

**Survey of Housing Development Information
For the Lake Placid Athlete's Village to Community Legacy Project**

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I. EXECUTIVE SUMMARY

This report is to inform the Lake Placid/North Elba Community Development Commission in their consideration of construction of a new athlete's village for the upcoming 2023 Winter World University Games. The Commission intends to have the University Games athlete housing converted into community housing, as well as short-term housing for their temporary workforce. Conventional zoning planning can create barriers to swift planning and development, and single-use housing structures will not meet the various needs of the community. Form Based Code to plan mixed-use housing and building within sustainable LEED certification parameters are two strategies to create an innovative approach to community housing. Low Income Housing Tax Credits and the Choice Neighborhoods Program are two of many funding streams available that also encourage the development of low income housing to support Lake Placid's residents in need who cannot afford to live in the area. A case study from Whistler, British Columbia illustrates success in converting from athlete's housing to community housing, and examples from Ithaca, New York show different mixed-use housing developments that utilized different funding streams. These are all options for Lake Placid depending on the plan for the athlete's village. This report recommends creating an Athlete's Village to Community Housing Board to address this upcoming project. For the immediate next steps, the Housing Board can consider Form Based Code as a development guide, continue to collect data on community housing needs, and hold community meetings to develop a collaborative vision for the new development.

II. INTRODUCTION

The Village of Lake Placid won the bid to host the 2023 Winter World University Games, also known as Universiade (Committee, 2018). The Universiade is a collegiate level Olympic athlete event organized by the International University Sports Federation (FISU). Athletes and volunteers participate from hundreds of colleges globally. For a village like Lake Placid, which has hosted the 1932 and 1980 winter Olympic Games as well as numerous other large sporting events, this is an exciting time to prepare and develop the village for a new international event (Tourism, 2018). Lake Placid is expecting upwards of 3,000 athletes, 700 media personnel and professionals, and as many as 3,000 volunteers to descend upon their lakeside village, and help make this event an extraordinary experience for everyone who attends (Norfolk, McKenna, & Byrne, Lake Placid Winter Universiade 2023 Bid Dossier, 2018).

Due to the funding potentially available for hosting the Games, this event creates an opportunity for Lake Placid to develop a community housing legacy. The village intends to build a new Universiade athletes' village, which the Lake Placid/North Elba Community Development Commission plans to convert into community housing after the games. To start this process, the Development Commission has contracted with a student consulting team from Cornell University to develop this survey report on the newest building trends, funding opportunities, and examples of development projects that achieved similar goals.

This report details an introductory survey into modern planning and building practices, as well as several suggested funding resources, like the sustainable program LEED, that may apply to Lake Placid. Following the introductory survey are several case studies that demonstrate innovative planning and design. Finally, this report provides cost comparison and analysis tools developed specifically for the Village of Lake Placid's planning committee. These tools are stocked with information that averages construction costs for a variety of developments and designs, and the setup to input potential costs and prospective revenue to estimate financial recoupment times.

With these tools, the Development Committee can workshop a variety of design plans, estimate the cost and benefit to the community, and gain a general knowledge of construction costs for future development projections.

III. LITERATURE REVIEW

In order to begin the research and analysis process, the team developed a literature review. This information involves a current snapshot of Lake Placid's status regarding income and housing availability, and then reviews information on development and planning.

A. LAKE PLACID CURRENT STATUS

Lake Placid is both a diverse and connected community that is home to only 2,639 permanent residents but frequently hosts an enormous number of tourists, temporary workers, and athletes competing in large events (Bureau, Quick Facts, 2016). This section provides a snapshot of housing availability, socioeconomic status, and the housing needs of local residents, temporary seasonal workers, and the visiting athletes of the upcoming games.

1. HOUSING STATUS

As of the 2015 Census Community Survey, there are a total of 1,917 housing units within Lake Placid, 652 (34%) of which are unoccupied by renters or owners, as illustrated in Figure 1. Of these 652 unoccupied units, 76.9% (about 500) are categorized as seasonal, recreational, or occasional use (Bureau, Vacancy Status, 2015). Over 300 show up on AirBnB.com as available in entirety which means that the owner or host does not live in the home. However, local estimates of available Airbnb and other vacation rental units are considered to be higher (Dietrich, 2018). In addition, there are other owned but vacant homes in the Lake Placid area that may be second homes for people who claim residency in another state. These homes tend to be occupied for less than six months per year. This leaves 8.1% of the vacant units available for rent, and only 4.6% available to buy, or 53 and 30 units respectively (Bureau, American Community Survey 5-year estimates, 2015). It seems that while there are a lot of vacant homes, they are unavailable for local residents to rent or buy, and as a result there's a hidden housing shortage.

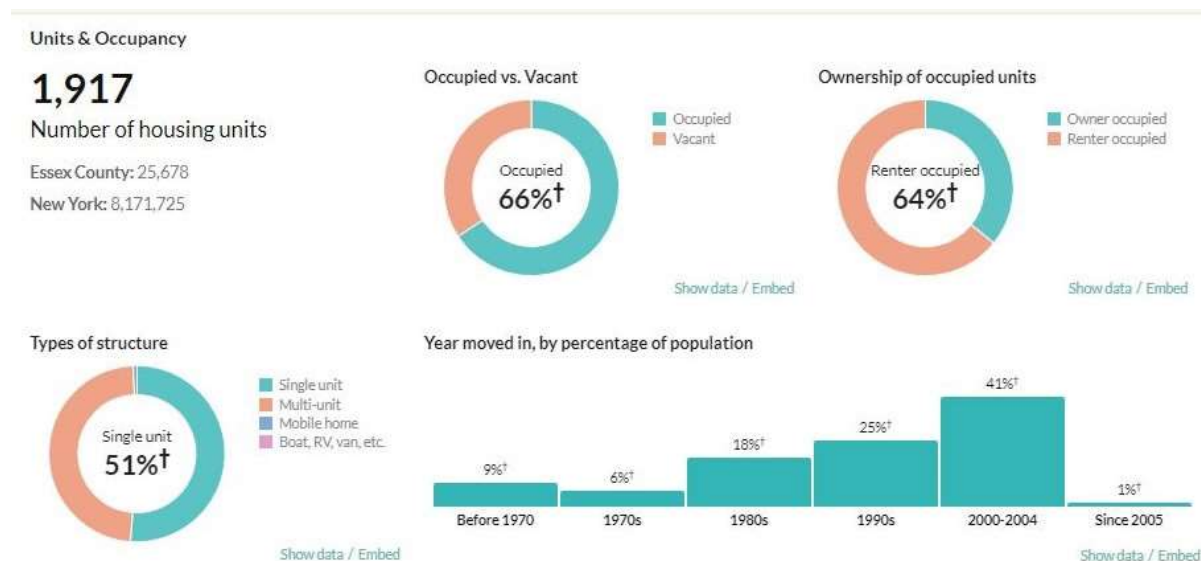


Figure 1 – A table of Lake Placid housing availability and style. (Bureau, American Community Survey 5-year estimates, 2015)

2. COST OF LIVING

Lake Placid has a relatively balanced local economy, though there is room for growth and development within the community. According to the 2015 Census Community Survey, the median income a Lake Placid household is \$50,766 (Bureau, American Community Survey 5-year estimates, 2015). Of the overall population, an estimated 9.8% are below the poverty line. Out of context, this appears to be a large percentage, but it is below the national average of 14.5% (Bureau, American Community Survey 5-year estimates, 2015).

The cost of living in Lake Placid is indexed at an average just below the national average as of 2015, though the average utility cost of Lake Placid is approximately 19% above the national average, as illustrated in Figure 2. Housing costs as of 2015 remain below the national average (Bureau, 2018). With these estimates of the current state, the data indicates Lake Placid could be considered a reasonably affordable place to live relative to New York State, and there is reason to consider developing housing for people within the median income range with more efficient utility use to balance these deviations from the average (Bureau, Lake Placid, New York Economy Data, 2018). The lower poverty rate of the area can indicate that Lake Placid has room to develop median-income level housing as well as low-income housing.

The average household income remains just below the national average at \$50,766. It is worth noting that 54% of the households have unmarried residents and would require housing suited to single occupancy. This would be well matched by the percentage of single units at 51% of the housing in Lake Placid, if there were enough available for long term rental (Bureau, 2018). Given the decrease in mixed income housing options and increase in vacation rental demand, the residents of Lake Placid are at risk of price inflation found in similar resort development towns (Nepal & Jamal, 2011). The median rent has increased to \$1,159 since the median of \$756 found in the 2010 census (Bureau, Quick Facts, 2016). A study done on five different mountain resort towns in British Columbia, Canada, which resemble the size of Lake Placid, show resident disenfranchisement and population decline due to similar pushout. The study recommends attention to resident needs and population retention, as well as mindful planning of both affordable housing and median-income housing throughout the development process (Nepal & Jamal, 2011).

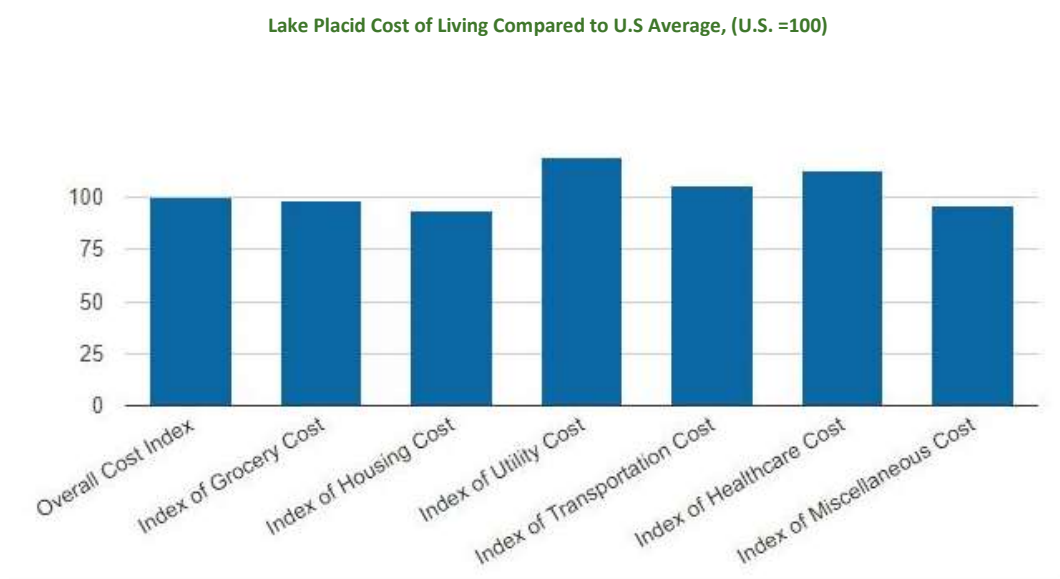


Figure 2 – A Snapshot of Lake Placid's cost of living, compared to the national average (Bureau, Lake Placid, New York Economy Data, 2018).

3. J-1 STUDENT NEEDS

Individuals from other countries may apply for a J-1 Visa that allows temporary visitation and employment in the United States as a form of cultural exchange (State Department, 2018). International workers who can perform labor in the hospitality industry are often hired by resorts and tourist destinations to fill seasonal workforce needs when the local labor supply is insufficient to staff a business. For many small resort destinations like Lake Placid, utilizing an international population of students seeking cultural exchange and work is the only way to maintain a business because there is a lack of local workers available for temporary positions (Terry, 2016). Suitable housing is supposed to be available to students, yet resort destinations like the Wisconsin Dells have been reported to have J-1 visa holders arriving without a place to stay, hoping find housing after they arrive (Traylor, 2017). There is strong anecdotal evidence that there is not enough housing available in Lake Placid to fit the needs of the J-1 workforce required to sustain the local economy (Dietrich, 2018).

4. UNIVERSIADE COMPETITOR NEEDS

The athlete's village needs to be built in compliance with FISU's requirements for athlete accommodations, or the village may lose their right to bid for Universiade events in the future (FISU, 2014). There needs to be appropriate quarters for 3,000 athletes, with 7m³ of space per person, no more than three persons to one bathroom, and other amenities listed in detail in [Appendix A](#) (FISU, 2014). Besides the housing arrangements, the athletes will also need to be reasonably close to grocery and drug stores, as well as to the event locations. Additionally, it is likely that shuttle service or other modes of public transportation will be needed to support these athletes.

B. ZONING AND LAND USE REGULATIONS

Zoning is the process of dividing land in a municipality into zones (e.g. residential, industrial) in which certain land uses are permitted or prohibited (Lamar, 2015). The type of zone determines whether planning permission for a given development is granted. Therefore, it's worthwhile to investigate local zoning code before implement developments.

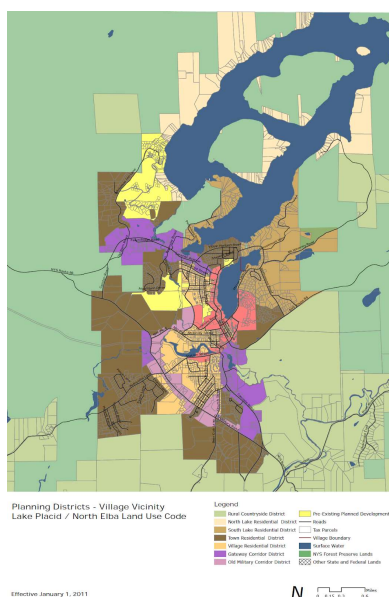


Figure 3 – Planning Districts - Town of North Elba (Placid, 2011)

North Elba and Lake Placid both follow the Code Regulations for the Town of North Elba/Village of Lake Placid. The code has established four categories for the planning districts, including base planning districts, overlay districts, New York State preserve lands, and planned development districts (Placid, 2011). Among the base planning districts, there are classifications for Rural Countryside District, North Lake Residential District, South Lake Residential District, Town Residential District, Village Residential District, Village Center District Gateway Corridor District, and Old Military Road Corridor District, as the map shows in Figure 3 (Placid, 2011). As for the planned development districts, there are some pre-existing districts, including Whiteface Resort, Crowne Plaza Resort, Mirror Lake Resort, and Fawn Ridge Drive. Specific codes were enforced for these districts, such as restricting the maximum building height to 45 feet (Placid, 2011). Overall, since the New York State preserve land is not available for development, the districts under the base planning districts are targeted areas for this project. In the base planning district, there are four overlay districts that have specific requirements for that district, such as an allowance for higher density structures. Among these options, the Gateway Corridor district and Old Military Road corridor district

allow higher density development and welcome commercial use, whereas the village residential district and town residential district enforce stricter requirements regarding the space and density. For details on zoning regulation in the four districts, see [Appendix C](#).

C. THE NEW FACE OF PLANNING AND DEVELOPMENT

There are many practices in providing economical housing alternatives for urban populations, including community land trusts, housing cooperatives, micro houses and tiny apartments, senior community housing, modular housing, co-living housing, and more. According to research, neighborhoods with a greater variety of housing types and residential density have a greater quantity of units affordable to very low-income renters, and the children of low-income homes develop a higher likelihood of socioeconomic mobility if they grow up in a mixed-income neighborhood (Aurand, 2010). To solve an affordability shortage, communities also launched inclusionary zoning, as well as removing parking minimums, changing building codes to make it easier to rehabilitate older buildings, and finding new funding models (Aurand, 2010).

