Buffalo Niagara Medical Campus

MASTER PLAN UPDATE

A Scoping Document for the Future

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December 1, 2010

2010 BNMC Board of Directors and Member Institutions

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Document Intention

This 2010 BNMC Master Plan Update revisits broad strategies that were laid out in the first BNMC Master Plan in 2003. It includes a review of individual institutional plans, summarizes campus growth expectations and establishes a planning framework to accommodate that growth into the future.

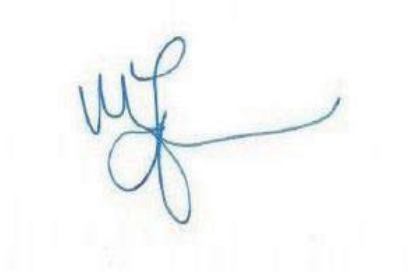
The document also outlines important next steps that are necessary to enable the vision for an Academic Health Center to become a reality and provides recommendations for cooperative planning initiatives in the years ahead.

Letter from the Chairman of the Board

As many Western New York residents now realize, the Buffalo Niagara Medical Campus is a rapidly burgeoning consortium of premier health care, life sciences, medical education institutions and community interests located downtown. The campus to date has undergone dramatic growth both in terms of downtown employment (now at 8,500) and infrastructure additions (more than $1 billion over the last nine years), including the in-progress Kaleida/UB Global Vascular Institute and Clinical and Translational Research Center. It is clearly one of the most tangible expressions of successful economic development in our region that is also directly responsive to the evolving health needs of our citizenry.

As much has been accomplished, however, this is only a starting point for what can truly be transformational for Western New York's economy and its health sciences advancements. The long term vision of UB2020 has the relocation of its Medical School, Nursing School, School of Public Health, and Schools of Dentistry and Pharmacy to the downtown campus. Combined with existing institutions, Buffalo would have all the components of an Academic Health Center of national stature. It will absolutely turbo-charge the potential for economic growth, scientific advancement, wellness outcome improvements, entrepreneurial spin-offs, urban revitalization and civic pride. Well-paid employment on the campus will increase to 13,000-plus. Ten thousand students will circulate throughout. New construction will be worth more than $1 billion. Start-up and existing biotech companies will be increasingly anxious to locate in proximity. Service businesses will be needed in support. This is not pie-in-the-sky optimism - it's real, it's doable, and it is an opportunity we must manage effectively.

This update of the 2003 BNMC Master Plan implicitly recognizes the dramatic growth of the campus far exceeding initial expectations. It reflects the need to revise assumptions, process and aspirations. As a result, it is not cast in stone. We appropriately anticipate adaptations "on the fly" and new iterations as we progress. However, the revision exercise itself helps the campus interests to coordinate and collaborate for mutual and community benefit. That has been our guiding objective from the start and it has served us well.



William L. Joyce
Chairman of the Board
Buffalo Niagara Medical Campus

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I. EXECUTIVE SUMMARY

Overview

The Buffalo Niagara Medical Campus (BNMC) was established to capitalize upon and foster further development of the biomedical research, education, business and clinical organizations that are co-located on its downtown campus. The original founders of the BNMC recognized that a critical mass of prestigious institutions in those fields already existed, and that nurturing their coordination would provide the basis of an exceptional Academic Health Center to promote wellness and economic development for the Buffalo Niagara Region.

Shortly after formation, the BNMC created its first Master Plan (2003) that proposed a framework for growth for the future. The plan reflected an understanding that the BNMC needed to create a physical environment commensurate with its health care ambitions and one that was on par with other established and successful centers nationwide.

This 2010 BNMC Master Plan Update to the original 2003 Master Plan is evidence of the speed at which those plans and aspirations are evolving.

This update anticipates the medical campus will grow by 1.4 million square feet in the next five years and illustrates how it can potentially accommodate up to 5.3 million additional square feet in the next 20 years as the vision of a comprehensive Community Engaged Academic Health Center downtown is realized.

2003 Master Plan

The medical campus is on track to exceed even the most aggressive initial growth expectations from when the BNMC was first formed. The 2003 BNMC Master Plan anticipated approximately 2.9 million square feet of new development over a 20-year horizon, yet the campus will reach that goal in much less time. By 2013, over 2.3 million square feet of new construction and renovated space will have taken place since the campus first emerged.

Urban medical campuses often buy additional land on the periphery as it becomes available. However, this growth paradigm often results in a deterioration of the surrounding neighborhood if not done with strong consideration of the demographic and physical characteristics and needs of the community. **Serving as a catalyst for the revitalization of adjoining neighborhoods, not simply remaining defensive against them, is important for the future of the BNMC**.

There are many ambitious projects on the horizon as more and more medical, research and educational partners are seeking to coalesce around the medical campus and as the University at Buffalo substantially grows its Downtown Campus. Great plans are taking shape and being executed. More collaborative models and partnerships are emerging. **There have been significant physical, organizational and financial successes, and there exists a strong belief among campus partners that the BNMC is only at the beginnings of what can be accomplished.**

2010 Master Plan Update

The 2010 Update builds off the original Chan Krieger Master Plan. While the north-south oriented "Ellicott Park" offers an opportunity to create a collective campus identity, new growth on the BNMC will also be absorbed along east-west streets that will maintain a continuity of campus infrastructure while respecting member institutions' identities.

The connectivity concept of the 2003 plan that established a "sense of place" along Ellicott Street must now advance with equal emphasis on several cross streets - such as Goodell, High, Carlton and Virginia - to reinforce individual institutional growth and identity.

Site studies show that there is capacity on the 120 acre campus to accommodate the vast majority of this growth. An inventory of properties within the current campus boundary indicates that much of that growth can be met without significant land acquisition if the BNMC proceeds wisely, enhancing community partnerships and maximizing development potential on underutilized sites. **Still, in order for the campus as a whole to accommodate the anticipated development program, density in its core will be one key to its success.**

A renewed emphasis on underutilized sites with greater densification is part of the answer, but carefully working with adjacent landowners to open up new opportunities is critical as well. **An emphasis on joint development projects that cluster facilities in order to absorb growth and enable long term partnerships is also imperative.**

The future environment of the BNMC will be one of exceptional scientific, clinical, educational and entrepreneurial venues, but also a welcoming place to walk, bike, shop, eat and live. These attributes will attract and retain the knowledge-based employees of tomorrow.

Economic development activity in Western New York indicates four primary drivers of the region's economy: entrepreneurship, research, academic and health care institutions. **The BNMC lies at the convergence of these economic catalysts and is therefore integral to the Buffalo-Niagara region's future**.

Much has been accomplished on the BNMC in the last seven years. However, the future is even brighter as it solidifies its place as a Community Engaged Academic Health Center of national stature. With nearly $1.5 billion in economic impact and 1 million annual patient visits, the campus is already a major growth engine for the region.

Poised to add nearly 7 million square feet of development over the next two decades and beyond, the need to accommodate that growth and plan collectively is imperative.

Therefore, the Master Plan Update recommends "Ten Collaborative Opportunities for Moving Forward" (listed on the next page) that will help the Buffalo Niagara Medical Campus meet the challenges and opportunities of the next decade and beyond.

These topics were identified in Strategic Forums that centered on the creation of an Academic Health Center and were established in dialogue with the Master Planning Subcommittee and Project Management Group.

In order for the BNMC to adequately absorb anticipated growth, density in its core along with constant collaboration, coordination and communication will be the keys to success.

BNMC THEN AND NOW

	2003	2010
SIZE	72 ACRES	120 ACRES
NUMBER OF INSTITUTIONS	5	9
NUMBER OF EMPLOYEES	7,000	8,500
ANNUAL PATIENT VISITS	900,000	+1,000,000

GROWTH EXPECTATIONS AND CAMPUS CAPACITY

	2010	2015	2030
	CURRENT SIZE	NEAR TERM PROJECTS	ACADEMIC HEALTH CENTER
CAMPUS SIZE (sf)	3.4 million	4.8 million by 2015	+/- 10 million
STRUCTURED PARKING (sf)	861,000 (1560 + 900 existing cars)	560,000 (1600 new cars)	1,421,000 (3200 new cars)
ANTICIPATED BUILDOUT (sf)	1.4 million (permitted or under construction)	5.3 million (projected)	

Above: The BNMC is on track to exceed even the most aggressive growth expectations set forth in 2003. With a five year buildout of 1.4 million square feet, the campus in 2015 will have over 4.8 million square feet (3.4 million in 2010 plus 1.4 million permitted or under construction and to be completed by 2015). See page 14 for the five year development program).

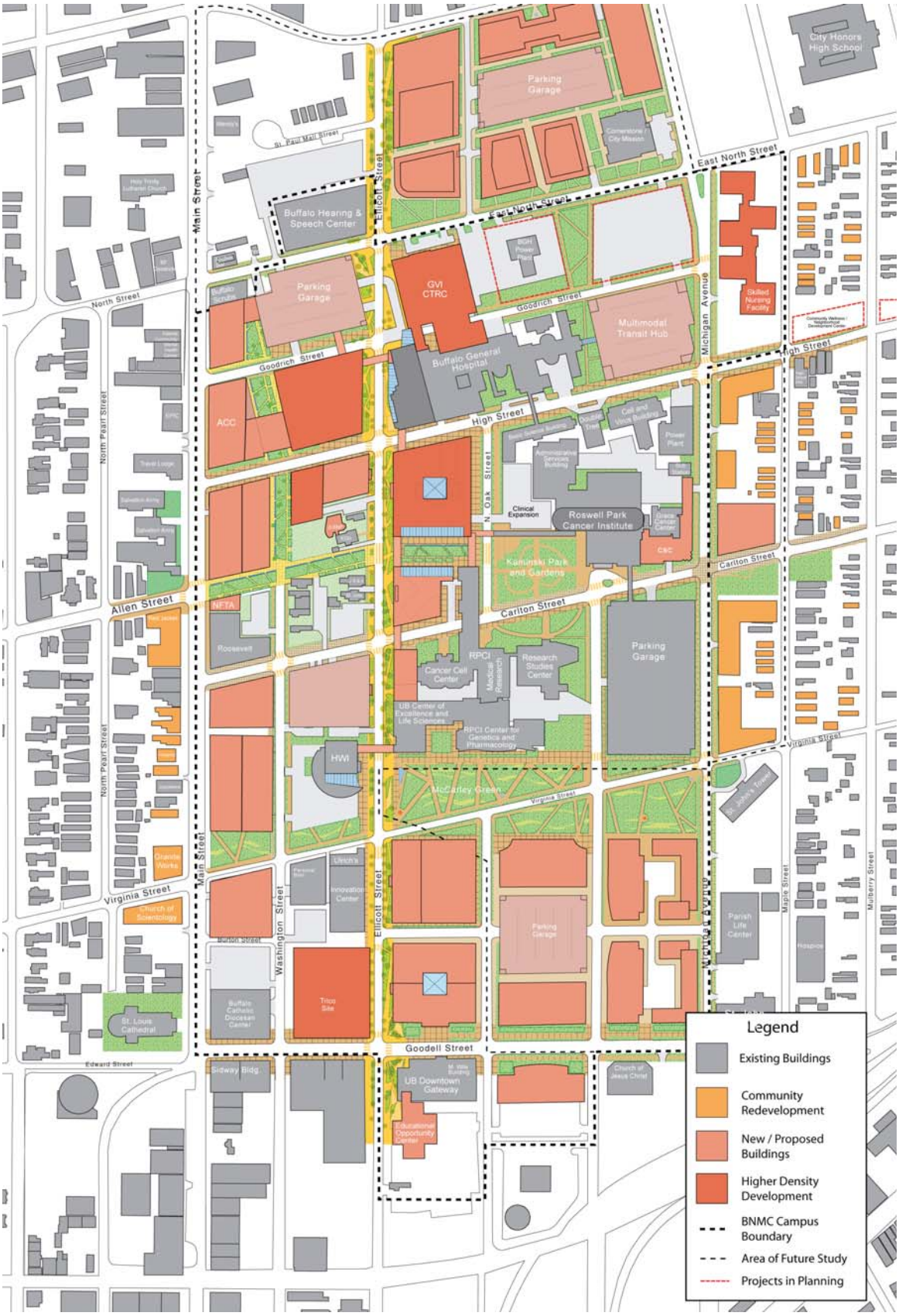
Ten Collaborative Opportunities for Moving Forward

1. Facilitate more comprehensive programmatic discussions with doctors, educators, researchers, administrators and staff in order to aid in the development of a **strategic plan** that will move the master plan forward.
2. Implement the **parking and transportation system** for the future – one that will support a widespread, diverse, and growing campus population.
3. Brand the BNMC as a world-class Community Engaged Academic Health Center and a desirable neighborhood, including through an enhanced **signage and wayfinding plan.**
4. Create a campus-wide **Generic Environmental Impact Statement** (GEIS) in order to facilitate future campus development and assess the environmental, social, and economic impacts of growth.
5. Work closely with citywide rezoning "Green Code" planning efforts to define and implement a **form-based zoning code** on the medical campus, giving the institutions greater ability to appropriately shape the physical character of the campus environment.
6. Continue to engage existing public safety and law enforcement agencies in the creation of a **collaborative safety and security plan**.
7. Develop a **comprehensive retail strategy** that will provide the appropriate retail amenities to service a growing population of employees, patients, visitors, and students while supporting a healthy balance between on-campus and neighborhood retail providers.
8. Examine the many opportunities for improving energy costs and efficiencies through the development of **campus utility plans**.
9. Work within the existing organizational structure (i.e. Project Management Groups and Work Councils) to create a series of **functional groups** containing subject matter experts to focus on various campus initiatives as they arise.
10. Advance **mechanisms for resolving differences** that adhere to an agreed upon set of Guiding Principles for campus development.

These items are elaborated upon in Section VIII: Implementation Plan

Above: The Buffalo Niagara Medical Campus in downtown Buffalo is situated between the neighborhoods of Allentown to the west and the Fruit Belt to the east. The campus boundary has grown from 72 acres to 120 acres since 2003. View looking northwest. (Image courtesy of Ciminelli Development).

Above: The 2003 Plan suggested a framework for campus expansion that concentrated institutional growth along Ellicott Street. This north-south axis assembled the largest concentration of underutilized properties along a single alignment and sought to alleviate institutional pressures on the surrounding neighborhoods.



Above: The 2010 BNMC Master Plan Update builds on the 2003 Ellicott spine by emphasizing perpendicular streets that can complement Ellicott Park. Growth on the medical campus will likely double in the next decade with over 1.4 million new square feet of construction in the next five years alone and another 5.3 million square feet from 2015-2030.

II. PURPOSE AND NEED

Why an Update Now?

As the BNMC blossoms into an Academic Health Center, the many changes to its physical, organizational and financial make-up since its founding warrants a review of the first BNMC Master Plan. New opportunities and challenges are emerging that were not as evident in the past. As such, the need to identify and seek solutions for these challenges is greater than ever before. Therefore, the BNMC Master Plan Update intends to address the following themes:

COMMUNICATION & COLLABORATION

Much has been done to facilitate communication between the institutions when it comes to collaborative efforts. Enhanced dialogue surrounding development can better prepare for opportunities that emerge from collaboration and guard against unexpected consequences that result from solitary decisions. Scenarios such as this are most evident when viewed in the context of specific development sites that hold the greatest potential for collaborative endeavors.

An increase in density and proximity encourages collaboration. **As the campus seeks to create a more robust core of research, education and clinical care centers, the possibilities of combining uses together become heightened and new hybrid models may emerge from that synergy and adjacency**.

PROJECT TIMING

As the campus grows, challenges surrounding project timing increase. Individual developments that need to move forward are often not easily reconciled with the realities of incremental funding streams. For instance, one institution cannot wait to proceed while another cannot commit to joining in the partnership in light of financing cycles. Impasses such as these must be identified early on and avoided.

