

Memorandum

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Subject **Town of Orleans, MA**
Water Quality and Wastewater Planning
Task Number 5 – Financial Evaluation
Deliverable 5.c.3 - Final Financial Model Update – Preliminary Analysis

Project Number 60476644

From Thomas Parece, P.E., AECOM Project Manager

Date 06/30/16

1. Purpose

This Technical Memorandum describes the updating of the Town's Financial Model. The Town originally utilized a financial model developed by its consultant Mike Domenica. A second model, referred to as the "Kluge Model" was developed by Pioneer Consulting in 2015 as part of the Stantec Analysis. Both models included cost, financing, revenue, and user charges functionality. The main objective of this current effort has been to develop a robust Financial Model that provides the Town with flexibility when analyzing Water Quality and Wastewater Planning program costs. While similar concepts and data points are found in the two models the Town utilized and the new financial model, the new financial model was developed from scratch with strong guidance and input from the Town.

2. Introduction

A. The Financial Model's Role

The Town has utilized multiple financial models for wastewater planning. As part of the Water Quality and Wastewater Planning program, a new Financial Model has been developed. The new Financial Model can:

- (1) Determine project costs including capital costs of the various treatment types to be implemented. Capital costs include planning, design, and construction costs;
- (2) Determine costs to finance capital costs over time through SRF, USDA, or conventional financing;
- (3) Determine revenue sources to fund the capital and financing costs, as well as the operating, maintenance, replacement, and monitoring costs;
- (4) Run scenarios to optimize a financial plan;

- (5) Test affordability based on selected criteria;
- (6) Produce data that can aid the Town with its financing plan; and
- (7) Present financial results in a clear and simplified manner.

B. Groups of Customers in New Financial Model

The customer groups in the new financial model were defined through collaboration between AECOM, The Abrahams Group (model developer), and the Town. They are defined differently than they were defined in the Town's other financial models.

- (1) **Downtown Area Commercial Users** – There are about 210 customers in the Downtown Area to be sewered, according to plans.
- (2) **Downtown Area Residential Users** – There are about 140 residential customers in the Downtown Area to be sewered, according to plans.
- (3) **Meetinghouse Pond Area Users** – There are about 370 Meetinghouse Pond Area users to be sewered, according to plans. Most of the users are residential.
- (4) **Non-Traditional Technology Area Users** – There are about 3,000 customers that are in nitrogen-sensitive areas who will remain on on-site systems and that require non-traditional technologies, such as PRBs, floating constructed wetlands and the like, for nitrogen remediation. Additionally, there are about 2,300 customers that are in non-nitrogen-sensitive areas that require on-site septic systems to address their wastewater needs. Combined, these two groups make up the Non-Traditional Technology Area group of users in the new Financial Model and are evaluated separately to determine cost per property.

A. Output Options in Kluge Model

The Kluge Model displays customer impact, in the form of per-customer costs by user group, in a clean and easy-to-compare format. Each of the options or cases is displayed side-by-side with the assumptions for each option shown at the top. The Town is interested in utilizing the format of this customer impact table going forward. Therefore, the format is used in a similar table that is created as an output by the new financial model. Although the output cases in the Kluge Model included some financing options and some program costs offsets the Town is considering as options for financing the program, the Town sought the inclusion of additional financing options and costs offsets that are included in the output cases presented in the new financial model.

- (1) **100 Percent Tax (for Capital) and User Fees (for Operating, Maintenance, and Monitoring)** – This option is the Baseline. There is no betterment revenue with this option. The interest rate for borrowings is 2 percent and the borrowing term is 20 years.
- (2) **20 Percent Betterments** – This option is the same as the baseline, but 20 percent of the capital costs are funded by betterments and 80 percent by taxes.
- (3) **20 Percent Betterments, Zero Percent Interest** – This option is the same as the baseline, but 20 percent of the capital costs are funded by betterments and 80 percent by taxes and the interest rate for borrowings is 0 percent.

- (4) **20 Percent Betterments, Zero Percent Interest, 30-Year SRF** – This option is the same as the baseline, but 20 percent of the capital costs are funded by betterments and 80 percent by taxes, the interest rate for borrowings is 0 percent, and the borrowing term is 30 years.
- (5) **20 Percent Betterments, Zero Percent Interest, 30-Year SRF, Septage Revenue** – This option is the same as option (4), but includes septage revenue.
- (6) **20 Percent Betterments, Zero Percent Interest, 30-Year SRF, Septage Revenue, 25 percent Grant** – This option is the same as option (5), but includes a 25 percent Grant as an offset to capital costs.
- (7) **80 Percent Betterments** – This option is the same as option (2), but 80 percent of the capital costs are funded by betterments and 20 percent by taxes.

Each of these output options include user charges.

3. Important Data and Functionality in New Financial Model

A. Customer Groups

- (1) **Downtown Area Commercial Users** – There are about 210 customers in the Downtown Area to be sewered, according to plans.
- (2) **Downtown Area Residential Users** – There are about 140 customers in the Downtown Area to be sewered, according to plans.
- (3) **Meetinghouse Pond Area Users** – There are about 370 Meetinghouse Pond Area users to be sewered, according to plans. Most of the users are residential.
- (4) **Non-Traditional Technology Area Users** – There are about 3,000 customers that are in nitrogen-sensitive areas that require that require on-site septic systems to address their wastewater needs as well as non-traditional technologies, such as PRBs, floating constructed wetlands and the like, for nitrogen remediation. Additionally, there are about 2,300 customers that are in non-nitrogen-sensitive areas that require on-site septic systems to address their wastewater needs. Combined, these two groups make up the Non-Traditional Technology Area group of users in the new Financial Model.

B. Special Assessments - Special assessments are assessed to the sewered commercial and residential users in the Downtown Area and Meetinghouse Pond Area. Special assessments may be assessed for the non-traditional capital costs in the nitrogen-sensitive areas. These assessments are based on the capital and financing costs related to the wastewater collection, treatment, and disposal for the Downtown Area and Meetinghouse Pond Area facilities, septage costs at the Downtown Wastewater Treatment Facility, and capital and financing costs for the non-traditional technologies. These costs are allocated to users based on residential equivalent dwelling units (EDUs), which are based on actual water usage. Special assessments are assessed based on apportionments not to exceed 20 years, unless the Town adopts MGL Chapter 83, Section 1A to extend the apportionments beyond 20 years, but no greater than 50 years. Committed interest is applied to any apportioned special assessments, based on Town Meeting vote of either up to 2 percent over the borrowing rate or 5 percent.

- C. **Inputs to the Financial Model** - The new Financial Model relies on data in a Cost Estimates input file for the costs (capital and operating, maintenance, replacement, and monitoring) related to the treatment types. The Cost Estimates input files are in a consistent format such that, if cost estimates change, the updated ones can be loaded into the Financial Model seamlessly. The data in the Cost Estimates file used by the Financial Model include program-level costs and phasing costs, which are presented as annual costs over a 20-year period.
- D. **Operating, Maintenance, Monitoring, and Replacement Costs** - The Financial Model extracts operating, maintenance, monitoring, and replacement costs for each of the engineering solutions included in the Costs Estimates file, including (Aquaculture/Shellfish Propagation, Permeable Reactive Barriers, Floating Constructed Wetlands, and Sewering and includes them as part of any financial analysis it presents.
- E. **Borrowing Schedules** - Based on user-defined criteria, the Financial Model produces long-term principal and interest schedules for SRF, USDA, and conventional borrowings. For SRF financing, origination and administrative fees are included. The interest percentage used to determine origination fees can be set to accommodate interim-financing costs, if any.
- F. **Public-Private Partnerships** - The Financial Model contains functionality to measure the financial impact of public-private partnerships related to Orleans' wastewater system, in the form of a percentage to represent an offset to project-wide capital and operating costs. The current version of the model does not have this functionality active and available to the user. However, this functionality can again be activated and used if the Town desires to use it.
- G. **Output Options** - The Financial Model produces seven output cases similar to, but not the same as, the ones from the Kluge Model detailed previously in this document. Additionally, the model produces graphical outputs that show project costs and costs per user in a clear and succinct manner. In the future, additional functionality could be added to the Financial Model which would allow the user to define other output cases.

4. Conclusion

The new Financial Model available for the Town's use went through several iterations as AECOM, The Abrahams Group (model developer), and the Town sought to find a good balance of financing options and revenue options to produce reasonable output cases for the Town's consideration. Additionally, part of the intent with the creation of different output cases was to show how costly the project would be with conventional financing, instead of SRF financing, and compare that case with cases that included SRF financing. Similarly, output cases that included septage costs and revenue, grant revenue/principal forgiveness, and design/build and design/build/operate savings were created to show different ways the Town could save on project costs to make the project more affordable.

Throughout its development, the Financial Model produced many different output cases, many of which were created as an exercise to see what the results indicated. Currently, the Financial Model produces seven output cases defined below in Table 1. These cases are the ones that AECOM, The Abrahams Group (model developer), , and the Town believe to be the best representation of the different options available to the Town to finance the Water Quality and Wastewater Planning program.

Table 1

Description	Output Cases						
	1	2	3	4	5	6	7
Financing Options							
20-Year Conventional with 4% Interest Rate	X						
20-Year SRF with 0% Interest Rate		X	X	X	X		
30-Year SRF with 0% Interest Rate						X	X
Funding of Capital and Financing Costs							
100% Property Taxes	X	X	X				
100% Special Assessments				X	X		
75% Special Assessments/25% Property Taxes						X	X
Project Costs Offsets							
90% Grant/Principal Forgiveness					X		
25% Grant/Principal Forgiveness						X	X
21% Design/Build Savings on Capital Costs						X	X
7% Design/Build/Operate Savings						X	X
Septage Revenue			X	X	X	X	X
5% Local Options Taxes						X	X

A. Financing Options

- (1) **20-Year Conventional with 4 percent Interest Rate** – Schedules with conventional financing include equal principal payments over the life of the loan, with declining interest payments.
- (2) **20-Year SRF with 0 percent Interest Rate** – Schedules with SRF financing include total yearly payments that are similar over the life of the loan. With no interest, principal payments are equal each year. The schedules also include a per-payment administrative fee, which is a percentage of the outstanding principal balance at the time of payment, and a one-time up-front origination fee, which is a percentage of the overall loan amount.
- (3) **30-Year SRF with 0 percent Interest Rate** – The option for this type of financing is similar to the 20-Year SRF with 0 percent Interest Rate one, but with a longer term.

B. Funding of Capital and Financing Costs

- (1) **100 percent Property Taxes** – All project and financing costs are paid via property taxes. Applying these costs to the tax base spread them equally to all properties in town.
- (2) **100 percent Special Assessments** – All project and financing costs are paid via special assessments. Assessing these costs to individual properties ensures that properties in certain areas only pay for capital and financing costs related to projects completed in their area. For example, properties in the Downtown Area would be assessed their portion of capital and financing costs for work related to the Downtown Area Wastewater Treatment Facility only and would not pay for capital work completed in other areas.
- (3) **75 percent Special Assessments/25 percent Property Taxes** – A combination of the two previous options, this option allows most of the capital and financing costs tied to certain areas to be assessed to properties in those areas only, but also allows the remainder of capital and financing costs to be spread across all properties in town via property taxes.

C. Project Costs Offsets

- (1) **90 percent Grant/Principal Forgiveness** – With this capital costs offset, the Town would not be responsible for 90 percent of the capital costs of the project. Only 10 percent of the capital costs would remain and be put into borrowing schedules.
- (2) **25 percent Grant/Principal Forgiveness** – This option is similar to the previous one, but, with this one, the Town would be responsible for 75 percent of the capital costs.
- (3) **21 percent Design/Build Savings** – If the Town were to complete the Downtown Area and Meetinghouse Pond Area Wastewater Treatment Facilities, Collection System and Effluent Disposal Facilities as design/build projects, the Town could recognize capital costs savings of 21 percent.
- (4) **7 percent Design/Build/Operate Savings** – If the Town were to complete the Downtown Area and Meetinghouse Pond Area Wastewater Treatment Facilities, Collection System and Effluent Disposal Facilities as design/build/operate projects, the Town could recognize operating and maintenance savings of 7 percent.
- (5) **Septage Revenue** – If the Downtown Area Wastewater Treatment Facility were to be built to handle septage, then the Town could realize \$584,000 in annual septage revenue, based on 16,000 gallons processed per day at a rate of 10 cents per gallon. Operating and maintenance costs related to septage are estimated at \$200,000 annually. Capital costs related to septage are estimate at \$500,000. If amortized over 20 years, capital costs are \$25,000 annually. Ignoring financing costs, the Town could see an annual net septage revenue amount of \$359,000.
- (6) **5 percent Local Options Taxes** – The Town could collect additional local options taxes to use as an offset to project costs. The Financial Model uses this revenue as offsets to operating and maintenance costs, replacement costs, and monitoring costs. The Town would have to consider raising its meals and/or rooms tax (or some other tax measure) in order to accomplish this.

D. Miscellaneous - Additionally, the following list contains explanations on nuances related to cases 6 and 7:

- (1) In Output Case 6, the special assessments in the Downtown Area are split between commercial properties and residential properties at a rate of 60 percent to 40 percent, respectively.
- (2) In Output Case 7, a residential rate is introduced and used. The residential rate, once it is determined, is applied to all residential properties in the Downtown Area and the Meetinghouse Pond Area, with the remainder of the properties (the commercial ones) paying for more to make up for the decreased residential cost. The residential rate is determined by taking all grant money and applying it to the Meetinghouse Pond Area capital costs only. Any leftover grant money is applied to the capital costs in other areas, starting with the Downtown Area. The resulting per-year costs for Meetinghouse Pond Area considered the residential rate. This same rate is applied to all Downtown Area residential users so they are not paying more than residential users in the Meetinghouse Pond Area. Commercial users in the Downtown Area would pay more in Output Case 7 to make up for the lost revenue of residential users' being assigned a residential rate.

5. APPENDIX

Appendix A contains output cases tables and graphs produced by the Financial Model using the latest Cost Estimates file (version 28).

The All in Year One scenario depicts all project costs together. This snapshot shows what the data would look like if all of the project costs were spent in the same year. The outputs for the All in Year One scenario consist of a table containing the Output Cases discussed earlier in the document and consist of two graphs. One graph shows all program costs by case. The other graph shows the annual charges for each of the four user groups defined in this document by case.

Contrary to the All in Year One scenario, the other group of outputs represents phasing. Phasing focuses on costs year to year instead of in just one year. The outputs for the Phasing scenario consist of three tables containing the Output Cases discussed earlier in the document and consist of multiple graphs for each case. One graph shows all program costs for the case. The other graph shows the annual charges for each of the four user groups defined in this document for the case. For the Phasing graphs, Downtown Area users are distinguish as commercial and residential for cases 6 and 7 only since the costs for the two groups are the same in the other cases. Three of the potential 20 Output Cases tables are shown for phasing. Only a few select ones were chosen to include as outputs. They are from years 4, 9, and 15. Those years were selected since they contain large jumps in capital costs when compared to the prior years. Year 4 is the year the Downtown Area Wastewater Treatment Facility is projected to come online. Year 9 is the year the Meetinghouse Pond Area Wastewater Treatment Facility is projected to come online. Year 15 is the year after completion of Phase 3 of the Downtown Area Wastewater Treatment Facility.

The outputs described for the All in Year One scenario and for the Phasing scenario appear on the following pages.

