Tutorial on Excel Rent Roll Modeling to Enhance DCF

Overview

In a basic Discounted Cash Flow Model, income and expenses are often treated as a single line item. This approach has some appeal and is adequate for preliminary analysis or for analysis of a single-tenant building on a NNN lease. However, it lacks the precision needed for fine-tuning the value of a multi-tenant building, or a building in which more detailed treatment of expenses is warranted. The objective of this tutorial is to explore two enhancements that can be incorporated in DCF models: First, we will discussion how the rent roll for a multi-tenant building can be modeled to arrive at more precise forecasts of gross income. Second, we will explore the treatment of fixed and variable expenses in term of different types of leases and allocation of expenses. Finally, we will model the analysis in Excel, taking advantage of built-in functions to develop a robust model that can accommodate changes in assumptions and treat leases with different terms without deferring to manual calculations that are rigid and fixed. Since we are interested in developing more advanced modeling skills, we will incorporate some Excel hints and examples throughout this text. The basic tools and concepts should provide you with enough of an understanding of the issues when you set up your own leasing models.

Background

This tutorial assumes you understand lease concepts and know how to construct lease payment schedules for individual leases (see: Exhibit 1). This tutorial will build on that foundation, and show you how you can construct lease payment schedules for a multi-tenant building consisting of tenants holding variations of these leases with different rates, adjustments, patterns, renewal probabilities and other assumptions. In addition, we will explore how to calculate variable and fixed rate expenses and reimbursements will be built on top of these as well as leasing commissions, absorption and other elements that affect the Net Operating Income. In addition, you should have a basic understanding of Excel and understand the equations built into basic DCF; if not, you will develop them by going through this exersize and the attached worksheet.

Table of Contents

Overview	
BACKGROUND	
INTRODUCTION	1
DCF/Rent Roll Analysis	
Exhibit 1(a): Discounted Cash Flow	
Exhibit 1(b): NOI Bundle of Leases, Varied Terms	
Alternative Approaches to Valuation	2
COMMON LEASE TERMS APPLIED IN CASE	
CASE STUDY: GENERAL ASSUMPTIONS	4
Project Profile	
Exhibit 1: Rent Roll Input Assumptions	
Overview of Rent Roll	4
OTHER OPERATING ASSUMPTIONS	5
Exhibit 2(a): General Assumptions	5
Exhibit 2 (b): Expense Assumptions	5
Exhibit 3: Market Leasing Assumptions	
PROPERTY PROFILE	7
Exhibit 4: Property Size and Floorplates	7
RENT ROLL ANALYSIS	8
Rent Roll Schedule	
Exhibit 5: Rent Roll Schedule	
Hints on Rent Roll Schedule	
Hints on Naming Tables	
Exhibit 6: Rent Roll Triggers & Codes	
Hints to Identify Rent Roll Triggers	
MARKET MATRICES	
Exhibit 7: Market LeasingAssumptions (MLA)	
Hints on MLA Table	
FUTURE VALUE KENTS AND I ENANT IMPROVEMENTS (II'S)	
EXNIDIT 8: Kent & TI Forecast	
Exhibit 9: Ketail Sales and Percentage Kent Forecast	
Hints on Percentage Kents	
EXHIBIT TO (U): TEHUHIT REAL FORECAST	

Hints on Tenant Rent Forecast	.14
Exhibit 10 (b): Market Rent Forecast	.15
Exhibit 11: Rent Roll Triggers and Rollover Codes	16
Hint: Rollover Codes	. 16
Exhibit 12: Expected Rollover and Leasing Patterns	.17
Exhibit 13: Rents Schedule Adjusted for Months	.18
Annual Rent Adjusted for Months Hints	. 18
Exhibit 14: Gross Rent/SF Schedule	.19
Exhibit 15: Vacancy on Renewals	.19
Exhibit 16 (a): Free Rent and Vacant on Re-leasing in Months	.20
Exhibit 16 (b): EGI net of Vacant/Free w/o % Rent	.21
Exhibit 17: EGI With Percentage Rent	.22
Exhibit 18: Tenant Improvements	.23
Hint on TIs	23
Exhibit 19: TI's and Leasing Commissions	.24
Hint on Leasing Commissions	24
Exhibit 20: Cash Flow from Tenants after TI, Leasing & Percent Rent	25
Exhibit 21 (a): Expense Schedule Recap	25
Exhibit 21(b): Expenses and Reimbursement	26
Exhibit 22: Expense Stops and Reimbursements	.27
Exhibit 23: Net Income by Tenant and Overall Cash Flow	.27
Exhibit 24: Cash Flow Schedule	.28
Exhibit 25(a): NPV based on BTCF	.28
Exhibit 25(b): Average NPV of BTCF	.29
Exhibit 26 (a): NPV of BTCF and NOI-capped Terminal Value	.29
Exhibit 26 (b): Average NPV of NOI Capped	.30
Exhibit 26 (c): IRR at Average \$/SF	.30

Introduction DCF/Rent Roll Analysis

Exhibit 1(a): Discounted Cash Flow

As noted in Exhibit 1 (a), the real estate values can be calculated as the Net Present Value of Future Benefits. In this context, Future Benefits consist of Net Operating Income (NOI), Tax Benefits (or costs), and Net Terminal Value (i.e., After Tax Proceeds on Sale). Once these benefits are modeled, they can be discounted back by some Rate to establish the Present Value (i.e., V = I/R).

The Income (I) in this application is the NOI + TSOI (Tax Savings on Other Income). The NOI is in turn based on the aggregation of individual leases with different rates, terms, adjustments and options. The leases are often staggered to avoid excessive market risk, with some probability of renewal. At the same time, market conditions are changing, resulting in a set of assumptions regarding future lease terms that would kick in if the tenant does not renew, along with



leasing commissions, tenant improvements and other costs. In addition to Rental Income, NOI might be affected by Expense Reimbursement (ER) in which tenants pay a portion of expenses, often over some floor. The Rate is a function of capital flows and demand, along with the Risk profile which is related to the certainty of Rental Income which depends on the bundling of leases (see: Exhibit 1 (b) and credit of tenants.



Alternative Approaches to Valuation

Before launching into an example of constructing a rent roll, along with related expenses and other financial elements, it is useful to see where this type of modeling fits into the investment analysis continuum. As noted in Exhibit 2, there are two basic types of financial models in real estate; static and dynamic. In general, rent roll and lease analyses are built into dynamic models, with the exception of rental structure analysis that can be used in Frontdoor/Backdoor models. In this tutorial, we will be seeking to develop a subset or module for rent Roll analysis and expense analysis that can be inserted in a basic DCF model. For more advanced modeling, we will defer to Argus.

Exhibit 2: Alternative Real Estate Models

- Static
 - Attributes
 - Fixed Cash Flows; Annuitized
 - In Perpetuity
 - Before Tax
 - Cap Rate
 - Overall Cap Rate
 - Gross Income Multiplier
 - Net Income Multiplier
 - Frontdoor/Backdoor
 - Application: Filtering deals, go/no go
 - Model: annuitized cash flows
 - Risk: in Rate or scenarios, etc.
- Dynamic
 - Attributes
 - Variable Cash Flows
 - Fixed Time
 - After Tax
 - DCF Excel: Base
 - Application: Preliminary Go/No
 - Model: single source income, expenses, investment
 - Risk: IRRs, MIRRs other Ratios; scenarios, simulation
 - DCF Enhanced: Rent Roll and Investor-specific
 - Application: Final Commitment, Due Diligence
 - Model: precise contract/market based; segmented users
 - Risk: scenarios, simulation analysis

Common Lease Terms Applied in Case

By way of background, you should be able to model the types of leases presented in Exhibit 1 (b). You should also be familiar with basic leasing concepts and terms including:

- Type of lease (i.e., N, NN, NNN)
- Rent (e.g., base/minimum amount/square foot, lump sum)
- Unit of measure (i.e., usable space vs. rentable adjusted by load factor)
- Changes in lease rates (e.g., escalations or indexing)
- Expense treatments (i.e., fixed, variable)
- Expense changes (i.e., CPI, CPI modified, specified pattern)
- Expense allocations (i.e., reimbursements, expense stops, pro-rata treatment)
- Concessions (e.g., free rent, tenant improvements)
- Leasing Costs (e.g., commissions, expenses)
- Renewal Assumptions (e.g., option to renew, right of refusal)
- Probability of Renewal
- Absorption Rates (i.e., when will vacant space be leased; what gap between leases)
- Market Leasing Assumptions (i.e., by tenant category, what are the assumptions on the above items that would apply if the space were vacant and leased up, or if the lease jumps to market on renewal)

You should also think about other key assumptions including:

- Cap rates (e.g., going in, exit)
- General inflation
- Market Leasing Assumptions
- Market Segmentation (for assigning tenant/spaces to classes)

The basic framework can be expanded to allow you to create more sophisticated models and make other enhancements that can be used in adding more precision to basic DCF models. There are a number of ways to approach Rent Roll analysis that can be integrated into DCF. One approach would be to develop an elaborate set of "IF" statements that would apply logic tests to determine which values are appropriate at which point. Another approach would be to create a series of tables or matrices that laid out the pattern of rents, expenses and other items over time under various scenarios. Then, you could use LOOKUP functions to extract the relevant data given certain conditions or trigger events. This tutorial uses a combination, but to help explain what is actually occurring, relies more heavily on the matrix approach. To a certain extent, the decision about how you decide to approach rent roll analysis and how much you automate it to accommodate different scenarios or options is a matter of personal taste. However, since you will be working in teams and want others to review and/or contribute to your work, you should approach the choice in more of a strategic manner. At the same time, pragmatics and time allocation will enter into the decision.

Case Study: General Assumptions Project Profile

Exhibit 1: Rent Roll Input Assumptions

Suite	Tenant	Lease Type	Rentable SF	% of	Start Date	Term Yrs	Current	Rent Change	Reimbursement***	Upon	Leasing
		• •		Total SF			\$/SF/Yr	-		Expiration	Assumption
100	Land Leap Group	Office	5,750	13.9%	12/1/2003	6	\$22.51	Market Rent Inflation	\$5.18/SF	Renew 1	MLA 1
101	Smoky Bean*	Retail	1,725	4.2%	7/1/2006	3	\$18.40	CPI, Lease Year	Net, Pro-rata Share	Renew All	MLA 2
102	Cobbler & Co.**	Retail	1,438	3.5%	3/1/2007	3	\$23.00	CPI, Lease Year	\$5.85/SF	Renew All	MLA 2
103	Vacant	Office	1,725	4.2%	3/1/2008	5	Market	Increase \$1/SF/Yr	Base Stop	Market	MLA 1
104	ZYX	Office	3,163	7.6%	5/1/2004	5	\$23.40	CPI, Lease Year	\$5.34/SF	Vacate	MLA 1
200	Mighty Mortgage	Office	3,910	9.4%	5/1/2004	5	\$24.58	Market Rent Inflation	\$5.34/SF	Renew 1	MLA 3
201	Archived Architecture	Office	4,600	11.1%	12/1/2005	5	\$25.55	Market Rent Inflation	5.50/SF, Inc over Base YrStor	Market	MLA 3
202	Horizon Life Insurance	Office	5,290	12.8%	9/1/2007	3	\$27.65	Market Rent Inflation	\$5.85/SF	Market	MLA 3
300	Bedrock Research	Office	5,463	13.2%	3/1/2006	5	\$29.24	Market Rent Inflation	\$5.68/SF	Renew 1	MLA 4
301	Vacant	Office	3,738	9.0%	6/1/2008	5	Market	Increase \$1/SF/Yr	Inc over Market Stop	Market	MLA 4
302	Firestarter Analytics	Office	4,600	11.1%	9/1/2005	5	\$28.12	Market Rent Inflation	\$5.50/SF	Vacate	MLA 4

* Tenant pays 5% on sales up to \$150,000 and then 2.5% on all sales above that level up to \$250,00, and then 1% thereafter. 2008 sales were \$280,000.

** 5% on sales above \$70,000. 2008 sales were \$80,000.

Overview of Rent Roll

- Spaces. The existing building has 11 spaces, 9 of which are occupied and 2 vacant (i.e., Suites 103, 301). All spaces are Net Rentable SF.
- **Commence Date**. This is an existing building with 9 leases which must be renewed/replaced and 2 vacant.
- Lease Terms. The lease terms are given, with the vacant spaces from Market Leasing Assumptions/type.
 - Future terms are stated in the MLA.
 - Lease expirations occur at the beginning or end of months; items will need pro-rata allocations between the respective years.
- **Types**. There are 9 office spaces and 2 retail. The retail spaces have percentage rents which will be added on top of the base rent/square foot.
- Rent Changes. There are two types of rent changes; Market Rate Inflation, and CPI (i.e., general inflation). All changes are compounded.
- **Expense Reimbursements**. Each tenant has a form of Net lease, with most having a Base Stop.
 - The landlord will absorb the expenses up to the expense stop, then get reimbursed above that amount.
 - The Net, Pro-rata option indicates no stop; the tenant will pay a proportionate share of all expenses.
 - The Base Stop is the actual expense per SF in year the space is leased.
- Upon Expiration. There are three options: Renew All, Renew 1, or Market (aka Vacate)
 - Renew All. This indicates there is 100% probability the current tenant will renew the lease at the agreed rate of increase for each roll.
 - o Renew 1: This indicates the existing tenant will renew the first rollover and then it will go to MLA assumptions on Renew/New.
 - Market. This indicates the probability of renewal comes from the Market Leasing Assumption for that tenant class.
 - The rent at turnover will be weighted by the probability of renewal. If 75/25, new rent is 75% *Tenant Rent + 25% *Market Rent.
 - All rents are inflated by the Rent Change for the individual tenant or for the tenant type in the MLA.
- Leasing Assumptions. There are 4 classes of tenants: MLA 1-MLA4. These will drive the new rents, terms and other assumptions.

Other Operating Assumptions

Exhibit 2(a): General Assumptions

Category	Rate	Code
Building Efficiency	85.00%	Net/Gross
Changes		
General Inflation	3.00%	CPI
Retail Sales Volume	3.50%	
Market Rent Inflation	4.00%	MRI

There are two types of inflation; General Inflation which is the Consumer Price Index (CPI), and Market Rent Inflation which is the overall rate of rental growth assumed for the market. Rents are fixed during the term of the respective lease and then increase by the compounded CIP or MRI change.