1. MIXED-USE HOUSING

Conventional zoning strictly separates the land and building use of developments for individual regulation that can fail to address the congestion, pollution, and poorer urban living environment, which inspired the introduction of a new integrated urban planning form (Grant, 2002). Mixed-use development is the solution for many cities and towns which can be a useful planning tool for restoring economic vitality, social equity, and environmental sustainability for urban environment (Grant, 2002). The Urban Land Institute defines a mixed-use as a project organized under a coherent plan with three or more physically integrated revenue-producing uses within its scope (ULI, 2011). However, mixed-use development can also refer to the ability to multifunction at different times (Hoppenbrouwer & Louw, 2005). For instance, a water square or rain garden could serve as recreational and entertainment use while also performing as water storage. As Hoppenbrouwer (2005) argued, besides the physical development integrated in the geographical scope, the mixed-used development also refers to the dimension of time. The longer the time-horizon, the larger the mix of functions. This creates enormous potential for a development to serve different needs while also minimizing the transformation cost in an urban context. Studies also show that the increase in leisure activities of the population are creating a demand for facilities centered in communities, which can be included in mixed use development (Coupland, 2005). This especially works for a tourism-centered area like Lake Placid, where the space is quite limited and the demands from visitors or residents could be large and varied.

2. FORM BASED CODE

To promote a mixed-use community, looking to an alternative planning method such as Form Based Code (FBC) could help meet multiple community goals. “A form-based code is a land development regulation that fosters predictable built results and a high-quality public realm by using physical form (rather than separation of uses) as the organizing principle for the code. A form-based code is a regulation, not a mere guideline, adopted into city, town, or county law. A form-based code offers a powerful alternative to conventional zoning regulation.” (Form Based Codes Defined, 2018)

Traditional town planning uses conventional zoning, which defines strict regulations for floor to area ratio, dwellings per acre, setbacks, parking ratios, traffic level of service, density use, and more for each individual building intended. Conventional regulations are designed to center on the purpose or use of the building. This can create a longer, more complex planning processes with overlapping space requirements if a municipality intends to

build more than one building at once and would like to incorporate public space or urban renewal elements (Coon, 2009). Since Lake Placid is looking to build accommodations for athletes that can be converted to mixed-use community housing for residents and temporary workers, there is an opportunity to use a newer planning approach called Form Based Code. It emphasizes an integrated series of buildings, public space, and residential and commercial use, as opposed to the segregated, micromanaged conventional planning form illustrated in Figure 4 below (Form Based Codes Defined, 2018).

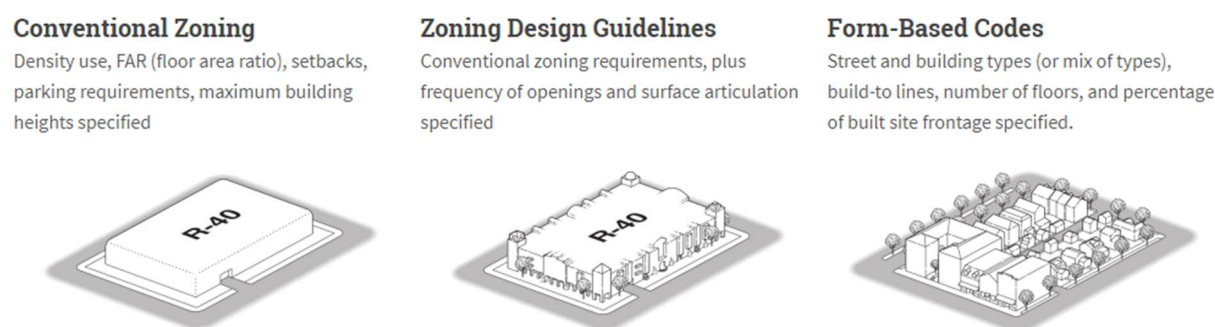


Figure 4 – A simplified comparison of structures using different styles of zoning planning (Form Based Codes Defined, 2018)

By utilizing this tool, developers of the Lake Placid athlete’s housing can accelerate the planning process, include community feedback, and begin building several pieces at a time if necessary. FBC can easily integrate green spaces, public parks, bike trail connections, and many other amenities the neighborhood could enjoy. If sustainability is a goal for the village of Lake Placid, this form of planning can also control for environmental regulations and innovations that benefit the whole area. These include regulations controlling storm water drainage and infiltration, development on slopes, tree protection, and planned solar access for the buildings, which would help the project achieve LEED standards of sustainability and thus qualify for state and federal sustainability development grants.

The state of California adopted FBC as a statewide regulatory guideline in 2004, and since then cities of all sizes have utilized FBC to revitalize downtown spaces and increase sustainability (Garde, 2017). Overall, California has demonstrated FBC is a successful tool to procure LEED certification, with increases in walkability and decreases in car usage for the surrounding area, which can indicate there is more foot traffic available for the local businesses (Garde, 2017). The city of Ventura in California was rated highest for LEED certification, pedestrian integration, and was noted for having integrated wetlands into the plan design for water control (Garde, 2017).

D. DEVELOPMENT FUNDING OPPORTUNITIES

Besides the money granted to Lake Placid for hosting the 2023 World University Games, there are a variety of funding streams available for the village planning and development team to take advantage of. Note that the Fiscal Year 2019 executive budget proposal was released in May 2018, and has proposed budget cuts to several federal programs that may affect the following funding opportunities.

1. PUBLIC PRIVATE PARTNERSHIPS

Public Private Partnerships (PPP) refers to arrangements between the public and private sectors where part of the services or work that fall under the responsibilities of the public sector are provided by the private sector, with a clear agreement on shared objectives for delivery of public infrastructure or public services (Moseley, 2012). In terms of housing, many universities pursue these initiatives when they lack funds, land, or staff who have

experience overseeing construction projects, according to Norb Dunkel, Associate Vice President for Student Affairs at the University of Florida (Moseley, 2012). For example, public universities contract with a developer to build the residential halls and then pay the developer for the maintenance within a contracted term, as Cornell University did in partnership with EdR to build the [Maplewood housing project](#), in Section V.4. of the Data Findings and Analysis. The university manages details such as room assignments, occupancy, and collecting rent, then pays the developer a per-room fee plus the cost of services such as trash collection. At the end of the contracted term, the developer returns the ownership of the dorm building to the university.

2. LOW INCOME HOUSING TAX CREDITS

Low Income Housing Tax Credits (LIHTC) is a federal, state, and sometimes local subsidy used to finance the construction and rehabilitation of low-income housing (Novogradac, 2018). LIHTCs give investors a matching dollar reduction in their federal tax liability in exchange for providing funds to develop affordable rental housing (Congress, 1986). For the Lake Placid project to qualify for LIHTC, the developers would need to set aside at least 40% of the units for renters earning 60% or less of the area's median income (Congress, 1986). In terms of Lake Placid, this would be approximately \$30,000 per year. Alternatively, to qualify developers can set aside 20% of the units for renters earning 50% or less of the area's median income (Congress, 1986). The Lake Placid earnings distribution shown below in Figure 5 illustrates that many residents qualify for this housing, and there is an established need for more low-income housing in Lake Placid (Kilburn, 2018).

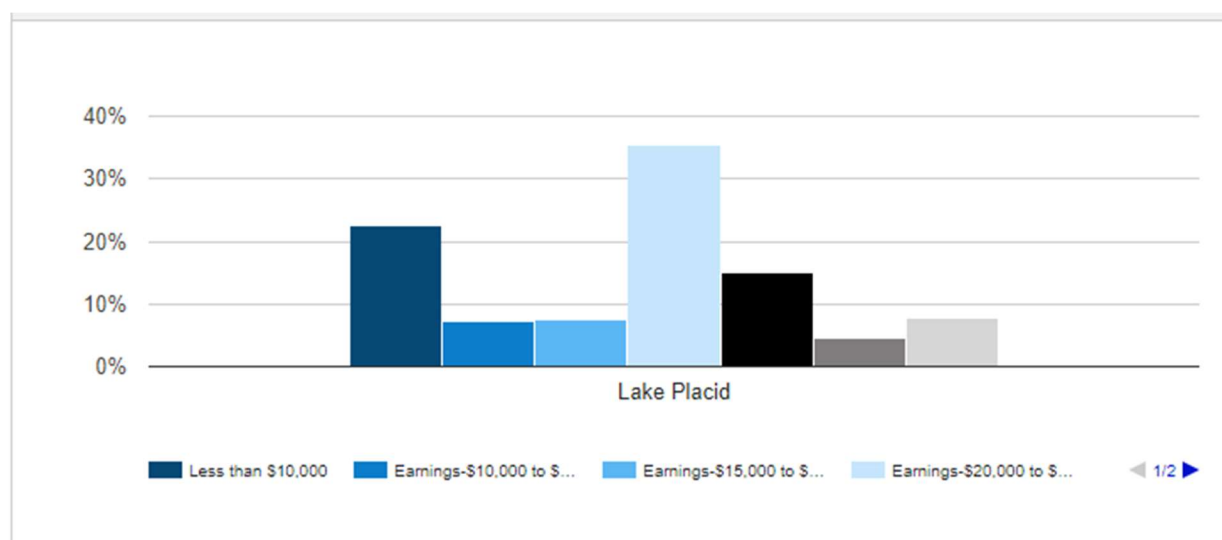


Figure 5 – Lake Placid earnings distribution (Bureau, Lake Placid, New York Economy Data, 2018).

3. CHOICE NEIGHBORHOODS PROGRAM

The Choice Neighborhoods program leverages significant public and private dollars to support locally driven strategies that address struggling neighborhoods with distressed public or HUD-assisted housing through a comprehensive approach to neighborhood transformation (Development, 2018). If Lake Placid is looking to update any of its three public housing developments, this funding stream may be feasible. This program aims to fund an entire community's demand for housing, through building high-quality mixed-income housing to replace degenerating public and assistance housing. It also incorporates planning for long-term benefits regarding employment and income, health, and children's education for the people who live in the targeted area. The goal with this program is to improve the overall condition of the target neighborhood with necessary amenities and

assets, including increased safety, access to high-standard education, and a refurbished commercial area (Development, 2018). Currently Lake Placid has three low income housing apartment complexes which contain 145 affordable apartments, 122 of which set rent based off of income (Layfield, 2018).

4. HOUSING REVENUE BONDS

Housing Revenue Bonds are issued to finance construction of housing in which a specified proportion of the units will be rented to low-income households (Agency, 2017). These securities provide financing either directly or through a loans-to-lender program and may be secure in whole or in part by federal agency guarantees or subsidies (Agency, 2017).

The Internal Revenue Code of 1986 restated that interest income on any state or local bond is excluded from federal income tax (Congress, 1986). Tax credits are granted to each state on a per-capita basis and are administered competitively through the states' housing agencies (Congress, 1986). According to New York State Housing Finance Agency's requirements, to qualify for issuing tax-exempt bonds, developers must set aside at least 20 percent of the units to renters with incomes below 50 percent of the area median income, or alternatively 40 percent of the units may be rented to individuals with incomes below 60 percent of the area median income (Agency, 2017).

The developer who receives the credits may use them or sell them to private investors to generate equity. This can be an attractive vehicle for beginning developers to manage funding sources. However, since there would be more paperwork and legal issues when it comes to dealing with a government program, the bonds can be time-consuming and costly to acquire. Due to the high cost of bond issuance, projects with less than \$5 million in tax-exempt bonds generally do not make sense economically (Novogradac, 2018). If the building project designed for the Village of Lake Placid exceeds \$5 million, housing revenue bonds can be a useful option for funding. The developer might need to work with local housing departments, redevelopment agencies, and state housing finance agencies (Ho, 2015)

5. SUSTAINABILITY: LEED AND ENERGY STAR

The most commonly known sustainability certification, LEED, stands for Leadership in Energy and Environmental Design. It is a global Green Building rating system that contains four rating levels: Certified, Silver, Gold, and Platinum (USGBC, 2018). To receive LEED certification, projects pursue "credits" to earn points. LEED v4.1 is the latest version of LEED and the pre-requests and standards for credits and points different for each rating system, which including Building Design and Construction, Interior Design and Construction, Building Operations and Maintenance, Neighborhood Development, Homes, and Cities and Communities (Council, 2018). The project manager or team can choose the category that best fits the project. After teams send in the application for the project and get reviewed, the project will receive a LEED certification based on the points earned. If the project earns 40-49 points, it will be classified as Certified. Silver certification requires 50-59 points, Gold certification requires 60- 79 points, and any project that achieves over 80 points will be classified as platinum (Samaskera, 2017).

LEED has four main advantages. The certification is highly recognizable, flexible, sustainable, and valuable. It is the most widely used green building rating system in the world, certifying more than 92,000 projects in 165 countries by 2018 (Pexton, 2018). LEED is suitable for any building, community, and housing style anywhere. LEED encourages designs for sustainable, high efficiency buildings that save energy, water, and other resources. Financially, utilizing LEED can lower operation cost, attract tenants, and qualify the development for funding. By

getting a LEED rating, the project is eligible for grants from The Office of Energy Efficiency and Renewable Energy, Green Communities, Federal Tax Credits for Energy Efficiency, Funders' Network for Smart Growth and Livable Communities, Home Depot Foundation, and the Tax Incentive Assistance Project (EPA, 2016).

ENERGY STAR is a governmental program, which is jointly operated by the U.S Environmental Protection Agency and U.S. Department of Energy. This program aims to help businesses and families to reduce energy cost and protect the environment (EPA, About ENERGY STAR, 2018).

The ENERGY STAR rating system scales from 0 to 100 and any project, which scores 75 and above, will gain ENERGY STAR recognition (EPA, About ENERGY STAR, 2018). By gaining ENERGY STAR certification, the project could reduce operation cost in the long run and be qualified for more green building funding, tax reduction, loan, and rewards. Below in section 5A is a table of other possible sustainable funding streams available to Lake Placid.

A) OTHER POSSIBLE FUNDING FOR LAKE PLACID'S GREEN PROJECTS

There are different funding options in the form of credits, grants, awards, and tax exemptions. These can be available on the local, state, and federal levels, and can mitigate or even lower the cost of any additional investment in green development. See [Appendix I](#) for charted selection of possible green funding options.

E. HOW RESIDENT PUSHOUT CAN APPLY TO LAKE PLACID

When gentrification is discussed, it is mostly commonly in the context of densely urban areas where there has been a history of low income communities. As the city grows in population and development, the original residents of these areas, often marginalized people, get systematically pushed out of their community to make room for a different socioeconomic group (Cócola, 2016). Even if city development planners are well meaning in their urban revitalization planning, the results of rejuvenating or updating neighborhoods can result in the devastation of tightly-knit communities and displacement of the poor and vulnerable (Cócola, 2016).

1. THE NEW FACE OF GENTRIFICATION

The new face of gentrification isn't exclusively urban. The rise of micro-economies like AirBnB have begun to impact residents of small vacation towns as well as large cities (Nepal & Jamal, 2011). While AirBnB is an opportunity for investors and homeowners to increase personal capital through the highly profitable vacation rental prices, it results in displacement of residents in favor of temporary visitors (Cócola, 2016). This isn't to vilify AirBnB as a model, which can offer homeowners financial reprieve from mortgages or help create extra income, but rather to demonstrate that in popular tourist destinations with scarce housing resources, landlords and homeowners are increasingly likely to turn to the more profitable vacation rental model at the expense of resident renters (Cócola, 2016). Short-term rentals can be significantly more profitable than month-to-month or leased rental prices. Some cities and communities are restricting or banning AirBnB use, which may have the desired effect of reopening housing to residents, but there has yet to be data on its effectiveness. Regulations can be difficult or costly to enforce and communities could instead encourage growth and allow for platform industry by creating more housing and rental housing developments with vacation rental restrictions. Lake Placid has experienced a growth of 296% of AirBnB listings in the immediate area since 2015, contributing to the hundreds of short-term rental homes that are now unavailable to residents seeking long-term rentals (Olivero, 2018).

2. RESIDENT PUSHOUT

Lake Placid is a small village that has long been a resort-oriented tourist destination village, so the traditional definition of gentrification does not apply. Moreover, just over 40% of Lake Placid workers are commuting to the village from the surrounding areas, which is a lower percentage of the working populace than the surrounding towns and the average for New York, as shown in Figure 7, below (Bureau, Lake Placid, New York Economy Data, 2018). This implies that Lake Placid still hosts most of its workforce in its own community, which may be due to the lower than average housing costs for the area (Bureau, Lake Placid, New York Economy Data, 2018). Yet anecdotally, many business owners and city officials feel that Lake Placid is unaffordable.