Appendix A

Output Cases Tables and Graphs

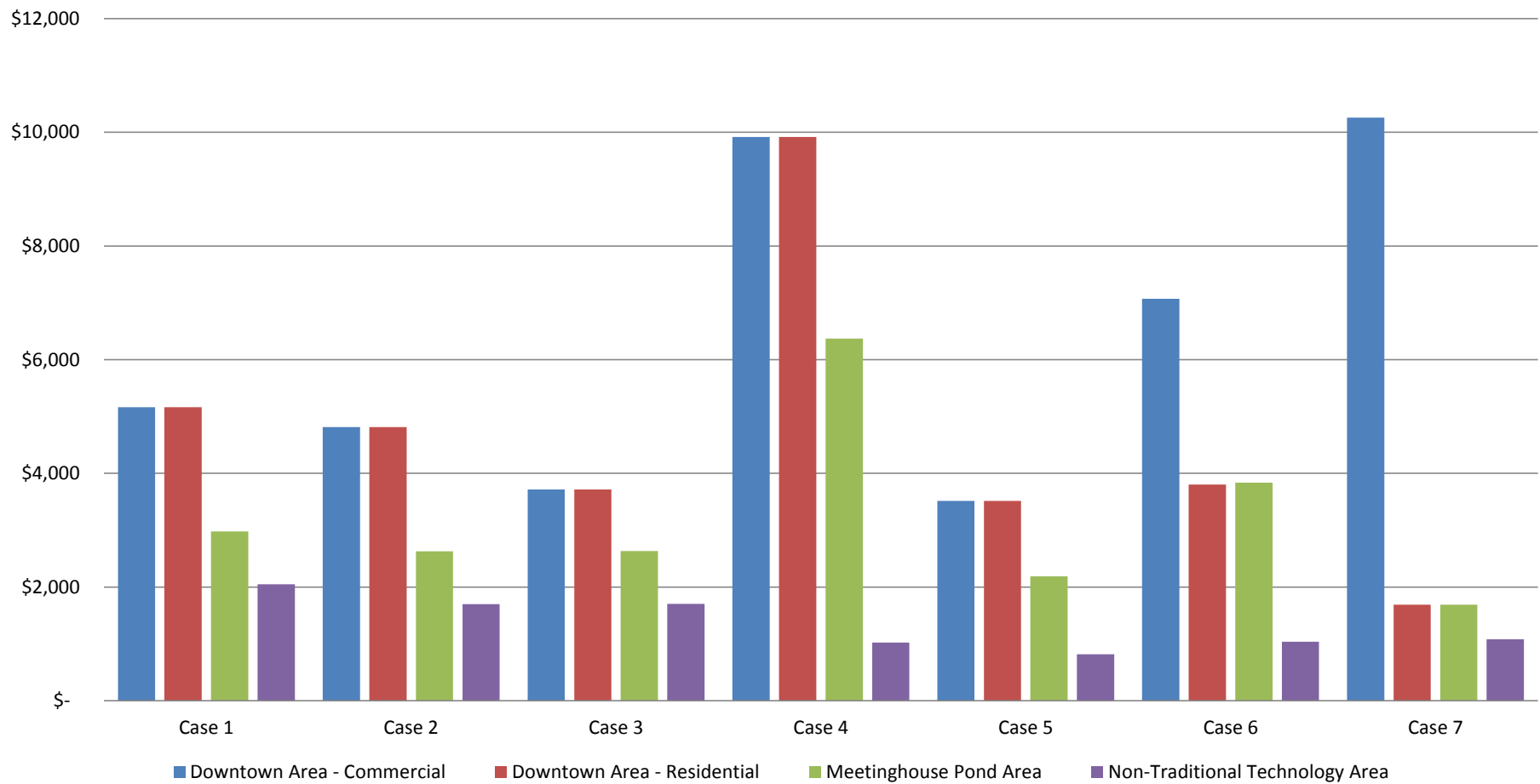
Produced by the Financial Model using the latest Cost Estimates File (v28)

Compatible with Cost Estimates Version 28

**Town of Orleans
Water Quality and Wastewater Planning Program
Customer Rate Scenarios**

Assumptions	Customer Rate Scenarios						
	Case 1 (Baseline)	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
	Capital - 100% Tax O&M&R&M - 100% User Fees Financing - Conventional	Same as Case 1 with Financing - 0% 20-year SRF	Same as Case 2 plus Septage Revenue	Same as Case 3, but Capital 100% Special Assessments	Same as Case 4 plus 90% Grant	Case 4 + 30-year SRF, 25% Grant, 21% D/B, 7% D/B/O, and Local Options Tax Savings, Capital 25% tax, and Downtown Capital Split 60%/40%	Same as Case 6, but grant applied to MH Pond capital and Residential Downtown Users Pay Residential Rate
Special Assessment	0%	0%	0%	100%	100%	75%	75%
Bond Years	20	20	20	20	20	30	30
Interest on Bond	4%	0%	0%	0%	0%	0%	0%
Grant / Loan Forgiveness	0%	0%	0%	0%	90%	25%	25%
Design / Build	0%	0%	0%	0%	0%	21%	21%
Design / Build / Operate	0%	0%	0%	0%	0%	7%	7%
Septage Revenue (Annual)	\$0	\$0	\$584,000	\$584,000	\$584,000	\$584,000	\$584,000
Local Options Tax	0%	0%	0%	0%	0%	5%	5%
Total Equivalent Annual Cost	\$12,555,346	\$10,469,068	\$10,694,650	\$10,694,650	\$5,829,016	\$8,395,343	\$8,195,073
Capital Costs							
Downtown Area	\$48,009,870	\$48,009,870	\$48,509,870	\$48,509,870	\$4,850,987	\$29,511,954	\$39,243,499
Meetinghouse Pond Area	\$33,801,300	\$33,801,300	\$33,801,300	\$33,801,300	\$3,380,130	\$20,563,700	\$0
Non-Traditional Technology Area	\$23,357,230	\$23,357,230	\$23,357,230	\$23,357,230	\$2,335,723	\$17,517,923	\$24,464,168
Totals	\$105,168,400	\$105,168,400	\$105,668,400	\$105,668,400	\$10,566,840	\$67,593,576	\$63,707,667
Special Assessment / Benefit Fee (One Time Charge)							
Downtown Area - Per Parcel	\$0	\$0	\$0	\$142,228	\$14,223	\$65,371	\$144,879
Meetinghouse Pond Area - Per Parcel	\$0	\$0	\$0	\$92,976	\$9,298	\$42,734	\$0
Non-Traditional Technology Area - Per Parcel	\$0	\$0	\$0	\$4,586	\$459	\$2,598	\$3,629
Connection Charges (One Time Charge)							
Downtown Area (Included in Other Revenues)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Meetinghouse Pond Area (Included in Other Revenues)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-Traditional Technology Area	N/A	N/A	N/A	N/A	N/A	N/A	N/A
User Fees (Annual Charge)							
Downtown Area - Commercial	\$3,905	\$3,905	\$2,805	\$2,805	\$2,805	\$2,347	\$2,877
Downtown Area - Residential	\$3,905	\$3,905	\$2,805	\$2,805	\$2,805	\$2,347	\$1,553
Meetinghouse Pond Area	\$1,722	\$1,722	\$1,722	\$1,722	\$1,722	\$1,553	\$1,553
Non-Traditional Technology Area (O&M)	\$592	\$592	\$592	\$592	\$592	\$562	\$562
Non-Traditional Technology Area (Septic Impact Fee)	\$200	\$200	\$200	\$200	\$200	\$200	\$200
Property Tax (Annual Charge)							
Downtown Area	\$1,259	\$907	\$911	\$0	\$0	\$147	\$138
Meetinghouse Pond Area	\$1,259	\$907	\$911	\$0	\$0	\$147	\$138
Non-Traditional Technology Area	\$1,259	\$907	\$911	\$0	\$0	\$147	\$138
Total Annual Charge							
Downtown Area - Commercial	\$5,164	\$4,812	\$3,716	\$9,916	\$3,516	\$7,070	\$10,260
General influence of financial metric on average rate compared to Baseline (Downtown area):	N/A	-7%	-28%	92%	-32%	37%	99%
Downtown Area - Residential	\$5,164	\$4,812	\$3,716	\$9,916	\$3,516	\$3,802	\$1,691
General influence of financial metric on average rate compared to Baseline (Downtown area):	N/A	-7%	-28%	92%	-32%	-26%	-67%
Meetinghouse Pond Area	\$2,980	\$2,628	\$2,633	\$6,370	\$2,186	\$3,836	\$1,691
General influence of financial metric on average rate compared to Baseline (Meetinghouse Pond area):	N/A	-12%	-12%	114%	-27%	29%	-43%
Non-Traditional Technology Area	\$2,050	\$1,699	\$1,703	\$1,021	\$815	\$1,039	\$1,082
General influence of financial metric on average rate compared to Baseline (NT Technology area):	N/A	-17%	-17%	-50%	-60%	-49%	-47%

Annual Charges for All in Year One Scenario



Town of Orleans
Water Quality and Wastewater Planning Program
Customer Rate Scenarios

Compatible with Cost Estimates Version 28

Assumptions	Customer Rate Scenarios						
	Case 1 (Baseline)	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
	Capital - 100% Tax O&M&R&M - 100% User Fees Financing - Conventional	Same as Case 1 with Financing - 0% 20-year SRF	Same as Case 2 plus Septage Revenue	Same as Case 3, but Capital 100% Special Assessments	Same as Case 4 plus 90% Grant	Case 4 + 30-year SRF, 25% Grant, 21% D/B, 7% D/B/O, and Local Options Tax Savings, Capital 25% tax, and Downtown Capital Split 60%/40%	Same as Case 6, but grant applied to MH Pond capital and Residential Downtown Users Pay Residential Rate
Special Assessment	0%	0%	0%	100%	100%	75%	75%
Bond Years	20	20	20	20	20	30	30
Interest on Bond	4%	0%	0%	0%	0%	0%	0%
Grant / Loan Forgiveness	0%	0%	0%	0%	90%	25%	25%
Design / Build	0%	0%	0%	0%	0%	21%	21%
Design / Build / Operate	0%	0%	0%	0%	0%	7%	7%
Septage Revenue (Annual)	\$0	\$0	\$584,000	\$584,000	\$584,000	\$584,000	\$584,000
Local Options Tax	0%	0%	0%	0%	0%	5%	5%
Total Equivalent Annual Cost	\$6,247,824	\$5,181,138	\$5,410,638	\$5,410,638	\$2,866,389	\$2,933,888	\$4,137,555
Capital Costs							
Downtown Area	\$1,845,995	\$1,845,995	\$1,870,995	\$1,870,995	\$0	\$187,961	\$1,003,953
Meetinghouse Pond Area	\$62,805	\$62,805	\$62,805	\$62,805	\$0	\$9,426	\$0
Non-Traditional Technology Area	\$92,300	\$92,300	\$92,300	\$92,300	\$0	\$13,889	\$73,115
Totals	\$2,001,100	\$2,001,100	\$2,026,100	\$2,026,100	\$0	\$211,277	\$1,077,068
Special Assessment / Benefit Fee (One Time Charge)							
Downtown Area - Per Parcel	\$0	\$0	\$0	\$6,720	\$0	\$513	\$4,958
Meetinghouse Pond Area - Per Parcel	\$0	\$0	\$0	\$234	\$0	\$24	\$0
Non-Traditional Technology Area - Per Parcel	\$0	\$0	\$0	\$21	\$0	\$4	\$14
Connection Charges (One Time Charge)							
Downtown Area (Included in Other Revenues)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Meetinghouse Pond Area (Included in Other Revenues)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-Traditional Technology Area	N/A	N/A	N/A	N/A	N/A	N/A	N/A
User Fees (Annual Charge)							
Downtown Area - Commercial	\$3,041	\$3,041	\$1,940	\$1,940	\$1,940	\$1,575	\$2,625
Downtown Area - Residential	\$3,041	\$3,041	\$1,940	\$1,940	\$1,940	\$1,575	\$0
Meetinghouse Pond Area	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-Traditional Technology Area (O&M)	\$308	\$308	\$308	\$308	\$308	\$293	\$293
Non-Traditional Technology Area (Septic Impact Fee)	\$200	\$200	\$200	\$200	\$200	\$200	\$200
Property Tax (Annual Charge)							
Downtown Area	\$604	\$424	\$429	\$0	\$0	\$12	\$66
Meetinghouse Pond Area	\$604	\$424	\$429	\$0	\$0	\$12	\$0
Non-Traditional Technology Area	\$604	\$424	\$429	\$0	\$0	\$12	\$66
Total Annual Charge							
Downtown Area - Commercial	\$3,644	\$3,465	\$2,369	\$8,660	\$1,940	\$2,305	\$7,650
General influence of financial metric on average rate compared to Baseline (Downtown area):	N/A	-5%	-35%	138%	-47%	-37%	110%
Downtown Area - Residential	\$3,644	\$3,465	\$2,369	\$8,660	\$1,940	\$1,792	\$66
General influence of financial metric on average rate compared to Baseline (Downtown area):	N/A	-5%	-35%	138%	-47%	-51%	-98%
Meetinghouse Pond Area	\$604	\$424	\$429	\$234	\$0	\$36	\$0
General influence of financial metric on average rate compared to Baseline (Meetinghouse Pond area):	N/A	-30%	-29%	-61%	-100%	-94%	-100%
Non-Traditional Technology Area	\$1,112	\$932	\$937	\$529	\$508	\$508	\$573
General influence of financial metric on average rate compared to Baseline (NT Technology area):	N/A	-16%	-16%	-52%	-54%	-54%	-48%

Town of Orleans
Water Quality and Wastewater Planning Program
Customer Rate Scenarios

Compatible with Cost Estimates Version 28

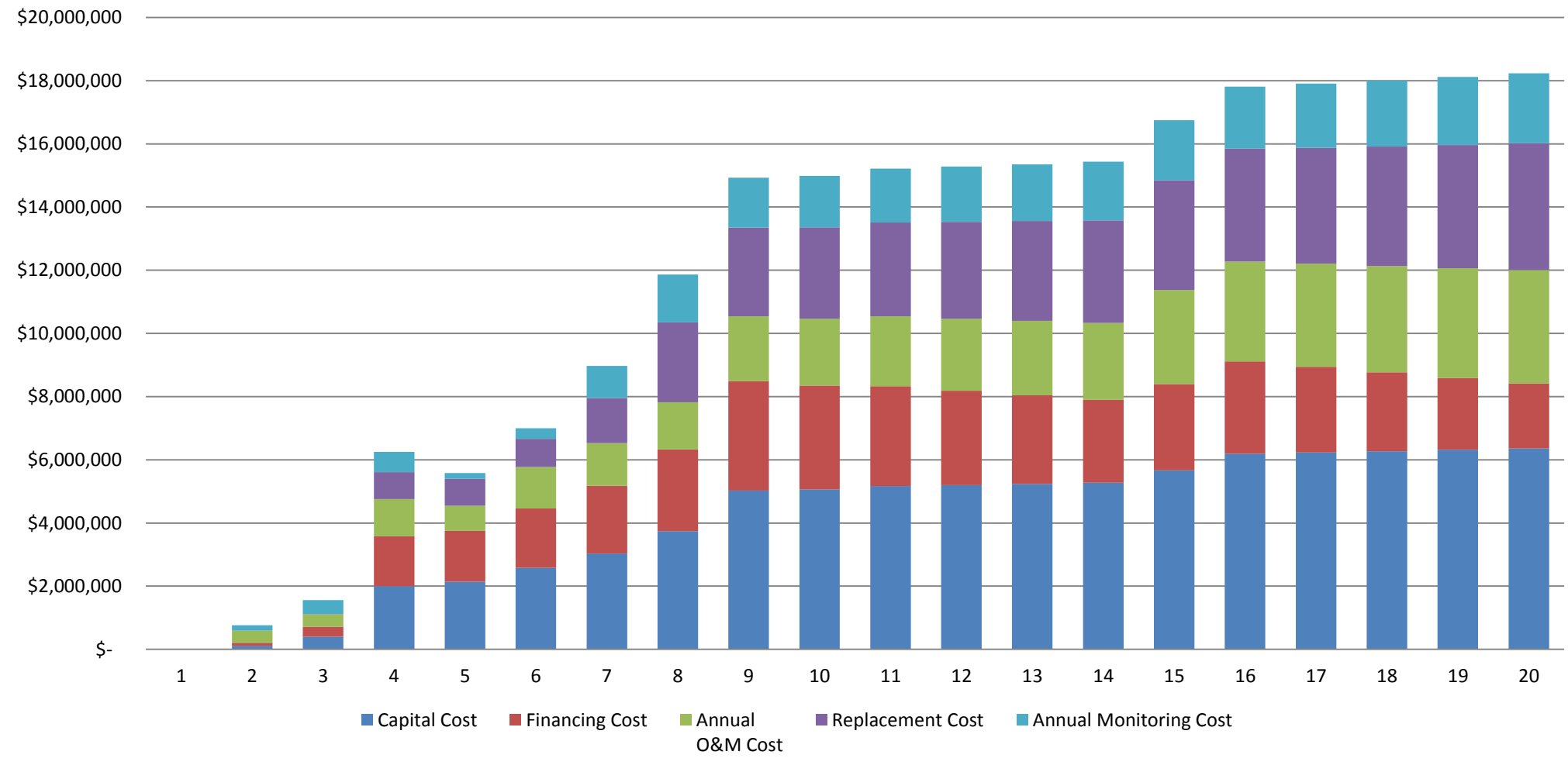
Assumptions	Customer Rate Scenarios						
	Case 1 (Baseline)	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
	Capital - 100% Tax O&M&R&M - 100% User Fees Financing - Conventional	Same as Case 1 with Financing - 0% 20-year SRF	Same as Case 2 plus Septage Revenue	Same as Case 3, but Capital 100% Special Assessments	Same as Case 4 plus 90% Grant	Case 4 + 30-year SRF, 25% Grant, 21% D/B, 7% D/B/O, and Local Options Tax Savings, Capital 25% tax, and Downtown Capital Split 60%/40%	Same as Case 6, but grant applied to MH Pond capital and Residential Downtown Users Pay Residential Rate
Special Assessment	0%	0%	0%	100%	100%	75%	75%
Bond Years	20	20	20	20	20	30	30
Interest on Bond	4%	0%	0%	0%	0%	0%	0%
Grant / Loan Forgiveness	0%	0%	0%	0%	90%	25%	25%
Design / Build	0%	0%	0%	0%	0%	21%	21%
Design / Build / Operate	0%	0%	0%	0%	0%	7%	7%
Septage Revenue (Annual)	\$0	\$0	\$584,000	\$584,000	\$584,000	\$584,000	\$584,000
Local Options Tax	0%	0%	0%	0%	0%	5%	5%
Total Equivalent Annual Cost	\$14,932,608	\$12,146,256	\$12,371,819	\$12,371,819	\$6,995,143	\$8,604,974	\$8,604,191
Capital Costs							
Downtown Area	\$2,229,364	\$2,229,364	\$2,254,364	\$2,254,364	\$14,539	\$399,755	\$1,232,149
Meetinghouse Pond Area	\$1,530,513	\$1,530,513	\$1,530,513	\$1,530,513	\$275,368	\$789,307	\$0
Non-Traditional Technology Area	\$1,267,108	\$1,267,108	\$1,267,108	\$1,267,108	\$7,000	\$797,095	\$872,722
Totals	\$5,026,985	\$5,026,985	\$5,051,985	\$5,051,985	\$296,907	\$1,986,157	\$2,104,871
Special Assessment / Benefit Fee (One Time Charge)							
Downtown Area - Per Parcel	\$0	\$0	\$0	\$6,991	\$49	\$897	\$5,020
Meetinghouse Pond Area - Per Parcel	\$0	\$0	\$0	\$5,097	\$873	\$2,157	\$0
Non-Traditional Technology Area - Per Parcel	\$0	\$0	\$0	\$267	\$2	\$132	\$145
Connection Charges (One Time Charge)							
Downtown Area (Included in Other Revenues)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Meetinghouse Pond Area (Included in Other Revenues)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-Traditional Technology Area	N/A	N/A	N/A	N/A	N/A	N/A	N/A
User Fees (Annual Charge)							
Downtown Area - Commercial	\$3,912	\$3,912	\$2,812	\$2,812	\$2,812	\$2,358	\$2,726
Downtown Area - Residential	\$3,912	\$3,912	\$2,812	\$2,812	\$2,812	\$2,358	\$1,805
Meetinghouse Pond Area	\$1,997	\$1,997	\$1,997	\$1,997	\$1,997	\$1,805	\$1,805
Non-Traditional Technology Area (O&M)	\$832	\$832	\$832	\$832	\$832	\$790	\$790
Non-Traditional Technology Area (Septic Impact Fee)	\$200	\$200	\$200	\$200	\$200	\$200	\$200
Property Tax (Annual Charge)							
Downtown Area	\$1,431	\$961	\$965	\$0	\$0	\$101	\$108
Meetinghouse Pond Area	\$1,431	\$961	\$965	\$0	\$0	\$101	\$0
Non-Traditional Technology Area	\$1,431	\$961	\$965	\$0	\$0	\$101	\$108
Total Annual Charge							
Downtown Area - Commercial	\$5,343	\$4,873	\$3,777	\$9,803	\$2,861	\$3,715	\$7,854
General influence of financial metric on average rate compared to Baseline (Downtown area):	N/A	-9%	-29%	83%	-46%	-30%	47%
Downtown Area - Residential	\$5,343	\$4,873	\$3,777	\$9,803	\$2,861	\$2,818	\$1,913
General influence of financial metric on average rate compared to Baseline (Downtown area):	N/A	-9%	-29%	83%	-46%	-47%	-64%
Meetinghouse Pond Area	\$3,428	\$2,958	\$2,962	\$7,094	\$2,871	\$4,063	\$1,805
General influence of financial metric on average rate compared to Baseline (Meetinghouse Pond area):	N/A	-14%	-14%	107%	-16%	19%	-47%
Non-Traditional Technology Area	\$2,463	\$1,993	\$1,997	\$1,299	\$1,034	\$1,224	\$1,243
General influence of financial metric on average rate compared to Baseline (NT Technology area):	N/A	-19%	-19%	-47%	-58%	-50%	-50%

