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Real Estate Program

Feasibility, underwriting and due diligence in Real Estate Development:
Potomac Yard Project Case Study

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Part I. Introduction and overview

As the real estate industry evolves and real estate capital markets become more and more institutionalized, the gap between those who commit capital and those making investment decisions continues to increase. "Investors committing capital to real estate investments in reliance on professional management expect their fiduciaries' actions to be consistent with the prudent man standard, employing appropriate due diligence prior to investing capital." (Stephen Roulac, 2000) In addition, new investors entering the market often fail to understand the nature and dynamics of the real estate value-creation chain and various requirements for successful investment decisions. Consequently, they fail to support real estate enterprises with properly adapted financial structures and resources.

The purpose of this paper is to analyze the real estate development value-creation chain as an investment proposition and to create a conceptual framework that considers planning, design, development and operation of real estate as economic modules of the investment decision-making process. It will then examine the kind of analysis that needs to be done for each stage of a feasible decision-making process. Numerous publications and books talk about project-level feasibility for various uses and types of development, typically spanning from project selection to execution and stabilization. I will expand that circle to include strategic company-level planning in order to show its importance to overall investment management success. Additionally, I will try to summarize and incorporate in the framework the best feasibility and due diligence practices available so far.

This paper, however, does not cover everything in depth; it addresses only essential topics related to feasibility in real estate.

The feasibility framework incorporates two major functions of real estate business development and investment:

- The framework provides a set of steps with underlying processes aimed at a strategic alignment of interests and goals between an investor committing capital and a developer making an investment decision. The framework will demonstrate the real estate development-project life cycle as a sequence of well structured, transparent and interrelated value-creation steps. The framework will allow a real estate developer to efficiently plan and execute and will help an investor to understand the process, make an educated investment decision and participate in the decision-approval process. The framework will reinforce the notion of the developer as a fiduciary responsible to the investor.

- The framework provides a set of specific due diligence tasks at each stage of the development process aimed to ensure fulfillment of "prudent person" standards and successful execution of project tasks. In addition, the paper drills down to explore the feasibility as an interactive analytical
process that helps to structure and clarify the risk and return characteristics of the real estate assets being carried along the value chain spectrum.

In the second part of the paper, I will apply the framework to a real-life extensive land development project – Potomac Yard in Northern Virginia, executed by Crescent Resources company from 1999 to 2006. Through this case study, I will test the framework for adequacy in a real-life business environment. I will then analyze the Potomac Yard Project execution in terms of the proposed framework for any possible deficiencies and respective lessons learned.

**Part II. Project Feasibility**

**Feasibility In a Real Estate Project Cycle**

A real estate project is feasible when the real estate analyst determines that there is a reasonable likelihood of satisfying explicit objectives when a selected course of action is tested for a fit to a context of specific constraints and limited resources. – James A. Graaskamp.

The above quote demonstrates that feasibility in the real-estate development process is a very broad concept. In fact, the whole real estate value-creation cycle is described in the above definition:

- First, any enterprise must have business objectives – in the case of real estate, these include the objectives of a developer and of all other participants in the process;
- Second, there should be a course of action to meet those objectives (i.e., planning and execution strategy);
- Third, the environment presents the business of real estate with various constraints – market, regulatory, legal, physical, human, political, etc.; and
- Fourth, the resources to accomplish all of the above are typically limited primarily in terms of capital, but also in terms of time and expertise.

Each of these pieces is unique to specific opportunities, time, people and other conditions. However, all of those pieces together do not necessarily guarantee anything, providing just a likelihood of success. Consequently, determining a project's feasibility requires continuous, systematic analysis of the above components with the goal of formulating a combination of the parameters that will satisfy the given function and make the project feasible. In other words, the feasibility analysis is an analytical evaluation that precedes a major real estate decision and that establishes a risk-return function for a given set of project parameters.

In order to simplify the task of creating a project feasibility framework, I will take the following steps:
1. I will divide the real estate development process into eight major theoretical stages. At the end of each stage, there will be a decision-making point that will shape the next stage and drive further actions.

2. I will demonstrate that for a given decision to be feasible, it must satisfy two conditions: decision underwriting criteria and due diligence of those criteria. "Underwriting" and "due diligence" are commonly used real estate terms that have slightly different connotations depending on who uses them (appraisers, lenders, developers, etc.) in a particular case. To avoid that I'll define their meanings within the context of this paper:

   a. Underwriting process: a set of conditions to be met or tasks to be carried out in order to justify the decision to move to the next step (a forward-looking concept). In underwriting a decision, we first need to understand what we are trying to achieve, then we need to determine all the factors and parameters that shape the possible outcomes of the decision. Next, we need to conduct research and analysis of the available data relative to those factors. We then need to predict with certain accuracy the most likely outcome of the decision.

   b. Due diligence: a multi-disciplinary audit of tasks that have been already accomplished and a validation of proposed planned activities (a backward-looking concept) in the context of various project-execution criteria defined at earlier stages of the process. Before moving to the next stage, we make sure that, in our underwriting process, we have covered all the critical issues. We then evaluate again, or involve a third party to evaluate, the data that led us to a positive decision for accuracy. While due diligence stands out as a separate activity in this context, in reality it may be carried out concurrently with an underwriting decision.

Under these assumptions, an idea will be feasible (i.e., objectives can be met given all the limitations and constraints) if we are able to positively underwrite it. This means that a set of activities confirms that the decision makes sense or is doable, and the outcome of due diligence confirms the results of the underwriting process.

Every time we evaluate a potential investment opportunity, we determine its feasibility based on a variety of enterprise criteria relevant to us, from the company's strategy and business plan to the project-selection criteria. Something feasible to us may not be feasible to others and vice versa; a disadvantage for others may be an advantage for us. Similarly, a project that is feasible in today's conditions may not be feasible six months from now. Again, this is a very important condition: In order to understand if a decision is feasible, we first need to understand what we are trying to achieve with the decision and which factors shape our expectations and demands relative to the outcome of the decision. For example, an investor deciding to invest his funds in a real estate development project first needs to understand why he is trying to do it and what he is trying to achieve. He needs to determine if this decision is feasible given his enterprise
criteria. This process, if properly conducted, (see the section below) will allow him to make a smart decision.

In the process of feasibility analysis, it is equally important to obtain a sufficient amount of project-related information (quantity) as well as to find the right kind of information (quantity). This process is very similar to solving a complex problem with certain given parameters: We don’t know all the parameters (or risks, in our case) but we know some; the solution to the problem can only be obtained using existing data - but would that be the right solution? And, would that be the only solution? How can we make sure that the answer is as close to reality and as predictable as we want? We continue to gather additional information related to the problem or project as we are moving along the cycle; we analyze and audit it for accuracy and we incorporate it in our decision-making process.

Due diligence – the process of auditing the information for completeness and accuracy – is the second-most important part of the real estate investment process, after underwriting. Due diligence is one of the major inputs to the real estate investment decision process. It confirms that the decision is in compliance with the earlier defined objectives. It also helps establish the acceptable risk-adjusted return of the investment. “Though due diligence can properly be considered as an integral input to the real estate investing process, its purpose is to ensure higher quality outputs in term of risk-adjusted rewards to capital committed to real estate involvement. Thus disappointing financial results from real estate investment suggest the likelihood of deficient due diligence” (Roulac, 2000).
Due Diligence is often a legal requirement, as many institutional entities make capital commitment contingent on its proper completion.

Timing of due diligence is also very important, as is demonstrated later in the framework. It must be carried out to its full extent before making the major capital commitment or investment decision, since it directly affects the financial parameters of a given project.

**Due Diligence in Real Estate Investment Decisions**

The integrity of the due diligence function, as practiced by institutional investors responsible for major capital commitments, is central to the effective functioning of real estate capital markets. Since institutional investing has become a more dominant component of the market, and because of pervasive real estate securitization through commercial mortgage-backed securities, commingled real estate funds, real estate investment trusts and real estate limited partnerships, investors are increasingly separated from the decisions concerning specific real estate acquisitions. Thus, due diligence is even more important. The prudent man standard, which requires proper due diligence before investing, is put into action through the investing processes and due diligence practices of those who hold fiduciary responsibilities.

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1 Based on Steven Roulac’s “Institutional Real Estate Investing Processes, Due Diligence Practices and Market Conditions”
Due diligence determines the degree to which those making commitments to real estate investing may realize their goals. The abundant evidence of disappointing financial results from real estate investments made in the 1980s suggests that less-than-stellar due diligence was associated with those capital commitments. "Extraordinary financial losses and market disruptions in the late 1980s and early 1990s are eloquent ... testimony to the proposition that the quality of many real estate decisions is less than distinguished" (Roulac, 1994). Effective due diligence can improve the prospects of superior investment performance and mitigate loss exposure.

Most often, developers consider due diligence in regard to the specific property investment opportunity and often fail to include the investigation of the developer’s entity and its organizational structure that would manage the development or investment opportunity, even though those factors are important. "Due Diligence" in the institutional real estate setting is defined as an evaluation of the policies, procedures and results of an organization's structure and staffing, portfolio construction, and monitoring and selection of specific real estate investments...The due diligence imperative seeks to replicate the process that a prudent person would employ prior to a major financial commitment" (Roulac, 1995).

Very often, due diligence is conceptually compared to traditional mortgage underwriting, detailed evaluation of a site and structure or a comprehensive appraisal. However, those activities, while each are a part of the due diligence process, are not sufficient on a stand-alone basis and cannot be used as a substitute for full due diligence. In the above mentioned article Mr. Roulac suggests dividing and systematizing the due diligence information into logical categories for ease of comprehension. Another important factor is that often, investors not sophisticated in real estate fail to properly understand all the available project information (including due diligence) and consequently are not able to properly adjust their risk-return requirements. The breakdown below provides a good gradation of the due diligence materials.

**Relative Importance of Investment Decision Tasks**

- Review of financial analysis
- Your firm’s own expertise and professional experience
- Your firm’s own quantitative analysis
- Review of property information
- Your firm’s own qualitative
- Review of market information
- Review of information provided by developer/borrower
- Review of legal information
- Review of economic information
- Review of appraisal reports
- Others’ informal opinions and impressions

**Relative Importance of Investment Factors**

- Confidence in investment quality
Quality and comprehensiveness of information provided by borrower/developer/seller
Type of investment
Market knowledge
Reputation of borrower/developer/seller
Prior experience in that market
Property type
Prior experience with borrower/developer/seller
Size of investment

**Due Diligence of Property Characteristics**
Location
Tenant quality
Property inspection
Building condition
Construction quality
Competitive position in market
Access to transportation and major highways in path of building growth
Design/architecture

**Due Diligence of Borrower/developer Attributes**
Prior experience with borrower/developer
Review of borrower’s/developer’s financial statement
Evaluation of borrower’s/developer’s capability, substance and track record
Status of borrower’s/developer’s financial obligations on other projects
Market performance of borrower’s/developer’s other projects

**Due Diligence of Market Factors**
Rents for comparable properties
Vacancy rates and trends in the sub-market
Rental rates and trends in the market
Lease terms and concessions on competing properties
Vacancy rates and trends in the market
Your firm’s familiarity with market
Rental rates and trends in the sub-market
Sales prices of comparable properties
New competitive building
New construction trends
Local restrictions on new building
Limited land availability
Corporate expansion and relocation decisions

**Due Diligence of Economic Factors**
Demand as evidenced by strength of local economy
Capital availability
Overall economic conditions and outlook
Tax policy and regulations
National real estate market
Inflation

**Due Diligence of Financial Factors**
Current occupancy levels
Tenant quality
Projected future income
Debt coverage ratio
Pre-leasing requirement
Lease terms
Loan-to-value ratio
Subject property’s prior financial performance
Capitalization rate
Tenant improvements and requirements
Cash-on-cash return
Lease pass-through and stop clauses
Sensitivity analysis
Price per foot
Break-even point
Potential for equity appreciation
Required internal rate of return (discount rate)
Anticipated holding period
Projected future value
Replacement cost

**Due Diligence of Legal/Documentation Factors**
Environmental reports
Title report
Loan documents
Soils and engineering reports
Building and occupancy permits
Construction documents
Part III. The Business of Real Estate

The real estate process, like any other business process, can be viewed as a value-creation sequence — a number of steps or processes that businesses take to create economic value between sources of capital (investors) and space users (tenants):

Developer – risk management through professional planning, execution, operation, and other services

Value

Need for space — Customers

Investor – Capital

While the definition of real estate development is simple, the actual activity is increasingly complex. The product of the development process is a coordinated effort by many allied professionals. In this process, the developer must ensure that the numerous elements comprising the process (including planning, design, approval, financing, construction, lease-up/sale) are completed on schedule, properly executed and reasonably within the budget.

Real estate companies come in a variety of shapes and forms. Real estate developers can be anything from financial institutions, corporations and universities to private individuals and public sector groups. Consequently, understanding the basic development cycle (value-creation chain) is crucial to successfully participate in the process, no matter who the developer is. However, in the context of this framework, we’ll consider a real estate investment company with a development function.

In general, the real estate development process or cycle consists of three major components and the respective sub-components (See Exhibit for Schematic Development Process):

- Planning
  - Strategic planning
  - Business planning
  - Project planning

- Execution
  - Pre-development
  - Development
  - Post-Development

- Asset Management

The process itself is a complex, fully integrated sequence of interrelated steps that must be carried out in order to make a successful investment. Each decision in the process should be made in the context of the entire investment process. The developer should make current decisions while fully aware of their implications not just for immediate next step but also for the life of the project.
The process conceptually divided into eight stages. This subdivision provides a convenient way to analyze all aspects of the investment cycle. However, in real life, some stages may be more emphasized than others, some may overlap and some may happen in parallel due to a variety of deal-specific factors. Nevertheless, all stages are usually present in one way or another. We’ll see that later, in the framework application section of the paper.

The cycle promotes a high level of interaction between the various components of the value-creation chain. The process is constantly moving and all participants of the process are continuously interacting with each other, reinforcing the “enterprise concept” of the development process. Investors and tenants are directly or indirectly (through market standards and requirements, property-asset management input, etc.) participating in the process together with the developer. This changes the nature of the development company to an operating business enterprise with ongoing problems, including that of cash management. Consequently, the process promotes a more comprehensive approach to development (more complex feasibility studies) and higher alertness in earlier stages to any possible issues that may arise in the stages past the traditional period in which the developer is involved. It also allows certain risks to be passed to tenants or long-term investors.

Similarly, as shown on the Real Estate Development Cycle diagram, the cycle shows a top-down process: It starts with the definition of the investment strategy and goes down step-by-step to the property level. Bottom-up approaches exist as well, when property-specific criteria drive investment strategy. Both approaches have their advantages and should contribute to the overall strategy of a successful enterprise. As described above, the circular nature of the process should allow for the self-adjustment of the framework between the overall strategic objectives and property-driven factors to create a combined approach. It is very important that investors entering the real estate field understand the basic development cycle and adapt their business models accordingly.