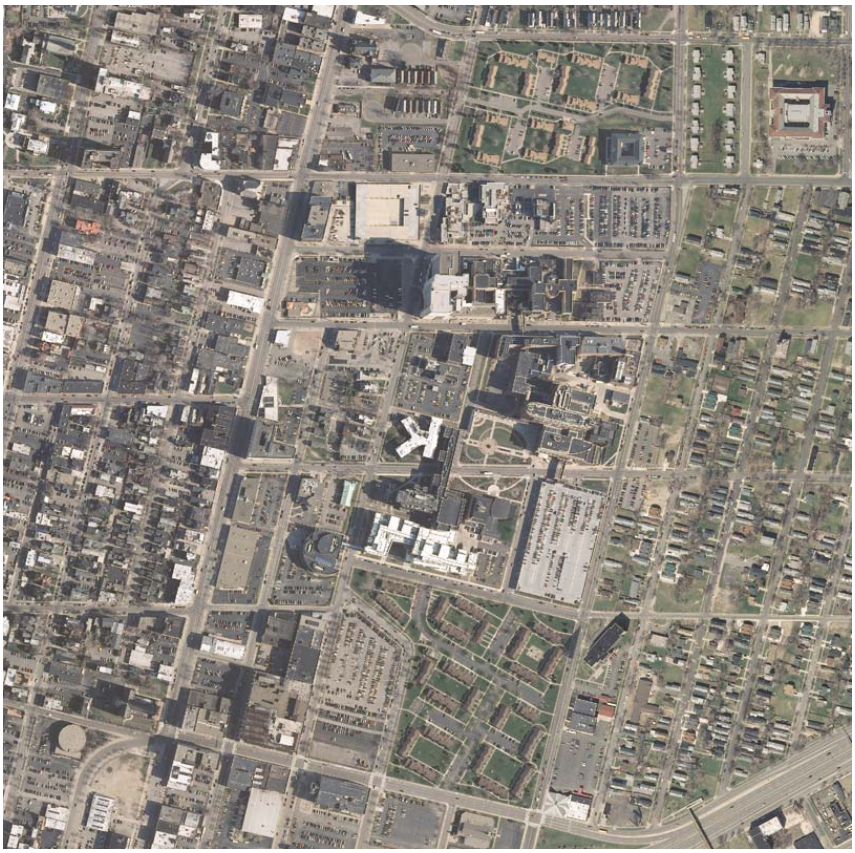
TRANSPORTATION, PARKING and PUBLIC SAFETY

Increasingly, parking availability and traffic congestion are problematic for patients, visitors, staff and the adjacent neighborhoods. A transportation system that supports the evolving short and long term needs of an Academic Health Center is emerging but still incomplete.

A new parking structure, integrated shuttle system, satellite parking facilities and more interaction with the Niagara Frontier Transportation Authority (NFTA) to increase transit ridership is helping with demand.

Nevertheless, within the next few years, there will be a net deficit of nearly 3,000 spaces with demand from new development and the displacement of surface parking. Innovative solutions must be sought that address the unique needs and policies of each institution while developing a comprehensive transportation plan for the whole campus.

Enhanced campus safety and security is necessary as the campus grows. A charge from the BNMC Board of Directors is to ensure that a collaborative effort is implemented that provides enhanced service, protection and infrastructure for the entire community.



Above: Aerial view of the BNMC (2008).

CAMPUS DYNAMICS

Some leadership turnover within the organization has naturally occurred since the BNMC was first formed. This update, therefore, serves as a reminder of the principles that were set forth in the beginning and - for the newest members of the organization - an introduction to the physical plan.

Advancing the exciting vision of a comprehensive Community Engaged Academic Health Center on the BNMC will alter the campus configuration and establish a new trajectory for health care, education, research and entrepreneurship in the region. New clinical care facilities, academic and research buildings, staff and student housing, incubator spaces and a broad spectrum of campus life facilities will be necessary to support the AHC effort. These developments are most effective when their growth implications can be studied with a holistic view of the entire area.

PROGRAMMATIC SYNERGIES

Detailed discussions need to occur around specific program synergies that include physicians, educators, administrators, researchers and business leaders. This document is intended to be a springboard for those discussions. Enhanced dialogue about the interpretation of an Academic Health Center and an individual institution's role within it will enable opportunities to emerge.

MULTIPLE PLANNING INITIATIVES

In 2006, BNMC Inc. initiated an integrated planning effort entitled "Four Neighborhoods, One Community." **This initiative was based on the premise that as the campus grows so too should the adjoining neighborhoods and recognizes the imperative that they be planned together.**

The BNMC Master Plan Update began in sequence with the neighborhood planning strategies and incorporates the Allentown and Fruit Belt Implementation Plans (by Sasaki/ Madden Planning Group). It reflects the recent work by the University at Buffalo and their team of consultants (led by Beyer Blinder Belle) and recent Kaleida Health and Roswell Park initiatives. The document also includes the current plans for Ellicott Park (led by nArchitects) and integrates the Comprehensive Transportation, Traffic and Parking Plan for the BNMC (Howard/Stein-Hudson Associates). In this way, the Master Plan Update seeks to assemble and reconcile the individual plans.

ANALYSIS + SYNTHESIS

If individual initiatives are planned in isolation or if developments do not fully maximize their use of property, future construction is likely to overwhelm the surrounding context and undermine the true potential of the AHC. Analyzing opportunities for shared programs and services and seeking synthetic development projects will increase the potential of the medical campus and make available critical funding streams that support such collaborative endeavors.

The BNMC will grow by a minimum of 1,400,000 sf in the next five years and will likely grow another 5,300,000 sf when the vision of a comprehensive Academic Health Center downtown is realized. In each case, this growth will mean a substantial change in the physical, financial and organizational composition of the BNMC, areas where the campus has already experienced a great deal of change.

Poised to add up to 1.4 million square feet of development over the next five years, the need to plan collectively is more important than ever.

Recent Accomplishments:

PHYSICAL

Since the completion of the 2003 Master Plan, significant physical change has occurred both on and off the medical campus. On the BNMC, the Life Science Complex (a collaboration involving RPCI, UB and HWI) was completed in 2005 and changed the way that the institutions viewed the future of the campus.

Today, a new physical model for inter-institutional collaboration is under construction. The Kaleida Health Global Vascular Institute (GVI) and University at Buffalo (UB) Clinical and Translational Research Center and Biosciences Incubator will add over 500,000 square feet of new development to the north of Buffalo General Hospital's A Tower.

A Skilled Nursing Facility for Kaleida Health has broken ground and a new Multi-Modal Transportation Facility will be under construction soon. Plans for an Ambulatory Care Center continue to evolve along Main Street. These four developments were permitted together under the 2009

BNMC "North End Projects" and represent the next phase of campus evolution and a concentration of construction activity north of High Street.

Demolitions of dilapidated or underutilized buildings since 2003 have opened up new possibilities which were not possible in the past. In addition, two former industrial buildings have been rehabilitated into the UB Gateway and the BNMC Innovation Center that have brought new programs and users to the south end of the medical campus.

Off campus, infill construction by St. John Baptist Church marks the first stage of larger redevelopment initiatives to the east. To the west, rehabilitation of historic commercial properties is attracting mixed-use activity (e.g. Granite Works lofts and retail) along the city's Main Street and beginning to revitalize a corridor that has languished from disinvestment.

In addition to growing in physical size over the last seven years, the medical campus has matured in its financial and organizational capacity.

FINANCIAL

The medical campus has attracted infrastructure funding to lay the groundwork for growth. Attained by federal, state and local sources, the money is being used to drastically enhance the infrastructure of the campus and public realm.

The funding has enabled the BNMC to complete the design and prepare for construction of Ellicott Park, the primary open space corridor through the campus. The park was made possible by two grants from the Federal Government ($2.3 million and $3.2 million) with matching state and city funds. Over $6 million has also been dedicated to the Allen Street extension that will foster greater connectivity with the adjoining neighborhoods.

In the last few years, BNMC Inc. has itself become a property owner that allows the organization to facilitate campus development for mission-based purposes and to act in the best interests of its member institutions.

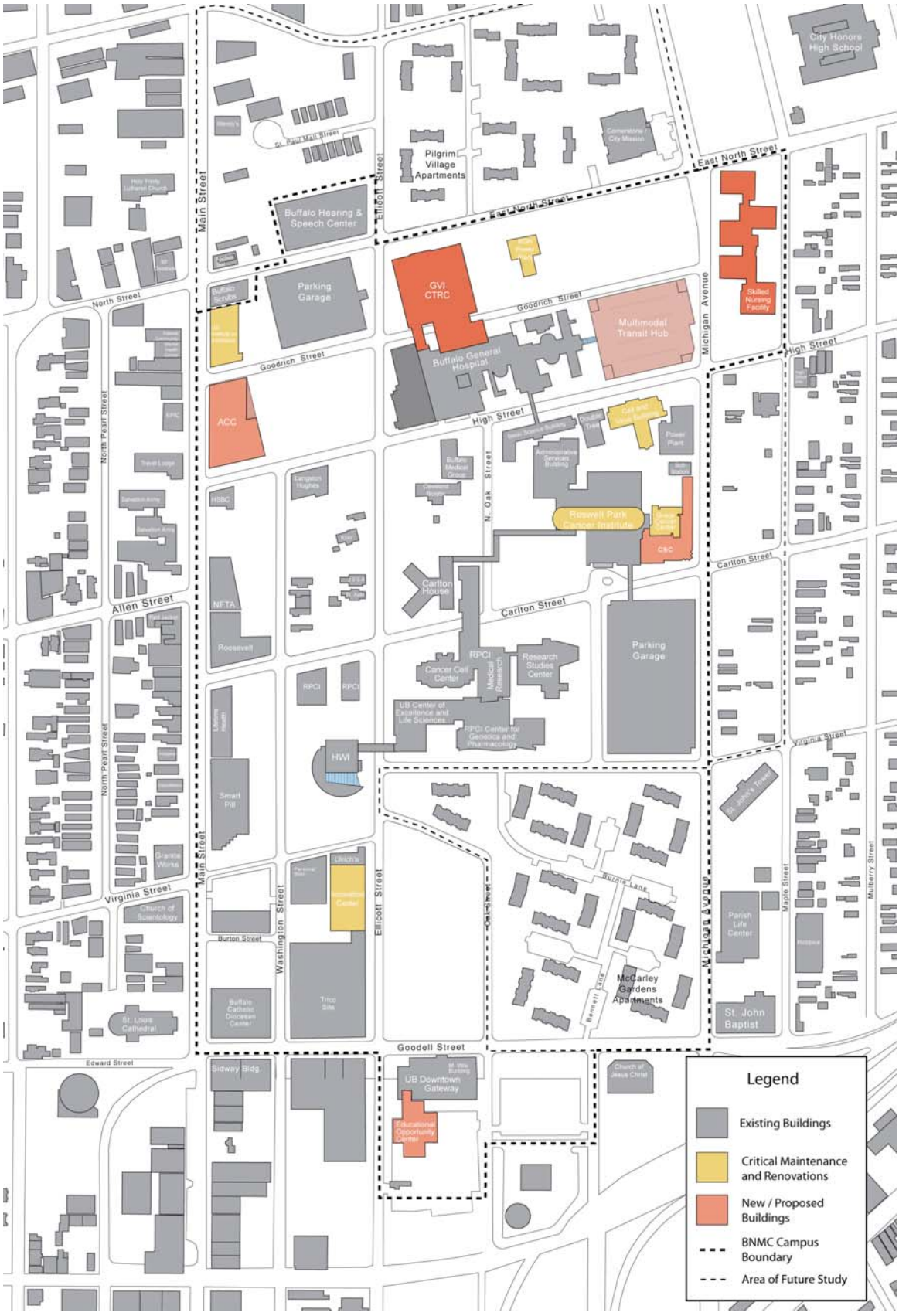
Finally, substandard infrastructure conditions in the Fruit Belt and the frustration it raised with residents resulted in a $1.6 million grant to the City of Buffalo from Congress in 2007. The money is being spent towards new street paving, sidewalks, curbs, lighting and utility improvements.

ORGANIZATIONAL

While significant physical and financial changes have taken place on the BNMC, the organizational structure and capacity has matured. **In the last seven years, the number of medical-related institutions as part of the BNMC has grown from five to nine.**

The addition of the Buffalo Hearing and Speech Center, the Center for Hospice & Palliative Care, the Olmsted Center for Sight and Upstate New York Transplant Services means greater breadth of knowledge and expertise to the campus as well as a stronger collective voice.

Above: Four outdated facilities have been demolished on the campus that have enabled new construction to occur or development parcels to be created. Renovations of other former industrial buildings (640 Ellicott Street into the Innovation Center and the University's rehabilitation of the former M Wile building) are preserving parts of the city's history.



Above: New construction and building renovation projects on the 120 acre Buffalo Niagara Medical Campus. The next five years will see four new buildings emerge in addition to many building renovations.

Project Management Groups have been established with key stakeholders and experts on the medical campus assigned to work with BNMC staff on the management and implementation of projects in the areas of Planning and Infrastructure, Public Safety, Branding, Transportation and Parking.

These efforts are complemented by Work Councils that foster stronger relationships with member institutions, nearby businesses, representatives of the surrounding community and city departments. Thus far, the Groups and Councils have been successful in enhancing communications and aligning initiatives with the broader community. Staff resources dedicated to operations on the BNMC has grown two-fold, due to both the modest growth of BNMC, Inc. as an organization and the collaborative efforts of its member institutions.

BNMC staff is working closer than ever with staff members from the institutions, some of whom have been assigned to co-chair campus-wide initiatives with BNMC staff (e.g. transportation, public safety and retail planning). **Despite a larger number of individuals now involved in campus planning and implementation, communication continues to improve.**

Additional board-level Committees on Master Planning, Operations & Coordination, Finance & Personnel, Governance and Audit & Compliance are held by heads of the respective member institutions. Recently, the Board of Directors adopted full by-laws in order to better define member roles and responsibilities.

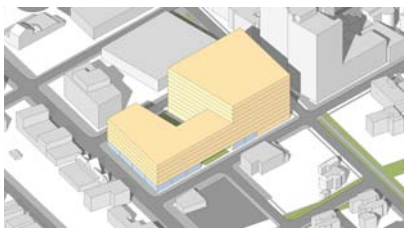
Bracing for the Next Wave of Construction

THE NORTH END DEVELOPMENT

The Buffalo Life Sciences Complex established an initial model for physical adjacency in 2003 with three BNMC institutions situated next to one another. New interdisciplinary and inter-institutional models like the Kaleida Health Global Vascular Institute/University at Buffalo Clinical and Translational Research Center and Biosciences Incubator need to continue to emerge. The project demonstrates the value and efficiencies of effective collaboration.

This 500,000 square foot facility is just one of four new developments that will be constructed on the BNMC in the next few years. Together with Kaleida Health's Skilled Nursing Facility, a Medical Office Building and a Multimodal Transportation Facility, the campus will continue to experience growing challenges for a long while to come. **This update intends to provide a framework for dealing with the challenges that arise with future waves of expansion**.

New interdisciplinary and inter-institutional models are emerging that demonstrate the value and efficiencies of effective collaboration.



Right (top to bottom): The North End Development Project: GVI-UB CTRC/ Biosciences Incubator and Kaleida Health's Skilled Nursing Facility currently under construction (Images courtesy of Cannon Design). Conceptual rendering of the Mixed Use Development at 50 High Street that includes clinical programs and a Medical Office Building and the Multi-Modal Transportation Facility.

