



## STAFF REPORT

**DATE:** August 31, 2023  
**TO:** The Honorable Mayor and City Council  
**FROM:** Nathan Cherpeski, City Manager  
**SUBJECT:** Update and Discussion Regarding Public/Private Open Fiber Utility Partnership

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### **RECOMMENDATION:**

Direct staff to return with details for the following:

- Basic utility service/Fee
- Wholesale rate for open access
- Opt out processes
- Whether forming an interlocal with another community makes sense
- and Resolution for Bond Parameters

### **ISSUE BEFORE COUNCIL:**

Should the City of Herriman continue pursuing the feasibility of a private/public fiber utility partnership with Strata Networks?

### **BACKGROUND/SUMMARY:**

The financial model prepared by Strata Networks shows the system is capable of self-funding. Next steps are to finalize what basic service is received by residents for the utility fee, what the wholesale rate is for open access users, and define the opt out process. Additionally, the City will need to explore and determine if forming an interlocal with another city makes sense and what eventual bond parameters will look like.

### **DISCUSSION:**

Key items:

- 1) **The utility fee** - In all models, the proposed utility fee is \$15 for residential and \$30 for business. Staff recommends that the City establish a basic service level available to those

who don't opt out but do not subscribe to a high-speed option. Current planning is for up to 10 Mbps as the basic service level to each resident.

The utility fee is primarily designed to cover costs associated with connecting all essential city facilities. As AI improves, we will see a need for greater connectivity to improve efficiencies in such things as traffic control, water operations, public safety, etc...

- 2) **Wholesale rate** – The wholesale rate is the amount of money necessary to cover the City's costs of offering the open access network and the base fee charged to all Internet Service Providers. Combined with the utility fee, all providers will pay the same wholesale rate. In the end, the City will be agnostic on where residents purchase their final internet service.
- 3) **Opt Out Process** – While functioning as a utility, the Council has asked to create an opt out process for property owners. The goal will be to make it accessible for any not interested in the service. However, since much of the benefit derives to residents from increased efficiencies in City services, the opt out process will need to be more robust than simply saying no.
- 4) **Entity** - Should the city form a separate entity to operate the network? Enter into an interlocal agreement with another nearby city?
- 5) **Bonding** – We will need to create bonding parameters.

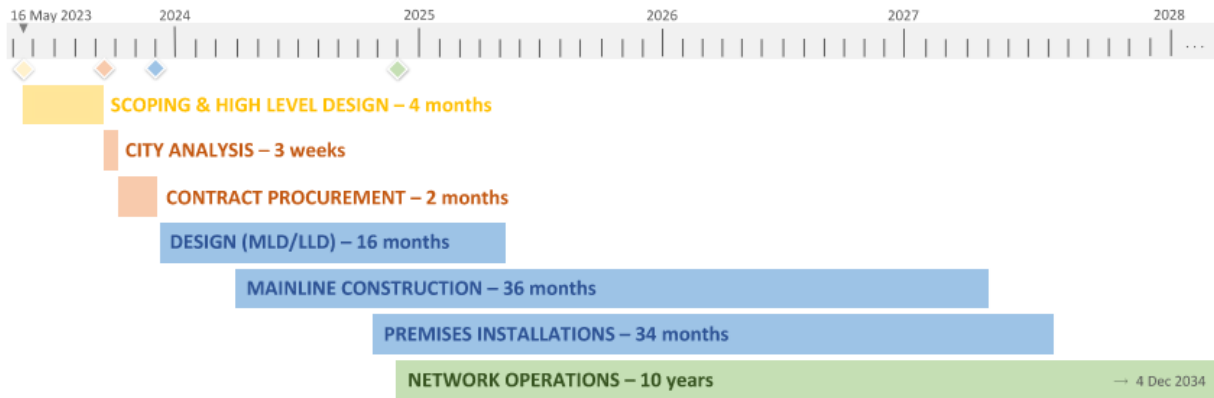
If Council moves forward today directing staff to return with the final details for the items above, the remaining off ramps exist:

- 1) At the meeting when council is asked to formally adopt the utility model, wholesale rate, and opt out process, Council can stop the process at that time.
- 2) At the meeting when a bond parameters resolution is introduced, the Council can opt to not move forward.
- 3) There may be other off ramps that present prior to final authorization to proceed to our partner Strata that may appear as the process matures.

