%
34			O&M Expenses	Wed 5/1/19	Fri 6/28/19	0%
35			Capital Expenses	Mon 6/3/19	Fri 7/26/19	0%
36			Plant Accounting	Mon 6/3/19	Fri 7/26/19	0%
37			Tax Depreciation	Mon 6/3/19	Fri 7/26/19	0%
38			Capital Financing	Mon 7/1/19	Fri 9/27/19	0%
39			Income Taxes and Other Taxes	Mon 7/1/19	Fri 9/27/19	0%
40			Rate Relief and Other Regulatory Mechanisms	Mon 7/1/19	Thu 10/31/19	0%
41			Mergers and Acquisitions	Tue 9/3/19	Thu 10/31/19	0%
42			Financial Ratios and non-GAAP Measures	Tue 10/1/19	Fri 11/29/19	0%
43			<b>Other Configuration</b>	<b>Fri 11/1/19</b>	<b>Fri 11/29/19</b>	<b>0%</b>
44			Auto Financing	Fri 11/1/19	Fri 11/29/19	0%
45			Reporting	Fri 11/1/19	Fri 11/29/19	0%
46			Other Analysis	Fri 11/1/19	Fri 11/29/19	0%
47			<b>PlannerDash Configuration</b>	<b>Mon 7/1/19</b>	<b>Fri 9/27/19</b>	<b>0%</b>
48			Deliverable - PlannerDash Design	Mon 7/1/19	Fri 9/27/19	0%
49			Deliverable - PlannerDash Dashboard	Mon 7/1/19	Fri 9/27/19	0%
50			<b>Quality Test / Plan</b>	<b>Mon 11/4/19</b>	<b>Fri 11/22/19</b>	<b>0%</b>
51			Deliverable - Test Plan	Mon 11/4/19	Fri 11/22/19	0%
52			<b>Knowledge Transfer</b>	<b>Mon 4/15/19</b>	<b>Fri 11/29/19</b>	<b>0%</b>
53			Knowledge Transfer Plan	Mon 4/15/19	Fri 4/26/19	100%
54			Working Sessions Setup	Mon 4/15/19	Fri 4/26/19	0%
55			Working Sessions Delivery	Mon 4/15/19	Fri 11/29/19	0%
56			<b>Training</b>	<b>Mon 11/4/19</b>	<b>Fri 11/22/19</b>	<b>0%</b>
57			Training Plan	Mon 11/4/19	Fri 11/22/19	0%
58			Develop Training Sessions	Mon 11/4/19	Fri 11/22/19	0%
59			Deliver Training Sessions	Mon 11/4/19	Fri 11/22/19	0%
60			<b>Transition to Support</b>	<b>Mon 12/2/19</b>	<b>Fri 12/20/19</b>	<b>0%</b>
61			Deliverable - Production Migration Plan	Mon 12/2/19	Fri 12/20/19	0%
62			Deliverable - Execute Migration Plan	Mon 12/2/19	Fri 12/20/19	0%

































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64			Deliverable - Execute Confirmation Plan	Mon 12/2/19	Fri 12/20/19	0%







Predecessor Resource Names	Notes

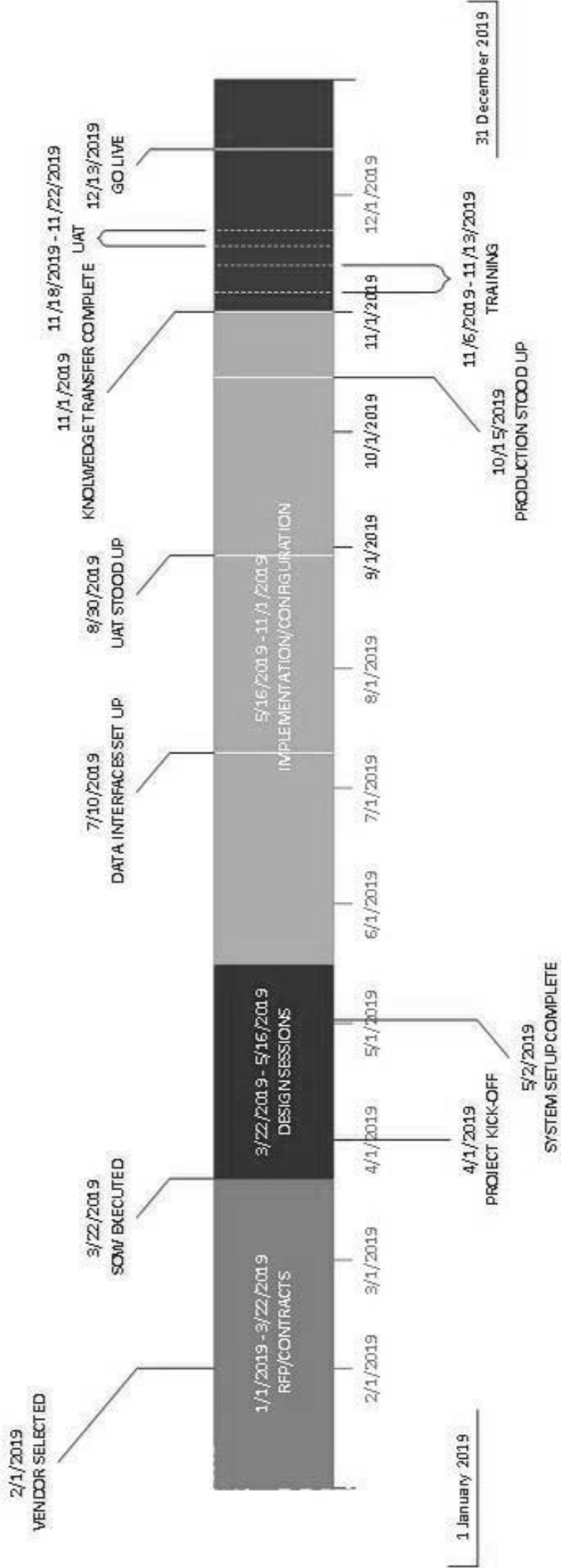
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1		<b>Strategic Financial Planning</b>	<b>Mon 4/1/19</b>	<b>Fri 12/20/19</b>	<b>0%</b>
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3		<b>Requirements Review</b>	<b>Tue 4/2/19</b>	<b>Fri 5/3/19</b>	<b>0%</b>
4		Deliverable - Updated Requirements Document	Tue 4/2/19	Fri 5/3/19	0%
5		Deliverable - Deviations from stated requirements	Tue 4/2/19	Fri 5/3/19	0%
6		<b>Detailed Design</b>	<b>Tue 4/2/19</b>	<b>Fri 5/3/19</b>	<b>0%</b>
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8		<b>System Setup</b>	<b>Mon 4/1/19</b>	<b>Fri 9/27/19</b>	<b>0%</b>
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43		★	<b>Other Configuration</b>	<b>Fri 11/1/19</b>	<b>Fri 11/29/19</b>	<b>0%</b>
47		★	PlannerDash Configuration	Mon 7/1/19	Fri 9/27/19	0%
48		★	Quality Test / Plan	Mon 11/4/19	Fri 12/6/19	0%
49		★	Knowledge Transfer	Mon 4/15/19	Fri 12/20/19	0%
50		★	Training	Mon 12/2/19	Fri 12/20/19	0%
51		★	Transition to Support	Mon 12/2/19	Fri 12/20/19	0%