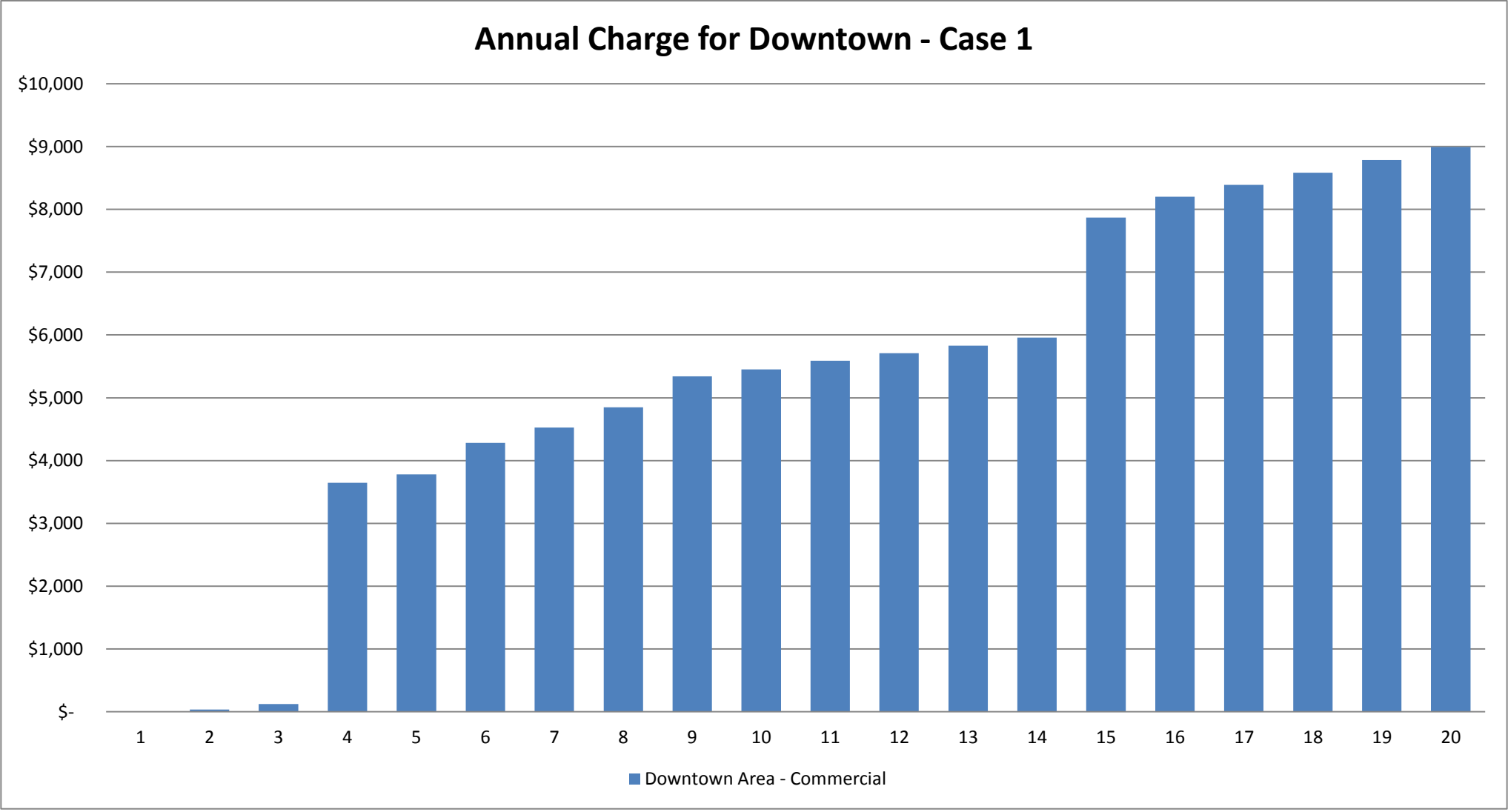
Town of Orleans
Water Quality and Wastewater Planning Program
Customer Rate Scenarios

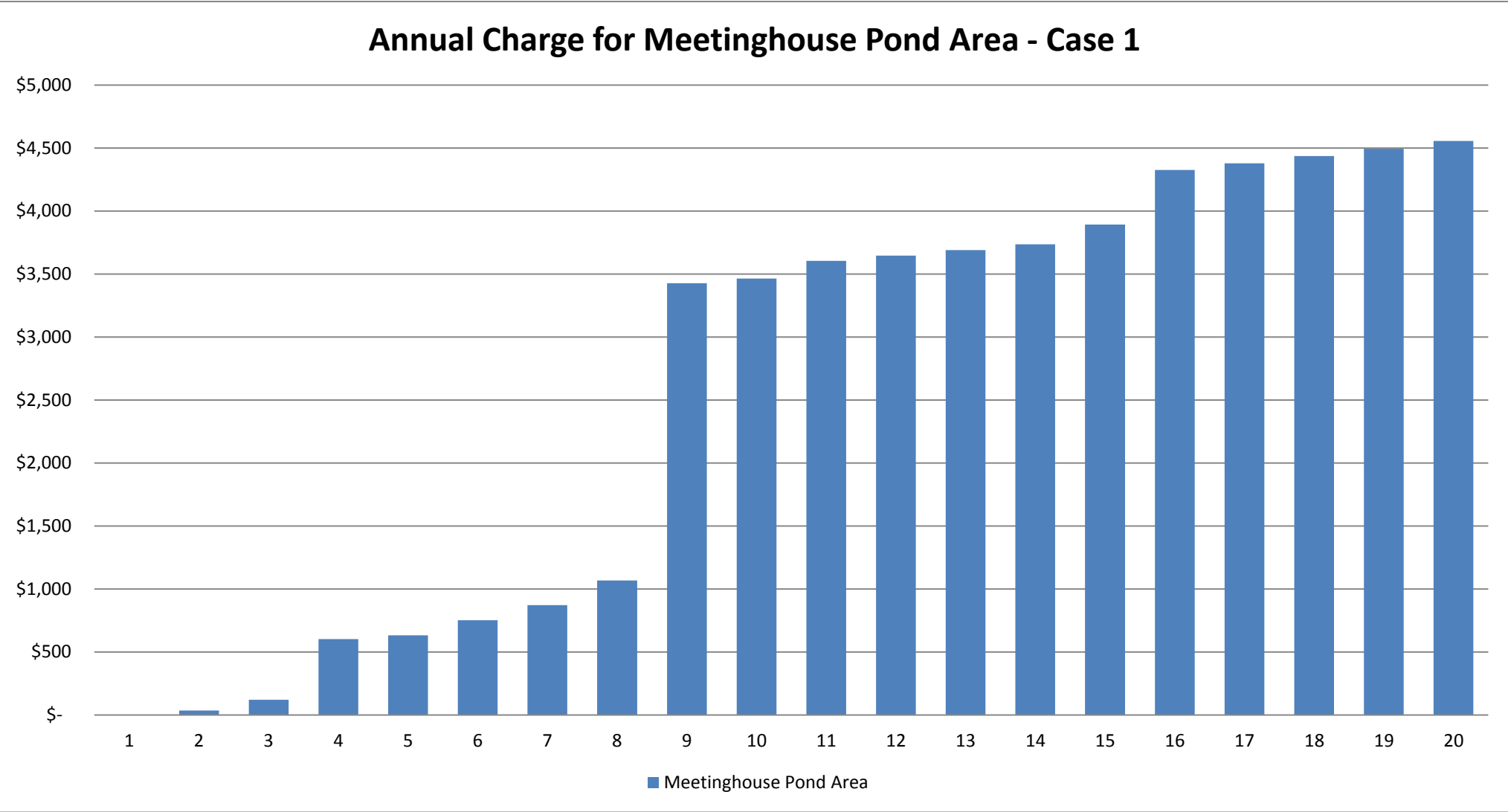
Compatible with Cost Estimates Version 28

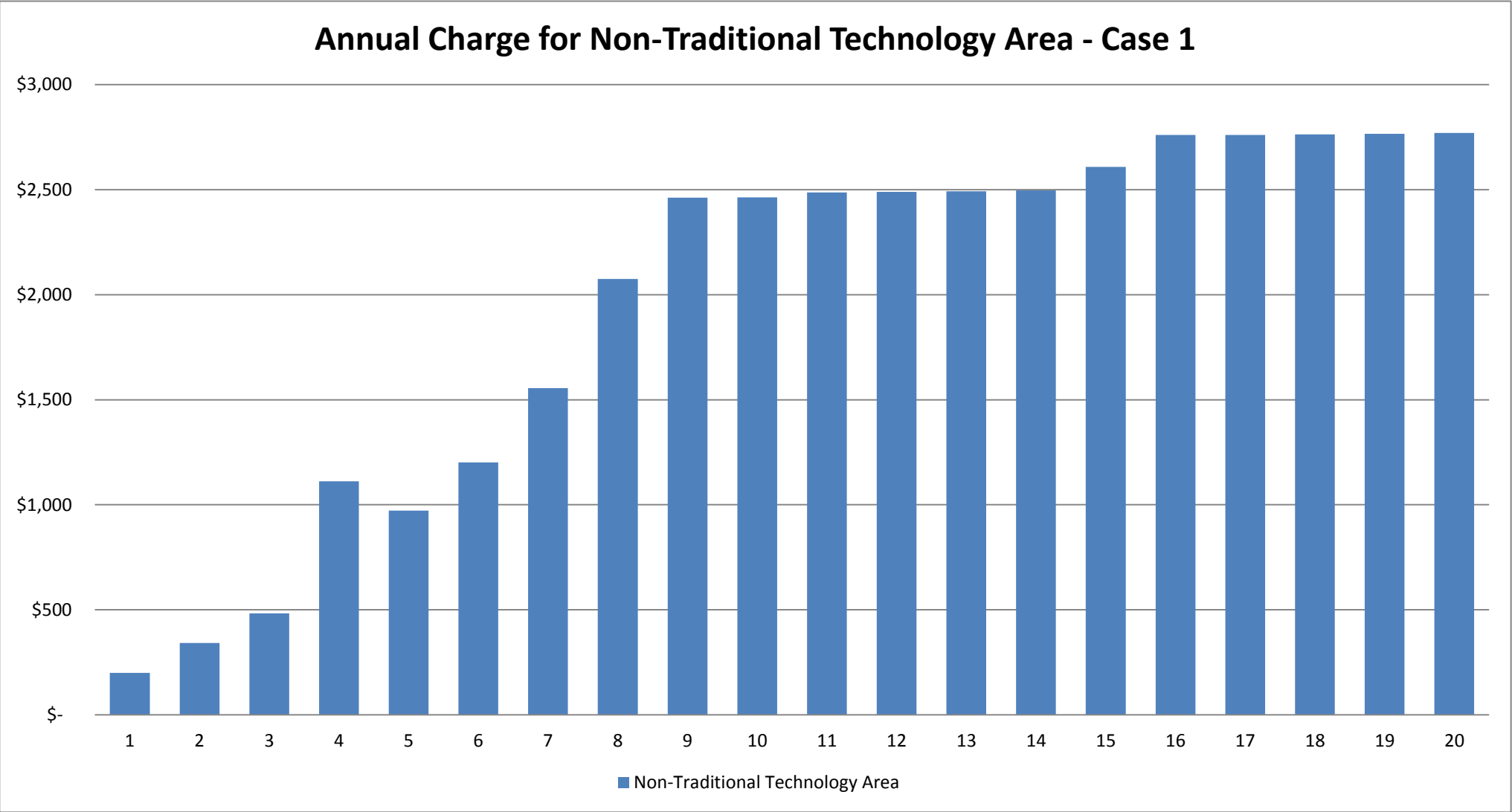
Assumptions	Customer Rate Scenarios						
	Case 1 (Baseline)	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
	Capital - 100% Tax O&M&R&M - 100% User Fees Financing - Conventional	Same as Case 1 with Financing - 0% 20-year SRF	Same as Case 2 plus Septage Revenue	Same as Case 3, but Capital 100% Special Assessments	Same as Case 4 plus 90% Grant	Case 4 + 30-year SRF, 25% Grant, 21% D/B, 7% D/B/O, and Local Options Tax Savings, Capital 25% tax, and Downtown Capital Split 60%/40%	Same as Case 6, but grant applied to MH Pond capital and Residential Downtown Users Pay Residential Rate
Special Assessment	0%	0%	0%	100%	100%	75%	75%
Bond Years	20	20	20	20	20	30	30
Interest on Bond	4%	0%	0%	0%	0%	0%	0%
Grant / Loan Forgiveness	0%	0%	0%	0%	90%	25%	25%
Design / Build	0%	0%	0%	0%	0%	21%	21%
Design / Build / Operate	0%	0%	0%	0%	0%	7%	7%
Septage Revenue (Annual)	\$0	\$0	\$584,000	\$584,000	\$584,000	\$584,000	\$584,000
Local Options Tax	0%	0%	0%	0%	0%	5%	5%
Total Equivalent Annual Cost	\$16,750,172	\$14,397,534	\$14,622,871	\$14,622,871	\$9,570,582	\$10,581,579	\$10,677,743
Capital Costs							
Downtown Area	\$2,681,807	\$2,681,807	\$2,706,807	\$2,706,807	\$466,981	\$651,602	\$1,506,494
Meetinghouse Pond Area	\$1,669,025	\$1,669,025	\$1,669,025	\$1,669,025	\$413,880	\$871,706	\$0
Non-Traditional Technology Area	\$1,313,747	\$1,313,747	\$1,313,747	\$1,313,747	\$53,639	\$828,187	\$926,312
Totals	\$5,664,579	\$5,664,579	\$5,689,579	\$5,689,579	\$934,501	\$2,351,496	\$2,432,806
Special Assessment / Benefit Fee (One Time Charge)							
Downtown Area - Per Parcel	\$0	\$0	\$0	\$8,257	\$1,537	\$1,546	\$6,051
Meetinghouse Pond Area - Per Parcel	\$0	\$0	\$0	\$4,817	\$1,142	\$1,976	\$0
Non-Traditional Technology Area - Per Parcel	\$0	\$0	\$0	\$268	\$11	\$133	\$149
Connection Charges (One Time Charge)							
Downtown Area (Included in Other Revenues)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Meetinghouse Pond Area (Included in Other Revenues)	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Non-Traditional Technology Area	N/A	N/A	N/A	N/A	N/A	N/A	N/A
User Fees (Annual Charge)							
Downtown Area - Commercial	\$6,457	\$6,457	\$5,356	\$5,356	\$5,356	\$4,641	\$6,242
Downtown Area - Residential	\$6,457	\$6,457	\$5,356	\$5,356	\$5,356	\$4,641	\$2,240
Meetinghouse Pond Area	\$2,477	\$2,477	\$2,477	\$2,477	\$2,477	\$2,240	\$2,240
Non-Traditional Technology Area (O&M)	\$993	\$993	\$993	\$993	\$993	\$944	\$944
Non-Traditional Technology Area (Septic Impact Fee)	\$200	\$200	\$200	\$200	\$200	\$200	\$200
Property Tax (Annual Charge)							
Downtown Area	\$1,415	\$1,019	\$1,023	\$0	\$0	\$111	\$122
Meetinghouse Pond Area	\$1,415	\$1,019	\$1,023	\$0	\$0	\$111	\$0
Non-Traditional Technology Area	\$1,415	\$1,019	\$1,023	\$0	\$0	\$111	\$122
Total Annual Charge							
Downtown Area - Commercial	\$7,872	\$7,475	\$6,379	\$13,613	\$6,893	\$6,916	\$12,415
General influence of financial metric on average rate compared to Baseline (Downtown area):	N/A	-5%	-19%	73%	-12%	-12%	58%
Downtown Area - Residential	\$7,872	\$7,475	\$6,379	\$13,613	\$6,893	\$5,370	\$2,362
General influence of financial metric on average rate compared to Baseline (Downtown area):	N/A	-5%	-19%	73%	-12%	-32%	-70%
Meetinghouse Pond Area	\$3,893	\$3,496	\$3,500	\$7,294	\$3,620	\$4,327	\$2,240
General influence of financial metric on average rate compared to Baseline (Meetinghouse Pond area):	N/A	-10%	-10%	87%	-7%	11%	-42%
Non-Traditional Technology Area	\$2,609	\$2,212	\$2,217	\$1,461	\$1,204	\$1,388	\$1,415
General influence of financial metric on average rate compared to Baseline (NT Technology area):	N/A	-15%	-15%	-44%	-54%	-47%	-46%