1. Strategic planning

At the level of strategic planning, the developer focuses on the organization and creates a plan for controlling and utilizing the company’s resources (human, physical and financial) to promote and secure the developer’s vital interest. Strategic planning also aims to give the enterprise a competitive advantage through differentiation. The developer determines answers to fundamental questions: Where is the company now? What is it doing and why? What does it want to do? Where is it moving over the next several years, and how? Strategic planning can be carried out in a variety of ways. However, in order to answer those questions, external and internal factors affecting the company must be analyzed.

External: the developer examines the operational environment, the state of the market and economy and all the trends and factors shaping the current industry conditions.

- **Demographic trends**
  - Population and households statistics
- Age, sex, marital status
- Employment/unemployment rates (and growth)
- Income, purchasing power, affordability, spending patterns, etc.

- State of the market: supply and demand trends by region/sector
- Prevailing rents and values
- Real estate cycle by market sector
- Competition
- Economy trends
  - Inflation
  - Short/long term interest rates
  - Growth trends, etc.
- Capital markets
  - Domestic and foreign investment streams
  - Trends in lending
  - Trends in yields and cap rates, etc.
- Construction trends
  - Construction materials/labor costs, trends, etc.
- Technology
- Industry laws, regulations and government policies

Internal: the developer also examines the current internal company conditions and capabilities and the role of the company within the industry:

- Current company profile
- Track record
- Geographical area of operation
- Human resources
- Organizational/management structure
- Range of products and services
- Past experience and projects
  - Type, scale, use, etc.
  - Evaluation of execution performance, financial performance
  - Evaluation of prior strategic objectives and accomplishments, lessons learned
- Specific expertise/advantage or weaknesses
- Financial capabilities

As a result, the developer frames the key issues that must be addressed (both internal and external) and formulates a strategic plan that encompasses fundamental decisions, immediate and long-term goals, objectives and initiatives regarding the company’s future operations company. This strategic plan is not meant to be a detailed action plan; it lays out the general strategy of the company. It is often called a “mission, vision and values statement.” At the same time, it must be clearly formulated and articulated.

Although the value-creation chain is described based on the development enterprise, it is important to understand that investors entering the real estate field have to go through the same strategic planning process internally in order to determine if the decision to invest
funds to in real estate is feasible for their enterprises. This decision must be compatible with their overall strategy and business models.

**Due Diligence at the strategic planning Stage**

The importance of strategic planning is difficult to underestimate. It is a fundamental process that outlines the company’s future and makes sure that everybody in the organization understands the long term objectives and goals. In order to make sure that all the information and assumptions used in preparation of the strategy are reliable and well justified, a prudent developer would start employing due diligence at this stage. The parameters of the strategic plan must be properly defined and articulated in order for due diligence to be effectively carried out. All the objectives and guidelines should be clearly formulated and have no ambiguities.

At least the following fundamental factors should be validated for accuracy:

- Economic factors
- State of the industry
- Market factors
- Objective analysis of the developer’s track record, prior performance, experience and lessons learned.

**2. Business planning**

The next step is to formulate a business plan, which will detail how the business will be carried out in real life: Where, geographically, will the company operate, what it is going to build and how it is going to manage and finance its projects? In other words, the business plan or model is the mechanism through which the developer’s entity will produce and deliver the product (space, in our case) and services to the customer. It explains the economic logic (business value proposition) of how the value can be delivered to a customer at the appropriate cost.

This plan addresses the following fundamental categories:

- Market area delineation within a region
  - Subject area market and economic data
  - Development regulations/climate
- Product and services objectives
  - Product: use type, scale, customer base
  - Range of real estate services offered
- Resources allocation
  - Capital sources and availability (equity/debt)
  - Contractors, architects, engineers and other consultants
  - Third-party consultants
  - Government agencies
- Competition evaluation
  - Major regional competition
    - Entities/projects
    - Competition strengths, weaknesses
- Business organization objectives
  - Human resources
  - Organizational structure/culture
  - Management structure
- Financial and risk objectives
  - Minimum required returns
  - Range of acceptable risks; including development, financial and legal risks

Using the business plan, the developer creates a set of project selection criteria that describe the parameters of target opportunities. Most likely, it would include the geographic area(s), range of uses, project scale, range of acceptable risks and limitations. Consequently, the developer gathers all business information related to the specific market area. As in the case of the strategic plan, the business plan must provide and clearly articulate as many details as possible (for example, details regarding the required risks and expected returns). Those details will be later communicated to all participants of the process.

**Due Diligence at the Business Planning Stage**
Due diligence continues and expands as more specific business criteria are being shaped. The emphasis now is on looking back and auditing the business plan policies for adequacy based on the strategic plan.

The following project-planning stage is a very important link between the planning and execution stages of the project. A developer works with all the issues described below on a daily basis looking for opportunities.

### 3. Project Planning

At the project-planning stage, the developer looks for an opportunity that is consistent with the project-selection criteria as specified in the business plan. During this process, the developer also obtains more specific local data related to the subject market or submarket (e.g., development climate, local political and competitive environment.) It is important to understand the trends in local politics and regulations and to be able to project how those can affect the feasibility of the development. Local zoning regulations are an expression of the public position regarding development. These regulations reflect the patterns of local infrastructure development, interactive land uses and urban growth trends. Consequently, regulations could present a hurdle for the developer if the project doesn’t comply with local public interest. A significant re-zoning may be required, which can substantially delay the project. This is an extremely important risk management factor during the project-selection process. Upcoming elections, possible changes in zoning rules and the vision of new officials may also impose a cloud even on projects currently underway.

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2 Note that in the context of this framework, I will generally assume a rather simple suburban income-producing (office or residential apartments) property-development scenario. Although the steps are very similar, the types of market analysis, property management issues, etc., vary dramatically between different uses and types of development.
3.1. Project identification
After completing project planning, the developer must identify specific project opportunities, which generally involve one of three common deal types: a site looking for a use, a use looking for a site or a combination of the two. Once identified, the projects are screened for “deal-breakers.” The screening process involves a preliminary opportunity evaluation based on the readily available physical, legal and regulatory information regarding the particular property that doesn’t require any significant spending (offering documents, owner representatives, public sources and conversations with local consultants). The objective is to understand where the value is and how to get to it. “Back of the-envelope” analysis is conducted, considering the offering price, potential project timing and other parameters and limitations to determine whether the project is initially feasible and can be justified by the development potential and location benefits.

Projects that survive the initial screening usually have more chance to proceed to secondary review or appraisal. At this point, the project actually passes two thresholds: project selection criteria and initial feasibility analysis. The developer feels confident about the feasibility of the project, wants to tie up the property and proceeds to the next step: He or she submits a Letter Of Intent (or equivalent) outlining major terms of a future purchasing agreement. Parties may have a few rounds of negotiations in regard to the LOI, and we will assume that the project study period (investigation and project feasibility study period) starts at the execution of this document. The official due diligence period also begins: The LOI typically lists all the DD materials to be provided by the seller. It’s important to understand that at this stage the developer has not yet assumed any risk: He or she may terminate the LOI and walk away without any penalties if any problems are uncovered during the study period. If any deposits are posted, they are typically refundable until the “go hard” date, which signifies the end of the study/due diligence period.

3.2. Project Appraisal (Or Project-Level Feasibility Study)
Given the higher certainty rate of success at this stage and a certain degree of control of the property obtained by the developer, site/project investigation expenditures are being incurred. Examination of due diligence materials delivered by the seller begins (described in 3.3.3).

The project-appraisal stage signifies a comprehensive feasibility and due diligence of the projects under review and covers the following topics:

3.2.1 Evaluation of physical and environmental conditions — includes an assessment of such physical site attributes as size, shape, existing structures, natural

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3 This is the first round of analysis of project-specific information. As the developer becomes engaged with the specific property, he or she expands on this information, analyzing it in greater detail as they become available during the transaction progress.

4 A confidentiality agreement is usually signed at this point.
features, environmental issues, accessibility and on-site and off-site infrastructure. The purpose of this process is to estimate the buildable area on the site.

**Physical attributes of the site:**
- Size, shape, orientation and functionality;
- Topography (a comprehensive survey may not be available but initial determination during the site visit may be enough to identify obvious issues); and
- Natural and other features that may increase value (view corridors, access to water, etc.).

**Environmental issues:**
- Soils. The primary concern is with the bearing capacity of the underlying soils and their characteristics. For example, hard rock very close to the surface will significantly increase the cost of excavation for underground parking;
- Hazardous waste;
- Existing vegetation; and
- Wetlands.

**Physical site accessibility:**
- Accessibility; entry points, natural barriers (railroad tracks, lakes, etc.);
- Proximity to major transportation routes and ease of access; and
- Proximity to major public transportation.

**Existing infrastructure, off-site and on-site utilities:**
- Sewers (sanitary and storm). These are problematic because of the specific operational conditions;
- Water;
- Electricity;
- Gas; and
- Telecommunication lines.

### 3.2.2 Evaluation of legal and local regulatory conditions

- Examines ownership structure of the property, current zoning conditions and respective allowed density and use parameters, possibility of re-zoning if necessary and zoning improvement process.

**Ownership structure:**
- Owner (sole/joint ownership, a corporation, LLC, etc.);
- Bundle of rights; and
- Legal restrictions, covenants.

**Existing zoning:**
- Development potential by right: existing use, applicable zoning overlays, FAR (density), height limits, setbacks, minimum required parking ratio, other zoning restrictions;
- Applicability of any special districts that may affect the new project or imply additional costs or approval requirements (e.g., growth control, affordable housing, historic districts, national parks, security buffer zones); and
- Local building codes and construction permit-obtaining process.
Entities involved in re-zoning/approval process:
- Local authorities;
- Other government agencies (e.g., military, CFA, NCPC); and
- Public groups.

Process and policy for changing underlying entitlements:
- The kind of re-zoning/approval needed;
- Special exemption application;
- Re-zoning consistent with the local master plan
  - Re-zoned through a standard process;
- PUD process;
- Re-zoning not consistent with the local master plan
  - Re-zone through zoning administration/planning commission lobbying
  - Re-zone during comprehensive rezoning (master plan process – usually takes 1.5 to three years to complete);
- Approximate duration of the re-zoning process;
- Administration of the re-zoning process;
- Participants in the re-zoning process; and
- Possible government requirements that may be imposed on the project (proffers, APF, PAYG, etc.).

3.2.3 “Highest and best use” conceptual design – when the developer knows the site and what is allowed to build on the site, he or she commissions an architectural firm to conduct a design study based on that vision and the building concept, as well as on the market information obtained earlier. The study will provide the initial version of the schematic site and building design. It will show the distribution of rentable density through the site and configuration of parking (on-grade or structural). Several iterations may be performed before the optimum combination is determined. Some rough construction costs estimates\(^5\) will also be provided at this point as well as an estimate of the architect’s fees. When that is done, the developer will consult with a civil engineer to get a preliminary assessment of the required grading and infrastructure (e.g., utilities, storm water management, and ground water management) to support the proposed density. The assessment will also determine whether the existing utilities will have enough capacity to accommodate the proposed density. In addition, the civil engineer will prepare preliminary infrastructure sketches and provide cost estimates and engineering fees.

Once the preliminary building and site plans have been sketched out, the developer will consult a general contractor to test the buildability of the conceptual design, (i.e., to see if there are any major construction issues) and get a more detailed construction cost estimate including construction management costs, their fee and insurance and bonds (if needed). Once again, these are only

\(^5\) At this stage, the cost estimates provided by design consultants are approximate and do not account for any specific conditions. More detailed estimates will be produced during the pre-development period.
ballpark numbers and will most likely be adjusted later, during the pre-development stage.

The developer will also try to estimate the most probable construction start date and duration of the construction period, contingent on the availability of financing and other unforeseen conditions. This will help the developer understand and estimate the project timeline and future costs associated with that.

In addition to design consultants, the developer involves other outside experts, such as legal, environmental, PR and marketing.

Simultaneously with the design study, the developer will also meet with local authorities to present the vision, explain the benefits to the public sector and see their first reaction to the proposed project. Based on the prior due diligence, the developer will be already familiar with local ordinances and the site-entitlement process and will know approximately what to expect. However, because of the complex nature of the entitlement process, it is important to maintain an ongoing dialog with the authorities. In addition, by introducing public sector partners to the process early, the developer can identify and effectively manage issues important to them. The developer must understand what requirements may be imposed in order for the project to be approved.

The developer will also start talking to potential investors and lenders (or with a mortgage brokers that will help him or her work with the financial community) to get their reaction to the project and identify possible issues on their side. Does the project fit their risk profile? Do their requirements fit the developer's needs? How can the developer effectively respond to those issues during the project selection process? What would be the general construction and permanent financing terms for this kind of project? How long will it take to process the loan? As a result, the most likely groups are identified and relations are established.

3.2.4 Market study – as part of the project appraisal, the developer commissions an assessment of the demand and supply relative to the subject property and the proposed building concept. The market study plays two important roles. First, it is a reality check to see if the assumptions regarding the positioning of the project relative to current and future market conditions and estimates are correct. Second, it provides a third-party opinion on the above-mentioned conditions and the project. This opinion will later be used in negotiations with project participants. Usually, the market study is outsourced to a professional market-research company. The methodology and data sources for the study vary somewhat depending on the product type. However, regardless of the method used, the study must address three basic questions:

1. Will there be demand for the proposed project?
2. How long will it take to fully lease/sell the project and at what rent/price?
3. What can be done from a planning and marketing standpoint to differentiate the project from others and make it more competitive?
To answer those questions, the following general categories should be covered in the market study:

a. **Definition of the market area** – the area that includes the property itself as well as its major direct rivals (competing projects). Market area may also include the area from which the majority of potential customers will be drawn. Market delineation will depend on several factors:
   - Location of competitive projects or clusters
   - Street and road patterns in the area surrounding the project
   - Proximity to mass transit
   - Commute time, where applicable
   - Proximity to other facilities relevant to the project
   - Jurisdictional boundaries
   - Proximity to major transportation hubs where applicable (airports, rail lines, etc.)
   - Land use patterns
   - Physical barriers to access

b. **Demand analysis** – even though national and regional economic conditions usually affect property demand, the most important factors are local. Thus, the study of local economic conditions and demographics should be a major focus of the market study:
   - Review of local economy should highlight the indicators most relevant to the particular land use or property, including drivers of local economic growth, largest employers and the nature of existing and expanding businesses.
   - Region’s and local “location quotient” shows the most significant employment sectors. Is the local economy diverse or focused on a small number of industries?
   - Local labor-force profile.
   - Consumer demographics, including population trends, households and their characteristics, age characteristics, race and ethnicity, household income, house ownership vs. rent, etc.

c. **Supply analysis** and its effect on the project are probably the most important factors of the market study. Typically, supply-side analysis considers the following factors:
   - Macro market conditions; measuring country-wide or region-wide absorption, vacancy trends and rent or price growth.
   - Local trade-area market indicators and construction activity.
   - Characteristics and performance of competitive buildings, both existing and proposed.

