

I am impressed!! The proposed ED on Fiscal Sustainability is clear and succinct on a very complex subject. I was especially pleased to see that the Intergenerational Equity concept was used as the basis for discussions in the ED. Hopefully, this concept can be discussed earlier in the Conceptual Framework project to lay the foundation for all the IPSASs.

I would like to have seen more on discount rates in Section 7 of the ED. This was an especially difficult subject at the local level when we were deliberating the use of discounting techniques in our Guide for Economic Development projects (see attached). Since there was no consensus on which discount rate to use in our deliberations, we also applied sensitivity analysis as suggested in the ED. Also, I was disappointed that the discount rate was not discussed more extensively in the ED on Service Concession Agreements (public-private partnerships) to give us at the working level more guidance on its application.

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**GUIDE FOR FINANCIAL  
ANALYSIS OF  
ECONOMIC  
DEVELOPMENT  
PROJECTS**

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## 1) PURPOSE

The goal of this Guideline is to provide a standard analytic model to assist in determining the feasibility of proposed investments in public-private partnerships and economic development projects by the City of Hampton.

## 2) SCOPE

The guidelines are recommended for use by City Council, staff and the Council established Finance Committee in evaluating all public-private partnerships and economic development projects. All net present value (NPV) and cash flow analysis submitted to the Finance Committee for their review and recommendation shall comply with these guidelines.

The results of the net present value and cash flow analysis should be used along with other quantitative and qualitative factors in arriving at an overall decision. The Finance Committee will not evaluate these factors as a part of their review of the analysis.

## 3) BACKGROUND

A Public Private Partnership (PPP) is a partnership between the public sector and the private sector for the purpose of delivering a project or a service traditionally provided by the public sector. PPPs recognize that both the public sector and the private sector have certain advantages relative to the other in the performance of specific tasks. By allowing each sector to do what it does best, public services and infrastructure can be provided in the most economically efficient manner. The overall aim of PPPs is therefore to structure the relationship between the public sector and the private sector, so that risks are borne by those best able to control them and increased value is achieved for public services through the exploitation of private sector skills and competencies.

PPPs can involve the design, construction, financing, operation and maintenance of public infrastructure or facilities, the operation of services, grants or incentives to businesses for job generation, development and redevelopment of public land, to meet public needs.

## 4) FINANCIAL ANALYSIS

The financial model is an integral part of the analysis of project finance. It must be very carefully structured and managed to ensure that the results are reliable and accurate. For ease of comparison, the contract should specify the format and content of the financial model to be provided as part of the tender submissions. The financial model looks at cash flows over the life of the project, and is the key tool in assessing the sensitivity of the financial projections to changes to any of the key assumptions. The output of the financial model is typically the identification of the financing requirements of the project, the project cash flows available to service debt and reward equity, and the NPV of the project cash flows.

In constructing or assessing a financial model, attention should be paid to certain key areas. This will help to ensure that the model is accurate, and that the output is a reliable basis for assessment. In no circumstances should the results of a financial model be accepted without question, as minor errors can easily occur and result in decisions being made based on inaccurate information. In terms of the broad areas to be addressed by the model, some of the critical areas, which will have to be clearly set out include: a summary area showing the results of the model; an area setting out the assumptions underpinning the model, including construction and operating costs, macroeconomic assumptions, revenue (volume and price) assumptions, financing structure including terms and costs, taxation, working capital and timetable; areas showing the profit and loss account, cash flow and balance sheet implications of all of the above assumptions in the accounts; an area showing the calculation of the summary results, and project NPV. The following key information should be included in the financial model:

- a. Anticipated Cash Receipts by Year. The major sources of receipts for each year of the project's life.
- b. Anticipated Cash Disbursements by Year. The major categories of disbursements for each year of the project's life.
- c. Anticipated Net Cash Flows by Year. The anticipated receipts by year less the anticipated disbursements by year reflect the anticipated net cash flows by year.
- d. Net Present Value Computations. All anticipated receipts and disbursements over a project's life cycle are discounted to the present using the effective discount rate, and the discounted disbursements are subtracted from the discounted receipts to yield a NPV. If discounted

receipts exceed discounted disbursements, the NPV is positive and the project is worth pursuing. Where two or more alternatives for a project exist, the one with the highest NPV over an equivalent analysis period should usually be pursued. Funding availability, perceived risk, policy issues and other qualitative factors, however, may lead to the selection of an alternative with a lower NPV.

- e. Sensitivity Analysis. Upper and lower limits equal to at least 5% of the anticipated revenues or expenditures should be established to identify the sensitivity of the estimates to unanticipated changes. The anticipated net cash flows, along with the NPV computations, at these upper and lower limits should be calculated to identify the range in the estimates.

## 5) NET PRESENT VALUE ANALYSIS

### a) General Principles

A standard criterion for evaluating whether the City should invest in a Public-Private Partnership or economic development project is net present value. Net present value represents the expected net benefits (benefits minus costs) expressed in today's dollars. Generally, a positive net present value means the project generates wealth. Projects with negative net present value consume wealth and should generally be avoided subject to other qualitative factors.