Exhibit 2 (b): Expense Assumptions

Category	Amount/yr	Units	Area	% Fixed	Inflation	Total Annualized
Reimbursable Expenses						1 11110011200
Property Taxes	\$55,000	\$ Amount	NA	100%	CPI	\$55,000
Utilities	\$1.20	\$ / Area	Gross SF	60%	CPI	\$58,447
Janitorial	\$0.60	\$ / Area	Gross SF	15%	CPI	\$29,224
Administrative	\$60,000	\$ Amount	NA	100%	CPI	\$60,000
Property Insurance	\$0.60	\$ / Area	Gross SF	100%	CPI	\$29,224
Non-reimbursable Expension	ses					\$231,894
Management Fee	5%	Gross Income	NA	NA	NA	
Capital Expenditures	\$0.05	\$ / Area	Gross SF			
Reserve	\$0.50	\$ / Area	Gross SF	100%	CPI	\$24,353

The Total Annualized is a simple calculation ignoring Fixed and Variabel and Occupancy. It can be used to test the Expense Ratio against the Gross Income to see if it is reasonable for the respective type and scale of the project. It is the \$/SF * Gross SF (48,706)

In this case we are ignoring Capital Reserves which would be carried forward in an account until needed.

Expenses fall into two categories: reimbursable and non-reimbursable.

- o The % Fixed field adjusts for vacancy and are charged regardless of occupancy; variable expenses or portion only for occupied space.
- o For example
 - Utilities are \$1/sf/year and 60% fixed. Assume Occupancy in that year is 75%.
 - Fixed Utilities are \$.60 (\$1.00*60%) and Variable = \$.45 (\$1 * 35% * 75%) which is \$.95/sf and \$46,270 total.
- Reimbursable expenses are accumulated and then allocated back to tenants:
 - Allocation based on Pro-rata or % of Net Rentable Occupied Space by the respective tenant compared to the Stop for that tenant. Overall, the Base Stop or current estimated stop at 100% occupancy is \$5.13 (\$212,000/41,400 Net SF
- Assume expenses on a calendar year basis.
 - All changes occur in 12 month increments.
 - o Increase is "General" or at CPI unless noted otherwise.

Calculated Base Stop	
\$	5.13

Exhibit 3: Market Leasing Assumption	ıs
Market Leasing Assumptions 1 (MLA 1)	

Item	New Market	Renewal Market
Renewal Probability	-	75%
Market Rent (\$/SF/Yr)	\$23.81	\$22.00
Months Vacant	3	-
Tenant Improvements	\$16.00	\$8.00
Leasing Commissions	6.00%	4.00%
Rent Abatements	3	1
Rent Changes	MRI	-
Reimbursements	Base Stop	-
Term (Yrs)	5	-

Market Leasing Assumptions 2 (MLA 2)

Item	New Market	Renewal	
Item	New Market	Market	
Renewal Probability	-	50%	
Market Rent (\$/SF/Yr)	\$23.00	\$21.00	
Months Vacant	3	-	
Tenant Improvements	\$12.00	\$6.00	
Leasing Commissions	5.00%	3.00%	
Rent Abatements	2	2	
Rent Changes	MRI	-	
Reimbursements	Pro-rata	-	
Term (Yrs)	3	-	

Item	New Market	Renewal
Item	New Market	Market
Renewal Probability	-	80%
Market Rent (\$/SF/Yr)	\$25.00	\$24.00
Months Vacant	5	-
Tenant Improvements	\$16.00	\$8.00
Leasing Commissions	6.00%	4.00%
Rent Abatements	2	1
Rent Changes	MRI	-
Reimbursements	Base Stop	-
Term (Yrs)	5	-

Market Leasing Assumptions 4 (MLA 4)

Market Leasing Assumptions 3 (MLA 3)

Itom	Now Markat	Renewal	
Itelli	INEW MAINER	Market	
Renewal Probability	-	70%	
Market Rent (\$/SF/Yr)	\$27.50	\$26.00	
Months Vacant	6	-	
Tenant Improvements	\$16.00	\$8.00	
Leasing Commissions	6.00%	4.00%	
Rent Abatements	3	2	
Rent Changes	MRI	-	
Reimbursements	Base Stop	-	
Term (Yrs)	5	-	

There are 4 classes of tenants with different assumptions:

- Type of Lease Terms: New Leases (i.e., space rolls over to Market) and Renewal Market (i.e., new tenant at Market expires and Renews)
- The New Market are the assumptions that would be applied if a space rolls over and there is no renewal.
- Calculations/Rationale
 - For Leases that went to Market, the 2^{nd} rollovers automatically use the Renewal Probability. That is, the rentas are weighted between the New Market and Renewal Market by the percent. For example, in MLA 3, the New Market is \$25 and Renewal is \$24 with an 80% chance of renewal. Thus, the inferred rent would be = (20% * \$25) + (80% * 24) which = \$24.20.
 - The difference between the two rates in this case reflects the fact the Market Rents grew faster than the Rent increases for existing tenants who have a slight advantage if they renew. If they don't renew, it goes to Market.

Property Profile

One of the first steps is to step back and analyze the overall project, as well as the existing rent Roll. As noted earlier in Exhibit 3 (a), the Rent Roll is keyed to the Suites as the basic spatial unit. These suites are mapped to current tenants or noted as Vacant. For each of the spaces, the Type of Space (e.g., Retail, Office) is noted, along with the Leasing Assumptions as to type of tenancy. The table also indicates the "Rentable SF" per Suite (SFR). From a tenant's perspective, the Rentable SF is typically bigger than the Usable SF (USF), adjusted upward by a Load Factor. This allows the landlord to "load" some of the operating expenses back to the tenants. In this case, assume we are focused on the RSF which when combined with non-rentable areas, comprise the entire building. The difference between the sum of the RSF and the gross building area is the Building Efficiency Ratio (BER). In this case, the 85% BER converts the 41,400 RSF to 48,706 SF total. This is determined by mapping the Suites to the Floors. Note Net rentable is 41,400 and Gross is 48,706 SF.

Exhibit 4: Property Size and Floorplates

Floor	Net RSF	Gross SF
Floor 1	13,800	16,235
Floor 2	13,800	16,235
Floor 3	13,800	16,235
Total SF	41,400	48,706

Occupied	35,938	42,279
Vacant	5,463	6,426
Total SF	41,400	48,706

Category	Unit
Building Efficiency	85.00%

Getting the building composition right up front will be important since you must tie back to these figures in the actual rental calculations. Also, expense reimbursements will be based on pro rata share of occupied stock. Since we have some vacant spaces, we will have to make some assumptions regarding the lease-up or absorption. Further, since we do not have a lease in place, we will have to make some basic leasing assumptions (e.g., term, rates, commissions, and expense treatments).

Rent Roll Analysis

Rent Roll Schedule

One of the first calculations is to set up a system to "FLAG" when a space or tenant is up for renewal. Exhibit 5 presents a schedule of the lease maturities drawing from the Inputs and the Market Leasing Assumptions. These data were extracted from the assumptions page and contain a number of key variables in addition to the lease maturities. As noted in the schedule to the spaces are vacant; unit number 103 and unit 301. Thus there will be no current inputs for some of the key variables related to individual tenants. The required data for these tenant spaces will be extracted from the market leasing assumptions.

	Tenant		Start Date	Term					Upon	Current Rent			Net SF		Rent at
Unit	Tonan	MLA Category	Blart Bute	Term	EDATE1	MLA term	EDATE2	EDATE3	Expiration	Current Rent	Expense Stop	Rent Ch	THE BI	Gross SF	Inception
100	Land Leap Group	MLA1	12/1/2003	6	12/1/2009	5	12/1/2014	12/1/2019	Renew 1	\$22.51	\$ 5.18	MRI	5,750	6,765	\$17.79
101	Smoky Bean*	MLA2	7/1/2006	3	7/1/2009	3	7/1/2012	7/1/2015	Renew All	\$18.40	\$ -	CPI	1,725	2,029	\$16.36
102	Cobbler & Co.**	MLA2	3/1/2007	3	3/1/2010	3	3/1/2013	3/1/2016	Renew All	\$23.00	\$ 5.85	CPI	1,438	1,691	\$20.45
103	Vacant	MLA1	3/1/2008	5	3/1/2013	5	3/1/2018	3/1/2023	Market	\$23.81	\$ 5.60	MRI	1,725	2,029	\$19.57
104	ZYX	MLA1	5/1/2004	5	5/1/2009	5	5/1/2014	5/1/2019	Vacate	\$23.40	\$ 5.34	CPI	3,163	3,721	\$19.24
200	Mighty Mortgage Company	MLA3	5/1/2004	5	5/1/2009	5	5/1/2014	5/1/2019	Renew 1	\$24.58	\$ 5.34	MRI	3,910	4,600	\$20.20
201	Archived Architecture	MLA3	12/1/2005	5	12/1/2010	5	12/1/2015	12/1/2020	Market	\$25.55	\$ 5.50	MRI	4,600	5,412	\$21.00
202	Horizon Life Insurance	MLA3	9/1/2007	3	9/1/2010	5	9/1/2015	9/1/2020	Market	\$27.65	\$ 5.85	MRI	5,290	6,224	\$24.58
300	Bedrock Research	MLA4	3/1/2006	5	3/1/2011	5	3/1/2016	3/1/2021	Renew 1	\$29.24	\$ 5.68	MRI	5,463	6,426	\$24.04
301	Vacant	MLA4	6/1/2008	5	6/1/2013	5	6/1/2018	6/1/2023	Market	\$27.50	\$ 5.60	MRI	3,738	4,397	\$22.60
302	Firestarter Analytics	MLA4	9/1/2005	5	9/1/2010	5	9/1/2015	9/1/2020	Vacate	\$28.12	\$ 5.50	MRI	4.600	5.412	\$23.11

Exhibit 5: Rent Roll Schedule

* Tenant pays 5% on sales up to \$150,000 and then 2.5% on all sales above that level up to \$250,00, and then 1% thereafter. 2008 sales were \$280,000. ** 5% on sales above \$70,000. 2008 sales were \$80,000.

Hints on Rent Roll Schedule

- The EDATE function is used to calculate the date of maturity of the leases from the Start Date using the Term as the lag. The Equation is EDATE(StartDate,Term*12) which adds the number of months to the Start Date. The program adjusts for Leap Years where appropriate.
- Two of the spaces are Vacant (i.e., 103 and 301) which belong to MLA 1 and MLA 4 groups, respectively. Thus, the Rents, Expense Stop and Rent Change can be drawn from the MLA assumptions. However, a special adjustment will have to be made since they are going to roll at an anniversary date based on 2009 leasing vs. the earlier leasing assumption using the prior lease.
- The "Rent at Inception" will be used for the tenants who are still in at their old rents. That is, the current market rent for a space is set at \$23 for Cobbler & Co's current space. However, when they leased it in 2007, the old rate was \$20.45 which is the PV of \$23 discounted at the 4% Rate back 3 years.

Hints on Naming Tables

One of the more useful features in Excel that makes it easy to apply lookup tables that are robust is the NAMING function. In this context, the term robust refers to the need for flexibility in setting up equations that can be easily modified to include other data items that may be generated through subsequents calculations and need to be added to the set of assumptions. For example, Exhbit 5(b) indicates how Naming can be used by Clicking on Formulas and Name Manager. Now, just highlight a desired range and click on NEW.

Name Manager

N	lame Manager	marine based on	areas analysis and	Anna Anna
	<u>N</u> ew Ec	lit.,, Delete		
	Name	Value	Refers To	Scope
	Building_Efficiency	{"Building Efficiency	='JRD2008'!\$H\$19:	Workbook
L	MLA_Table	{"MLA1","75%","\$2	='JRD2008'!\$H\$27:	Workbook
	PercR_Table	{"Smoky Bean*"," \$	='JRD2008'!\$H\$70:	Workbook
I	Roll_Table	{"100", "Land Leap	='JRD2008'!\$G\$5:\$	Workbook
	TIN_Table	{"MLA1","\$16.00","	='JRD2008'!\$H\$51:	Workbook
	TIR_Table	{"MLA1"," \$8.00 ","	='JRD2008'!\$H\$57:	Workbook

At this point, the Cell Reference Bar at the bottom of the screen will identify the range you highlighted and prompt for a Name. In this case, I named it Roll_Table which is the RED outline below. I suggest using some consistent naming convention so you can remember when you apply it in a LOOKUP function. As noted, I could have two or more names refering to parts of the same matrix. This comes in handing since VLOOKUP only match the first column in where you are looking up some data. I could have built H5:V15 in the equation (i.e., VLOOKUP(\$I22,Roll_Table,5) which if I122 had the tenant named Mighty Mortgage, would pull back 5 which is the Term in the 5th offset column.

F,	G	н	I	J	к	L	м	N	0	Р	Q	B	S	Term	U	V	
<u> </u>	_			Nan	ie = Ro	ll Tabl	e						Values Only				
	1	2	3	4		- 6	~ 7	8	9	10	11	12	13	14	15	16	
		Tenant	MLA	Start Date	Term					Upon	Current	Expense		Net SF		Inceptio	
	Unit	renand	Category	otalt Date	reini	EDATE1	MLA term	EDATE2	EDATE3	Expiration	Rent	Śtop	Rent Ch	Tues of	Gross SF	n	
5	100	Land Leap Grou	MLA1	12/1/2003	6	12/1/2009	5	12/1/2014	12/1/2019	Renew 1	\$22.51	\$ 5.18	MBI	5,750	6,765	\$17.79	
6	101	Smoky Bean*	MLA2	7/1/2006	3	7/1/2009	3	7/1/2012	7/1/2015	Renew All	\$18.40	\$-	CPI	1,725	2,029	\$16.36	
7	102	Cobbler & Co."	MLA2	3/1/2007	3	3/1/2010	3	3/1/2013	3/1/2016	Renew All	\$23.00	\$ 5.85	CPI	1,438	1,691	\$20.45	
8	103	Vacant	MLA1	3/1/2008	5	3/1/2013	5	3/1/2018	3/1/2023	Market	\$23.81	\$ 5.60	MBI	1,725	2,029	\$19.57	
9	104	ZYX	MLA1	5/1/2004	5	5/1/2009	5	5/1/2014	5/1/2019	Vacate	\$23.40	\$ 5.34	CPI	3,163	3,721	\$19.24	
10	200	Mighty Mortgag	MLA3	5/1/2004	5	5/1/2009	5	5/1/2014	5/1/2019	Renew 1	\$24.58	\$ 5.34	MBI	3,910	4,600	\$20.20	
11	201	Archived Archit	MLA3	12/1/2005	5	12/1/2010	5	12/1/2015	12/1/2020	Market	\$25.55	\$ 5.50	MBI	4,600	5,412	\$21.00	
12	202	Horizon Life Ins	MLA3	9/1/2007	3	9/1/2010	5	9/1/2015	9/1/2020	Market	\$27.65	\$ 5.85	MBI	5,290	6,224	\$24.58	
13	300	Bedrock Resea	MLA4	3/1/2006	5	3/1/2011	5	3/1/2016	3/1/2021	Renew 1	\$29.24	\$ 5.68	MBI	5,463	6,426	\$24.04	
14	301	Vacant	MLA4	6/1/2008	5	6/1/2013	5	6/1/2018	6/1/2023	Market	\$27.50	\$ 5.60	MBI	3,738	4,397	\$22.60	
15	302	Firestarter Anal	MLA4	9/1/2005	5	9/1/2010	5	9/1/2015	9/1/2020	Vacate	\$28.12	\$ 5.50	MBI	4,600	5,412	\$23.1	

The advantage of using NAMES is you can add a column to the table and/or make other changes and then just EDIT the named range. That way, all equations are updated. For example, if you use VLOOKUP(\$122,\$H5:\$V15,5) and then insert any row above it, your coordinates will be off. The name automatically adjusts and coordinate changes.

