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# The Water's Edge Apartments: Capital Budgeting In Real Estate Development

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## ABSTRACT

*The Water's Edge Apartments case provides intermediate finance students with an opportunity to apply capital budgeting analysis and decision- making techniques to a real estate development situation. The objective is to give students practice in identifying and estimating project cash flows to make a decision regarding the project. Students are encouraged to include basic sensitivity analysis in their recommendation.*

**Keywords:** capital budgeting, cash flow estimation, real estate, sensitivity analysis

## INTRODUCTION

The typical introductory finance textbook includes a chapter on capital budgeting decision criteria and another on estimating cash flows in a capital budgeting project. The chapter examples and end-of-chapter questions tend to focus on capital budgeting in a manufacturing setting. In these problems, taxes are usually determined as a fixed percentage of incremental taxable income and there is rarely a consideration of potential variation in the proposed cash flows. The Water's Edge Apartments case provides students with the opportunity to evaluate the cash flows for a proposed senior housing development.

The case presents enough information for cash-flow projections throughout a 30-year project life. An accelerated depreciation schedule and preferential tax treatment provide an opportunity for careful consideration of cash flow timing. The main driver of the cash flows and the NPV is rental income, contingent on the anticipated occupancy level. To simplify the analysis, the case specifies the cost of capital.

The case is challenging for students just beginning to learn finance principles, but is also rich enough to use with experienced students and executives. The main learning points of the case include the following:

- The basics of incremental-cash-flow analysis: identifying the cash flows relevant to a capital-investment decision
- The construction of a discounted-cash-flow analysis for a real estate investment decision
- How to adapt the NPV decision rule to account for sensitivity to occupancy rates or other key inputs
- The importance of sensitivity analysis to a capital-investment decision

## THE WATER'S EDGE APARTMENTS

### The Opportunity

In early 2008, John Francis and Donald White met to discuss a potential real estate development opportunity. The Water's Edge property was created through the purchase of eight individual properties to create a single 9.66 acre footprint on the banks of the Mohawk River in Cohoes NY. When complete, the development would contain 132 individual units in two mirrored buildings with a private street separating them. The current developer of the project was experiencing financial difficulties and was seeking a buyer for the partially complete project.

John Francis is President of Francis Properties (FP), a real estate development and management firm specializing in multiple occupant facilities in the greater Capital District of New York. FP's projects include Greystone, a 38 unit senior living property and Windy Pointe, a 51 unit facility. Donald White is Managing Director of Alliance Venture Partners (AVP) and is a seed-stage investor in early stage technology companies. AVP also invests in commercial and residential real estate projects in metropolitan Boston and in the Capital Region of upstate New York.

Friends since childhood, John and Donald agreed to evaluate the acquisition of Water's Edge property as a joint venture between FP and AVP. Their first concern is to evaluate the potential value of the opportunity.

**The Senior Housing Movement**

America is a quickly graying country, with nearly 8,000 Americans turning 60 each day according to the US Census Bureau. The fastest growing segment of the US population is those over 85, with those of traditional retirement age (65) being the second fastest growth segment. Immediately behind them come the Baby Boomers, a two decade spanning group of over 70 million individuals with more wealth and inclination to spend it than any other time in US history.

The Albany region has a shortage of attractive senior living alternatives. Currently, senior living facilities in the area represent a total of less than 500 units. Potential customers prefer to relocate nearby their homes in order to retain connections to their local communities. Unfortunately, there are a limited number of appropriate undeveloped spaces in proximity to the population centers. Only one other major project has been announced locally, a $14M project of roughly 100 units to be started in early 2009 in nearby Saratoga Springs.

**Acquisition Cash Flows**

The partnership would to acquire the property for $9.5 million, 70% of which would be financed through an interest-only bank loan. Once acquired, the group anticipates investing an additional $5.5 million (equity) in year 0 to complete construction. The partnership intends to sell the property after twenty years.

**Anticipated Project Cash Inflows**

The cash inflows for the project are dominated by the monthly rents. The maximum monthly rents for Water's Edge would be $980 per unit per month by the end of Fiscal Year 2008. Assume no discounts for rent in Year 1 (2009, $1,050 per unit) and beyond, with rents increasing at 5% per annually.

| **Completion schedule** | **31-Aug-08** | **31-Aug-09** | **31-Aug-10** |
|---|---|---|---|
| Building 1 units | 30 | 66 | 66 |
| Building 2 units | | 33 | 66 |

Secondary cash flow comes from an arrangement with Time Warner Cable to purchase internet, cable TV, and digital phone services at a discount and resell these services to the residents for a profit. The current cost is $52 per month per unit. The services are resold at $100. The partners expect that 75% of the residents will purchase this service and that these costs and revenues will increase at 5% per year.