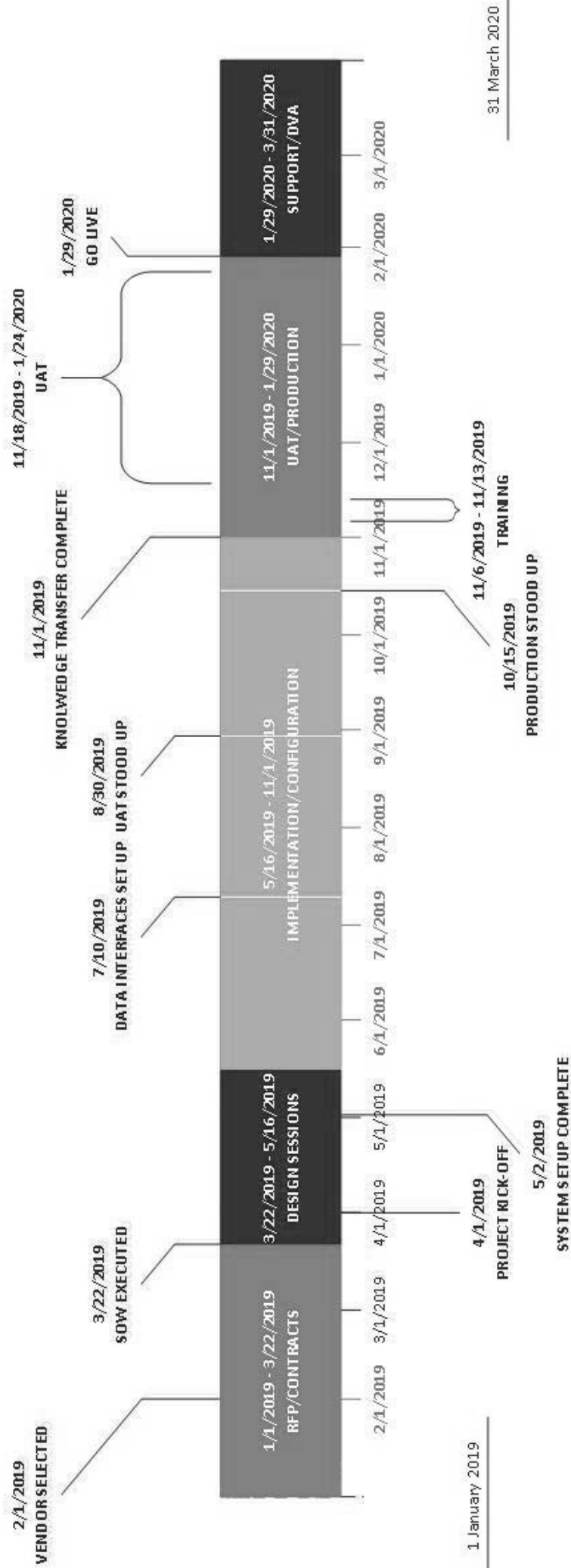
Predecessor Resource Names	

# UI Planner/PlannerDash Implementation High Level Timeline





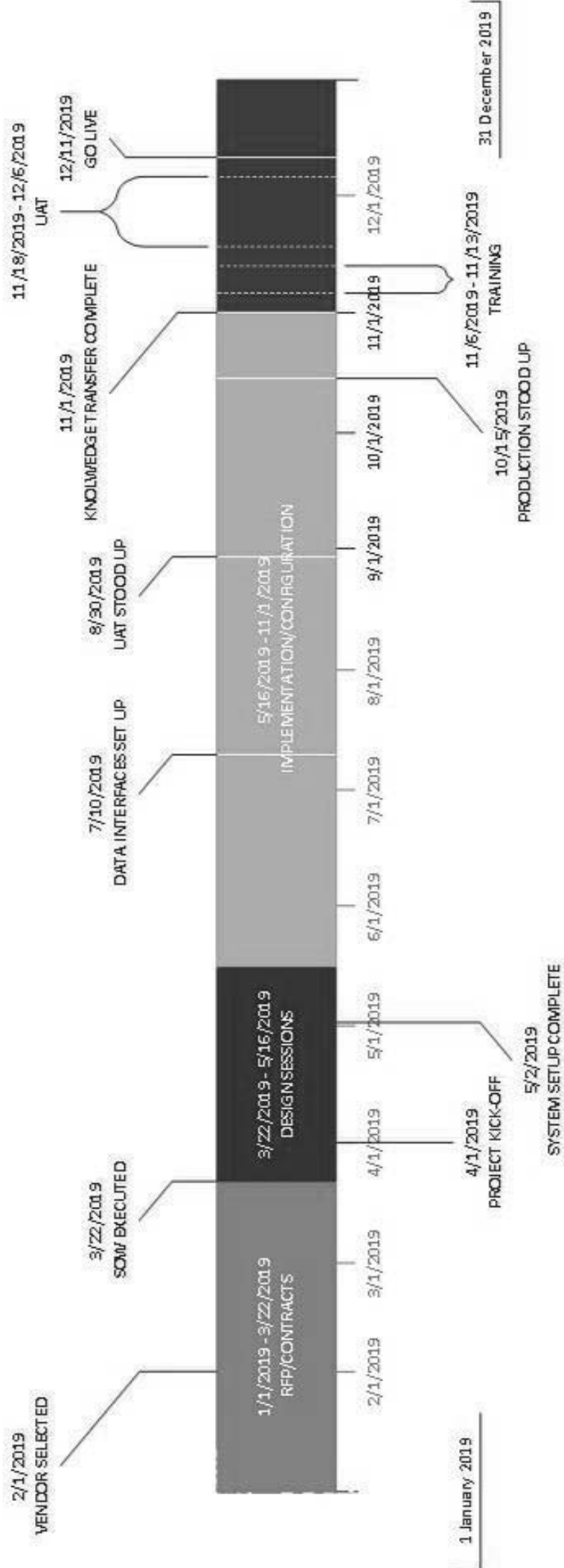
# UI Planner/PlannerDash Implementation High Level Timeline