Exhibit 6: Rent Roll Triggers & Codes

Leasing Schedule for Expense Stop		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	1					1					1
Smoky Bean*	MLA2	1			1			1			1	
Cobbler & Co.**	MLA2		1			1			1			1
Vacant	MLA1	1					1					1
ZYX	MLA1	1					1					1
Mighty Mortgage Company	MLA3	1					1					1
Archived Architecture	MLA3		1					1				
Horizon Life Insurance	MLA3		1					1				
Bedrock Research	MLA4			1					1			
Vacant	MLA4	1					1					1
Firestarter Analytics	MLA4		1					1				
Rollover Codes		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	T-100					T-NM					NM-RM
Smoky Bean*	MLA2	T-100			T-100			T-100			T-100	
Cobbler & Co.**	MLA2	T-OLD	T-100			T-100			T-100			T-100
Vacant	MLA1	M-100					NM-RM					M-100
ZYX	MLA1	M-100					M-100					M-100
Mighty Mortgage Company	MLA3	T-100					T-NM					NM-RM
Archived Architecture	MLA3	T-OLD	M-100					NM-RM				
Horizon Life Insurance	MLA3	T-OLD	M-100					NM-RM				
Bedrock Research	MLA4	T-OLD	T-OLD	T-100					T-NM			
Vacant	MLA4	M-100					NM-RM					M-100
Firestarter Analytics	MLA4	T-OLD	M-100					M-100				

Once a schedule has been set up for the rent rolls, the results can be converted to a calendar year cash flow layout as noted in Exhibit 6. In this case, the matrix is set up to flag the lease rollover and indicate the type of rollover that occurs at the respective date. One of the first steps in setting up the rent roll is to identify the trigger dates identifying when leases expire. This can be accomplished by writing an equation that would look up the end dates of the initial lease as well as any subsequent anniversary dates. The anniversary dates would be simply calculated by adding the term of the lease by the respective market leasing assumptions (MLA) for the individual tenants using the EDATE function. One problem that has to be built into the logic of the equation is the treatment of currently vacant space for which the initial renewal may be shorter than the indicated term of the lease. Once the trigger dates have been identified, a coding session should be applied to indicate what actually occurs in terms of Renewal (R), New Market (NM), Renewal Market (RM), or some combination thereof. The blending of the treatments is governed by the probability of renewal which can be looked up in the MLA table.

Hints to Identify Rent Roll Triggers

- Flagging Rent Rolls. To identify when a rent roll occurs for a lease, you can use the YEAR function which pulls the Year out of a date. For example, in the EDATES in Exhibit 5, you can extract the 2009, 2010 etc. and then test that against the year.
 - IF(YEAR(L5)=I 155,1,IF(YEAR(N5)=I 155,2,"")) This equation goes to the:
 - L column which is EDATE1 in Exhibit 5 and checks to see if that Year is the Current Year which is in Row 155 in Exhibit 6. If so, it returns 1.

- The 2nd IF goes to the N column which is EDATE2 (EDATE1 + Term*12 and pulls out a 2 if it starts the next lease period.
- Actions Upon Lease Expiration = Renew
 - Existing Tenant:. This is 100% renewal at the accrued rate of growth for the existing tenant.
 - Lease Up, 2^{nd} time it expires; blends the then-current Tenant Rate (inflated) new with the Market Rate for that space, using the Renewal Probability for the Space.
 - 3rd Time, uses the then-current Market Rate with the then-current Renewal Rate for that MLA type, using Probility of Renewal to allocate.
 - o 4th Time; uses 100% then-current Market Rate
- Actions Upon Lease Expiration = Market
 - Existing Tenant
 - 1st Roll: This goes 100% to the then-current Market
 - 2nd Roll: This uses a blending of the then-current rent for Market New with the then-current Renewal Market Rate using the Renewal Probability for the MLA type driving the allocation.
 - Vacant now; goes 100% to current Market for that space type in the MLA.When it comes up for 2nd roll, uses blended rate for New Market and Renewal Market.

Market Matrices

Since we are developing a "robust" model, we will use a series of LOOKUP functions which will be used to populate the Rent Roll model based on assumptions (e.g., renewals, rental adjustments) that will affect the NOIs during our forecast period. In Exhibit 3 (f), the Market Leasing Assumptions (MLA) were presented for each Class of Tenant (note: MLA 1, MLA 2 etc. in Rent Roll). While these data could be used in the raw format, to automate the process we should set them up in matrix format.

Exhibit 7: Market LeasingAssumptions (MLA)

	Н	I	J	ĸ	L	M	N	0	Р	Q	B	S	Т	U	¥
MLA_Roll	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
															Renew
	TENANT CLA	Renewal	Market Rei	Renewal	Vacant	TI	Renew TIs	LeaseCom	R-Lease Co	Free	RentCh	Reimburse	Term	V + Free	Free
27	MLA1	75%	\$23.81	\$22.00	3	\$16.00	\$ 8.00	6.00%	4.00%	3	4.00%	Base Stop	5	6	1
28	MLA2	50%	\$23.00	\$21.00	3	\$12.00	\$ 6.00	5.00%	3.00%	2	4.00%	Pro-rata	3	5	2
29	MLA3	80%	\$25.00	\$24.00	5	\$16.00	\$ 8.00	6.00%	4.00%	2	4.00%	Base Stop	5	7	1
30	MLA4	70%	\$27.50	\$26.00	6	\$16.00	\$ 8.00	6.00%	4.00%	3	4.00%	Base Stop	5	9	2

The market leasing assumptions indicated in Exhibit 7 were extracted from the input assumptions. They are reorganized into the matrix to make it easier for pulling values that will be needed for the various schedules.

Hints on MLA Table

Once the table is organized with the needed data, VLOOKUPs can be used so pick out the items of interest in your schedules. You can put the data in any order, but should make it refer to the respective Assumptions cells to make it interactive and capable of being updated. To make it easier to ensure the proper data are extracted from the table the table could be named using the name manager under the formula function in Excel. In this case, the coordinates are H27:V30.

Future Value Rents and Tenant Improvements (TI's)

At this point, create tables that show changes in key market items over the forecast period. In essence, you are inflating the current Market Rent, TIs for Market and Renewal to get future values. These can be pulled down when needed.

Market	Rent											
ind not		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	MLA1	\$23.81	\$24.76	\$25.75	\$26.78	\$27.85	\$28.97	\$30.13	\$31.33	\$32.59	\$33.89	\$35.24
	MLA2	\$23.00	\$23.92	\$24.88	\$25.87	\$26.91	\$27.98	\$29.10	\$30.27	\$31.48	\$32.74	\$34.05
	MLA3	\$25.00	\$26.00	\$27.04	\$28.12	\$29.25	\$30.42	\$31.63	\$32.90	\$34.21	\$35.58	\$37.01
	MLA4	\$27.50	\$28.60	\$29.74	\$30.93	\$32.17	\$33.46	\$34.80	\$36.19	\$37.64	\$39.14	\$40.71
Renewal	Rent											
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	MLA1	\$22.00	\$22.88	\$23.80	\$24.75	\$25.74	\$26.77	\$27.84	\$28.95	\$30.11	\$31.31	\$32.57
	MLA2	\$21.00	\$21.84	\$22.71	\$23.62	\$24.57	\$25.55	\$26.57	\$27.63	\$28.74	\$29.89	\$31.09
	MLA3	\$24.00	\$24.96	\$25.96	\$27.00	\$28.08	\$29.20	\$30.37	\$31.58	\$32.85	\$34.16	\$35.53
	MLA4	\$26.00	\$27.04	\$28.12	\$29.25	\$30.42	\$31.63	\$32.90	\$34.21	\$35.58	\$37.01	\$38.49
TIs Mar	ket											
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	MLA1	\$16.00	\$16.48	\$16.97	\$17.48	\$18.01	\$18.55	\$19.10	\$19.68	\$20.27	\$20.88	\$21.50
	MLA2	\$12.00	\$12.36	\$12.73	\$13.11	\$13.51	\$13.91	\$14.33	\$14.76	\$15.20	\$15.66	\$16.13
	MLA3	\$16.00	\$16.48	\$16.97	\$17.48	\$18.01	\$18.55	\$19.10	\$19.68	\$20.27	\$20.88	\$21.50
	MLA4	\$16.00	\$16.48	\$16.97	\$17.48	\$18.01	\$18.55	\$19.10	\$19.68	\$20.27	\$20.88	\$21.50
TIs Rene	ew											
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	MLA1	\$8.00	\$8.24	\$8.49	\$8.74	\$9.00	\$9.27	\$9.55	\$9.84	\$10.13	\$10.44	\$10.75
	MLA2	\$6.00	\$6.18	\$6.37	\$6.56	\$6.75	\$6.96	\$7.16	\$7.38	\$7.60	\$7.83	\$8.06
	MLA3	\$8.00	\$8.24	\$8.49	\$8.74	\$9.00	\$9.27	\$9.55	\$9.84	\$10.13	\$10.44	\$10.75
	MLA4	\$8.00	\$8.24	\$8.49	\$8.74	\$9.00	\$9.27	\$9.55	\$9.84	\$10.13	\$10.44	\$10.75

Exhibit 8: Rent & TI Forecast

As noted, the Market and Renewal rates are inflated by the assumed Rent Growth which in this case is 4% for each group. These values could be changed to reflect "expected" market conditions to add more precision to the analysis The TI's are assumed to grow at the General Inflation or CPI rate. The Market Rent and Renewal rent can be copied from the MLA inputs, or extracted using LOOKUPs.

	Н	Ι	J	K	L	М	Ν	0	Р	Q	R	S
		1	2	3	4	5	6	7	8	9	10	11
65	Retail Sales	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
66	Smoky Bean*	\$ 289,800	\$ 299,943	\$ 310,441	\$ 321,306	\$ 332,552	\$ 344,191	\$ 356,238	\$ 368,707	\$ 381,611	\$ 394,968	\$ 408,792
67	Cobbler & Co.**	\$ 82,800	\$ 85,698	\$ 88,697	\$ 91,802	\$ 95,015	\$ 98,340	\$ 101,782	\$ 105,345	\$ 109,032	\$ 112,848	\$ 116,798
68												
69		1	2	3	4	5	6	7	8	9	10	11
70	Percentage Rent	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
71	Smoky Bean*	\$ 10,798	\$ 10,899	\$ 11,004	\$ 11,113	\$ 11,226	\$ 11,342	\$ 11,462	\$ 11,587	\$ 11,716	\$ 11,850	\$ 11,988
72	Cobbler & Co.**	\$ 640	\$ 785	\$ 935	\$ 1,090	\$ 1,251	\$ 1,417	\$ 1,589	\$ 1,767	\$ 1,952	\$ 2,142	\$ 2,340
73												
74	Percentage Rent/SF											
75	Smoky Bean*	\$6.26	\$6.32	\$6.38	\$6.44	\$6.51	\$6.58	\$6.64	\$6.72	\$6.79	\$6.87	\$6.95
76	Cobbler & Co.**	\$0.45	\$0.55	\$0.65	\$0.76	\$0.87	\$0.99	\$1.11	\$1.23	\$1.36	\$1.49	\$1.63
77		* Tenant pays	s 5% on sales u	p to \$160,000	and then 2.5%	on all sales ab	ove that level u	up to \$260,00,	and then 1% th	nereafter. 2008	sales were \$2	80,000.
78		** 5% on sale	es above \$70,0	00. 2008 sales	were \$80,000.							
79		-				-						
80	Smoky Bean*	Breakpoint	Test: Yr 1	Cobbler & Co	Test: Yr 1							
81	5.0%	\$ 160,000	\$ 8,000	5%	\$ 70,000							
82	2.5%	\$ 260,000	\$ 2,500	2008	\$ 80,000							
83	1.0%	\$ 260,000	\$ 298	1								
84	2008	\$ 280,000	\$ 10,798									

Exhibit 9: Retail Sales and Percentage Rent Forecast

In this case, two of the tenants are retailers occupying portions of the ground floor of the mixed-use development. There are two treatments of percentage rents. In the first case, different breakpoints are used to "scale back" the percentage rents. Thus, the model must be able to test which category the rents fell into, and how to treat the percentages. For example, the Smoky Bean pays a set percentage for the first two tranches, but then a lower percent if it beats its projections.

Hints on Percentage Rents

The logic employed in percentage rent calculations depends on the number of steps and how the percentages are applied. To debug your equations, it's a good idea to manually calculate the desired results (i.e., \$10,798 for Smoky Bean in I80-I84). Once you know the number, you can work with the equation in I71 and drag it across the other years. Note the retail percentages differ, with Smoky Bean having multiple steps and Cobbler & Co. a floor (i.e., no Percentage Rent below \$70,000 in total sales. You could set this up in a matrix like the MLA and then test for the kind of percentage agreement and then identify the breakpoints and percents to be more robust. This is what Argus does but is not necessary here.