**OPERATING COSTS**

**Employees**

Based on his previous experience, Francis estimates that Water's Edge will require one full time employee acting as property manager. In the Capital District an appropriate individual for the demographics of Water's Edge (45-55 year old, college educated, good communication skills) would be about $4,500 per month for salary, with employee benefits and taxes adding $1,500 for a total of $6,000 per month. This number will increase at 5% annually for the term of holding of the property.

**Maintenance**

Initially, Water's Edge will require little maintenance ($50,000, year 0). Annual maintenance will increase in year 1 (2009) to $65,000. This value will increase $32,000 per year until the end of the holding period.

**Insurance**

Due to the design of Water's Edge, insurance costs are not as much of a burden as to be expected with a facility this size. The previous developer installed hydrants outside the buildings and sprinklers on every floor. There are Fire Control Panels and full monitoring, and relatively close proximity to both fire and police. The current policy on Water's Edge pre-completion is $45,000 per year, based on a $9 million value. Using a full value of $15 million, the estimated insurance cost is $75,000 for the year. Insurance costs are expected to increase at a 5% annual rate.

**Depreciation Calculations**

Normally a building is straight line depreciated over its usable life of 30 years. While the simplest manner, it is not nearly the most tax efficient as components other than the building itself (carpets, light fixtures, etc) can be depreciated in as little as five years. Based on preliminary estimates, Water's Edge enjoys $750,000 a year of accelerated depreciation each year for the first ten years of the project's life. After that time, normal depreciation of the structures and other long lived components gives $300,000 for the remaining years of ownership. Expected annual depreciation expenses are shown in Table 1.

**Table 1: Annual Depreciation Expenses**

| Years of ownership | Annual Depreciation |
|---|---|
| 1-10 | $750,000 |
| 11-30 | $300,000 |

**Taxes**

Taxes for Water's Edge are on a per unit basis. As Water's Edge is not 100% completed at this point, it does not carry the full tax burden, and the Pilot Tax Program is not yet in effect. This tax incentive plan will go into effect upon assessment following completion and will last for ten years from that point.

The tax rate for the next two years is projected to be $8,333 per month until September 2009, when full assessment will be in effect. This number shall be used for Year 1 calculations. 75% of this ($6,248) shall be used in Year 0. Full assessment shall be used thereafter.

At full assessment, the tax rate is $1,100 per unit per year, for a full value of $145,200 per year. Due to the fiscal constraints of the current economy, 5% per annum tax rate growth will be utilized annually from full assessment.

The Pilot Tax Program (PTP) is built into the deed of Water's Edge. The PTP is a tax credit for 50% of the property tax bill in the first year of full assessment, decreasing at 5% per year until it has been eliminated in year 11. Tax calculations for the purpose of this analysis will take into account the PTP.

Due to the tax schedule, September 1st shall be used as the start of the fiscal year for all calculations and projections for Water's Edge. Annual tax estimates are shown in Exhibit 2.

**Interest Charges**

Given the current credit markets, it is assumed that only 70% of the purchase value of Water's Edge can be leveraged via mortgage. An 8% assumption is used for interest only with a balloon beyond the holding time horizon.

## THE EVALUATION

As the partners sat down to evaluate the project, White raised some of his concerns. “In order to determine the value of this opportunity, we’ll need to clearly understand all the cash inflows and outflows. Is this project really worth the $15 million price tag? Our overall cost of capital on this project is 14%. Will the investment create value? I am sure that our lender will want to see our estimates.”

Francis replied, “I agree that we need to value the project for the full twenty years, but I am concerned about the expiration of the Pilot Tax Program incentives. Should we consider selling after ten years instead? I am also concerned about keeping the apartments filled throughout the project. Let’s plan on ninety percent occupancy in our calculations. We can use this format (Exhibit 1) as our guide."

## TEACHING NOTES

Teaching notes and a copy of the excel solution are available from the author.