III. THE VISION

Becoming a Leading Academic Health Center

The long-range vision for the campus is to become a world-class Community Engaged Academic Health Center (AHC), where clinical care, medical education, health sciences research, practical applications and entrepreneurship are combined into one physical setting.

What is an AHC?

There are more than 100 Academic Health Centers nationally. According to the Association of Academic Health Centers, *"An academic health center consists of an allopathic or osteopathic medical school, one or more other health profession schools or programs (such as allied health, dentistry, graduate studies, nursing, pharmacy, public health, veterinary medicine), and one or more owned or affiliated teaching hospitals, health systems or other organized health care services."*

BACKGROUND

A series of Strategic Forums in 2008 and 2009 amongst representatives of the various BNMC institutions helped to clarify individual initiatives, define a collective vision for an AHC and to identify potential areas of collaboration.

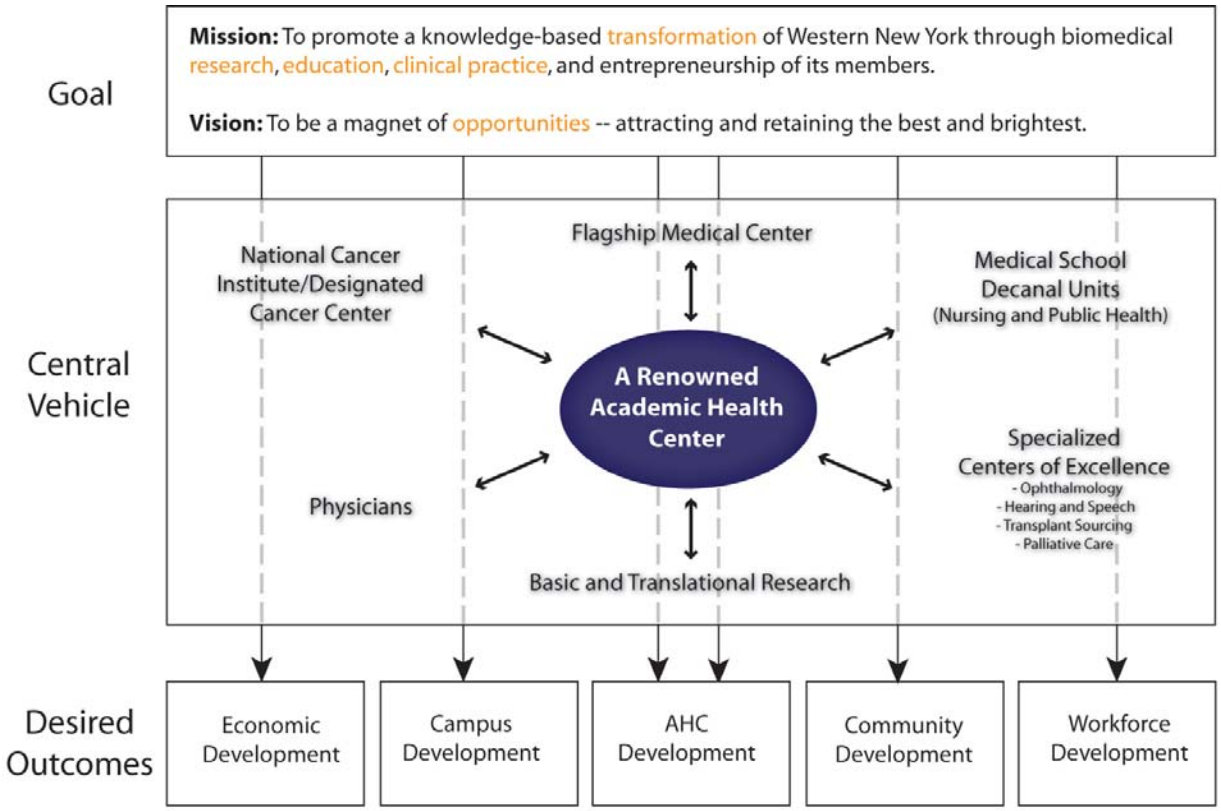
Another objective of the Forums was to seek agreement on short and long-term campus objectives and chart a course for the future. **There was strong consensus that the pursuit of the AHC vision should be a central focus and priority for the entire campus and that the long term benefits of this collaboration would be worth the significant investment in time, energy and resources.**

While one of the foremost goals in the near term for the BNMC is to focus on the implementation of current initiatives and to see through the construction of the North End Projects, the collective focus remains on the long term vision of an AHC.

ENHANCED RELATIONSHIPS

Initial seeds of an Academic Health Center are already in place, yet they lack the proximity and concentration necessary for effective collaboration. A full-fledged AHC on the Buffalo Niagara Medical Campus represents an enormous potential to enhance relationships amongst the institutions. As an organizing mechanism, it has the potential to become the glue that ties partnerships together, requiring the definition and refinement of both priorities and resources for all its members.

In light of the fact that an AHC embraces the coordinated potential of its members, constant dialogue is needed. An Academic Health Center expands the definition, ambitions



Above: Diagram structure for an Academic Health Center. (Image courtesy of BNMC Inc. and adapted from University at Buffalo).

BNMC MISSION

To promote a knowledge-based transformation of Western New York through the bio-medical research, education, clinical practice and entrepreneurship of its member institutions.

BNMC VISION

To be a magnet of opportunities – attracting and retaining the best and the brightest.

PRINCIPLES

We will respect the individual mission and identity of our members and associated organizations.

We will pursue preeminence in all endeavors related to our mission.

We will communicate and coordinate effectively.

We will support regional development beyond our campus boundaries, reflecting our member's total composition and initiatives.

We will engage our surrounding neighborhoods to enhance diversity, inclusion and community revitalization.

We will create an environment that will seek cooperative collaborations and community solutions.

We will be leaders in sustainability.

We will ensure a clean, safe, friendly and healthy environment.

Above: Mission, Vision and Principles developed by the BNMC Board of Directors (2009).

and possibilities of what the BNMC's mission is and what it can ultimately become.

DESIRED OUTCOMES

At its most fundamental level, an AHC will more closely align research, education and patient care. It requires inter-institutional planning in a multi-disciplinary fashion that enables more sophisticated research initiatives to occur, resulting in better education and ultimately improved clinical delivery of care.

Greater funding sources will be made available to the institutions as they coalesce around a more comprehensive organizational structure. Improved teaching and research will accelerate biotechnology transfer and translate directly into economic growth. New linkages will be fostered between academia and all economic sectors.

The desired outcomes for an AHC will extend beyond the campus boundaries and into the surrounding neighborhoods. Economic development opportunities for the neighborhoods will be enhanced as the campus seeks to develop a physical environment that is safe, convenient, accessible, aesthetically pleasing and exciting.

In addition, a Community Engaged AHC will enable the creation of a comprehensive and collaborative workforce development strategy that will match the needs of the neighborhood's employers with the skills of its residents through education, training and strategic placement opportunities.

CHALLENGES

Even in the midst of the current economic downturn, health care and education are two of the fastest growing sectors in the nation. The consolidation of health care in Western New York has placed additional pressure on the BNMC to sustain growth, absorb facilities from other locations and advance cutting-edge research and services.

The City of Buffalo is fortunate to have these economic drivers and major employment centers in such close proximity to one another.

However, there are existing facilities on the medical campus which are inadequate for its ambitions. Many properties warrant greater density and are in need of redevelopment; numerous sites are underutilized. Stronger integration of clinical care, education, research and business is needed and building in ways that leverage proximity similar to the vertical model of GVI/CTRC. The timing and funding of such collaborations increases the complexity of the development plan.

Finally, the campus will need to overcome the lingering (though misguided) perceptions about the safety of its downtown location. The BNMC needs to aggressively brand itself as a true "neighborhood", complete with the type of amenities and events that attract people to the area beyond the medical workshifts.

BNMC member institutions have acknowledged these challenges and are interested in working together to develop the facilities and amenities that will match the development of the AHC brand.

A WHOLE BIGGER THAN THE SUM OF ITS PARTS

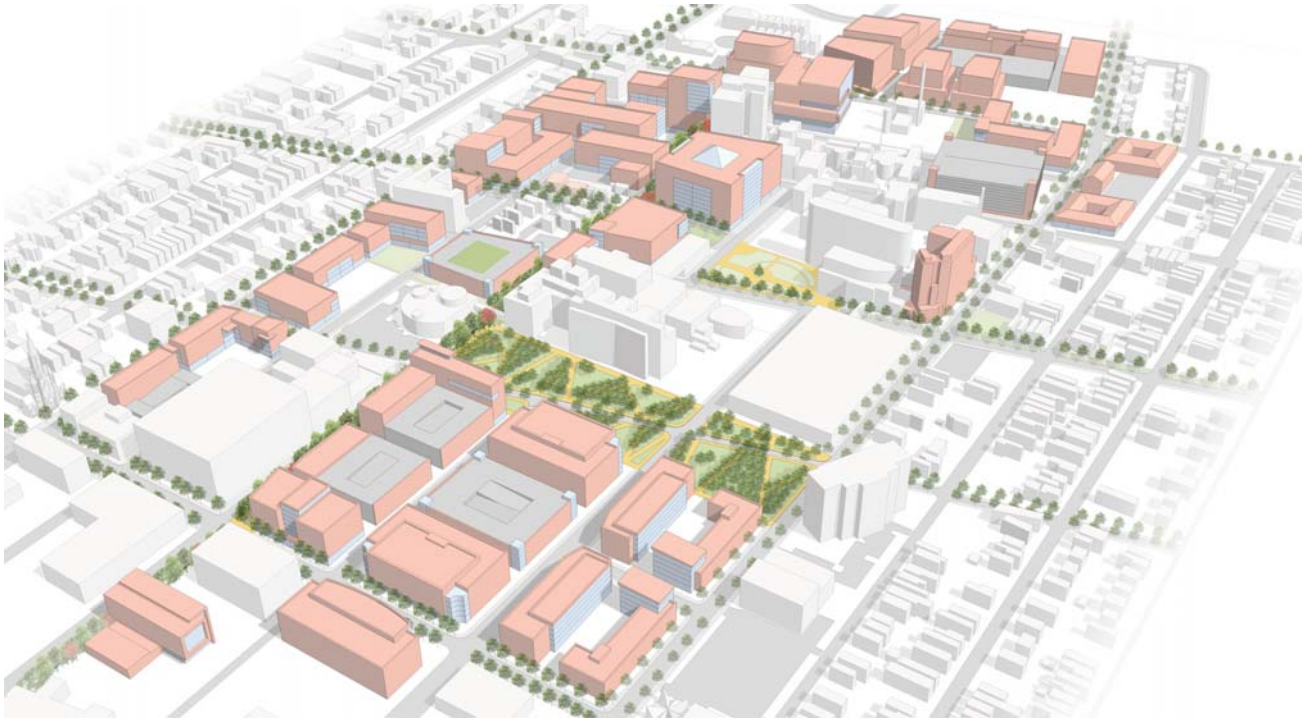
How will all the growth associated with an Academic Health Center come to the ground on the BNMC and what is the wider vision for the campus in the future?

Each of three largest BNMC institutions have developed facility or master plans for their respective properties. Kaleida Health, Roswell Park and the University at Buffalo are constantly evaluating their physical plant and responding to space pressures to enhance their missions, as are the other BNMC partners.

An objective of the BNMC Master Plan Update is to tally individual institution plans in order to understand where their differences lie and what potential there is for integration. The next section describes the growth expectations of member institutions and what happens when it gets aggregated toward the development of a single campus environment.

In order for the BNMC to fulfill its ambitions of becoming a nationally recognized AHC, the University at Buffalo's five health science schools will need to be near the region's leading tertiary care hospital and medical research concentrations. UB's Schools of Medicine, Nursing, Public Health, Dental and Pharmacy will ultimately need to return downtown. It is this BNMC partner institution that we begin with in Section IV.

The major value of the AHC model is the ability to plan in an interdisciplinary fashion across various health science disciplines, leading to better education, better research initiatives and better clinical care.



Above: A Community Engaged Academic Health Center on the BNMC and the anticipated growth that goes along with that vision holds the greatest transformative effect for the campus and surrounding area. Rendering of the 2010 Master Plan Update view looking northwest. Development shown on the McCarley Gardens site in the foreground and Pilgrim Village site in the background are conceptual only.

IV. INDEPENDENT GROWTH PROJECTIONS

INTRODUCTION

There is an inherent challenge in planning for institutions whose plans change rapidly. The transformations in health care delivery and the pressures to meet exceptional quality of clinical care requires that institutions constantly evaluate and re-evaluate their planning and construction goals.

A comprehensive overview of anticipated development on the medical campus for the short-term (5 years) and long-term (20 years) is therefore an elusive goal.

Nevertheless, an itemization of growth projections of the primary three institutions (University at Buffalo, Kaleida Health and RPCI) is an important place to begin to understand each institution's vision as a way to identify where programmatic overlaps may occur.

This section represents an act of synthesis and an attempt to pull together individual plans of the partners. The next section that follows (Section V) identifies potential areas of collaboration and co-location.

Growth projections represent an initial act of synthesis to pull together and reconcile individual plans of the respective partners while recognizing that those plans change.

BNMC DEVELOPMENT PROGRAM - 5 YEAR HORIZON (2010-2015)

North End Projects

PROJECT	INSTITUTION/Project Sponsor	ESTIMATED SIZE (GSF) / UNITS	STATUS*
GLOBAL VASCULAR INSTITUTE (GVI)	Kaleida Health	250,500	I
SKILLED NURSING FACILITY	Kaleida Health	200,000	I
MEDICAL OFFICE BUILDING	Kaleida Health/developer	300,000	II
GATES RELOCATION / BUFFALO GENERAL	Kaleida Health	87 beds	II
EMERGENCY DEPARTMENT**	Kaleida Health	- 10,400	I
CARDIAC ARREST**	Kaleida Health	- 17,000	I
CMHC RELOCATION		16,800	I
CLINICAL and TRANSLATIONAL RESEARCH CTR. (CTRC)	UB	188,000	I
BIOSCIENCES INCUBATOR	UB	40,000	I
MULTIMODAL TRANSPORTATION FACILITY	BNMC	(1600 cars)	II
*I = under construction II = in design III = in planning	**SUBTOTAL**	**967,900**	

Additional Projects

CLINICAL SCIENCE CENTER (Offices/Outpatient)	RPCI	120,000	II
EDUCATIONAL OPPORTUNITY CENTER	UB	71,000	II
UB GATEWAY (M Wile Renovation)	UB	170,000*	I
INNOVATION CENTER	BNMC	109,000*	I
* = renovated space	**SUBTOTAL**	**470,000**	

Above: By 2015, the BNMC will add over 40% of new development to its current footprint with 1,437,900 gross square feet of construction. (Note: not including the square footage of the new Multi-Modal Transportation Facility).

*** Emergency Department and Cardiac Care facility actually expand within the footprint of the GVI/CTRC.*

BNMC DEVELOPMENT PROGRAM - 15 YEAR HORIZON (2015-2030)

PROJECT	INSTITUTION	ESTIMATED SIZE (GSF) / UNITS
SCHOOL OF MEDICINE / BIOMEDICAL SCIENCES	UB	1,156,000
SCHOOL OF NURSING	UB	85,000
MD FACILITY	UB	200,000
CAMPUS LIFE / SUPPORT	UB / private developer	560,000
SCHOOL OF PUBLIC HEALTH	UB	232,000
SCHOOL OF DENTAL MEDICINE	UB	378,000
SCHOOL OF PHARMACY	UB	172,000
INCUBATOR	UB	328,000
OTHER ACADEMIC, ADMINISTRATION & CAMPUS LIFE	UB	725,000
UNIVERSITY HOUSING	UB/ private developer	660,000
	SUBTOTAL	**4,496,000**
PARKING STRUCTURE	tbd	+/- (1600 cars)
CAMPUS SUBSTATION	tbd	tbd
PARKING STRUCTURE	tbd	+/- (1600 cars)
AMBULATORY CARE CENTER	Kaleida	100,000
FUTURE BNMC EXPANSION (program TBD)	Kaleida	400,000
	SUBTOTAL	**500,000**
CLINICAL SCIENCE CENTER (CSC)	Roswell Park	120,000
SCIENCE BUILDING (post CSC)	Roswell Park	140,000
OFF CAMPUS DEVELOPMENT	Roswell Park	tbd
	SUBTOTAL	**260,000**
	GRAND TOTAL **20 year horizon and beyond**	**5,256,000***
* A wide range of additional programs and amenities are not included in this number. When taking into account additional amenities and the expansion plans of other BNMC institutions, the projected buildout of the campus brings the total to approximately 5.3 million gross square feet from 2015-2030 and beyond, nearly doubling the current campus footprint.		