Figure 1 below is the anticipated schedule for all utility models.

## HERRIMAN CITY FIBER NETWORK

Project Timeline Summary



### LEGEND

Yellow	Current High Level Design Agreement
Orange	Analysis and Contract Procurement
Blue	Future Design & Construction Agreement
Green	Future Network Operations Agreement

Figure 1. Anticipated Schedule

### FISCAL IMPACT:

The intent is for the broadband utility to be at least revenue neutral. The City will not subsidize the operations of the utility with tax funds. It is likely that the bonds will need to cover some operations until the utility cash flows.

### ALTERNATIVES:

**Option 1** – Provide direction to staff on the items discussed in the staff report.

**Option 2** – Discontinue efforts at this time and provide staff with further direction.

# Herriman Cost Modeling

## Microtrenching Construction Option

### Construction Methodology:

- 90% microtrenching
- 10% directional drilling

### Assumptions:

- Utility Fee:
  - o Residential - \$15
    - \$2 to Strata for baseline Utility Service at 10 Mbps (symmetrical)
  - o Business - \$30
    - \$3 to Strata for baseline Utility Service at 10 Mbps (symmetrical)
- Opt-Out Percentage
  - o 20%
- Bond Term & Interest
  - o 30 Years
  - o 5% interest
- Retail Rate(s) & Rate Mix
  - o 1 Gbps - \$75
  - o 250 Mbps - \$65
  - o 50/50 mix of 1 Gbps & 250 Mbps
- Business Rate(s) & Rate Mix
  - o 40% Take Rate
    - 90% at \$110 (small business 1 Gbps)
    - 10% at \$400 (special access service)

### Summary - Utility Model

#### FIBER-OPTIC INFRASTRUCTURE MODEL

Estimated Initial Fiber-Optic Network Infrastructure Cost:	\$ 60,323,809.00
Bond Term (Years):	30
Bond Interest Rate:	5.00%
Estimated Monthly Bond Payment for Infrastructure (Year 4):	\$ 352,710.81
Estimated Monthly Utility Fee Revenue (Year 4):	\$ 211,180.80
Minimum # of Subscribers for Estimated Monthly Bond Payment:	7650
Minimum Take Rate for Estimated Monthly Bond Payment	38%