*In supply overview*, the key indicators are the size of the current inventory (number of housing units or square feet of office or industrial space), its growth overtime and anticipated near-term new construction. Also important are current vacancy rates and sales prices or rent levels over time. The profile of current inventory should be presented by property class: type of property, current vacancy rates and age of the buildings. Historic trends in the size of
the inventory, average sale prices and rents should also be shown. It is very important to understand the cause of changes in rents and vacancies over time, average annual additions to the inventory, leasing activity and annual net absorption. To the extent possible, local trends must be contrasted with the larger city-wide or metropolitan markets. The analyst must explain the reasons for any significant deviation from area-wide norms.

**Construction activity** can be monitored through literal “construction cranes count” or through building permit issuance activity of the local government. Historic data should be analyzed and any dramatic shifts explained. The local trade area capture of the development activity should be shown relative to larger metropolitan areas. Projects under construction will be among the most important competitors for the developer, since he or she hasn’t obtained financing or broken ground yet. It is important to understand the size of the competitors and how much of the space has been pre-leased or sold. Asking rents should be included in the supply analysis. The analysts must discuss the development activity with the local government in order to clarify the size of the development pipeline and when planned projects will start construction. The amount of well-located and properly zoned undeveloped land nearby that can be competitive with the developer’s project in the future should also be considered. Redevelopment of underused or obsolete properties should also be considered as potential competition.

Competition should be laid out on the map showing the location of subject property, buildings under construction and proposed as well as those already completed. Tables with key comparable characteristics should accompany the map.

d. **Marketability analysis** must be provided summarizing all the above data and drawing conclusions regarding the proposed project’s marketability and future performance.

**Site advantages and disadvantages should be discussed:**
- Physical site conditions
- Location
- Zoning and permitted uses
- Community character and reputation and performance of the local school district
- Crime rates
- Proximity to shopping, health care, etc.
- Community amenities

**Comparison of the subject property with competitors:**
Since the developer doesn’t have the final design of the site and building done yet, the part of the analysis related to a building helps him or her understand some of the minimum tenant preferences in order to stay competitive. Some of the factors below may be more or less important in different cases:
o Location and linkage (access, convenience, visibility, prestige)
o Rent or purchase price and related fees (condominium fees in case of residential)
o Unit size and mix for residential or typical floor-plate size for commercial
o Occupancy costs (estimated monthly cost of utilities, property taxes, etc.)
o Parking ratios and availability of garage spaces versus open lots
o Building or project amenities (exercise rooms, concierge services, etc.)
o Ability to support current and future technologies
o Security
o Maintenance of buildings and grounds

Ultimately, the following questions should be answered: how are those factors related to rent levels? What distinctive features have the highest value? The analyst must provide a site and building design recommendation that would improve the competitiveness of the project based on the above criteria.

e. **How strong will the demand be?** Growth in target market groups needs to be sufficiently strong so that a project will not overwhelm the market. In order to address growth, the analyst must present the “capture rate,” which shows the share of projected-demand growth that a project must attract in order to fill its rentable space or sell the units.

What is the timing of the project compared to the competitive projects underway and the economic and real estate cycles in the area? How much of the projected demand can the project capture, considering those factors?

Supply/demand imbalances or signs of an overbuilt market, if any, should be identified:
o Construction activity levels that dramatically exceed new demand, as indicated by household or employment projections;
o Escalating vacancy rates that can’t be readily explained (for example, by movement of a single large tenant);
o Negative net absorption with more space being vacated than new leases signed; or
o Declining real rents.

f. **Absorption rates** – is an extremely important aspect of the market study that will later be incorporated into financial feasibility models. How many units, at what price and over what time period will the target market likely absorb? Consequently, the absorption rate will show how long the developer will have to carry the property before it starts generating positive cash flows. Pre-leased space must also be factored into absorption rates. Usually, the rates are estimated based on the performance of the comparable recently completed projects. Also some statistical absorption average data should be available for
different property types. The absorption data is usually expressed in number of units leased or sold per month or number of months until the building is fully leased.

3.2.5 A financial evaluation examines the potential value of the project considering all of the above information. An acquisition budget and proforma are prepared as part of it. Hard and soft costs are estimated using current market and historical data and the following inputs are determined:

- The start date and the timeline of the project broken into pre-development, development, post-development and asset management periods (disposition year will be assumed) The timeline can be presented on a monthly, quarterly or annual basis;
- Inflation rate used to grow the expenses and rents;
- Financing terms of construction and permanent financing;
- Appropriate reversion capitalization rate; and
- Appropriate risk-adjusted discount rate.

Using the above inputs, the following financial estimates are determined:

- Project cost draw, income and debt repayment schedule;
- Cash-flow distribution to project partners and other participants;
- Internal rate of return and present value;
- Sensitivity analysis to identify the available sources of cost flexibility; and
- Financial model results, if possible, should be benchmarked against comparable projects.

The overall financial terms of the project must be appropriate given the property type as well as financial strategy and return requirements of the project stakeholders’ business enterprise.

3.3. Project-level due diligence

Since the developer has an agreement with the seller (LOI or equivalent), the project site can be accessed for testing. Simultaneously, the seller agrees to provide the developer with a list of available information relative to the property, such as existing soil reports, hazardous waste clearances, preliminary design and engineering studies, pre-approved plans and agency approvals. The developer initiates comprehensive project-level due diligence aimed at taking all reasonable measures to investigate a variety of existing conditions before going hard or committing to the purchase. This work is undertaken parallel with the project appraisal activities described above. It is in the developer’s best interest to discover anything and everything that can be an issue later, as he or she will be directly or indirectly exposed to and responsible for any delays and expenses related to unknowns that could have been resolved at this stage. The due diligence work will cover physical, environmental, legal and entitlement conditions of the site and any other conditions that can be reasonably uncovered. Although many of the due diligence items are very similar to what the developer has looked at during the project appraisal stage, the process is different. The goal of the due diligence process is to make sure that all the parameters critical to
the future success of the project are reviewed, properly evaluated and validated for accuracy. Often, given the rigorous competitive environment and consequent short study periods, the developer needs to analyze and manage significant amounts of information within weeks or even days. Proper due diligence execution specifically provides the developer with an opportunity to look back and see if something is missing. The developer gathers and audits detailed information on project-specific parameters:

**Physical property attributes**
- Location
- Property inspection
- Building condition (if any)
- Competitive position in market
- Access to transportation and major highways in path of building growth
- Design/architecture

**Legal and other documentation factors**
- Ownership structure
- Environmental reports
- Title report
- Loan documents
- Soil and engineering reports

**Project financial factors**
- Projected future income
- Debt coverage ratio
- Pre-leasing requirements
- Anticipated lease terms based on market
- Loan-to-value ratio
- Subject property’s prior financial performance
- Capitalization rate
- Tenant improvements and requirements
- Cash-on-cash return
- Sensitivity analysis
- Price per foot
- Break-even point
- Potential for equity appreciation
- Required internal rate of return (discount rate)
- Anticipated holding period
- Projected future value

**Local economic factors**
- Demand as evidenced by strength of local economy
- Capital availability
- Overall economic conditions and outlook
- Tax policy and regulations

**Local market factors**
- Rents for comparable properties
- Vacancy rates and trends in the sub-market
- Rental rates and trends in the sub-market
- Lease terms and concessions on competing properties
- Sales prices of comparable properties
- New competitive projects
- New construction trends
- Local restrictions on new projects
- Limited land availability
- Corporate expansion and relocation decisions

**Market study methodology**
Carefully review and understand the methodology behind the analysis used to estimate the supply and demand factors:
- What are the assumptions?
- How is the market area delineated?
- What are the methodology/models used to assess supply and forecast the demand parameters?
- Where are the data coming from? Several independent sources of information should be considered to confirm accuracy.
- What are the variables and volatility of the forecasts?
- How accurate have these forecasts been historically?
- What are the comparables? How close are the comparables to the developer's project and how the adjustments were made?

**Confirmation of the overall project feasibility**
Now, looking at the feasibility study, the developer can determine whether the project is formally feasible. If the value adjusted for all risks exceeds the total cost (and provides the minimum required rate of return), including all the logistics and items required to satisfy the physical, legal, governmental and all other requirements, and a due diligence audit demonstrates that all the assumptions used are accurate, the project is feasible. When this is done, the developer moves to the next stage and prepares a Project Appraisal Report (or Project Investment Plan)

**3.4. Project Investment Plan**
The developer's next step is to prepare a formal and detailed Project Investment Plan that will later be presented to the investment committee. At this point, due diligence work reaches its peak: All efforts should be made to obtain maximum available project/property data and extensive analysis by internal and external experts, where required, should be carried out. The ultimate goal is to uncover any significant deficiencies that may seriously affect the future feasibility of the project. Some uncertainties will always exist, but the level of those unknowns must be brought to an acceptable level.

The Project Investment Plan will analyze the following parameters of the project:
- Opportunity analysis in connection with market and industry trends
• Due diligence results and assessment of all risks involved
• Acquisition budget, project proforma, required capital structure and investment horizon
• Transaction structure and participants
• Detailed analysis of the projected operating and financial performance, returns and distribution patterns.

At the same time, the developer puts together a project development strategy that formulates how the project would be executed (development plan, management team, project timing and phasing considerations). A purchasing agreement\(^6\) outlining all the issues related to the deal closing will also be prepared. Proper preparation of the purchasing agreement should not be underestimated, as it represents a significant risk-management tool. With the Project Investment Plan completed, the developer negotiates with equity investors, partners and debt providers. The drafts of the relevant investment and development agreements are prepared with proper allocation of responsibilities and liabilities. Investment objective of the partners/investors must be compatible and properly aligned; track record, prior experience and expertise, financial structure and models should be properly evaluated in terms of the existing investment strategy and business enterprise for compatibility. We'll assume that at this stage the study/due diligence period comes to an end and the developer has a choice to proceed with the deal and go hard on the previously placed deposits or to walk away from the deal (the only exposures are the money spent on the project feasibility study and to some degree, the developer's professional reputation).

This is a very important time point in the context of the overall cycle. The developer, representing partners and investors, is ready to make a fundamental decision whether to assume all the project risks and proceed or to pass on this opportunity.

### 4.1. Investment Committee Approval

The investment committee represents the interest of the project’s equity inventors and plays a crucial role in the overall investment framework presented in this paper.

The committee considers the Project Investment Plan prior to a major capital commitment and focuses on the financial returns, risk management and execution strategy. The investment committee reviews the complete project data for accuracy and consistency with the earlier defined business goals and objectives. The existence of this hurdle creates an additional incentive (in addition to the developer's own good faith and proper business execution standards) or, in some instances, forces the developer to properly review, prepare and answer all possible project-related questions.

\(^6\) We will assume that the purchase and sale agreement is signed together with placement of the first non-refundable deposit.
This process signifies an extra layer of due diligence of the decision to acquire the project that is based on the developer’s prior activities.

### 4.2. Acquisition

If the project is approved, the developer proceeds with the transaction and prepares for closing. The following activities would need to happen:

- Execute the investment/development agreements
- Obtain environmental insurance (obtain Phase I/II)
- Obtain title insurance and survey (ALTA)
- Acquire financing
- Purchase the property

After the closing, the project enters the execution phase. As the investment committee grants its approval, the developer becomes a fiduciary responsible to the investors to complete the project as per the investment plan. Good faith execution now becomes a priority. This must be done by staying on budget, on time, through risk management by proper contracts preparation, scoping and execution.

### 5. Pre-Development

When the project is acquired, it enters the implementation phase of the cycle that starts with pre-development. This may be one of the most complicated and lengthy stages of the project, especially if re-zoning is involved. The developer works with government and the public sector to finalize the allowed design issues and completes all the necessary activities that make the project design criteria final:

- Prepare pre-development budget (entitlement and post-entitlement if necessary).
- Finish schematic design, start design development (as needed for the entitlement process).
- Entitle the property. This process may take anywhere from four to six months to several years, depending on the project parameters and scale. It may become a sub-project on its own, with a specifically defined strategy, execution plan, timeframe and budget, involving a separate “entitlement” team of consultants.
- Obtain early permits.
- Conduct full geo-technical and other required testing.
- Develop a “correction action plan” for environmental issues as necessary.
- Obtain utility availability letters.
- Identify proffers or other APF requirements.
- Finalize the design team and start negotiating contracts for
  - Architect/engineers
  - Civil, VT, market and other consultants.
- Revise the schematic project design prepared earlier, if needed
  - Mix of uses, density, height
  - Building configuration
  - Choose aesthetic attributes
Choose building systems, etc.
  - Phase the project.
  - Revise/refine the financial development model, update the pro-forma.

Due diligence emphasis now shifts from property-specific items (however, some are still present) towards the design team members and respective contract documents valuation:
  - Environmental study
  - Soils and engineering study
  - Contract documents: contract scoping preparation and adjustment to the specific project needs and realities
  - Design team members’ track record, expertise, experience, etc.

6. Development

When the most important conditions (entitlements) are obtained and the developer knows exactly what is allowed, the project moves to the development stage. The developer now finalizes the project design and related documents, obtains construction financing, all the necessary government permits, and executes the construction by:
  - Finalizing the design development stage
  - Developing construction documents
  - Bidding the project
    - Value-engineering as necessary to meet the budget
    - Re-bidding
    - Obtaining proper construction insurance program (builder’s risk, general liability, P&P bonds, etc.)
  - Finalizing the development budget with “hard costs”
  - Obtaining permits required for construction
  - Obtaining construction financing
  - Constructing the building
    - Monitoring construction schedule
    - Monitoring construction draws/budget
    - Mitigating any possible design deficiencies
    - Refining design with voluntary owner changes if necessary
  - Maintaining development relations with project participants:
    - Partners
    - Investors
    - Lenders
    - Tenants
    - Government agencies
    - Neighbors
  - Delivering the building for occupancy

Due diligence:
The most important questions at this stage are related to successful completion of construction. Developer conducts necessary due diligence in regard to construction management decisions.
Investors (based on the overall project risk level and their own risk profile) usually monitor the construction process by hiring a consultant who participates in construction draw reviews to make sure that monies are being spent properly and accordingly with the job progress. The developer actively manages the construction process and makes sure that all possible disputes are being resolved and that the job stays on budget and doesn’t stop.

7. Post-Development

When the base building construction is completed, the project enters the post-development stage. The main objective now is to fill the space with tenants, and bring the asset to fully operational level so the proforma cash flow projections can be met.

Depending on the project type, tenant construction may or may not be needed. If it is needed, the emphasis should be put on proper management of the tenant space design and work process, which in general follows the base building design and construction rules:

- Stabilize the property
  - Market the property
  - Establish lease-up strategy
  - Pursue potential clients
  - Lease-up space
  - Build out/obtain Certificates of Occupancy/deliver space to tenants
- Obtain permanent financing
- Hand over the project to property management

Due diligence:
- Review the appropriateness of the marketing and leasing program. It should be consistent with the tenant profile defined for the project and current market standards.
- Tenant work Contract documents: contract scoping preparation and adjustment to the specific project needs and realities
- Design team members’ track record, expertise, experience, etc.