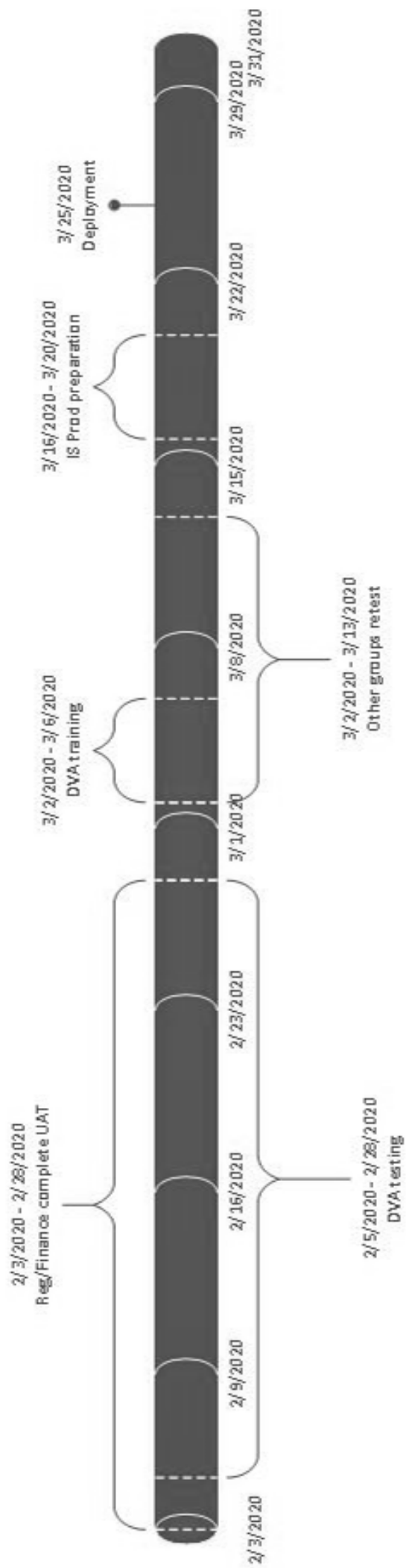
1 January 2019

31 March 2020

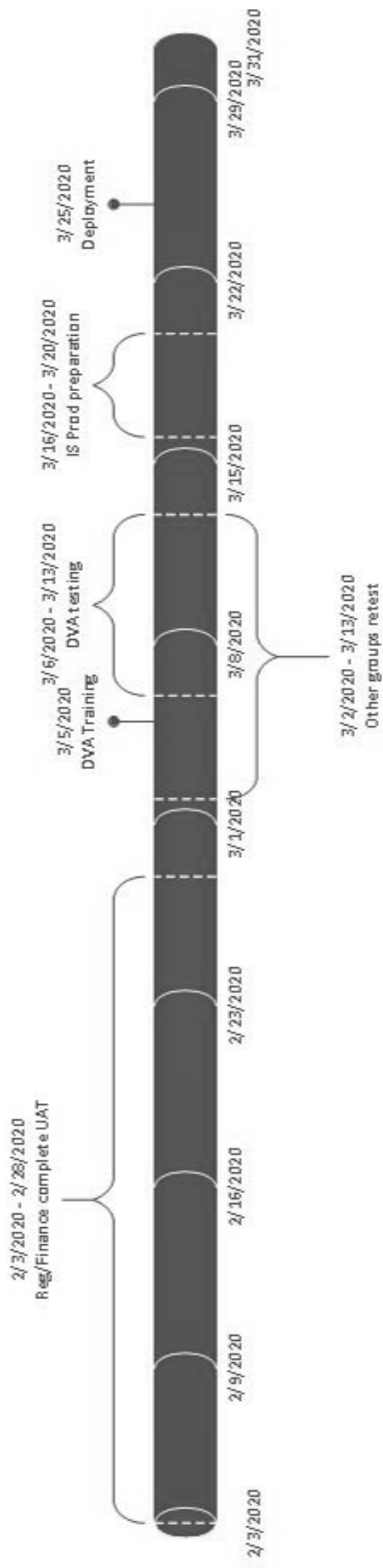
# UI Planner/PlannerDash Implementation High Level Timeline



# UI Planner / PlannerDash UAT/DVA/Deployment Schedule



# UI Planner / PlannerDash UAT/DVA/Deployment Schedule





# **SCADA Upgrade**

## **Project Charter**

## Document Control

### Document Information

	Information
Prepared by	Chris Bovill
File Name	SCADA Upgrade Project Charter
Project ID	P17010
Copyright Notice	Method 123 owns the copyright for the use of this document template

### Document History

Version	Date	Changes
Draft 0.1	10/31/2018	Initial draft
Draft 0.2	11/05/2018	Submit for review to Oversight
1.0	11/07/2018	Incorporates changes from Oversight review

### Document Review

Version	Review Date	Reviewer
Draft 0.1		Keith Sutton
Draft 0.2	11/05/2018	Oversight Committee
1.0		