Herriman Municipal Pro Forma Utility Model

Calendar Year Fiber Network Status (projected)	2024 Building	2025 Building	2026 Building	2027 Established	2028 Established	2029 Established	2030 Established	2031 Established	2032 Established	2033 Established	2034 Established
<b>Projections (at mid-year, rounded)</b>											
Households [a]	19,154	19,345	19,539	19,734	19,932	20,131	20,332	20,535	20,741	20,948	21,158
Businesses [b]	173	175	177	179	180	182	184	186	188	190	192
Locations [c]	19,327	19,520	19,716	19,913	20,112	20,313	20,516	20,721	20,929	21,138	21,350
Locations In Grid (Passed) % [d]	8%	42%	75%	100%	100%	100%	100%	100%	100%	100%	100%
Households With Municipal Broadband [e]	637	3,255	5,978	8,133	8,297	8,463	8,633	8,807	8,984	9,164	9,349
Businesses With Municipal Broadband [f]	6	29	54	74	75	77	78	80	81	83	85
Locations With Municipal Broadband [g]	642	3,284	6,032	8,207	8,371	8,540	8,711	8,886	9,065	9,247	9,433
% Of Households With Muni Broadband [h]	3%	17%	31%	41%	42%	42%	43%	43%	43%	44%	44%
% Of Businesses With Muni Broadband [i]	3%	17%	31%	41%	42%	42%	42%	43%	43%	44%	44%
% Of Locations With Muni Broadband [j]	3%	17%	31%	41%	42%	42%	43%	43%	43%	44%	44%
Average Residential Broadband Price [k]	\$70.00	\$70.00	\$70.00	\$70.00	\$70.00	\$70.00	\$70.00	\$70.00	\$70.00	\$70.00	\$70.00
Average Business Broadband Price [l]	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00
Weighted Average Price Per Location [m]	\$70.62	\$70.62	\$70.62	\$70.62	\$70.62	\$70.62	\$70.62	\$70.62	\$70.62	\$70.62	\$70.62
<b>Projected Revenues</b>											
Residential Subscribers [1]	\$435,515	\$2,226,163	\$4,088,747	\$5,562,824	\$5,674,825	\$5,788,797	\$5,905,062	\$6,023,660	\$6,144,928	\$6,268,318	\$6,394,468
Business Subscribers [2]	\$7,729	\$39,570	\$72,779	\$99,146	\$100,697	\$102,834	\$105,004	\$107,207	\$109,443	\$111,713	\$114,018
Utility Fees [3]	\$202,382	\$1,024,278	\$1,862,692	\$2,509,200	\$2,534,170	\$2,559,523	\$2,585,126	\$2,610,979	\$2,637,206	\$2,663,558	\$2,690,285
Impact Fees To New Subscribers [4]	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total Revenues [5]</b>	<b>\$645,626</b>	<b>\$3,290,012</b>	<b>\$6,024,217</b>	<b>\$8,171,171</b>	<b>\$8,309,692</b>	<b>\$8,451,154</b>	<b>\$8,595,192</b>	<b>\$8,741,845</b>	<b>\$8,891,577</b>	<b>\$9,043,590</b>	<b>\$9,198,771</b>
<b>Projected Cost of Sales</b>											
Provision For Network Updates [6]	\$53,967	\$275,862	\$506,675	\$689,350	\$703,202	\$717,332	\$731,746	\$746,448	\$761,480	\$776,776	\$792,412
Network Operation Contract Expense [7]	\$169,957	\$868,760	\$1,595,658	\$2,170,956	\$2,214,559	\$2,259,063	\$2,304,460	\$2,350,766	\$2,398,110	\$2,446,282	\$2,495,527
ISP Utility Baseline Service Cost	\$15,488	\$78,387	\$142,549	\$192,024	\$193,939	\$195,878	\$197,837	\$199,814	\$201,821	\$203,837	\$205,882
Internet Service Contracts Expense [8]	\$74,635	\$381,520	\$700,757	\$953,429	\$972,507	\$992,069	\$1,012,022	\$1,032,372	\$1,053,177	\$1,074,344	\$1,095,980
Costs To Extend Network [9]	\$0	\$0	\$0	\$754,988	\$757,183	\$770,100	\$777,656	\$785,212	\$796,546	\$800,324	\$811,658
<b>Total Cost of Sales [10]</b>	<b>\$314,048</b>	<b>\$1,604,529</b>	<b>\$2,945,639</b>	<b>\$4,760,748</b>	<b>\$4,841,389</b>	<b>\$4,934,442</b>	<b>\$5,023,720</b>	<b>\$5,114,612</b>	<b>\$5,211,134</b>	<b>\$5,301,562</b>	<b>\$5,401,458</b>
<b>Projected Municipal Margins [11]</b>	<b>\$331,579</b>	<b>\$1,685,483</b>	<b>\$3,078,578</b>	<b>\$3,410,423</b>	<b>\$3,468,302</b>	<b>\$3,516,712</b>	<b>\$3,571,472</b>	<b>\$3,627,233</b>	<b>\$3,680,443</b>	<b>\$3,742,028</b>	<b>\$3,797,313</b>
Projected Municipal Margins [11]	\$331,579	\$1,685,483	\$3,078,578	\$3,410,423	\$3,468,302	\$3,516,712	\$3,571,472	\$3,627,233	\$3,680,443	\$3,742,028	\$3,797,313
Provision For Network Updates [6]	\$53,967	\$275,862	\$506,675	\$689,350	\$703,202	\$717,332	\$731,746	\$746,448	\$761,480	\$776,776	\$792,412
Funds Available To Municipality [12]	\$385,546	\$1,961,344	\$3,585,254	\$4,099,773	\$4,171,504	\$4,234,044	\$4,303,217	\$4,373,681	\$4,444,924	\$4,518,804	\$4,589,725
Projected Bond Payments [13]	\$0	\$0	\$0	\$2,116,265	\$4,232,530	\$4,232,530	\$4,232,530	\$4,232,530	\$4,232,530	\$4,232,530	\$4,232,530
<b>Projected Net Funds After Debt Service [14]</b>	<b>\$385,546</b>	<b>\$1,961,344</b>	<b>\$3,585,254</b>	<b>\$1,983,509</b>	<b>(\$61,026)</b>	<b>\$1,514</b>	<b>\$70,688</b>	<b>\$141,151</b>	<b>\$209,394</b>	<b>\$286,274</b>	<b>\$357,195</b>