Exhibit 10	(a):	Tenant	Rent	Forecast
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E	F	G	н		J	к	L	M	N	0	P	Q	B	S
Tenant	Rent			1	2	3	4	5	6	7	8	9	10	11
Tenar	nt R	ow.	88 ТТуре 🖕	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap	o Group		MLA1	\$22.51	\$23.41	\$24.34	\$25.32	\$26.33	\$27.38	\$28.48	\$29.62	\$30.80	\$32.03	\$33.31
Smoky B	ean"		MLA2) \$18.40°	\$19.14	\$19.90	\$20.70	\$21.53	\$22.39	\$23.28	\$24.21	\$25.18	\$26.19	\$27.24
Cobbler 8	(Co.""		MLA2	\$23.00	\$23.92	\$24.88	\$25.87	\$26.91	\$27.98	\$29.10	\$30.27	\$31.48	\$32.74	\$34.05
Vacant			MLA1	\$23.81	\$24.76	\$25.75	\$26.78	\$27.85	\$28.97	\$30.13	\$31.33	\$32.59	\$33.89	\$35.24
ZYX			MLA1	\$23.40	\$24.34	\$25.31	\$26.32	\$27.38	\$28.47	\$29.61	\$30.80	\$32.03	\$33.31	\$34.64
Mighty M	ortgage	Comp	MLA3	\$24.58	\$25.56	\$26.58	\$27.64	\$28.75	\$29.90	\$31.10	\$32.34	\$33.63	\$34.98	\$36.38
Archived	Archited	sture	MLA3	\$25.55	\$26.58	\$27.64	\$28.74	\$29.89	\$31.09	\$32.33	\$33.63	\$34.97	\$36.37	\$37.82
Horizon L	ife Insur	ance	MLA3	\$27.65	\$28.75	\$29.90	\$31.10	\$32.34	\$33.64	\$34.98	\$36.38	\$37.84	\$39.35	\$40.92
Bedrock	Researc	:h	MLA4	\$29.24	\$30.41	\$31.63	\$32.90	\$34.21	\$35.58	\$37.00	\$38.48	\$40.02	\$41.62	\$43.29
Vacant			MLA4	\$27.50	\$28.60	\$29.74	\$30.93	\$32.17	\$33.46	\$34.80	\$36.19	\$37.64	\$39.14	\$40.71
Firestarte	r Analyt	ics	MLA4	\$28.12	\$29.24	\$30.41	\$31.63	\$32.89	\$34.21	\$35.58	\$37.00	\$38.48	\$40.02	\$41.62

At this point, you should set up inflated rents for existing tenants (Exhibit 10(a)) and New Market and Renewal Markets. These will be used to extract the appropriate lease rates at the respective anniversary dates. Since the rents will depend on what happens (i.e., renew, market, vacate) you will have to apply different logic in your equations.

Hints on Tenant Rent Forecast

One way to set your table up is to VLOOKUP the current rates from the Roll_Table using the appropriate offset for the first year (2009) and then create a different equation for the 2^{nd} year which is then dragged down and across to fill in the matrix. The challenge with that is you have different equations in the first year and subsequent ones which can get confusing later when/if you identify some problems and forget they are different. Where practical, try to have ROBUST equations in each table or matrix. For example, in Cell I89, I entered the following:

=IF(I\$88=2009,IF(Q5>0,+Q5,VLOOKUP(\$C89,MLA_Table,3)),+H89*(1+VLOOKUP(\$C89,MLA_Table,11)))

- The first IF checks to see if it is in 2009 and if so, pulls the data in Q5 which is the current market rent (you could also use a VLOOKUP here to the Roll_Table and pick the 11th column offset.
- The 2nd embedded IF applies to years other than 2009. In essence, takes the prior year Rent and inflates it by the Rent Change which it extracts from MLA_Table offset 11.

Compare this to my initial setup which had

- Cell H89 set to =IF(Q5>0,+Q5,VLOOKUP(C89,SH\$27:ST\$30,3))
- Cell I89 and the rest of the matrix to: =+I89*(1+VLOOKUP(\$C89,\$H\$27:\$T\$30,9))

The problem in my initial are: 1) inconsistent equations, and 2) the fixed \$H\$27:\$T\$30 range rather than MLA_Table. I discovered this the hard way when I added some rows for Percentage rent and all my hard-coded equations were wrong. An easy way to combine the equations is to set up Cell H 89 and I89 so they work, copy the equations in Cell I89 and then paste it into the equation in Cell H89 for the 2nd option.

14

Exhibit 10 (b): Market Rent Forecast

New Market Rent		1	2	3	4	5	6	7	8	9	10	11
Tenant	ТТуре	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	\$23.81	\$24.76	\$25.75	\$26.78	\$27.85	\$28.97	\$30.13	\$31.33	\$32.59	\$33.89	\$35.24
Smoky Bean*	MLA2	\$23.00	\$23.92	\$24.88	\$25.87	\$26.91	\$27.98	\$29.10	\$30.27	\$31.48	\$32.74	\$34.05
Cobbler & Co.**	MLA2	\$23.00	\$23.92	\$24.88	\$25.87	\$26.91	\$27.98	\$29.10	\$30.27	\$31.48	\$32.74	\$34.05
Vacant	MLA1	\$23.81	\$24.76	\$25.75	\$26.78	\$27.85	\$28.97	\$30.13	\$31.33	\$32.59	\$33.89	\$35.24
ZYX	MLA1	\$23.81	\$24.76	\$25.75	\$26.78	\$27.85	\$28.97	\$30.13	\$31.33	\$32.59	\$33.89	\$35.24
Mighty Mortgage Company	MLA3	\$25.00	\$26.00	\$27.04	\$28.12	\$29.25	\$30.42	\$31.63	\$32.90	\$34.21	\$35.58	\$37.01
Archived Architecture	MLA3	\$25.00	\$26.00	\$27.04	\$28.12	\$29.25	\$30.42	\$31.63	\$32.90	\$34.21	\$35.58	\$37.01
Horizon Life Insurance	MLA3	\$25.00	\$26.00	\$27.04	\$28.12	\$29.25	\$30.42	\$31.63	\$32.90	\$34.21	\$35.58	\$37.01
Bedrock Research	MLA4	\$27.50	\$28.60	\$29.74	\$30.93	\$32.17	\$33.46	\$34.80	\$36.19	\$37.64	\$39.14	\$40.71
Vacant	MLA4	\$27.50	\$28.60	\$29.74	\$30.93	\$32.17	\$33.46	\$34.80	\$36.19	\$37.64	\$39.14	\$40.71
Firestarter Analytics	MLA4	\$27.50	\$28.60	\$29.74	\$30.93	\$32.17	\$33.46	\$34.80	\$36.19	\$37.64	\$39.14	\$40.71
Renewal Market Rent		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	\$22.00	\$22.88	\$23.80	\$24.75	\$25.74	\$26.77	\$27.84	\$28.95	\$30.11	\$31.31	\$32.57
Smoky Bean*	MLA2	\$21.00	\$21.84	\$22.71	\$23.62	\$24.57	\$25.55	\$26.57	\$27.63	\$28.74	\$29.89	\$31.09
Cobbler & Co.**	MLA2	\$21.00	\$21.84	\$22.71	\$23.62	\$24.57	\$25.55	\$26.57	\$27.63	\$28.74	\$29.89	\$31.09
Vacant	MLA1	\$22.00	\$22.88	\$23.80	\$24.75	\$25.74	\$26.77	\$27.84	\$28.95	\$30.11	\$31.31	\$32.57
ZYX	MLA1	\$22.00	\$22.88	\$23.80	\$24.75	\$25.74	\$26.77	\$27.84	\$28.95	\$30.11	\$31.31	\$32.57
Mighty Mortgage Company	MLA3	\$24.00	\$24.96	\$25.96	\$27.00	\$28.08	\$29.20	\$30.37	\$31.58	\$32.85	\$34.16	\$35.53
Archived Architecture	MLA3	\$24.00	\$24.96	\$25.96	\$27.00	\$28.08	\$29.20	\$30.37	\$31.58	\$32.85	\$34.16	\$35.53
Horizon Life Insurance	MLA3	\$24.00	\$24.96	\$25.96	\$27.00	\$28.08	\$29.20	\$30.37	\$31.58	\$32.85	\$34.16	\$35.53
Bedrock Research	MLA4	\$26.00	\$27.04	\$28.12	\$29.25	\$30.42	\$31.63	\$32.90	\$34.21	\$35.58	\$37.01	\$38.49
Vacant	MLA4	\$26.00	\$27.04	\$28.12	\$29.25	\$30.42	\$31.63	\$32.90	\$34.21	\$35.58	\$37.01	\$38.49
Firestarter Analytics	MLA4	\$26.00	\$27.04	\$28.12	\$29.25	\$30.42	\$31.63	\$32.90	\$34.21	\$35.58	\$37.01	\$38.49

At this point, establish the Rent Matrices or two scenarios: if the Tenant Stays, and if the Tenant leaves and Rent goes to Market. These Exhibit 10 tables show the rent levels over the forecast period for the current Tenants, as well as for the Market for the Type of Tenant (MLA1, MLA2...). Using this combined matrix, a VLOOKUP can be written to pick the appropriate rent upon expiration of a Lease. For example, the first column in the Tenant Roll schedule above actually uses a VLOOKUP which looks to the Rent Roll table, takes the MLA1 code, which is plugged into the Market Rent table and then it takes the 3 column offset.

Exhibit 11:	Rent Roll	Triggers and	Rollover	Codes
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Leasing Schedule for Expense Stop		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	1					1					1
Smoky Bean*	MLA2	1			1			1			1	
Cobbler & Co.**	MLA2		1			1			1			1
Vacant	MLA1	1					1					1
ZYX	MLA1	1					1					1
Mighty Mortgage Company	MLA3	1					1					1
Archived Architecture	MLA3		1					1				
Horizon Life Insurance	MLA3		1					1				
Bedrock Research	MLA4			1					1			
Vacant	MLA4	1					1					1
Firestarter Analytics	MLA4		1					1				
Rollover Codes		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	T-100					T-NM					NM-RM
Smoky Bean*	MLA2	T-100			T-100			T-100			T-100	
Cobbler & Co.**	MLA2	T-OLD	T-100			T-100			T-100			T-100
Vacant	MLA1	M-100					NM-RM					M-100
ZYX	MLA1	M-100					M-100					M-100
Mighty Mortgage Company	MLA3	T-100					T-NM					NM-RM
Archived Architecture	MLA3	T-OLD	M-100					NM-RM				
Horizon Life Insurance	MLA3	T-OLD	M-100					NM-RM				
Bedrock Research	MLA4	T-OLD	T-OLD	T-100					T-NM			
Vacant	MLA4	M-100					NM-RM					M-100
Firestarter Analytics	MLA4	T-OLD	M-100					M-100				

One of the challenges in applying a rent roll to DCF analysis is to be able to figure out when leases expire and what will happen in terms of renewals or re--leasing. This necessary to indicate when a lease expires which will drive rents, leasing commissions, tenant improvements and other dependent variables. Once the trigger dates (i.e., years) have been identified, then some assumptions must be made to determine what to do when it occurs.

Hint: Rollover Codes

As noted, there are four scenarios:

- T-100. This indicates there is a 100% probability the existing tenant will renew. Thus, there may be some free rent, but no TI's. At the same time, some tenants will be carrying old rents from when they initially signed up to occupy the space.
- M-100. This assumes the space will go to the market in terms of rents, expenses, income and other key variables. This is 100% to the market.
- T-NM. This indicates there is a probability of renewal that must be accounted for in the model.
- NM-RM. This indicates there is a probability an new tenant coming into the space in the future will renew, or not. Thus, the probabilities for renewal should be applied to handle partial years.

Note: this is one table I generated manually and missed the rollover for Land Leap in 2014 which rippled throughout; this points out the danger of not debugging your work and/or not making sure all calculations are equation-based.

Exhibit 12: Expected Rollover and Leasing Patterns

Leasing Schedule for Expense Stop		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	1					1					1
Smoky Bean*	MLA2	1			1			1			1	
Cobbler & Co.**	MLA2		1			1			1			1
Vacant	MLA1	1					1					1
ZYX	MLA1	1					1					1
Mighty Mortgage Company	MLA3	1					1					1
Archived Architecture	MLA3		1					1				
Horizon Life Insurance	MLA3		1					1				
Bedrock Research	MLA4			1					1			
Vacant	MLA4	1					1					1
Firestarter Analytics	MLA4		1					1				
Rollover Codes		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	T-100		-	-		T-NM					NM-RM
Smoky Bean*	MLA2	T-100			T-100			T-100			T-100	
Cobbler & Co.**	MLA2	T-OLD	T-100			T-100			T-100			T-100
Vacant	MLA1	M-100					NM-RM					M-100
ZYX	MLA1	M-100					M-100					M-100
Mighty Mortgage Company	MLA3	T-100					T-NM					NM-RM
Archived Architecture	MLA3	T-OLD	M-100					NM-RM				
Horizon Life Insurance	MLA3	T-OLD	M-100					NM-RM				
Bedrock Research	MLA4	T-OLD	T-OLD	T-100					T-NM			
Vacant	MLA4	M-100					NM-RM					M-100
Firestarter Analytics	MLA4	T-OLD	M-100					M-100				

The Tenant Rent and Market Rent tables above simply take the current rent and inflate it by the appropriate rates to create a matrix of future rents for Tenants and Tenant Classes. Recall that most of the rents are fixed during the term and then bump to the compound Future Value at the rent Change; from there the stay flat in a step pattern until the next bump. For example, in the Expected Rent below, Land Leap has rents of \$22.51 for 5 years, and then bumps to \$27.78 which is $22.51 * (1+Change)^{5^{th}}$ power.