Program Costs for Case 1

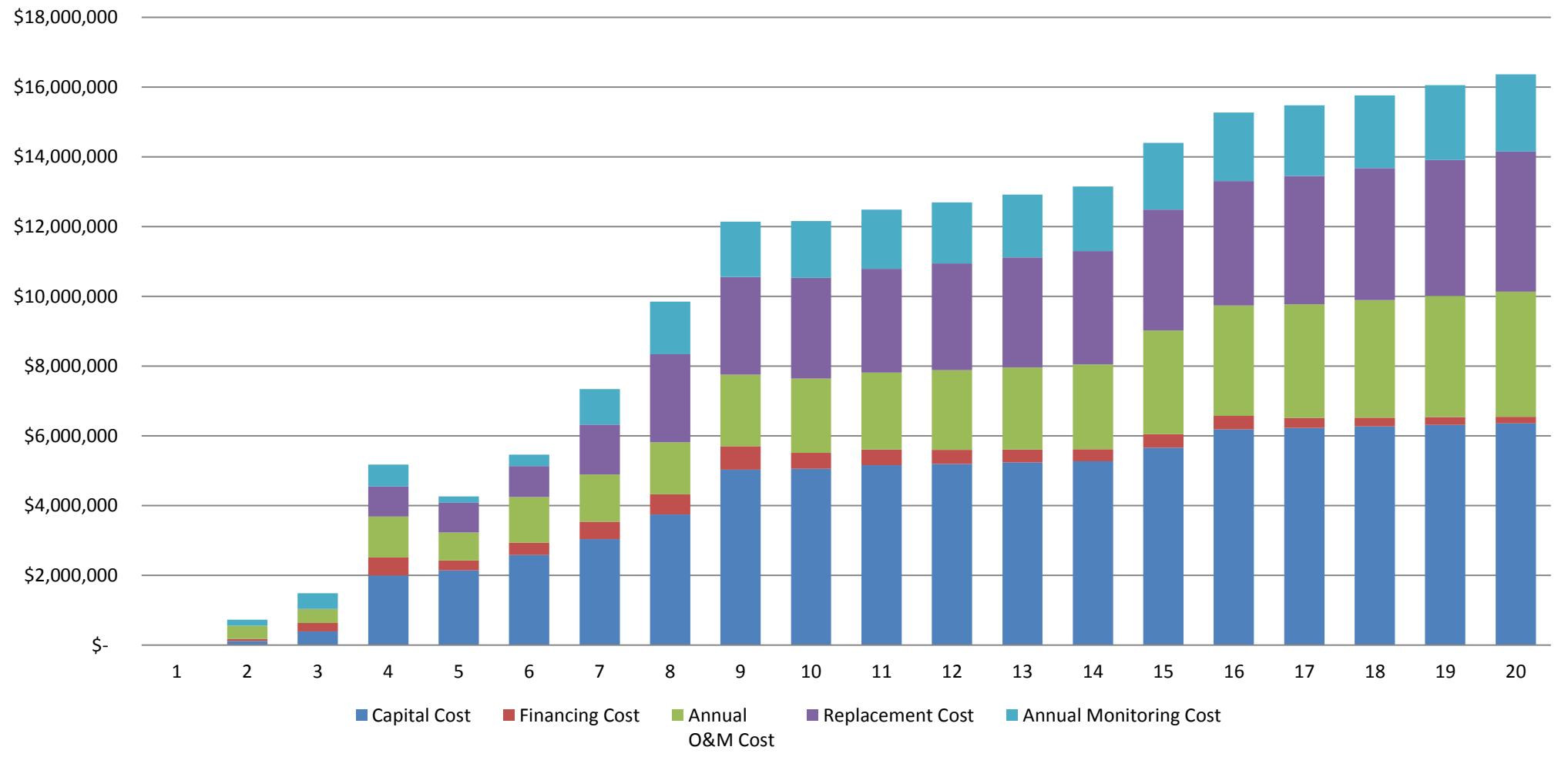


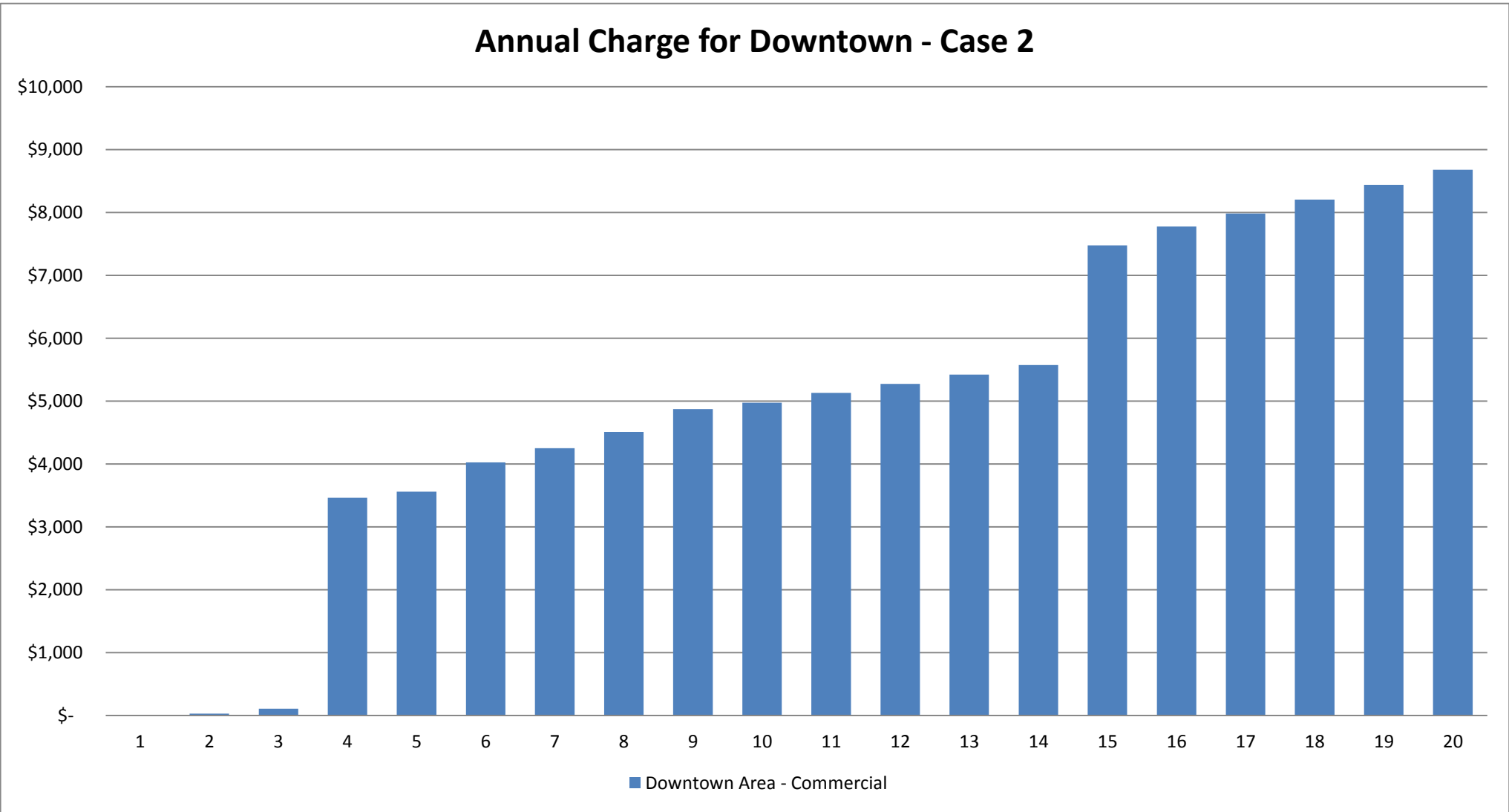


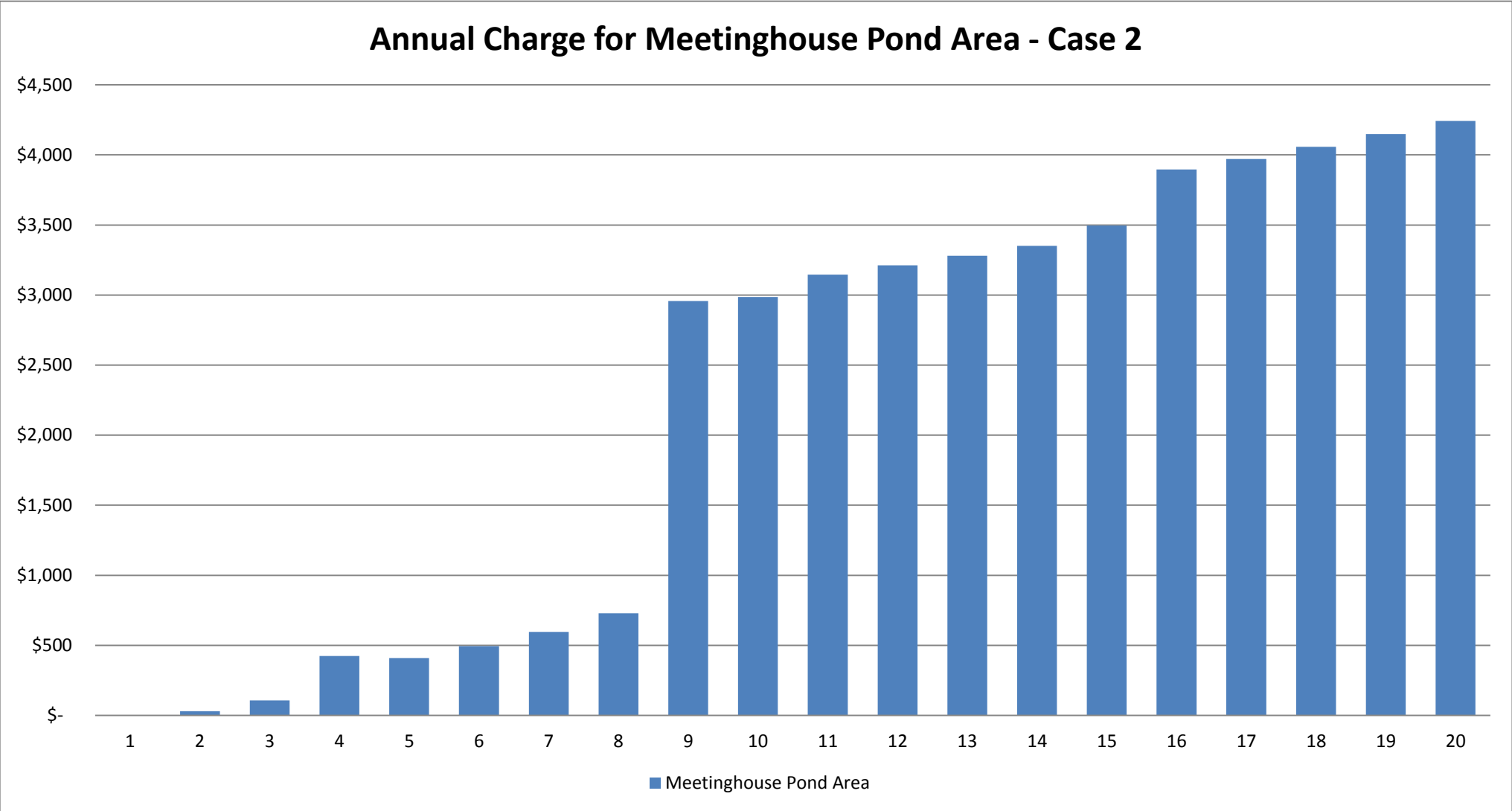


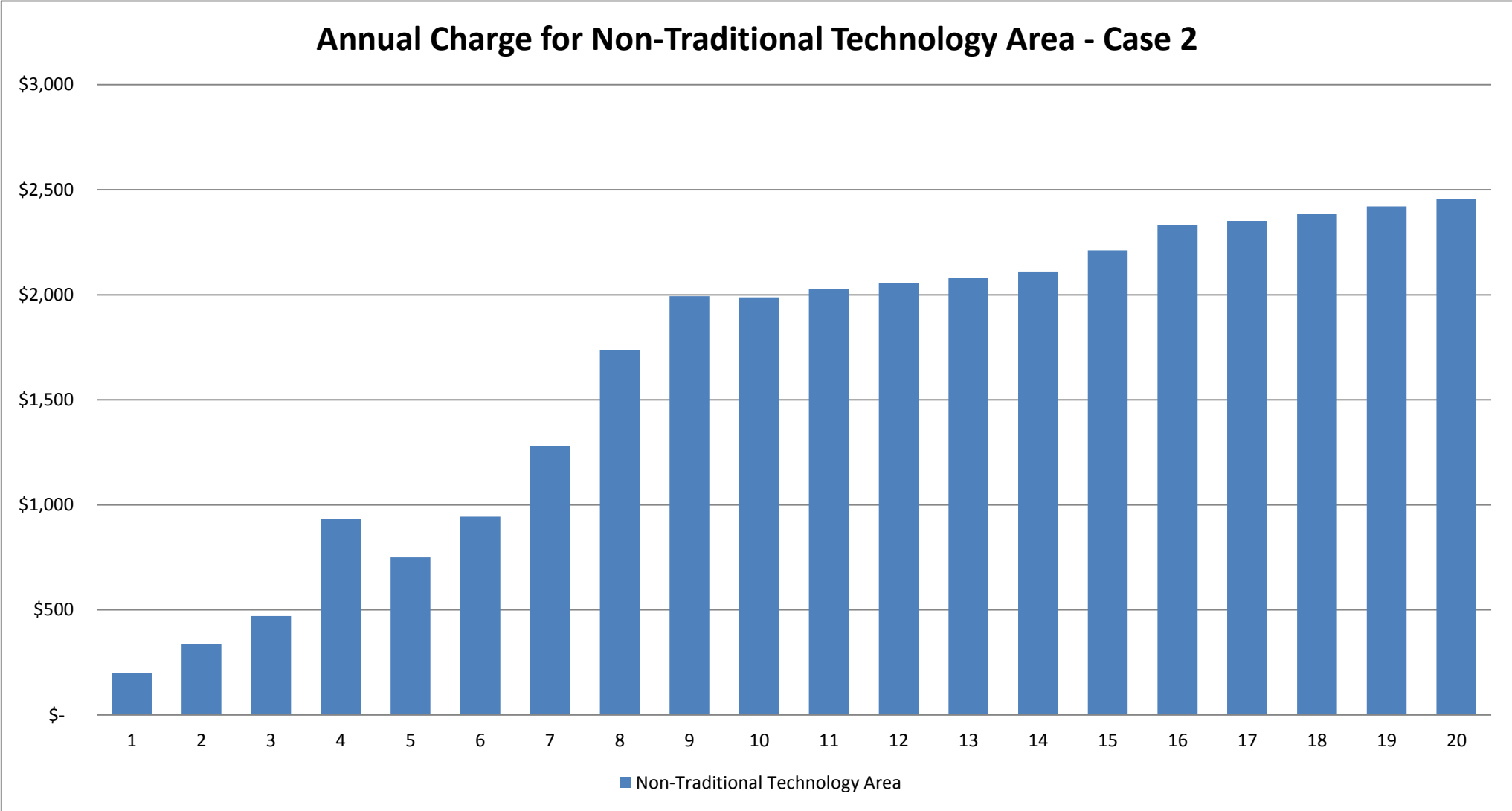


Program Costs for Case 2