At the end of this stage, the property is delivered to property management, which signifies the start of the last stage of the development process.

8. Asset Management

As the asset is up, stabilized and running properly, an asset-management plan becomes the next important stage in maximizing the property value and ensuring overall long-term project profitability. This phase of the cycle is typically implemented through effective property management, asset management and portfolio management.
Property management controls the everyday building operation and has detailed understanding of the local sub-market. Its responsibilities generally include:

- Tenant relations and retention
- Rent collection
- Control of operating expenses
- Financial reporting and record keeping
- Maintenance of the property
- Planning capital expenditures
- Crisis management
- Security issues
- Public relations

Asset management oversees several properties and makes sure that each property performance is maximized. Its responsibilities generally include:

- Development of property strategic plan
- Hold/sale analysis
- Review of opportunities to reposition properties and to provide justification for major expenditures
- Monitoring of property performance
- Assisting in tenant relations

Portfolio management expands on the functions of asset management, including understanding and directing the owner's investment objectives, managing assets to maximize the risk-adjusted portfolio returns and orchestrating the acquisitions and dispositions. Other responsibilities include:

- Communicating with investors and setting portfolio goals and investment criteria
- Defining and implementing portfolio investment strategy
- Overseeing acquisitions, dispositions, asset management and reinvestment decision
- Being accountable for portfolio performance
- Client reporting and cash management

Due diligence:
As demonstrated above one of the most important asset management functions is to understand and direct the owner-investor investment objectives. Consequently the asset management stage provides a logical connection with the strategic-level planning. Similarly the due diligence is items at this stage are comparable:

**Due Diligence of Market Factors**
Rents for comparable properties
Vacancy rates and trends in the sub-market
Rental rates and trends in the market
Lease terms and concessions on competing properties
Vacancy rates and trends in the market
Your firm’s familiarity with market
Rental rates and trends in the sub-market
Sales prices of comparable properties
New competitive building
New construction trends
Local restrictions on new building
Limited land availability
Corporate expansion and relocation decisions

**Due Diligence of Economic Factors**
Demand as evidenced by strength of local economy
Capital availability
Overall economic conditions and outlook
Tax policy and regulations
National real estate market
Inflation

**Due Diligence of Financial Factors**
Current occupancy levels
Tenant quality
Projected future income
Debt coverage ratio
Pre-leasing requirement
Lease terms
Loan-to-value ratio
Subject property’s prior financial performance
Capitalization rate
Tenant improvements and requirements
Cash-on-cash return
Lease pass-through and stop clauses
Sensitivity analysis
Price per foot
Break-even point
Potential for equity appreciation
Required internal rate of return (discount rate)
Anticipated holding period
Projected future value
Replacement cost

At this point, the real-estate cycle is complete. Every new development or repositioning project will be a new cycle, and several cycles may be underway at a given time at different phases of completion.
Part IV Methodology [to be inserted]

Part V.I. Potomac Yard Case Study

In the second section of the paper, I will apply and contrast and compare the conceptual investment feasibility framework to a real-life project: the Potomac Yard land development project. I’ll first describe what Crescent Resources did at each stage of the project cycle, and then analyze each stage for compliance with the proposed framework.

In the context of the above framework, the project will be divided into the following stages:

V.I. Case Study Findings

Case Study Overview

Strategic and business-level planning – In 1989, Crescent Resources puts together a strategic plan aimed at bringing the Crescent Timber and Land Management Company to a new level in real estate development. An accompanying action plan outlines how the business must be carried out and how the company has to be positioned within the industry. After almost a decade in which it compiled a track record of successful projects in North Carolina, Crescent Resource aimed its sights toward expanding into new markets – specifically, the Washington, DC region.

Project-level planning – New projects are being sought by Crescent in the mid-Atlantic region – Potomac Yard appears on the horizon. Dan Kohlhepp, together with a team of professionals from Crescent’s Charlottesville office, starts project evaluation:

Potomac Yard offering package
Crescent’s initial project evaluation - long-term nature of the project
Feasibility analysis
Negotiations
Board approval
Contract execution
Continued feasibility study and due diligence
Money goes hard
Contract closing

Project execution – Project execution stages in the original form proposed in the framework are not that clearly defined in the context on the Potomac Yard project. For example: the most complex construction was the off-site infrastructure in both jurisdictions. However construction is typically associated with a development stage. Although the off-site infrastructure construction was a prerequisite to have the development rights vested, it was still a major improvement to the overall land value and may be counted towards development. Nevertheless I’ll stick to my framework and will
consider the off-site infrastructure as part of pre-development specifically because only after it was built the developer would get his rights vested to the degree comparable to obtaining entitlements. Consequently, I’ll conceptually separate project execution into the proposed categories and assumptions:

**Pre-development** – everything that needed to be done in order to fulfill the necessary conditions for development:
- Off-site infrastructure design approval
- Off-site infrastructure construction
- Site-plan design approval

**Development/Post-Development** – on-site infrastructure construction, accelerated completion of the project compared to the previous expectations:
- On-site infrastructure design and construction
- Preparation of the development agreements
- Market the parcels for sale to the prospective vertical developers

**Asset management**
Even though the traditional asset-management phase didn’t take place during the life of the project, in the context of the paper, I’ll consider the final land-disposition process as a short-term asset-management stage. This will explain why the execution strategy changed from long-term “office play”7 to land disposition of ready-for-construction land bays and a shortened overall project horizon (overlapping with development and post-development).

1. **Crescent Resources Strategic Plan**

**Strategic and business planning**
In 1989, the real estate development arm of Crescent Land and Timber Corporation (see Exhibit) issued a new strategic plan under the direct supervision of Mr. Arthur Fields, a senior vice-president of real estate development. Mr. Fields (See Exhibit for Arthur W. Fields’ CV) joined Duke Power a year earlier, brought extensive real estate expertise to the subsidiary of Duke Power (a public utility company) that was struggling to enter the real estate development business. He was specifically tasked with bringing Crescent to a new business level. Mr. Fields became the appointed president of Crescent in 1991. His authorship of the strategic plan marks the beginning of Crescent’s business success.

The strategic plan included the following:

**MISSION STATEMENT**
**What the company is** – Crescent Land and Timber Company was identified as a developer of diversified real estate properties located primarily in the Carolinas region. It was emphasized that the company is a start-up venture in an established industry under the corporate sponsorship of Duke Power Company.
Evaluation of the overall industry competition and strategic implications on Crescent goals and objectives – The existing competition in the defined region was described as very broad, exceptionally skilled and producing products of superior quality. Those factors were emphasized as the most important in setting company’s performance, product quality and differentiation objectives and goals.

Crescent tried to differentiate itself from its competition by:

- Establishing a positive, customer-driven business image
- Focusing on becoming a high quality water front/ water access residential community developer
- Use of creative aesthetics and distinctive features in residential projects and developing an architectural signature in commercial projects
- Creating and nurturing especially strong relationships within Duke and other companies
- Maintaining a strong financial foundation

Crescent’s immediate mission was to establish a solid position in certain residential segments capitalizing on the existing land inventory where it provided a natural and strong opportunity to create a unique competitive identity and achieve measurable results relatively quickly. At the same time, the importance of building a diversified product capability for the future was also a way to defend against economic fluctuations and to compete effectively and maximize the long-term value for Duke Power shareholders.

Immediate customers and, most often, the end users were identified as single-family residential builders and homeowners, national and local users of office and industrial space, large or small retailers, apartment dwellers and investors.

Two particular customer types and their needs were identified by Crescent:

- Residential and commercial
  - High quality sites and infrastructure ready for construction
  - High quality of life and prestige communities
  - Enhancement of greater community immediately surrounding Crescent’s projects by contributions towards public amenities
  - Well located, convenient and attractive workplaces

- Investors
  - Higher rate of return compared to alternative investments
  - Vehicle for quick investment in attractive opportunities

High quality definition was divided into two components:

- Physical component
  - High quality materials
  - Long term durability of Crescent’s buildings
  - Market-driven selection of mechanical and electrical systems
  - Distinctive nature of aesthetics in Crescent’s projects
  - Landscaping features better than competition

- Human component
- Best available and the most appropriate design consultants for a particular market (architects, land planners, engineers, attorneys, etc)
- Professional way of conducting business

Initial project size was identified as a broad range in the millions of dollars. In initial projects, the emphasis was said to maximize the value from the beginning land inventory and develop internal project management experience. General development cycle period was said to be anywhere from six months to five to eight years.

Internal activities were limited to:
- Project planning and management
- Relationship management
- Financial and information management
- Certain marketing activities, including commercial leasing
- Procurement of different outside professional services
- Joint ventures where fulfilling the strategic need of gaining specific project experience

BELIEFS AND VALUES
This section of the strategic plan again reinforced the importance of particular issues for achieving company’s goals. Most important of those are:
- Maintaining the standards of quality and integrity in all activities
- Building a strong and positive image and reputation as a responsible corporate citizen in all communities of operation, not only for long-term business success but also as a reflection upon Duke Power Company and its traditions
- Being opportunistic in nature and driven by customers and markets
- Building a reputation as people-oriented and respectful of interpersonal relationships
- Having creativity, flexibility and a can-do attitude towards all activities, employing innovative, result-oriented individuals with freedom of decision-making, while also understanding that mistakes can happen
- Understanding the long-term-commitment nature of real estate development

GOALS
The most important goals are summarized as follows:
- To build a real estate business under umbrella of Duke Power Company by incorporating entrepreneurial success within a corporate environment
- To attract, train and retain strong team of real estate development individuals
- To be perceived by industry leaders as a major diversified player in real estate development in the Southeast within the next six to eight years
- All projects to be recognized as high quality for a given market
- To position Crescent to compete effectively with industry leaders in the major commercial developments in the Carolinas within three years
- To accumulate internal project management and planning experience, extend boundaries of competence and further differentiate itself from competition
- To maintain financial strength needed to seize opportunities
- To achieve long-term financial returns that are the best in the business and create value for shareholders

OBJECTIVES
Objectives of the company were divided into three sections:

**Organizational** objectives focused on the necessity of hiring specific expertise that the team was missing at that time. Emphasis was also put on strengthening the relationship with industry-related groups: brokers, designers, builders, sources of capital, etc. The importance of maintaining a communication network between Crescent’s and Duke Power's senior management was emphasized.

**Operational** objectives primarily focused on timely execution of several particular projects with timeframes to achieve certain project thresholds. In general, the purpose of the operational objectives was to add momentum to the overall development activity of the company (i.e., to have at least so much commercial, residential and industrial developments underway within next two to three years).

**Financial** objectives were to meet certain profitability thresholds and to become a contributor to Duke Power Company earnings (to maximize recognized earnings).

BUSINESS ISSUES
Part of the important business issues discussed was SWOT analysis, which realistically exposed all strengths and weaknesses of the enterprise. The most important of those were:

**Strengths**
Factors included financial strength and existing inventory of water access residential land, as well as Duke Power’s top management’s commitment to the Crescent development venture.

**Weaknesses**
Weaknesses included a lack of a track record in development and a lack of a network of external relationships, especially with the brokerage community. In addition to that, the danger of potential constraints imposed by Duke, as well as an “entrepreneurial cultural gap” between the mindset of a public utility company and a free-wheeling, market-driven and intuitive real estate enterprise was clearly identified.

**Threats**
The most important threat to the enterprise was described as a breakdown of the human relationships between Crescent and the parent company. Others included the high quality of the existing competition and the consequent need for clear differentiation. Failure to establish realistic objectives and timing for building the development business as well as possibility of losing focus and getting involved with too many projects at once were stressed as possible threats.
2. Crescent Resources Action Plan

An action plan came together with the strategic plan and focused on details of the specific issues that needed immediate attention. The plan consisted of the following sections:

Building and developing relationships:

Duke Power — the action plan specified a set of activities aimed at building regular communication and interaction with Duke Power on all levels. Duke was considered a potential client for a variety of future projects, both commercial and industrial. Becoming, in general, an active part of the Duke Power Company and establishing a strong presence as a self-sufficient profit-making business line was a priority as well.

Real Estate Brokers — the plan provided detailed tasks on how to establish and maintain the company presence in brokerage community: introducing the company to the brokers in all market segments and creating a database of major brokerage companies and brokers, creating extensive marketing information on Crescent’s projects, participating in community and business functions important to brokers, selecting an advertising and public relations firm to create an image and to build name recognition in all important market segments.

Government Officials and Economic Development Experts — the plan established a program to focus on government and regulatory officials and organizations at state and local levels. In this case, the emphasis was on becoming a part of such entities as Charlotte Chamber of Commerce, economic development councils and other important industry trade organizations by market segments.

Operations — the tasks outlined were primarily project-specific or market-area- or market-segment-specific steps to be taken, such as selecting an architect, conducting market studies and adding project managers.

Specific issues by project:

Retail/commercial projects in the existing markets of presence and new markets — land assemblage goals in order to establish presence and gain experience in new markets of interest

Property Management — specified task to be taken in order to set up and develop a property management department by hiring a person with expertise, establishing guidelines and philosophies and developing a long-term management system. The emphasis was on a customer-driven motivation for Crescent’s property management.

Financial Systems Development — outline of the tasks to be completed in order to establish a proper financial analysis package, which would include proforma models and corporate reporting models. Other issues included proper cost-control measures among project managers and corporate financial considerations for use of leverage.
General Management Issues – stressing the people-focused nature of the real estate development business, this section of the action plan included measures to create incentive programs for project and non-project real estate managers, conduct project reviews for the entire staff to promote experience-sharing to gain additional input and critique results. Performance review measures were also identified.

3. Project-Level Planning

The strategy employed by Crescent turned out to be very successful in the ensuing 10 years and achieved all of the goals and objectives: Crescent’s Charlotte office became proficient in the development of a variety of residential master planned communities, apartment and condominium communities, commercial office parks, corporate headquarters, industrial distribution facilities, etc. (See the Entity’s Portfolio Exhibit). Moreover, Crescent became one of the high quality real estate development leaders in the Southeastern and Southwestern United States.

In 1997, as a result of the revision to their own strategic planning, the Duke Board decided that they wanted to invest more money in Crescent based on its great track record. Duke now wanted Crescent to grow and expand to new more dynamic markets of the mid-Atlantic, including Washington, DC. Crescent didn’t have a presence in the market at the time, so it needed local expertise. It approached Dan Kohlhepp (see exhibit for Dan Kohlhepp’s résumé) whom management had known for 20 years, with an offer to head the expansion efforts in the mid-Atlantic. At the time, Mr. Kohlhepp had his own real estate investment advisory company in DuBois, Pennsylvania.
So what were the business criteria and pros for the expansion that Crescent had considered?

3.1 Project Identification
Northern Virginia was defined as sub-market of interest within the Washington Metropolitan Area region because of its pro-development environment and larger inventory of available land (and larger pieces of land) compared to Washington, DC, or suburban Maryland. Crescent was looking for large tract deals (approximately 100 acres and up) capitalizing on its previous experience with land development. Dan Kohlhepp said:

Most companies specialize in either vertical (building) or horizontal (infrastructure) development. We did both. We also had experience in a range of projects from retail to offices to industrial to recreation. That was our strength…

In addition, the market had good fundamentals. Its proximity to many agencies within the federal government was attractive; their space needs were growing. Mr. Kohlhepp was particularly familiar with the existing state of the market through his local broker contacts and subscription to a handful of market and economy surveys and reports.