“The biggest problem is that the J-1 students have nowhere to live that’s comfortable enough and that they have to fit six kids in a hotel room to afford it. They’re coming here to work, but it also affects the rest of us because the [J-1 students] take all the apartments... They shove as many kids as they can into an apartment, and then there’s no place for locals to live that is also cost effective.” Emily Brown, from Base Camp Café.

Building unaffordable homes that might displace the current Lake Placid workforce may have the effect of pushing out existing residents in favor of higher income owners, and not accounting for J-1 students’ needs may continue to push resident renters out of available apartments. Retaining the local population is important to maintain the integrity of the community, and so any new housing developments should be accessible to the workforce, with consideration for restricting AirBnB within the new community housing.

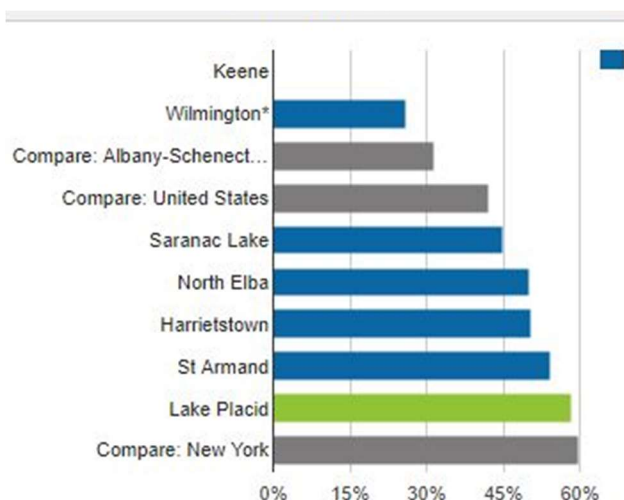


Figure 6 – Comparison of the percentages of residents who live and work in the same city or town for Lake Placid and surrounding areas (Bureau, Lake Placid, New York Economy Data, 2018).

IV. DATA METHODOLOGY

This following section is comprised of the methodology behind the research stage of the project. Starting with stakeholder interviews to develop an understanding of our client's needs and the needs of the village, we created a foundation for further inquiries. Using the information gathered through interviewing key stakeholders in the Lake Placid area, we then focused our research on finding case studies and examples of other towns and villages like Lake Placid to discover innovative approaches to supporting the tourism industry while expanding opportunities for residents. By then using construction bases and the information from the case studies, we organized a collection of construction possibilities into worksheets and excel documents for the Development Commission and all interested parties to review.

A. STAKEHOLDER INTERVIEWS

The following are summations of interviews with several stakeholders of the Lake Placid Community that helped frame, support, or inform this report.

1. BRANDON MONTAG

Our primary contact, Brandon Montag, was essential for developing our research questions. As a representative of the Development Commission and of business owners in Lake Placid, Montag provided information on the overlapping needs of the community. Through multiple meetings with Montag, we were able to reshape and refine our research questions into two basic questions:

1. *What are the unique aspects of Lake Placid's area and community that would factor into a new housing development?*
2. *What kind of innovative and traditional housing developments are being built in other communities that could be relevant to Lake Placid's plans for building?*

The first research questions led to explorations of the demographics of Lake Placid, the Olympic history of the area, and the zoning and land use regulations specific to the village. This information helped contextualize the world of building options within the boundaries of Lake Placid, as well as tailored the recommendations to the unique needs of the area.

The second research question led to construction databases, case studies, and explorations into contemporary trends of building and development that can help put Lake Placid on the leading edge of community integration, sustainability, and unique building designs. This report contains compilations of data in the form of case studies to help illustrate what other communities have done to create housing, and a cost spreadsheet for our clients to explore that features the average costs of diverse kinds of developments.

2. DARCY NORFOLK

Given the primary purpose of the housing project is to build an athletes' village for the World University Games to be later converted into community housing, it was clear the Bidding Coordinator for Lake Placid, Darcy Norfolk, was a clear stakeholder and voice in the process. The accommodation requirements of FISU sets boundaries for how the housing project will be developed. Norfolk compiled a 152-page document regarding Lake Placid's bid for the Games and has an extremely thorough knowledge of Lake Placid's relationship with large sporting events. She is also responsible for including the "community legacy" aspect of this project, as she included the conversion of the athlete's village to community housing in the bid dossier presented to FISU. Norfolk has been a guiding force

for the community legacy inclusion (Norfolk, Stakeholder Interview - Co-Author of the Lake Placid Games Bid, 2018).

3. CLAY LEWIS

To better understand the demand and supply for J-1 students, as well as the needs and requirements of the students and the agencies that employ them, the interview with the Community and Employer Engagement Manager of InterExchange has been integrated into this report. InterExchange is a large J-1 placement agency that contracts with employers across the United States. While Mr. Lewis could not supply hard numbers regarding how many applications the agency receives for J-1 employees from Lake Placid, he could state that his agency turns down applications for J-1 students every year due to lack of housing, and that he would supply more J-1 employees to Lake Placid if housing for students was safe and available (Lewis, 2018).

B. CASE STUDIES

The following case studies were selected because each one illustrates aspects of development that we believe would be relevant to Lake Placid. Whether it's the use of Form Code Planning, creative funding streams, or sustainable building, these case studies demonstrate innovative building problem-solving styles.

1. WHISTLER

Cheakamus Crossing in Whistler is a valuable case study because this case is a direct transfer of an Olympic athletes' village into community housing. There are similar geographic and economic characteristics between Whistler and Lake Placid, which makes it a valuable model. The accommodation requirements set by the Olympic Committee and FISU are very similar, so the floor plans, barriers, and ingenuity experienced by Whistler's design team can be directly transferred to Lake Placid's future plans. Not only was it home to more than 3,500 athletes and officials during the Games, the neighborhood now provides much-needed affordable housing to Whistler residents (Martin, 2015).

2. WISCONSIN DELLS

Wisconsin Dells is an example of how the community successfully developed appropriate, affordable, and profitable housing for the resort town's large J-1 student population. In the Dells' example, supporting a temporary workforce housing needs was economically viable, and the startup cost was mitigated through hotel taxes and local bank loans. The success of this dorm project is shown through the safe housing provided to 1,200 J-1 students at a time, as well as the inspiration for the resorts in the Dells to build housing for their own employees (Traylor, 2017). Now the approximately 4,000 J-1 students employed in the Dells have safe housing that is organized by the business owners, making the Dells a competitive applicant for more J-1 employees.

3. ITHACA – HANCOCK ST.

210 Hancock Street is featured as a case study for both its locale and its use of funding resources. Since 210 Hancock is in Ithaca, New York, the costs, funding opportunities, and regulations will closely apply to Lake Placid. This project emphasized sustainable building, community building, and low-income housing availability, which won it the attention of the state governor and multiple funding streams (INHS, 2018).

4. ITHACA – MAPLEWOOD

The Maplewood Graduate and Professional Apartments case study is an example of Public Private Partnerships. Owned by private development firm EdR but situated on Cornell land and restricted to Cornell personnel, Maplewood is an example of mixed-use housing made possible with private funds for public sector benefit (Crandall, 2016).

C. BUILDING DATABASES

Construction databases are tools for us to build a fundamental understanding of cost and income for a broad range of projects. The international examples of construction for both J-1 student housing and residential housing have provided a variety of prices and options, but it is important to isolate those examples that are applicable to Lake Placid. The databases provide a wealth of accurate data, and included in the excel spreadsheet that accompanies this report are the building projects that most closely resemble the scope and needs of Lake Placid's potential housing projects.

1. RSMEANS

The RSMeans is an online database that provides accurate and up-to-date cost information, including productivity rates, crew composition, and the contractor's overhead and profit rates. This resource was accessed through the Cornell Fine Art Library, which subscribes to this database. RSMeans provides accurate estimations of the cost for different components of building structures. The RSMeans template will also be a resource that the Development Commission could use to help refine cost estimates for added amenities throughout the project (Gordian, n.d.).

Ideally, finding a construction financial report from Lake Placid would be the most useful tool. However, Lake Placid was not included in this database, so comparable towns have been used for the cost estimation worksheet accompanying this report. The nearby towns and villages that were utilized were chosen because the social and economic situations appear similar. By using local data for building cost, we can construct a reasonable estimation for Lake Placid about the materials and labor cost.

Currently, the data on [Plattsburgh and Glen Falls](#) appears most applicable, as this town is geographically closest to Lake Placid and has relatively the same median income level (Bureau, American Community Survey 5-year estimates, 2015). The database provides the total cost of building housing with different stories and styles, including economy, average, custom, and luxury, and for one story, one and a half stories, and two stories. As the zoning code in Village of Lake Placid permits generally building heights ranges from 30 feet to 35 feet, it's appropriate to consider the cost from Glen Falls and Plattsburgh are applicable in estimating the average cost per square foot in Lake Placid (Placid, 2011). The details of the construction cost, please check [Excel spreadsheet in Appendix H](#).

2. CONSTRUCTION COST SPREADSHEETS

To provide a flexible estimate of cost per square feet for any kind of housing construction Lake Placid selects, the accompanying [Excel spreadsheet](#) provides the average cost per square foot for multiple building styles, with one spreadsheet for community housing and one for temporary dorm style housing. The Excel spreadsheets are both divided into three categories: economy, average, and luxury. These categories form sub-spreadsheets shown in [Appendix H](#). The temporary housing cost is estimated by calculating the average cost of various university dormitory projects. The cost of community housing is estimated by getting the average cost of completed residential housing projects in areas similar to Lake Placid. The Estimate Cost spreadsheets are designed for the

client to put number of area with different kind of building they want to build and the cost will be automatically calculated and delivered to the client.

The sub-spreadsheets within the two excel spreadsheets are named Estimate Cost, J-1Housing-Economy, J-1Housing-Average, J-1Housing-Luxury, Community Housing-Economy, Community Housing-Average, Community Housing-Luxury. Each sub-spreadsheet has similar layout that each contain the same categories: project name, location, land use, use type, sustainability, gross size (sq. ft.), floor plans, number of units, number of beds, development cost, cost per unit, cost per bed, cost per sq. ft., amenities, details of construction, a picture, and reference. The J-1 housing spreadsheets have an extra category for the university that hosted the project, and the community housing spreadsheets have an extra category for the median household income. We focused on areas that have a median income within the range of \$35,000 to \$65,000, creating a bracket around Lake Placid's median income, to eliminate inapplicable construction projects (Bureau, Quick Facts, 2016). All the median household incomes assume each household contains four people (Bureau, Quick Facts, 2016).

A) GIS MAP – UNITED STATES

The GIS Map of the United States is a visual tool that shows the cost of construction in all the locations found in the Cost Comparison Spreadsheet can be found in the [Appendix G](#). This tool was constructed as a visual reference for the construction costs of the surrounding areas.

3. PRO FORMA

Using the cost estimation spreadsheets, we designed another tool to support the planning process. The Pro Forma sheet demonstrates estimated cash flows to help project financial performance for any considered housing projects. The Pro Forma sheet presents a housing projection, a rental and sales summary, a cash flow projection, and an additional template tool for detailed cost report.

A) CENSUS BUREAU

The estimations for the rent and sale price, vacancy, and percentages of owners versus renters was found using the American Fact Finder from the census bureau database. The Pro Forma was populated with this data to estimate an example of housing options and the calculations of financial results for feasibility analysis, but the Pro Forma is interactive and the user can update the spreadsheet with more accurate data as needed.

B) PROPERTY ASSESSMENT AND TAX FOR ESSEX COUNTY

Image Mate Online is Essex County's database for real property information. This database can be utilized to develop the estimation of the market sales when the project turns into the long term residential developments and sell to public. By first looking at the property value in the current market to fulfil the valuation and then referring to the cost, the Pro Forma can provide an accurate snapshot of cost and value for Lake Placid. This database shows full market value, land and total assessed valuation, and tax bill information. With the estimated cost and tax information Image Mate provided, and with an estimated rent price set, the worksheet can estimate future cash flow for developments. This database from Systems Development Group, 2014, is only accessible by name and password via a county clerk or real property developer.

C) GIS MAP – NEW YORK

The GIS Map of New York is a visual tool that shows the cost of construction in locations used to estimate the Pro Forma tool. This can be found in the [Appendix G](#).

V. DATA FINDINGS AND ANALYSIS

This section is a collection of findings in the form of case studies and the analysis of data from construction and land use databases. Most prominently featured is the case study of Whistler, British Columbia, which is a small resort community that hosted the 2010 Winter Olympics and turned the athlete's housing into housing restricted to residents. Other case studies highlight opportunities like sustainability funding, Form Based Code, and J-1 housing dorm construction.

The average estimates of building costs of different styles of housing are summarized in this section, but the full excel list of construction costs can be found in [Appendix H](#). For an interactive view, open the accompanying excel spreadsheet provided with this report.

A. CASE STUDIES

1. WHISTLER

Located in the Coast Mountains of British Columbia two hours north of Vancouver, Whistler is one of Canada's more popular tourism destinations for both the winter and summer seasons. Incorporated as the Resort Municipality of Whistler (RMOW), it has a permanent population of approximately 9,965, plus a larger but rotating population of seasonal workers. Whistler was the Host Mountain Resort of the Vancouver 2010 Winter Olympics and Paralympic Games, the first time the International Olympic Committee has bestowed that designation on a community. The Whistler Olympic and Paralympic Village, commonly referred to as the Athlete's village, housed around 3,500 athletes, coaches, trainers and officials. Post-games, the site has been turned into a new residential neighborhood called Cheakamus Crossing (Dickinson, 2009).

A) DESIGN OF THE MIXED-USE DEVELOPMENT OF CHEAKAMUS CROSSING



Figure 7 – Cheakamus Crossing layout (Cheakamus Crossing, n.d.)

The municipality created the Whistler 2020 Development Corporation (WDC) to develop the site. WDC was responsible for constructing the athlete's village to meet the International Olympic Committee's (IOC) requirements while also creating a legacy neighborhood of affordable housing (Dickinson, 2009). To preserve the community's cohesiveness, the Council decided that no more than 10% of the housing built will be placed on the market for non-residents to purchase. This is an unprecedented ratio, and still the lowest ever established (Dickinson, 2009). The solutions developed by the WDC to meet the various needs of their community were extremely creative. The agency created a multipurpose neighborhood with housing that will host athletes during the Games and become an affordable, vibrant community afterwards (Martin, 2015). One hundred

and fifty-four townhomes and sixty-seven condominium units have been constructed for resident housing as well as a fifty-five unit rental apartment managed by the Whistler Housing Authority (Martin, 2015). For a list of floorplan layouts and amenities, see [Appendix D-1](#).