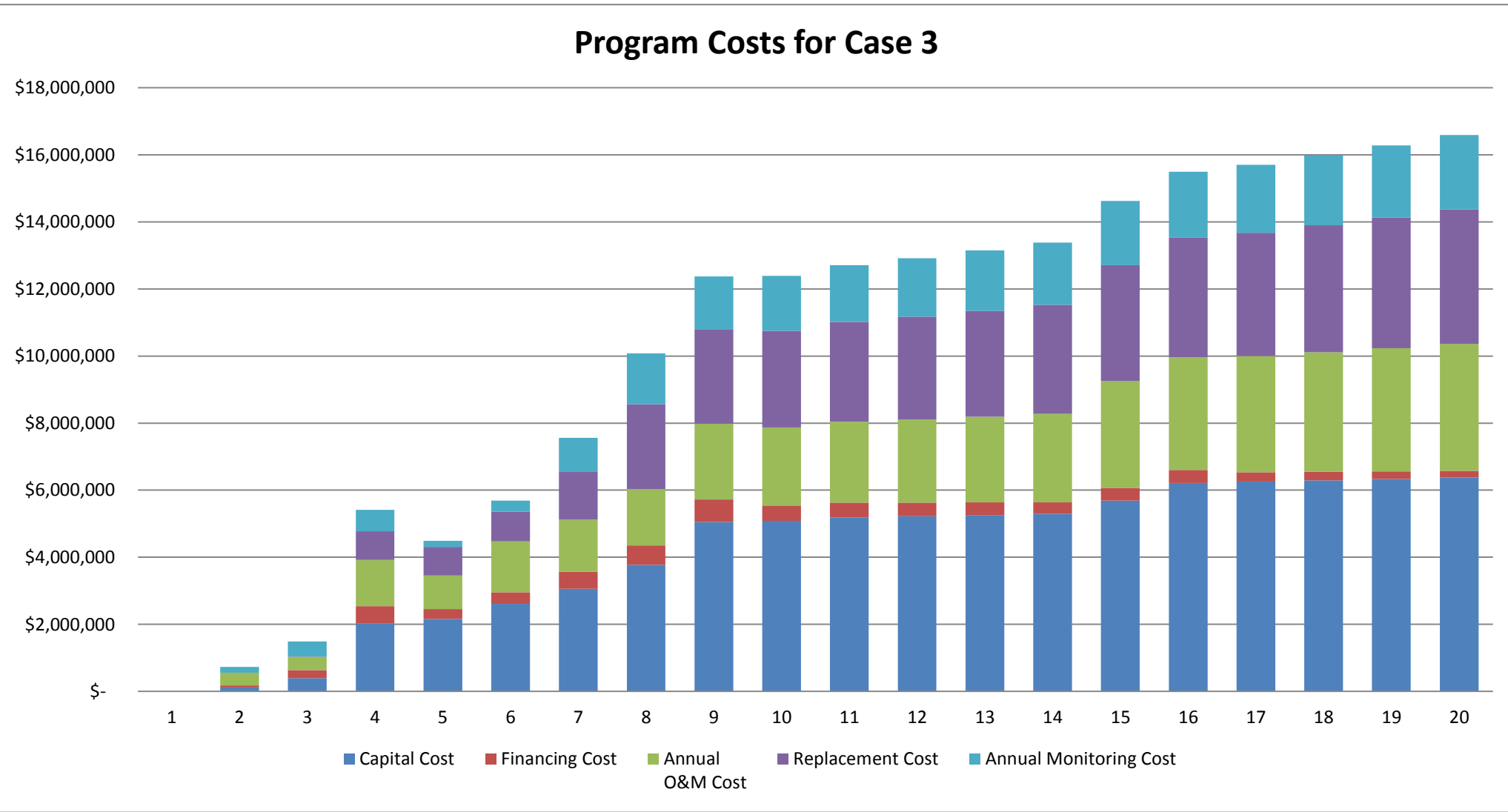


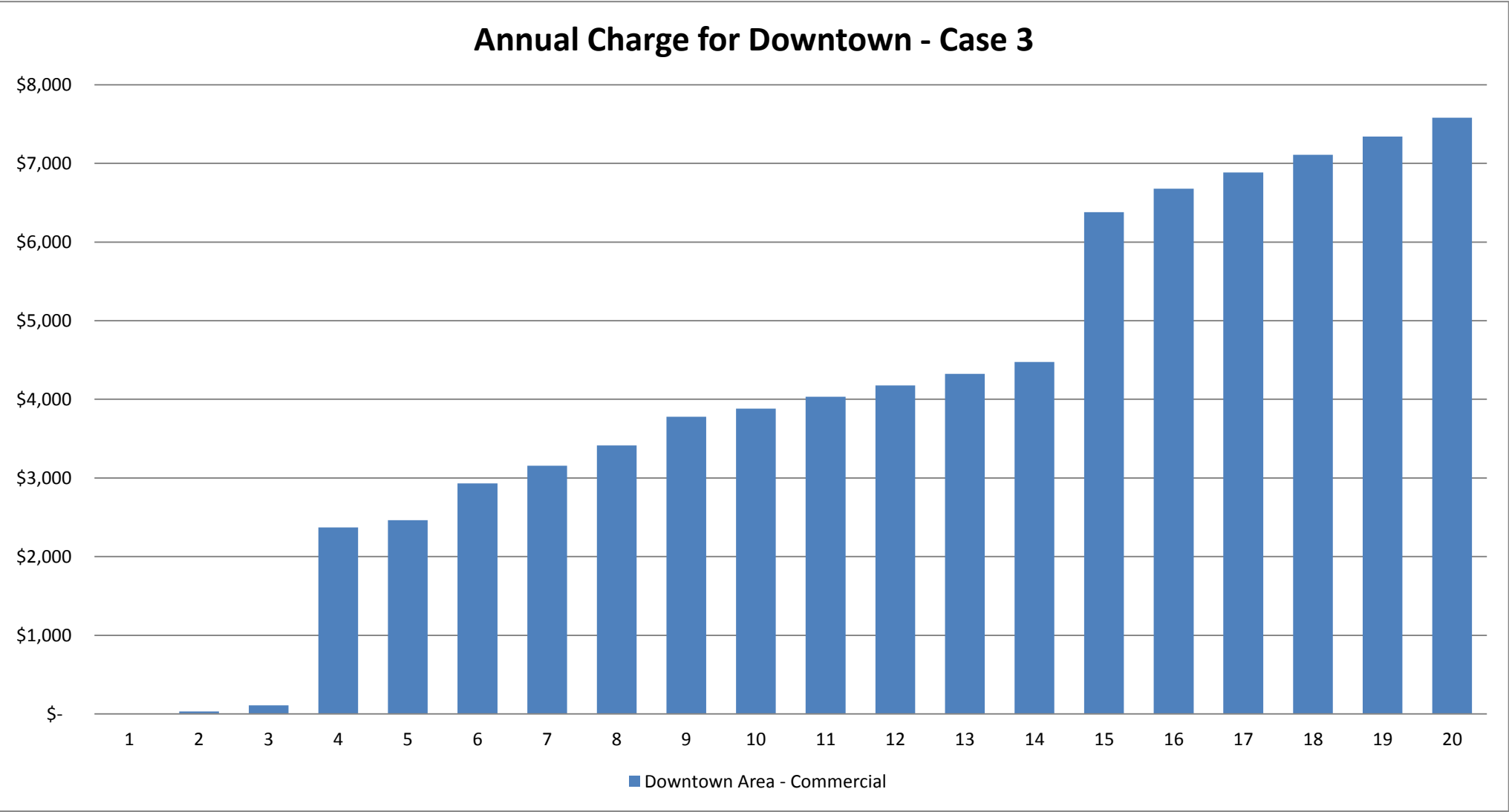


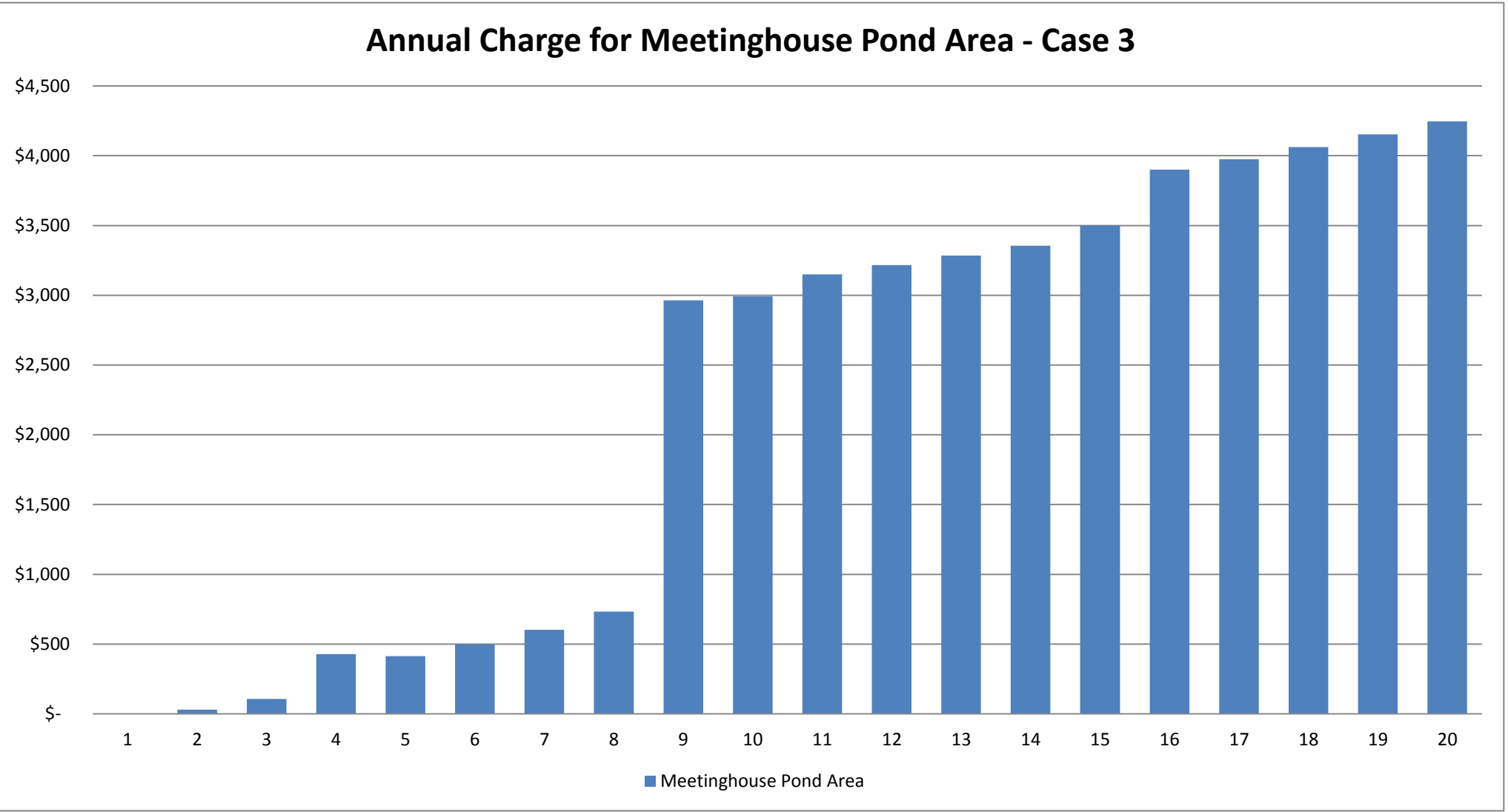


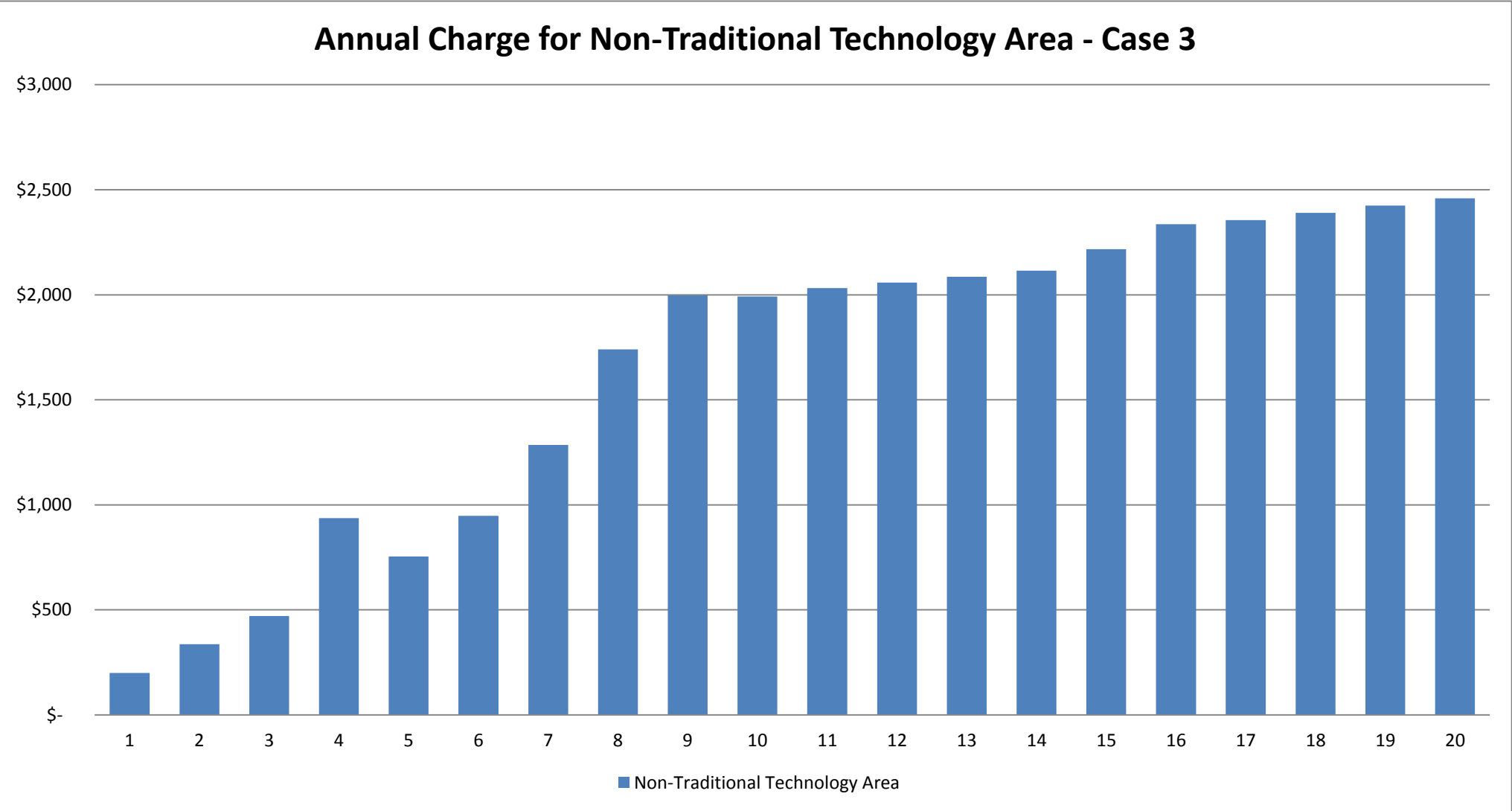


Program Costs for Case 3

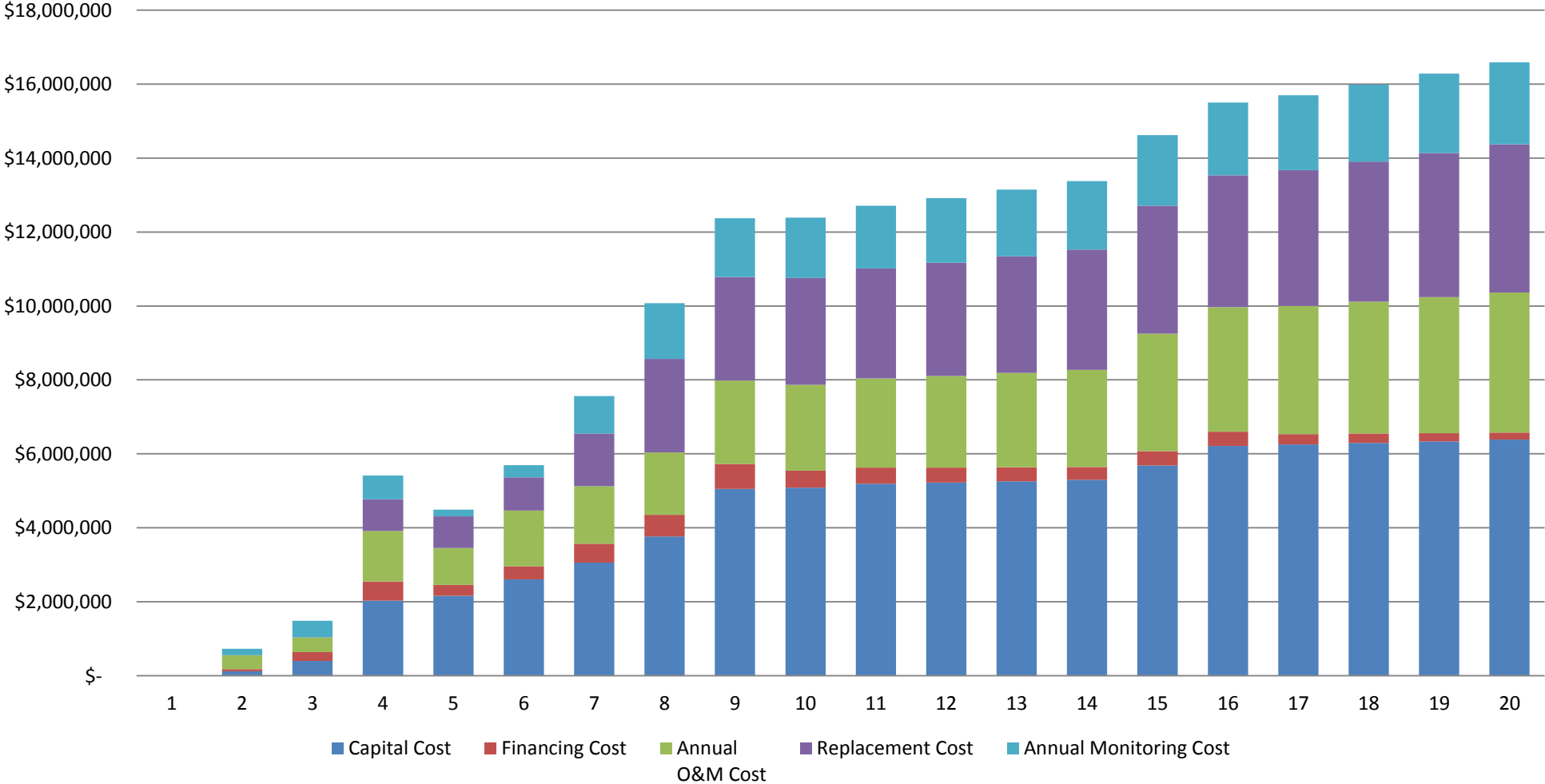