## Document Approvals

Role	Name	Signature	Date
Project Sponsor	Jerry Schmitz	Approved (email)	Nov 2018
Project Steering Committee	Brad Harris	Approved (email)	Nov 2018
	Chris Sohus	Approved (email)	Nov 2018
	Ngoni Murandu	Approved (email)	Nov 2018
	Randy Gabe	Approved (email)	Nov 2018
Project Oversight Committee	Anthony Hills	Approved	11/05/2018
	Carl Landre	Approved	11/05/2018
	Jeff Maples	Approved with changes	11/06/2018
	Ken Briggs	Approved	11/06/2018
	Kevin Lang	Approved	11/06/2018
	Russell Vallejo	Approved	11/06/2018
Project Manager	Chris Bovill	Approved	Nov 2018

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## **1 Executive Summary**

The goal of this project is to upgrade the existing OASyS DNA 7.5 to the latest release of OASyS DNA 2018. In addition, the front-end interface will be upgraded to SCA 2017 R2. This will be accomplished in two distinct phases. The first phase will consist of a gap analysis – a Front-End Engineering and Design (FEED) study between Southwest Gas and AVEVA to estimate the effort involved in proceeding with this upgrade activity. The deliverables from this phase will be a statement of work from AVEVA detailing the scope of work with schedule and project plan for the upgrade. This will be followed by the actual upgrade phase in which Southwest Gas and AVEVA teams implement the plan to upgrade the SCADA system.

## **2 Project Definition**

### **2.1 Background**

Southwest Gas Corporation (SWG) and AVEVA Software, LLC (AVEVA) have agreed to execute the SCADA Upgrade project utilizing a collaborative implementation model that utilizes resources from both companies to ensure success.

### **2.2 Business Objectives**

The project objectives are as follows:

- Upgrade SWG existing OASyS DNA 7.5 installation to the latest release of OASyS DNA 2018
- Compliance with the latest changes in pipeline security, safety and regulation standards
- Standardized System Architecture that meets SWG IT/Cyber Security standards
- Effective collaboration between AVEVA and SWG
- High Customer Satisfaction & consistency in overall execution and project management

### **2.3 Scope of Services**

- Staging and deployment
- System build

- Product software development to the baseline OASyS DNA software
  - Alarm Summary filters
  - Remconnjoin VDB
  - Eagle protocol enhancements
- Project application integration outside the baseline OASyS DNA software
  - Deadman Alarm/Alert
  - SCADAAlert
  - Dynamic attribute summation
  - RTU history to PI
  - PIAF to OASyS
  - GMAS to PI
- System configuration of the baseline OASyS DNA 2018 system including
  - Control room management
  - Data archiving
  - Datapump
  - Distribusys
- Protocol configuration including installation, configuration and testing of protocol drivers using test RTUs provided by SWG
  - Eagle CGL protocol
  - XModus protocol
  - Mercury protocol
  - Fisher ROC/ROC+ protocol
  - Gas Micro protocol
  - FloBoss protocol
- Database migration – three realtime database refresh cycles will happen at
  - Beginning of the project when AVEVA obtain the Realtime database snapshot
  - Before pre-AT
  - Before Point to Point (P2P)

- Display migration and building
  - AVEVA shall migrate SWG existing displays to the OASyS DNA 2018 system. The migrated displays shall be provided to SWG for a single validation review during this effort. This validation review, including look & feel and animation checking, shall be separate from the structured testing cycles. Minor baseline display errors and issues identified by SWG shall be provided to AVEVA and corrected based on SWG feedback. The corrected displays shall be delivered to SWG at this time. Subsequent clean-up and rework of the displays shall be the responsibility of SWG. Final validation of the displays will be completed by SWG during the point to point testing later in the project. Any issues found during point to point testing shall be addressed by SWG.
- New display creation/cosmetic changes after migration
  - AVEVA upon request by SWG shall be responsible for any display refreshes as detailed in the Project Schedule to bring the system up-to-date with current configuration and data. AVEVA has provided pricing for new display creation scope for the following types and quantities of displays:
    - System Overview Displays (2) 120 Hours
    - High Complexity Displays (2) 32 Hours
    - Medium Complexity Displays (4) 32 Hours
    - Simple Displays (4) 16 Hours
- Equation routines migration
  - Equation Routines was designed as a C++ application to allow users the ability to define equations on various RealTime data sources. AVEVA shall create new Advanced Calculation Engine (ACE) routines, Flow Total and Gas Contract Nomination points based on the existing equations. SWG shall modify the displays to replace equation references with newly created ACE routines and RealTime data sources.
- SWG interfaces
  - PI Interface: PIAF to OASyS Interface
  - GMAS to PI Interface:
  - RTU History to PI Interface

- Gas applications – AVEVA install and configure the following baseline gas application modules and clients:
  - Gas Common & Gas Common Client
    - Gas Common Infrastructure
    - Measurement Device Configuration
    - Data Collection and Conversion
    - Calculation Library
    - Advanced Calculation Library
  - Gas Measurement and Analysis System (GMAS)
    - Validation
    - Flow Editing
    - Advanced Analysis Logic
    - Recalculation
    - Estimation
    - Aggregation
    - Spreading
    - Closing & PPA's
    - Calibration
  - RealTime Gas (RTG) & RTG Client
    - Real Time Metering/Analysis
    - Line Pack Monitor
    - Real Time Flow Totals
  - Gas Device Interface
    - Gas Protocol Translator (Krunch)
    - History Upload
    - Configuration Upload
    - Configuration Download
    - Event and Alarm Upload
    - Gas Quality Management
    - Current Upload

- Gas Application Clients
  - RTG Client
  - GMAS (Sightline) Client
- Control room management applications – AVEVA install and configure the following Advanced Applications Modules:
  - Alerts
  - Point-to-Point Checkout
  - Email Notification
  - Re-Alarming
  - Alarm Shelving
  - Test Mode Alarm Suppression
  - Safety Point Designation
  - Station-Level Alarming
- Integration and integration testing
  - AVEVA integrate the product and custom software development onto the staged SCADA system. Integration testing shall be performed to ensure the software works successfully in the full system environment. These tests will not be formal tests, and no test results will be made available to SWG.
  - The system shall be refreshed and prepared during this time for the upcoming Pre-Acceptance Test.
- Preliminary Acceptance Test (pre-AT)
  - AVEVA use the Preliminary Acceptance Test (pre-AT) Procedures to validate the configured system to ensure the system is operating successfully and is stable.
  - Pre-AT shall be held at the SWG facility in Las Vegas, Nevada, USA. This testing will focus, to the extent possible without field conditions, on the validation of custom-developed software. The Preliminary Acceptance Test Procedures will be used for these structured tests. Ad-hoc testing shall not be conducted during this test cycle.
  - Pre-AT shall test the following standard system functionality at Test and Development System. Items may be added/removed as agreed upon by both parties:
    - RealTime Services
      - Omnicomm