B) FUNDING FOR CHEAKAMUS CROSSING

September 30, 2014 Financial Report							
	FUNDING & EXP. TO DEC 31, 2013	Jan 1 - Sept 30, 2014 FUNDING AND EXP.	Oct 1 - Dec 31, 2014 PROJECTIONS	2015 PROJECTIONS	2016 PROJECTIONS	2017 PROJECTIONS	PROJECTED FUNDING REC'D & EXP. TO DEC 31, 2017
FUNDING							
Resident Restricted	68,494,808						68,494,808
Market Townhomes	13,028,113						13,028,113
Lot 18 (9 Single Family Lots)	1,372,381		1,250,000	1,350,000			3,972,381
Lot 8, Retail Areas	252,800		940,000				1,192,800
Lot 12 (Rezoned, SF, Duplex, MF)	1,207,475						1,207,475
Lot 10 (Small Live/Work, 3 Units)	-		525,000				525,000
Lot 2 (Single Family Lots or Duplex Units)	-		1,275,000	1,275,000	1,275,000		3,825,000
Lot 14 (Compact Live/Work, 4-5 Units)	-	950,000	-				950,000
Road 7 (7 Riverfront Lots or 10 Duplex Units)	-			1,166,667	1,166,667	1,166,667	3,500,001
Lot 15 (Medium Live/Work, 5-6 Units)	-	1,025,000					1,025,000
Lot 1 (Sale vs. Commercial/Rental)	-			700,000	700,000	700,000	2,100,000
Lot 16 (Large Live/Work, 6-12 Units)	-				1,575,000		1,575,000
WHA Building	7,200,000						7,200,000
Hostel Building	8,900,000						8,900,000
Subtotal: Funding from Sales	100,455,577	1,975,000	3,990,000	4,491,667	4,716,667	1,866,667	117,495,578
VANOC Capital Contribution (Permanent Facilities)	31,000,000						31,000,000
VANOC - Athletes Centre Lands Services Contribution	4,500,000						4,500,000
RMOW contribution (Hotel Tax)	8,000,000						8,000,000
Other Revenue	928,244	42,662	14,000	56,400	56,400	56,400	1,154,106
Interest Revenue	812,114	209		13,000			825,322
Total Funding	145,695,935	2,017,870	4,004,000	4,561,067	4,773,067	1,923,067	162,975,006

Table 1 – Financial Report for Cheakamus Crossing from the Whistler 2020 Development Corporation (Martin, 2015).

(1) Funding for the Whole Project

The village was built in partnership with land donated by the provincial government specifically for resident housing, a Vancouver Organizing Committee (VANOC) contribution of \$37.5 million to the project, and The Resort Municipality of Whistler (RMOW)'s wholly owned subsidiary The Whistler 2020 Development Corporation to manage and supply the rest of the funding for the project, with the sources listed in Table 2 above. The RMOW funds added an additional \$8 million dollars from the Affordability Initiatives into clearing and servicing the land. The project was built at no expense to Whistler's tax payers (McKeever, 2009) (McKeever, Interview with RMOW Former Councilor, Former Chair WHA Board of Directors, 2009).

(2) Funding for Infrastructure

Resort communities are challenged to develop and maintain the infrastructure necessary for the large population of the tourists from a small property tax base. Whistler collaborated with other resort communities in BC to lobby the Provincial government for creative solutions to this challenge. The solution was to share the Provincial Sales Tax on hotel accommodation (McKeever, 2009). Whistler's additional revenue was projected to be \$6 million annually for the five-year term of the current agreement. Of that annual amount, \$2 million was reserved for Affordability Initiatives like affordable housing (McKeever, 2009).

(3) Funding for a Rental-Only Apartments—Chiyakmesh

Though most housing in Cheakamus Crossing is local owner occupied, there is one rental-only apartment building called The Chiyakmesh, consistent with WHA's mission to provide residents with a wide range of housing opportunities (Samu, 2001). Construction of this building required more equity than Whistler Housing Authority

(WHA) had in its reserves, so WHA and the municipality tackled the challenge jointly. WHA put in \$3 million and the RMOw contributed another million dollars from the Affordability Initiatives fund. The remaining \$3.2 million was secured from long term financing (McKeeever, 2009).

C) COST

EXPENDITURES							
Site Development	50,584,036	4,516	770,484	750,000	-	-	52,109,036
Residential Building	100,391,103	11,823	12,533	16,250	16,250	6,250	100,454,209
Overhead	4,773,794	30,055	31,842	50,039	40,750	40,750	4,967,230
Maintenance Costs	1,028,031	30,666	23,698	22,701	-	-	1,105,096
Real Estate Commissions	1,068,187	-	159,600	179,667	188,667	74,667	1,670,787
Insurance (Property & Casualty)	943,065	-	-	-	-	-	943,065
Interest	2,941,427	-	300,000	235,000	120,000	75,000	3,671,427
Total Expenditures	161,729,644	77,059	1,298,157	1,253,657	365,667	196,667	164,920,851
						Shortfall	(1,945,844)

Table 2 – Expenditures for construction of Cheakamus Crossing (Martin, 2015).

Table 3 has the total list of costs for Cheakamus Crossing, and Table 4 has the breakdown analysis factoring in building size and estimated the expenditures of site development, residential buildings, and real estate commission per square feet. The information can be used in two ways: first, to provide a comparison of the construction cost estimated from projects excel; second, since Whistler hosted around 3,000 athletes in the athletes' village in 2010, the same number of people that Lake Placid needs to host in 2023.

Average size of each unit type is estimated as follows (Table 4, below). We used average size because a majority of unit's sizes are not listed. As mentioned in "Plan for the Mix-use of Cheakamus Crossing", there are 154 townhomes (with 3+ bedrooms) and 67 condominium units (one bedroom) and 55-unit rental apartment (2 bedrooms) managed by the Whistler Housing Authority. With those figures, we were able to calculate the total building size of Cheakamus Crossing. With total expenditures for site development, residential building and other costs known, we could calculate the cost for each category per square feet, as shown below in Tables 4 and 5.

Type	Total Units	Size (sqft)	Units	Median Size (Sqft)	Total Size (sqft)
1 Bedroom	67	667-748	9	707.5	6367.5
		842	3	842	2526
		510	4	510	2040
		700-714	19	707	13433
		814-845	3	829.5	2488.5
Total			38		26855
1 Bedroom Average Size					706.7105263
2 Bedrooms	55	942-1017	21	979.5	20569.5
		912-959	8	935.5	7484
Total			29		28053.5
2 Bedroom Average Size					967.362069
3+ Bedrooms	154	1141-1471	13	1306	16978
		1398-1720	14	1559	21826
		1059	40	1059	42360
		1429	20	1429	28580
		1460-1560	27	1510	40770
		1560-1780	20	1670	33400
		1853-2000	20	1926.5	38530
Total			154		222444
Average Size					1444.441558

Table 3 – Size breakdown in square feet of Cheakamus Crossing

Type	Average Size	Units	Total Building Size
3+ Bedroom	1444.441558	154	222444
1 Bedroom	706.7105263	67	47349.60526
2 Bedroom	967.362069	55	53204.91379
Sum		276	322998.5191
Expenditures	\$		Expenditure Per ft.
Site Development Fee	\$52,109,036.00		\$161.33
Residential Building	\$100,454,209.00		\$311.01
Real Estate Commissions	\$1,670,787.00		\$5.17
Total Expenditures	\$154,234,032.00		\$477.51

Table 4 – Cost estimate per square foot of Cheakamus Crossing

D) RESULTS OF DEVELOPMENT

Located south of Whistler Village and within Whistler's municipal boundaries. Cheakamus Crossing is now home to a vibrant mixture of residents, hostel visitors and athletes, numbering 700-1000 residents at any given time. Most resident housing projects in Whistler have been subsidized through the inclusion of a limited number of market townhomes and single-family lots, which provides the necessary profit to discount the costs of developing the resident housing.

The plan "Whistler 2020 – Moving toward a Sustainable Future" identifies the goal of continuing to house 75% of the community's workforce in Whistler and allocated up to 6,650 resident housing beds through to 2020 to meet this objective. Development of Cheakamus Crossing provides as much as 20% to 25% of the allocated resident housing beds, with future development at the site increasing the resident housing beds to up to 50% of the Whistler 2020 goal.

The village concept identified a hostel as a significant housing legacy component. Lands were zoned to facilitate the development of a new 180-bed hostel. The building has been completed and turned over to the Canadian Hostel Association following the exclusive use period and retrofitting (Dickinson, 2009).

Market housing and market lots were included in the neighborhood plans. The proceeds of sale are being used to offset the costs of providing affordable resident housing and to provide a more dynamic social mix. Twenty-four single family lots have been developed for sale as well as 20 market townhomes (Dickinson, 2009).

E) CHALLENGES OF MEETING VARIOUS STANDARDS AND WHISTLER'S SOLUTIONS

Developing the accommodation strategy for the Olympic Games provided special challenges for the village. The need to meet IOC accommodations criteria while also meeting the needs of the resident housing market was a complex task. To efficiently accommodate the number of athletes requested by VANOC a program was developed so that several athletes could be housed in each type of unit.

We found that both IOC and Fédération Internationale du Sport Universitaire (FISU) both requires having a maximum of three persons sharing one bathroom (equivalent to one shower, one washbasin and one toilet). Therefore, the following solutions can apply to planning the athletes' village in Lake Placid.

- Bedrooms were designed larger than normal as per IOC standards so that two athletes could be accommodated comfortably.
- Kitchens were not installed. By installing the kitchens after the exclusive athlete use period, the kitchen area could be utilized during the Games as an additional bedroom or lounge area.
- Temporary walls were installed in the living and dining areas providing additional bedrooms. In some cases, the garages were finished with heat, windows, and carpeting, and used as bedrooms.
- Extra bathrooms were installed to meet IOC standards for the number of athletes staying in each housing unit.

This program allowed up to twelve athletes to be accommodated in the townhomes. The temporary walls and carpeting were removed following the Games and much of the material was recycled. The additional bathrooms were a selling feature to the end purchasers (Olympics, n.d.).

2. WISCONSIN DELLS

The Wisconsin Dells is a small city in Wisconsin home to 2,678 people (Bureau, 2015), a population almost exactly the same as Lake Placid. It is situated in a glacially formed gorge on the Wisconsin River, and is composed almost exclusively of resorts, water parks, and other tourist activity sites. To support the tourism industry that forms the backbone of the Dells, the hospitality and tourism business employ around 4,000 J-1 students per year (Traylor, 2017). With such a small resident population to provide spare rooms and basements, and hotel rooms in high demand from tourists, businesses were failing to find and provide adequate housing for J-1 students. Some students were even reported to arrive in the Dells with no place to stay at all. To solve this problem, the Village of Lake Delton Housing Commission devised a plan to construct dorm style housing that was accessible, affordable, and appropriate for J-1 students. The project, called the Hiawatha Residence, now houses up to 1,219 students in five buildings, and has remained profitable to the developers (Traylor, 2017).

A) DESIGN FOR HIAWATHA DORMS

The building company Holtz Construction developed dorm-style room plans that comprise of a mixture of three- and four-bed rooms, with a bathroom (toilet, sink, and shower) in each room. The rooms come equipped with a microwave, a refrigerator, and air conditioning (Hiawatha, n.d.). Each floor has a communal kitchen available to all guests, equipped with three ovens, stoves, and sinks, although occupants need to supply their own cookware and cleaning supplies. The residence has communal laundry facilities in the main building, as well as a game room open to all residents (Hiawatha, n.d.). For more detailed descriptions of rooms and layout, please see [Appendix D-2](#).

B) FUNDING FOR HIAWATHA DORMS

The Housing Commission of the Wisconsin Dells put together an incentive package for developers totaling \$750,000, funded by the premium resort tax, plus a loan from a community bank. After construction, a cost analysis of the project estimated that the dorms would be profitable to the developers renting out beds to J-1 students at only \$85 per person per week (Traylor, 2017).

C) J-1 DORMS FEASIBILITY

Out of all the housing options available to Lake Placid, building a simple dorm for J-1 students will likely be the easiest to design and build. At an average estimated cost of \$110 per square foot, the residence hall, owned by the village, can charge approximately \$85 per week to the J-1 students and still turn a profit. Creating a place for J-1 students to live will also ensure that the housing provided to J-1 employees is legal and safe and will relieve the pressure on the community to provide housing for a temporary workforce. Local businesses will also benefit from the possibility of contracting more J-1 employees should enough housing be provided.

3. ITHACA – 210 HANCOCK HOUSING

In 2015, Governor Cuomo announced that Ithaca Neighborhood Housing Services' 210 Hancock Street redevelopment project was approved for the financing needed to start construction (INHS, 2018). This mixed-use community redevelopment project has updated an entire city block, replacing two vacant buildings and a parking lot with a 59-unit housing project comprising of 54 mixed-income rental apartments and five townhouses. The integrated commercial space hosts an Early Head Start program and a Free Science Workshop (Mearhoff, 2017). Given the multiple funding streams, community input and integration in the planning process, and the use of Form Based Code planning, this project could serve as a local example for development in Lake Placid.

A) DESIGN



Figure 8 – Aerial view of the 210 Hancock development (INHS, 2018)

The layout of the 210 Hancock Project was designed through community meetings with Ithaca residents. Joseph Bowes, Senior Real Estate Developer for INHS, explains this process as “a series of four open meetings designed to engage the public in the planning of the project. Over 250 people attended these meetings and discussed everything from building design to questions about density, greenspace, and parking.” (INHS, 2018) The site also replaced the two city streets that would have run through the area to eliminate traffic, created a playground, and installed walkways connecting the site to the town’s larger pedestrian and bicycle system that link to the Cayuga Waterfront Trail. The construction has been built to green standards, including a solar power source for the project, which will qualify Hancock for LEED certification and thereby increase the value of the property (INHS, 2018).

B) COST

The 210 Hancock Project is estimated to have cost \$20 million dollars to build almost 63,000 square feet of housing and 6,000 square feet of commercial space (INHS, 2018; Mearhoff, 2017).

C) FUNDING

Forty percent or higher of the units built in the Hancock project qualify as low-income housing, and as a result, the project qualified for low income housing tax credits from both the state and federal government. From New York State and the Federal Government, the project received over \$1.5 million in LIHTC, which are estimated to generate over \$13.3 million in equity, plus an additional \$2.5 million from Middle Income Housing Program and Community Investment Fund dollars. Additionally, the project received \$10 million in loans from the Community Preservation Corporation, \$516,000 from a New York State Energy Research and Development Authority grant, and over \$700,000 from the City of Ithaca and Tompkins County (Mearhoff, 2017).

D) LEED CERTIFICATION

LEED certification for the Hancock Project is currently in progress, but the outlook is hopeful (INHS, 2018). The housing was built to exceed LEED standards, as well as the standards for the Energy Star Program for energy efficiency (INHS, 2018). Building with sustainability in mind is what brought this project to the attention of Governor Cuomo, who started the Cleaner, Greener Communities (CGC) Program in 2011 (INHS, 2018). Compared to new conventional construction, 210 Hancock will save an estimated 10,754 therms/year of natural gas, and 217,364 KWh/year in grid electricity, which will be mitigated by the solar panels on the roof generating an estimated 84,727 KWh/year. The project is also estimated to reduce 6,000 miles of car use per year.

4. ITHACA – MAPLEWOOD

A) DESIGN

To build the Cornell Maplewood Graduate and Professional Apartments, Cornell worked with the developer EdR. Cornell will own the land and it will be rented only to Cornell graduate and professional students and visiting faculty, but developer EdR will develop, finance and manage the dynamic, 16-acre new-urbanist community which

will include 872 beds in a mix of apartment and townhouse units, described in Table 6 below. There are over 400 parking spaces, as well as amenities including retail spaces, a fitness center, a community center, a community garden, walking trails, and a variety of outdoor amenities designed to support Cornell's growing graduate and professional student population (Crandall, 2016).

Space	Type	Number	Percentage of the Total Project
Building	4-Story Apartment Buildings	5	75%
	Townhouse Buildings	21	25%
Total: 444 student units with 872 beds			
Others			
Community Center and Green Space		7700 sqft	
Parking		463 spaces; almost one for every two bedrooms	

Table 5 – Styles and area of Maplewood construction project.

A) COST

The gross size of the project is 484,388 sq. ft., and EdR spent approximately \$80 million on the project and owns the structure for 50 years (Crandall, 2016).

B) COST RECOUPMENT

Cornell collects rents for the project, which include utilities, wireless and pre-furnished units, are looking to range from \$790-\$1147 per bed per month, depending on the specific unit. Back of the envelope calculations suggest affordability at 30% rent and 10% utilities, for 40% of income (Crandall, 2016).