Months New Rent in Year	of Renewal	1	2	3	4	5	6	7	8	9	10
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Land Leap Group	MLAT	£ 1		-	-	-	1	-	-	-	-
Smoky Bean"	MLA2	6	-	-	6	-	-	6	-	-	6
Cobbler & Co."	MLA2	-	10	-	-	10	-	-	10	-	- 1
Vacant	MLA1	9	· ·	-	-	-	9	-	-	-	
ZYX	MLA1	8	· ·	-	-	-	8	-	-	-	· `
Mighty Mortgage Company	MLA3	8	\.	-	-	-	8	-	-	-	-
Archived Architecture	MLA3	-	1	-	-	-	-	1	-	-	-
Horizon Life Insurance	MLA3	-	4	-	-	-	-	4	-	-	-
Bedrock Research	MLA4	-	-	10	-	-	-	-	10	-	-
Vacant	MLA4	7	-	-	-	-	7	-	-	-	
Firestarter Analytics	MLA4	-	4			-	-	4			
				- Bas	ed on '	11 mor	nths ol	d, 1 mc	onth ne	w	
Rent Adjusted for Monthl	•	1	2	3	4	5	6	7	8	9	10
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Land Leap Group	MLAT	\$ 18.18	\$ 22.51	\$ 22.51	\$ 22.51	\$ 22.51	\$ 22.94	\$ 27.78	\$ 27.78	\$ 27.78	\$ 27.78
Smoky Bean"	MLA2	\$ 17.38	\$ 18.40	\$ 18.40	\$ 19.55	\$ 20.70	\$ 20.70	\$ 21.99	\$ 23.28	\$ 23.28	\$ 24.74
Cobbler & Co."	MLA2	\$ 20.45	\$ 23.34	\$ 23.92	\$ 23.92	\$ 26.41	\$ 26.91	\$ 26.91	\$ 29.71	\$ 30.27	\$ 30.27
Vacant	MLA1	\$ 22.75	\$ 23.81	\$ 23.81	\$ 23.81	\$ 23.81	\$ 27.27	\$ 28.42	\$ 28.42	\$ 28.42	\$ 28.42
ZYX	MLA1	\$ 22.29	\$ 23.81	\$ 23.81	\$ 23.81	\$ 23.81	\$ 27.25	\$ 28.97	\$ 28.97	\$ 28.97	\$ 28.97
Mighty Mortgage Company	MLA3	\$ 23.12	\$ 24.58	\$ 24.58	\$ 24.58	\$ 24.58	\$ 28.19	\$ 30.00	\$ 30.00	\$ 30.00	\$ 30.00
Archived Architecture	MLA3	\$ 21.00	\$ 21.42	\$ 26.00	\$ 26.00	\$ 26.00	\$ 26.00	\$ 26.45	\$ 31.38	\$ 31.38	\$ 31.38
Horizon Life Insurance	MLA3	\$ 24.58	\$ 25.05	\$ 26.00	\$ 26.00	\$ 26.00	\$ 26.00	\$ 27.79	\$ 31.38	\$ 31.38	\$ 31.38
Bedrock Research	MLA4	\$ 24.04	\$ 24.04	\$ 30.37	\$ 31.63	\$ 31.63	\$ 31.63	\$ 31.63	\$ 36.77	\$ 37.80	\$ 37.80
Vacant	MLA4	\$ 25.46	\$ 27.50	\$ 27.50	\$ 27.50	\$ 27.50	\$ 30.66	\$ 32.91	\$ 32.91	\$ 32.91	\$ 32.91
Firestarter Analytics	MLA4	\$ 23.11	\$ 24.94	\$ 28.60	\$ 28.60	\$ 28.60	\$ 28.60	\$ 30.67	\$ 34.80	\$ 34.80	\$ 34.80
Unweighted Aver	age Bent/SF	\$ 22.03	\$ 23.58	\$ 25.04	\$ 25.26	\$ 25.59	\$ 26.92	\$ 28.50	\$ 30.49	\$ 30.63	\$ 30.77

Exhibit 13: Rents Schedule Adjusted for Months

To adjust for months in each year, the maturity date should be used to establish how many months are at the prior rate, and how many are at the current or new rate. The Months New Rent in Year of Renewal table above shows the number of months in the year of renewal at the NEW rate. Then, iIn the Rent Adjusted for monthly, this is done by weighting the percent old and new by the renewal percent. In

Annual Rent Adjusted for Months Hints

The following equation in I200 might provide some insights:

=IF(I137>0,IF(AND(E\$203="Vacant",I196=2009),12-VLOOKUP(\$H200,MLA_Table,5),13-MONTH(VLOOKUP(\$A200,Roll_Table,4))),0) The first embeded if checks to see if if Vacant now and then subtracts the Vacant months from the MLA assumption. The latter option pulls out the Month of renewal from the MONTH function.

2019

10

-

11 2019 \$ 28.34

31.38

\$ 37.80

37.46

\$ 34.80

\$ 26.19

\$ 33.42 \$ 33.54 \$ 33.15 \$ 34.47 \$ 31.38

\$

\$

\$ 32.90

Exhibit 14: Gross Rent/SF Schedule

Gross Rent Schedule		1	2	3	4	5	6	7	8	9	10	11
Tenant	ТТуре	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	104,533	129,407	129,407	129,407	129,407	131,933	159,724	159,724	159,724	159,724	162,981
Smoky Bean*	MLA2	29,978	31,740	31,740	33,722	35,703	35,703	37,932	40,161	40,161	42,669	45,176
Cobbler & Co.**	MLA2	29,392	33,553	34,385	34,385	37,963	38,678	38,678	42,703	43,508	43,508	48,035
Vacant	MLA1	39,244	41,072	41,072	41,072	41,072	47,034	49,021	49,021	49,021	49,021	57,853
ZYX	MLA1	70,476	75,299	75,299	75,299	75,299	86,175	91,613	91,613	91,613	91,613	104,845
Mighty Mortgage Company	MLA3	90,387	96,090	96,090	96,090	96,090	110,238	117,312	117,312	117,312	117,312	134,795
Archived Architecture	MLA3	96,612	98,528	119,600	119,600	119,600	119,600	121,662	144,348	144,348	144,348	144,348
Horizon Life Insurance	MLA3	130,013	132,522	137,540	137,540	137,540	137,540	147,027	166,000	166,000	166,000	166,000
Bedrock Research	MLA4	131,301	131,301	165,870	172,784	172,784	172,784	172,784	200,844	206,456	206,456	206,456
Vacant	MLA4	95,155	102,781	102,781	102,781	102,781	114,577	123,003	123,003	123,003	123,003	140,000
Firestarter Analytics	MLA4	106,308	114,726	131,560	131,560	131,560	131,560	141,061	160,063	160,063	160,063	160,063
Total Gross Rent		923,401	987,020	1,065,344	1,074,240	1,079,799	1,125,823	1,199,817	1,294,792	1,301,208	1,303,716	1,370,551
Size Weighted Average R	ent/SF	\$ 22.30	\$ 23.84	\$ 25.73	\$ 25.95	\$ 26.08	\$ 27.19	\$ 28.98	\$ 31.28	\$ 31.43	\$ 31.49	\$ 33.11

Exhibit 14 presents the total Gross Rent/year. It is the Monthly adjusted rent * Net SF per tenant. The Wgtd average/SF exceeds the average/SF since larger tenants pay more/SF.

Exhibit 15: Vacancy on Renewals

Vacant Months on Releasing		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	-	-	-	-	-	3	-	-	-	-	3
Smoky Bean*	MLA2	-	-	-	-	-	-	-	-	-	-	-
Cobbler & Co.**	MLA2	-	-	-	-	-	-	-	-	-	-	-
Vacant	MLA1	3	-	-	-	-	3	-	-	-	-	3
ZYX	MLA1	3	-	-	-	-	3	-	-	-	-	3
Mighty Mortgage Company	MLA3	-	-	-	-	-	5	-	-	-	-	5
Archived Architecture	MLA3	-	5	-	-	-	-	5	-	-	-	-
Horizon Life Insurance	MLA3	-	5	-	-	-	-	5	-	-	-	-
Bedrock Research	MLA4	-	-	-	-	-	-	-	6	-	-	-
Vacant	MLA4	6	-	-	-	-	6	-	-	-	-	6
Firestarter Analytics	MLA4	-	6	-	-	-	-	6	-	-	-	-
Implicit Vacancy on Releasing		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	-	-	-	-	-	17,250	-	-	-	-	17,250
Smoky Bean*	MLA2	-	-	-	-	-	-	-	-	-	-	-
Cobbler & Co.**	MLA2	-	-	-	-	-	-	-	-	-	-	-
Vacant	MLA1	5,175	-	-	-	-	5,175	-	-	-	-	5,175
ZYX	MLA1	9,488	-	-	-	-	9,488	-	-	-	-	9,488
Mighty Mortgage Company	MLA3	-	-	-	-	-	19,550	-	-	-	-	19,550
Archived Architecture	MLA3	-	23,000	-	-	-	-	23,000	-	-	-	-
Horizon Life Insurance	MLA3	-	26,450	-	-	-	-	26,450	-	-	-	-
Bedrock Research	MLA4	-	-	-	-	-	-	-	32,775	-	-	-
Vacant	MLA4	22,425	-	-	-	-	22,425	-	-	-	-	22,425
Firestarter Analytics	MLA4	-	27,600	-	-	-	-	27,600	-	-	-	-
Implicit Vacancy Rate		6.35%	13.18%	0.00%	0.00%	0.00%	12.64%	13.18%	5.61%	0.00%	0.00%	12.64%

The Vacancy Rate should be isolated from the Free Rent since it will be needed in calculating the Fixed vs. Variable Expenses. Exhibit 15 shows the Vacant months for each space or tenant. Then, the implicit vacancy can be calculated by multiplying the number of months by the SF/tenant and dividing that result by the total Net SF. This is the % vacant.

Free Rent on Renewal or Releasing		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	1	-	-	-	-	3	-	-	-	-	3
Smoky Bean*	MLA2	2	-	-	2	-	-	2	-	-	2	-
Cobbler & Co.**	MLA2	-	2	-	-	2	-	-	2	-	-	2
Vacant	MLA1	3	-	-	-	-	3	-	-	-	-	3
ZYX	MLA1	3	-	-	-	-	3	-	-	-	-	3
Mighty Mortgage Company	MLA3	1	-	-	-	-	2	-	-	-	-	2
Archived Architecture	MLA3	-	2	-	-	-	-	2	-	-	-	-
Horizon Life Insurance	MLA3	-	2	-	-	-	-	2	-	-	-	-
Bedrock Research	MLA4	-	-	2	-	-	-	-	3	-	-	-
Vacant	MLA4	3	-	-	-	-	3	-	-	-	-	3
Firestarter Analytics	MLA4	-	3	-	-	-	-	3	-	-	-	-
F D		Take vacancy	first, then free	rent if carryov	ver	r.		7	0	0	10	11
Free Kent & vacancy on Turnover		1	2	3	4	5	0	/	8	9	10	11
Tenant	ТТуре	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	1	-	-	-	-	6	-	-	-	-	6
Smoky Bean*	MLA2	2	-	-	2	-	-	2	-	-	2	-
Cobbler & Co.**	MLA2	-	2	-	-	2	-	-	2	-	-	2
Vacant	MLA1	6	-	-	-	-	6	-	-	-	-	6
ZYX	MLA1	6	-	-	-	-	6	-	-	-	-	6
Mighty Mortgage Company	MLA3	1	-	-	-	-	7	-	-	-	-	7
Archived Architecture	MLA3	-	7	-	-	-	-	7	-	-	-	-
Horizon Life Insurance	MLA3	-	7	-	-	-	-	7	-	-	-	-
Bedrock Research	MLA4	-	-	2	-	-	-	-	9	-	-	-
Vacant	MLA4	9	-	-	-	-	9	-	-	-	-	9
rirestarter Analytics	MLA4	-	9	-	-	-	-	9	-	-	-	-
Free Rent & Vacate Carry Over		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	1	-	-	-	-	3	3	-	-	-	3
Smoky Bean*	MLA2	2	-	-	-	-	-	-	-	-	-	-
Cobbler & Co.**	MLA2	-	-	-	-	-	-	-	-	-	-	-
Vacant	MLA1	3	3	-	-	-	3	3	-	-	-	3
ZYX	MLA1	3	3	-	-	-	3	3	-	-	-	3
Mighty Mortgage Company	MLA3	1	-	-	-	-	5	2	-	-	-	5
Archived Architecture	MLA3	-	5	2	-	-	-	5	2	-	-	-
Horizon Life Insurance	MLA3	-	5	2	-	-	-	5	2	-	-	-
Bedrock Research	MLA4	-	-	-	-	-	-	-	6	3	-	-
Vacant	MLA4	6	3	-	-	-	6	3	-	-	-	6
Firestarter Analytics	MLA4	-	6	3	-	-	-	6	3	-	-	-

Exhibit 16 (a): Free Rent and Vacant on Re-leasing in Months

In addition to Vacancy losses, the renewals and new leases involve some free rent as an inducement. Once calculated, the Vacant Months and Free Rent are combined. Now, they are checked to see if the "fit" in the calendar year or need to be carried forward and deducted from the subsequent year. For example, Firestarter Analytics has 9 months of credit in 2010, but only 6 months remaining. Thus, 3 are carried forward.

Free Rent and Vacant on Re-leasing	g											
Tenant	ТТуре	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	8,711	-	-	-	-	32,983	39,931	-	-	-	40,745
Smoky Bean*	MLA2	4,996	-	-	-	-	-	-	-	-	-	-
Cobbler & Co.**	MLA2	-	-	-	-	-	-	-	-	-	-	-
Vacant	MLA1	9,811	10,268	-	-	-	11,758	12,255	-	-	-	14,463
ZYX	MLA1	17,619	18,825	-	-	-	21,544	22,903	-	-	-	26,211
Mighty Mortgage Company	MLA3	7,532	-	-	-	-	45,933	19,552	-	-	-	56,165
Archived Architecture	MLA3	-	41,053	19,933	-	-	-	50,693	24,058	-	-	-
Horizon Life Insurance	MLA3	-	55,218	22,923	-	-	-	61,261	27,667	-	-	-
Bedrock Research	MLA4	-	-	-	-	-	-	-	100,422	51,614	-	-
Vacant	MLA4	47,578	25,695	-	-	-	57,289	30,751	-	-	-	70,000
Firestarter Analytics	MLA4	-	57,363	32,890	-	-	-	70,530	40,016	-	-	-
Total Vacancy & Free	Rent	98,256	210,432	77,758	2,012	2,013	171,521	309,892	194,178	53,631	2,018	209,604
EGI w/o Percentage Rent		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	95,822	129,407	129,407	129,407	129,407	98,950	119,793	159,724	159,724	159,724	122,236
Smoky Bean*	MLA2	24,982	31,740	31,740	33,722	35,703	35,703	37,932	40,161	40,161	42,669	45,176
Cobbler & Co.**	MLA2	29,392	33,553	34,385	34,385	37,963	38,678	38,678	42,703	43,508	43,508	48,035
Vacant	MLA1	29,433	30,804	41,072	41,072	41,072	35,275	36,766	49,021	49,021	49,021	43,390
ZYX	MLA1	52,857	56,474	75,299	75,299	75,299	64,631	68,710	91,613	91,613	91,613	78,634
Mighty Mortgage Company	MLA3	82,854	96,090	96,090	96,090	96,090	64,306	97,760	117,312	117,312	117,312	78,630
Archived Architecture	MLA3	96,612	57,475	99,667	119,600	119,600	119,600	70,970	120,290	144,348	144,348	144,348
Horizon Life Insurance	MLA3	130,013	77,305	114,617	137,540	137,540	137,540	85,766	138,333	166,000	166,000	166,000
Bedrock Research	MLA4	131,301	131,301	165,870	172,784	172,784	172,784	172,784	100,422	154,842	206,456	206,456
Vacant	MLA4	47,578	77,086	102,781	102,781	102,781	57,289	92,252	123,003	123,003	123,003	70,000
Firestarter Analytics	MLA4	106,308	57,363	98,670	131,560	131,560	131,560	70,530	120,047	160,063	160,063	160,063
Total EGI w/o Percent	age Rent	827,154	778,598	989,598	1,074,240	1,079,799	956,316	891,941	1,102,629	1,249,595	1,303,716	1,162,967
				E 0.44	0.001							

Exhibit 16 (b): EGI net of Vacant/Free w/o % Rent

Once the Vacancy and Free Rent are deducted, The EGI can be calculated. Note this is prior to Percentage Rents which should be added separately.