- Data Points
- Remote Client Services (RCS)
- General Security (Active Directory)
- Areas of Responsibility
- Alarming (basic alarming functionality)
- Eventing
- Gas Measurement and Analysis System (GMAS)
- Line Packs
- Flow Totals
- Historical Services
  - Data Collection and Trending
  - Data Editing
  - Archive / De-archive
- DistribySyS
  - General DistribySyS Tests
  - Interface Requirements
  - Main Site in Full Control (failover between hot/standby at each site)
  - Backup Site in Full Control
  - Startup/Shutdown
  - Forced Failures
- Datapump
  - Basic Data Replication
  - Historical Service Disruption
  - Backup Site Mode Data Replication
- Protocol Testing
  - XMODBUS – RealTime (TCP/IP and RTU/Binary modes), Daily Historical Gas Upload
  - Eagle Protocol
  - Mercury Protocol

- Fisher ROC/ROC+ Protocol
    - Galvanic Gas Micro Protocol
    - FloBoss Protocol
  - Southwest Gas Specific Application Testing
    - ACE Calculations
    - OSI PI Interface – RTU History to PI, PIAF to OASyS, GMAS to PI
    - Dynamic Attribute Summation
    - Operator Log
    - Comm Alarm Suppression (Baseline)
    - SCADAAlert
    - Remconjoin to VDB Change
    - Connection On, Turns Remote On (Baseline)
    - Alarm Summary Filters
    - Deadman Alarm
  - Control Room Management Application Testing
    - Point-to-Point Checkout
    - Email Notification if applicable
    - Re-Alarming
    - Alarm Shelving
    - Test Mode Alarm Suppression
    - Safety Point Designation
    - Station-Level Alarming
  - Gas Application functionality
- Install & Commission
  - Acceptance Test – the Acceptance Test (AT) shall be held at SWG facility. Functionality, system performance, and interfaces with field devices and agreed upon SWG systems will be the primary focus of AT. The Acceptance Test Procedures will be used for these structured tests. Ad-hoc testing shall not be conducted during this test cycle.

- AT shall test the following standard system functionality. Items may be added/removed as agreed upon by both parties:
  - RealTime Services
    - Omnicomm
    - Data Points
    - Remote Client Services (RCS)
    - General Security (Active Directory)
    - Areas of Responsibility
    - Alarming (basic alarming functionality)
    - Eventing
    - Gas Measurement and Analysis System (GMAS)
    - Line Packs
    - Flow Totals
  - Historical Services
    - Data Collection and Trending
    - Data Editing
    - Archive / De-archive
  - DistribySyS
    - General DistribySyS Tests
    - Interface Requirements
    - Main Site in Full Control (failover between hot/standby at each site)
    - Backup Site in Full Control
    - Startup/Shutdown
    - Forced Failures
  - Datapump
    - Basic Data Replication
    - Historical Service Disruption
    - Backup Site Mode Data Replication
  - Protocol Testing



- XMODBUS – RealTime (TCP/IP and RTU/Binary modes), Daily Historical Gas Upload
- Eagle Protocol
- Mercury Protocol
- Fisher ROC/ROC+ Protocol
- Galvanic Gas Micro Protocol
- FloBoss Protocol
- Southwest Gas Specific Application Testing
  - ACE Calculations
  - OSI PI Interface – RTU History to PI, PIAF to OASyS, GMAS to PI
  - Dynamic Attribute Summation
  - Operator Log
  - Comm Alarm Suppression (Baseline)
  - SCADAAlert
  - Remconjoin to VDB Change
  - Connection On, Turns Remote On (Baseline)
  - Alarm Summary Filters
  - Deadman Alarm
- Control Room Management Application Testing
  - Point-to-Point Checkout
  - Email Notification if applicable
  - Re-Alarming
  - Alarm Shelving
  - Test Mode Alarm Suppression
  - Safety Point Designation
  - Station-Level Alarming
- Gas Application functionality
- Commissioning

- Following successful completion of AT, SWG shall commission the system, validating all of the new displays and databases in preparation for cutover. Commissioning shall be executed as per the Installation, Commissioning and Cutover Plan (ICCP).
- AVEVA shall support SWG with software fixes as required, and fixes to database configuration where it is deemed that a AVEVA-caused deficiency exists. Support shall be provided on-site as per the Project Schedule, unless otherwise agreed upon between both parties.
- Point to Point (P2P) Validation
  - SWG shall be responsible for their P2P Validation plan and test documents. SWG will verify through front-end displays for each of the points in the P2P validation plan to ensure that each point performs the same function as designed. The P2P Validation plan is an internal SWG document and will be approved by the SWG Compliance Officer in 2018. The plan could potentially be re-evaluated prior to the P2P process in 2019. SWG will notify AVEVA of any major changes in AVEVA scope.
- Parallel Operations Validation (POV)
  - The POV is provided to allow SWG to monitor and validate the stability of the AVEVA OASyS DNA 2018 SCADA system against the same display in the AVEVA OASyS DNA 7.5 system.
  - The POV shall be executed by SWG as per the Installation, Commissioning and Cutover Plan (ICCP). Upon completion of POV, SWG shall sign a POV Milestone Certificate.
- System Cutover
  - Cutover shall be executed by SWG as per the Installation, Commissioning and Cutover Plan (ICCP). Upon completion of cutover, SWG shall sign the Final System Acceptance Certificate. Customer First shall also commence at this time, offered through AVEVA Customer FIRST Support and Services program.
  - In the event that SWG commences operational use of the SCADA system before signing a Final Acceptance Certificate, AVEVA shall not be responsible for any damage that results from use of the system. In addition, the milestone payments for completion of Final Acceptance Testing shall be released to AVEVA and the Customer First Period will begin.