VI. CONSTRUCTION DATA

In order to meet the Housing Commission's need for a wide-reaching estimate of construction cost per square feet for both temporary housing and residential housing, including different level of utilities and amenities, two separate Excel documents has been developed. The projects are organized from economy to luxury styles of buildings. Many of the projects found in the spreadsheets are sustainable constructions with LEED Gold or LEED Silver certificates.

A. COST COMPARISON SPREADSHEETS

1. HOW TO USE EXCEL SPREADSHEET

The Cost Comparison spreadsheet is comprised of the following categories, defined in Table 7.

Table 6 – Cost Comparison Spreadsheet Terms

Project name	The name or title of the building or project.
Location	Where the building or project is located
Land use	The land use type and it usually referred to zoning
Use type	The purpose of the building
Sustainability	The sustainability of the project or building, which sometimes has LEED Certification
Gross size (sq. ft.)	The Project size with exact number in ft ²
Floor plans	The floor plans that the project has
Number of units	Total number of units that the project contains
Number of beds	Total number of beds in the project
Construction Cost	"Expense incurred by a contractor for labor, material, equipment, financing, services, utilities, etc., plus overheads and contractor's profit. Costs such as that of land, architectural design, consultant and engineer's fee are not construction costs." (WebFinance, 2018)
Development cost	Including all costs to develop the project, that usually contains site acquisition, general conditions, demolition/excavation, construction, finishes, specialties, cabinets, equipment, materials, soft costs
Cost per unit	Total construction cost divided by the number of units

Cost per bed	Calculated by dividing the construction cost by the number of beds
Cost per sq. ft.	Total construction cost divided by gross size
Amenities	Contains both features for the building and community
Detail/picture	Standard picture of the project
Reference	The project's data resource
University Name	The university that the student housing serves
Median Household income	The median household income of the township where the project has been conducted, assuming each household has 4 family members.

Some projects suit both temporary housing and residential housing, so those are included in both temporary and community housing excel sheets provided. They are University View Apartment I, USC University Gateway, U point Syracuse, ASPEN Heights, University Village, University Park Student Apartments, East Edge, The Retreat at Oxford, Evergreen Commons, Multiple Residence Halls (Bee Johnson Hall, Herman & Heddy Kurz Hall, Billy Minardi Hall), University Village Apartments, Honeysuckle Apartments, The Marshall, Union on Lincoln Way, Maplewood Graduate and Professional Apartments, and The Local Downtown.

2. DORM STYLE HOUSING FINDINGS

The J-1 housing estimated construction cost is mostly based on the newly constructed residential hall for American Universities. A full breakdown of amenities, cost, square footage, location, and layout is available in the attached spreadsheets in [Appendix H](#).

The economy project would be furnished dormitory style room with basic utilities, such as shared laundry room and shared bathroom. The estimated cost of economy style temporary housing construction per square foot is \$128/sq. ft.

The mid-level cost project comprises of furnished rooms with a private bathroom or shared bathroom with a two-person maximum, and shared kitchen area. The construction cost for average style housing is \$154/sq. ft.

The luxury style has furnished rooms with a private bathroom or shared bathroom per two person maximum, private or shared kitchen area, and upscaled community amenities, such as parking garage, pool, barbeque, coffee, convenience store, and so forth. The average construction for luxury style temporary housing is \$263/sq. ft.

3. MIXED-USE COMMUNITY HOUSING FINDINGS

The spreadsheet breakdown for community housing is based on construction database data and case studies that involve the combination of affordable housing, off-campus student housing, mixed income housing, and senior housing. To eliminate projects that have been conducted in townships are not comparable to Lake Placid, the range for the median household income of the town is \$35,000 to \$65,000, bracketing the Lake Placid median

household income of around \$50,000. The projects are also divided into three categories, which are economy, average, and luxury.

The economy style J-1 Housing project would be basic furnished dormitory style room with basic utilities, such as shared laundry room and shared bathroom. The average construction cost is \$128.85/sq. ft.

The average style J-1 Housing project would be standard furnished rooms with private bathroom or shared bathroom per two person maximum, shared kitchen area, and may have some community basic amenities. The average construction cost is \$142.04/sq. ft.

The luxury style J-1 Housing project would be High-quality furnished rooms with private bathroom or shared bathroom per two person maximum, private or shared kitchen area, and upscaled community amenities, such as parking garage, pool & BBQ, coffee, convenience store, etc. The average construction cost is \$174.39/sq. ft.

The economy style residential housing would be apartments or townhouses that are just above minimum floor plan area that contains private bathroom, kitchen, in-room laundry, and surface parking. The average construction cost is \$84.25/sq. ft.

The average style housing will be apartments or townhouses that have the basic features that the economy style has, and more community amenities, such as playground and commercial area. The average construction cost is \$123.73/sq. ft.

The luxury style housing will be upscaled apartments or townhouses that contain high-end or high-tech community amenities and high-end room features. The average construction cost is \$242.10/sq. ft.

The construction costs per square feet for both economy and average style J-1 housing are relatively expensive compare to the economy and average style residential housing because J-1 housing is furnished and has more plumbing per square foot.

Furthermore, some off-campus housing projects are suitable for both temporary housing and residential housing and those projects, which are Maplewood Graduate and Professional Apartments, East Edge Apartments, Honeysuckle Apartments, University Park Student Apartments, and The Heights at Slippery.

B. COST BENEFIT ANALYSIS TOOL

1. PRO FORMA

The Pro Forma is an interactive worksheet that aims to deliver an intuitive table for planning housing options and determining financial feasibility. Although much of the included data is relevant, such as construction costs, further data is still needed to be gathered by community surveys. To provide more flexibility with the financial feasibility analysis, the worksheet is adjustable and interactive so relative data can be inserted as needed. The table consists of several parts, including an overall projection, a rental and sales summary, and a cash flow projection. By changing the data on the cells that are marked red, such as the number of desired residents, the proportion of affordable housing, the proportion of rental units, the rent per square feet, the number of different types of housing (one bedroom, two bedroom, or three bedroom), total construction costs, total revenue income, and net operating income for the first year can be obtained. The results presented in this table can provide a solid quantitative basis for housing arrangements, pricing strategies for rents and purchases, cost control, and operation.

2. PRO FORMA DETAILS

A) HOUSING PROJECTION

Two primary groups are defined as in need of housing after the Universiade Games: the temporary workforce and the full-time residents of Lake Placid. J-1 students are included in the workforce group. Considering their different housing needs, given the resident might seek housing for rental or for sale while the temporary workforce only needs seasonal rental housing, this [worksheet](#) summarizes the total housing units built and divided the units according to their affordability, ownership and unit types.

As for the total units provided, a mixed-use housing project offers different housing options from one bedroom to three bedrooms, and for each option there are different household sizes. Total housing units consist of affordable housing and marketable housing. Both contain units that can be rented or sold. The demand of housing is to be determined, but once obtained can be put into the Pro Forma. The maximum proportion of the affordable housing should be decided based on the potential net income from this project, pricing, and funding of the affordable housing as well as the demand information collected.

Once the number of people seeking housing, percentage of housing options, percentage of affordable housing units, percentage of housing for sale (in both affordable housing or market housing) are inserted, the spreadsheet will present the number of units for each housing option required and whether they should be for rent or for sale, and an estimate as to what the market price will be. The spreadsheet also calculates the percentage of housing options in total units under affordable price or market price, to give more intuitive perception of how the total units break down due to different price and size.

B) RENTAL AND SALES SUMMARY WITH CASH FLOW PROJECTION

After summarizing the total units to be built, the total revenue of the housing project could be calculated in the rental and sales summary sheet. Information used in this part includes: construction cost per square feet (for different unit types), average unit size, rent and sale information for marketable housing, rent and sale information for affordable housing, vacancy, and expense.

The average unit size could be determined by the local zoning code or by the actual preferences from the resident survey. The rental and sale information could be obtained by the census bureau or a local real estate assessment database (Image Mate Online). In addition, considering affordable housing, the pricing standards from HUD indicate that the housing cost should be below 30% of the occupant's income (HUD, 2018). Once these data are inserted, the total area, rental and sales revenue, and total annual revenue will be gathered.

The spreadsheet also takes the vacancy rate and operating expense into consideration. The vacancy rate can be determined by the Census Bureau, while the operating expense varies due to local context and need to be justified by looking into similar properties.

Construction cost could be estimated from the Cost Comparison spreadsheet by averaging costs of various projects conducted in similar regions. The data from RSMeans also provides a solid reference whether the cost is suitable for local context. However, this cost is used only for estimating the net expense for the project. More accurate cost will be obtained when the project is implemented. The tool for calculating specific items for the construction cost will be placed in the Detailed Cost Report worksheet.

Based on this, the project's total revenue is then calculated by multiplying average unit size, rent or sale price, and the total units built. The total revenue minus the total construction cost, vacancy loss, and operating expenses is

the estimated net operating income in the first year of the housing project. The decision maker could adjust related items and obtain better housing plans by checking the financial performance with their expectations.

C) EXAMPLE OF PRO FORMA USE

The following will demonstrate an example of how to use the Pro Forma worksheet, with Table 7 as an example of cost analysis and Table 8 as the subsequent financial performance generated using the following data obtained from the U.S. Census Bureau.

Vacancy: The 2015 Census Community Survey revealed that there are a 34% vacancy rate, and 652 units are unoccupied by renters or owners. According to the following 5-Year Estimates, there will be 37.9% (763 units) are vacant. From the interview with local officials, the vacancy rate is likely to lie around 35%, which is comply with the survey data (Bureau, American Community Survey 5-year estimates, 2015). Of course, 76.5% of these vacant units are used for short-term use and vacation rentals, so it is up to the user which figures to list for vacancy (Bureau, Vacancy Status, 2015).

Bedrooms in one unit: Among the 2,013 housing units, there are around 23.6% units with 1 bedroom, 19.8% with two bedrooms and 49% with more than 3 bedrooms. From the successful case of Whistler mentioned earlier, the percentages are 24.28%, 19.93% and 55.80% respectively. The similarities in preference for housing units implies much of Whistler's development plans could be applicable.

Ownership: In terms of ownership, according to the 2012-2016 American Community Survey, among the 1,250 occupied housing units, 65.2% of them (815) are renter-occupied and 34.8% of them are owner-occupied. This could be a potential trend locally for housing (Bureau, American Community Survey 5-year estimates, 2015).

Average unit size: as per the code regulation in Lake Placid, the minimum requirement for affordable housing in terms of its size are 600, 750, 900 for 1-bedroom, 2-bedroom and 3-bedroom units respectively (Placid, 2011).

Rental and sales price: The median list price per square foot in Lake Placid is \$293, which is higher than the Essex County average of \$122. Based on this, it could be assumed that comparing to \$293, \$122 is more affordable as sale price per square feet.

Based on these findings as well as data from the construction cost spreadsheet, the Pro Forma has been populated with information and run for analysis as an example as shown in Tables 8 and 9 below.

Input assumption	Number
Demands	2000
Unit option	
1 bedroom	24.28%
2 bedroom	19.93%
3 bedroom	55.80%
Percentage of affordable unit	80%
Percentage of marketable unit	20%
Percentage for sale	35%
Percentage for rental	65%
Market price	

For sale	\$293
For rental	
1 bedroom	\$1.15
2 bedroom	\$1.15
3 bedroom	\$1.28
Affordable price	
For sale	\$122
For rental	
1 bedroom	\$0.48
2 bedroom	\$0.48
3 bedroom	\$0.53
Cost(per sqft)	\$123.73
Vacancy loss rate	35%
Operating expense rate	20%

Table 7 – Example of Pro Forma worksheet with the data from the census to estimate cost analysis.

And the financial performances are as follows:

Items	Amount
Total sale revenue	\$33,655,583.64
Total rental revenue	\$6,704,493.62
Total revenue	\$40,360,077.27
Operating expense	\$7,602,700.90
Vacancy loss	\$2,346,572.77
Net operating income for first year	\$30,410,803.60
Construction cost	\$79,291,151.60

Table 8 – Financial Performance if the data above is used.

The detailed sheet could be found in [Appendix F](#).

This tool can be reused for different scenarios with different assumptions. As community surveys are needed for populating the worksheet with accurate figures, the sheet can be adjusted any time for more accurate financial results.

D) DETAILED COST REPORT

Since the cost data is gathered from the different resources discussed above, once the Village of Lake Placid obtains data specific to their area, the Development Commission can input that data for a more accurate estimate. To adjust the cost and obtain accurate cost when the project implemented, as mentioned in 3.2.2, the detailed [cost report](#) will help track expense estimations for ten aspects: Site Work, Foundation, Framing, Exterior Walls, Roofing, Interior, Specialties, Mechanical, Electrical, and Parking.

VII. RECOMMENDATIONS

A. NEXT STEPS

The following recommendations on next steps for the Lake Placid/North Elba Community Development Commission are based off the data and conclusions found in this report.

1. CREATE A HOUSING BOARD

Creating a team of invested community members dedicated to the development of this housing will create a strong platform on which to act. A dedicated team can devote specific attention to the development of this project and given the quickly diminishing bracket of time needed to finish this project, anything to streamline the process will be helpful.

2. EXPLORE FORM BASED CODE

Lake Placid could begin the process of redevelopment by evaluating Form Based Code regulations and how they can be utilized in an overlay district alongside the conventional zoning regulations required to protect Lake Placid from over-development. Even if Lake Placid opts out of adopting Form Based Code into the Village's regulations, just exploring the cutting-edge planning processes involved in using FBC can provide a wealth of inspiration for new developments.

3. COMMUNITY SURVEY – ASCERTAIN SUPPLY AND DEMAND

The next steps for the Lake Placid Development Commission should include finding the supply and demand of housing in the Lake Placid area. Questions in community surveys or polls should include how much affordable housing is needed, what kind of housing residents want, what potential home buyers and renters can afford, and where would the residents prefer this project be built.

Another survey should be distributed to business and resort owners in the area to determine how many J-1 students they employ, whether those students have specific housing provided by the business, how much housing is available for J-1 students, and how many J-1 students the business could employ if finding appropriate housing was not a barrier.

4. HAVE A COMMUNITY WORKSHOP

One of the many strengths of Form Based Code is the ability to incorporate the community's vision into any project. Since Lake Placid has such a strong, localized community, integrating the voices of the residents into the design process could be a valuable way to protect the community's integrity.

5. SITE RESEARCH

The Gateway Corridor district seems most appropriate for development, given its zoning regulations allow for higher density and multiuse planning. Identifying available areas within this district and land ownership should happen soon if new construction is to start in time for the Games. The negotiation of land value as well as detailed information about the site can be logged into the Pro Forma tool for a more accurate analysis.

B. J-1 STUDENTS

Creating dorms with J-1 students specifically in mind could expand the local business owners' opportunities to fill employment positions. The interview with management from J-1 agency InterExchange indicated that the agency would be willing to place more students in Lake Placid if appropriate housing was found. The J-1 student needs will be very close to the needs for an athlete's village, so there will be very little cost for transference. The building design necessary for dorm style housing could be incorporated into mixed-use housing developments using Form Based Code, could be built to LEED or Energy Star standards, and could create a profit for the owners. Further, creating dedicated housing for J-1 students can relieve pressure on the Village for apartment rentals, and even ease the market demand enough to start lowering rent in the area.

The J-1 dorms do not have to be J-1 exclusive. Building dorms for a hostel with preference to J-1 workers can help create revenue from tourists during the workers' off-season.

C. COMMUNITY HOUSING

1. SUSTAINABLE OPTIONS

The sustainable funding streams currently available may be affected by the Executive Office's FY 2019 Budget. The current LEED or Energy Star certification process is subsidized down nearly to the cost of conventional construction, and is an obvious choice for developments moving forward, unless the new budget reduces the subsidizations. Applying for funding streams on the federal level in this category may need to be completed before the end of 2018.

2. LOW-INCOME AND AFFORDABLE HOUSING INCLUSION

The FY 2019 Executive Office Budget has been released as of May 2018. It contains many budget cuts to affordable housing initiatives. Should Lake Placid decide to integrate federal Low-Income Housing Tax Credits of Choice Neighborhood programs, it may be necessary to apply well before the end of 2018.