## AUTHOR INFORMATION

**Dr. Jim Murtagh** is an experienced management consultant and educator. After earning his B.S. in Engineering from the United States Military Academy, he served his country as an active duty Army aviator. He earned his PhD in Finance from Rensselaer Polytechnic Institute where he taught a broad range of graduate and undergraduate finance courses. He has consulted with private, public and governmental agencies on financial management and IT strategy. Dr. Murtagh’s academic research focuses on international capital markets, banking and risk management. His articles appear in the *Journal of International Financial Markets, Institutions & Money*, *Global Perspectives Research in Banking and Finance*, and the *Journal of Equipment Leasing*.

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**Exhibit 1: Water's Edge Apartments Cash Flow Estimation and Evaluation**

| Part 1. Input Data | | |
|---|---|---|
| | ***Acquistion costs*** | |
| | Acquistion cost (total) | |
| | Acquistion cost (equity) | |
| | Acquistion cost (balloon loan) | |
| | Additional construction costs | |
| | Total Acquisition value | |
| | | |
| | ***Revenues*** | |
| | Rental rate/unit/month (2008) | |
| | Rental rate/unit/month (2009) | |
| | Anticipated occupancy rate | |
| | Internet/Cable/Phone rate/unit/month | |
| | Utilization rate for Internet/cable/phone | |
| | | |
| | ***Costs*** | |
| | Employee costs w/benefits/month | |
| | Maintenance (2009) | |
| | Insurance (2009) | |
| | Internet/Cable/Phone cost/unit/month | |
| | | |
| | | |
| | ***Anticipated growth rates*** | |
| | Rental revenue | |
| | Internet/Cable/Phone service | |
| | Employees | |
| | Annual Maintenance increase | |
| | Insurance | |
| | Growth rate for property value | |

**Exhibit 1: Water's Edge Apartments Cash Flow Estimation and Evaluation - continued**

| **Part 2. Projected Cash Flows** | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5 |
| Acquistion costs (equity) | | | | | | |
| Additional construction costs | | | | | | |
| | | | | | | |
| **Operating Cash Flows** | | | | | | |
| Rental Units complete | | | | | | |
| Rental Revenue | | | | | | |
| Internet/Cable/Phone Revenue | | | | | | |
| Total Revenue | | | | | | |
| | | | | | | |
| Costs | | | | | | |
| Employees | | | | | | |
| Maintenance | | | | | | |
| Insurance | | | | | | |
| Internet/Cable TV/ Phone costs | | | | | | |
| Depreciation | | | | | | |
| Taxes | | | | | | |
| Total Costs | | | | | | |
| | | | | | | |
| **Terminal Year Cash Flows** | | | | | | |
| Sale of Property | | | | | | |
| Less book value of property | | | | | | |
| Gain/loss on sale | | | | | | |
| Taxes on gain/loss on sale (40%) | | | | | | |
| Balloon payment on loan | | | | | | |
| Net Terminal Year Cash Flow | | | | | | |
| | | | | | | |
| Net Cash Flow | | | | | | |
| | | | | | | |
| **Part 3. Project Evaluation** | | | | | | |
| | | | | | | |
| Discount Rate | | | | | | |
| | | | | | | |
| Net Present Value | | | | | | |
| Internal Rate of Return | | | | | | |
| Profitability Index | | | | | | |
| Modified Internal Rate of Return | | | | | | |

**Exhibit 2: Annual Tax Estimates under Pilot Tax Program**

| **Year End 8/31** | **Annual Tax (5% annual growth)** | **Pilot Tax Program Credit Percentage** | **Adjusted Annual Tax** |
|---|---|---|---|
| 2008 (0) | $74,976 | 0% | $74,976 |
| 2009 (1) | 99,960 | 0% | 99,960 |
| 2010 (2) | 145,200 | 50% | 72,600 |
| 2011 (3) | 152,460 | 45% | 83,853 |
| 2012 (4) | 160,083 | 40% | 96,050 |
| 2013 (5) | 168,087 | 35% | 109,257 |
| 2014 (6) | 176,492 | 30% | 123,544 |
| 2015 (7) | 185,316 | 25% | 138,987 |
| 2016 (8) | 194,582 | 20% | 155,666 |
| 2017 (9) | 204,311 | 15% | 173,664 |
| 2018 (10) | 214,527 | 10% | 193,074 |
| 2019 (11) | 225,253 | 5% | 213,990 |
| 2020 (12) | 236,515 | 0% | 236,515 |