Above: The evolving long-range vision for the campus is to become a world-class Academic Health Center, where clinical care, medical education, health sciences research and practical applications are combined into one physical setting. To achieve this goal would require the University at Buffalo to relocate its five health science decanal units over a series of five phases and it is possible that all of UB's new facilities will not be completed by 2030.

UNIVERSITY AT BUFFALO - LONG TERM BUILDOUT (2010-2030+)

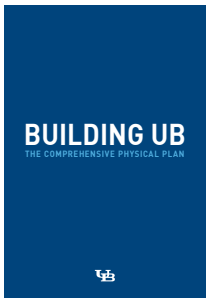
PHASE	PROGRAM	ESTIMATED SIZE (GSF)	STUDENTS
II	SCHOOL OF MEDICINE/BIOMEDICAL SCIENCES	1,156,000	3,345
II	SCHOOL OF NURSING	85,000	1,073
II	MD FACILITY	200,000	incl. above
II	PHASE II UB CAMPUS LIFE/SUPPORT (on and off campus)	560,000	na
III	SCHOOL OF PUBLIC HEALTH	232,000	1,760
IV	SCHOOL OF DENTAL MEDICINE	378,000	556
IV	SCHOOL OF PHARMACY	172,000	1,859
IV	INCUBATOR	328,000	na
V	OTHER ACADEMIC, ADMINISTRATIVE & CAMPUS LIFE	725,000	na
V	UNIVERSITY HOUSING	660,000	tbd
	TOTAL	**4,496,000**	8,593

The University at Buffalo Downtown Campus

"The University at Buffalo's plans for a Downtown Campus involves nothing less than the creation of a world class center of clinical practice, medical education, health sciences research and the translation of new knowledge into practical applications – one that will rival other urban medical centers across the nation. The health sciences will continue to be a key economic sector in the 21st century and Buffalo can and should be prepared to compete in that important arena". (From the introduction to the UB2020 Downtown Campus).

"BUILDING UB"

The Comprehensive Physical Plan,



released in 2009, was the result of over two years of collective work. The plan outlines ambitious growth strategies for all three of the university's campuses: North, South and Downtown.

The University at Buffalo has long had a presence downtown. The Ira G. Ross Eye Institute, the Research Institute on Addictions, the Jacobs Executive Development Center and the NYS Center of Excellence in Bioinformatics and Life Sciences contain an assortment of academic and community engagement programs totaling more than a half million gross square feet.

Three UB projects currently underway (identified as Phase 1 and listed below) are strengthening the school's research, educational, civic engagement missions in the city.

UB DOWNTOWN GATEWAY

The "UB Downtown Gateway" is two interconnected buildings. To the south end of the campus, renovations to the historic early 20th century daylight factory (commonly referred to as the M. Wile Building), has given new life to this precinct. The former industrial building is now home to a wide variety of civic engagement programs such as the UB Regional Institute. This building will be directly connected via an atrium to a new building located directly to the south. UB's Educational Opportunity Center will provide educational services, job training and employment services for adult learners.

NORTH END PARTNERSHIP

On the north end of the campus, the UB Clinical and Translational Research Center and Biosciences Incubator is situated atop Kaleida's Global Vascular Institute. This hybrid building represents the most integrated model of research, education and patient care coming to ground on the BNMC.

These three UB developments will add approximately 1,800 students to downtown. While the North and South Campuses for the University at Buffalo will remain strong centers of excellence, within the next few years the image and intensity of educational opportunities at the Downtown Campus will become

Above: UB developed four "Test Fits" for how substantial growth might be configured on it's Downtown Campus. The university does not currently own much of the land where the growth is indicated, and the diagrams are conceptual. Studies represent variations of program on the McCarley Gardens site, the Pilgrim Village site and combinations of the two. Changing real estate dynamics and partnerships with landowners will determine the ultimate development scenario. (Images courtesy of Beyer Blinder Belle).

significantly stronger. Collectively, these projects create extended interaction with the broader community and demonstrate a commitment of UB to strengthen its physical presence and educational mission downtown.

While the UB Downtown Campus seeks to infill on sites within the BNMC, attractive development opportunities in the surrounding areas will emerge with a host of campus life, administration and support functions in tandem with the downtown migration of UB and the growth of partner institutions.

As the student and staff base grows, demand will increase for retail services, entertainment, professional services, housing and improved transit on and off the campus.

UB's Downtown Campus is as much an act of "city-building" as building a "campus", but development will not occur all at once. **The university's growing presence on the BNMC is incremental but substantial. The goal is clear and the timetable is flexible depending on economic and political realities.**

Above: UB recently entered into an agreement with St. John Baptist Church to purchase the McCarley Gardens site. This 16 acre parcel will enable to university to strengthen the AHC southern gateway.

ROSWELL PARK CANCER INSTITUTE (20 YEAR HORIZON) 2010-2030

PHASE	PROGRAM	ESTIMATED SIZE (GSF)
I	CLINICAL SCIENCE CENTER (CSC)	120,000
II	SCIENCE BUILDING (post CSC)	140,000
III	OFF CAMPUS DEVELOPMENT	tbd
	TOTAL	**260,000**

Roswell Park Cancer Institute (RPCI)

Above: RPCI's Main Hospital Tower was built as part of the Major Modernization Project and is the institution's front door along Carlton Street.

BACKGROUND

The Roswell Park Cancer Institute is one of the oldest National Cancer Institute-designated comprehensive cancer centers in the United States. It is the only upstate New York facility to hold the National Cancer Center designation of "comprehensive cancer center" and to serve as a member of the prestigious National Comprehensive Cancer Network.

The Roswell campus spans 27 acres in the center of the BNMC with 16 buildings and approximately 1.6 million square feet of space.

Past Planning Initiatives

MAJOR MODERNIZATION PROJECT

From 1992 to 2001, Roswell Park drastically altered its physical plant on the BNMC. The "Major Modernization of Roswell Park" demolished many outdated facilities and added over 120,000 square feet of new space. The impressive Hospital Building, completed in 1998, houses a comprehensive diagnostic and treatment center. It has become the "front door" and iconic image for the institution.

In terms of physical redevelopment, no large BNMC institution has accomplished more in the last decade than Roswell. The Major Modernization Plan transformed its campus around the primary open space of Kaminski Park and Gardens (still being completed when the initial BNMC Master Plan began). **The $300 million Major Modernization Project finally gave Roswell Park a physical environment befitting its national reputation.**

FACILITIES MASTER PLAN

RPCI conducted a Master Facilities Plan in 2006. Conducted by the Boston-based firm of Shepley Bulfinch Richardson & Abbott, internal drivers for the planning stemmed from the need to optimize existing under-spaced units, increase research capabilities and develop a reuse plan for decommissioned facilities. Strategies for increasing internal connectivity and addressing the severe parking shortfall were also explored. Site development options were tested (on land owned by RPCI), indicating a maximum build-out potential of more than 1 million square feet.

In addition to development capacity, the plan evaluated programmatic efficiencies, established highest and best uses for existing spaces and set into motion internal configurations that could distribute non-critical support functions to less central locations off-site. As urban campuses grow, more and more institutions are relocating

administrative spaces and/or non-essential programs elsewhere to allow core programs to expand. Roswell is now at maximum capacity in terms of office and clinic space, despite numerous internal reconfigurations to optimize space utilization and moving non-essential programs off site.

Roswell anticipates a growth of 4,000 employees over the next ten years. Thus, it has been considering numerous on-campus and off-campus options for development that advance the Facilities Master Plan.

Near term initiatives

CLINICAL SCIENCE CENTER (CSC)

Roswell's top priority is the development of a Clinical Science Center (CSC). Currently in the initial design stages, a gateway site has been identified at the corner of Michigan Avenue and Carlton Street on land owned by RPCI. The corner is an important intersection for the campus and Fruit Belt neighborhood, with high visibility for patients, visitors, and staff. The facility will have multiple internal floor connections to the Main Hospital as well as the Grace Cancer Drug Center.

Mid to Long Term Initiatives

WOMEN'S CANCER FACILITY

Still in the conceptual stages, RPCI is studying the viability of a cancer screening facility on the northeast corner of Michigan Avenue and Carlton Street, directly across from the CSC.

SCIENCE BUILDING

The Carlton House site will continue to service RPCI for the near future for prevention programs, offices and records. However, the current building does not warrant major investment in renovations. The site is well positioned for reuse within the core precinct of the Roswell campus.

WET LAB RESEARCH BUILDING

Connected to the Cancer Cell Center directly south of the Carlton House site, this narrow parcel is ideal for lab expansion along Ellicott and Carlton Streets.

CLINICAL FACILITY / HOSPITAL TOWER EXPANSION

The largest development project and next significant clinical expansion for RPCI will likely occur along North Oak Street. This building could be connected to the Main Hospital by an expanded lobby that fronts Kaminski Park. The key site expands clinical functions in the direction of Buffalo General Hospital's A Tower.

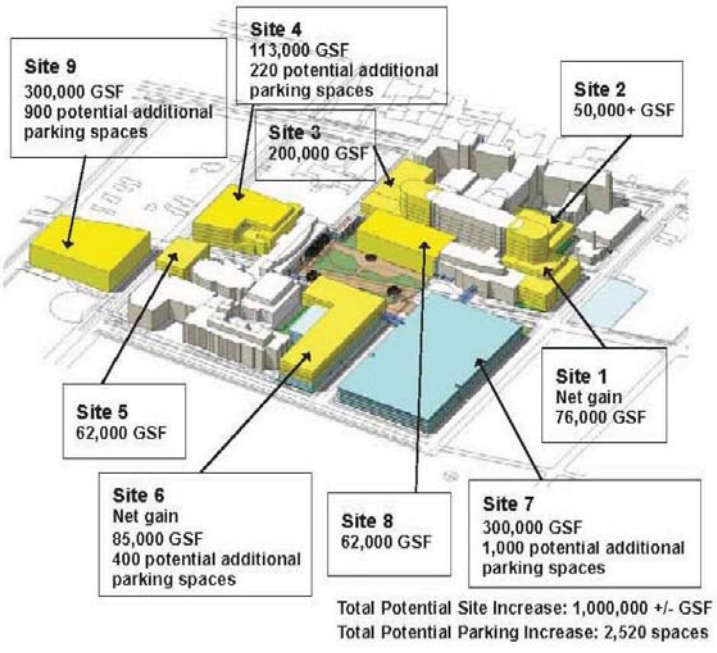
SHARED UTILITIES

In addition to the above development needs, Roswell is seeking to initiate a campus-wide utility plan and pursue discussions about a strategically-located substation on the west side of the BNMC. This critical infrastructure would reduce the amount of line loss for common steam and water service.

COMMUNITY OUTREACH

RPCI has been active in community engagement and outreach, working with the Community Action Organization (CAO) in the Fruit Belt. Initial (pro-bono) studies for a Community Wellness and Neighborhood Development Center have been emerging with representatives of the CAO and UB.

The initiative - still in the programming and space planning stages - would bring a new multi-purpose community center to a location near the BNMC on High Street. High Street has been identified as a priority investment area by residents, building on existing neighborhood assets.



Above: Roswell's 2006 Facilities Plan identified a potential site capacity of 1 million square feet on land it currently owns. (Image courtesy of Shepley Bulfinch).

KALEIDA HEALTH (20 YEAR HORIZON)
2010 - 2030

PHASE	PROGRAM	ESTIMATED SIZE (GSF)
I	GLOBAL VASCULAR INSTITUTE (GVI)	250,000
I	SKILLED NURSING FACILITY	200,000
II	MEDICAL OFFICE BUILDING	300,000
II	GATES RELOCATION	87 beds
II	CHMC RELOCATION	16,800
III	AMBULATORY CARE CENTER	100,000
III	FUTURE BNMC EXPANSION (program TBD)	400,000
	TOTAL	**1,266,800**

Past Planning initiatives

BACKGROUND

Kaleida completed a Site Master Plan Study for the Buffalo General Hospital/High Street Campus in October 2007 by Architectural Resources. The plan was developed further by Cannon Design. The purpose of the plan was to provide a high level analysis of potential growth and development opportunities within and adjacent to Kaleida Health's existing campus boundary.

The study considered the importance of connections, circulation and parking. Approximately 14 acres were identified for potential new development. Proposed development on those parcels included six buildings totaling over 1 million square feet and structured parking for 2,380 cars.

The demolition of vacant and/or deteriorating buildings such as the Hamlin House, 50 High Street and the Community Mental Health Center (CMHC) have opened up new opportunities for development on these strategic sites and enabled projects such as the GVI to move from planning to implementation.

Current initiatives

NORTH END PROJECTS

The North End (defined by Maple Street, High Street, Main Street and East North Street) is the area on the BNMC that will see the greatest amount of construction activity in the next five years. Just as Roswell Park significantly altered its physical presence on the Buffalo Niagara Medical Campus in the 1990's, Kaleida Health is now poised to do the same.

Over 1.4 million square feet of new construction will emerge on property owned by Kaleida in the next five years. The four projects associated with the plan are estimated to bring an additional 2,000 permanent employees to the campus and more than 60,000 additional patients and visitors each year. The four projects that comprise the North End development bring together world-class clinical care, research, medical education, office and support spaces.

GLOBAL VASCULAR INSTITUTE (GVI) /UB CLINICAL AND TRANSLATIONAL RESEARCH CENTER (CTRC) AND UB BIOSCIENCES INCUBATOR (BI)

The 500,000 square foot GVI/CTRC is the first of four North End Projects to break ground. The project establishes a vertical prototype for combining clinical care, research and educational spaces together in one state-of-the-art facility. The building is emerging as a model for institutional co-location and collaboration and integrates clinical, research and academic disciplines in new and innovative ways.

The structure is located directly north of Buffalo General Hospital's A Tower, requiring the closure of Goodrich Street between Ellicott and Michigan. The ground floor of the new building significantly upgrades the Emergency Department (ED) for the hospital, making it the largest ED in Upstate New York. The middle portion of the building is dedicated to the integration of the stroke and cardiovascular Center of Excellence and the upper portions contain UB research and incubator spaces.

SKILLED NURSING FACILITY

The Skilled Nursing Facility, located to the east of Michigan Avenue, provides three hundred beds and consolidates long-term care spaces from Deaconess Medical Center and Millard Fillmore Gates Hospital. The massing of the building aims to make its presence less institutional by relating to the domestic scale of its surroundings. The 200,000 square foot building is an appropriate transition between the primary clinical care functions of the hospital and the predominantly residential Fruit Belt neighborhood.

MEDICAL OFFICE BUILDING

The Medical Office Building is a collaboration between a private developer (Ciminelli Development), BNMC Inc. and Kaleida Health. The building will provide new class-A medical office space to support the surrounding development. The elevation change of the property (between Main, Ellicott, High and Goodrich Streets) will allow for below-grade parking to partially meet the needs of the building and to replace existing surface spaces that will be lost due to the site's redevelopment. A portion of the lower floor will contain retail and support activities that will enliven both the building and street edges of High and Main.