VIII. APPENDIX

A. ATHLETE HOUSING REQUIREMENTS

The Athletes' Village must be capable of housing all the participants, depending on the number of sports proposed. With regard to the compulsory sports program, the minimum bed capacity must be 3,000 at a specific time. Different types of rooms can be provided according the number of people in the delegations. Each room shall accommodate a maximum of three persons (minimum 7m² per person excluding bathroom and balcony), and no more than three members of a delegation shall share the bathroom facilities (toilet, washbasin and shower).

The rooms must be fully furnished for competitors and accredited delegation officials, and equipped with the following:

- Beds and beddings
- Bed extensions
- Lamps and lights
- Tables and chairs per person
- Closets, clothes racks
- Storage space for personal belongings
- Curtains / blinds
- Waste basket
- Bathroom amenities.

Depending on the size, delegations are allowed to have an Assistant Head of Delegation in addition to the Head of Delegation. Each Head of Delegation or Assistant Head of Delegation must be accommodated in a single room, with its own bathroom facilities. In addition to the standard facilities listed above, the Head of Delegation room should also have a telephone (usage at cost to the delegation), a blackboard or whiteboard, lockable cabinets, a television, and a refrigerator (FISU, 2014).

B. J-1 HOUSING REQUIREMENTS

- i. Clean and livable conditions when moving into the housing
 - a. Adequate space for belongings
 - b. Sufficient space for all residents so they do not feel over-crowded
 - c. Working locks and general sense of safety
 - d. Working smoke alarms and carbon monoxide detectors and an available fire extinguisher
 - e. Fully functional kitchen (if applicable) and bathrooms
 - f. Two ways to exit the housing in case of emergency
- ii. If housing is furnished:
 - a. The bed should be raised off of the floor
 - b. There should be furnishings appropriate to each room, in good working order
- iii. Participants should have access to the following standards for beds:
 - a. One bed per individual
 - b. No more than four beds per room, subject to management discretion
 - c. The bed should be raised off the floor
 - d. Air mattresses may not qualify as suitable beds
 - e. Bedding does not need to be provided, as long as appropriate expectations are set in advance (USIT, 2018).

C. ZONING REGULATIONS FOR LAKE PLACID

Zones	Min lot area (sq. ft.)	Max resident density (unit/ acre)	Min lot width	Min front setback	Min side yard setback	Min rear yard setback	Max building height	Max building width	Maximum impervious area
Town residential district	21780	2	100	Avg with principal structure on both sides of street within 500 feet, with 35-min for other cases	20	25	30	135%, 500	65.00%
Village residential district	4356	5	60	Avg with principal structure on both sides of street within 250 feet, with 20-min for other cases	10	15	30	135%, 250	65.00%
Gateway corridor district	8712	10	70	Avg with abutting building within 500 feet	min 10(one side), max 25(total)	15	35	N/A	70.00%
Old military road district	10890	6	75	Avg with abutting building within 500 feet	min 10(one side), max 25(total)	15	30	N/A	70.00%

Table 9 – Zoning Regulations sourced from (Placid, 2011).

Housing options	Minimum gross floor area(sqft)
Studio	450
One bedroom	600
Two bedroom	750
Three bedroom	900
Four bedroom	(need review by board)

Table 10 – Zoning Requirements for housing size (Placid, 2011).

Table 1. Off-Street Parking Requirements	
Use Type	Minimum Spaces Required
Bed & Breakfast/Rooming House	2 per dwelling unit, 1 per lodging room and 1 per non-resident employee
Commercial Use	1 per 300 sq. ft. of gross floor area
Dwelling, Accessory	1 per unit
Dwelling, Multi-Family	1.5 per unit
Dwelling, Single- or Two-Family	2 per dwelling unit
Hotel /Motel	1 per room or rental unit
Marina	1.3 per boat berth - additional parking for trailers may be required by the Joint Review Board
Membership Club / Fraternal Organization	1 per 200 sq. ft. of gross floor area
Nursing Home/ Residential Care Facility/ Convalescent Home	1 per 3 beds
Public Assembly (auditorium, stadium, theater, place of worship, etc.)	1 per 200 sq. ft. of gross floor area, or 1 per 5 seats in assembly room(s), whichever is greater
Restaurant, Eating/Drinking Establishment	1 per 3 seats, or 50 sq. ft. of floor area available to patrons where no seating is generally available
Semi public Building	1 per 200 sq. ft. of gross floor area
Grouped Retail	5.5 per 1000 sq. ft. of gross floor area
Unspecified	As determined by the Review Board under site plan or conditional use review

Table 11 – Parking requirements for zoning (Placid, 2011).

D. CASE STUDIES

1. WHISTLER

A) CHEAKAMUS CROSSING: DIFFERENT FLOOR PLANS AND COST

There are 6 major neighborhoods in Cheakamus Crossing.

The Falls: 1&2 Bedrooms Apartments

9 One-bedroom apartments ranging in size from approx. 667 sq. ft. to approx. 748 sq. ft.

3 One-bedroom + den apartments at approx. 842 sq. ft.

21 Two-bedroom apartments ranging in size from approx. 942 sq. ft. to approx. 1,017 sq. ft.

All ground floor apartments have a private patio while the upper floors have balconies. All apartments have a large storage room inside the entrance. One parking space is allocated per property.

The Springs: Studio and 1&2 Bedrooms Apartments

4 Studio apartments at approx. 510 sq. ft.

19 One-bedroom apartments ranging in size from approx. 700 sq. ft. to approx. 714 sq. ft.

3 One-bedroom + den apartments ranging in size from approx. 814 sq. ft. to approx. 845 sq. ft.

8 Two-bedroom apartments ranging in size from approx. 912 sq. ft. to approx. 959 sq. ft.

All ground floor apartments have a private patio while the upper floors have balconies. All apartments have a large storage room inside the entrance. One parking space is allocated per property.

The Heights: 2&3 Bedrooms Townhomes

13 of the homes at the Heights have 2 bedrooms and 2 bathrooms and range in size from approx. 1,141 sq. ft. to approx. 1,471 sq. ft.

While 14 of the homes have 3 bedrooms and 3 bathrooms and range in size from approx. 1,398 sq. ft. to approx. 1,720 sq. ft. Each home has access to a private patio area from the open concept living space or kitchen.

The Rise: 2&3 Bedrooms Townhomes

40 of these townhomes have 2 bedrooms and 2 bathrooms and are approx. 1,059 sq. ft. in size. 20 of the townhomes have 3 bedrooms and 2 bathrooms and are approx. 1,429 sq. ft. in size. These 3-bedroom homes feature the master bedroom and bathroom on the ground level. All the homes at The Rise include a patio at the rear and large storage room inside the entrance.

The Terrace: 3 Bedrooms Townhomes

These 3-bedroom, 3-bathroom townhomes range in size from approx. 1,460 sq. ft. to approx. 1,560 sq. ft. The accommodation is distributed over 3 stories with master and second bedrooms on the third floor and living/dining/kitchen area on the second floor where there is also access to a private deck. The third bedroom/flex room is on the ground floor and has separate patio access.

Whitewater: 3 & 3-½ Bedrooms Townhomes

The 20 townhomes all have 3 bedrooms and 3 bathrooms and range in size from approx. 1,560 to approx. 1,708 sq. ft. The 20 duplexes have 3 bedrooms + den (4th bedroom) and 3 bathrooms and range in size from approx. 1,853 sq. ft. to approx. 2,000 sq. ft. Each home has access to a private patio area from the open concept living space (Cheakamus Crossing, n.d.).

2. WISCONSIN DELLS

A) LAYOUT OF HIAWATHA DORMS



Figure 9 – Three bedroom dorm room photo from Hiawatha Residence (Hiawatha, n.d.).

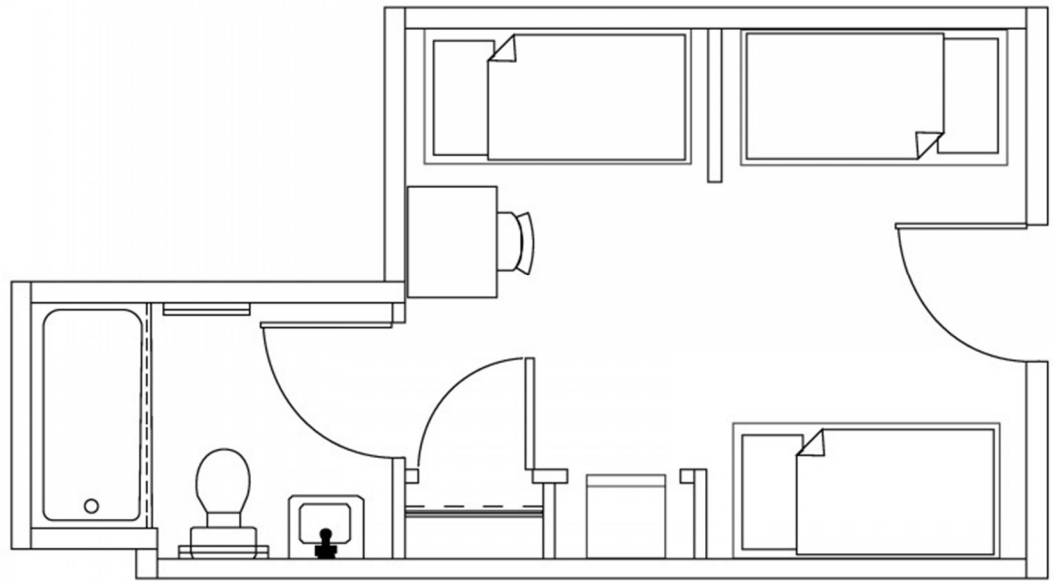


Figure 10 – Three bedroom dorm room layout from Hiawatha Residence (Hiawatha, n.d.).



Figure 11 – Four bed room picture from Hiawatha Residence (Hiawatha, n.d.)

E. COST

Construction Cost per square feet of comparable towns to Lake Placid.

Glens Falls

Story	Type	Brick Veneer - Wood Frame	Painted Concrete Block(E)/solid masonry(A/C) solid brick(L)	Stucco on Wood Frame(E/A)/stone veneer(C)/solid stone(L)	Wood Siding - Wood Frame
1 story(1200 sqft)	Economy	\$116.99	\$109.91	\$106.42	\$111.92
	Average	\$106.14	\$114.37	\$99.13	\$101.53
	Custom	\$120.25	\$126.06	\$125.52	\$113.82
	Luxury	\$124.43	\$131.67	\$135.46	\$118.03
1 and 1/2 story (1600 sqft)	Economy	\$113.14	\$105.46	\$101.84	\$107.72
	Average	\$111.22	\$120.55	\$102.85	\$105.75
	Custom	\$118.41	\$124.95	\$124.42	\$111.07
	Luxury	\$131.83	\$140.41	\$145.40	\$123.90
2 story (2000 sqft)	Economy	\$104.55	\$97.25	\$93.35	\$99.18
	Average	\$109.42	\$120.38	\$100.81	\$103.70
	Custom	\$119.35	\$126.68	\$125.84	\$111.42
	Luxury	\$126.06	\$135.80	\$140.07	\$118.02

Table 12 – Glens Falls Construction Costs (Gordian, n.d.)

Plattsburgh

Story	Type	Brick Veneer - Wood Frame	Painted Concrete Block(E)/solid masonry(A/C) solid brick(L)	Stucco on Wood Frame(E/A)/stone veneer(C)/solid stone(L)	Wood Siding - Wood Frame
1 story(1200 sqft)	Economy	\$116.41	\$109.55	\$105.96	\$112.00
	Average	\$105.69	\$113.70	\$98.77	\$101.69
	Custom	\$120.68	\$126.43	\$126.04	\$114.66
	Luxury	\$124.86	\$131.86	\$135.92	\$118.86
1 and 1/2 story (1600 sqft)	Economy	\$112.49	\$105.04	\$101.33	\$107.78
	Average	\$110.72	\$119.80	\$102.46	\$105.97
	Custom	\$118.70	\$124.81	\$124.42	\$111.82
	Luxury	\$132.20	\$140.49	\$145.81	\$124.76
2 story (2000 sqft)	Economy	\$103.95	\$96.88	\$92.87	\$99.27
	Average	\$108.90	\$119.58	\$100.40	\$103.93
	Custom	\$119.63	\$126.89	\$126.23	\$112.20
	Luxury	\$126.34	\$135.77	\$140.39	\$118.81

Table 13 – Plattsburgh Construction Costs (Gordian, n.d.)

F. PRO FORMA

BEDROOMS	Units	Percentage
Total housing units	2,013	100%
No bedroom	151	7.50%
1 bedroom	476	23.60%
2 bedrooms	399	19.80%
3+ bedrooms	987	49.00%
HOUSING TENURE		
Occupied housing units	1,250	100%
Owner-occupied	435	34.80%
Renter-occupied	815	65.20%

Item	Studio	One BR	Two BR	Three BR
Market rental price	\$589	\$689	\$864	\$1,148
Minimum area	450	600	750	900
Maximum rental price sqft	\$1.31	\$1.15	\$1.15	\$1.28

Unit size	Percentage	Units	Household size	Accommodated
1 BR	24.28%	199	1.5	299
2 BR	19.93%	164	2.0	327
3 BR	55.80%	458	3.0	1374
Total unit provides		821		
Total number of residents		2000		
Long-term Affordable Housing Options				
Rental/ownership	Housing group	1 bedroom	2 bedroom	3 bedroom
Rental	Affordable	104	85	238
			Total	427
	Market	26	21	60
			Total	107
For sale	Affordable	56	46	128
			Total	230
	Market	14	11	32
			Total	57
Total		199	164	1221
AFFORDABLE UNITS PROVIDED			MARKETABLE UNITS PROVIDED	
Total percentage	80%		Total percentage	20%
Total number of units	657		Total number of units	164
Targeted Affordable % of Total Units			Targeted Affordable % of Total Units	
<u>Ownership</u>	<u>Percentage</u>		<u>Ownership</u>	<u>Percentage</u>
For sale	35%		For sale	35%
Rental	65%		Rental	65%
Targeted Affordable Unit Mix			Marketable Unit Mix	
<u>Unit Type</u>	<u>Percentage</u>		<u>Unit Type</u>	<u>Percentage</u>
1 Bedroom	19.42%		1 Bedroom	4.86%
2 Bedroom	15.94%		2 Bedroom	3.99%
3 Bedroom	44.64%		3 Bedroom	11.16%

Rental and sales summary						
Apartment Unit Types	Number of Units	Rent or sale/ft	Average unit size(Area/Unit)	Total area(ft)	Rent/Month/Unit	Total Annual Rent/Income
SALE						
Market price for sale	57	\$293.00	750	43093	-	\$12,626,230.48
Affordable price for sale	230	\$122.00	750	172372	-	\$21,029,353.16
Total Sale revenue						\$33,655,583.64
RENTS						
Residential tenants						
Affordable price for rent						
1 Bedroom	104	\$0.48	600	62168	\$29,768.51	\$357,222.17
2 Bedroom	85	\$0.48	750	63792	\$30,546.05	\$366,552.60
3 Bedroom	238	\$0.53	900	214341	\$114,236.91	\$1,370,842.96
Market price for rent						
1 Bedroom	26	\$1.15	600	15542	\$17,873.31	\$214,479.70
2 Bedroom	21	\$1.15	750	15948	\$18,340.15	\$220,081.78
3 Bedroom	60	\$1.28	900	53585	\$68,588.97	\$823,067.60
Total residential apartment rental revenue						\$3,352,246.81
Retail/ commercial tenants	-	-	-	-	-	-
Total retail/commercial tenants						-
Other tenants	-	-	-	-	-	-
Total rental revenue						\$6,704,493.62
Total revenue						\$40,360,077.27
Inputs and Assumptions			Pro Forma NOI(First year)			
Area(S.F)	640840		Revenue			
Total rent	\$6,704,493.62		Potential gross income (PGI)	\$6,704,493.62		
Sale income	\$33,655,583.64		Plus: Sales income	\$33,655,583.64		
Cost(Per S.F)	\$123.73		Less: Vacancy loss (VC)	\$2,346,572.77		
Total cost	\$79,291,151.60		Effective gross income (EGI)	\$38,013,504.50		
Vacancy and collection losses (% of PGI per year)	35.00%		Less: Operating expenses (OE)	\$7,602,700.90		
Operating expenses (% of EGI per year)	20.00%		Total expense	\$7,602,700.90		
			Less: Capital Reserves (CR)	-		
			Net operating income (NOI)	\$30,410,803.60		