Crescent was primarily looking for an office “play”: its development model was a 120,000-square foot, 6-storey office building to be built in multiple phases. By that time, Crescent had approximately 10 M (Million) square feet of similar office development
experience. Office play was chosen because of a particularly strong market in this submarket of Washington Metropolitan Area; however, other uses were not automatically dismissed.

The competition was not very strong at that time, as many development companies, such as Trammell Crow and Lincoln Properties, were recovering from the down-market of the mid-90s. Additionally, it would be very difficult for them to compete with Duke’s balance sheet, which was available to Crescent. Access to funding is always a tremendous advantage at the times of acquisition.

Another interesting detail was that Crescent had never had an operating portfolio of properties and had no NOI income. That was a result of the goal to maximize recognized earnings for Duke shareholders. Crescent would develop, stabilize and sell. Consequently they were more flexible in their project-selection criteria as they had no portfolio considerations.

At that time, Crescent had specific risks that they didn’t want to take: entitlement, environmental, off-site infrastructure risks.

The Potomac Yard Project began in December of 1999 (see Exhibit Project Description). Altogether, it was approximately 340 acres of land strategically located between the Crystal City commercial hub and historic Alexandria Virginia, adjacent to the Ronald Reagan National Airport. It was a unique opportunity for Crescent to establish a significant presence in one of the most dynamic real estate markets in the United States.

Commonwealth Atlantic Properties (CAP), an investor group led by Lazard Freres, owned the Potomac Yard land. By the time of the offer, the group had spent seven years repositioning the property to allow for a large mixed-use urban in-fill development. CAP’s efforts were focused on zoning and entitlement approvals in the public arena and remediation of some environmental conditions affecting the site. Additionally, CAP developed a 589,000-square foot retail center on a portion of the site.

Initially, Crescent wanted to buy all CAP assets – land, REIT stocks, its complicated financial papers – to take them out of business. Money was not an obstacle.

3.2. Project Appraisal
Dan Kohlhepp: “Usually when you have a chance like this, you are in cornfields on somebody’s farm, but here we have the opportunity to build a community in the heart of the Washington, DC, metro area!”

Potomac Yard was an urban mixed-use project that included almost 5 M sqft of office space (1.9 M sqft of office in Arlington and 2.9 M sqft in City of Alexandria. See Exhibit Development Potential and Existing Conditions Aerial) and almost 4 M sqft of residential density in both jurisdictions (total). It was sizable tract, and consistent with the project-selection criteria the decision was made to take the office play, it was worth of the residential component that came with it. Office was the main driver for Crescent in the
Potomac Yard Project; it would develop office (horizontally and vertically) and lay out the residential (horizontally). Even though Crescent contemplated long-term office vertical construction, the project was analyzed and later underwritten on a land-development basis.

Potomac Yard presented Crescent with several strategic opportunities:

1. Major entry to one of the most dynamic markets in the nation.
2. Participation in a new product type: mixed-use urban in-fill. Crescent had done offices and single-house residential communities, but they had never done urban mixed-use projects. At that time, few developers had worked on this type of project.
3. The ability to leverage existing expertise across multiple product lines for Crescent in future penetration of this new geographic market.

Going through the entitlement process, CAP had produced initial schematic land-planning design for the land bays in both jurisdictions: high-rise office development in Arlington, and a town-center-style development in the City of Alexandria. Extensive urban development guidelines (a phased development site plan and design guidelines in Arlington, and coordinated development district guidelines in Alexandria) had evolved from a lengthy entitlement-approval process involving significant input from all the local stakeholders. The result was a plan that had gathered support from elected officials, the public planning staff, and public groups committed to “Smart Growth” and urban redevelopment, such as the Sierra Club and the EPA.

Up to this point, CAP had not examined from a constructability perspective how everything would be built, and had done a limited amount of geo-technical design and almost no infrastructure design.

The above mentioned was inherited by Crescent and became a basis for the development plan. Mr. Kohlhepp was heading the project evaluation with staff support from the main Crescent office in Charlotte, NC.

3.2.1. Initial major deal parameters (See Exhibit for Land Bays):
Physical conditions: 369 acres located on the border of Alexandria and Arlington, Virginia partially developed.

Environmental conditions
  o “Extent of Contamination Study” approved by EPA
  o “Human risk assessment and on-site ecological risk assessment” approved by EPA
  o Remediation underway at former central operations area
  o “No further action” letter expected

Entitlements
Two separate jurisdictions, Arlington County and the City of Alexandria, Virginia, controlled the entitlements for respective portions of the site.
Coordinated development district approved in Alexandria and included:
  o Development conditions
  o Urban design guidelines

Phased development site plan zoning being negotiated in Arlington included:
  o Development conditions
  o Urban design guidelines

*Charles E Smith Company vs. U.S. Department of Interior and Commonwealth Atlantic Properties* litigation is pending

**Assessment of critical project parameters**

In order to monitor the market conditions, Crescent was buying retail, residential apartments, hotels and office market studies from Delta Associates and other brokerage firms.

a. **Real estate market analysis and forecast**
   
   Office – strong
   Retail – weak
   Residential – weak
   Hotel – strong

b. **Required infrastructure assessment.** A land development project by nature combined with a planned unit development regulations resulted in significant amount of required on-site and off-site infrastructure.

**Off-site**
  o Potomac River outfall (paid by seller, done by buyer)
  o Four Mile Run outfalls
  o 1.75-mile trunk sewer through Old Town Alexandria
  o Pump (lift) at Arlington sanitary water treatment plan
  o Sewer line to pump station under Route 1 and Crystal Drive
  o Force main in Alexandria to Four Mile Run, holding tank through retail center
  o Pedestrian bridge through CSX and Metro rail lines
  o Monroe Avenue bridge over CSX and Metro rail lines
  o Water and sewer connections under CSX and Metro lines

**On-site**
  o Streets and transit way
  o Storm and sanitary sewer
  o Water and gas lines
  o Communication conduit
  o Street and traffic lights and control
  o Storm water detention ponds
  o Parks
  o Landscaping

c. **Assessment of the environmental risks**

A variety of the existing environmental studies (See Exhibit for Environmental Documents) and documents were reviewed by the following entities:
  o Duke Power scientists
- Third-party consultants
- Environmental attorneys

Environmental program included a variety of activities (See Exhibit VDEQ letter)
  - Phase II testing
  - Phase III remediation
  - Insurance

**d. Legal and regulatory evaluation**

Entitlements and municipal conditions:
  - Alexandria necessary conditions – Trunk sewer completion
  - Arlington necessary conditions - Existing litigation over alleged NEPA violations – Charles E. Smith litigation
  - North Tract transfer to Arlington County subsequent to the settlement of the litigation.
  - Arlington portion of the Property included a 28-acre parcel known as North Tract. Transfer of this tract to Arlington County for a public park construction as a proffer would allow for transfer of additional density to the South Tract in Arlington.

Political conditions of the cross jurisdictional project were different on each side:
  - Arlington
    - Board members support the development
    - Planning staff suspicious of North Carolina developer
  - Alexandria
    - Mayor and City manager expressed strong support for the development
    - City Council had mixed feelings
    - Planning commission Chairman supportive
    - No director of Planning Department

**e. Large number of complicated neighbors** added another level of complexity and needed to be accounted for:
  - CSX Railroad
    - Easement agreement
    - Railroad crossings
    - 100+ trains per day
  - Washington Metropolitan Airport Authority (Reagan National Airport)
    - Height restrictions
    - Aviation easements
    - Waterline connection
  - WMATA
    - Future Metro locations
    - Railroad crossings
  - Virginia Department Of Transportation
    - Glebe Road
    - Jefferson Davis Hwy
  - Army Corps of Engineers
- Four Mile Run flood control
- Wetlands delineation
- Storm water outfalls
  - National Park Service
    - Height limitations
    - Architectural approvals
    - Lighting and landscaping
    - NEPA litigation co-defendant
  - Neighborhood Associations
    - Arlington
    - Alexandria

f. **Capital Requirement**
   - Return expectations
     - Min 15% IRR on total capital
     - Recognized earnings are imperative
     - Minimum after tax return
   - Acceptable risks
     - Business risk
     - Construction risk
     - No entitlement risk
     - No environmental risk
   - 1031 trade dollars
     - Closing date is important
     - Use of trade dollars is critical

3.2.2 **Quantifying critical issues**
The next step was to project all the above issues on the project timeline and see how everything worked together:

**Land sales projections**
   - Market limitations/Absorption
     - Office has maximum annual absorption
     - Residential has maximum annual absorption

   - Regulatory limitations
     - Alexandria Land Bays A and C can be developed after trunk sewer is completed
     - Arlington Land Bay A can be developed before North Tract is transferred
     - Potomac Yard must be completed to Route 1 when the earlier of three development thresholds is met
     - Monroe Avenue Bridge must be built when a development threshold is met
   - Land sales vs. building occupancy analysis assessed the pros and cons of going vertical:
     - Site plan approval 6–18 months
- Building construction 18–30 months
- Certificate of occupancy lead time
  - Initial 2001 sales prices and other financial model assumptions used
    - Office $32.50 psf
    - Retail $32.50 psf
    - Townhouse $50 psf
    - Multi-family $35 psf
    - Hotel $33 psf
    - Annual growth rate 3%
    - Selling costs 3%

Interim Income and Holding Costs
Given the specifics of a land development project with extensive expenditures upfront before any income can be realized, parameters such as land carry, expenses and interim income become very important.
  - Arlington
    - North Tract Lease
    - Edna Parking
    - Sun Park
  - Alexandria
    - GSA
    - Avis
    - NCR
    - DCS
  - Real Estate Taxes
    - Projected rate $0.14 psf (in 2001 dollars)
    - Arlington assessed value exceeded sales price for the entire property
    - Alexandria assessed value exceeded sales price for the entire property

Infrastructure
Detailed analysis of scope, timing considerations and construction costs were performed:
  - Arlington
    a. Streets, sanitary sewer, storm water management and other utilities
      - Potomac Avenue
      - Thirty-third Street
      - Glebe Road extension
      - Route 1 and Crystal Drive
    b. Off-site sewer and pump station
    c. Rough grading and haul road
    d. North Park, Center Park and South Park
    e. North Track expenditures
      - Litigation settlement
      - Transfer expense
      - Remediation
    f. Environmental Cost
    g. Architectural and engineering
Alexandria
   a. Land Bays A and C
   b. Streets, sanitary sewer, storm water management and other utilities
      - Potomac Avenue
      - Swan Avenue
      - East Glebe Avenue
      - Custis Street
      - Howell Street
      - Main Street
      - Route 1
      - Monroe Avenue
   c. Monroe Avenue Bridge
   d. Rough grading
   e. Avis and GSA removal
   f. Off-site trunk sewer
   g. On-site sanitary sewer
      - Phase 1
      - Phase 2
      - Pump Station
   h. Land Bay D pedestrian bridge
   i. Four Mile Run force main
   j. Parks
      Land Bay M Braddock Fields
      Land Bay K Monroe Fields and Linear Park
      Land Bay D Rail Park
      Land Bay J Howell Park
      Land Bay H Swann Finger Park
      Land Bay E Curtis Finger Park
      Land Bay E Four Mile Run Park
      Land Bay G Town Center Park
   k. Environmental expenditures
   l. CDD phasing plan design

Time -- weighted measure for evaluation
   a. Land residual analysis
   b. Internal rate of return
   c. Role of reinvestment rate assumptions

3.2.3. Financial Evaluation
Mr. Kohlhepp started the process of putting all the project parameters into a DCF model. The strategy was to analyze it from the land development standpoint: The model did not include the costs or returns from developing and selling any of the buildings to be allocated on the site. It only included the infrastructure development and projected gain on hypothetical sales of the pads ready for construction to outside developers at the market price. Again, that was done for modeling purposes only, with limited exceptions; Crescent had no intentions at that point in time to actually sell lots to other developers.
Lot values were predicated on analyses of comparable sales and economic analysis of potential building projects driven by construction costs, market rents and operating expenses for the anticipated vertical projects. Crescent’s intent was to develop the vertical projects internally, so there would be no EBIT generated, nor taxes payable due to placing lots into production. (We should keep in mind that Duke was primarily driven by recognized earnings that would happen at the actual sale of a future building). The value of a lot would then serve as the equity for a vertical improvement project with most of the other development costs financed with construction or project loans. Finished vertical development project sales would ultimately generate the recognition of EBIT and the taxable event for GAAP purposes.

The first meeting with the Duke Board was to describe the project and to demonstrate all the significant risks that Kohlhepp and his team were working on. Project evaluation phase was underway: environmental studies, market studies, physical challenges of building the project. Kohlhepp and his colleagues had done that through 2000 and then met with the Duke Board for the second time with the better understanding of risks and a plan on how to handle and deal with them and at what price. Environmental contamination was studied, remediation was being done on the Alexandria portion of the project and would be completed by the time Crescent would close on the deal, and entitlements would be passed by the time of closing. Regarding the off-site trunk sewer project, Duke personnel assured Kohlhepp that they had had a lot of experience with micro-tunneling, and that would not be a problem.

However, at that moment, Kohlhepp advised Duke to pass on the deal: The project was too big, environmental risk was still a major problem and the numbers didn’t work for all other additional risks and complexity.

Bidding the Project
After Crescent started working on the deal, they underwent a bidding contest. There were more then a dozen other bidders. Crescent had provided their qualifications (as did others), conducted a series of negotiations with Commonwealth Atlantic Properties and finally won the project.

As previously mentioned, the initial offer included everything Commonwealth Atlantic owned, with a total value of $600–$700 million:
- Undeveloped land at Potomac Yard
- Other undeveloped land – Ruther Glen, a piece of industrial ground between rail road and I-95 Interstate Hwy
- Developed land – Retail Center
- Convertible securities in several REITs

After the second Duke Board meeting, Kohlhepp advised Commonwealth Atlantic Property that they were concerned about the significant amount of risks associated with the Project and that they were going to pass on the deal. CAP responded by asking what price would justify the purchase. Crescent went back and revised, re-quantified the risks and the deal components. One of the reasons CAP wanted to work with Crescent was
because they were one entity with lots of money; other bidders had an office developer, a residential developer, a banker on the side, a rich lawyer, a typical development team that would put together money and expertise. Crescent had everything, and the money, and was thus considered a good buyer. When it returned to CAP, CAP offered a significantly reduced price. In addition, in that process some of the initial offer components were taken out from the deal and now Crescent was looking at real estate only. It decided not to buy the securities due to the complex nature of some of those papers.