MULTI-MODAL TRANSPORTATION STRUCTURE

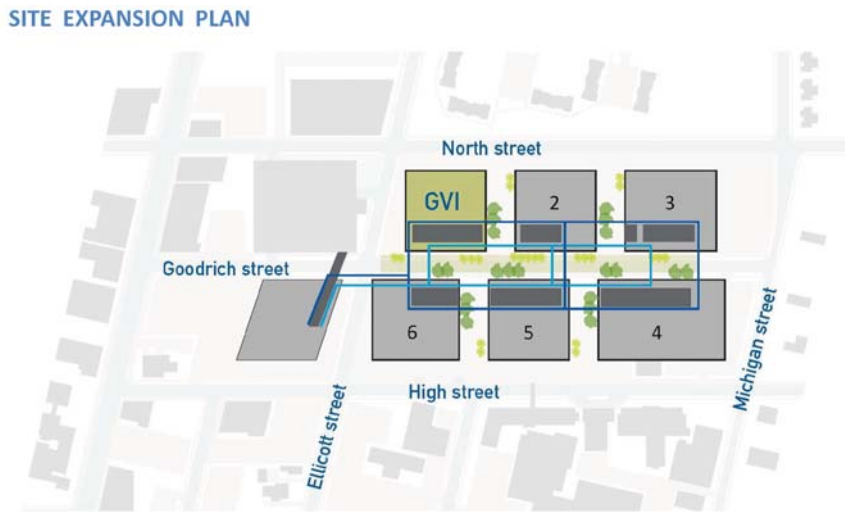
To accommodate the increase in traffic demand generated by the North End Projects and to partially address the existing shortfall, a new Multi-Modal Transportation Structure is planned. The facility will house over 1,600 cars and dedicate space for shuttle services and bicycle storage.

The transportation planning team of Howard/Stein-Hudson and Walker Parking consultants identified the first site for new facility at the intersection of High Street and Michigan Avenue. This site was selected after careful analysis of several alternate locations that considered key operational and environmental factors.

WOMEN'S AND CHILDREN'S HOSPITAL

Discussions surrounding the move of Children's Hospital from Bryant Street (where it is currently located) to the medical campus have taken place since the BNMC was first formed.

As the medical campus becomes a stronger center for clinical care delivery, the viability of this scenario becomes even more likely. Though its exact location on the medical campus is unknown, the facility could have direct connections to the BGH tower, nearby parking facilities and potentially even Roswell Park.



Above: Kaleida's long terms plans seek to grow eastward from the GVI towards Michigan Avenue and double-back upon itself as older facilities outlive their usefulness. (Concept diagram courtesy of Kaleida Health). Above right: GVI/CTRC under construction on Ellicott Street (July 2010).

V. OPPORTUNITIES FOR COLLABORATION

Analysis Of Individual Plans

Section IV: Independent Growth Projections looked at the plans of UB, RPCI and Kaleida Health as a way to itemize individual institutional needs. There is value in understanding the ambitions, magnitude and relative priorities of the three largest BNMC partners.

But the true opportunity for the medical campus lies in leveraging the partnerships *between* them and seeking stronger connections with all of the institutions and the adjacent neighborhoods.

There are pitfalls for individual developments that are built in the wrong location at the wrong time and in a density that diminishes the possibility for linkages and partnerships. Individual projects planned in isolation can also syphon away opportunities to enhance open space networks and other shared amenities or (even unintentionally) isolate partner institutions from parking, transit or service access.

This section seeks to amplify program elements that have emerged in previous discussions and identify ways in which specific programs could be aligned that advance the integration of research, teaching, clinical care and campus services throughout the BNMC.

One of the best ways to achieve this goal is to more fully integrate UB's health science schools with partner institutions. **A Community Engaged Academic Health Center - where teaching, research, clinical care and entrepreneurship occur in close proximity - is the glue that will hold individual projects together.**

UB GROWTH STRATEGY

The growth of UB's Downtown Campus will drastically transform the physical make-up of the BNMC. However, it is destined to occur incrementally and evolve over time as real estate and funding allows.

Regardless of the physical configuration that the five health science units eventually take on the Downtown Campus, four core principles identified in UB's *Comprehensive Physical Plan* will guide the decision making process. They are strongly supported in this BNMC Master Plan Update.

Coatless connections: There is a high priority for immediate proximity between facilities with related programs and a continuum between research, education and clinical practice.

Critical Mass: UB needs a recognizable physical presence that can best be achieved through a concentration of their own facilities. Where possible, new facilities will be in strategic locations which strengthen existing and facilitate new partnerships throughout the campus.

Respect for Context: An intensive, multi-partner infill growth strategy is sought that makes connections between institutions, fills in existing gaps in the streetwall and is mindful of neighborhood scale and urban design characteristics of the BNMC.

Access to Transit: UB needs to facilitate movement between and throughout its three campuses by maximizing opportunities for public transit while minimizing parking requirements, traffic and environmental impacts.

The GVI/CTRC saved approximately $15 million by co-locating institutions and building together. This project should be embraced as a hybrid model for moving forward.

RPCI'S GROWTH STRATEGY

In terms of institutional identity, RPCI views both Carlton Street and Michigan Avenue as the front door to their campus. Many entrances to existing and future facilities currently face or will face Carlton Street which runs through the center of Roswell's campus.

Roswell envisions that there will be a greater concentration of new research facilities around those that already exist to the south of Carlton Street. Less research space will exist on the north side of Carlton, with that area being increasingly dedicated to clinical and administrative functions. RPCI is destined to grow on sites surrounding their core research and clinical facilities, As institutional pressures dictate, less critical care functions will move to locations off campus.

KALEIDA HEALTH'S GROWTH STRATEGY

Kaleida's plans represent intense redevelopment on property it already owns and occupies. Their development strategy focuses on replacing outdated facilities in a manner that builds out from the GVI site. The closure of Goodrich Street for the expansion of the Emergency Department and the construction of the GVI provides an east-west spine around which the hospital will grow. Acute care is and will be centered around the BGH Tower.

Portions of the Main Street edge in Allentown have been identified for behavioral health programs and many are now occupying historic buildings that had been vacant. The Skilled Nursing Facility is an ideal buffer to the small scale, residential fabric of the Fruit Belt east of Michigan Avenue.

Opportunities For Synthesis and Shared Facilities

There is a maximum distance for effective collaboration: the closer, the better. New partnerships will emerge much more quickly if spatial relationships between clinical care, research and education are near one another. While BNMC partners are, by and large, on adjacent sites, new opportunities to co-locate are taking shape.

Partnerships that are directly adjacent to one another are possible in areas of Patient Care, Education, Academic Services, Research, Medical Office Facilities and Campus Services (See programmatic list to right). These relationships are facilitated by geographic proximity.

Potential Shared Programs

Kaleida Health provided an initial list of programmatic elements that could potentially be co-located and coordinated with BNMC partners. This list represents one partner's vision and establishes a springboard for discussion.

PATIENT CARE

GVI Specialty Centers:
- Neuro, Heart, Vascular

General Surgery
General Medicine
Medical Rehab Unit
Orthopedics
Transplant
Geriatrics
Mental Health
Bariatric
Critical Care
Emergency Medicine
Imaging
Dialysis
Ambulatory Care, Surgery and Clinics
Clinical Laboratories
Blood Center
Outreach

HEALTH PROFESSIONAL EDUCATION CENTERS

Nursing
Primary and Specialty Clinics
Pharmacy
Dental
Integrated Teaching (incl. nursing)

ACADEMIC SERVICES

Health Education
Library
Classrooms and Conference spaces
Simulation Labs

RESEARCH THEMES

Centers and Institutes
Research Offices
Core animal testing facilities
Incubator/entrepreneur spaces
Wet and dry labs

MEDICAL OFFICE BUILDING

General retail (drycleaning, concierge service, etc.)
Health related retail (pharmacy, orthotics, eyeglasses, etc.)
Wellness facility
Childcare
Adult Day Care
Administrative spaces
Spiritual Center

FACILITIES

Parking and Transportation
Power Plant
Receiving
Bio/Hazardous staging
Green space / park areas
Food service
Laundry

CAMPUS SERVICES

Transportation
Public Safety
Activities

Source: KSA Planning, BGH/Gates Site Strategic Planning , Integration Team (September 2008).

Hybrid models that integrate institutions have the ability to increase efficiencies and decrease costs through cooperative planning and management of resources. Hybrid models create opportunities to share space, increasing interaction and enhancing dialogue. It is unrealistic for every new building to contain a blending of programs. **However, a central principle for the future of the BNMC must be interconnectivity.**

With increased interconnectivity, there is convenience for patients and medical staff alike. Increasingly, one can find a faculty member who teaches at UB, conducts research at HWI or RPCI and is also on rounds at Buffalo General.

An Integrated Approach

THE HORIZONTAL MODEL

At the time it was completed in 2005, the Buffalo Life Sciences Complex (BLSC) represented a new, horizontal model of integration with three BNMC institutions located side by side: the Hauptman-Woodward Institute, University at Buffalo and Roswell Park. The three became even more integrated with a pedestrian bridge spanning over Ellicott Street.

THE VERTICAL MODEL

The GVI/CTRC represents the next evolution of an integration model that is stacked vertically. As opposed to a horizontal alignment, this building represents savings in infrastructure, utilities and servicing. **The GVI/CTRC saved approximately $15 million by co-locating institutions and building together on top of one another. In many instances, this project should be embraced as a model moving forward.**

The question has been asked: "Can the stars align again for the next large scale project that brings together multiple institutions?" For example, there are obvious synergies that would combine the Medical Office Building (MOB), Ambulatory Surgery Center (ASC) and UB School of Public Health.

The long range plan may also hold the possibility of bringing the Women and Children's Hospital to the BNMC from its current location on Bryant Street. This move would enable another hybrid building that could combine with UB's College of Nursing.

INCREMENTALISM

There is pressure to move in smaller steps. Some schools - what UB identifies as the "big building blocks" - are simply too big to move at once onto the Downtown Campus in any one year. At best, the university anticipates funding allocations between $50 to $60 million at a time which stymies larger aggregations. Timing is critical, and hybrid planning needs to anticipate an aggregation strategy over the course of three to four years. **Immediate needs unfortunately do not always align with the long range vision**.

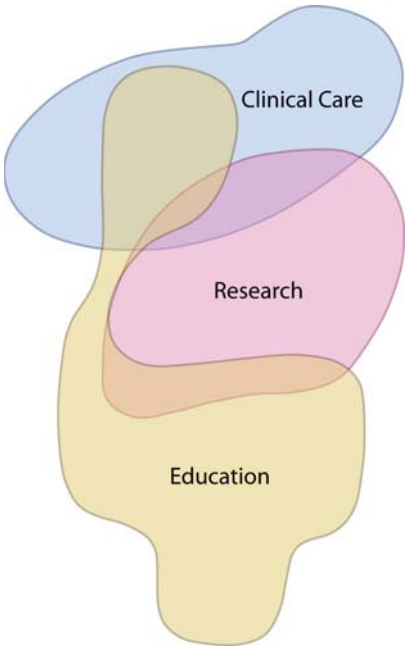
The downtown migration of the university, even in smaller steps, will greatly increase the opportunities for programmatic synergy and add vitality to the campus. Classrooms, simulation labs, wet and dry labs, administrative offices, medical and outpatient care offices, core biomedical research facilities and supportive functions will be needed.

In addition, a medical research library and technology support center and a conference center with lecture halls and breakout rooms are all integral to the notion of an Academic Health Center.

In addition to clinical, research and educational opportunities, there are a host of non-medical but complementary uses that will benefit immensely from collaboration with other BNMC institutions (see Missing Elements on next page).

PRECINCTS

Within the 120 acre BNMC boundary, a pattern is loosely emerging with clinical care situated to the north around Buffalo General Hospital and research to the south with HWI, portions of RPCI, the BLSC and the Innovation Center. Education is an excellent fit situated in-between, linking teaching, patient care, research and entrepreneurial activities and encouraging faculty and staff to develop innovative solutions to complex health problems.



Above: Precincts are slowly emerging on the BNMC with clinical care clustered to the north, research concentrated to the south and educational and entrepreneurship as the glue that binds them together.

Missing Elements

What are some of the elements necessary to enable an Academic Heath Center to become a reality?

- relocation of health science schools
- a new shared library facility
- gathering spaces to create a sense of community
- flexible shell spaces that can respond to emerging programs and grant requests
- retail spaces that are medical-related in addition to general retail needs
- coordinated parking, transportation and wayfinding
- campus wide safety and security
- hotels for visitors and patients
- conference center
- housing opportunities for residents and graduate students

Implementing Collaborative Projects

Collaborative projects like the GVI/CTRC are not easily accomplished. They require constant communication and dialogue within and across institutional partners. They demand innovative financing solutions that coordinate complex funding streams. Moreover, it is difficult to simply build shell space in anticipation of future alliances when funding mechanisms do not allow it. The mix of land ownership on the BNMC adds to the complexity even more.

Nevertheless, in challenging economic times with scarce resources, partnerships are more important than ever in stretching the funding that is available.

The advantages of larger, vertically or horizontally aligned buildings with greater synergies between institutions can often outweigh the disadvantages of bringing them together. **When collaborative projects are implemented, they become tangible demonstrations of the BNMC's principle to seek cooperative collaborations and community solutions.**

Fortunately, the organizational structure of the BNMC is developing in such a way to facilitate the implementation of future collaborative models. With the creation of Project Management Groups that focus on implementation and Work Councils that have demonstrated success in enhancing communication, the innovative GVI/CTRC model is just the beginning.

The next section: Planning Context places the growth of the medical campus in relationship to the city and neighborhood strategies to make sure the BNMC is a catalyst for economic development and physical improvement surrounding the campus.

Above: With an increase in collaborative projects and higher densities come other urban design challenges, such as making sure that future growth does not overwhelm the context and is planned in ways that add to the vitality of the streetscape. View looking north up Ellicott Street.

VI. PLANNING CONTEXT

Often, the best laid plans are those that advance existing plans and initiatives. This Master Plan Update builds from and seeks to advance a number of concurrent or recently completed initiatives on and around the BNMC.

In addition to pulling together the individual growth plans of the three largest medical institutions, this document references the *"Four Neighborhoods, One Community Plan"* that developed strategies for Allentown, the Fruit Belt and Downtown in relationship to the BNMC (Sasaki/Madden Planning Group).

Other documents referenced include: The *Queen City in the 21st Century: The Buffalo Comprehensive Plan* and the *Queen City Hub: A Regional Action Plan for Downtown Buffalo*. The two Neighborhood Strategies which bookend this BNMC Update are envisioned to serve as local Area Plans. This concept was recommended in the "Queen City Hub" which focused on five Strategic Investment Areas, of which the BNMC, Allentown and the Fruit Belt are an integral part.

This Update also references the Howard/Stein-Hudson and Walker Parking Consultant's *Comprehensive Transportation Study* and the University at Buffalo's 2020 *Building UB* Comprehensive Physical Plan.

Density and Scale

As the BNMC continues to expand, recognition that its neighbors become or remain vital is increasingly important. As the campus itself prospers, so too should Allentown, the Fruit Belt and all of Downtown.

Most urban medical campuses expand in one of three ways:
1.) they acquire land on the periphery and grow outward;
2.) they demolish older, obsolete buildings at the core and grow upward; or
3.) they disperse units of operation away from the center of campus to enable more critical services to expand.