Exhibit 17: EGI With Percentage Rent

Free Rent and Vacant on Re-leasing												
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	8,711	-	-	-	-	32,983	39,931	-	-	-	40,745
Smoky Bean*	MLA2	4,996	-	-	-	-	-	-	-	-	-	-
Cobbler & Co.**	MLA2	-	-	-	-	-	-	-	-	-	-	-
Vacant	MLA1	9,811	10,268	-	-	-	11,758	12,255	-	-	-	14,463
ZYX	MLA1	17,619	18,825	-	-	-	21,544	22,903	-	-	-	26,211
Mighty Mortgage Company	MLA3	7,532	-	-	-	-	45,933	19,552	-	-	-	56,165
Archived Architecture	MLA3	-	41,053	19,933	-	-	-	50,693	24,058	-	-	-
Horizon Life Insurance	MLA3	-	55,218	22,923	-	-	-	61,261	27,667	-	-	-
Bedrock Research	MLA4	-	-	-	-	-	-	-	100,422	51,614	-	-
Vacant	MLA4	47,578	25,695	-	-	-	57,289	30,751	-	-	-	70,000
Firestarter Analytics	MLA4	-	57,363	32,890	-	-	-	70,530	40,016	-	-	-
Total Vacancy & Free R	ent	98,256	210,432	77,758	2,012	2,013	171,521	309,892	194,178	53,631	2,018	209,604
EGI w/o Percentage Rent		1	2	3	4	5	6	7	8	9	10	11
EGI w/o Percentage Rent Tenant	TType	1 2009	2 2010	3 2011	4 2012	5 2013	6 2014	7 2015	8 2016	9 2017	10 2018	11 2019
EGI w/o Percentage Rent Tenant Land Leap Group	TType MLA1	1 2009 95,822	2 2010 129,407	3 2011 129,407	4 2012 129,407	5 2013 129,407	6 2014 98,950	7 2015 119,793	8 2016 159,724	9 2017 159,724	10 2018 159,724	11 2019 122,236
EGI w/o Percentage Rent Tenant Land Leap Group Smoky Bean*	TType MLA1 MLA2	1 2009 95,822 24,982	2 2010 129,407 31,740	3 2011 129,407 31,740	4 2012 129,407 33,722	5 2013 129,407 35,703	6 2014 98,950 35,703	7 2015 119,793 37,932	8 2016 159,724 40,161	9 2017 159,724 40,161	10 2018 159,724 42,669	11 2019 122,236 45,176
EGI w/o Percentage Rent Tenant Land Leap Group Smoky Bean* Cobbler & Co.**	TType MLA1 MLA2 MLA2	1 2009 95,822 24,982 29,392	2 2010 129,407 31,740 33,553	3 2011 129,407 31,740 34,385	4 2012 129,407 33,722 34,385	5 2013 129,407 35,703 37,963	6 2014 98,950 35,703 38,678	7 2015 119,793 37,932 38,678	8 2016 159,724 40,161 42,703	9 2017 159,724 40,161 43,508	10 2018 159,724 42,669 43,508	11 2019 122,236 45,176 48,035
EGI w/o Percentage Rent Tenant Land Leap Group Smoky Bean* Cobbler & Co.** Vacant	TType MLA1 MLA2 MLA2 MLA1	1 2009 95,822 24,982 29,392 29,433	2 2010 129,407 31,740 33,553 30,804	3 2011 129,407 31,740 34,385 41,072	4 2012 129,407 33,722 34,385 41,072	5 2013 129,407 35,703 37,963 41,072	6 2014 98,950 35,703 38,678 35,275	7 2015 119,793 37,932 38,678 36,766	8 2016 159,724 40,161 42,703 49,021	9 2017 159,724 40,161 43,508 49,021	10 2018 159,724 42,669 43,508 49,021	11 2019 122,236 45,176 48,035 43,390
EGI w/o Percentage Rent Tenant Land Leap Group Smoky Bean* Cobbler & Co.** Vacant ZYX	TType MLA1 MLA2 MLA2 MLA1 MLA1	1 2009 95,822 24,982 29,392 29,433 52,857	2 2010 129,407 31,740 33,553 30,804 56,474	3 2011 129,407 31,740 34,385 41,072 75,299	4 2012 129,407 33,722 34,385 41,072 75,299	5 2013 129,407 35,703 37,963 41,072 75,299	6 2014 98,950 35,703 38,678 35,275 64,631	7 2015 119,793 37,932 38,678 36,766 68,710	8 2016 159,724 40,161 42,703 49,021 91,613	9 2017 159,724 40,161 43,508 49,021 91,613	10 2018 159,724 42,669 43,508 49,021 91,613	11 2019 122,236 45,176 48,035 43,390 78,634
EGI w/o Percentage Rent Tenant Land Leap Group Smoky Bean* Cobbler & Co.** Vacant ZYX Mighty Mortgage Company	TType MLA1 MLA2 MLA2 MLA1 MLA1 MLA3	1 2009 95,822 24,982 29,392 29,433 52,857 82,854	2 2010 129,407 31,740 33,553 30,804 56,474 96,090	3 2011 129,407 31,740 34,385 41,072 75,299 96,090	4 2012 129,407 33,722 34,385 41,072 75,299 96,090	5 2013 129,407 35,703 37,963 41,072 75,299 96,090	6 2014 98,950 35,703 38,678 35,275 64,631 64,306	7 2015 119,793 37,932 38,678 36,766 68,710 97,760	8 2016 159,724 40,161 42,703 49,021 91,613 117,312	9 2017 159,724 40,161 43,508 49,021 91,613 117,312	10 2018 159,724 42,669 43,508 49,021 91,613 117,312	11 2019 122,236 45,176 48,035 43,390 78,634 78,630
EGI w/o Percentage Rent Tenant Land Leap Group Smoky Bean* Cobbler & Co.** Vacant ZYX Mighty Mortgage Company Archived Architecture	TType MLA1 MLA2 MLA2 MLA1 MLA1 MLA3 MLA3	1 2009 95,822 24,982 29,392 29,433 52,857 82,854 96,612	2 2010 129,407 31,740 33,553 30,804 56,474 96,090 57,475	3 2011 129,407 31,740 34,385 41,072 75,299 96,090 99,667	4 2012 129,407 33,722 34,385 41,072 75,299 96,090 119,600	5 2013 129,407 35,703 37,963 41,072 75,299 96,090 119,600	6 2014 98,950 35,703 38,678 35,275 64,631 64,306 119,600	7 2015 119,793 37,932 38,678 36,766 68,710 97,760 70,970	8 2016 159,724 40,161 42,703 49,021 91,613 117,312 120,290	9 2017 159,724 40,161 43,508 49,021 91,613 117,312 144,348	10 2018 159,724 42,669 43,508 49,021 91,613 117,312 144,348	11 2019 122,236 45,176 48,035 43,390 78,634 78,630 144,348
EGI w/o Percentage Rent Tenant Land Leap Group Smoky Bean* Cobbler & Co.** Vacant ZYX Mighty Mortgage Company Archived Architecture Horizon Life Insurance	TType MLA1 MLA2 MLA2 MLA1 MLA1 MLA3 MLA3 MLA3	1 2009 95,822 24,982 29,392 29,433 52,857 82,854 96,612 130,013	2 2010 129,407 31,740 33,553 30,804 56,474 96,090 57,475 77,305	3 2011 129,407 31,740 34,385 41,072 75,299 96,090 99,667 114,617	4 2012 129,407 33,722 34,385 41,072 75,299 96,090 119,600 137,540	5 2013 129,407 35,703 37,963 41,072 75,299 96,090 119,600 137,540	6 2014 98,950 35,703 38,678 35,275 64,631 64,306 119,600 137,540	7 2015 119,793 37,932 38,678 36,766 68,710 97,760 70,970 85,766	8 2016 159,724 40,161 42,703 49,021 91,613 117,312 120,290 138,333	9 2017 159,724 40,161 43,508 49,021 91,613 117,312 144,348 166,000	10 2018 159,724 42,669 43,508 49,021 91,613 117,312 144,348 166,000	11 2019 122,236 45,176 48,035 43,390 78,634 78,630 144,348 166,000
EGI w/o Percentage Rent Tenant Land Leap Group Smoky Bean* Cobbler & Co.** Vacant ZYX Mighty Mortgage Company Archived Architecture Horizon Life Insurance Bedrock Research	TType MLA1 MLA2 MLA2 MLA1 MLA1 MLA3 MLA3 MLA3 MLA3 MLA4	1 2009 95,822 24,982 29,392 29,433 52,857 82,854 96,612 130,013 131,301	2 2010 129,407 31,740 33,553 30,804 56,474 96,090 57,475 77,305 131,301	3 2011 129,407 31,740 34,385 41,072 75,299 96,090 99,667 114,617 165,870	4 2012 129,407 33,722 34,385 41,072 75,299 96,090 119,600 137,540 172,784	5 2013 129,407 35,703 37,963 41,072 75,299 96,090 119,600 137,540 172,784	6 2014 98,950 35,703 38,678 35,275 64,631 64,306 119,600 137,540 172,784	7 2015 119,793 37,932 38,678 36,766 68,710 97,760 70,970 85,766 172,784	8 2016 159,724 40,161 42,703 49,021 91,613 117,312 120,290 138,333 100,422	9 2017 159,724 40,161 43,508 49,021 91,613 117,312 144,348 166,000 154,842	10 2018 159,724 42,669 43,508 49,021 91,613 117,312 144,348 166,000 206,456	11 2019 122,236 45,176 48,035 43,390 78,634 78,630 144,348 166,000 206,456
EGI w/o Percentage Rent Tenant Land Leap Group Smoky Bean* Cobbler & Co.** Vacant ZYX Mighty Mortgage Company Archived Architecture Horizon Life Insurance Bedrock Research Vacant	TType MLA1 MLA2 MLA2 MLA1 MLA1 MLA3 MLA3 MLA3 MLA3 MLA4 MLA4	1 2009 95,822 24,982 29,392 29,433 52,857 82,854 96,612 130,013 131,301 47,578	2 2010 129,407 31,740 33,553 30,804 56,474 96,090 57,475 77,305 131,301 77,086	3 2011 129,407 31,740 34,385 41,072 75,299 96,090 99,667 114,617 165,870 102,781	4 2012 129,407 33,722 34,385 41,072 75,299 96,090 119,600 137,540 172,784 102,781	5 2013 129,407 35,703 37,963 41,072 75,299 96,090 119,600 137,540 172,784 102,781	6 2014 98,950 35,703 38,678 35,275 64,631 64,306 119,600 137,540 172,784 57,289	7 2015 119,793 37,932 38,678 36,766 68,710 97,760 70,970 85,766 172,784 92,252	8 2016 159,724 40,161 42,703 49,021 91,613 117,312 120,290 138,333 100,422 123,003	9 2017 159,724 40,161 43,508 49,021 91,613 117,312 144,348 166,000 154,842 123,003	10 2018 159,724 42,669 43,508 49,021 91,613 117,312 144,348 166,000 206,456 123,003	11 2019 122,236 45,176 48,035 43,390 78,634 78,630 78,630 144,348 166,000 206,456 70,000
EGI w/o Percentage Rent Tenant Land Leap Group Smoky Bean* Cobbler & Co.** Vacant ZYX Mighty Mortgage Company Archived Architecture Horizon Life Insurance Bedrock Research Vacant Firestarter Analytics	TType MLA1 MLA2 MLA2 MLA1 MLA1 MLA3 MLA3 MLA3 MLA4 MLA4 MLA4	1 2009 95,822 24,982 29,392 29,433 52,857 82,854 96,612 130,013 131,301 47,578 106,308	2 2010 129,407 31,740 33,553 30,804 56,474 96,090 57,475 77,305 131,301 77,086 57,363	3 2011 129,407 31,740 34,385 41,072 75,299 96,090 99,667 114,617 114,617 1165,870 102,781 98,670	4 2012 129,407 33,722 34,385 41,072 75,299 96,090 119,600 137,540 172,784 102,781 131,560	5 2013 129,407 35,703 37,963 41,072 75,299 96,090 119,600 137,540 172,784 102,781 131,560	6 2014 98,950 35,703 38,678 35,275 64,631 64,306 119,600 137,540 172,784 57,289 131,560	7 2015 119,793 37,932 38,678 36,766 68,710 97,760 70,970 70,970 85,766 172,784 92,252 70,530	8 2016 159,724 40,161 42,703 49,021 91,613 117,312 120,290 138,333 100,422 123,003 120,047	9 2017 159,724 40,161 43,508 49,021 91,613 117,312 144,348 166,000 154,842 123,003 160,063	10 2018 159,724 42,669 43,508 49,021 91,613 117,312 144,348 166,000 206,456 123,003 160,063	11 2019 122,236 45,176 48,035 43,390 78,634 78,630 144,348 166,000 206,456 70,000 160,063
EGI w/o Percentage Rent Tenant Land Leap Group Smoky Bean* Cobbler & Co.** Vacant ZYX Mighty Mortgage Company Archived Architecture Horizon Life Insurance Bedrock Research Vacant Firestarter Analytics Total EGI w/o Percentag	TType MLA1 MLA2 MLA2 MLA1 MLA1 MLA3 MLA3 MLA3 MLA4 MLA4 MLA4 MLA4 MLA4 MLA4	1 2009 95,822 24,982 29,392 29,433 52,857 82,854 96,612 130,013 131,301 47,578 106,308 827,154	2 2010 129,407 31,740 33,553 30,804 56,474 96,090 57,475 77,305 131,301 77,086 57,363 778,598	3 2011 129,407 31,740 34,385 41,072 75,299 96,090 99,667 114,617 165,870 102,781 98,670 989,598	4 2012 129,407 33,722 34,385 41,072 75,299 96,090 119,600 137,540 172,784 102,781 131,560 1,074,240	5 2013 129,407 35,703 37,963 41,072 75,299 96,090 119,600 137,540 137,540 172,784 102,781 131,560 1,079,799	6 2014 98,950 35,703 38,678 35,275 64,631 64,306 119,600 137,540 172,784 57,289 131,560 956,316	7 2015 119,793 37,932 38,678 36,766 68,710 97,760 70,970 85,766 172,784 92,252 70,530 891,941	8 2016 159,724 40,161 42,703 49,021 91,613 117,312 120,290 138,333 100,422 123,003 120,047 1,102,629	9 2017 159,724 40,161 43,508 49,021 91,613 117,312 144,348 166,000 154,842 123,003 160,063 1,249,595	10 2018 159,724 42,669 43,508 49,021 91,613 117,312 144,348 166,000 206,456 123,003 160,063 1,303,716	11 2019 122,236 45,176 48,035 43,390 78,634 78,630 144,348 166,000 206,456 70,000 160,063 1,162,967

The EGI is established by combining EGI w/o % Rents with the % Rents. Since the Retail Tenants have 100% renewal assumption, the same percent rents are carried forward.