Net present value is calculated as follows:

- 1) The first step is to forecast the expected benefits and costs over the life of the project (see section 6 "Identifying and Forecasting Costs and Benefits" on page 6).
- 2) The second step is to determine the discount rate (see section 7 "Determining the Discount Rate" on page 7) that will be used to convert the net expected benefits to today's dollars.
- 3) The final step is to enter all data into the NPV model worksheet and the results will be calculated automatically.

## b) Elements of the NPV Analysis

1. Description of Project- A brief description of the project, rationale for the City's proposed participation in the project including the selection of the private sector party, the proposed dollar amount of City and private sector investments, the proposed financing required by the City and private sector and the return expected by the private sector.
2. Assumptions- The analysis should include a statement of the assumptions, the rationale behind them and a review of their strengths and weaknesses.
3. Evaluation of Alternatives- The analysis should include the evaluation of achieving the project objectives by examining alternative investments and/or the different levels of participation by the City.

## **6) IDENTIFYING AND FORECASTING COSTS AND BENEFITS**

Analyses should include forecasts of the expected tangible benefits and costs over the life of the project or the financing period, whichever is shorter. If the financing period is chosen, then costs and benefits beyond the financing period will be shown as residual value. These benefits and costs should take into account the effect of inflation (unless the discount rate is converted from a nominal to a real rate).

Expected benefits shall include all direct and indirect taxes and fees. For purposes of this analysis, residual value or sales value of the project will be excluded from the forecasts.

Expected costs shall include all costs to acquire, build or improve the project, operating and maintenance costs, interest costs and opportunity costs. Opportunity costs are the potential benefits that are lost by selecting it. For example, if the city sold land to a private developer at a nominal price for a project, the city would lose the difference between the nominal sales price and the market value.

Sometimes it is difficult to estimate the benefits or costs because they are dependent on an unpredictable environment or because the result of a projection is uncertain. In these cases, use expected value to estimate



uncertain benefits and costs. Expected value is determined as follows: 1) list the possible scenarios; 2) estimate the probability of each scenario; 3) estimate the benefit (or cost) in each scenario; 4) add the expected value for each scenario to get an expected benefit (or cost).

The forecasts should include a statement of the assumptions, the rationale behind them and a review of their strengths and weaknesses.

## 7) DETERMINING THE DISCOUNT RATE

In order to compute net present value (NPV), it is necessary to discount future benefits and costs. This discounting reflects the time value of money. In essence, a dollar in the future is less in value than a dollar today.

One of the interesting controversies that has developed in making present value calculations revolves around the choice of the proper discount rate to use. The discount rate represents the expected yield rate necessary to induce decision makers to commit available funds to the subject investment, given its level of risk. Broken down into its simplest components, the discount rate incorporates the following elements:

- a. Risk-Free Rate. This is the amount that a decision maker feels certain of realizing over the holding period. The rate generally used is that rate available on instruments considered to have virtually no possibility of default, such as U.S. Treasury obligations.
- b. Risk Premium. This is the degree of uncertainty as to the realization of the expected future returns. The risk premium is in addition to the risk-free rate. In other words, decision makers must expect some additional rate of return to induce them to invest in an economic development project and be compensated for the additional risk incurred in such an investment.

There is no consensus on how governments should determine the discount rate. There is general agreement that a City would start with the current general obligation (GO) bond rate. In a Public-Private Partnership, a weighting factor would be added to the GO bond rate. The upper limit for the discount rate would be the expected return on the project by the private party. The difficulty is determining what the weighting factor should be. There are at least four methods that could be used:

- a. Partnership Approach. Apply the percent invested by government and the private party to each of the respective rates.
- b. Risk Approach. Double the GO bond rate to cover the funds needed for continual service if the project fails. The City's risk is that the project does not provide the cash flow that was projected to provide for citizen services and the City has to acquire funds a second time to pay for such services.
- c. Government Approach. Apply the percent invested by the government to the private sector rate to cover the risk incurred in the project.
- d. Cost of Capital Approach. Use the City's GO Bond Rate as the City does not have the same expectations as the private sector. If NPV calculation is positive, compare the result with the cost of the investment.

To illustrate the differences in approaches, let us assume that the City is investing \$30 million in a project and the private party is investing \$70 million. Further, let us assume that the GO bond rate is 5% and the expected return by the private party is 25%. The expectation is that the discount rate would be somewhere between 5% and 25%.

	Actual Rate	Weighting Factor	Effective Rate
<b>Partnership Approach:</b>			
GO bond rate	5%	30%	1.5%
Private sector rate	25%	70%	17.5%
Weighted discount rate			19.0%
<b>Risk Approach:</b>			
GO bond rate	5%	200%	10%
<b>Government Approach:</b>			
GO bond rate	5%		5.0%
Private sector rate	25%	30%	7.5%
Weighted discount rate			12.5%
<b>Cost of Capital Approach:</b>			
GO bond rate	5%	100%	5%

It is readily recognized that the higher the discount rate, the less favorable will be the NPV. Consequently, a weighted discount rate of 19% in the above example would reflect a less favorable NPV than a 12.5% discount

rate and the 10% discount rate using the risk approach or the 5% discount rate using the cost of capital approach would be the most favorable.