To varying degrees on the BNMC, all three models are operating simultaneously and will likely continue to do so into the future. Nevertheless, building in the core of the campus and seeking to achieve greater density will enable the BNMC to meet its growth expectations. Ensuring the future vitality and expansion of clinical, research, educational and business operations on the campus is crucial to its success and densification is key.

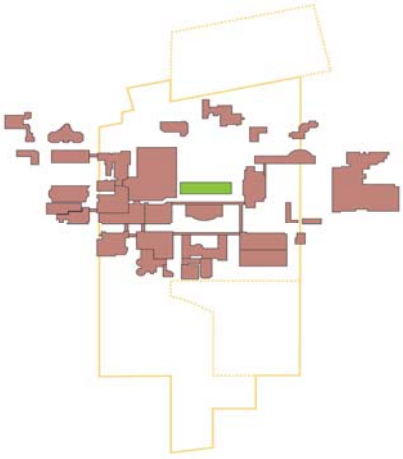
A great deal of development can take place within the existing campus boundaries. A Floor Area Ratio (FAR) that doubles the BNMC's current density (from 0.7 to +/- 1.5) will still not meet growth needs without additional land acquisition, but there is a great deal of land that could be redeveloped with higher densities and in closer proximity to one another.

Compared with other nationally renown medical centers, the BNMC is less dense (See table on facing page.) The plan builds up in scale from the neighborhood edges towards the center. The highest density for the BNMC is envisioned around Ellicott Street and High Street.

As BNMC health care, research, business and academic industries continue to expand, recognition that their host communities become or remain vital is increasingly important.

Above: The Queen City Hub: A Regional Action Plan for Downtown Buffalo identified five investment areas for downtown Buffalo. The medical campus (in the top quadrant) is situated bewteen Allentown and the Fruit Belt. (Image courtesy of the Urban Design Project).

Below: When one superimposes the boundaries of the BNMC with those of peer medical institutions, the opportunities to increase density become more apparent. The yellow outline indicates the 120 acre boundary of the BNMC with the much larger medical campuses of the Cleveland Clinic and Johns Hopkins superimposed at the same scale.



CLEVELAND CLINIC

9 million square feet
140 acres
FAR: 1.5

JOHNS HOPKINS MEDICAL CENTER

8.6 million square feet
57 acres
FAR: 3.5

COMPARABLE MEDICAL CENTER DENSITIES

Name	Institutions	GSF	Acres	FAR*
Rochester Medical Center	16	1 million	100	0.25
Buffalo Niagara Medical Campus	**9**	**3.4 million**	**120**	**0.7**
Texas Medical Center	46	42 million	1000+	0.9
Washington University at St. Louis	7	7 million	155	1
Cleveland Clinic	12	9 million	140	1.5
Longwood Medical Campus	21	17.5 million	125	3.2
Johns Hopkins Medical Center	5	8.6 million	57	3.5

**FAR = Floor Area Ratio*

Above: In the context of other nationally recognized Academic Health Centers, the Cleveland Clinic is twice as dense as the BNMC. John's Hopkins Medical Center is five times as concentrated with much more development on less land.

Four Neighborhoods, One Community

Four Neighborhoods, One Community began in 2007 with the recognition that the medical institutions and the city are committed to working together to harness their respective strengths. The four neighborhoods are Allentown, the Fruit Belt, Downtown and the BNMC. The collaborative neighborhood planning effort was conducted by Sasaki Associates/Madden Planning Group.

The purpose of the neighborhood studies were to identify the issues that were specific to Allentown and the Fruit Belt, develop implementation strategies that build on recent and ongoing momentum and establish support for action and investment in the neighborhood.

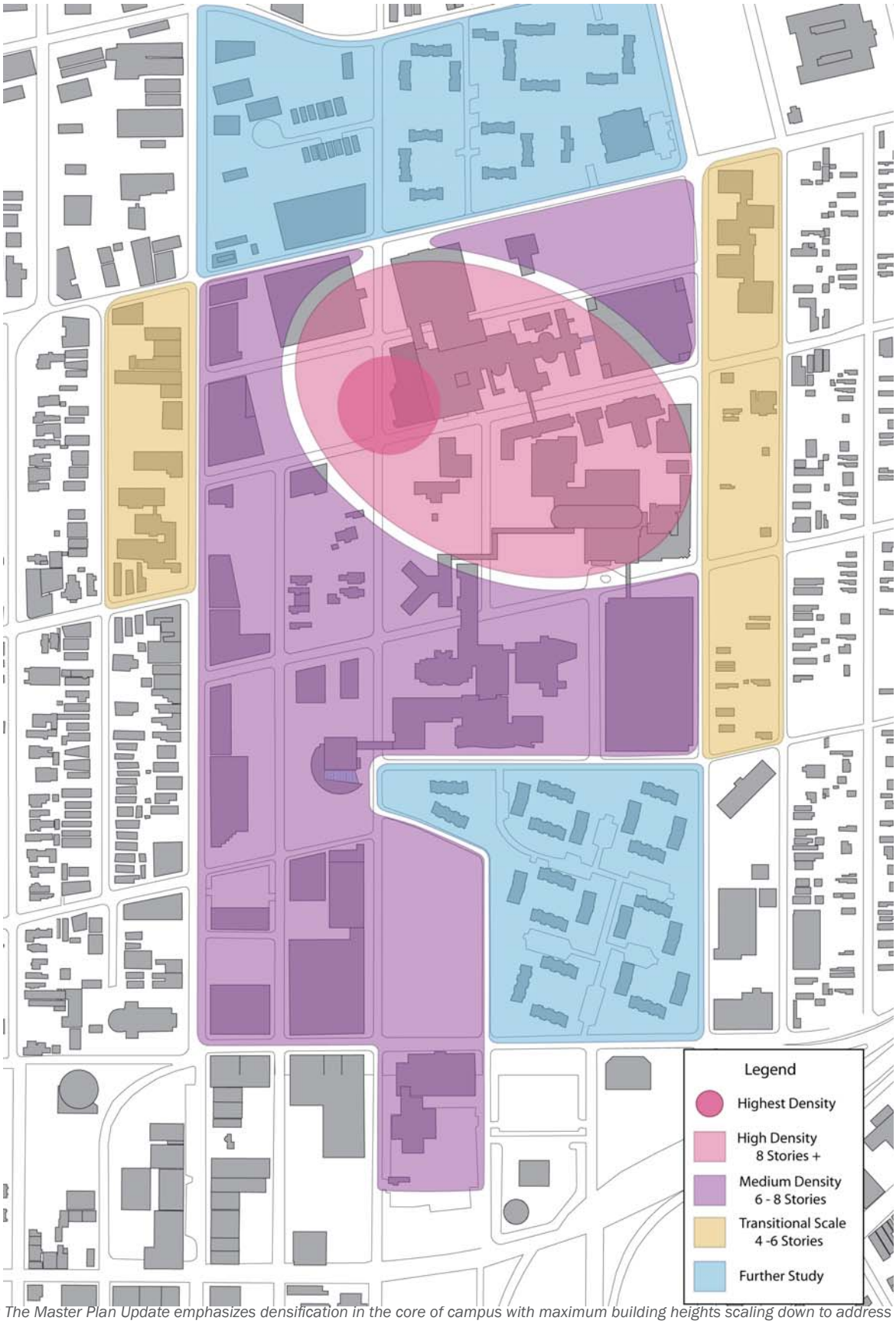
Planning in both neighborhoods involved a comprehensive consultation process that included interviews with a wide variety of stakeholder groups from the public, private and non-profit sectors.

Since each of these "neighborhoods" is quite distinct, they each must build on unique strengths and confront distinct sets of issues. Together, the "one community" seeks to evolve into a center of employment, research, health care services, education, a variety of housing opportunities and the retail and entertainment amenities that come from a vital urban setting.

The transition between the medical campus and the Fruit Belt neighborhood must be carefully considered to take advantage of proximity while also mediating building scale, character and use.

Above: Composite plan of the UB 2020 Downtown Campus Plan and the Neighborhood Strategies of Allentown and the Fruit Belt. The darker red color in the neighborhood plans represent a strengthening of the High Street, Allen Street and Elmwood Avenue corridors.

BNMC DENSITY CONCENTRATIONS



Above: The Master Plan Update emphasizes densification in the core of campus with maximum building heights scaling down to address Allentown and the Fruit Belt. The edges between the BNMC and the neighborhoods should be geared toward amenities and shared services and at a scale of building that does not overwhelm the neighborhoods.

Fruit Belt Neighborhood Strategy

When planned thoughtfully and in collaboration with partner institutions and local government, institutional expansion can be a major catalyst in neighborhood revitalization. Medical institutions can play an even greater role in the community if steps can be taken to capitalize on the strength and vitality of these business enterprises.

As with college campuses, medical campuses often have strongly defined boundaries. More often than not, these boundaries are demarcated by a "hard edge", such as the juxtaposition of a large scale structure directly adjacent to single-family homes. An equally prevalent tension is created by large expanses of surface parking or vacant land adjacent to the institution. **Neglect or underutilization of the environment surrounding institutions represents a lost opportunity to physically, socially and economically engage the community**.

MICHIGAN AVENUE

Increasingly, BNMC member institutions are a player in acquiring land on the east side of Michigan Avenue, in addition to private developers and community organizations. In addition, some individuals are capitalizing on the short-term demand for surface parking and hoping to benefit from the potential long-term opportunities of institutional development.

As stated in the "*Fruit Belt Neighborhood Strategy*", the interface of the medical campus and the Fruit Belt neighborhood along Michigan Avenue is a priority area due to the active development of medical campus programs. The transition between the medical campus and the Fruit Belt neighborhood must be carefully considered to take advantage of proximity while also mediating building scale, character and use.

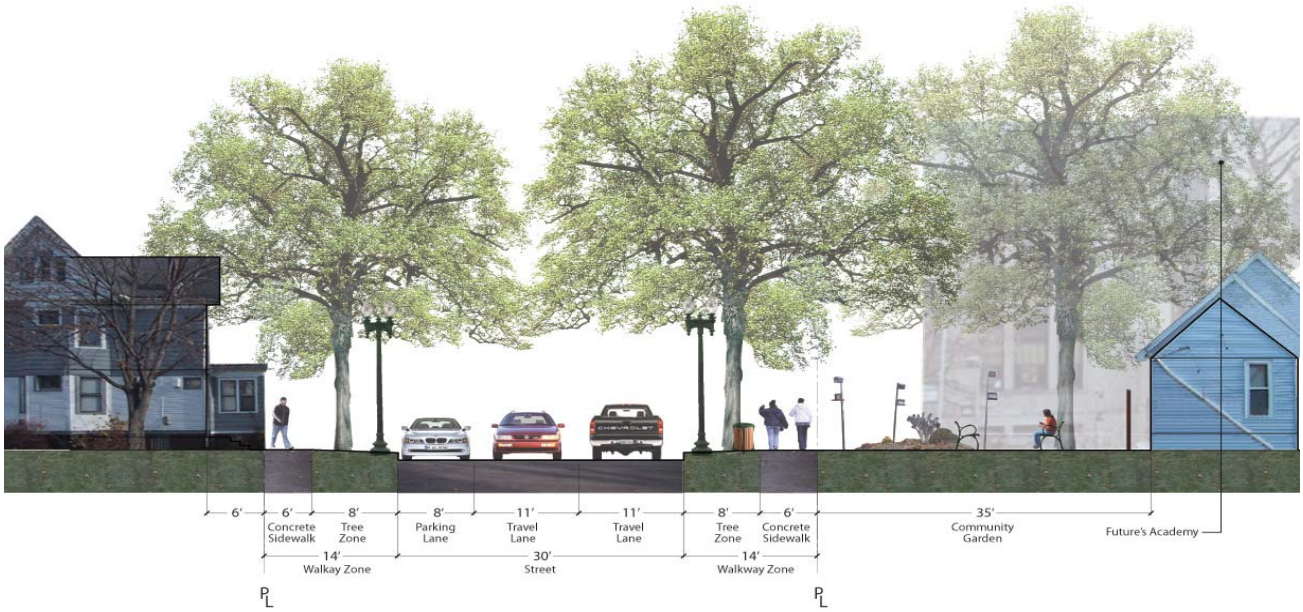
RECOMMENDATIONS

The Michigan Avenue corridor should support mid-rise heights and densities that transition from the residential scale of neighborhood to the adjacent institutional buildings.

POINTS OF POTENTIAL CONFLICT

Tensions between medical campuses and their surroundings can be the result of too much building or too much space. The key to integration is finding the right balance.

Future medical related uses on the eastside of Michigan need to enhance the pedestrian experience and balance clinical care with neighborhood amenities. Surface parking lots should be minimized on the primary east-west neighborhood corridors.



Above Street section of Carlton Street: Recommended infrastructure investments along key corridors of the Fruit Belt include: new pedestrian-scaled lighting, street trees, sidewalks and crosswalks, creating a more welcoming environment for the neighborhood. (Image taken from 2005 Chan Krieger & Associates Neighborhood Action Plan).

Actions Items for Moving Forward: Fruit Belt

The "*Fruit Belt Neighborhood Strategy*" highlights key recommendations for the area east of the BNMC. The implementation strategy defines a set of initiatives and identifies the participants, organizations, and sectors necessary to realize each initiative. The implementation strategy consists of the following six elements:

BUILD A UNIFIED VOICE

- With facilitation by the City, LISC, BNMC and /or UB, identify the representative Board members for a Fruit Belt partnership
- Clarify shared goals and define the mission and capacity of each of the member organizations'
- Refine the agenda for the next 12 months, building on the recommendations in the report as appropriate
- Identify potential sources of funding for staff support

AMEND THE REGULATORY ENVIRONMENT

- Community review of the Fruit Belt Neighborhood Plan
- City review of the Plan, with identification of additional Area Plan requirements
- City approval of Fruit Belt Area Plan
- Review the status of the Urban Renewal Plan and amendment as necessary
- Update the Fruit Belt zoning as part of the citywide zoning effort

CREATE A WORKFORCE DEVELOPMENT STRATEGY

- Conduct a workforce needs assessment through the BNMC human resources departments
- Develop a coordinated strategy with the relevant stakeholders including the BNMC, Fruit Belt community organizations, and local educational institutions to address education, training and placement opportunities

ESTABLISH A LAND BANK PROGRAM

- Identify potential funding sources that support property acquisition and land banking, including government programs as well as private foundations
- Assemble and maintain an inventory of vacant property and property ownership in the Fruit Belt
- Identify actions required to facilitate sales of individual properties, such as title clearance or environmental remediation
- Assign potential functions for vacant properties (i.e.: side lot transfer, parcel assembly, buildable lots and parking)
- Set priorities for the use of property in accordance with the Neighborhood Strategy Plan, such as housing, commercial or civic use

CREATE A FRUIT BELT COMMUNITY DEVELOPMENT CORPORATION (CDC)

- Establish partnerships with and seek funding from the City of Buffalo, the BNMC, LISC and other intermediaries
- Establish a board of directors and appoint an executive director
- Determine where and how the Fruit Belt CDC should focus its initial efforts
- Continue to focus fundraising efforts at the local, state, and national levels
- Develop a physical presence in the Fruit Belt neighborhood

FRUIT BELT AS A COMMUNITY DEVELOPMENT DEMONSTRATION PROGRAM

- Focus on a code enforcement effort with funds for demolition of dilapidated structures
- Actively promote home ownership in the neighborhood by targeting city and other non-profit resources
- BNMC should consider developing an employer-assisted homeownership program targeted to the Fruit Belt
- BNMC should identify opportunities to improve human and social capital with health education and screening, and offering job readiness programs for low income, permanent residents
- Gain approval from the city for an Area Plan with ongoing community input and additional detail.