## 2.4 Key Deliverables and Approvers

Deliverable	Sponsor	Steering Committee	Oversight Committee
Project Charter Memo	Approve	Review	Review
Project Charter	Approve	Approve	Approve
Communications Strategy	Approve	Approve	Approve
Testing Strategy	N/A	N/A	Review
Training Strategy	N/A	N/A	Review
Implementation Strategy	N/A	N/A	Review

## 2.5 Financial Plan

The following table represents all the anticipated expenses for the SCADA Upgrade Project as of October 31, 2018. The estimated cost is \$1,889,244.

Services	2018	2019	Total
AVEVA SOW	\$ 725,324	\$ 593,447	\$ 1,318,771
SWG project costs	\$ 376,968	\$ 193,505	\$ 570,473
Total	\$ 1,102,292	\$ 786,952	\$ 1,889,244

*AVEVA payment schedule as outlined in the statement of work (SOW):*

MILESTONE	DESCRIPTION	DATE	%	AMOUNT
1	Project Kick-off	05/07/18	10%	\$ 131,877
2	Planning Complete	08/14/18	10%	\$ 131,877
3	Baseline Demonstration	10/12/18	15%	\$ 197,816
4	Database Migration Complete	12/11/18	10%	\$ 131,877
5	Integration Complete	12/20/18	10%	\$ 131,877
6	Pre-AT Complete	01/18/19	10%	\$ 131,877
7	Acceptance Testing Complete	02/28/19	25%	\$ 329,693
8	Final System Acceptance	07/29/19	10%	\$ 131,877
	<b>Firm Total</b>		<b>100%</b>	<b>\$ 1,318,771</b>

### 3 Project Organization

#### 3.1 Roles

Role	Name	Title	Department
Project Sponsor	Jerry Schmitz	VP Engineering Staff	Engineering Staff
Project Steering Committee	Brad Harris	VP SCA & NNV Divisions	Division Operations
	Chris Sohus	VP SNV Division	Division Operations
	Ngoni Murandu	VP/Information Services/CIO	Information Services
	Randy Gabe	VP Gas Resources	Gas Resources
Project Oversight Committee	Anthony Hills	Dir Gas Operations	Division Operations
	Carl Landre	Dir Technology SIO	Information Services
	Jeff Maples	Dir Gas Operations/Paiute	Gas Operations
	Ken Briggs	Dir Application Services	Information Services
	Kevin Lang	Dir Engineering Services	Engineering Services
	Russell Vallejo	Manager, Gas Control & Dispatch	Gas Control & Dispatch
Project Manager	Chris Bovill	Project Manager	EPMO
Engineering Services Team	Ron Castle	Mgr Engineering Staff	Engineering Services
	Tina Norris	Admin SCADA Support	Engineering Services
	Glen Wilson	Supv Tech Services Support	Engineering Services
	Eric Eberle	Analyst II	Engineering Services
Gas Control Team	Russell Vallejo	Manager, Gas Control & Dispatch	Gas Control & Dispatch
	Matthew Fagin	Supv Gas Control	Gas Control
	Thomas McCune	Supv Gas Control	Gas Control
IS Application Services Team	Dina Lewis	Mgr Application Services	IS Application Services
	Leanne Fang	Sr. Analyst	IS Application Services
	Ryan Bingham	Sr. Analyst	IS Application Services
	Open Position	Analyst	IS Application Services
AVEVA Team	Jennifer Millett	Project Manager	AVEVA
	Todd Cherry	Solutions Architect	AVEVA
	Cristian Obreja	Project Leader	AVEVA
	Chase Malcolm	Technical Specialist	AVEVA

## **3.2 Responsibilities**

### **Project Sponsor**

The Project Sponsor will be primarily responsible for:

- Work with the project manager and affected departments to complete the project organization including project team membership and Oversight and Steering Committee membership
- Complete initial Project Prioritization and Risk Assessment matrices working with the project manager or designee
- Communicate business issues or changes to the appropriate levels of the project organization as necessary
- Participate in Project Management Steering Committee meetings as appropriate to resolve conflicts and priorities related to sponsored projects that are part of the project portfolio
- Issue a Project Charter Memo to inform affected and interested departments and personnel about the start of the project
- Approve the Project Charter created by the project manager including criteria for final project acceptance and completion/closure
- Approve specific deliverables as described in the Project Charter and/or project plan and upon request; provide input on key project-related decisions
- Approve project scope and objectives as they pertain to corporate strategic direction
- Approve project go/no go decisions
- Authorize acceptance of the final solution delivered by the project

### **Project Steering Committee**

The Project Steering Committee will be primarily responsible to:

- Review and approve the Project Charter created by the project manager including criteria for final project acceptance and completion/closure
- Ensure the project objectives and plans are compatible with corporate strategic objectives
- Provide project direction and obtain project funding and resources consistent with SWG business priorities
- Communicate project vision to Oversight Committee and Project Manager
- Approve specific deliverables as described in the Project Charter and/or project work plan

- Provide resolution of key project-related decisions or escalated as requested by the Oversight Committee
- Review and approve Oversight Committee recommendations
- Obtain approval for substantive changes in Company procedures, policies, staffing, and operations that are needed for or driven by the project
- Confirm all project requirements and expectations have been delivered and adequately satisfied
- Approve long term application support structure

### **Project Oversight Committee**

The Project Oversight Committee will be primarily responsible for:

- Act as communication liaison for their respective organization on project objectives, progress, and requests for input for requirements
- Review and approve the Project Charter created by the project manager including criteria for final project acceptance and completion/closure
- Provide Project Team resources and other support as requested
- Approve specific deliverables as described in the Project Charter
- Oversee the progress of the project
- Resolve all high-level risks, issues, and change requests
- Provide high-level planning and coordination of the project
- Ensure the project team has everything it needs to deliver successfully
- Make recommendations to Steering Committee regarding project issues and funding
- Confirm all project requirements and expectations have been delivered and adequately satisfied
- Recommend project go/no go decisions for major milestones
- Determine long term application support structure