The package now included:
- Undeveloped land at Potomac Yard
- Other undeveloped land – Ruther Glen
- Developed land – Retail Center

The North Tract of the Arlington portion of the Potomac Yard land package included a 4.5-acre parcel called the Davis Tract. It was contaminated with petroleum products, polychlorinated biphenyls (PCBs) and lead. This portion of the site was formerly operated as a scrap metal reclamation facility by Davis Industries pursuant to a lease with the Richmond, Frederick and Potomac Railroad and later with CAP. Another piece of land that was still in the deal at that moment was the Ruther Glenn parcel – located between I-95 State Highway, Belt Way and the VRE railroad tracks it was zoned for industrial use and didn’t have much commercial value for Crescent.

Moreover it was tied to acquisition of the Davis Tract. When Crescent decided that the level of environmental risk possessed by the Davis Tract was not acceptable and carved it out of the package, Ruther Glenn was dropped as well. The package became the undeveloped land of Potomac Yard and the existing Retail Center.

Commonwealth Atlantic Properties then realized that, because of the 1031 exchange, it would have to reinvest in another retail center, which was not what they were looking for. Instead they wanted to invest in very stable, prestigious office buildings. They decided to exclude the Retail Center themselves – the package became just the undeveloped land of Potomac Yard. However, Crescent negotiated the right of first offer to purchase the existing Retail Center of the Potomac Yard Project later at a fixed price, (which seemed to be very high at that time) whenever CAP was ready to sell it.

3.3. Project Investment Plan

Now, as the project scale was brought to a more manageable level, Mr. Kohlhepp revised the financial model in order to divide the entire project into stages. He envisioned a sequencing period of 15 years, and that drove how fast sites could be brought to the market, which in turn drove what kind of infrastructure had to be built before Crescent could deliver. A staging study was necessary as part of valuing the project. Two conditions had to meet immediately: In Alexandria, a trunk sewer had to be installed, and in Arlington, the North Tract had to be transmitted to the County. If Crescent could not meet those two conditions, the project would be seriously delayed.

Crescent also had to avoid putting its Alexandria and Arlington offices in competition with each other. Kohlhepp looked at the absorption schedule to figure out how much
market Crescent could take per year. The entitlement process also had to take into account parks, amenities and certain features that had to be put in, with costs established and projected into the future. Some of the entitlement requirements were unknown at the time but had to be accounted for in the Crescent’s financial model and projected five years ahead with some assumptions.

No matter how Kohlhepp pushed, the returns were below the minimum required number. One suggestion was to lower the yield expectations, but the minimum required 15% yield was the constraint that Crescent had to meet. Mr. Kohlhepp found ways to accelerate some of earlier pieces of the project that could be sold right away. The strategy became to immediately sell the pieces in Alexandria that could be sold separately and to develop the Arlington piece. Given that, Dan ended up with 15.2% projected IRR. The project’s financial forecast was as follows (See Exhibit for Proforma Spreadsheet):

Arlington
- Total land sales: $170,700,000
- Infrastructure expenditures: $30,900,000
- Allocated land cost: $3,100,000
- Cash flow: $66,700,000
- Time period: 12 years

Alexandria
- Total land sales: $295,300,000
- Infrastructure expenditures: $84,200,000
- Allocated land cost: $49,700,000
- Cash flow: $131,400,000
- Time period: 13 years

Total
- Total land sales: $465,900,000
- Infrastructure expenditures: $115,100,000
- Allocated land cost: $122,800,000
- Cash Flow: $198,100,000
- Time period: 13 years

Development Plan
Crescent’s development plan contemplated commencing as soon as possible with high-rise office development (mixed with ground-level retail) in Arlington. From there, the plan would expand south towards Alexandria, and begin there with a town-center-style development consistent with Old Town Alexandria. The development concept envisioned an urban village destination or a new town within the city.

4.1 Board Approval
At this point, Kohlhepp was ready to present the investment and development plans to Duke’s Board for final approval. He had been in close contact with Crescent and attended the executive committee meetings and board meetings on a regular basis with updates on the project.
The presentation to Crescent’s Board was a five-page Executive Summary (the same document was presented to Duke Board later, see Exhibit for Executive Summary Presented to the Board), which explained the value proposition for the land development deal: the cost per foot to buy, the cost of infrastructure and the cost per foot to sell over 15 years. All the major risks were identified and respective mitigation plans were provided.

One of the risks emphasized was the high profile of the deal; if something went seriously wrong, Crescent and Duke risked media exposure (after the Enron scandal, energy companies were subject to high media scrutiny).

Duke’s approval was needed to buy the property for $127 million and for $5 million in initial working capital. Crescent planned to seek separate authorization for future capital requirements on a phased basis to develop the stages of the project: off-site and on-site infrastructure and anticipated vertical development.

Kohlhepp met with the Board for a non-formal presentation: A separate formal presentation to Duke was not required, as Crescent had already discussed all the hurdles and parameters of the deal twice and Duke was familiar with the project. They discussed the staffing of the project, and Kohlhepp assured the Board that he would take care of everything. But the Board members were not that satisfied with this answer and asked for more details. Kohlhepp had only recently (July 1, 2000) become their full-time employee and a permanent development team to manage the project hadn’t been formed. Shortly thereafter, a plan was put together to open an office in Arlington, VA, to manage Potomac Yard and the Commonwealth Center Project at Westfields by building a local team while having continuing support from the Crescent’s Charlottesville office. In addition to that, key employees of CAP agreed to continue their involvement with Potomac Yard after closing as part-time consultants to Crescent. Also, CAP’s major outside professional consultants had agreed to continue their involvement after closing. This approach satisfied the Board.

Crescent and Duke Boards approved the deal. Separate approvals from Duke would be required later to finance the infrastructure projects and any sale of more then $50 million in value.

Crescent entered into sale and purchase agreement to buy Potomac Yard.

The contract was contingent on results of the three-month-long due diligence period and had the first non-refundable deposit scheduled for November 2000. Final closing was scheduled for March 2001. There was nine months between the Board approval and closing on the land.

The seller started delivering due diligence materials per the contract for the undeveloped land and the existing Retail Center. The documents included the following categories (See Exhibit Contract Due Diligence Materials):
In November 2000, the contract went hard, officially ending the due diligence period. Approvals, such as PDSP in Arlington and the "no further action" letter from EPA and VDEQ closing the contaminated soil remediation issues in Alexandria, had been obtained.

All the contract details were in the numerous exhibits and schedules to the exhibits. Kohlhepp also had to figure out how to get all the tax-deferral exchanges to come together at the closing. When the contract was signed, Crescent didn’t have any of 1031 exchange money available. But the actual closing was not until the following March. They didn’t have the money because any 1031 exchange they had, had to be invested within specific period of time. When the deal was made they realized that they were going to suck up most of the trades sales they had between September and March. In a 1031 exchange, gains on the sale are traded into like-kind investments and if possible equity to equity. Then the capital gain tax can be deferred.

4.2. Closing the Sale

When the contract was signed, Crescent had limited contacts on the deal. All other participants came on board in the period between the signing of the contract and the money going hard. Environmental consultants, engineers, lawyers looked at project data. Consultations with architects and land planners began during the same period and massing test studies had been done (See Exhibit for Development Team). First contacts with jurisdictional officials had been made. Meetings with neighborhood groups were also taking place. Two public relations companies were hired to make the transition of the project from CAP to Crescent a non-event; Crescent was stepping into CAP’s shoes to continue with the development. CAP had, so far, done a great job of building public consensus and Crescent wanted to show that it was not going to change anything and was just performing a logical progression: the site was entitled and the developer specialized in vertical development. The message was that Crescent was going to build the “stage”
upon which the great draw to Potomac Yard could be played out. The “script” had already existed.
The 1031 exchange process also added another layer of complexity to the closing. Crescent had 16 trades into it and CAP had four trades out of it, which created enormous amounts of paper. A day and a half was spent just on signing documents. Another concern was getting a clean title, which was not easy with 1850s railroad deeds. Modern survey and title insurance had been obtained. Environmental issues were dealt with during the due diligence period and the environmental insurance was also bought.

EXECUTION PHASE
The stages of the execution phase of the project are not easily separated according to the proposed pattern because of the large scale and complexity of the job. The timeline (see Exhibit Project Description and Timeline) demonstrates how the different execution stages were intertwined, but Crescent went through three major stages:

1. Obtain approvals: infrastructure construction and site-plan approvals (pre-development)
2. Construct the off-site infrastructure and fulfill the necessary conditions (pre-development)
3. Construct on-site infrastructure (development stage)
4. Sell the ready-for-construction land (asset management)

Accordingly I’ll conceptually separate them into those three stages.

5. Pre-Development Stage

In the pre-development stage, the main objective for the developer is to obtain the government regulatory approvals that finalize the design criteria for development. Consequently, Crescent’s had to fulfill all the necessary requirements imposed by both jurisdictions at the PUD process stage. That is why I will put the off-site infrastructure design and approval process, together with the site plan approval process in this stage, since both are critical for the next stage, even though they overlapped on the actual project timeline.

Finalization of the development team: Crescent opened its Virginia office right after closing the sale, and immediately started putting together an internal and external project management team (see Exhibit for Development Team). Soon thereafter, Kohlhepp had five more people working with him on the project in the new office with continuing support from Duke’s office and Crescent’s office in Charlottesville. The on-site full-time expertise now ranged from construction management to marketing and project management.

The process for selecting architects, engineers and contractors was simple and reliable: Crescent chose companies that were well known in the industry, and accounted for its previous experience with the firms. Some of the team members were inherited from CAP.

Government Approval Process
Land bays site plan approval process in both jurisdictions

In October 2000, the Arlington County Board unanimously approved the Potomac Yard Phased Development Site Plan (PDSP, see Exhibit for the PDSP Summary), which included 47 development conditions along Potomac Yard Design Guidelines and an 82-page book that further defined the Arlington Portion of Potomac Yard with drawings, conceptual designs, photographs, maps, street cross-sections, matrices and text.

A year earlier, the Alexandria City Council unanimously approved the Potomac Yard/Potomac Green Coordinated Development District (CDD, see Exhibit for the CDD Summary), which included 38 conditions for development and an additional 17 conditions for a Transportation Management Plan (TMP). These conditions also included the Potomac Yard Urban Design Guidelines, a 109-page book with further clarifications.

The Alexandria CDD conditions and Potomac Yard Urban Design Guidelines were similar to the corresponding documents in Arlington. While Alexandria was low density, Arlington was high density, and while Alexandria was predominantly residential, Arlington was predominantly office. Both municipalities conceived of Potomac Yard as a transit-oriented community. Consequently, Arlington required a dedicated transit way for light rail, and Alexandria required a reservation for a Metro station on the heavy rail. Both those conditions, however, were dropped later due to insufficient demand by Metro ridership and the lack of proper continuity of the transit way between Alexandria and Arlington.

Even though the entitlements were obtained by the time of closing, it was discovered later that in fact the entitlements were not final and jurisdictions still had ability considerably control the final design parameters. For example, in Alexandria from the time Crescent took over the CAP role to the time the development started, authorities had introduced significant changes to the design parameters through the Special Use Permit process (equivalent to the site-plan approval process in Arlington). That was in part because, during the development plan approval process in Alexandria, most of officials and planners, including the director of planning, the City Manager, City Council and the Mayor, had changed. Consequently, the Alexandria officials had little or no commitment to the existing plan. Arlington, on the other side was much more consistent in its interpretation of the plan and its commitment to it. In 2006, most of the vertical development was happening on the Arlington side of the project. But even in Arlington, every negotiation with the officials resulted in another condition that had to be fulfilled. There is no such thing as a done deal when working with public servants.

Obtaining municipal approvals and permits

Site plan approval process

The approved PDSP site plan in Arlington also required obtaining a specific site plan approval for each construction project. In Arlington, these are called 4.1 approvals (referring to the regulation that defines the approval process – see Exhibit 4.1 Approval).
The county requires that a specific approval for a specific construction project be obtained from the County Board. Crescent started the site plan approval process for Land Bay A in August 2001 and obtained the County Board approval in March 2002. The approval came with 71 requirements in addition to the 48 PDSP requirements. The initial phase of the site plan approval process is directed by a committee of the County Planning Commission, the Site Plan Review Committee. This committee conducts a series of public meetings over several months to examine and evaluate the building plan and it concludes by submitting a report to the Planning Commission. The Planning Commission reviews the project and reports its recommendation to the County Board. Similar meetings, evaluations and reports are made by the other County Commissions, which include:

- Transportation commission
- Housing commission
- Parks and recreation commission
- Art commission
- Environmental and energy conservation commission

**Building permit process**
Before beginning construction, a building permit must be obtained from the County Zoning Administrator, who would confirm that every condition for the PDSP and the 4.1 approval were met. The reality was that 4.1 approvals would take seven months and the building permit approval would take 18 months.

**All Potomac Yard Meeting**
The Arlington County Board Chairperson recognized the complexity of the site plan approval, building permit process and multiple overlapping and conflicting conditions that resulted from that complexity. Consequently, the City Manager assigned an assistant county manager to watch over the Potomac Yard development process. In response, an assistant county manager held monthly meetings to bring together the various county departments and the Potomac Yard team to systematically review the issue and challenges facing the land development at Potomac Yard. Those meetings were extremely helpful in solving problems and resolving issues.

**Design, approval and construction of the infrastructure were necessary conditions** for development; off-site improvements and land transfer. Because the off-site, infrastructure projects were outside the boundaries of Crescent's ownership at Potomac Yard, it needed to obtain permission, cooperation and the approval of the many neighbors surrounding Potomac Yard.

**Alexandria necessary conditions** – trunk sewer completion. The design of the system started immediately after closing. A budget was prepared and approved by Duke for construction financing. Construction started a year after the closing. Construction contract specifics for the trunk sewer included provisions for handling and disposition of contaminated waste in addition to that the work had to be performed in the middle of the traffic flow. Outside engineers were hired to oversee
the process and make sure everything was done properly. The operation was very complicated: The sewer line was going under Old Town Alexandria and required coordination with the existing utilities and historic structures.

The schedule was extremely aggressive, and Crescent used multiple crews to complete the project on time and ahead of schedule. It took less than a year to have it built and another five months to get it accepted by the City of Alexandria. Final acceptance of public works projects like that is often indirectly used by jurisdiction as leverage in negotiations with developers. The Potomac Yard trunk sewer and phase I collection system provide a dedicated sanitary sewer service for the Alexandria portion of the Potomac Yard development. The trunk sewer is slightly less than two miles in length and is a gravity service through Old Town Alexandria directly to the Alexandria wastewater treatment plan. It was done using innovative micro-tunneling technology.

**Off-site site infrastructure in Alexandria**
Alexandria CCD included an extensive amount of open space and parks. In late 2001 Crescent started with the school park construction in Land Bay M.