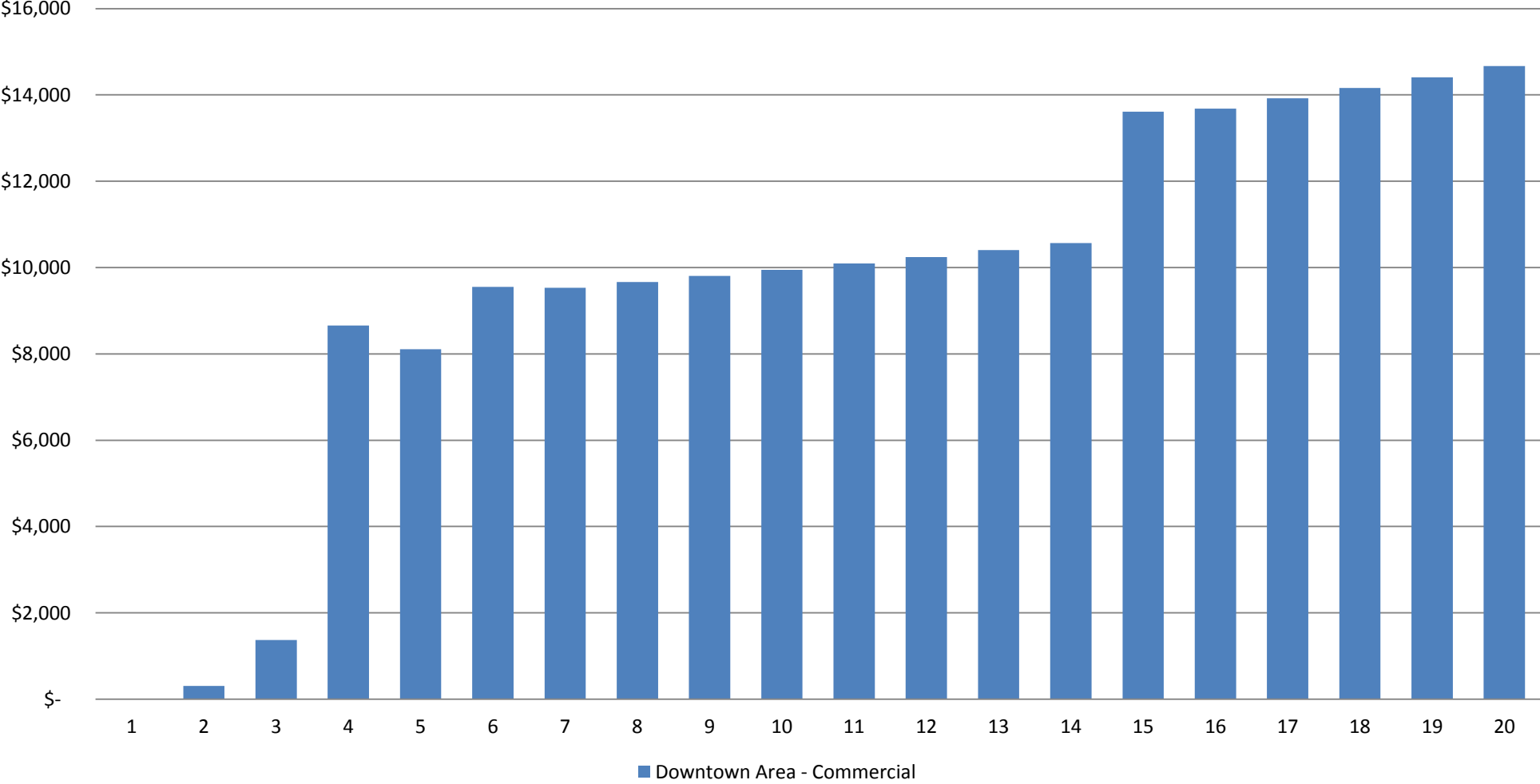


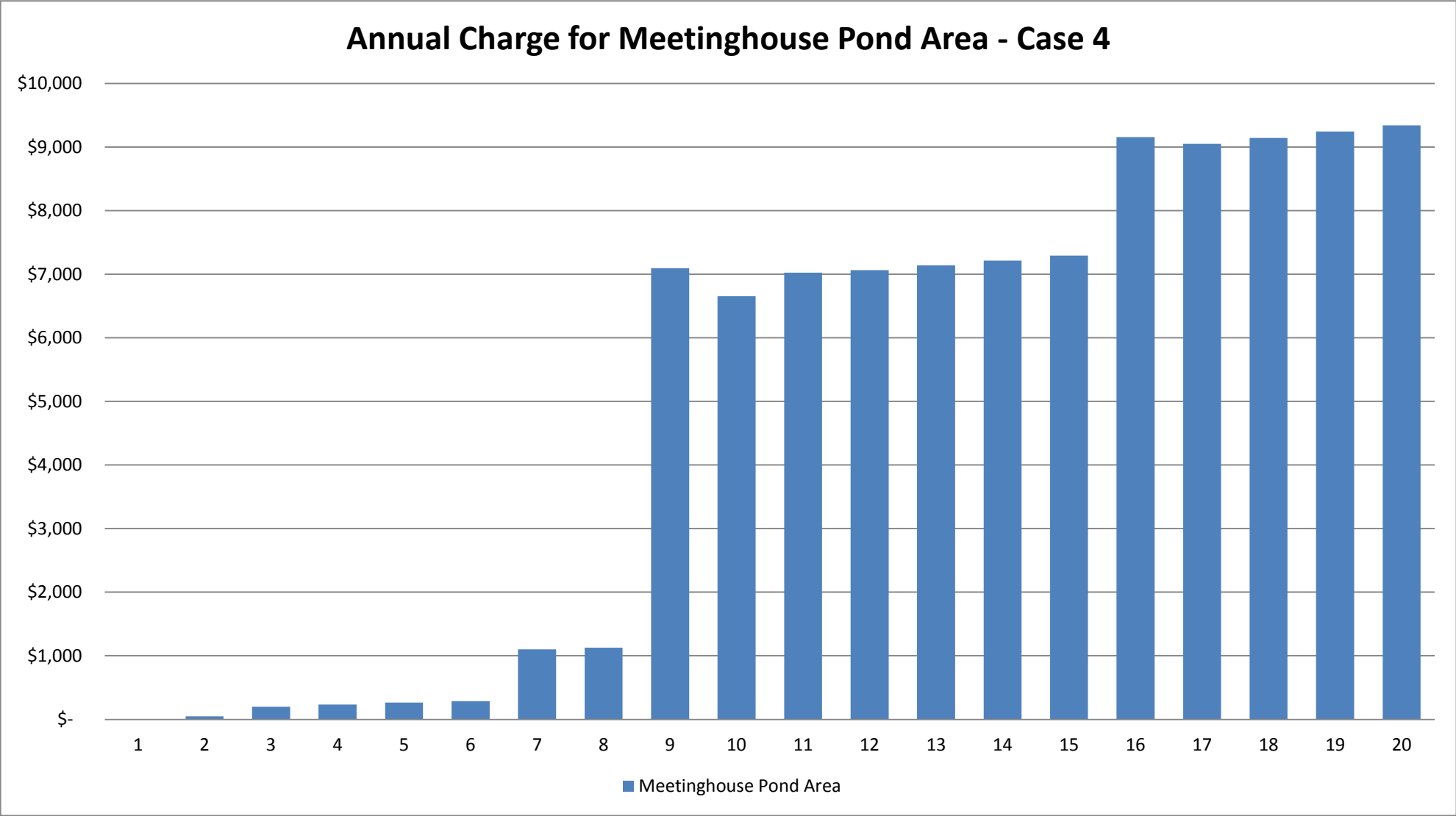


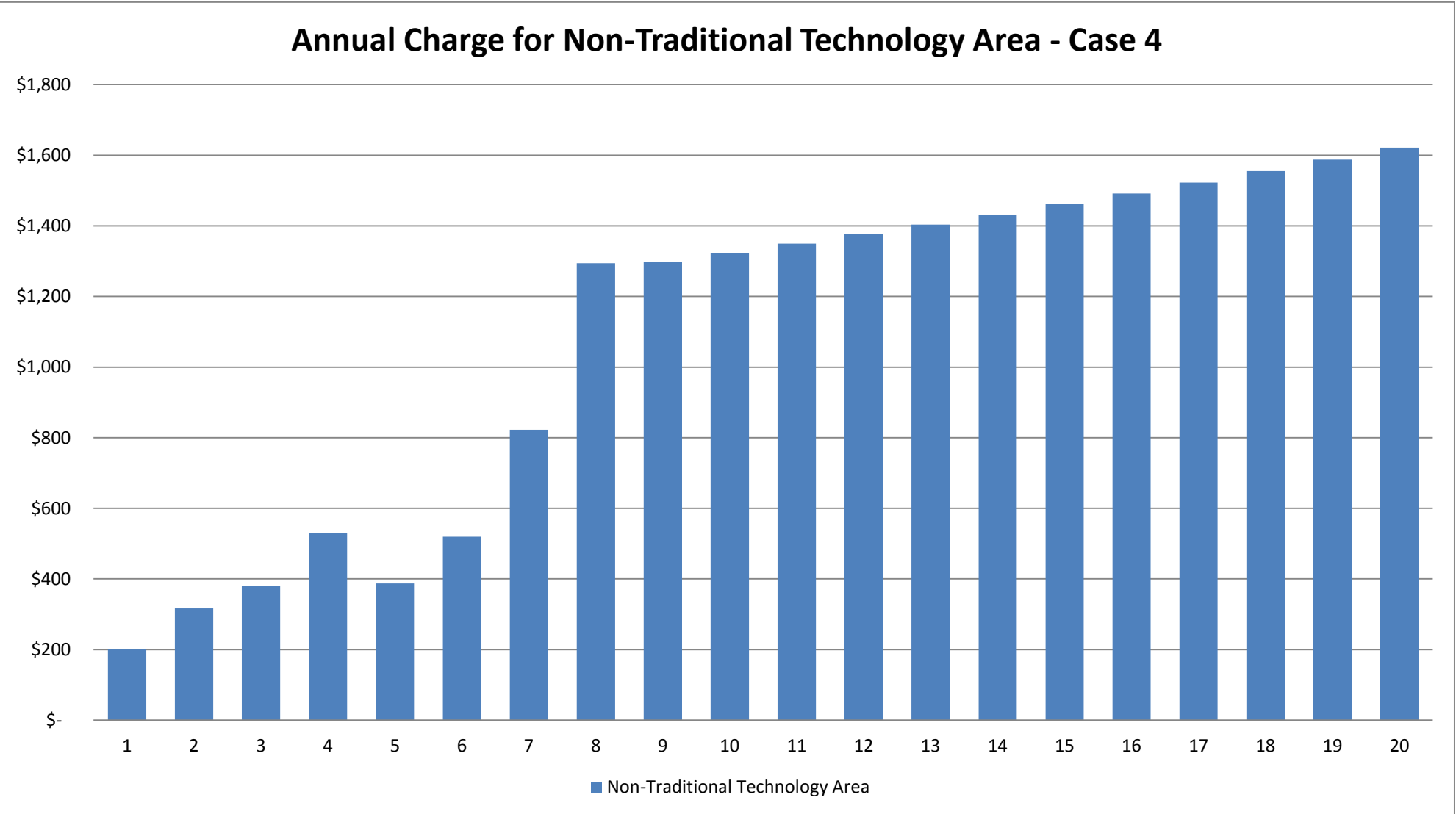
Program Costs for Case 4



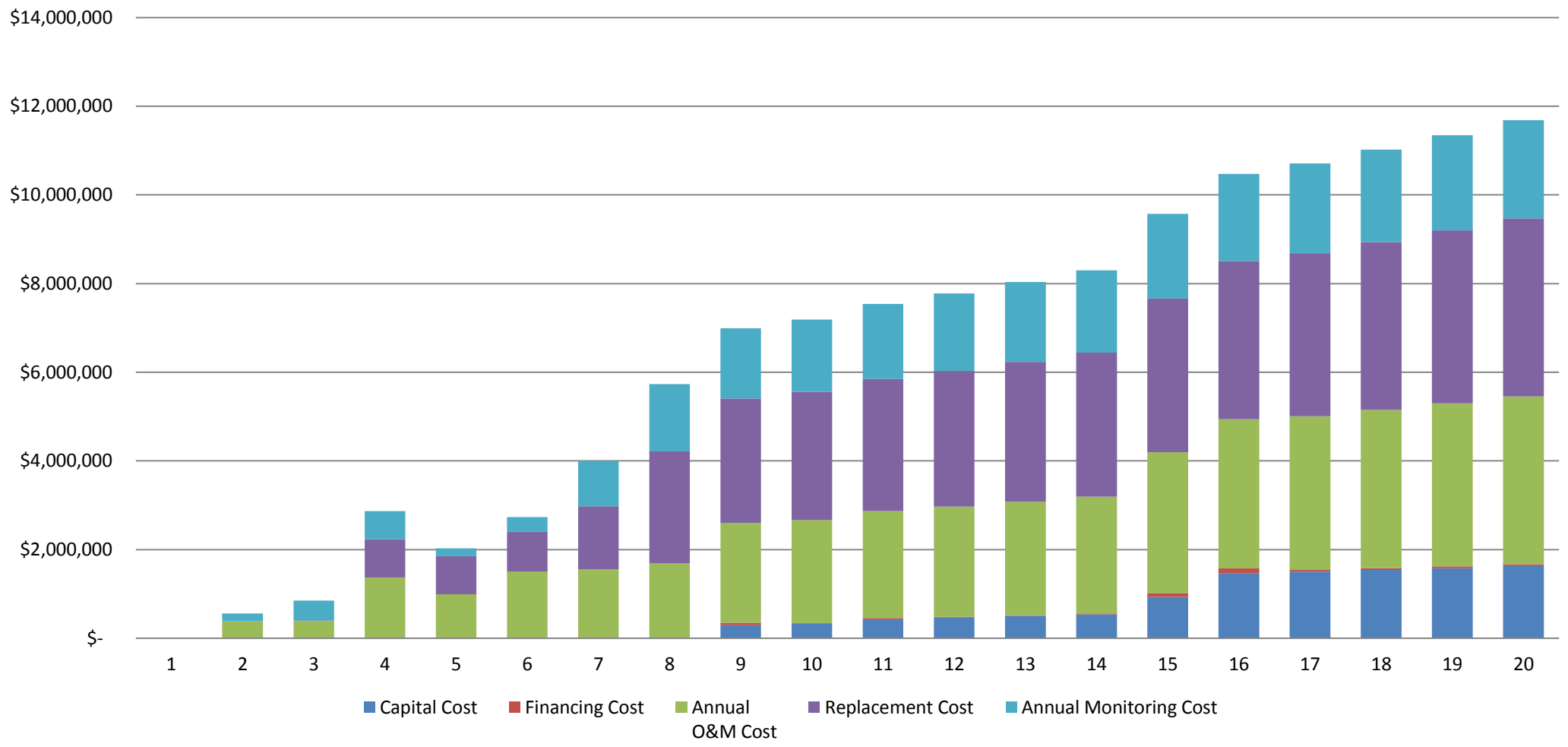
Annual Charge for Downtown - Case 4