## **Project Manager**

The Project Manager will be primarily responsible for:

- Deliver the project on time, within budget, and to specification
- Manage project staff and project stakeholders
- Undertake the activities required to initiate, plan, execute, and close the project successfully
- Communicate project progress through periodic project status meetings or reports
- Validate post project completion application owner and responsibilities
- Define project roles and responsibilities
- Develop preliminary production system responsibility support matrix

## **Project Team Members**

The Project Team members will be primarily responsible for:

- Contribute subject matter expertise for this business/user, technical, or end-user support perspective
- Undertake all tasks allocated by the project manager specified in the approved project plan
- Report progress of the execution of tasks to the project manager on a frequent basis
- Escalate issues and risks to be addressed by the project manager
- Attend regularly scheduled team meetings
- Participate in developing requirements and recommendations
- Contribute to evaluation
- Communicate project status to department and/or management
- Recommend project go/no go decisions for major milestones

### 3.3 Stakeholders

Stakeholder / Group	Stakeholder Interest
Project Sponsor	Project owner
Project Steering Committee	Ensure the project scope and objectives pertain to corporate strategic direction
Project Oversight Committee	Ensure the project team has everything it needs to complete the project successfully
Project Team	Project team members are responsible for (and therefore have a key interest) this project
Southwest Gas employees	System user
Southwest Gas contractors	System user

### 3.4 Resource Plan

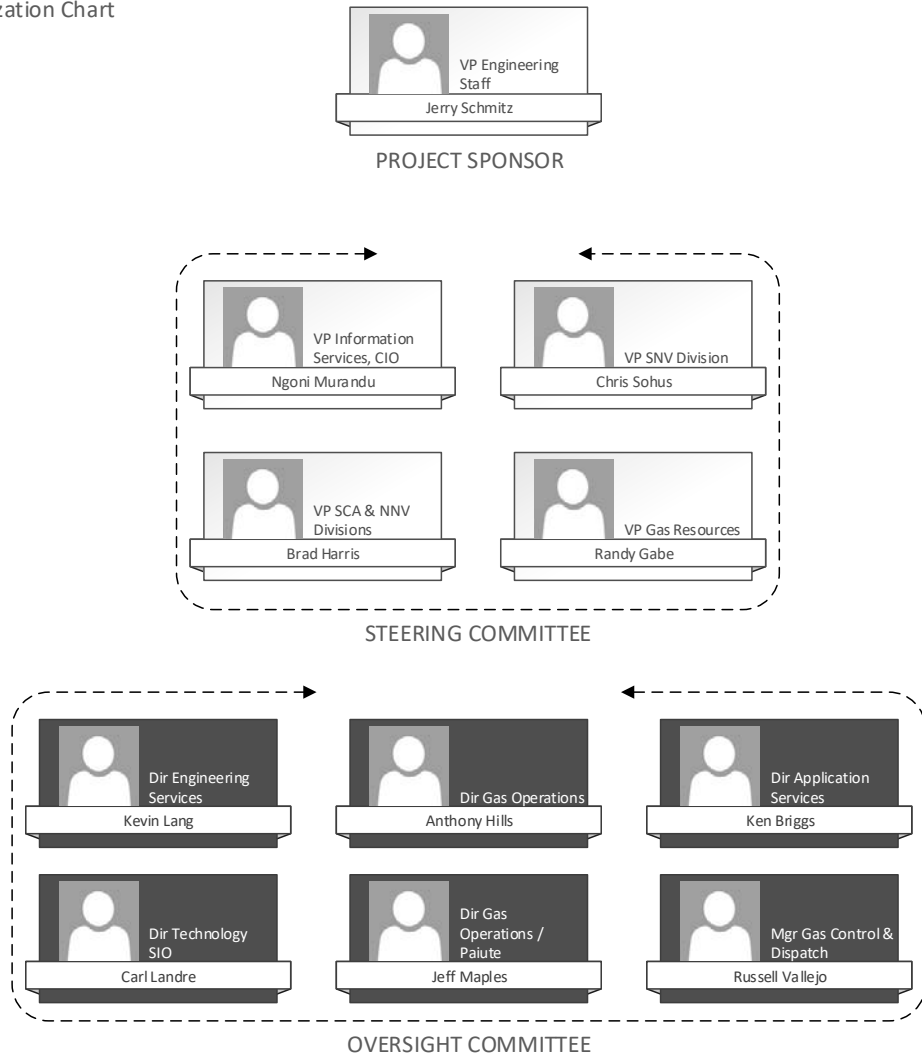
Role	Start Date	End Date
Project Sponsor (1)	May 2018	August 2019
Project Manager (1)	May 2018	August 2019
Project Steering Committee (5)	May 2018	August 2019
Project Oversight Committee (7)	May 2018	August 2019
Engineering Services Team (4)	May 2018	August 2019
Gas Control Team (3)	May 2018	August 2019
IS Applications Team (4)	May 2018	August 2019



### 3.5 Structure

## SCADA Upgrade Project

Organization Chart



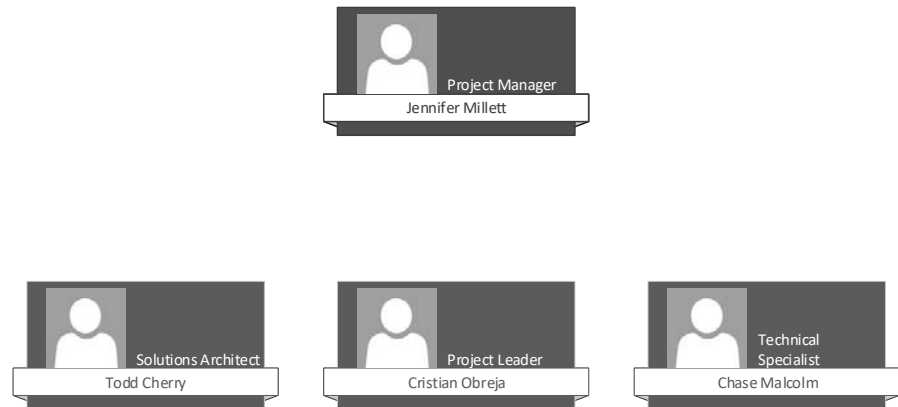
# Southwest Gas

Project Team



# AVEVA

Project Team



## 4 Implementation Plan/Project Approach

### 4.1 Overall Approach

The project schedule will be developed using Microsoft Project listing the key activities and timescales involved in implementing this project.

