

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	
Acquisition costs	
Acquisition cost (total)	
Acquisition cost (equity)	
Acquisition 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
Acquisition 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