In another example, let us assume that the City is investing \$80 million in a project and the private part is investing \$20 million. The weighted discount rate would be as follows:

	Actual Rate	Weighting Factor	Effective Rate
<b>Partnership Approach:</b>			
GO bond rate	5%	80%	4%
Private sector rate	25%	20%	5%
Weighted discount rate			9%
<b>Risk Approach:</b>			
GO bond rate	5%	200%	10%
<b>Government Approach:</b>			
GO bond rate	5%		5%
Private sector rate	25%	80%	20%
Weighted discount rate			25%
<b>Cost of Capital Approach:</b>			
GO bond rate	5%	100%	5%

As this example illustrates, a significant investment by the City may result in a weighted discount rate equal to or greater than the private sector rate if the government approach is used. Whereas the partnership approach will result in a discount rate slightly higher than the GO bond rate and the risk approach will be about the same in this example. The cost of capital approach would be the most favorable with a 5% discount rate.

For purposes of this type analysis, the discount rate will be considered a nominal discount rate. A nominal discount rate represents a rate that reflects expected inflation. Thus, the costs and benefits should be measured in nominal terms.

When there is some uncertainty about the rate to be employed, a computation of the critical rate is sometimes helpful. The critical discount rate is that rate at which NPV of the project being considered changes sign from negative to positive. If the critical rate is either sufficiently high or sufficiently low, the analyst is spared the agony of setting a single best discount rate. Suppose that the critical rate is 15%, and NPV is greater than 0 for any rate less than 15%; the decision maker and analyst might

then agree jointly that, while they do not have great confidence in any particular rate, the proper rate is surely less than 15%, and the project is worth pursuing.

## 8) SENSITIVITY ANALYSIS

Sensitivity analysis measures how sensitive the result of a net present value analysis is to a change in one of the variables (i.e. discount rate). For the purposes of this NPV analysis, the sensitivity analysis should include the recalculation of NPV at varying discount rates and for the worst-case scenario (i.e. project will only generate 60 % of the expected benefits over the life of the project).

In the event that the risk-free rate (GO Bond rate) is used, then benefits and costs must be subjected to sensitivity analysis.

## 9) REPORTING

It is important to determine how well the expected benefits and costs are tracking with the actual results. This helps staff to improve future forecasts and to determine the financial effectiveness of the project.

In most instances, the Commissioner of Revenue's staff must compile project revenues for projects. The Commissioner of Revenue will not disclose information for any single business entity. In addition, the type of revenue (i.e. business license, personal property taxes, etc) may not be disclosed. Thus, if a project is related to one business, the revenues will have to be estimated.

Staff should submit quarterly reports comparing actual to estimated benefits and costs to the Finance Committee in the designated standard format.

## 10) QUALITATIVE ANALYSIS

Cost is never the only reason to use public-private partnerships. Many qualitative factors must also be considered but they are not a part of this guide.

The second highest reason is the access to specialized expertise and proprietary technology. As generalists, governments cannot afford to provide or maintain such know-how in-house, especially in the area of information and communication technology. The laboratory of the competitive private sector accelerates change to a rate that cannot be matched in the public sector. Even in other more traditional areas, like environmental control systems, the private sector develops advanced techniques that are better left to their proprietary owner to operate, even if the new technology is installed by the public sector on its own. This is related to another key benefit of partnerships: the sharing of risks with the private sector. In developing complex projects, the private sector can guarantee fixed or maximum prices for construction and eventual operation of systems, relieving the government of its open-ended financial risk in those areas. A private provider can also guarantee the effectiveness and efficiency of the technology it installs, giving public agencies access to such technologies without innovation or performance risk. In some cases, as with concessions, the private provider can even relieve the government of market risk or rate/pricing risk. In most cases, all the risks in a partnership can be distributed among the parties by having the party best equipped to handle each of them take on that responsibility. Lastly, use of the private sector can help governments to address sensitive political and labor issues.

The third highest reason for public-private partnerships is to accomplish objectives when the city government can not directly take on an issue. With the flexibility and efficiency of private developers and operators, the public can sometimes enlist the private sector to handle more easily problems such as downsizing, coordination of political entities, regionalization, implementation of difficult policies and cross border relationships.

## APPENDIX A: DEFINITION OF TERMS

- 1) Benefits- Tangible revenues expected to be generated by the project for the City. The revenues will be recognized on a cash basis.
- 2) Costs- Amounts paid by the City to acquire, construct, improve or operate the project including opportunity costs.
- 3) Discount rate- The rate used in calculating the present value of expected benefits and costs. Generally, this will have some relation to (but will not reasonably be equal to) the private partner's cost of borrowing funds.
- 4) Government obligation (GO) bond rate- The bond rate associated with the latest GO bond issue.
- 5) Inflation- A general increase in the price level over time.
- 6) Net present value (NPV)– The value (in today's dollars) of the expected whole-life-cycle value of providing, maintaining and operating the activity in question, together with operating and relevant associated services, expressed as a figure in today's dollars by discounting all future payment obligations at the Discount Rate.
- 7) Nominal interest rate- An interest rate that is not adjusted to remove the effect of expected inflation.
- 8) Private partner- The private sector partner selected through a competitive procurement process to provide the contractual service to the public partner.
- 9) Private partner desired profit rate- The rate of profit that a private partner desires from their investment.
- 10) Project life- the shorter of the useful life of the project or the financing period for the debt.
- 11) Public private partnerships- A generic term for projects involving both the public and private sectors (with varying levels of involvement and responsibility).
- 12) Residual Value – The expected value of a project, structure, or other entity upon which NPV is being projected, after the term of the NPV structure. Such residual value may well include the costs and benefits that may accrue after the NPV term.
- 13) Real interest rate- An interest rate that has been adjusted to remove the effect of expected or actual inflation.