### 4.2 Project Time Line

The project schedule will be developed using Microsoft Project listing the key activities and timescales involved in implementing this project.

### 4.3 Milestones

MILESTONE	DESCRIPTION	DATE
1	Project Kick-off	05/07/18
2	Planning Complete	08/14/18
3	Baseline Demonstration	10/12/18
4	Database Migration Complete	12/11/18
5	Integration Complete	12/20/18
6	Pre-AT Complete	01/18/19
7	Acceptance Testing Complete	02/28/19
8	Final System Acceptance	07/29/19

#### 4.4 Quality Plan

The management processes to be undertaken during this project are summarized in the following table.

##### 4.4.1 Change Management

Process	Description
Scope changes	The project manager is responsible to ensure all changes follow procedures listed in this Change Control Process. The oversight committee and steering committee are responsible for the approval of all changes during the project. The process will be as follows: 1. Changes to project scope will be documented via a Scope/Design Change Request Form and submitted to the project committees for approval as-needed 2. The project manager will complete an analysis of each change request for severity, need, and impact to project scope, cost, time, and resources 3. The project manager will be responsible for implementing all approved changes 4. The project manager will be responsible to approve emergency changes. Emergency changes are characterized as changes necessary to avoid negative impact on users.
Process/organizational change management	If applicable, changes to business processes or organizations will be documented in the Project Change Management Strategy deliverable
Program changes	Customization to software code will be documented via the SWG Action Request System (ARS) Change Requests, and submitted for formal approval by the appropriate change committees

##### 4.4.2 Quality Management

Process	Description
Testing strategy	This will be addressed in the Testing Strategy
Data conversion	N/A

##### 4.4.3 Risk Management

All project risks are documented using the Initial or Ongoing Project Risk Assessment/Risk Log. Details of each risk are input in the applicable worksheet, enabling the project manager to monitor and control the status of the risk.

##### 4.4.4 Issue/action item/defect management

Depending on the solution selection, ARS may be used to track defects as ‘Change Requests’. In addition, a spreadsheet will be used to track issues, problems, questions and decisions for the project. This spreadsheet will be maintained by the project manager and reviewed at each Project Team Meeting.

#### 4.4.5 Communication Management

The following table defines the recurring, routine communication within the Steering Committee, Oversight Committee, and project teams. The timing provided in the table below is typical of most projects and is flexible as the progress of the project warrants.

Process	Description
Requirement workshops/meetings	The project team will meet as needed to discuss and document business/functional requirements
Project Team meetings	The project team will meet weekly or as needed to discuss progress to date, task assignments, current risks, issues, and any changes
Project Oversight Committee meetings	Monthly meetings are conducted to report on project deliverables, milestones, and updates on key discoveries and issues as needed
Project Steering Committee meetings	Meetings are conducted every quarter to report on key project deliverables, milestones, and updates on key discoveries and issues as needed
Project Sponsor meetings	Meetings are conducted monthly to discuss progress to date, risks, issues, and any changes prior to the scheduled steering committee meetings
Project status reports	Project status reports are distributed to the project sponsor, oversight committee, and steering committee monthly
Communication means	The primary means of communication is the Company’s e-mail system. The communication direction requires communication by the project manager to and from team members and other stakeholders. Acceptable attachments will be Microsoft Word, Excel, PowerPoint, Project, Visio, or PDF file formats.

## 4.5 Completion Criteria

Criteria	Description
Scope	The project must have operated within the scope specified by this document.
Deliverables	The project must have produced the deliverables specified in this document and/or the Project Plan.
Acceptance	The stakeholders must have identified all project deliverables as complete.
General	Where possible, the project must have produced the deliverables on schedule, within budget, and within specification

## 5 Project Considerations

### 5.1 Assumptions

To identify and estimate the duration of the tasks required to complete the evaluation, certain assumptions are made. If an assumption is proven invalid, adjustments to the project plan will be made accordingly. Within this project, it is presumed that:

- The number of resources identified in the project schedule will be available
- Cooperation, support, and representation from the business will be provided as defined and agreed
- Cooperation, support, and representation from staff personnel will be provided as defined and agreed
- Cooperation, support, and coordination from qualified contract personnel will be provided
- Successful identification of Business/Functional Requirements
- External Business Requirements do not interfere with the progress of the project
- Project scope will be controlled to stay within expected completion timeframes
- Scheduling conflicts with projects in progress will not have an effect on this project
- User testing will be thorough with full participation from all affected stakeholders
- Issues discovered through testing are repairable or have adequate workarounds

- No issues with application changes or performance are identified
- Availability for personnel scheduled for training
- Designed training for involved personnel will be sufficient

## 5.2 Constraints

The implementation plan will have to be scheduled around the following constraints identified:

- Resource availability
- Other projects
- Business black-out dates

## 5.3 Dependencies

Project /Initiative	Type	Description
Firewall Upgrade	Project	Checkpoint firewall being upgraded to Palo Alto firewall
CSM Project	Project	CSS system to be replaced by new customer information management system
Nexus Project	Project	Smartphone app for customer service

## 6 Appendix

### 6.1 Supporting Documentation

AFFIRMATION

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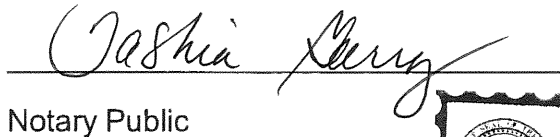
COUNTY OF CLARK )

\_\_\_\_\_ Jose L Esparza Jr. \_\_\_\_\_ being first duly sworn, deposes and says:

That I am the person identified in the Prepared Certification Testimony, and the exhibits applicable to my testimony; that such testimony and exhibits were prepared by me or under my direction; and that the answers and information set forth therein are true to the best of my own knowledge and belief.



Signed and sworn to before me on this 18 day of May, 2020.

  
Notary Public