**Arlington necessary condition** – North tract transfer and Charles E Smith litigation settlement as a prerequisite to that. The development of Land Bays B, C, D, E and F were contingent on Crescent settling an existing lawsuit and then transferring the North Tract property to the county for a park. As the developer understood the situation, the PDSP condition required that the North Tract land be transferred to the county within 60 days after the lawsuit was settled so a notice was immediately given to the 50-odd tenants occupying the land and buildings after the case settlement. For another 10 months, Crescent struggled to meet the county’s conditions. The county wanted the removal of all casements, encumbrances, and encroachments on the property. These included releases or quitclaim deeds for abandoned railroad right-of-ways, uranium deposits that might exist under the site (none did), a realigned storm water outfall, and an abandoned railroad spur that supplied coal to the Pentagon (the Pentagon switched to oil in 1985). The North Tract was finally transferred when Crescent agreed to post a standby letter of credit to fund the remediation of two contaminated soil spots.

**Off-site infrastructure in Arlington**
The Preliminary Infrastructure Plan (PIP) for Arlington was approved by the County Board on April 2002; it took another year to design it. A separate construction budget was prepared and approved by Duke. Construction started in May 2003. The infrastructure was completed in October 2004. The largest major component of the job was the Potomac Yard/Arlington Sanitary Sewer Pump Station, which was built within Arlington County's wastewater treatment compound. The pump station was over-sized so it could not only handle the Potomac Yard requirement of 0.367 MGD but also permit the eventual de-commissioning of the County's National Center Lift Station with a capacity of 0.4 MGD.
Other challenging off-site infrastructure included bridge improvements, intersections, and road improvements that bordered different jurisdictions and had different review authorities.

- **US Route 1 Bridge Improvements**
  Both Arlington and Alexandria wanted enhanced, double left-hand turns to be accommodated on the bridge bisected by the municipal boundary. Arlington wanted two left-hand turns northbound on Route 1 onto South Glebe Road, and Alexandria wanted two left-hand turn lanes southbound into the Shopping Center. A deadlock was averted with an ingenious “double taper” solution, which both municipalities accepted.

- **US Route 1 Landscaping**
  Another deadlock was encountered when the Virginia Department of Transportation (VDOT) would not approve Arlington’s required landscaping along US Route 1 at the Glebe Road Intersection. The county finally relented in the name of safety. However technically, the county required Crescent to file for a waiver to the State, which to this date has not been resolved.

- **Crystal Drive Lane Re-alignment**
  The construction of the Arlington County-approved new curb line and subsequent lane realignment on Crystal Drive is being threatened by the adjacent land owners, who contend that the easement that they granted to the County for the construction of Crystal Drive does not allow for a curb changes and lane re-alignments to accommodate the transit way. The county is attempting to resolve this conflict before resorting to eminent domain to accommodate the construction of the transit way.

**Aftermath of 9/11** – after the 2001 terrorist attack the market reality has changed dramatically, which significantly affected Crescent’s project execution strategy. Of all the contingency planning that had been done prior to acquiring Potomac Yard, terrorist attacks were never considered.

The attacks considerably delayed the overall project pace. The Potomac Yard office market deteriorated completely for almost five years; the hospitality market was also negatively affected. However, the residential markets (especially for condominiums) have dramatically improved. Consequently, hotel plans were put on “indefinite hold,” office prospects were hard to find and residential builders were standing in line to buy land. Fortunately, a PDSP condition allowed Crescent to adjust to the changing market conditions by converting 300,000 square feet of office space to residential space in Land Bays D and E.

New market reality, together with regulatory complexity, resulted in several major project events and decisions that are described in detail under the asset management stage:

- The long-term position in the project became too risky at that time for Crescent, as the overall market volatility turned out to be greater then
anticipated; specifically the office market future was uncertain. Consequently, the long-term vertical development plans were dropped.

- Demand for residential land and regulatory complexity resulted in changes to the overall project development direction and amount of off-site and on-site infrastructure in Alexandria.

Ultimately, the project execution feasibility at this stage had changed. Given the new external constraints and Crescent’s own internal constraints it became apparent that the underwritten risk-return function was not acceptable anymore. The change in strategy will be explained in the asset management section of the case study.

Arlington Soil Management Plan
Environmental risk associated with the soil contamination at Potomac Yard was one of the most problematic issues. It had been extensively studied, tested and evaluated with issuance of “no further action” letters by EPA and VDEQ after the previous owners had done remediation on the contaminated portion of the site before Crescent acquired the project.

However, the land development and associated excavation required some special measures aimed at proper handling and disposition of the contaminated soil. Crescent had developed a soil management plan based on the conventions used by LCOR Development in the excavation of the Patent and Trademark offices in Alexandria. The plan involved laying out a surface grid and systematically boring the site and taking dirt samples at various depths with later characterization of the soils. The disposition of the soil was then based on this three-dimensional map of soil conditions and on the regulations governing various levels of contamination. Formal protocols had been established to handle unexpected soil conditions. Crescent’s soil management plan was submitted to the VDEQ for review and subsequently approved.

The level of contamination of the Potomac Yard soils required no special handling if it remained on-site and only limited restrictions if the soils were hauled off-site for disposal.

6-7. Development/Post-Development Stages

By the time a project enters the development stage, most of the risks are already eliminated and the only major one left is the risk associated with construction. (Market risk, of course, always exists.)

Accordingly, I will concentrate on the issues related to construction execution and issues related to developer-investor relations.

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8 Potomac Yard I & II building phases are considered as exemptions from the overall project execution plan as the project is analyzed in the context of the land development model.
I’ll also consider the post-development stage as a part of development, as the only major function utilized was marketing of the land bays to prospective buyers (the actual disposition of the parcels would take place in the asset management stage). If we would consider the Project with the vertical component, then the post-development stage would be pronounced more strongly as it would also cover the building stabilization period.

Since all of the conditions necessary to further develop the project were fulfilled, Crescent could decide what to do next. Driven by the revised land disposition plan, explained later, Crescent decided to install the entire on-site infrastructure in Arlington at once, as the market conditions seriously favored the existing residential capacity and vertical builders were eager to buy the ready-for-construction lots.

In Alexandria, Crescent decided not to install the on-site infrastructure: The trunk sewer significantly increased the land value and the additional incremental increase in value by installation of the on-site infrastructure was not worth the uncertainty posed by the regulatory hurdles. Most importantly, there was strong interest from the residential vertical developers to buy the land in “as-is” condition and Crescent was minimizing the significant up-front costs.

Construction Budget

As Crescent moved along the execution process and the design drawings progressed from schematic design to design and construction documents, more precise construction pricing was obtained for the three infrastructure projects: off-site in Alexandria and off-site and on-site in Arlington.

A construction budget had been completed and later approved by Duke Power, which also financed the construction. Duke could monitor and better understand the individual project components, respective issues, timeframe and associated monetary needs. Timely and on-budget completion of construction is the major component of the successful project execution.

Construction Management

The type of construction contract that Crescent used for the infrastructure projects was a guaranteed maximum price (GMP) contract. This type of contract is a vehicle to minimize risk, avoid claims and integrate the diverse interests of a complex project. In this type of contract, the developer and a general contractor agree that the total project construction cost would not exceed the maximum number, which includes the cost of labor and materials and a limited (usually 6%) amount for the contractor’s overhead profit (for example, in “lump sum” contracts, the overhead profit by a general contractor may be twice that amount). The owner guarantees to pay the contractor his or her 6% fee. In addition, if the actual construction costs are below the direct cost amount, the owner splits the difference with the contractor. This way, the contractor is encouraged to minimize the project costs while the owner controls the overall contract cost. A GMP

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9The revised development plan will be covered in the Asset Management stage, although it can possible be put in this stage as well. However I want to show the revision of the plan as the strategic asset management issue where the assets are the developed land bays.
contract also provides the owner with a cost-control tool: The owner reimburses the contractor for the actual cost as it occurs, not from the schedule of values, so every purchase order and invoice is submitted to the owner as a back-up for a payment application.

The owner and the architect of record sit down with the contractor on a monthly basis and go over the current payment application to make sure that the scope of work that is billed for is done and materials are delivered to the site. This process is called a draw review. When the architect and the owner approve the application it goes to the bank financing the construction, which cuts a check to the general contractor. Usually, investors as well as the bank have their representatives participate in the draw review process to make sure that the funds are being properly spent.

Crescent followed the same process although, since Duke Power was the investor as well as the construction financing entity, only one representative was required during the monthly draw review meetings. Crescent would also write monthly investor’s reports outlining its progress.

**On-Site Infrastructure Design and Construction**
Arlington on-site infrastructure was approved in 2002. Design took another year, and construction started in 2004 after the off-site phase was done. A year later, construction was completed.

The infrastructure in Arlington included private and public road networks, which approached four miles in length and included all of the underground utilities to serve the development. Almost 20 miles of conduit was laid for the dry utilities such as power and communications. The infrastructure construction defined where parks, roads (and traffic patterns) and building footprints were going to be. At the same time, the marketing materials and seller due diligence packages had been prepared for distribution to the prospective individual land bay buyers.

**Preparation of the Development Agreements**
By definition, an urban in-fill location has a number of closely located neighbors. At Potomac Yard, neighbors included the CSX rail line, a federally funded but state-owned bridge and Crystal City Hyatt Regency and vacant land, both owned by an investment group. This situation required extensive amount of development agreements among all the neighbors (See Exhibit Development Agreements).

**8. Asset management**

Asset-management issues and decisions, among other factors, are primarily driven by financial, economic and physical characteristics and portfolio considerations. Asset management strategy is prepared and reviewed on a regular basis for a whole portfolio and each asset in particular in order to maximize the financial value and returns for all
participants in the investment process. Making decisions on whether assets should be held further, refinanced or sold at a given point in time are typical in this process.

The same options had been considered in developing the Potomac Yard project. Since on this project, and historically, Crescent hadn’t had a portfolio of existing income-producing properties, I will consider the Crescent’s land disposition process as a short-term asset management stage. In this case the assets were the individual land bays ready for vertical construction that Crescent was selling. Consequently, the asset management decisions were being made given constraints of a particular asset (i.e., regulatory environment in one jurisdiction versus the other): Should Crescent sell now or hold, or add more value through horizontal (or vertical) development and sell later in order to maximize the recognized earnings? This asset management strategy employed by Crescent was typical for all of its projects and was driven by the recognized earnings important for its investor, Duke Energy. Given the short-term asset-holding period inherent to this project, I will consider the development plan and the asset-management plan as similar and driven by the same issues. Consequently, this stage covers the changes to the development plan and the overall changes to project feasibility imposed by the new market reality after 9/11 and increased regulatory hurdles.

The existing execution plan for Potomac Yard contemplated future gradual vertical development by Crescent as well as the horizontal land-development model used to underwrite the project. However, because of unexpected changes in market and regulatory conditions, the vertical development plans for the project were no longer feasible.

**Revised Execution Plan**

Because of the aftermath of 9/11, the office market in the region slowed down considerably, especially in the area immediately adjacent to the Pentagon. It was difficult to predict how long it would take for the office industry to get out of its crisis, and Crescent had to find a way out.

New design guidelines driven by security concerns after 9/11, also created market changes. The approved guidelines in both jurisdictions conflicted with what major market users now required: set-backs, limited and controlled access points to sites and buildings, as opposed to the open-space concept of New Urbanism. Two concepts now needed to be reconciled.

In addition to the market problems, the site-approval process turned out to be much more complicated and time-consuming than expected, especially in Alexandria.

There were also positive changes: The residential market picked up considerably and numerous developers and builders looked for residential opportunities. The long-term nature of the project, which had been driven primarily by office “play” and vertical development plans, was revised considerably:

- The “play” now switched to residential. The recognizable value was now in residential capacity available in both jurisdictions;
- The anticipated overall volatility of the market turned out to be much greater than anticipated, making the project’s long-term plans unrealistic. To minimize the market risk exposure, Crescent wanted to get out of the project sooner rather than later.

The fastest way to get out of the project was to fulfill the necessary conditions, install the on-site infrastructure and sell the individual land bays. So Crescent went back to the land development model it had used to underwrite the project but decreased the overall timeframe. The goal became to realize the upside as soon as possible and minimize the up-front costs. That respectively drove the revised development-execution direction and the land-disposition plan (asset management): The development started in the predominantly residential Alexandria and later progressed to Arlington.

**Changing Conditions in Alexandria**

After the initial plan was approved in 1999, the jurisdiction had become obstreperous to the developer, primarily because its newly elected officials had little or no commitment to the old plan. There were also many more interested parties involved in the approval process, as the Alexandria portion of the project was adjacent to densely populated residential neighborhoods. The Special Use Permit process that Crescent had to go through for the first land bays to be developed demonstrated a lack of consensus between the city agencies and other parties. Development conditions previously imposed were being changed, some were put on indefinite hold (such as the pedestrian bridge) and new ones were being added. As a result, the sale of the first two land bays was delayed by almost a year.

Horizontal and possibly later vertical development would require numerous SUPs and the entitlement risk became too problematic. Market changes in Alexandria also meant that the town center as a focus of an office park was no longer feasible. More changes to the old plan were required.

After the trunk sewer was completed, Crescent’s development rights were vested to a degree that allowed them to proceed further with the development of the rest of the land bays. The next major proffer to the community was to design and construct the $20 million Monroe Bridge – Route 1 re-alignment project. It was a significant up-front expense in terms of both time and money, with a lesser value added to the project than, for example, with the trunk sewer. Crescent had designed the bridge and was planning on building it as the next step. This plan became unnecessary: Several large residential home-builders, including Centex Homes and Pulte, offered to buy the largest pieces of Alexandria land as-is and build the on-site infrastructure and later the bridge themselves. In fact completion of the trunk sewer and storm water outfalls – the most complicated portion of the overall infrastructure – significantly improved the land value and eliminated the associated construction risk. Construction of horizontal on-site infrastructure was simple and the bridge was already designed.

Given the regulatory complexity and possibility to reduce the up-front infrastructure costs by not building the bridge, Crescent started selling the Alexandria land. As a result, significant upside (recognized earnings) were realized sooner than anticipated in the land
development model: The infrastructure construction costs were offset and long-term vertical development costs were not longer needed.

Any sale of $50 million or more needed to be approved by Duke Power according to the project-approval plan. This allowed the investor to review the decision. The developer had an incentive to properly justify and back up the chosen disposition strategy, weighing different options.

Conditions in Arlington
Compared with Alexandria, the regulatory process in Arlington was friendly: There were no major changes in government and, consequently, people were much more committed to the approved Phased Development Site Plan. There were also fewer neighbors involved. Still, the site plan approval process was complicated: Numerous agencies had been involved and need to be coordinated. As it was demonstrated earlier, the county officials recognized the complexity and helped Crescent to make the process more structured, consistent and manageable.

While still lengthy, the scale and complexity Arlington’s necessary conditions and off-site infrastructure costs were less than Alexandria’s. Given more workable regulatory approval conditions, Crescent decided to move one step further and construct the entire on-site infrastructure in Arlington. Arlington’s entire infrastructure costs were approximately $20 million – the same cost as the Monroe Bridge in Alexandria. The land bays were marketed for sale to numerous interested vertical developers and builders.