Allentown Neighborhood Strategy

MAIN STREET

As stated in the "*Allentown Neighborhood Strategy*", the interface between the medical campus and Main Street is a top priority. Main Street is the city's primary address, and a corridor that would benefit from greater density, a mix of uses that are oriented to the street and active, pedestrian-oriented ground floor activities.

The regeneration of Main Street will mark a tremendous transformation for both Allentown and the Buffalo Niagara Medical Campus. Improvements to the streetscape and adjacent uses will extend the positive impact of the reconstruction of Main Street at Buffalo Place, reestablishing the prominence of this major city corridor. With the Allen Street NFTA station as a centerpiece, Transit-Oriented Development (TOD) could provide the additional density, residents and retail space to increase ridership and make the street itself more vibrant.

The rehabilitation of Main Street is likely to attract more hospital employees to leave the medical campus and invigorate the eastern end of Allen Street. Strategic projects such as Main Street streetscape improvements, Allen Street extension, and investment in the Red Jacket and its retail frontage will further strengthen this connection.

New infill development and restoration of historic buildings could accommodate a wide variety of uses, including medical office spaces, research companies and other spin-off businesses from the BNMC, as well as residential and retail uses.

New development, however, should meet the highest design standards and be built with the height and density sufficient to define the width of the Main Street right-of-way.

Some institutional expansion is already occurring along Main Street. In an effort to help revitalize the corridor and keep important mental health services near their core campus, Kaleida has located behavioral and community health programs from the GVI site to vacant buildings along Main Street.

Points Of Potential Conflict

SCALE

The entire Allentown neighborhood is designated as a Local Preservation District. Therefore, new construction needs to be sensitive to the quality and scale of the existing architecture. The Main Street corridor should support mid-rise heights and densities that transition from the scale of the nearby institutional towers to the six to eight story historic Main Street Buildings. However, a number of buildings constructed in the 1990's have been built to one and two stories only, undermining the character and definition of the street.

PARKING

Consideration should be given to the ability to share parking assets with the BNMC in lots and structures that are underutilized in the evening hours and would fit the needs of people shopping or dining in Allentown. This would require a safe and secure street experience between the BNMC

The highest priority for attention and investment in Allentown is the Main Street corridor that it shares with the Medical Campus.

Right: Main Street acts as a physical and psychological barrier between the BNMC and Allentown.

Actions Items for Moving Forward: Allentown

The "*Allentown Neighborhood Strategy*" highlights the key recommendations for the area west of the BNMC including: a Main Street Strategy, Retail Strategy, Infill and Improvement Strategy and a Regulatory Strategy. Key Action items under those categories are:

MAIN STREET STRATEGY

- Establish/enforce higher standards of design for new buildings
- Make façade grants available to transform existing facades
- Invest in Main Street streetscape and infrastructure
- Advance NFTA TOD Stations and Allen Street extension
- Organize a Task Force of the city, Allentown Association, BNMC and property owners to address problem properties
- Enforce city codes and HUD program inspections
- Promote greater density throughout
- Where appropriate, encourage the assembly of smaller sites with adjacent properties for redevelopment
- Develop corner lots and promote active retail uses on these corners where possible
- Limit building demolition for surface parking along Main Street

RETAIL STRATEGY:

- Encourage consistent maintenance of storefronts and restaurants
- Encourage retailers to regularly update merchandise displays
- Coordinate with the city and/or private foundations to assemble funding sources for façade and signage improvements and make those available for businesses
- Continue to advocate for streetscape repairs, maintenance and investment
- Outreach to successful retailers to ensure positive landlord relationships
- Recruit independent retailers that will complement existing uses
- In coordination with Allentown Association, assist with retail recruitment and cultivate local entrepreneurs and talent
- Address building vacancies, parking needs, egress issues and other deterrents to retail uses
- Encourage a mix of uses on upper floors with prime retail frontage on ground floors
- Prohibit drive-through uses and fast food franchises
- Discourage demolition of buildings for surface parking lots
- Infill development should be designed to accommodate retail uses on the ground floor
- Make infill a high priority on corner lots and target corner retail uses
- Non-retail uses should be encouraged to have facades that are open and visible to the street

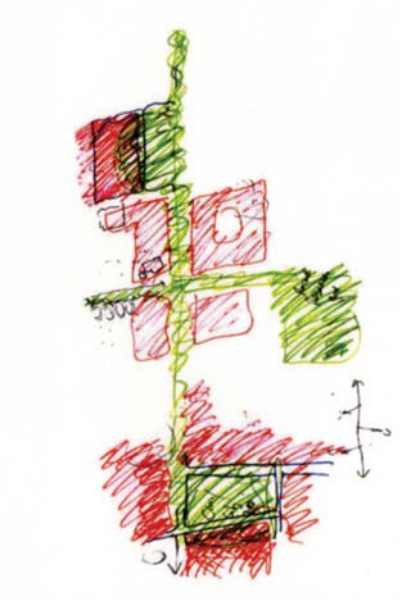
INFILL/IMPROVEMENT STRATEGY

- Study sites for a publicly accessible parking structure along Delaware Avenue
- Consider shared future parking assets with the BNMC
- Encourage private investment throughout the neighborhood on home and business improvements

REGULATORY STRATEGY

- Community review and refinement of Allentown Strategy
- City review of strategy with identification of additional Area Plan requirements
- City approval of Allentown Strategy
- Participation in the update of the Allentown zoning as part of the city-wide effort

VII. A FRAMEWORK FOR BNMC CAMPUS PLANNING



Above: Initial 2001 concept sketch of the Ellicott Street spine, which pulled together the greatest number of medical institutions along one axis.

Ellicott Park ushers in a new sense of shared identity for the medical campus. When completed, it will be a tangible manifestation of the collective spirit and shared ambitions of the BNMC partnership.

An Initial Framework for Growth: Ellicott Street

The initial framework to support the growth on the medical campus stemmed from an understanding that multiple sites along Ellicott Street were either underutilized with low density buildings or were entirely devoted to surface parking. Therefore, Ellicott Street emerged as a promising campus spine.

Development along this corridor could link the highest number of underutilized properties within the area of the campus. **Ellicott Street also represented the greatest opportunity to alter what was a collection of separate medical and research institutions who merely shared a territory into a true campus setting, marked with a distinct sense of character.**

As one of only two continuous north-south streets inside the campus boundaries, Ellicott engaged all five of the initial 2003 BNMC institutions. Properties owned by Kaleida Health, Roswell Park, the University at Buffalo, Hauptman-Woodward Institute and the Buffalo Medical Group all aligned along Ellicott Street.

Focusing large-scale institutional growth along this internal corridor helps to open up possibilities for supportive, campus-related development and neighborhood services along the edges of Main Street and Michigan Avenue. Major commercial, retail and residential uses are best shared with the adjoining neighborhoods.

There is a historical significance to the street itself, named after Joseph Ellicott who first laid out the plan for the City of Buffalo in 1804.

The importance of strengthening connections to the south will help to speed the rehabilitation of the northern edge of downtown. **The true value of Ellicott Street lies in its potential for transformation.**

2006 ARTS MASTER PLAN

What makes a campus a campus is its sense of place. The 2006 nArchitect's Arts Master Plan for the BNMC embraced the idea of the Ellicott spine and advanced its ability to physically connect institutions. Their work is transforming the east-side of the street into a robust and lush public environment. The open space is set to begin its first phase of construction in the fall of 2010.

"Ellicott Park" will usher in a new sense of shared identity for the medical campus. When completed, the park will be a tangible manifestation of the collaborative spirit of the BNMC and represent shared ambitions of the partnership. It will drastically change one's perception of the place, increasing pedestrian activity and establishing an armature for future development.

DEVELOPMENTS ALONG ELLICOTT

As the BNMC organizational structure has grown since 2001 - and new member institutions have joined the original partners - so too have opportunities for the Ellicott alignment to take on additional significance.

For example, to the south, BNMC Inc. owns the large parking lot at 589 Ellicott and opened the Innovation Center across the street. New buildings and programs at the UB Downtown Gateway to the south and

the new GVI/CTRC to the north also engage the Ellicott corridor along with the Buffalo Hearing and Speech Center. Moreover, future growth can engage in the framework of an expanded Ellicott Park both to the north and south with development on underutilized sites.

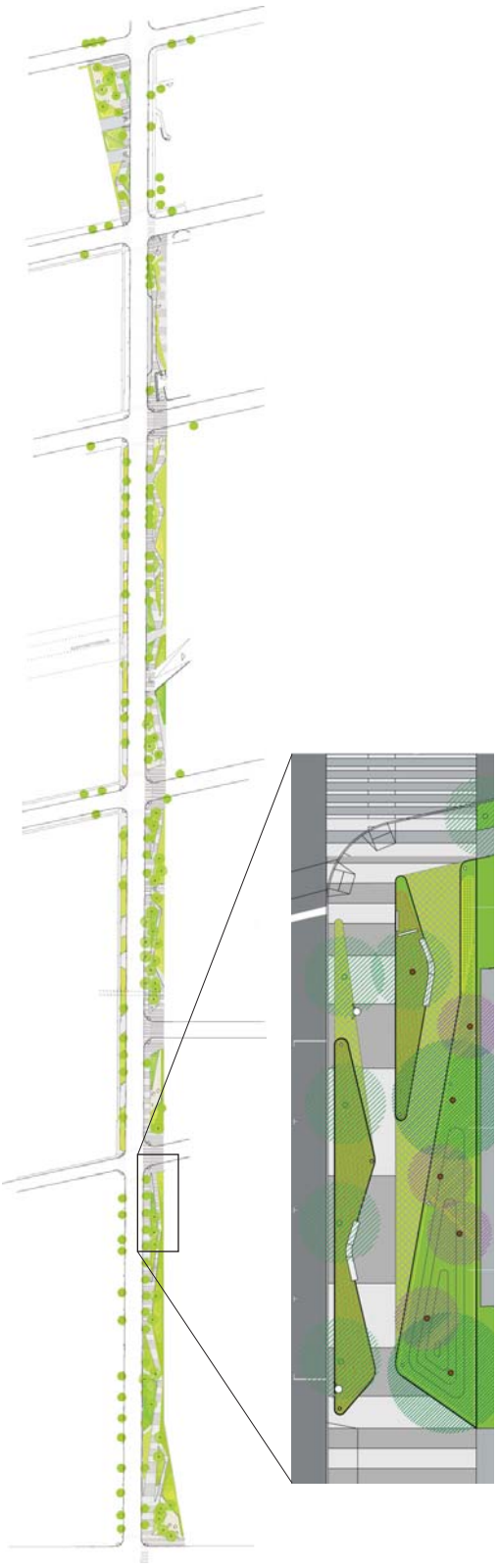
The primary public spaces of the BNMC will continue to be the streets. While the initial Master Plan centered on the opportunity of a north-south Ellicott Park as a connective device, the amount of new development planned for the campus over the next two decades places a new responsibility on the perpendicular corridors to complement the initial Ellicott Street framework.

Ellicott Park has a distinct advantage of running continuously through the core of the BNMC, connecting the largest institutions together along a corridor that has opportunity for institutional expansion.

A Future Framework for Moving Forward: The Perpendiculars

The first principle of BNMC Inc. is to "respect the individual mission and identity of the member institutions and associated organizations". The medical campus recognizes that each institution has its own campus environment set within the larger Academic Health Center geography. These individual campuses are naturally an important part of member institution identity.

While Ellicott's north-south framework creates a common "campus address", institutional identities can emerge or be reinforced along the east-west streets. In this way, Ellicott Street fosters a common identity for the BNMC as a whole, but the cross streets help to strengthen distinct "front doors" of various member institutions. The cross streets that follow offer particular roles and responsibilities for meeting growth needs into the future.



Above: Conceptual rendering of Ellicott Park. Above right: plan diagram and detail of Ellicott Park which is set to begin construction in the fall of 2010. (Images courtesy of nArchitects)

CARLTON STREET

Carlton Street is Roswell Park's primary corridor. The Main Hospital Building and the current parking garage entry are accessed off of Carlton Street. In addition, Kaminski Park and Gardens - the major open space about which RPCI is oriented on Carlton Street - remains the most manicured and programmed landscape on the BNMC.

Properties that RPCI controls along Carlton Street offer opportunities to enhance this institution's image as new development opportunities emerge to the east and west.

Development along Carlton Street to the eastside of Michigan Avenue should be seen as a transition zone between the larger institutional buildings and the lower-scale residential fabric of the neighborhood. Although much of the historic grain of the neighborhood has been lost over time due to disinvestment and demolitions, one of the most important urban design strategies is to stabilize the corridor.

Buildings along this edge should be appropriately-scaled mixed use or medical facilities that address the streets and enliven the pedestrian experience.

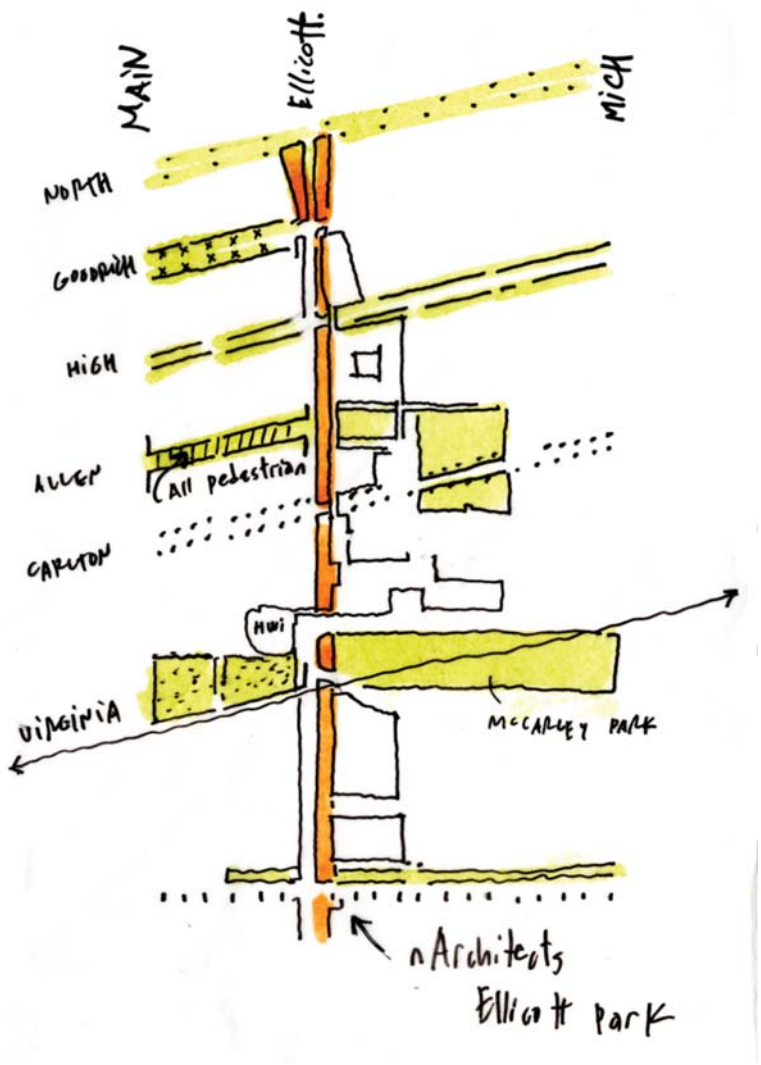
Due to the proximity of Main Street, development along Carlton is certain to emerge in the direction of Allentown as well. Underdeveloped sites to the west have the opportunity to reinforce pedestrian connections in the direction of Main Street such as the Cornerstone Manor site which is slated for demolition.

VIRGINIA STREET

As was typical of redevelopment sites in the Urban Renewal era, large superblocks were created through the consolidation of properties and the elimination of streets. This was a fate dealt to Virginia Street in 1972 with the construction of McCarley Gardens under the Oak Street Redevelopment Project. Under one of the Test Fit scenarios for the University at Buffalo Downtown Campus, a major new open space is created along the reconstruction of Virginia Street. This link re-establishes an important east-west connection that had been severed (See sketch to the left).