Detailed cost report template:

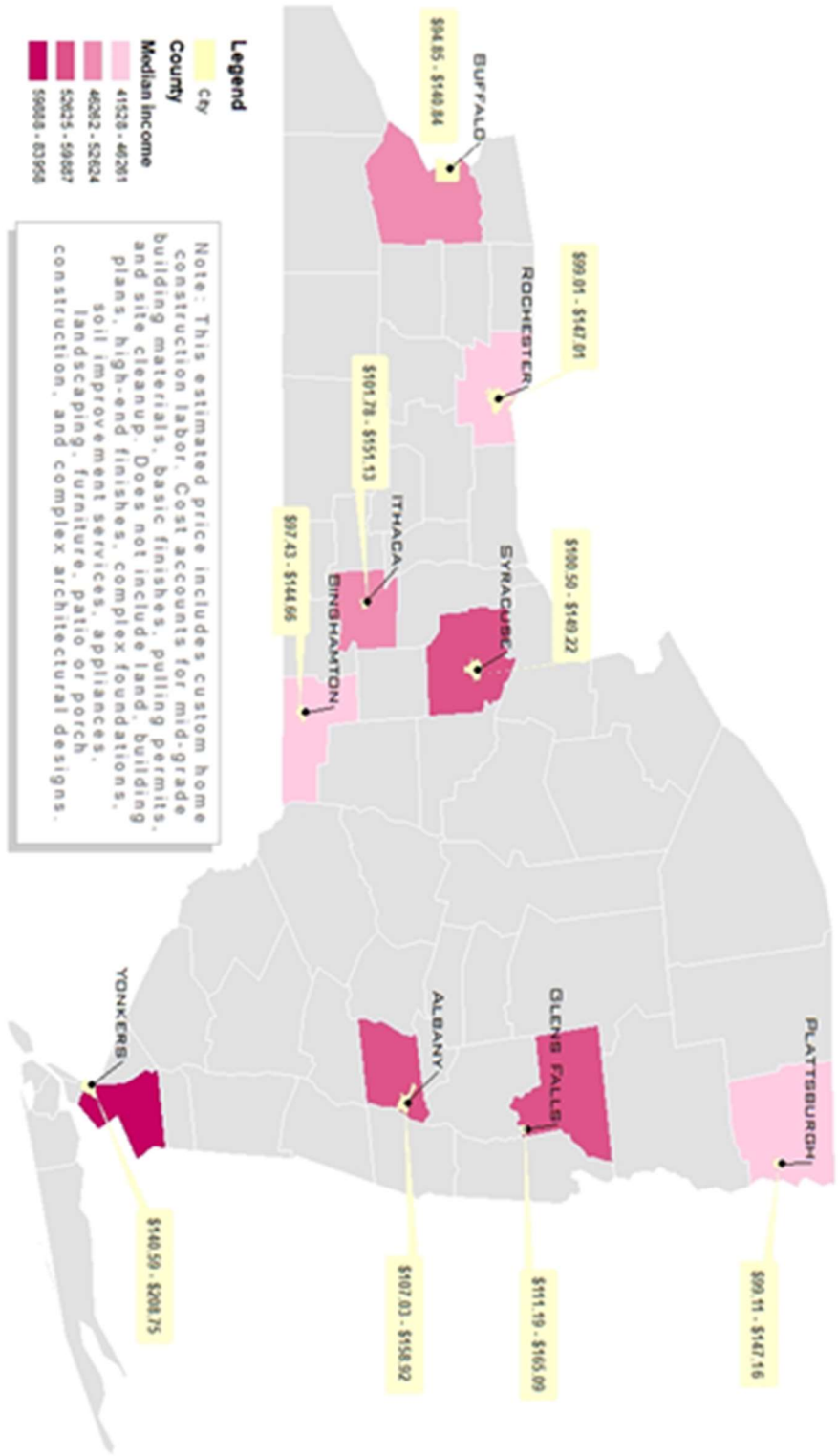
Square Foot Cost Estimate Report					Date:
Building Type:					
Estimate Name:					
Location:					
Story Count:					
Story Height (L.F.):					
Floor Area (S.F.):					
Labor Type:					
Basement Included:					
Data Release:					
Cost Per Square Foot:					
Building Cost:					
		% of Total	Cost Per S.F.	Cost	
01 Site Work					
02 Foundation					
03 Framing					
04 Exterior Walls					
05 Roofing					
06 Interiors					
07 Specialties					
08 Mechanical					
09 Electrical					
SubTotal					
Contractor Fees (General Conditions,Overhead,Profit)					
Architectural Fees					
User Fees					
Total Building Cost					

G. GIS MAPS

1. GIS MAP-US



2. GIS MAP-NY



H. CONSTRUCTION COST EXCEL SPREADSHEET











(1) EXCEL SPREADSHET

CONSTRUCTION COST














1	J-1 Housing/Temporary Housing				
2	Area (Square Feet)	Average Cost (per Square Feet)	Category	Common Features	Total Cost
3	300	\$ 128.85	Economy	Basic furnished dormitory style room with basic utilities, such as shared laundry room and shared bathroom.	\$ 38,656
4	200	\$ 142.04	Average	Standard furnished rooms with private bathroom or shared bathroom per two person maximum, shared kitchen area, and may have some community basic amenities.	\$ 28,408
5	100	\$ 174.39	Luxury	High-quality furnished rooms with private bathroom or shared bathroom two person maximum, private or shared kitchen area, and upscaled community amenities, such as parking garage, pool & BBQ, coffee, convenience store, etc.	\$ 17,439
6	Total Cost of J-1 Housing Mix				\$ 84,503
7					
8	Community Housig				
9	Area Square feet	Average Cost (per Square feet)	Category	Common Features	Total Cost
10	300	\$ 84.25	Economy	Apartments or townhouses that are just above minimum floor plan area that contains private bathroom, kitchen, in-room laundry, and surface parking.	\$ 25,274.26
11	200	\$ 123.73	Average	Apartments or townhouses that have the basic features that the economy style has, and more community amenities, such as playground and commercial area.	\$ 24,746.02
12	100	\$ 242.10	Luxury	(Upsclaed) apartments or townhouses that contain high-end or high-tech community amenities and high-end room features.	\$ 24,210.39
13	Total Cost of Community Housing Mix				\$ 74,230.67
14					
15	Project Total Cost (J-1 Housing+Community Housing)				\$ 158,733.64
16					
	EstimateCost	J-1Housing_Economy	J-1Housing_Average	J-1Housing_Luxury	Community_Economy




\$ 128.85

J-1 HOUSING AVERAGE









Project Name	University Name	Land use	Sustainability	Number Size (ft²) of Units	Floor Plans	Number of Beds	Construction Cost	Cost Per Unit	Cost Per Bed	Cost per ft²	Features	Detail	
Arlington Park Apartments	University of Northern Colorado	Student Housing	N/A	181,000	2- and 4-bedroom 179 units	394	\$ 24,300,000.00	\$	135,754	\$ 61,675.13	\$ 134.25	Fully furnished living/dining areas; full kitchens with washers/dryers; bedrooms wired for computer, telephone and cable TV; community	
GWU SOUTH HALL	The Georgetown University	Student Housing	LEED Gold	275,000	117 4-bedroom suites	474	\$50,600,000	\$	432,479	\$ 106,751.05	\$ 184.00	Apartment Style Kitchen facilities in each room Washer and dryer in each room Two private bathrooms in 4 & 5-person units Kitchens	
Phase II-B: Woodland Glen III to V	University of Kentucky	Student Housing	LEED Silver-designe d	596,100	2-bedroom (private) suites with shared bath 863 and kitchenette	1610	\$101,200,000.00	\$	117,265	\$ 62,857.14	\$ 169.77		
Poly Canyon Village	California Polytechnic State University	Student Housing	LEED Gold	1,405,118	4-bedroom and 5- bedroom	2,670	\$240,000,000	#DIV/0!	\$ 89,887.64	\$ 170.80	The center includes campus housing administration offices, a recreational swimming pool, exterior and interior recreation activity areas, study rooms, a mall		
Campus West	Syracuse University	Student Housing	LEED Gold	171,741	Studio and 1-, 2- and 191 4-bedroom units	312	\$ 29,740,000.00	\$	155,707	\$ 95,320.51	\$ 173.17	Fitness center, study/classrooms, media room, granite countertops, outdoor deck, bed/bath parity	
Multiple Residence Halls(Bee Johnson Hall; Herman & Heddy Kurz Hall;Billy Minardi Hall)	University of Louisville	Student Housing	N/A	450,000	Apartments, suites and 1288 Greek housing	1288	\$ 56,300,000.00	\$	43,711	\$ 43,711.18	\$ 125.11	Interior corridors, swimming pool, sand volleyball court, picnic area, large lobby, exercise facility, computer rooms, classrooms, study rooms,	
University Village	University of North Carolina at Greensboro	Student Housing	N/A	266,400	2-bedroom, 3-bedroom 203 and 4-bedroom	600	\$ 26,250,000.00	\$	129,310	\$ 43,750.00	\$ 98.54	Full-size washer/dryer in each apartment, private bathrooms, ceiling fans, balconies, fitness center, tanning domes, planned social activities, 24/7	
University Park Student Apartments	Salisbury University	Student Housing	N/A	339,090	4-bedroom/2-bath, 2-bedroom/2-bath and 4- 253 bedroom/4-bath units	890	\$ 34,900,000.00	\$	137,945	\$ 39,213.48	\$ 102.92	Private bedrooms, fully furnished living/dining areas, full kitchens, washers/dryers. Clubhouse with management offices, multimedia/exercise	
Evergreen Commons	Lock Haven University	Student Housing	N/A	139,159	4-bedroom/2-bath and 2-bedroom/1-bath units, all private 108 bedrooms	408	\$ 18,000,000.00	\$	166,667	\$ 44,117.65	\$ 129.35	Fully furnished units with washers and dryers, a computer room, study room, social/TV room, an office, common area with kitchen and lounge.	
Honeysuckle Apartments	Bloomsburg University of Pennsylvania	Student Housing	N/A	128,308	4 bedroom/2 bath and 3 bedroom/3 bath 407 units	407	\$ 17,000,000.00	\$	41,769	\$ 41,769.04	\$ 132.49	Fully furnished with a washer and dryer, computer room, study room, social lounge, exercise room, kitchen and sand volleyball court.	
Average Cost										\$ 142.04			

J-1 LUXURY








Project Name	University Name	Land Use	Sustainability	Size(B ²)	Number of Units	Floor Plans	Number of Beds	Construction Cost	Cost Per Unit	Cost Per bed	Cost Per B ²	Features	Detail
ASPEN Heights	For Syracuse University	Student Housing	N/A	300,000	166	1, 2, and 4-bedroom units	490	\$ 39,000,000.00	\$ 234,939.76	\$ 79,591.84	\$ 130.00	Parking garage, tanning bed, 24-hour fitness center, one bathroom per person, game room, dog park, fireplace, limited access gate	
University View Apartment II	For University of Maryland	Student Housing	N/A	231,500	154	Studio, 1-bedroom, 2-bedroom, and 4-bedroom	517	\$ 30,600,000.00	\$ 198,701.30	\$ 59,187.62	\$ 132.18	Amenity space that includes a pool, fitness center, business center, and study rooms. Has shell space for 11,750 square-foot of ground-level retail.	
929 Apartment	For John Hopkins University	Student Housing	LEED Gold	276,000	321	Studio, 1-bedroom, 2-bedroom, and 4-bedroom		\$ 42,900,000.00	\$ 133,644.86	#DIV/0!	\$ 155.43	Contain both furnished and unfurnished units, extensive green roof on the ninth floor, fitness center, club room, conference room, coffee bar	
USC University Gateway	For USC	Mixed-Used	N/A	1,008,200	13 one-bedroom, two-bathroom units, 13 one-bedroom, one-bathroom apartment home.	A single 1-bedroom, 1-bathroom or a 2-bedroom, 2-bathroom apartment home.	829	\$ 141,000,000.00	\$ 334,916.86	\$ 170,084.44	\$ 139.85	8 Story parking building, two stylish study lounges, two courtyards, rooftop terrace, media lounge, 24-hour entertainment lounge, sun and soak deck and fitness center, several on-site food options	
U point Syracuse	For Syracuse University	Student Housing	N/A	78,000	4-Bedroom, 3-bedroom, 2-bedroom		163	\$ 14,000,000.00	#DIV/0!	\$ 85,889.57	\$ 179.49	U Point Syracuse is the newest off campus residence community, high-end housing for juniors and seniors attending Syracuse University. The complex includes a state-of-the-art fitness facility,	
U of C riverside-Glen More 2 Student Housing	University of California, Riverside	Student Housing	LEED Gold	567,000	4-Bedroom, 2-bedroom		800	\$ 109,000,000.00	#DIV/0!	\$ 136,250.00	\$ 192.24	The housing facility has dedicated space for meeting rooms, a computer lab, and a fitness center. Also has resident services office building, a food emporium,	
Centennial Hall	ESF College	Student Housing	LEED Gold	138,000	Double bed suites, 2-room suites, and 4-room		539	\$ 27,000,000.00	#DIV/0!	\$ 50,092.76	\$ 195.65	Common areas include lounges, computer labs, vending, laundry, bicycle storage, student co-op store, and fitness center	
Phase III: University Flats and Lewis Hall	University of Kentucky	Student Housing	LEED Silver-designed	528,554	493	(private) suites with shared bath and kitchenette and mix of graduate apartments	1117	\$ 111,170,000.00	\$ 225,496.96	\$ 99,525.51	\$ 210.33	Kitchens Laundries	
Texas A&M Commerce	Texas A&M University	Student Housing	N/A	136,975	296	1 and 2 person traditional units	490	\$ 30,000,000.00	\$ 101,351.35	\$ 61,224.49	\$ 219.02	Lounges for every 35-person "pod," common lounge at main entrance, robust internet and Wi-Fi access, onsite laundry	
North Avenue Residence Hall	Iona College	Student Housing	N/A	98,000		Suites that house four students in either two doubles or four singles	300	\$ 33,000,000.00	#DIV/0!	\$ 110,000.00	\$ 336.73	Laundry room (each floor) 6 unique lounges on each floor	
East Edge	University of Alabama	Student Housing	Energy Star-rated	392,438	337	Studios (large and small), 1 BR/1BA, 2 BR/2 BA, 3 BR/3 BA, and 4 BR/4 BA	774	\$ 41,350,000.00	\$ 122,700.30	\$ 53,423.77	\$ 105.37	Fully furnished units, private bedrooms/bathrooms, resort-style pool, sand volleyball court, all utilities included in rent, clubhouse, movie theater, fitness center, internet and cable included in Clubhouse All private bathrooms	
The Retreat at Oxford	University of Mississippi	Student Housing	N/A	307,884		2-, 3-, 4- and 5-bedroom units	1018	\$ 37,600,000.00	#DIV/0!	\$ 36,935.17	\$ 122.12	5,000-square-foot clubhouse with collaborative study centers, recreation center (with Wii), surround sound-equipped theater	
University Village Apartments	Syracuse University	Student Housing	LEED Gold	218,390	120	2- and 4-bedroom units with private baths	423	\$ 28,500,000.00	\$ 237,500.00	\$ 67,375.89	\$ 130.50	459 parking spaces, 4- and 5-story buildings, washer and dryer in each unit, wireless internet, computer lab, study lounge	
The Marshall	University of Minnesota	Student Housing	N/A	563,838	315	Studios and 1-, 2-, 3- and 4-bedroom units, all with private baths	901	\$ 86,700,000.00	\$ 275,238.10	\$ 96,226.42	\$ 153.77		