Disposition Schedule Relative to Fulfillment of Major Development Conditions
1. Year 2001
   a. Closed on the purchase of Potomac Yard
   b. Applied for site approval of Arlington Land Bay A
   c. Applied for site plan approval of Alexandria Land Bays A and C, LOI is signed to sell those tracts
   d. Crescent settles lawsuit between Charles E Smith and U.S. Department of Interior and Commonwealth Atlantic Properties
   e. December – Crescent started work on school park (Alexandria Land Bay M)
2. Year 2002
   a. Started Alexandria trunk sewer
   b. Arlington Board approves site plan for Land Bay A
   c. Crescent enters into contract to sell Alexandria Land Bays A and C
   d. Arlington County Board approves Preliminary Infrastructure Plan for all on-site and off-site infrastructure required for the development of Potomac Yard in Arlington County
   e. Crescent transfers 28-acre North Tract to Arlington County
3. Year 2003
   a. Alexandria trunk sewer completed
   b. Crescent distributes Arlington residential Land Bays D, E, F due diligence packages to 68 potential buyers
c. Application for permits to install all of Arlington utilities was submitted. Construction on the Arlington pump station begins.
d. Sold Alexandria bays A and C (Potomac Greens and Potomac Plaza)
e. Sold DCS and NCR in Alexandria (Potomac Properties)
f. Sold Arlington Land Bay F (Residential condominium with 80,000 sqf of retail)

4. Year 2004
   a. Sold Arlington Land Bay E-East (Apartments)
   c. Sold Arlington Land Bays B, C, D, E-West

5. Year 2005
   a. Completed Arlington infrastructure
   b. Negotiated joint venture agreement for Arlington Land Bay A
   c. Completed five “post-closing development agreements” with Potomac Yard land-bay buyers

By 2005 Crescent Resources had completed the development and sales of the Potomac Yard land.

Actual Financial Results
The execution plan employed by Crescent proved to be successful: Even though the long-term forecast in terms of total land sales was not met, at least half of the predicted revenues were captured for a time period of just 4.5 years in Arlington and 3.25 years in Alexandria. Compare that with the 12 and 13 years initially planned.

All the hurdles and complexity of the execution plan in both jurisdictions are reflected in the performance numbers. While Arlington was the closest to meeting the projections, Alexandria results showed the highest negative deviation from the forecasts: Infrastructure costs in Alexandria were decreased by 85% while sales decreased by 50%.

Comparison matrix
Predicted performance versus the actual performance

<table>
<thead>
<tr>
<th>Predicted, $M</th>
<th>Actual, $M</th>
<th>% Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arlington</td>
<td>Alexandria</td>
<td>Total</td>
</tr>
<tr>
<td>Sales</td>
<td>170.7</td>
<td>295.3</td>
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<tr>
<td>Infrast</td>
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<td>84.2</td>
</tr>
<tr>
<td>Land</td>
<td>73.1</td>
<td>49.7</td>
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<td>CF</td>
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<td>131.4</td>
</tr>
<tr>
<td>Time</td>
<td>12</td>
<td>13</td>
</tr>
</tbody>
</table>
Part V. II. Discussion of the Case Study Findings

Planning Stage Analysis
Crescent’s overall strategic planning is consistent with the planning approach proposed in the first section of this paper, as it objectively reflects the internal state of the company and external issues. It has all the necessary components and answers the questions of what the company is, where it is headed and how it is planning to get there. As we can see, the following important issues were addressed: geographical area of operation, organizational/management structure, specific expertise, competition, changing market conditions financial structure, need for differentiation and quality parameters. The document clearly formulated the two most important advantages of the company: extensive existing land inventory and strong financial and operational support from Duke Power as starting points for building an enterprise.

The plan had some characteristics that should be mentioned specifically:

▪ **The start-up nature of the development enterprise.**

  We gain an understanding of the existing weak positions of the company in the overall market environment and the need for a proper plan to deal with this weakness.

  Building, constantly maintaining and reinforcing relationships on all levels with Duke and with the real estate community was a priority throughout the document. The plan also provided for enough flexibility to define the strategy while still emphasizing the two primary development destinations – residential master-plan communities (often with water access) and commercial projects. The plan allowed for a learning curve that prioritized projects on the existing land inventory before acquiring large projects in other regional markets.

▪ **The business decision to create independence from the parent company while still relying heavily on its financial support.** The difference between the mindset of a public utility company and that of a real estate development enterprise was properly assessed and identified as one of the challenges to future successful operation of the company. Mr. Fields wanted to keep Duke away from everyday company operations. It is clear that, at the same time, Crescent understands its unique position to capitalize on the existing expertise of Duke in infrastructure development. This gave Crescent an advantage over competitors in residential land development. Duke itself was also targeted as a customer for future commercial projects.

Full financial support from Duke was a major issue. Crescent didn’t have to worry about money, which significantly differentiated it from its competition and allowed for flexibility and speed of acquisition. Duke could, however, potentially use its financial clout to interfere with Crescent’s everyday decision-making.
Note that this concern had nothing to do with the fiduciary responsible nature of Crescent Resources to Duke at the time of investment decisions – the idea was just to keep the two business lines apart from each other. Duke's Board approval was still required for new projects acquisition. Crescent wanted to protect their domain and prove that they can do business successfully on their own.

Consequently, the plan provided directions in how to balance the two: Keep Duke informed of Crescent's activities and accomplishments on the corporate level, involve Duke on the engineering/operational level and position Crescent such that it is a separate and independent business line.

Why didn’t Crescent put together a business plan\(^\text{10}\) when the strategic plan was created instead of limiting itself to the action plan? The action plan, by its very nature, implements the strategic plan and addresses key strategic goals through practical steps. The real estate development business is opportunistic, especially before institutional and corporate investors introduced requirements for more transparency and a more structured investment process. Crescent saw itself as such and didn’t want to lock itself into a well-defined business plan. In fact, many business plan components, such as product and services objectives, market delineation, resources allocation, competition evaluation, business organization objectives and financial objectives, were covered to some degree in the strategic plan or action plan, leaving some flexibility. Crescent was mostly a start-up enterprise, and even though the strategic plan was issued, it needed flexibility as it was still trying to figure out and better understand its future objectives in real estate development.

Another reason that allowed for more flexibility in the business planning was the fact that the company didn’t have to go out and raise money from investors for its projects. Doing so would have required a more detailed and thorough strategic and business plan. All the financing was through Duke Energy’s working capital, so there was never a need for outside financing. This fact was and still is the most important strength factor for the company, considering that the most difficult part of real estate development is acquiring financing. The Crescent development department could concentrate its energy on finding the best deals.

Based on the level of details and specifics provided in the above documents, I am assuming that the due diligence at the strategic-business level planning included a review of the market, economic factors and internal company’s track record, prior performance and lessons learned.

I believe that, in general, Crescent's strategic- and -business-level planning was adequate and project level and execution criteria were formulated well enough to allow for dynamic evolution of the enterprise.

**Project Planning Analysis**

\(^{10}\) In this case, we’ll refer to the business plan as a detailed business model plan that clearly identifies all the details of how the unit should operate.
In general, Crescent’s project-planning approach during expansion to the WMA region was consistent with the proposed framework and most of the tasks have been performed, including:

- **The project identification** based on the business planning criteria – even though the criteria were not clearly formulated in a separate document, the strategic plan and previously gained experience basically defined those criteria. When Crescent came to market, it was looking for a specific product based on other projects that it looked at. Crescent was more opportunistic because it saw itself that way – it had industry experience and money.

  Not enough attention, however, was paid to understanding the specifics of the site-approval process. No one in the company was local, which may have added to this problem, as they underestimated the complexity of the approval process.

- **Project appraisal** activities were also carried out in full, as Crescent looked at physical site, legal and regulatory conditions and project feasibility studies based on a variety of market studies and personal market conditions knowledge.

- **The project investment plan** was prepared in detail, accounting for all of the known conditions. The plan also accounted for specifics of the land development versus the vertical development using the proposed by Mr. Kohlhepp’s methodology.

- **The development strategy** was defined based on the investment plan, but the project execution and management plan was not clearly formulated. The office in VA was not established until after the closing.

**Investment Committee Approval**
The committee approval process was part of the deal; however, it was done before the sales and purchasing agreement was executed, and before the due diligence period was complete and the money went hard. The committee had plenty of freedom from Duke – without much pressure, the amount of attention to details was much less compared to typical investor-developer situations where every decision needs an investor sign-off. A corporate approach was present, however, with consultants and lawyers reviewing the deal (See Exhibit Due Diligence Ranking). The relative freedom was a result of a relationship of trust between the two companies and because no outside investors interfered.

**Pre-Development Stage Analysis**
The Potomac Yard pre-development project stage is consistent with the proposed framework. Crescent concentrated on obtaining government approvals and fulfilling of necessary conditions:

- **Entitle the project** - although the project’s conceptual development plan was approved in both jurisdictions prior to acquisition, a significant part of the approval process still needed to be done at this stage, in particular, the site plan (or SUP in Alexandria) approvals. The process had been studied by Crescent in detail during the project evaluation and due diligence stages. Several zoning attorneys had been involved in order to clarify possible issues. The nature of the entitlement process is such that it is very difficult to predict future outcomes, timeframes and the evolution of the process. Numerous groups are involved, from
city agencies to public groups and neighborhood associations, with different agendas and priorities. Even government bodies, such as the executive office, planning commission, zoning board and planning staff, are often driven by different issues and politics. Large projects like Potomac Yard attract a lot of interest from interested parties. Unfortunately, the public development partners often have no idea about how the economics of real estate work and if the developer does not defend himself or herself actively, these partners may over-impose a project with proffers (or other APF requirements) to the point where it becomes economically unfeasible. At the same time, the developer is usually very limited in what he or she can do manage the process. The public approval process is one of the major risks in the real estate development and very often developers are not willing to take it. If we look back at the Crescent’s project selection criteria we’ll find that it originally did not want to take the entitlement risk. The changed market conditions seriously affected the previously approved development plan in Alexandria, and the jurisdiction became much difficult to deal with than was originally anticipated. As Crescent realized the amount of uncertainty and associated financial risk posed by those two factors in Alexandria it returned to its no-entitlement risk policy: It decided to sell the land after the trunk sewer was installed.

The same process in Arlington, however, turned out to be relatively friendly and city officials cooperated with Crescent to make it more consistent and manageable.

- **Identify proffers or other APF requirements** – In the case of Potomac Yard, this meant the required off-site infrastructure in both jurisdictions and other necessary conditions, such as North Tract transfer. By the time of the closing, Crescent had already known and planned for all those required improvements. During this stage, the improvements were designed, submitted for approval, approved and built. A separate approval from Duke was obtained for the off-site infrastructure construction budgets in both jurisdictions. This mechanism allowed the investor to monitor the project schedule by separate project components and later control the use of funds allocated for construction through a draw review process.

- **Obtain early permits** – this included the approvals for the off-site infrastructure design in both jurisdictions, building permits to have it built and, later, acceptance by the respective jurisdictions.

- **Conduct geo-technical and other required testing** – Crescent completed the testing on the Arlington side of the project (In Alexandria, soil remediation was finished by the time of closing).

- **Develop a “correction action plan” for environmental issues as necessary** – The Arlington soil management plan was designed and approved by the Virginia Department of Environmental Quality. Remediation followed. It turned out that the levels of contamination/remediation were much less then estimated.

- **Finalize the design team** – At this stage, Crescent had established an office in Crystal City, Virginia, and formed an on-site/in-house development/project management team. It also formed a project team of outside consultants based on
their professional qualifications, previous involvement with the project and previous involvement with Crescent’s projects

- **Revise the conceptual project design** – The developer had little flexibility to revise the project design at this stage as both jurisdictions had approved the respective design guidelines earlier. A changed market reality following 9/11 required reconciliation of new priorities with the approved design parameters.

- **Phase the project** – Changes had been introduced at this stage to the project phasing plan as well. Because of changed market conditions, the residential component became the driving force of the project. Regulatory hurdles defined the direction of the construction activities. Most of the efforts were now concentrated in Arlington rather than in Alexandria.

- **Revise/refine the financial development model** – Although, globally, the development model/budget structure stayed the same throughout the project, the overall long-term nature of the project and anticipated scope of work had to be revised based on the global market consequences of 9/11.

Potomac Yard was affected by the economic and market consequences of September 11 like no other project in the region because it was close to the Pentagon. Ultimately, the project execution feasibility at this very important point in the project timeline had changed considerably. Given its new external constraints and Crescent’s own internal constraints the underwritten risk-return function was no longer acceptable at the original levels: The same amount of return would now require too much risk. Crescent was now looking for the opportunities to reduce the risk, which would consequently also reduce the anticipated revenues. The logistics of the revisions to the execution plan was explained in the asset management section of the case study as it directly affected the land disposition strategy.

Because of the project specifics, the pre-development stage became a central point of the overall execution phase, as most of the total value-creation took place here. The results of this stage conceptually defined how the project would evolve in its later stages.

**Development Stage Analysis**

Because of the specifics of the project, the development stage did not bear the weight that it usually would in projects with a vertical development component. In reality, most of the construction happened off-site as a prerequisite to having the development rights vested. The major tasks of this stage, however, had been done by Crescent and are consistent with the proposed framework. The development stage was executed in a manner that allowed the investor to control the proper construction execution.

**Asset-Management Stage Analysis**

Although the property operational considerations were not a part of this stage, the rest of the activities were consistent with the proposed framework. The asset management decisions (mostly regarding disposition strategy) were driven by the residual value of the land (or property) for sale. Holding period operational NOI (from existing tenants) was not a portion of the realizable value created: the value came through the land appreciation. This is one of the typical investment strategies in today’s market.
The overall decision-making process was to find a balance between up-front spending (both in terms of money and time) associated with that risk and respective future value. Given the changed economic, market and regulatory characteristics, a new project feasibility equation was created that also included Crescent’s business and strategic issues.

Duke had control over land sales that exceeded $50 million in value, but the smaller deals were decided by Crescent. Potentially, there is a risk for an investor in this situation that the developer may exit at some unfavorable conditions. Because of the unique nature of the relationship between Crescent and Duke, that was an unlikely scenario in this case. Typically, the investor would have a much more active role.

**Part VI Conclusion**

**Framework**
The framework is a convenient way to analyze the real-estate-development project-feasibility process, and, specifically the individual parts of the cycle. Every stage provides a list of the most important issues that must be addressed and decisions that must be made. The framework also integrates the investor in the development process and adds another layer of control over the developer’s actions at the major project-cycle milestones. The investor gets an opportunity to question the developer’s actions and assumptions and make sure that the crucial decisions to be made based on those assumptions are well justified and that the developer had conducted or followed proper due diligence procedures before the decisions are actually made.

The analysis of the framework based on a comparison with the Potomac Yard project demonstrates its applicability and validity. However, because of the conceptual nature of the framework, adjustments must be made to its assumptions based on the specifics of the project.

Most importantly the framework provides a good basis and starting point for the thinking process that leads to an educated real estate investment decision. It addresses the complex nature of the process and the variety of issues that must be considered and analyzed in order to make a successful real estate investment decision.

**Part VII References**

**Part VIII Appendices**