Key elements to the financial analysis

CITY OF IOWA CITY

1) A Project Cost Summary - shows what it costs to get the building out of the ground (Project Cost Summary Worksheet)

	Acquisition Cost
+	Renovation/Construction Cost
+	Fees
=	Project Cost

2) An Operating Pro forma - shows income stream from project, in particular, the stabilized NOI *, which is critical in determining its value. See below how NOI is used to compute fair market value.

	Gross Rent
+	Tenant Contributions
=	Gross Income
-	Vacancy Contingency
=	Effective Gross Rent (EGR)
-	Operating Expenses
=	Net Operating Income (NOI) *
-	Debt Service #1
-	Debt Service #2
=	Cash Flow

3) Determination of Fair Market Value (FMV) of the Completed Project

$$\text{FMV} = \frac{\text{Net Operating Income (NOI)}^{*}}{\text{Capitalization Rate}}$$

Solving for Fair Market Value -- a property with an annual NOI of $20,000 where the desired cap rate is 10.5% puts the value at $190,500. The higher the cap rate, the lower the value.

$$\text{Fair Market Value} = \frac{\text{NOI}}{\text{Cap Rate}} = \frac{\$20{,}000}{.105} = \$190{,}500$$

Conversely, you can solve for a cap rate, by flipping the equation.

$$\text{Cap. Rate} = \frac{\text{NOI}}{\text{FMV or Sale Price (sale price of comps if solving for market cap rate)}}$$

Cap expresses “for X flow of income (NOI), at Y price, I expect this rate of return.”

4) Determination of maximum loan size by each of two methods, to ensure maximum loan capacity is taken on by developers; also referred to as debt that can be attracted to the project.

   a) Banks require a certain **Debt Coverage Ratio** (DCR). A common DCR is 1.2 to 1.35 which means for every $1 in debt, you must have $1.20 to $1.35 of net operating income.

   $$\text{Loan Size By DCR} = \frac{\text{NOI}}{\text{Debt Service (D/S)}}$$

   To solve for a loan size based on DCR, use 2 step process:

   1. $$\text{D/S} = \frac{\text{NOI}}{\text{DCR}}$$

   2. $$\text{Loan} = \frac{\text{D/S}}{\text{“c” (terms of the loan: duration and interest rate)}}$$

   b) Banks also require a certain **Loan to Value (LTV)** ratio, which measures a 2^{nd} way out of the deal. Common local Loan to Value ratios are .75 - .8, which requires that for every 75 or 80 cents of loan, there must be at least $1 in fair market value.

   $$\text{Loan Size By LTV} = \frac{\text{Loan Size}}{\text{Fair Market Value (FMV)}}$$

   To solve for a loan size based on LTV, use 2 step process:

   1. $$\text{FMV} = \frac{\text{NOI}}{\text{Cap Rate required}}$$

   2. Loan = FMV x LTV

5) Measuring reasonable returns to the developer is a critical part of the financial analysis process. Here are 2 common ways to measure returns.

Cash on Cash Return

$$\frac{\text{Cash Flow}}{\text{Equity Invested}} = \frac{\text{Money out of a deal}}{\text{Money in the deal}} = \frac{\text{CF (out)}}{\text{EQ (in)}}$$

While cash on cash returns in the mid- to high-teens are desirable for privately owned investments, this level of return is high. A 10% return would be considered more acceptable for City participation in financing a project. Reducing costs and/or increasing equity are the primary ways to effect change in this number. Cash on cash measures a developer’s cash flow as a percent of their equity investment.

Internal Rate of Return (IRR)

The all-important IRR measure combines all benefits, of owning real estate, after taxes, and converts them to a single rate of return. IRR is the discount rate at which the present value (PV) of a stream of income equals the equity investment. Specifically it measures the owner's return on equity invested and provides City staff one of the standards for evaluating whether a developer's return is fair when City financing is included among funding sources.

An IRR in the teens is great for privately owned investments but is too high to justify City participation unless there are extenuating circumstances. A more modest 7% - 8% IRR might be considered.

Perhaps a good way to illustrate IRR is to show and illustration of 2 ten-year equity investments of $1,000 – each with different annual cash flows, yet each resulting in a 10% IRR:

Year	Present Value (PV) of $1.00 @ 10% return	Returns on Scenario A	Present Value of Scenario A returns	Returns on Scenario B	Present Value of Scenario B returns
1	$0.9091	$10	$9.09	$500	$454.55
2	$0.8264	20	$16.53	500	$413.20
3	$0.7513	30	$22.54	300	$225.39
4	$0.6830	100	$68.30	300	$204.90
5	$0.6209	200	$124.18	200	$124.18
6	$0.5645	300	$169.35	200	$112.90
7	$0.5132	400	$205.28	250	$128.30
8	$0.4665	600	$279.90	247	$115.23
9	$0.4241	600	$254.46	200	$84.82
10	$0.3855	2,250	$867.38	400	$154.20
			$2,017.00		$2,017.67

Note that that the present value of Scenario A and Scenario B returns are nearly equal due to the time value of money, even though the returns to the investor are so vastly different in the initial years.