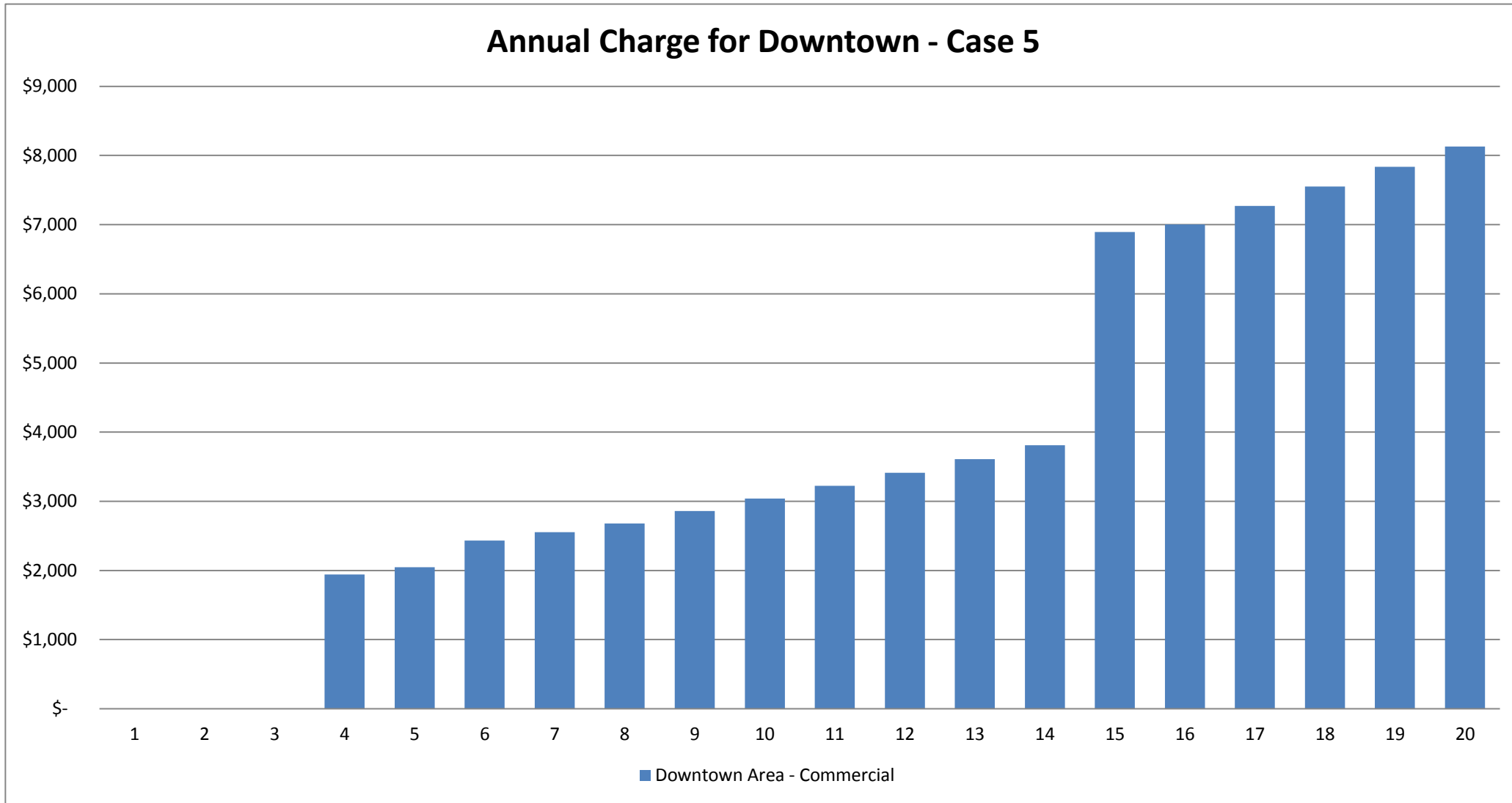


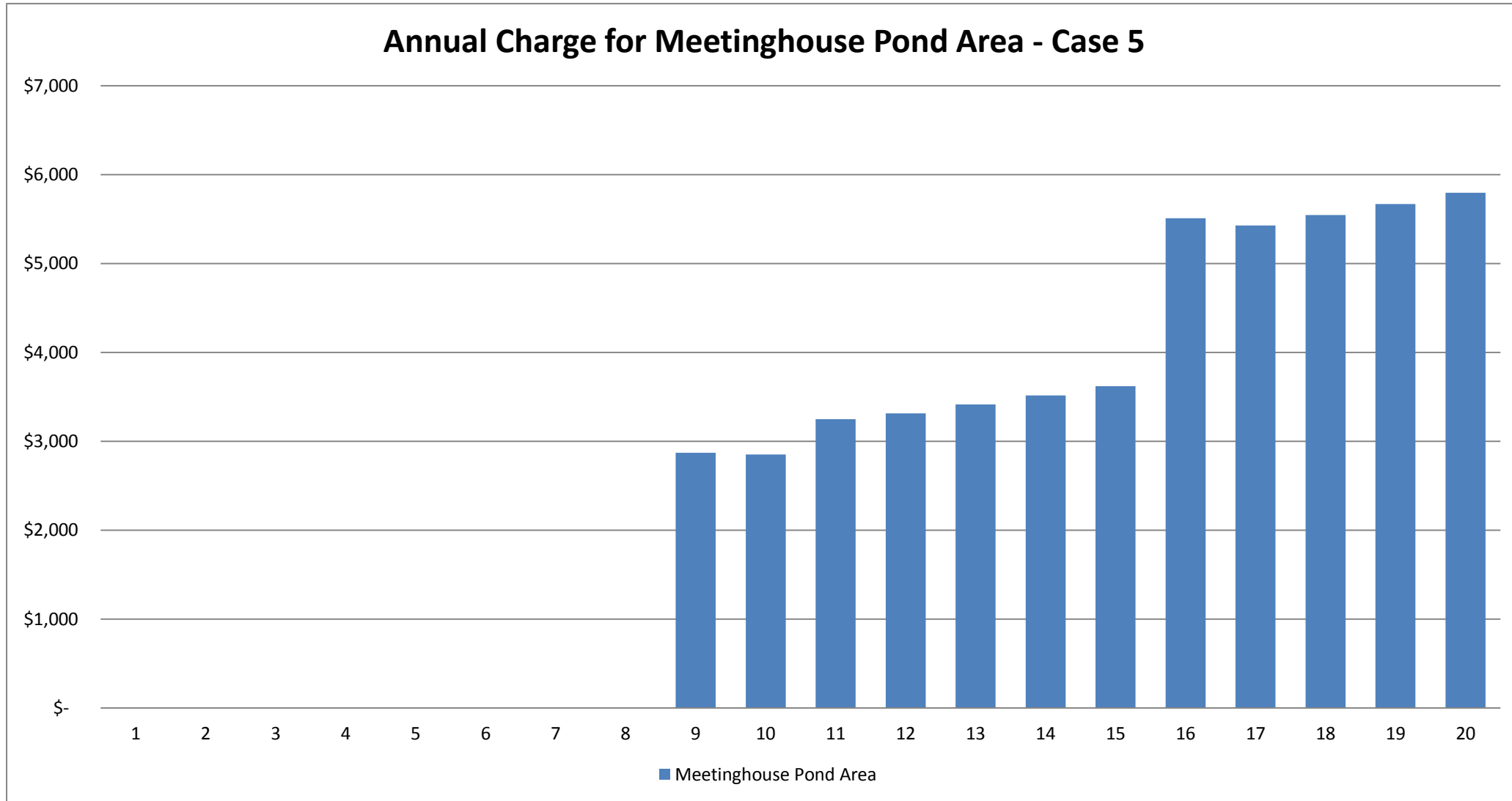


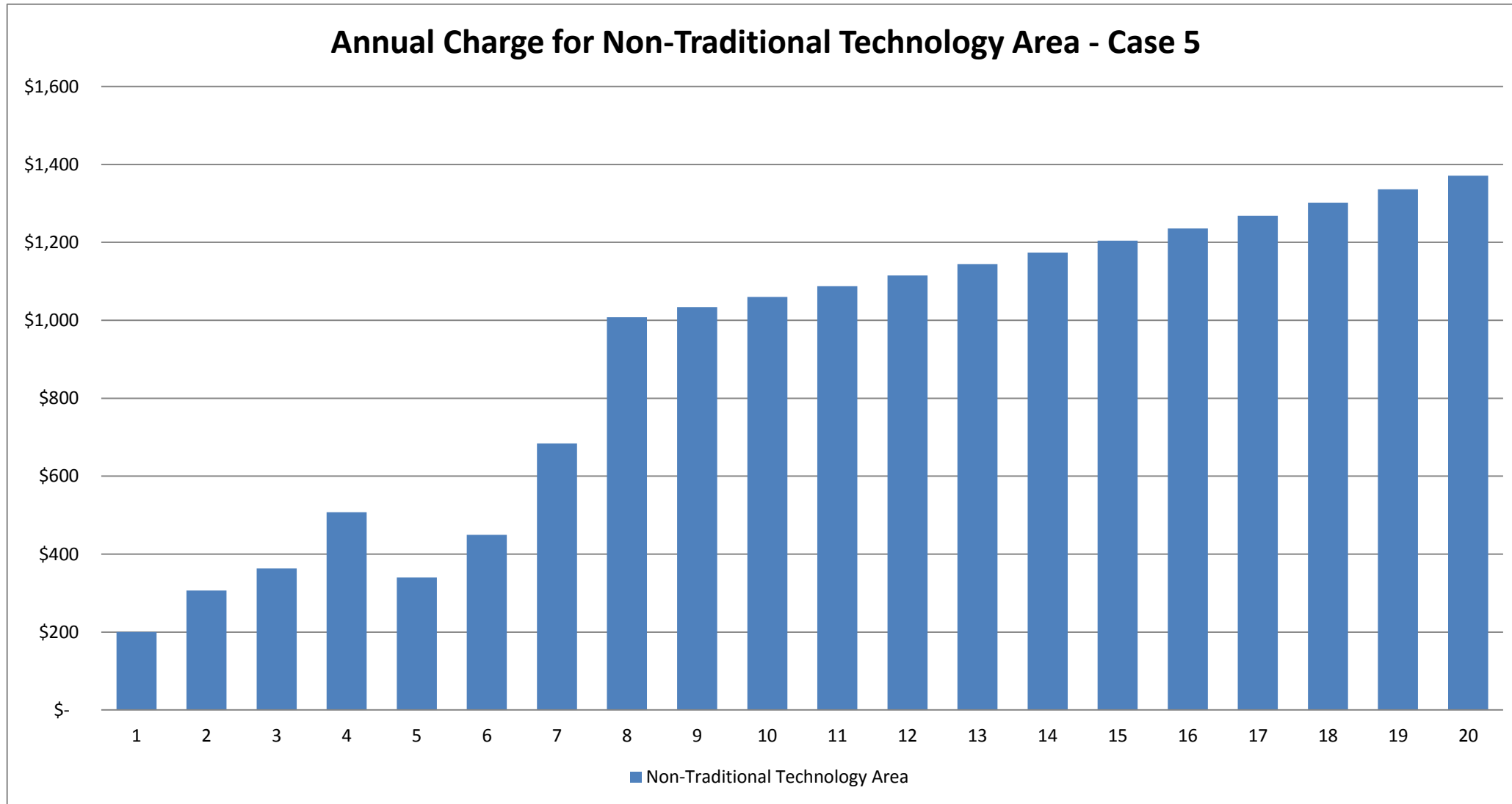
Program Costs for Case 5



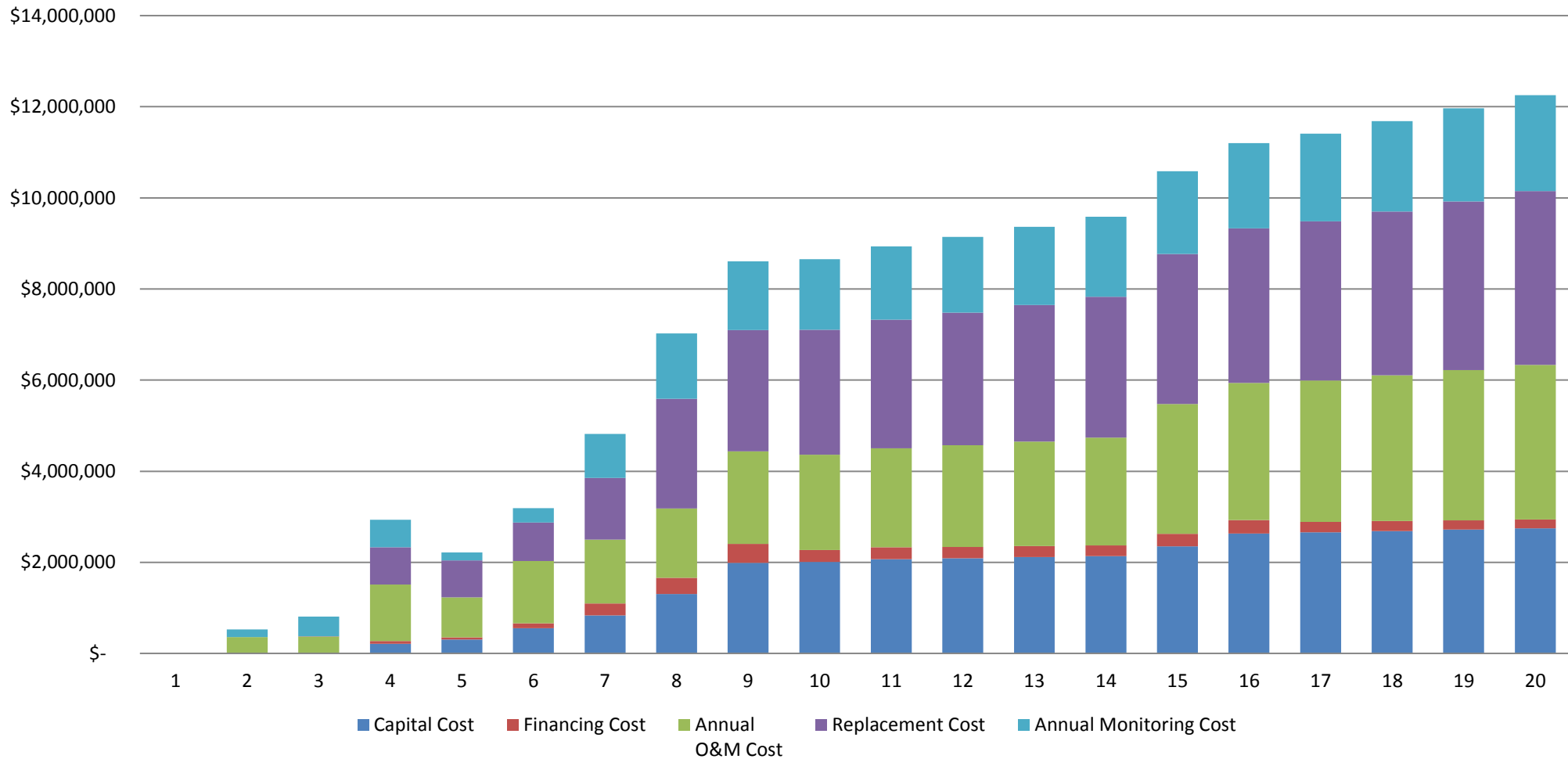
Annual Charge for Downtown - Case 5