- 14) Sensitivity analysis- A technique for evaluating the NPV results by changing assumptions and/or the discount rate.
- 15) Sunk cost- A cost incurred in the past that will not be affected by any present or future decision. Sunk costs should be ignored in determining whether a project is worthwhile.
- 16) Weighting factor- The weights applied to the GO bond rate and the private partner desired profit rate in order to compute the effective discount rate to be used in determining the net present value associated with the project.

**APPENDIX B**

**Name of Project  
Net Present Value Analysis  
Standard Model for Public-Private Partnerships**

	Actual Rate	Weighting Factor	Effective Rate	Year 1	Year 2	Year 3	Year N
<b>Discount Rate</b>							
GO Bond Rate	(1)	(3)	0%				
Private sector return expectation	(2)	(3)	0. (4)				
			0.00%				
<hr/>							
<b>Benefits (5)</b>				<b>Total for All Years</b>			
Direct Taxes, Fees and Interest	\$ -	\$ -	\$ -				
Indirect Taxes and Fees (Rising Tide)	-	-	-				
<b>Total Benefits</b>	-	-	-				
<b>Costs(6)</b>							
Cost of Investment (acquire, build or improve)	-	-	-				
Operating and Maintenance Costs	-	-	-				
Interest Costs	-	-	-				
Opportunity Costs	-	-	-				
<b>Total Costs</b>	-	-	-				
<b>Net Benefits (Costs)</b>	\$ -	\$ -	\$ -				
<b>Net Present Value</b>	\$ -	\$ -	\$ -				

**Notes:**

- (1) Represents the estimated City's general obligation bond interest rate based on the current market data as of \_\_\_\_\_
- (2) Represents the private sector's expected return for this project ; This data was obtained from \_\_\_\_\_
- (3) Weighting factor based on \_\_\_\_\_ approach .
- (4) Expected return for the City based on the amount invested in the project.
- (5) Information is linked to the "Benefits" sheet. See the "Benefits" sheet for the detailed revenues and assumptions.
- (6) Information is linked to the "Costs" sheet. See the "Costs" sheet for the detailed costs and assumptions.



**APPENDIX B**

**Name of Project  
Net Present Value Analysis  
Supporting Worksheet for Benefits**

<b>Assumption Reference</b>	<b>Benefits</b>	<b>Total for All Years</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year N</b>
	Real estate tax	\$ -	\$ -	\$ -	\$ -	\$ -
	Personal property tax	-	-	-	-	-
	Business license tax	-	-	-	-	-
	Sales and use tax	-	-	-	-	-
	Lodging tax	-	-	-	-	-
	Meal Tax	-	-	-	-	-
	Amusement tax	-	-	-	-	-
	Direct Taxes and Fees	-	-	-	-	-
	Real estate tax	-	-	-	-	-
	Personal property tax	-	-	-	-	-
	Business license tax	-	-	-	-	-
	Sales and use tax	-	-	-	-	-
	Lodging tax	-	-	-	-	-
	Meal Tax	-	-	-	-	-
	Amusement tax	-	-	-	-	-
	Indirect Taxes and Fees(Rising Tide)	-	-	-	-	-
	Total Benefits	\$ -	\$ -	\$ -	\$ -	\$ -

**ASSUMPTIONS :**

**APPENDIX B**

**Name of Project  
Net Present Value Analysis  
Supporting Worksheet for Costs**

<b>Assumption Reference</b>	<b>Costs</b>	<b>Total for All Years</b>	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year N</b>
	Acquisition of land	\$ -	\$ -	\$ -	\$ -	\$ -
	Acquire/Construct Building & Equipment	-	-	-	-	-
	Capital improvements to project	-	-	-	-	-
	<b>Costs of investment</b>	-	-	-	-	-
	Salaries & Wages	-	-	-	-	-
	Operating Expenses	-	-	-	-	-
	Capital purchases	-	-	-	-	-
	<b>Operating and maintenance costs</b>	-	-	-	-	-
	Interest expense	-	-	-	-	-
	Sale of property for less than FMV	-	-	-	-	-
	Contribution of property to project	-	-	-	-	-
	Other	-	-	-	-	-
	<b>Opportunity costs</b>	-	-	-	-	-
	<b>Total Costs</b>	\$ -	\$ -	\$ -	\$ -	\$ -

**ASSUMPTIONS :**

# APPENDIX C: EXAMPLE

## Project Summary

The City of VT plans to redevelop part of their downtown. The goals are to strengthen the downtown area and to optimize the value of underutilized real estate assets. Two sites are existing City-owned surface parking areas, one site is the air rights of an existing City-owned garage, and one site is to be acquired from a potential tenant in the proposed development. The proposed developments have been organized into six public projects and three private components. The total development cost of the public and private development components is \$82.3 million. The Developer has indicated that he expects to earn a 25 percent return on this project.