Herriman Municipal Pro Forma Utility Model

Notes Regarding Assumptions
[a] Assumes the projected population growth rate (1.0%) is the future growth rate and the average number of persons (3) per household does not change.
[b] Assumes the number of households is as per [a] above and that the population-to-business ratio (336.4 / 1) remains the same.
[c] [c] = [a] + [b]
[d] Assumes work progresses approximately linearly from the anticipated construction start date (04/01/2024) through the anticipated construction end date (03/31/2027).
[e] Assumes that the initial adoption rate is 40.0% and that there is net growth in adoptions at 1.0% per annum.
[f] Assumes that the initial adoption rate is 40.0% and that there is net growth in adoptions at 1.0% per annum.
[g] [g] = [c] + [f]
[h] [h] = [c] + [a]
[i] [i] = [f] + [b]
[j] [j] = [g] + [c]
[k] Assumes the consumer-adopted mix of service (50%=250 MBPS; 50%=1000 MBPS) remains the same, and prices grow at about 0.0% after the first year.
[l] Assumes the business-adopted mix of service (10%=250 MBPS; 90%=1000 MBPS) remains the same, and prices grow at about 0.0% after the first year.
[m] Average price given the mix of residential to business subscribers.
[1] Relies on assumptions [c] and [k]; assumes there is no seasonality to revenues.
[2] Relies on assumptions [f] and [l]; assumes there is no seasonality to revenues.
[3] Assumes the monthly utility fee assessed to residences is \$13.00 and the monthly utility fee assessed to businesses is \$27.00; subject to 0.0% inflation.
[4] Once network is established, assumes an impact fee of \$0 for new residences and of \$0 for new businesses and fee inflation of 0.0%.
[5] Total Revenues
[6] Assumes annual growth of 0.0% in the amount set aside by the municipality for the purpose of network updates.
[7] Assumes annual contract expense is inflation-indexed at 0.0%.
[8] Assumes annual internet service contract expense growth of approximately 0.0%.
[9] Assumes the capital to construct the network suffices to fund early changes; assumes a change in households and businesses as in [a] and [b] and inflation of 0.00%.
[10] Total Cost of Sales
[11] Projected Municipal Margin = Total Revenues - Total Cost of Sales
[11] See above.
[6] See above.
[12] [12] = [6] + [11]
[13] Assumes the bond is amortizing at 5.00% (365/360) with biannual P&I payments due beginning six months after construction is completed.
[14] [14] = [12] - [13]
Assumes the Network Update Allocation will be set aside
[15] [15] = [14] - ([6] + [13]) OR [15] = [11] - [13]

Municipality public finance counsel will determine final rates and terms.

Projected Net Funds After Debt Service & Network Update Allocation [15]

\$331,579	\$1,685,483	\$3,078,578	\$1,294,158	(\$764,228)	(\$715,818)	(\$661,058)	(\$605,297)	(\$552,086)	(\$490,502)	(\$435,217)
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# Herriman Cost Modeling

## *Microtrenching* Construction Option

### Construction Methodology:

- 90% microtrenching
- 10% directional drilling

### Assumptions:

- Utility Fee:
  - o Residential - \$15
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  - o Business - \$30
    - \$3 to Strata for baseline Utility Service at 10 Mbps (symmetrical)
- Opt-Out Percentage
  - o 20%
- Bond Term & Interest
  - o 30 Years
  - o 5% interest
- Retail Rate(s) & Rate Mix
  - o 1 Gbps - \$80
  - o 250 Mbps - \$70
  - o 50/50 mix of 1 Gbps & 250 Mbps
- Business Rate(s) & Rate Mix
  - o 40% Take Rate
    - 90% at \$110 (small business 1 Gbps)
    - 10% at \$400 (special access service)