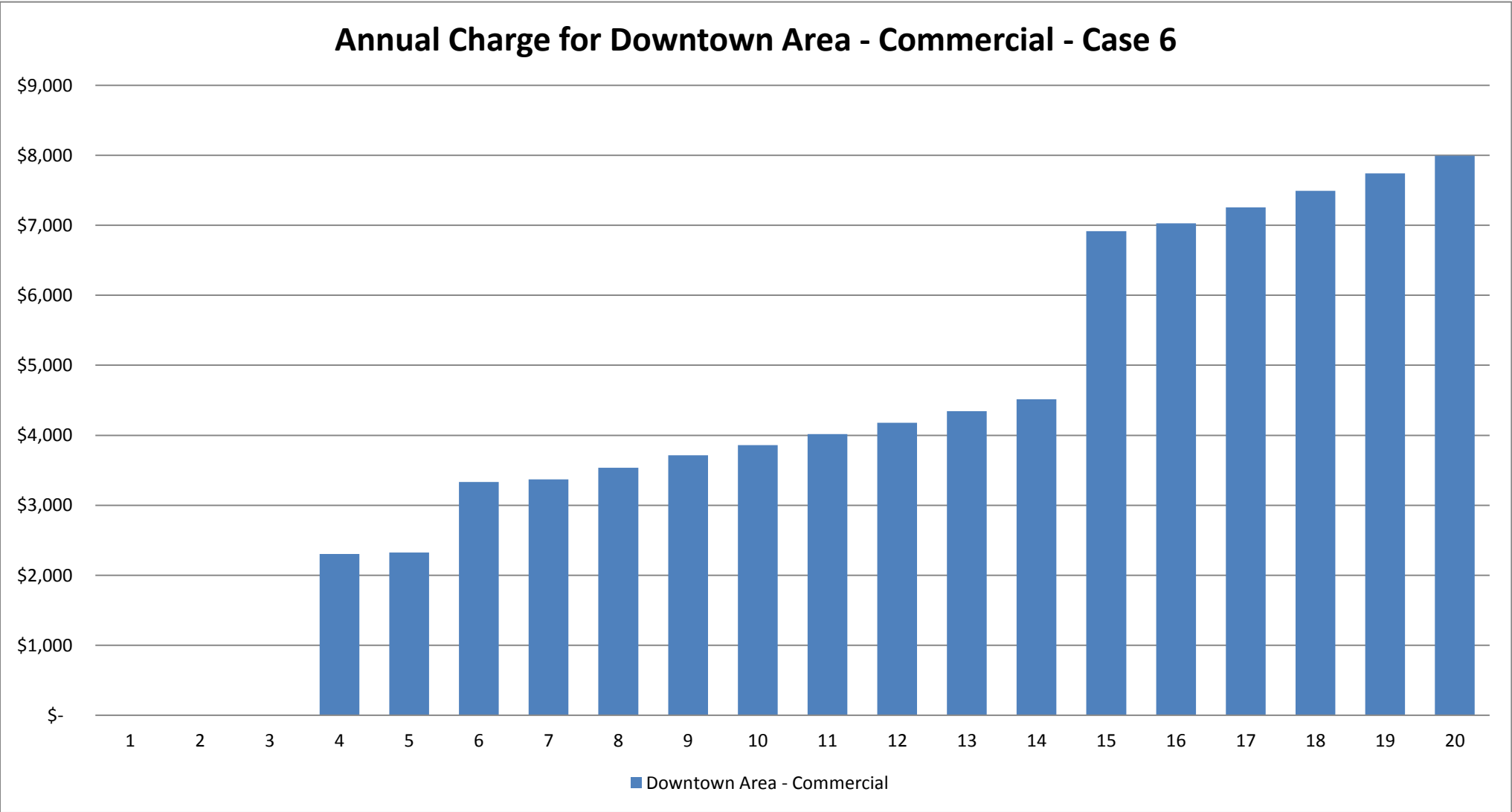


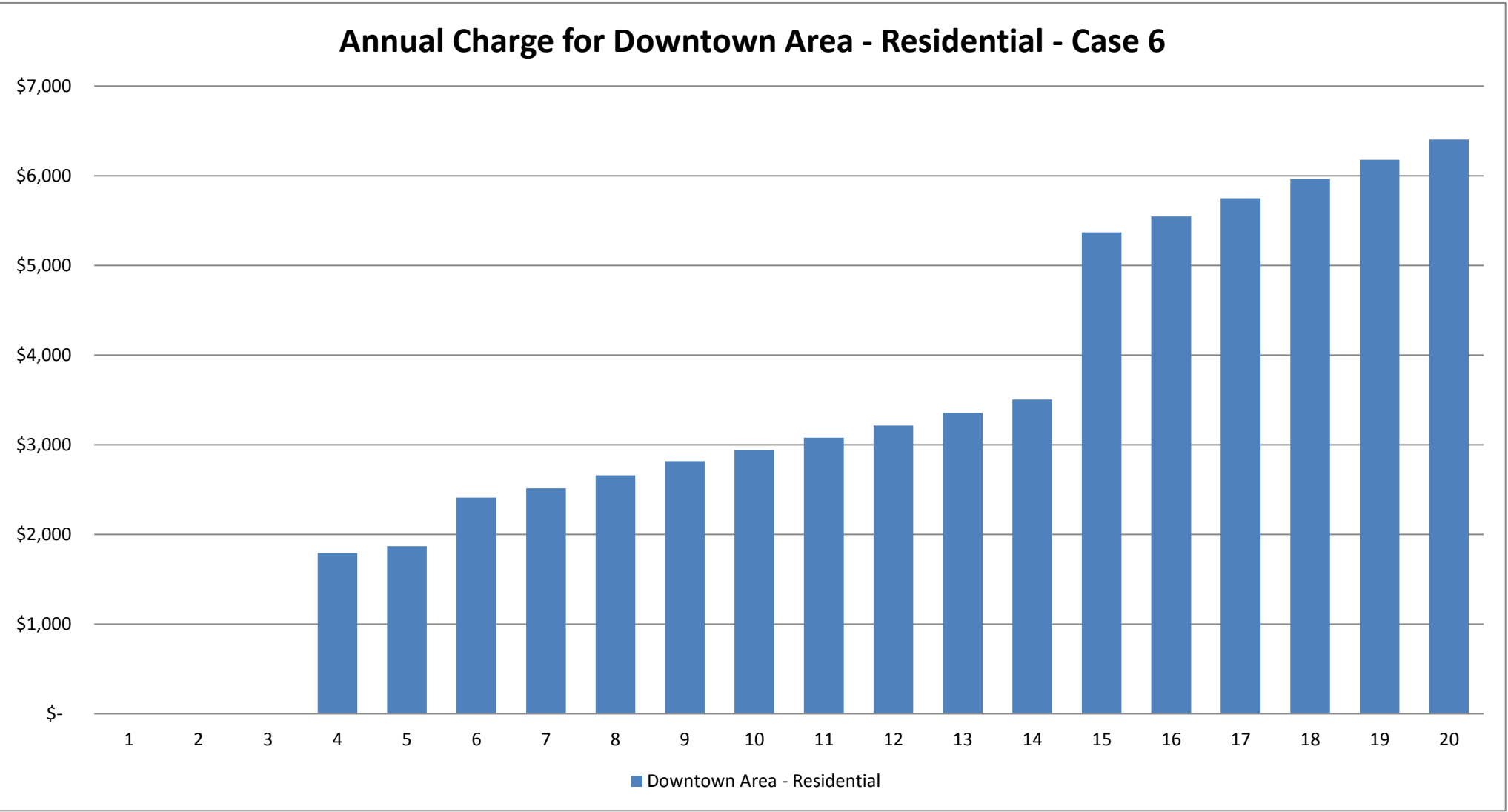


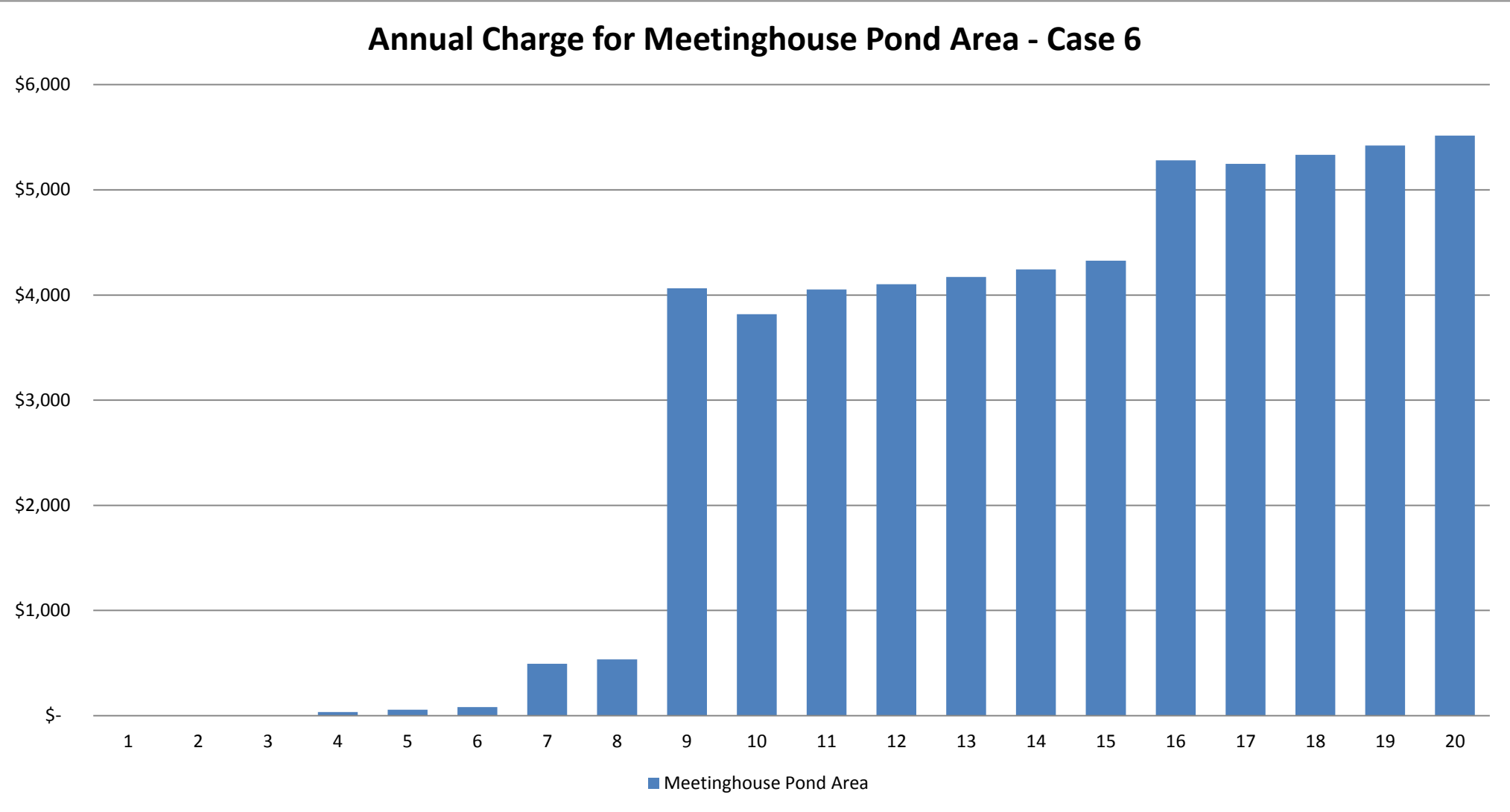


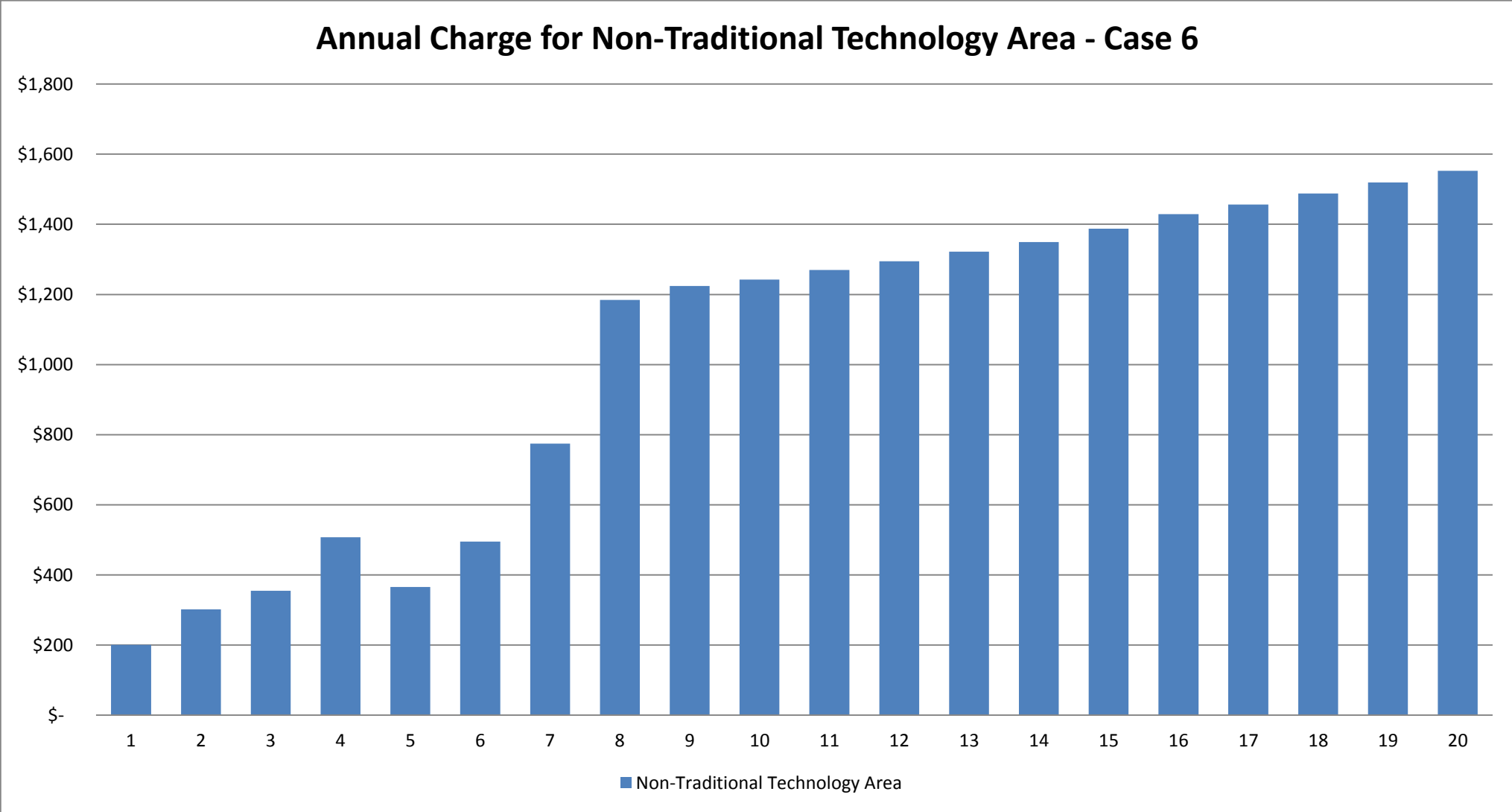
Program Costs for Case 6











Program Costs for Case 7