## Development Scope

The three commercial developments include retail at the street level with market rental and/or condominium housing above. The Lot 2 site includes retail space at the street level, a transit transfer center and housing above the retail. The estimated development required to finance, design, develop and construct the private development components is \$64.6 million. Twenty percent of each private development includes affordable housing units.

The public projects include replacement parking, the transit transfer center, a city-owned garage and a second –level pedestrian bridge. The total development costs for the public component is \$17.7 million.

The City of VT will lease land to the developer for a \$1 per year. This land was recently appraised at \$ 4.5 million.

The City has issued 20 year General Obligation Bonds at an interest rate of 5.25 percent to finance the public projects.

The City has forecasted that it will generate \$51.8 million in real estate and sales taxes over twenty years and a positive cash flow of \$16.5 million.

See results of the Analysis on the following worksheets:

- **Summary Cash Flow and Net Present Value Analysis .....C1**
- **Net Present Value Analysis (Government Approach).....C2-C5**
- **Supporting Worksheet for Benefits .....C6-C8**
- **Supporting Worksheet for Costs .....C9-C12**
- **Sensitivity Analysis (Government Approach).....C13**
- **Net Present Value Analysis – Summarized by Approach.....C14**

APPENDIX C

City of VT Downtown Redevelopment Project  
 Summary Cash Flow and Net Present Value Analysis  
 Using the Government Approach for the Discount Rate

Year	Total Benefits	Total Costs	Net Benefits (Costs)	Net Present Value
1	\$ -	\$ 14,972,546	\$ (14,972,546)	\$ (13,534,300)
2	1,316,000	4,705,020	(3,389,020)	(2,769,201)
3	1,936,960	977,831	959,129	708,431
4	2,016,669	949,153	1,067,516	712,746
5	2,099,849	918,907	1,180,942	712,737
6	2,186,658	887,009	1,299,649	709,034
7	2,277,263	853,367	1,423,896	702,197
8	2,371,836	817,889	1,553,947	692,719
9	2,470,558	780,476	1,690,082	681,035
10	2,573,621	2,741,024	(167,403)	(60,977)
11	2,681,223	699,421	1,981,802	652,532
12	2,793,573	655,553	2,138,020	636,346
13	2,910,889	609,297	2,301,592	619,228
14	3,033,400	560,525	2,472,875	601,401
15	3,161,345	509,101	2,652,244	583,063
16	3,294,976	454,881	2,840,095	564,385
17	3,434,555	397,718	3,036,837	545,512
18	3,580,358	337,449	3,242,909	526,572
19	3,732,674	273,912	3,458,762	507,673
20	3,891,804	2,206,927	1,684,877	223,548
Total	\$ 51,764,211	\$ 35,308,006	\$ 16,456,205	\$ (5,985,319)

## APPENDIX C

### City of VT Downtown Redevelopment Project Net Present Value Analysis Standard Model for Public-Private Partnerships

Discount Rate	Actual Rate	Weighting Factor	Effective Rate
GO Bond Rate	5.25% (1)		5.25%
Private sector return expectation	25% (2)	22% (3)	5.38% (4)
			10.63%

Benefits (5)	Year 1	Year 2	Year 3	Year 4
<b>Total for All Years</b>				
Direct Taxes, Fees and Interest	\$ 51,764,210	\$ 1,316,000	\$ 1,936,960	\$ 2,016,669
Indirect Taxes and Fees (Rising Tide)	-	-	-	-
<b>Total Benefits</b>	<u>51,764,210</u>	<u>1,316,000</u>	<u>1,936,960</u>	<u>2,016,669</u>
<b>Costs(6)</b>				
Cost of Investment (acquire, build or improve)	14,000,000	3,700,000	-	-
Operating and Maintenance Costs	-	60,000	61,800	63,654
Interest Costs	922,546	895,020	866,031	835,499
Opportunity Costs	50,000	50,000	50,000	50,000
<b>Total Costs</b>	<u>14,972,546</u>	<u>4,705,020</u>	<u>977,831</u>	<u>949,153</u>
<b>Net Benefits (Costs)</b>	<u>\$ (14,972,546)</u>	<u>\$ (3,389,020)</u>	<u>\$ 959,129</u>	<u>\$ 1,067,516</u>
<b>Net Present Value</b>	<u>\$ (13,534,300)</u>	<u>\$ (2,769,201)</u>	<u>\$ 708,431</u>	<u>\$ 712,746</u>

**Notes:**

- (1) Represents the estimated City's general obligation bond interest rate based on the current market data as of July 2005.
- (2) Represents the private sector's expected return for this project; This data was obtained from the developer.
- (3) Determined based on the City's investment of \$17.7 million to the total investment of 82.3 million.
- (4) Expected return for the City based on the amount invested in the project.
- (5) Information is linked to the "Benefits" sheet. See the "Benefits" sheet for the detailed revenues and assumptions.
- (6) Information is linked to the "Costs" sheet. See the "Costs" sheet for the detailed costs and assumptions.