### Summary - **Utility Model**

#### **FIBER-OPTIC INFRASTRUCTURE MODEL**

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Estimated Monthly Bond Payment for Infrastructure (Year 4):	\$ 352,710.81
Estimated Monthly Utility Fee Revenue (Year 4):	\$ 211,180.80
Minimum # of Subscribers for Estimated Monthly Bond Payment:	6023
Minimum Take Rate for Estimated Monthly Bond Payment	30%

Herriman Municipal Pro Forma Utility Model

Calendar Year Fiber Network Status (projected)	2024 Building	2025 Building	2026 Building	2027 Established	2028 Established	2029 Established	2030 Established	2031 Established	2032 Established	2033 Established	2034 Established
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Locations With Municipal Broadband [g]	642	3,284	6,032	8,207	8,371	8,540	8,711	8,886	9,065	9,247	9,433
% Of Households With Muni Broadband [h]	3%	17%	31%	41%	42%	42%	43%	43%	43%	44%	44%
% Of Businesses With Muni Broadband [i]	3%	17%	31%	41%	42%	42%	42%	43%	43%	44%	44%
% Of Locations With Muni Broadband [j]	3%	17%	31%	41%	42%	42%	43%	43%	43%	44%	44%
Average Residential Broadband Price [k]	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00	\$75.00
Average Business Broadband Price [l]	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00	\$139.00
Weighted Average Price Per Location [m]	\$75.57	\$75.57	\$75.57	\$75.58	\$75.57	\$75.57	\$75.57	\$75.57	\$75.57	\$75.58	\$75.58
<b>Projected Revenues</b>											
Residential Subscribers [1]	\$473,718	\$2,421,440	\$4,447,409	\$6,050,791	\$6,172,617	\$6,296,586	\$6,423,050	\$6,552,051	\$6,683,956	\$6,818,170	\$6,955,387
Business Subscribers [2]	\$7,729	\$39,570	\$72,779	\$99,146	\$100,697	\$102,834	\$105,004	\$107,207	\$109,443	\$111,713	\$114,018
Utility Fees [3]	\$202,382	\$1,024,278	\$1,862,692	\$2,509,200	\$2,534,170	\$2,559,523	\$2,585,126	\$2,610,979	\$2,637,206	\$2,663,558	\$2,690,285
Impact Fees To New Subscribers [4]	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
<b>Total Revenues [5]</b>	<b>\$683,829</b>	<b>\$3,485,289</b>	<b>\$6,382,879</b>	<b>\$8,659,138</b>	<b>\$8,807,483</b>	<b>\$8,958,943</b>	<b>\$9,113,180</b>	<b>\$9,270,237</b>	<b>\$9,430,606</b>	<b>\$9,593,442</b>	<b>\$9,759,690</b>
<b>Projected Cost of Sales</b>											
Provision For Network Updates [6]	\$53,967	\$275,862	\$506,675	\$689,350	\$703,202	\$717,332	\$731,746	\$746,448	\$761,480	\$776,776	\$792,412
Network Operation Contract Expense [7]	\$169,957	\$868,760	\$1,595,658	\$2,170,956	\$2,214,559	\$2,259,063	\$2,304,460	\$2,350,766	\$2,398,110	\$2,446,282	\$2,495,527
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Costs To Extend Network [9]	\$0	\$0	\$0	\$754,988	\$757,183	\$770,100	\$777,656	\$785,212	\$796,546	\$800,324	\$811,658
<b>Total Cost of Sales [10]</b>	<b>\$314,048</b>	<b>\$1,604,529</b>	<b>\$2,945,639</b>	<b>\$4,760,748</b>	<b>\$4,841,389</b>	<b>\$4,934,442</b>	<b>\$5,023,720</b>	<b>\$5,114,612</b>	<b>\$5,211,134</b>	<b>\$5,301,562</b>	<b>\$5,401,458</b>
<b>Projected Municipal Margins [11]</b>	<b>\$369,782</b>	<b>\$1,880,760</b>	<b>\$3,437,240</b>	<b>\$3,898,390</b>	<b>\$3,966,094</b>	<b>\$4,024,501</b>	<b>\$4,089,459</b>	<b>\$4,155,624</b>	<b>\$4,219,472</b>	<b>\$4,291,881</b>	<b>\$4,358,231</b>
Projected Municipal Margins [11]	\$369,782	\$1,880,760	\$3,437,240	\$3,898,390	\$3,966,094	\$4,024,501	\$4,089,459	\$4,155,624	\$4,219,472	\$4,291,881	\$4,358,231
Provision For Network Updates [6]	\$53,967	\$275,862	\$506,675	\$689,350	\$703,202	\$717,332	\$731,746	\$746,448	\$761,480	\$776,776	\$792,412
Funds Available To Municipality [12]	\$423,749	\$2,156,622	\$3,943,916	\$4,587,740	\$4,669,296	\$4,741,833	\$4,821,205	\$4,902,072	\$4,980,952	\$5,068,656	\$5,150,643
Projected Bond Payments [13]	\$0	\$0	\$0	\$2,116,265	\$4,232,530	\$4,232,530	\$4,232,530	\$4,232,530	\$4,232,530	\$4,232,530	\$4,232,530
<b>Projected Net Funds After Debt Service [14]</b>	<b>\$423,749</b>	<b>\$2,156,622</b>	<b>\$3,943,916</b>	<b>\$2,471,476</b>	<b>\$436,766</b>	<b>\$509,304</b>	<b>\$588,676</b>	<b>\$669,543</b>	<b>\$748,423</b>	<b>\$836,126</b>	<b>\$918,113</b>