Exhibit 18: Tenant Improvements

Tenant Improvements (TIs)		1	2	3	4	5	6	7	8	9	10	11
Tenant	ТТуре	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4.64	\$ -	\$-	\$ -	\$ -	\$ 13.44
Smoky Bean*	MLA2	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$-	\$-	\$ -	\$ -	\$ -
Cobbler & Co.**	MLA2	\$ -	\$-	\$-	\$-	\$ -	\$ -	\$-	\$-	\$-	\$ -	\$ -
Vacant	MLA1	\$ 16.00	\$ -	\$ -	\$ -	\$ -	\$ 11.59	\$-	\$ -	\$ -	\$ -	\$ 21.50
ZYX	MLA1	\$ 16.00	\$-	\$-	\$-	\$ -	\$ 18.55	\$-	\$-	\$-	\$ -	\$ 21.50
Mighty Mortgage Company	MLA3	\$-	\$ -	\$ -	\$ -	\$ -	\$ 3.71	\$-	\$ -	\$ -	\$ -	\$ 12.90
Archived Architecture	MLA3	\$ -	\$ 16.48	\$-	\$-	\$ -	\$ -	\$ 11.46	\$-	\$-	\$ -	\$ -
Horizon Life Insurance	MLA3	\$ -	\$ 16.48	\$-	\$-	\$ -	\$ -	\$ 11.46	\$-	\$-	\$ -	\$ -
Bedrock Research	MLA4	\$ -	\$-	\$-	\$-	\$ -	\$-	\$-	\$ 5.90	\$ -	\$ -	\$ -
Vacant	MLA4	\$ 16.00	\$ -	\$ -	\$ -	\$ -	\$ 12.06	\$-	\$ -	\$ -	\$ -	\$ 21.50
Firestarter Analytics	MLA4	\$ -	\$ 16.48	\$ -	\$ -	\$ -	\$ -	\$ 19.10	\$ -	\$ -	\$ -	\$ -
TI's in \$s		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	0	0	0	0	0	26,663	0	0	0	0	77,275
Smoky Bean*	MLA2	0	0	0	0	0	0	0	0	0	0	0
Cobbler & Co.**	MLA2	0	0	0	0	0	0	0	0	0	0	0
Vacant	MLA1	27,600	0	0	0	0	19,997	0	0	0	0	37,092
ZYX	MLA1	50,600	0	0	0	0	58,659	0	0	0	0	68,002
Mighty Mortgage Company	MLA3	0	0	0	0	0	14,505	0	0	0	0	50,445
Archived Architecture	MLA3	0	75,808	0	0	0	0	52,729	0	0	0	0
Horizon Life Insurance	MLA3	0	87,179	0	0	0	0	60,639	0	0	0	0
Bedrock Research	MLA4	0	0	0	0	0	0	0	32,247	0	0	0
Vacant	MLA4	59,800	0	0	0	0	45,061	0	0	0	0	80,366
Firestarter Analytics	MLA4	0	75,808	0	0	0	0	87,882	0	0	0	0
Total Tis		138,000	238,795	0	0	0	164,886	201,250	32,247	0	0	313,181

TI Allowances are based on the type of lease transaction and the probability of renewal which is the weighting factor between the New TI and Renew TI amounts. It should be noted there are no TI's for existing tenants so the weighting applies to the probability of renewal.

Hint on TIs

This can be complicated, because it depends on 4 variables. First, is there a lease trigger and if so, which scenario holds: T-100, M-100, T-NM and NM-RM. The following equation in Cell I400 treats these different scenarios and returns the "Expected TI/SF." Note, the low rates in 2014 for Land Leap are based on the T-NM assumption and the \$0 for the existing tenant renewal.

Leasing Commissions		1	2	3	4	5	6	7	8	9	10	11
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	\$ 38,822	\$ -	\$ -	\$ -	\$ -	\$ 43,924	\$ -	\$ -	\$ -	\$ -	\$ 54,671
Smoky Bean*	MLA2	\$ 4,761	\$ -	\$ -	\$ 5,355	\$ -	\$ -	\$ 6,024	\$ -	\$ -	\$ 6,776	\$ -
Cobbler & Co.**	MLA2	\$ -	\$ 5,158	\$ -	\$ -	\$ 5,802	\$ -	\$ -	\$ 6,526	\$ -	\$ -	\$ 7,341
Vacant	MLA1	\$ 12,322	\$-	\$-	\$-	\$-	\$ 13,481	\$-	\$-	\$-	\$ -	\$ 18,239
ZYX	MLA1	\$ 22,590	\$ -	\$ -	\$ -	\$ -	\$ 27,484	\$-	\$-	\$ -	\$ -	\$ 33,438
Mighty Mortgage Company	MLA3	\$ 28,827	\$ -	\$-	\$ -	\$ -	\$ 32,847	\$ -	\$ -	\$ -	\$ -	\$ 40,190
Archived Architecture	MLA3	\$ -	\$ 35,880	\$ -	\$ -	\$ -	\$ -	\$ 40,417	\$ -	\$-	\$ -	\$ -
Horizon Life Insurance	MLA3	\$ -	\$ 41,262	\$ -	\$ -	\$ -	\$ -	\$ 46,480	\$ -	\$-	\$ -	\$ -
Bedrock Research	MLA4	\$ -	\$ -	\$ 51,835	\$ -	\$ -	\$ -	\$ -	\$ 55,743	\$-	\$ -	\$ -
Vacant	MLA4	\$ 30,834	\$ -	\$ -	\$ -	\$ -	\$ 33,211	\$ -	\$ -	\$ -	\$ -	\$ 45,642
Firestarter Analytics	MLA4	\$ -	\$ 39,468	\$ -	\$ -	\$ -	\$-	\$ 48,019	\$ -	\$ -	\$ -	\$ -
Total Leasing		\$ 138,156	\$ 121,768	\$ 51,835	\$ 5,355	\$ 5,802	\$ 150,947	\$ 140,940	\$ 62,269	\$ -	\$ 6,776	\$ 199,522
		1	-			-	1					
Tis and Leasing Commissions		1	2	3	4	5	6	7	8	9	10	11
Tenant	ТТуре	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	MLA1	\$ 38,822	\$ -	<u>\$</u> -	\$ -	<u>\$</u> -	\$ 70,588	<u>\$</u> -	<u>\$</u> -	\$ -	\$ -	\$ 131,947
Smoky Bean*	MLA2	\$ 4,761	\$ -	<u>\$</u> -	\$ 5,355	\$ -	<u>\$</u> -	\$ 6,024	\$ -	<u>\$</u> -	\$ 6,776	\$ -
Cobbler & Co.**	MLA2	\$ -	\$ 5,158	\$ -	\$ -	\$ 5,802	\$ -	\$ -	\$ 6,526	\$ -	\$ -	\$ 7,341
Vacant	MLA1	\$ 39,922	\$ -	\$ -	\$ -	\$ -	\$ 33,478	\$ -	\$ -	\$ -	\$ -	\$ 55,331
ZYX	MLA1	\$ 73,190	\$ -	\$ -	\$ -	\$ -	\$ 86,143	\$ -	\$ -	\$ -	\$ -	\$ 101,440
Mighty Mortgage Company	MLA3	\$ 28,827	\$ -	\$ -	\$ -	\$ -	\$ 47,352	\$ -	\$ -	\$ -	\$ -	\$ 90,635
Archived Architecture	MLA3	\$ -	\$ 111,688	\$ -	\$ -	\$ -	\$ -	\$ 93,147	\$ -	\$ -	\$ -	\$ -
Horizon Life Insurance	MLA3	\$ -	\$ 128,441	\$ -	\$ -	\$ -	\$ -	\$ 107,119	\$ -	\$ -	\$ -	\$ -
Bedrock Research	MLA4	\$ -	\$ -	\$ 51,835	\$ -	\$ -	\$ -	\$ -	\$ 87,990	\$ -	\$ -	\$ -
Vacant	MLA4	\$ 90.634	\$ -	\$ -	\$ -	\$ -	\$ 78,272	\$ -	\$ -	\$ -	\$ -	\$ 126,009
		1										
Firestarter Analytics	MLA4	\$ -	\$ 115,276	\$ -	\$ -	\$ -	\$ -	\$ 135,901	\$-	\$ -	\$ -	\$ -

At this point, the leasing commissions should be calculated. As above, it is driven by the type of lease event; New vs. Renewal. Pull the probabilities from the MLA assumptions and then apply them to the respective rates for new vs. renewal (e.g., 6% vs. 4% for MLA1).

Hint on Leasing Commissions

This is similar to the TI calculations so you may be able to "borrow" your solution. Note, once you get the weighted percent, you apply it to the entire lease in current dollars. That is, multiply the Lease Rate * SF * Term * Commission Rate for the respective tenants.

Cash FLow		1	2	3	4	5	6	7	8	9	10
Tenant	TType	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Land Leap Group	MLA1	\$ 18,178	\$ 129,407	\$ 129,407	\$ 129,407	\$ 129,407	\$ (15,562)	\$ 119,793	\$ 159,724	\$ 159,724	\$ 159,724
Smoky Bean*	MLA2	\$ 26,258	\$ 42,639	\$ 42,744	\$ 34,124	\$ 46,929	\$ 47,045	\$ 37,346	\$ 51,748	\$ 51,877	\$ 40,965
Cobbler & Co.**	MLA2	\$ 30,032	\$ 24,022	\$ 35,320	\$ 35,475	\$ 27,610	\$ 40,095	\$ 40,268	\$ 31,418	\$ 45,460	\$ 45,650
Vacant	MLA1	\$ (22,811	\$ 30,804	\$ 41,072	\$ 41,072	\$ 41,072	\$ (11,684)	\$ 36,766	\$ 49,021	\$ 49,021	\$ 49,021
ZYX	MLA1	\$ (42,922	\$ 56,474	\$ 75,299	\$ 75,299	\$ 75,299	\$ (48,996)	\$ 68,710	\$ 91,613	\$ 91,613	\$ 91,613
Mighty Mortgage Company	MLA3	\$ 25,200	\$ 96,090	\$ 96,090	\$ 96,090	\$ 96,090	\$ (15,894)	\$ 97,760	\$ 117,312	\$ 117,312	\$ 117,312
Archived Architecture	MLA3	\$ 96,612	\$ (90,093)	\$ 99,667	\$ 119,600	\$ 119,600	\$ 119,600	\$ (62,594)	\$ 120,290	\$ 144,348	\$ 144,348
Horizon Life Insurance	MLA3	\$ 130,013	\$ (92,399)	\$ 114,617	\$ 137,540	\$ 137,540	\$ 137,540	\$ (67,833)	\$ 138,333	\$ 166,000	\$ 166,000
Bedrock Research	MLA4	\$ 131,301	\$ 131,301	\$ 62,200	\$ 172,784	\$ 172,784	\$ 172,784	\$ 172,784	\$ (43,312)	\$ 154,842	\$ 206,456
Vacant	MLA4	\$ (73,891	\$ 77,086	\$ 102,781	\$ 102,781	\$ 102,781	\$ (54,194)	\$ 92,252	\$ 123,003	\$ 123,003	\$ 123,003
Firestarter Analytics	MLA4	\$ 106,308	\$ (97,381)	\$ 98,670	\$ 131,560	\$ 131,560	\$ 131,560	\$ (113,389)	\$ 120,047	\$ 160,063	\$ 160,063
Total Cash Flow		\$ 424,280	\$ 307,951	\$ 897,867	\$ 1,075,732	\$ 1,080,672	\$ 502,295	\$ 421,862	\$ 959,198	\$ 1,263,262	\$ 1,304,155

Exhibit 20: Cash Flow from Tenants after TI, Leasing & Percent Rent

Exhibit 21 (a): Expense Schedule Recap

Category	Amount/yr	Units	Area	% Fixed	Inflation	Total Annualized
Reimbursable Expenses						
Property Taxes	\$55,000	\$ Amount	NA	100%	CPI	\$55,000
Utilities	\$1.20	\$ / Area	Gross SF	60%	CPI	\$58,447
Janitorial	\$0.60	\$ / Area	Gross SF	15%	CPI	\$29,224
Administrative	\$60,000	\$ Amount	NA	100%	CPI	\$60,000
Property Insurance	\$0.60	\$ / Area	Gross SF	100%	CPI	\$29,224
Non-reimbursable Expense	ses					\$231,894
Management Fee	5%	Gross Income	NA	NA	NA	
Capital Expenditures	\$0.05	\$ / Area	Gross SF			
Reserve	\$0.50	\$ / Area	Gross SF	100%	CPI	\$24,353

Exhibit 21(b): Expenses and Reimbursement

Reimbursable Expenses											
Category	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Reimbursable Expenses			÷					÷			
Property Taxes	55,000	56,650	58,350	60,100	61,903	63,760	65,673	67,643	69,672	71,763	73,915
Utilities	58,447	60,200	62,006	63,867	65,783	67,756	69,789	71,883	74,039	76,260	78,548
Janitorial	29,224	30,100	31,003	31,933	32,891	33,878	34,894	35,941	37,019	38,130	39,274
Administrative	60,000	61,800	63,654	65,564	67,531	69,556	71,643	73,792	76,006	78,286	80,635
Property Insurance	29,224	30,100	31,003	31,933	32,891	33,878	34,894	35,941	37,019	38,130	39,274
Total Reimbursable	231,894	238,851	246,016	253,397	260,999	268,829	276,894	285,201	293,757	302,569	311,646
Non-reimbursable Expenses	8										
Management Fee	46,170	49,351	53,267	53,712	53,990	56,291	59,991	64,740	65,060	65,186	68,528
Cap Ex Reserve	24,353	24,353	24,353	24,353	24,353	24,353	24,353	24,353	24,353	24,353	24,353
Mgmt & Cap Expenditures	70,523	73,704	77,620	78,065	78,343	80,644	84,344	89,093	89,413	89,539	92,881
Allocated Expense/SF	\$ 5.60	\$ 5.77	\$ 5.94	\$ 6.12	\$ 6.30	\$ 6.49	\$ 6.69	\$ 6.89	\$ 7.10	\$ 7.31	\$ 7.53
Adjust for Vacancy Impact or	n Variable Exp 2009	enses 2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Implicit Vacancy	6.35%	13.18%	0.00%	0.00%	0.00%	12.64%	13.18%	5.61%	0.00%	0.00%	12.64%
Reimbursable Expenses											
Property Taxes	55,000	56,650	58,350	60,100	61,903	63,760	65,673	67,643	69,672	71,763	73,915
Utilities	56,593	54,595	58,447	58,447	58,447	54,753	54,595	56,808	58,447	58,447	54,753
Janitorial	27,647	25,949	29,224	29,224	29,224	26,083	25,949	27,831	29,224	29,224	26,083
Administrative	60,000	61,800	63,654	65,564	67,531	69,556	71,643	73,792	76,006	78,286	80,635
Property Insurance	29,224	30,100	31,003	31,933	32,891	33,878	34,894	35,941	37,019	38,130	39,274
Total Reimbursable	228,464	229,094	240,677	245,268	249,995	248,031	252,754	262,016	270,369	275,850	274,660
Non-reimbursable Expenses	5										
Management Fee	46,170	49,351	53,267	53,712	53,990	56,291	59,991	64,740	65,060	65,186	68,528
Cap Ex Reserve	24,353	24,353	24,353	24,353	24,353	24,353	24,353	24,353	24,353	24,353	24,353
Mgmt & Cap Expenditures	70,523	73,704	77,620	78,065	78,343	80,644	84,344	89,093	89,413	89,539	92,881
Expense Stop Base	\$ 5.52	\$ 5.53	\$ 5.81	\$ 5.92	\$ 6.04	\$ 5.99	\$ 6.11	\$ 6.33	\$ 6.53	\$ 6.66	\$ 6.63

The calculation of Fixed vs. Variable Expenses draws off of the Implicit Vacancy Rate calculated earlier. Now, the Utilities and Janitorial costs can be adjusted downward by the vacancy which is 6.35% in 2009 and 13.18% in 2010.