## APPENDIX C

### City of VT Downtown Redevelopment Project Net Present Value Analysis Standard Model for Public-Private Partnerships

Benefits (5)	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Direct Taxes, Fees and Interest	\$ 2,099,849	\$ 2,186,658	\$ 2,277,263	\$ 2,371,836	\$ 2,470,558	\$ 2,573,621
Indirect Taxes and Fees (Rising Tide)	-	-	-	-	-	-
Total Benefits	<u>2,099,849</u>	<u>2,186,658</u>	<u>2,277,263</u>	<u>2,371,836</u>	<u>2,470,558</u>	<u>2,573,621</u>
<b>Costs(6)</b>						
Cost of Investment (acquire, build or improve)	-	-	-	-	-	2,000,000
Operating and Maintenance Costs	65,564	67,531	69,556	71,643	73,792	76,006
Interest Costs	803,343	769,478	733,811	696,246	656,684	615,018
Opportunity Costs	50,000	50,000	50,000	50,000	50,000	50,000
Total Costs	<u>918,907</u>	<u>887,009</u>	<u>853,367</u>	<u>817,889</u>	<u>780,476</u>	<u>2,741,024</u>
<b>Net Benefits (Costs)</b>	<u>\$ 1,180,942</u>	<u>\$ 1,299,650</u>	<u>\$ 1,423,895</u>	<u>\$ 1,553,946</u>	<u>\$ 1,690,082</u>	<u>\$ (167,403)</u>
<b>Net Present Value</b>	<u>\$ 712,737</u>	<u>\$ 709,034</u>	<u>\$ 702,197</u>	<u>\$ 692,719</u>	<u>\$ 681,035</u>	<u>\$ (60,977)</u>

## APPENDIX C

### City of VT Downtown Redevelopment Project Net Present Value Analysis Standard Model for Public-Private Partnerships

Benefits (5)	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16
Direct Taxes, Fees and Interest	\$ 2,681,223	\$ 2,793,573	\$ 2,910,889	\$ 3,033,400	\$ 3,161,345	\$ 3,294,976
Indirect Taxes and Fees (Rising Tide)	-	-	-	-	-	-
Total Benefits	<u>2,681,223</u>	<u>2,793,573</u>	<u>2,910,889</u>	<u>3,033,400</u>	<u>3,161,345</u>	<u>3,294,976</u>
<b>Costs (6)</b>						
Cost of Investment (acquire, build or improve)	-	-	-	-	-	-
Operating and Maintenance Costs	78,286	80,635	83,054	85,546	88,112	90,755
Interest Costs	571,135	524,918	476,243	424,979	370,989	314,126
Opportunity Costs	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>
Total Costs	<u>699,421</u>	<u>655,553</u>	<u>609,297</u>	<u>560,525</u>	<u>509,101</u>	<u>454,881</u>
<b>Net Benefits (Costs)</b>	<u>\$ 1,981,802</u>	<u>\$ 2,138,020</u>	<u>\$ 2,301,592</u>	<u>\$ 2,472,875</u>	<u>\$ 2,652,244</u>	<u>\$ 2,840,094</u>
<b>Net Present Value</b>	<u>\$ 652,532</u>	<u>\$ 636,346</u>	<u>\$ 619,228</u>	<u>\$ 601,401</u>	<u>\$ 583,063</u>	<u>\$ 564,385</u>

## APPENDIX C

### City of VT Downtown Redevelopment Project Net Present Value Analysis Standard Model for Public-Private Partnerships

	Year 17	Year 18	Year 19	Year 20
<b>Benefits (5)</b>				
Direct Taxes, Fees and Interest	\$ 3,434,555	\$ 3,580,358	\$ 3,732,674	\$ 3,891,804
Indirect Taxes and Fees (Rising Tide)	-	-	-	-
<b>Total Benefits</b>	<u>3,434,555</u>	<u>3,580,358</u>	<u>3,732,674</u>	<u>3,891,804</u>
<b>Costs(6)</b>				
Cost of Investment (acquire, build or improve)	-	-	-	2,000,000
Operating and Maintenance Costs	93,478	96,282	99,171	102,146
Interest Costs	254,240	191,167	124,741	54,781
Opportunity Costs	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>
<b>Total Costs</b>	<u>397,718</u>	<u>337,449</u>	<u>273,912</u>	<u>2,206,927</u>
<b>Net Benefits (Costs)</b>	<u>\$ 3,036,837</u>	<u>\$ 3,242,909</u>	<u>\$ 3,458,762</u>	<u>\$ 1,684,877</u>
<b>Net Present Value</b>	<u>\$ 545,512</u>	<u>\$ 526,572</u>	<u>\$ 507,673</u>	<u>\$ 223,548</u>