Municipality public finance counsel will determine final rates and terms.

Projected Net Funds After Debt Service & Network Update Allocation [15]

\$369,782	\$1,880,760	\$3,437,240	\$1,782,125	(\$266,436)	(\$208,028)	(\$143,070)	(\$76,905)	(\$13,058)	\$59,351	\$125,702
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Herriman Municipal Pro Forma Utility Model

Notes Regarding Assumptions

- [a] Assumes the projected population growth rate (1.0%) is the future growth rate and the average number of persons (3) per household does not change.
- [b] Assumes the number of households is as per [a] above and that the population-to-business ratio (336.4 / 1) remains the same.
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- [d] Assumes work progresses approximately linearly from the anticipated construction start date (04/01/2024) through the anticipated construction end date (03/31/2027).
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- [g]  $[g] = [c] + [f]$
- [h]  $[h] = [c] + [a]$
- [i]  $[i] = [f] + [b]$
- [j]  $[j] = [g] + [c]$
- [k] Assumes the consumer-adopted mix of service (50%=250 MBPS; 50%=1000 MBPS) remains the same, and prices grow at about 0.0% after the first year.
- [l] Assumes the business-adopted mix of service (10%=250 MBPS; 90%=1000 MBPS) remains the same, and prices grow at about 0.0% after the first year.
- [m] Average price given the mix of residential to business subscribers.

- [1] Relies on assumptions [c] and [k]; assumes there is no seasonality to revenues.
- [2] Relies on assumptions [f] and [l]; assumes there is no seasonality to revenues.
- [3] Assumes the monthly utility fee assessed to residences is \$13.00 and the monthly utility fee assessed to businesses is \$27.00; subject to 0.0% inflation.
- [4] Once network is established, assumes an impact fee of \$0 for new residences and of \$0 for new businesses and fee inflation of 0.0%.
- [5] Total Revenues
- [6] Assumes annual growth of 0.0% in the amount set aside by the municipality for the purpose of network updates.
- [7] Assumes annual contract expense is inflation-indexed at 0.0%.
- [8] Assumes annual internet service contract expense growth of approximately 0.0%.
- [9] Assumes the capital to construct the network suffices to fund early changes; assumes a change in households and businesses as in [a] and [b] and inflation of 0.00%.
- [10] Total Cost of Sales
- [11] Projected Municipal Margin = Total Revenues - Total Cost of Sales
- [12]  $[12] = [6] + [11]$
- [13] Assumes the bond is amortizing at 5.00% (365/360) with biannual P&I payments due beginning six months after construction is completed.
- [14]  $[14] = [12] - [13]$

Assumes the Network Update Allocation will be set aside

$[15] = [14] - ([6] + [13])$  OR  $[15] = [11] - [13]$