Once the expenses are adjusted the Expense Base Stop for reimbursement can be calculated. Note, the Stop uses the Net Rentable SF while the expenses themselves are based on Gross SF. Also, the Stop does not include the Management Fee

Exhibit 22: Expense Stops and Reimbursements

Expense Stops	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	5.18	5.18	5.18	5.18	5.18	6.49	6.49	6.49	6.49	6.49	7.53
Smoky Bean*	5.60	5.60	5.60	6.12	6.12	6.12	6.69	6.69	6.69	7.31	7.31
Cobbler & Co.**	5.85	5.77	5.77	5.77	6.30	6.30	6.30	6.89	6.89	6.89	7.53
Vacant	5.60	5.60	5.60	5.60	5.60	6.49	6.49	6.49	6.49	6.49	7.53
ZYX	5.34	5.34	5.34	5.34	5.34	6.49	6.49	6.49	6.49	6.49	7.53
Mighty Mortgage Company	5.34	5.34	5.34	5.34	5.34	6.49	6.49	6.49	6.49	6.49	7.53
Archived Architecture	5.50	5.77	5.77	5.77	5.77	5.77	6.69	6.69	6.69	6.69	6.69
Horizon Life Insurance	5.85	5.77	5.77	5.77	5.77	5.77	6.69	6.69	6.69	6.69	6.69
Bedrock Research	5.68	5.68	5.94	5.94	5.94	5.94	5.94	6.89	6.89	6.89	6.89
Vacant	5.60	5.60	5.60	5.60	5.60	6.49	6.49	6.49	6.49	6.49	7.53
Firestarter Analytics	5.50	5.77	5.77	5.77	5.77	5.77	6.69	6.69	6.69	6.69	6.69
	1	2	3	4	5	6	7	8	9	10	11
Expense Reimbursement	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	2,423	3,389	4,384	5,409	6,465	-	-	-	3,462	4,686	-
Smoky Bean*	-	-	588	-	-	-	-	-	-	-	-
Cobbler & Co.**	-	-	249	505	-	-	-	-	-	-	-
Vacant	-	-	588	896	1,213	-	-	-	1,039	1,406	-
ZYX	826	1,358	1,905	2,469	3,050	-	-	-	1,904	2,577	-
Mighty Mortgage Company	1,022	1,679	2,355	3,053	3,770	-	-	-	2,354	3,187	-
Archived Architecture	466	-	796	1,616	2,461	3,331	-	-	-	-	-
Horizon Life Insurance	-	-	916	1,859	2,830	3,831	-	-	-	-	-
Bedrock Research	-	-	-	-	1,977	3,010	4,074	-	-	-	-
Vacant	-	-	1,275	1,941	2,628	-	-	-	2,250	3,046	-
Firestarter Analytics	466	-	796	1,616	2,461	3,331	-	-	-	-	-
Total Expense Reimbursement	5,203	6,425	13,853	19,364	26,854	13,502	4,074	0	11,010	14,902	0

Exhibit 23: Net Income by Tenant and Overall Cash Flow

Net Income by Tenant	1	2	3	4	5	6	7	8	9	10	11
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Land Leap Group	20,601	132,795	133,791	134,816	135,871	(15,562)	119,793	159,724	163,187	164,411	(64,382)
Smoky Bean*	26,258	42,639	43,333	34,124	46,929	47,045	37,346	51,748	51,877	40,965	57,164
Cobbler & Co.**	30,032	24,022	35,569	35,980	27,610	40,095	40,268	31,418	45,460	45,650	35,693
Vacant	(22,811)	30,804	41,661	41,968	42,285	(11,684)	36,766	49,021	50,060	50,427	(30,181)
ZYX	(42,096)	57,832	77,204	77,768	78,349	(48,996)	68,710	91,613	93,517	94,190	(56,245)
Mighty Mortgage Company	26,222	97,769	98,446	99,143	99,861	(15,894)	97,760	117,312	119,667	120,499	(52,195)
Archived Architecture	97,078	(90,093)	100,463	121,216	122,061	122,931	(62,594)	120,290	144,348	144,348	144,348
Horizon Life Insurance	130,013	(92,399)	115,532	139,399	140,370	141,371	(67,833)	138,333	166,000	166,000	166,000
Bedrock Research	131,301	131,301	62,200	172,784	174,760	175,793	176,858	(43,312)	154,842	206,456	206,456
Vacant	(73,891)	77,086	104,056	104,722	105,409	(54,194)	92,252	123,003	125,253	126,049	(101,651)
Firestarter Analytics	106,774	(97,381)	99,466	133,176	134,021	134,891	(113,389)	120,047	160,063	160,063	160,063
Total Net Income	429,483	314,377	911,720	1,095,096	1,107,526	515,797	425,936	959,198	1,274,272	1,319,057	465,069

Exhibit 24: Cash Flow Schedule

Cash Flow Schedule	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Gross Income	923,401	987,020	1,065,344	1,074,240	1,079,799	1,125,823	1,199,817	1,294,792	1,301,208	1,303,716	1,370,551
- Vacancy & Free Rent	98,256	210,432	77,758	2,012	2,013	171,521	309,892	194,178	53,631	2,018	209,604
Effective Gross Income	1,021,658	1,197,452	1,143,102	1,076,252	1,081,812	1,297,343	1,509,709	1,488,970	1,354,839	1,305,734	1,580,155
+ Other Income											
+ Expense Reimbursement	5,203	6,425	13,853	19,364	26,854	13,502	4,074	0	11,010	14,902	0
Total Revenue	1,026,860	1,203,877	1,156,955	1,095,615	1,108,666	1,310,845	1,513,783	1,488,970	1,365,849	1,320,636	1,580,155
- Reimbursable Expenses	(231,894)	(238,851)	(246,016)	(253,397)	(260,999)	(268,829)	(276,894)	(285,201)	(293,757)	(302,569)	(311,646)
- Non-reimbursable Expenses	(70,523)	(73,704)	(77,620)	(78,065)	(78,343)	(80,644)	(84,344)	(89,093)	(89,413)	(89,539)	(92,881)
Net Operating Income	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	1,114,677	982,679	928,528	1,175,628
- Tenant Improvements	(138,000)	(238,795)	0	0	0	(164,886)	(201,250)	(32,247)	0	0	(313,181)
- Leasing Commissions	(138,156)	(121,768)	(51,835)	(5,355)	(5,802)	(150,947)	(140,940)	(62,269)	-	(6,776)	(199,522)
Before Tax Cash Flow	448,287	530,759	781,483	758,798	763,522	645,540	810,355	1,020,160	982,679	921,751	662,925
Before Tax Cash Flow	448,287	530,759	781,483	758,798	763,522	645,540	810,355	1,020,160	982,679	921,751	662,925

The final stage in the analysis is to pull the cash flow items together. This is simply by drawing from the respective tables. As you can see, the NOI is relatively stable, with the Before Tax Cash Flow fluctuating with the rent roll which trigger vacancy, free rent, TIs and leasing commissions. At this point, it is possible to analyze the investment performance on an NOI and Before Tax Cash Flow (BTCF) Basis.

Exhibit 25(a): NPV based on BTCF

			-				-					
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	NTY>	7,582,271	11,164,049	10,839,973	10,907,462	9,221,994	11,576,499	14,573,715	14,038,274	13,167,878	9,470,352	14,018,619
YR	NPV											
	1 (\$7,435,703)	8,030,559										
2	(\$10,443,219)	448,287	11,696,820					670 DIS	count			
	(\$10,097,207)	448,287	530,759	11,623,470				Pa	to.			
4	(\$10,067,019)	448,287	530,759	781,483	11,668,276			Ra				
5	(\$8,845,575)	448,287	530,759	781,483	758,798	9,987,534						
6	(\$10,271,098)	448,287	530,759	781,483	758,798	763,522	12,224,059					
1	(\$11,952,304)	448,287	530,759	781,483	758,798	763,522	645,540	15,386,092				
1	(\$11,584,199)	448,287	530,759	781,483	758,798	763,522	645,540	810,355	15,060,459			
1	(\$11,078,478)	448,287	530,759	781,483	758,798	763,522	645,540	810,355	1,020,160	14,152,584		
10	(\$9,304,740)	448.287	530,759	781.483	758,798	763,522	645,540	810.355	1.020.160	982,679	10.394.131	
1	(\$11,214,729)	448,287	530,759	781,483	758,798	763,522	645,540	810,355	1,020,160	982,679	921,751	14,683,573

Exhibit 25 shows the NPV using the Net Terminal Value (NTV) which is derived by capping the next year BTCF and pulling down the BTCF as the return. Year 11 NPV calculation takes the vector: =-NPV(\$E\$567,I580:V580).

Exhibit 25(b): Average NPV of BTCF

Exit Cap	7%				
Equity Discount F	8%				
Sales Price (Cap I	BTCF n+ 1)				NTV>
NPV/sf	Avg	IRR		YR	NPV
\$ 152.67			8%	1	(\$7,435,703)
\$ 214.41			8%	2	(\$10,443,219)
\$ 207.31			8%	3	(\$10,097,207)
\$ 206.69			8%	4	(\$10,067,019)
\$ 181.61			8%	5	(\$8,845,575)
\$ 210.88			8%	6	(\$10,271,098)
\$ 245.40			8%	7	(\$11,952,304)
\$ 237.84			8%	8	(\$11,584,199)
\$ 227.46			8%	9	(\$11,078,478)
\$ 191.04			8%	10	(\$9,304,740)
\$ 230.25			8%	11	(\$11,214,729)
\$ 256.64			8%	12	(\$12,499,753)
\$ 251.85			8%	13	(\$12,266,679)
\$ 234.96	\$ 217.79		8%	14	(\$11,443,818)
	AVG			15	(\$11,040,216)

Exhibit 25 (b) shows the NPV for the 14 years and converts it t an average cost/SF of \$217.91.

Exhibit 26 (a): NPV of BTCF and NOI-capped Terminal Value

	NOI	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	1,114,677	982,679	928,528	1,175,628
		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	NOI Cap	12,733,171	11,904,550	10,916,480	10,990,344	13,733,893	16,464,937	15,923,951	14,038,274	13,264,684	16,794,686	20,334,898
	NPV											
1	(\$12,460,754)	13,457,614										
2	(\$11,641,178)	724,443	12,795,871									
3	(\$10,762,314)	724,443	891,322	11,749,798								
4	(\$10,736,368)	724,443	891,322	833,318	11,754,498							
5	(\$12,528,782)	724,443	891,322	833,318	764,154	14,503,217						
6	(\$14,163,256)	724,443	891,322	833,318	764,154	769,324	17,426,309					
7	(\$13,751,525)	724,443	891,322	833,318	764,154	769,324	961,373	17,076,497				
8	(\$12,646,721)	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	15,152,951			
9	(\$12,189,506)	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	1,114,677	14,247,363		
10	(\$13,763,139)	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	1,114,677	982,679	17,723,214	
11	(\$15,209,446)	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	1,114,677	982,679	928,528	21,510,526

NOI-based Returns are more stable since they do not include TIs and Leasing Commissions in calculating the Net Terminal Value (i.e., future sales price). Using the NOI which ignores leasing and TI's, the Value/SF is much higher than if using BTCF.

Exhibit 26 (b): Average NPV of NOI Capped

Exit Cap	7%	Sales Price (Cap NOI + 1)
Equity Discount Rate	8%	NPV/sf
		\$ 255.84
		\$ 239.01
		\$ 220.97
		\$ 220.43
		\$ 257.23
		\$ 290.79
		\$ 282.34
		\$ 259.65
		\$ 250.27
		\$ 282.58
		\$ 312.27
		\$ 303.52
		\$ 283.84
		\$ 286.78
	AVG	\$ 267.54

Exhibit 26 (c): IRR at Average \$/SF

IRR			2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	1	(\$13,030,623)	13,181,458										
2%	2	(\$13,030,623)	724,443	12,795,871									
1%	3	(\$13,030,623)	724,443	891,322	11,749,798								
2%	4	(\$13,030,623)	724,443	891,322	833,318	11,754,498							
7%	5	(\$13,030,623)	724,443	891,322	833,318	764,154	14,503,217						
10%	6	(\$13,030,623)	724,443	891,322	833,318	764,154	769,324	17,426,309					
9%	7	(\$13,030,623)	724,443	891,322	833,318	764,154	769,324	961,373	17,076,497				
8%	8	(\$13,030,623)	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	15,152,951			
7%	9	(\$13,030,623)	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	1,114,677	14,247,363		
9%	10	(\$13,030,623)	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	1,114,677	982,679	17,723,214	
10%	11	(\$13,030,623)	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	1,114,677	982,679	928,528	21,510,526
10%	12	(\$13,030,623)	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	1,114,677	982,679	928,528	1,175,628
9%	13	(\$13,030,623)	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	1,114,677	982,679	928,528	1,175,628
9%	14	(\$13,030,623)	724,443	891,322	833,318	764,154	769,324	961,373	1,152,546	1,114,677	982,679	928,528	1,175,628

As you can see, the rent roll can make a tremendous difference in the feasibility of an acquisition and/or the ability to make cash flow requirements in light of capital requirements for leasing.

The End (or is it?)