**APPENDIX C**

**City of VT Downtown Redevelopment Project  
Supporting Worksheet for Benefits**

Assumption Reference	Benefits	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	<b>Total for All Years</b>						
(A)	Real estate tax	\$ -	\$ 416,000	\$ 856,960	\$ 882,669	\$ 909,149	\$ 936,423
	Personal property tax	-	-	-	-	-	-
	Business license tax	-	-	-	-	-	-
(B)	Sales and use tax	31,282,975	900,000	1,080,000	1,134,000	1,190,700	1,250,235
	Lodging tax	-	-	-	-	-	-
	Meal Tax	-	-	-	-	-	-
	Amusement tax	-	-	-	-	-	-
	<b>Direct Taxes and Fees</b>	<u>51,764,210</u>	<u>1,316,000</u>	<u>1,936,960</u>	<u>2,016,669</u>	<u>2,099,849</u>	<u>2,186,658</u>
	Real estate tax	-	-	-	-	-	-
	Personal property tax	-	-	-	-	-	-
	Business license tax	-	-	-	-	-	-
	Sales and use tax	-	-	-	-	-	-
	Lodging tax	-	-	-	-	-	-
	Meal Tax	-	-	-	-	-	-
	Amusement tax	-	-	-	-	-	-
	<b>Indirect Taxes and Fees(Rising Tide)</b>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
	<b>Total Benefits</b>	<u>\$ 51,764,210</u>	<u>\$ 1,316,000</u>	<u>\$ 1,936,960</u>	<u>\$ 2,016,669</u>	<u>\$ 2,099,849</u>	<u>\$ 2,186,658</u>

**ASSUMPTIONS :**

(A) Initial year assessment of \$65 million at 1.28/100 tax rate, assuming one-half year billing; projected inflationary growth of 3 percent for all other years.  
 (B) Initial year sales base of \$30 million at 3 percent tax rate; base projected to grow at 20 percent in second year and 2 percent thereafter. Inflation factor of 3 percent applied.

These estimates were developed by the City's consultant. Staff reviewed the estimates and decided to discount the sales and use tax estimates by 50 percent.

It has been the experience of the City that projects similar to this may have a longer lead time in securing the appropriate tenants and it is expected that this development will cause some displacement in the City's overall economy.



## APPENDIX C

### City of VT Downtown Redevelopment Project Supporting Worksheet for Benefits

Assumption Reference	Benefits	Year 14	Year 15	Year 16	Year 17	Year 18	Year 19	Year 20
(A)	Real estate tax	\$ 1,186,233	\$ 1,221,820	\$ 1,258,475	\$ 1,296,229	\$ 1,335,116	\$ 1,375,169	\$ 1,416,424
	Personal property tax							
	Business license tax							
(B)	Sales and use tax	1,847,167	1,939,525	2,036,501	2,138,326	2,245,242	2,357,505	2,475,380
	Lodging tax							
	Meal Tax							
	Amusement tax							
	Direct Taxes and Fees	<u>3,033,400</u>	<u>3,161,345</u>	<u>3,294,976</u>	<u>3,434,555</u>	<u>3,580,358</u>	<u>3,732,674</u>	<u>3,891,804</u>
	Real estate tax							
	Personal property tax							
	Business license tax							
	Sales and use tax							
	Lodging tax							
	Meal Tax							
	Amusement tax							
	Indirect Taxes and Fees(Rising Tide)							
	Total Benefits	<u>\$ 3,033,400</u>	<u>\$ 3,161,345</u>	<u>\$ 3,294,976</u>	<u>\$ 3,434,555</u>	<u>\$ 3,580,358</u>	<u>\$ 3,732,674</u>	<u>\$ 3,891,804</u>

## APPENDIX C

### City of VT Downtown Redevelopment Project Supporting Worksheet for Costs

Assumption Reference	Costs	Total for All Years	Year 1	Year 2	Year 3	Year 4	Year 5
(A)	Acquisition of land	\$ 2,000,000	\$ 2,000,000	\$ -	\$ -	\$ -	\$ -
(B)	Acquire/Construct Project	15,700,000	12,000,000	3,700,000	-	-	-
(C)	Capital improvements to project	4,000,000	-	-	-	-	-
	<b>Costs of investment</b>	<u>21,700,000</u>	<u>14,000,000</u>	<u>3,700,000</u>	<u>-</u>	<u>-</u>	<u>-</u>
(D)	Salaries & Wages	1,004,675	-	40,000	41,200	42,436	43,709
(E)	Operating Expenses	502,337	-	20,000	20,600	21,218	21,855
	Capital purchases	-	-	-	-	-	-
	<b>Operating and maintenance costs</b>	<u>1,507,012</u>	<u>-</u>	<u>60,000</u>	<u>61,800</u>	<u>63,654</u>	<u>65,564</u>
(F)	Interest expense	11,100,995	922,546	895,020	866,031	835,499	803,343
	Sale of property for less than FMV	-	-	-	-	-	-
	Contribution of property to project	-	-	-	-	-	-
(G)	Other	1,000,000	50,000	50,000	50,000	50,000	50,000
	<b>Opportunity costs</b>	<u>1,000,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>
	<b>Total Costs</b>	<u>\$ 24,207,012</u>	<u>\$ 14,050,000</u>	<u>\$ 3,810,000</u>	<u>\$ 111,800</u>	<u>\$ 113,654</u>	<u>\$ 115,564</u>

**ASSUMPTIONS :**

- (A) Site expected to be acquired from a potential tenant in the proposed development. 5 acres at 400,000 per acre.
- (B) Estimated costs to construct garage and other improvements based on review by City Engineer.
- (C) Projected improvements needed to maintain garage . Based on study performed by outside consultant.
- (D) One employee will be used to maintain garage. Applied inflation factor of 3 percent.
- (E) Operating supplies, parts, and utilities required to operate the garage. Based on costs to operate an existing City garage. Applied inflation factor of 3 percent.
- (F) Represents the difference between market rental for similar commercial land and the City's agreed upon rental price of \$1 per year.