Union on Lincoln Way	Iowa State University	Student Housing	N/A	321,531	Studio, 1-, 2-, 3- and 4- bedroom units all with private baths	537	\$	51,900,000.00	\$	277,540.11	\$	96,648.04	\$	161.42	Parking garage, clubhouse with a gaming lounge, coffee bar, study lounge, saunas, and a fitness center with cardio and strength training equipment, private bedrooms, private bathrooms, fully furnished	
Maplewood Graduate and Professional Apartments	Cornell University	Student Housing	pursue LEED certification	484,388	442 Studio, 1, 2, 3 and 4- bedroom units all with private baths	872	\$	80,000,000.00	\$	180,995.48	\$	91,743.12	\$	165.16	Retail, fitness center, community center and garden, trails and outdoor amenities	
The Local Downtown	Texas State University-San Marcos	Mixed-Used	N/A	125,781	1-, 2- and 4- bedroom units all with private baths	304	\$	29,600,000.00	\$	308,333.33	\$	97,368.42	\$	235.33	Parking garage, river and city views, clubhouse with a gaming lounge, coffee bar, study lounge, saunas, and a fitness center. Private bedrooms with private bathrooms, fully furnished	
Average														\$	174.39	




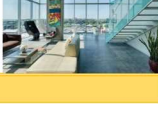
COMMUNITY HOUSING ECONOMY

Project Name	Median Household	Land use	Use Type	Sustainability	Size(ft²)	Number of	Floor Plans	Number of	Construction Cost	Cost Per Unit	Cost Per Bed	Cost Per ft²	Features	Detail
Springwood Overlook	\$ 59,879.00	Affordable Housing	Senior	N/A	51816	84	1-Bedroom (61), 2-bedroom (16)	93	\$ 6,000,000.00	\$ 71,428.57	\$ 64,516.13	\$ 115.79	<ul style="list-style-type: none"> •Air Conditioning •Heating •Smoke Free •Cable Ready •Alarm •Wheelchair Accessible (Rooms) 	
The Heights at State C	\$ 54,040.00	Multi-Family Housing	Mixed-income	N/A	Total square footage of town-homes is 240,000 sq ft Total square footage of apartment buildings is 240,000 sq ft	213	2-bedroom, 3-bedroom	602	\$ 22,000,000.00	\$ 103,286.38	\$ 25,896.41	\$ 64.48	single units, duplexes, triplexes and fourplexes. All homes are 3 story, 3 bed, 3.5 bath, slab-on-grade, wood frame, asphalt shingle, brick/stone veneer, vinyl siding, kitchens & vanities and also includes mechanical, a 400-bed town-home community located close to Slippery Rock University. The community is geared towards young adults and students. Each three-story town-home has a full kitchen, great room, furnished living/dining areas, full kitchens, washers/dryers. Clubhouse with management offices, multimedia/exercise facilities, lounge and dining areas, computer	
The Heights At Slipper	\$ 45,657.00	Student Housing	Off-Campus: open to all neighborhood	N/A	185500	100	4-bedroom	400	\$ 11,500,000.00	\$ 115,000.00	\$ 45,731.71	\$ 61.99		
University Park Student Apartments	\$ 52,099.00	Student Housing	Off-Campus: open to all neighborhood	N/A	339,090	253	4-bedroom/2-bath, 2-bedroom/2-bath and 4-bedroom/4-bath units	890	\$ 34,900,000.00	\$ 137,944.66	\$ 109,195.40	\$ 102.92		
Honeysuckle Apartment	\$ 46,754.00	Student Housing	Off-Campus: open to all neighborhood	N/A	128,308	407	4 bedroom/2 bath and 3 bedroom/3 bath units	407	\$ 17,000,000.00	\$ 41,769.04	\$ 42,928.45	\$ 132.49	Fully furnished with a washer and dryer, computer room, study room, social lounge, exercise room, kitchen, and sand volleyball court.	
Waterloo Heights House	\$ 51,568.00	Affordable Housing	For Residential who needs Special Care	N/A	18730.8	18	Studio, 1-bedroom	18	\$ 781,800.00	\$ 43,433.33	\$ 41,322.31	\$ 41.74		
A Safe Heaven	\$ 45,614.00	Affordable Housing	Veterans	Energy Star Rating and was awarded	68,714	34			\$8,589,250	\$ 252,625.00	#DIV/0!	\$ 125.00		
LV Series Homes	N/A	Single-Family Room		N/A	1453	1	3-bedroom	3	\$ 42,950.00	\$ 42,950.00	#VALUE!	\$ 29.56		
Average Cost												\$ 84.25		

COMMUNITY AVERAGE

Project Name	Median Household Income	Land use	Use Type	Sustainability	Size(ft²)	Number of Units	Floor Plans	Number of Beds	Construction Cost	Cost Per Unit	Cost Per Bed	Cost Per ft²	Features	Detail
210 Hancock Project	\$ 50,290	Mixed-Income(including affordable housing)	Multi-family	LEED standards	63,000 of housing and 6000 sf of commercial	54	1-bedroom and 2-bedroom apartment, 3-bedroom townhouses		\$ 13,000,000.00	\$ 240,741	#DIV/0!	\$ 188.41	New construction of almost 63,000 square feet of housing and 6,000 square feet of commercial space. Included in the residential space are 54	
University Village	\$ 41,670	Student Housing	Off-Campus: open to all neighborhood	N/A	266400	203	2-bedroom/2-bath, 3-bedroom/3-bath and 4-bedroom/4-bath units	600	\$ 26,250,000.00	\$ 129,310	\$ 43,750.00	\$ 98.54	Pool, full-size washer/dryer in each apartment, private bathrooms, ceiling fans, balconies, fitness center, tanning domes;	
Rivermere Apartment	\$ 48,356	Mixed-Income(including affordable housing)	Multi-family	N/A	184491	192	2-bedroom(120) and 3-bedroom(71)	456	\$ 17,000,000.00	\$ 88,542	\$ 37,280.70	\$ 92.15	Site amenities include a pool, clubhouse, community room, playground, resident clothes care center, business center, and fitness center. On-site	
South Oka Crossing A	\$ 43,346	Mixed-Income(including affordable housing)	Multi-family	N/A	193502	192	2-Bedroom(120) and 3-bedroom(71)	456	\$ 19,000,000.00	\$ 98,958	\$ 41,666.67	\$ 98.19	amenities include a media room, swimming pool, gas grills, business center, clubhouse, playground, clothes care center, and state of the art fitness center.	
Meadowcreek Commx	\$ 58,641	Affordable	Senior Housing(adults ages 55+)	LEED Silver standards	54,024	48	1-bedroom and 2-bedroom apartment		\$ 6,391,543.00	\$ 133,157	#DIV/0!	\$ 118.31		
East Edge	\$ 51,365	Student Housing	Off-Campus: open to all neighborhood	N/A	392,438	337	Studios (large and small), 1 BR/1BA, 2 BR/2 BA, 3 BR/3 BA, and 4 BR/4 BA	774	\$ 41,350,000.00	#DIV/0!	\$ 41,322.31	\$ 105.37	Fully furnished units, private bedrooms/bathrooms, resort-style pool, sand volleyball court, all utilities included in rent, clubhouse, movie	
Maplewood Graduate and Professional Apartments	\$ 50,290	Student Housing	Off-Campus	Pursuing LEED certification	484,388	442	Studio, 1, 2, 3 and 4 bedroom	872	\$ 80,000,000.00	#DIV/0!	#DIV/0!	\$ 165.16	Retail, fitness center, community center and garden, trails and outdoor amenities	
Average Cost												\$ 123.73		

COMMUNITY LUXURY

Project Name	Median Household Income	Land use	Use Type	Sustainability	Size (ft ²)	Number of Floors	Number of Units	Construction cost	Cost per unit	Cost per bed	Cost per ft ²	Features	Detail
Checkamus Crossing	\$ 65,757	Mixed-Use	Winter Olympic Game Legacy	LEED N.D. (Neighborhood Development) rating system.	322,998.52	276 bedroom	639	\$ 110,545,209.00	\$ 400,526	\$ 172,997.20	\$ 342.25	Children's play area, High Performance Training facility, athletic fields and park areas, retail and commercial convenience center, abundant recreation within walking distance, transit service	
Sojourn Lake Boone	\$ 58,641	Mixed-Use	Multi-Family	N/A	356,320.8	One-, two-, and three-bedroom apartment homes	283	\$ 68,000,000.00	\$ 240,283	#DIV/0!	\$ 190.84	detached garage spaces, electric car charging station, spacious balcony or terrace, 9-foot ceilings, granite countertops, Energy Star appliances, wood-style flooring.	
The Local Downtown	\$ 36,025	Student Housing	Off-Campus Housing	N/A	125,781	1-, 2- and 4-bedroom units all with private bathrooms	304	\$ 29,600,000.00	\$ 308,333	\$ 97,368.42	\$ 235.33	views, clubhouse with a gaming lounge, coffee bar, study lounge, saunas, and a fitness center with cardio and strength training equipment, private bedrooms	
Park@201	\$ 40,216	Mixed-Use	Residential, Office, retail (ERV)	Energy recovery ventilator	48,000	Condo		\$ 9,600,000.00	#DIV/0!	#DIV/0!	\$ 200.00	Private bathrooms hookups. Access to the building is controlled by an electronic security card access system. Life safety systems in the high-rise building (such as the fire protection systems, egress lighting, and evacuation	
Average Cost											\$ 242.10		

Note: the real Excel spreadsheets may appear different from the screenshots above due to the limited width of the word document.

(2) TERMS

J-1 Housing-Economy: Basic furnished dormitory style room with basic utilities, such as shared laundry room and shared bathroom.

J-1 Housing-Average: Standard furnished rooms with private bathroom or shared bathroom per two person maximum, shared kitchen area, and may have some community basic amenities.

J-1 Housing-Luxury: High-quality furnished rooms with private bathroom or shared bathroom two person maximum, private or shared kitchen area, and upscaled community amenities, such as parking garage, pool & BBQ, coffee, convenience store, etc.

Community Housing-Economy: Apartments or townhouses that are just above minimum floor plan area that contains private bathroom, kitchen, in-room laundry, and surface parking.

Community Housing-Average: Apartments or townhouses that have the basic features that the economy style has, and more community amenities, such as playground and commercial area.

Community Housing-Luxury: (Upscaled) apartments or townhouses that contain high-end or high-tech community amenities and high-end room features.

Project name: the name or title of the building or project.

Location: the place that the building or project exist

Land use: It describes the land use type and it usually referred to zoning

Use type: It describes the purpose of the building

Sustainability: This provides the sustainability of the project or building, which sometimes has LEED or ENERGY STAR recognition.

Gross size (ft²): it provides the Project size with exact number in ft²

Floor plans: this column describes the floor plans that the project has

Number of units: it provides the total number of units that the project contains

Number of beds: is total number of beds count in the project

Construction Cost: Expense incurred by a contractor for labor, material, equipment, financing, services, utilities, etc., plus overheads and contractor's profit. Costs such as that of land, architectural design, consultant and engineer's fee are not construction costs. (<http://www.businessdictionary.com/definition/construction-cost.html>)

Cost per unit: is total construction cost divide by the number of units

Cost per bed: is calculated by divide the construction cost by the number of beds

Cost per ft²: is total construction cost divide by gross size

Amenities: contains both features for the building and community

Detail/picture: standard picture of the project

Reference: is the project's data resource

University Name: The university that the student housing is belong or serves to

Median Household income: It shows the median household income of the township where the project has been conducted, assuming each household has 4 family members.

Furthermore, some projects suit both temporary housing and residential housing, so those are including in both database for those two different type of housing. They are University Village, University Park Student Apartments, East Edge, Honeysuckle Apartments, and Maplewood Graduate and Professional Apartment.

I. OTHER POSSIBLE FUNDING SOURCES FOR SUSTAINABLE BUILDING

Funding Resources:	Agency/Administer	Region	Eligible For	Type	Websites
The Office of Energy Efficiency and Renewable Energy	Department of Energy	National	Green building	Grants, awards, prize	https://www.energy.gov/eere/funding/eere-funding-opportunities
Green Communities	Enterprise	National	Green affordable housing	Grants, financing, tax-credit equity	https://www.enterprisecommunity.org/solutions-and-innovation/green-communities
Building Healthy Communities: the Affordable Housing Built Responsibly Program	The Home Depot Foundation	National	Affordable housing	Grants	https://corporate.homedepot.com/community/home-depot-foundation-grants
Bollman Award	Funder's Network	National	Green building	Award	https://www.fundersnetwork.org/about-funders-network/nicholas-p-bollman-award/
Rural Housing and Economic Development	U.S. Department of Housing and Urban Development	National	Projects that improve the availability of quality housing in rural areas	Grants	https://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/HomePerformanceGrantOpportunities.pdf
Community Development Block Grants -- State Administered Grants	U.S. Department of Housing and Urban Development	National	Building for Low-to moderate-income	Grants	https://www.energystar.gov/ia/partners/bldrs_lenders_raters/downloads/HomePerformanceGrantOpportunities.pdf
Energy Conservation Improvements Property Tax Exemption	New York State Office of Real Property Tax Services	NY	Qualifying energy-conservation improvements to homes	Tax exemption	http://programs.dsireusa.org/system/program/detail/1596
Qualified Energy Conservation Bonds	U.S. Internal Revenue Service	Federal	Green building	Loan	http://programs.dsireusa.org/system/program/detail/3098
NY Green Bank	NYSERDA	NY	Green building	Other incentive	https://greenbank.ny.gov/
Clean Energy Fund	NYSERDA	NY	Green building	Public benefits fund	http://www.nysenda.ny.gov/About/Clean-Energy-Fund

NY-Sun Loan Program	Systems Benefit Charge, REGGI	NY	Installing solar PV systems	Loan	http://ny-sun.ny.gov/Get-Solar/NY-Sun-Financing.aspx
Fannie Mae Green Initiative- Loan Program	Fannie Mae	Federal	Sustainable property improvements for apartment buildings	Loan	http://programs.dsireusa.org/system/program/detail/5780
Clean Renewable Energy Bonds	U.S. Internal Revenue Service	Federal	Green building	Loan	http://programs.dsireusa.org/system/program/detail/2510
Real Property Tax Exemption for Green Buildings	Administered locally	NY	Green building	Tax exemption	http://programs.dsireusa.org/system/program/detail/5249
Solar, Wind & Biomass Energy Systems Exemption	New York State Real Property Tax Law	NY	Solar, wind energy, and farm-waste energy systems	Tax exemption	http://programs.dsireusa.org/system/program/detail/192
Municipal Sustainable Energy Programs	Programs administered locally	NY	Energy Improvement	PACE financing	http://programs.dsireusa.org/system/program/detail/3765
Solar Sales Tax Exemption	N/A	NY	Solar-energy system, installation	Tax exemption	http://programs.dsireusa.org/system/program/detail/4857
Advanced Sub-Metering Program	New York State Energy Research and Development Authority	NY	Installing advanced sub-meters for master-metered multifamily buildings.	Rebate program	http://programs.dsireusa.org/system/program/detail/5660
System Benefits Charge	NYSERDA	NY	Funds programs to improve state's transmission and distribution infrastructure.	Public benefits fund	http://programs.dsireusa.org/system/program/detail/699

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