## APPENDIX C

### City of VT Downtown Redevelopment Project Supporting Worksheet for Costs

Assumption Reference	Costs	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11
(A)	Acquisition of land	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(B)	Acquire/Construct Project					2,000,000	
(C)	Capital improvements to project					2,000,000	
	<b>Costs of investment</b>						
(D)	Salaries & Wages	45,020	46,371	47,762	49,195	50,671	52,191
(E)	Operating Expenses	22,510	23,185	23,881	24,597	25,335	26,095
	Capital purchases						
	<b>Operating and maintenance costs</b>	<u>67,531</u>	<u>69,556</u>	<u>71,643</u>	<u>73,792</u>	<u>76,006</u>	<u>78,286</u>
(F)	Interest expense	769,478	733,811	696,246	656,684	615,018	571,135
	Sale of property for less than FMV						
	Contribution of property to project						
(G)	Other	50,000	50,000	50,000	50,000	50,000	50,000
	<b>Opportunity costs</b>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>
	<b>Total Costs</b>	<u>\$ 117,531</u>	<u>\$ 119,556</u>	<u>\$ 121,643</u>	<u>\$ 123,792</u>	<u>\$ 2,126,006</u>	<u>\$ 128,286</u>

## APPENDIX C

### City of VT Downtown Redevelopment Project Supporting Worksheet for Costs

Assumption Reference	Costs	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17
(A)	Acquisition of land	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
(B)	Acquire/Construct Project	-	-	-	-	-	-
(C)	Capital improvements to project	-	-	-	-	-	-
	<b>Costs of investment</b>	-	-	-	-	-	-
(D)	Salaries & Wages	53,757	55,369	57,030	58,741	60,504	62,319
(E)	Operating Expenses	26,878	27,685	28,515	29,371	30,252	31,159
	Capital purchases	-	-	-	-	-	-
	<b>Operating and maintenance costs</b>	<u>80,635</u>	<u>83,054</u>	<u>85,546</u>	<u>88,112</u>	<u>90,755</u>	<u>93,478</u>
(F)	Interest expense	524,918	476,243	424,979	370,989	314,126	254,240
	Sale of property for less than FMV						
	Contribution of property to project						
(G)	Other	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>
	<b>Opportunity costs</b>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>
	<b>Total Costs</b>	<u>\$ 130,635</u>	<u>\$ 133,054</u>	<u>\$ 135,546</u>	<u>\$ 138,112</u>	<u>\$ 140,755</u>	<u>\$ 143,478</u>

## APPENDIX C

### City of VT Downtown Redevelopment Project Supporting Worksheet for Costs

Assumption Reference	Costs	Year 18	Year 19	Year 20
(A)	Acquisition of land	\$ -	\$ -	\$ -
(B)	Acquire/Construct Project			2,000,000
(C)	Capital improvements to project			2,000,000
	<b>Costs of investment</b>			
(D)	Salaries & Wages	64,188	66,114	68,097
(E)	Operating Expenses	32,094	33,057	34,049
	Capital purchases	-	-	-
	<b>Operating and maintenance costs</b>	<u>96,282</u>	<u>99,171</u>	<u>102,146</u>
(F)	Interest expense	191,167	124,741	54,781
	Sale of property for less than FMV			
(G)	Contribution of property to project			50,000
	Other	50,000	50,000	50,000
	<b>Opportunity costs</b>	<u>50,000</u>	<u>50,000</u>	<u>50,000</u>
	<b>Total Costs</b>	<u>\$ 146,282</u>	<u>\$ 149,171</u>	<u>\$ 2,152,146</u>

**APPENDIX C**

**City of VT Downtown Redevelopment Project  
Sensitivity Analysis  
Standard Model for Public-Private Partnerships**

<u>Assumption Change</u>	<u>Net Present Value Amount</u>
Initial Calculation	\$ (5,985,318)
Discount Rate decreased to 9%	\$ 4,458,268
Revenue grows by 5% each year at 10.63% discount rate	\$ 513,640
Revenue grows by 5% each year at 9% discount rate	\$ 3,111,680



**APPENDIX C**

**City of VT Downtown Redevelopment Project  
Net Present Value Analysis-Summarized by Approach**

	<u>Partnership Approach</u>	<u>Risk Approach</u>	<u>Government Approach</u>	<u>Cost of Capital Approach</u>
Discount Rate	20.66%	10.50%	10.63%	5.25%
Net Present Value	\$ (10,263,228)	\$ (5,879,396)	\$ (5,985,318)	\$ 909,357