If implemented as envisioned, a new "McCarley Park" has the ability to link Allentown and the Fruit Belt once again. If implemented as conceptualized, the new space would be bounded by the Buffalo Life Sciences Complex, Hauptman-Woodward's iconic Institute, a portion of UB's Academic Health Center and St. John's Senior Tower. The re-emergence of this alignment through the campus and the development of a public park along its edges will create an inviting public realm.

The BNMC Master Plan Update advances the connective potential of



Above: Linked by the north-south Ellicott Park spine, separate institutional identities can be strengthened along east-west streets. A cohesive and legible open space network will assist in the creation of a campus-like environment around which new development emerges.

Virginia Street through a westward continuation of "McCarley Park" to link to Main Street. While there is much more study that needs to be done with respect to property ownership, parking and traffic circulation, the value of this infrastructure and open space investment would be enormous. **A new "McCarley Park" will provide relief from the density of the surrounding institutional buildings, restore the original street grid and enhance connectivity between the neighborhoods**.

GOODELL STREET

Nearly two-thirds of people arriving to the BNMC by car do so via Goodell Street. Access to the downtown core and the medical campus via the Kensington Expressway places a significant responsibility on Goodell as a threshold to Buffalo's Academic Health Center. The renovation and occupation of the M. Wile Building and construction of the Educational Opportunity Center for UB acknowledges the importance of Goodell with a concentration of civic engagement programs.

Additional new development must reinforce this potential for Goodell Street to be a gateway and celebrate the intersection with Ellicott. As a primary corridor from the expressway, the street also carries the highest Level of Service. Traffic calming measures need to be introduced that overcome the fast moving, one-way traffic to this New York State DOT controlled roadway.

ALLEN STREET (EXTENSION)

The 2003 BNMC Master Plan advanced a strategy of enhancing connections between the campus and public transportation through an extension of Allen Street eastward from Main Street. The "Allen Street extension" (partially funded but yet to be completed) will help to reinforce pedestrian wayfinding and take advantage of the light rail amenity. **While more planning and dialogue needs to occur with regard to whether the extension is a two-lane road or simply a wide pedestrian passage, enhancing connectivity is imperative**.

The BNMC is fortunate to have two transit stations for the Niagara Frontier Transportation Authority

Above: Kevin's Walk is presently a shaded, meandering path. This walkway has the potential to become a major pedestrian route leading from the Allen Street/Medical Campus transit station into the heart of the Community Engaged Academic Health Center.

Above: Kevin's Walk is one of the few connections between the BNMC and a public transit hub. This corridor would be strengthened by landscape and infrastructure investments. (Image from the 2003 BNMC Master Plan, courtesy of Carol R Johnson Associates).

(NFTA) light rail: the Allen/Medical Campus and Summer/Best stations. As the campus grows, access to this transit line will help to minimize the demand of parking and provide a direct connection to UB's South and North Campuses.

NFTA STATION

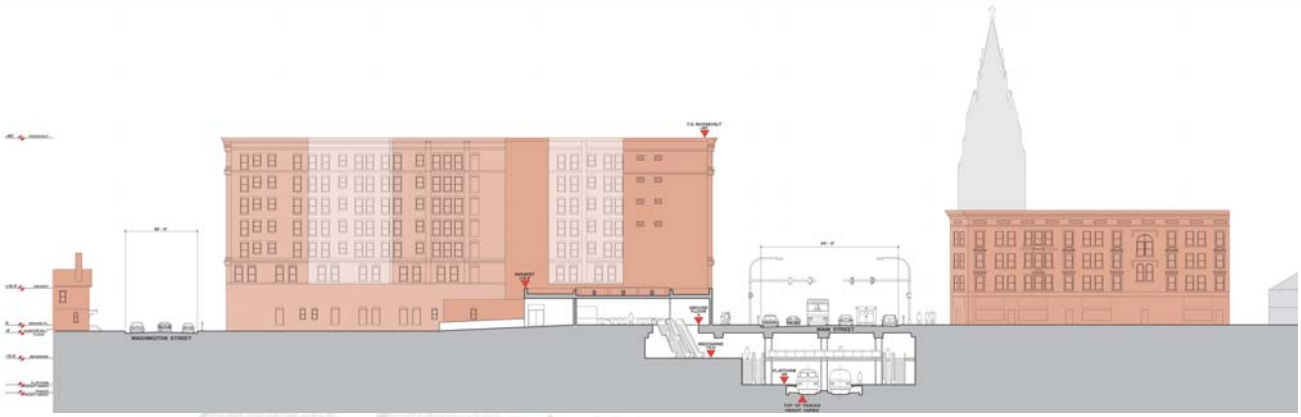
Long-term redevelopment options for the Allen/Medical Campus station (as well as the Summer/ Best stop) must include substantial residential, educational and/or office uses in association with commercial amenities and the transit stations themselves. These public/private initiatives will be development catalysts and important gateways.

Clustering these uses together with enhanced stations and wayfinding will significantly leverage the NFTA's proximity and provide a viable alternative to students, employees and visitors arriving to the BNMC by car. **The light rail and bus networks are transit resources that must be exploited**.

HIGH STREET

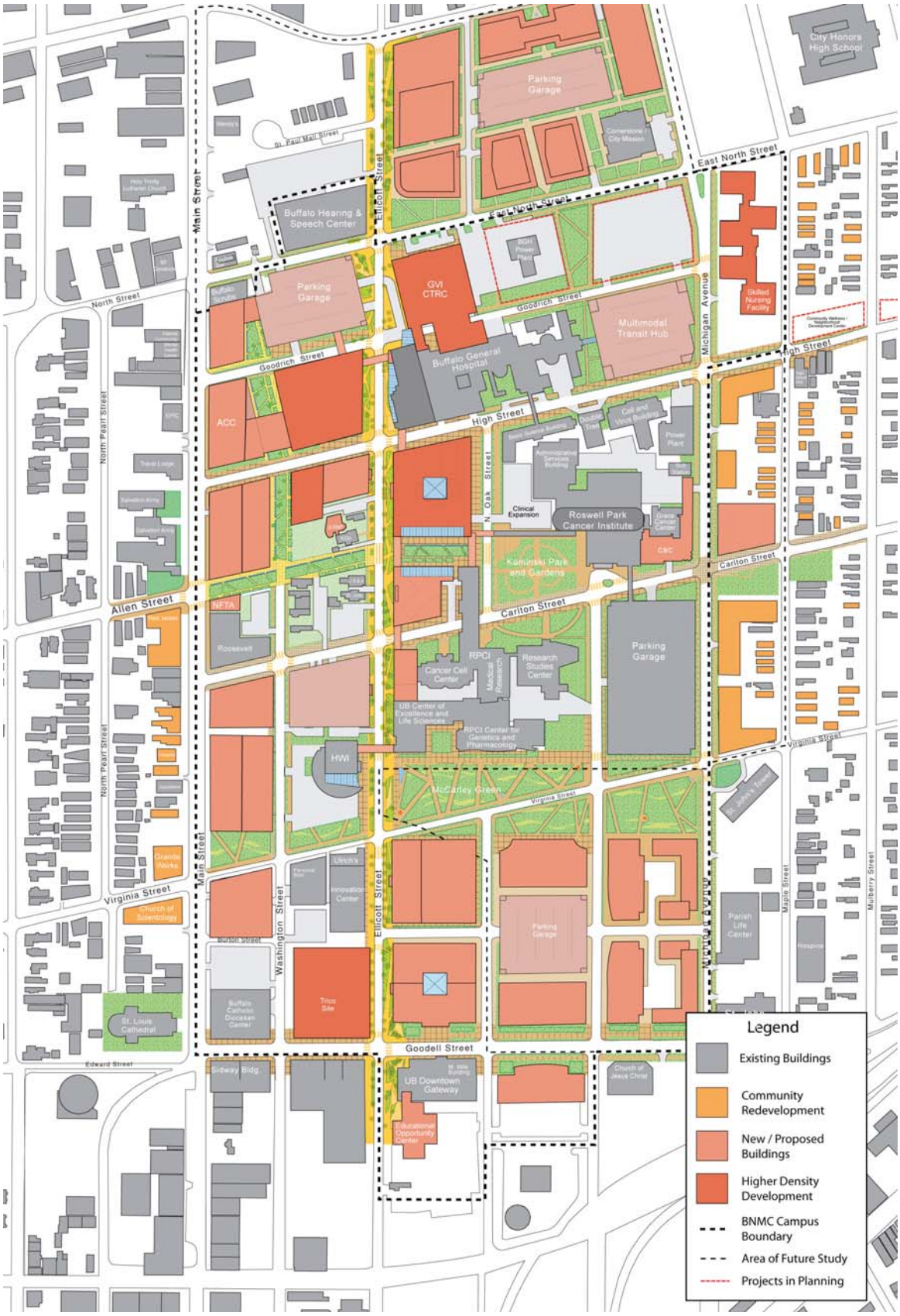
For over a century and a half, Buffalo General Hospital has grown incrementally along High Street. For this Kaleida Health facility, High Street is the front door. While the intersection of High and Ellicott marks the highest point of elevation on the campus, recent renovations to the main entry/drop off at this location have enhanced the visibility of the hospital. In addition, a primary internal corridor leading from the main entrance connects BGH buildings A- E running parallel to High Street.

Top: Diagram of the open space network on the BNMC. A renewed emphasis on streets the run perpendicular to Ellicott Street will enhance individual institutional identities.



Above: Section through Main Street at Allen Street. As the campus grows, the Allen/Medical Campus Station will be a major Transit-Oriented Development opportunity.

Left: The Allen Street extension, whether it includes cars or is designed for pedestrians only, will signal the strengthening of one of the campus' most important east-west linkages. Perspective looking east from Allen Street.



Above: The 2010 BNMC Master Plan Update builds on the 2003 Ellicott spine by emphasizing perpendicular streets that can complement Ellicott Park. Growth on the medical campus will likely double in the next decade with over 1.4 million new square feet of construction in the next five years alone with as much as 5.3 million additional square feet in the next two decades.

As High Street extends eastward into the Fruit Belt, it should emerge as a center for mixed-use development. Consistent with its historic identity and neighborhood commercial zoning designation, ground floor retail uses should compliment residential uses above. In an effort to draw users into the neighborhood, the intersection of Michigan Avenue and High Street should be treated as a gateway to the Fruit Belt.

GOODRICH STREET

The construction of the GVI/CTRC to the north of the Buffalo General tower has provided an opportunity to reconfigure the Emergency Department drop-off that had previously been located in a compromised corner location for the hospital. The construction of this project requires the closure of Goodrich Street, which will become more service-oriented and internalized to better address the needs of the hospital. However, the western section of Goodrich Street between Ellicott and Main can be improved with streetscape enhancements and wayfinding to increase Kaleida's exposure to the city's primary thoroughfare.

EAST NORTH STREET

As identified in "*The Olmsted City: The Buffalo Olmsted Park System: Plan for the 21st Century*", East North Street has the ability to be a greenway extension, connecting Symphony Circle and Front Park on the west side to Masten Park and Martin Luther King Jr. Park on the east side of the BNMC.

BEST STREET

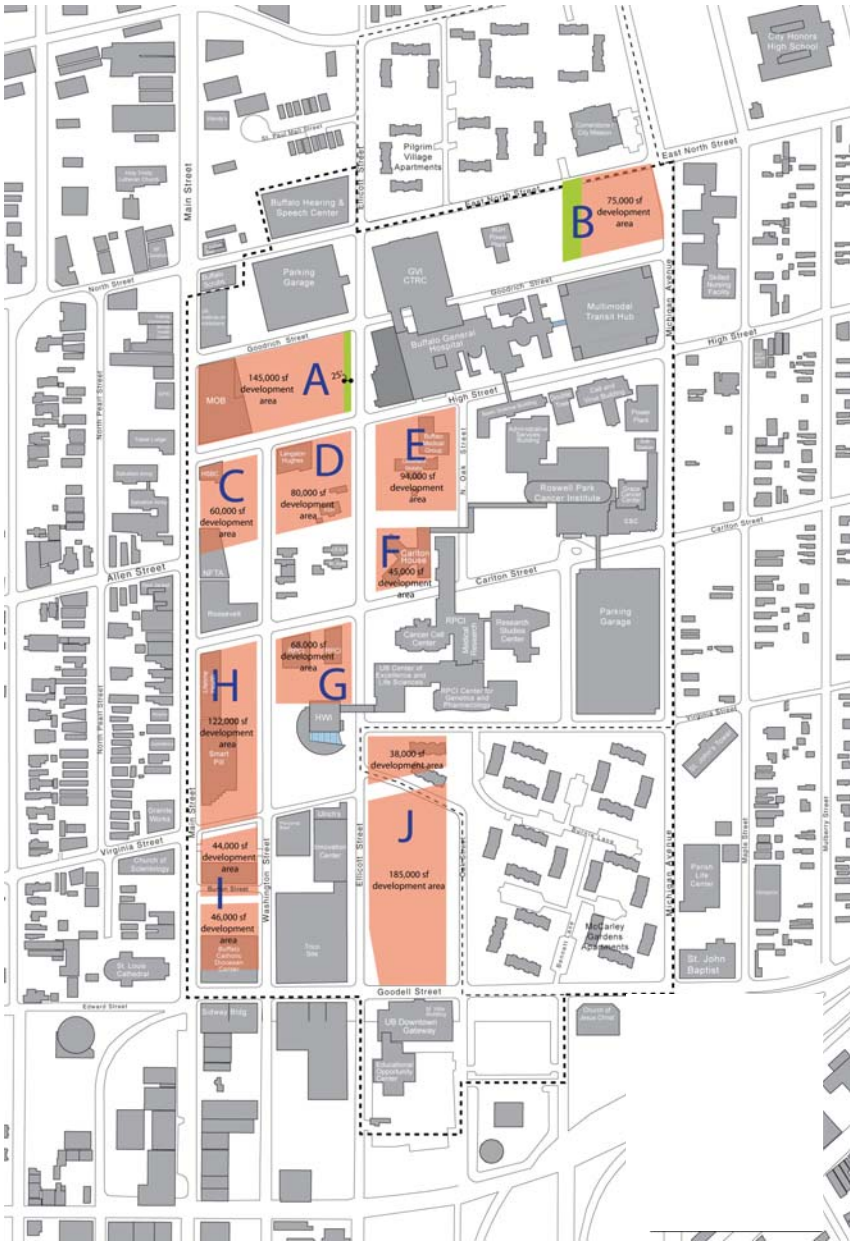
Ellicott Park currently terminates at North Street; however, the landscape should eventually extend further to North Street where it will link near to the NFTA Summer/Best station. At the intersection of Ellicott and Best Streets, a Gateway Plaza is envisioned that bookends the BNMC and signals the northern threshold with the adjoining neighborhood.

Above: North Street (at the top of the Study Area shown with a red line) has the ability to connect Symphony Circle and Front Park on the west side to Masten Park and Martin Luther King Jr. Park on the east side of the BNMC. (Image courtesy of the Urban Design Project).

Ten Strategic Parcel Studies

Opportunities to accommodate significant expansion of the medical campus increases if higher density development occurs on sites that are underutilized or low density. Assuming an "urban model" of development with higher than existing lot coverages and densities, over 4.6 million of square feet could be accommodated on parcels outlined to the right (not including the McCarley Gardens site).

The following pages identify opportunities for redevelopment on strategic sites along the streets mentioned in this section. The capacity studies and concept proposals (lettered A - J) recommend urban design strategies, target densities and configurations for key sites within the campus boundaries.

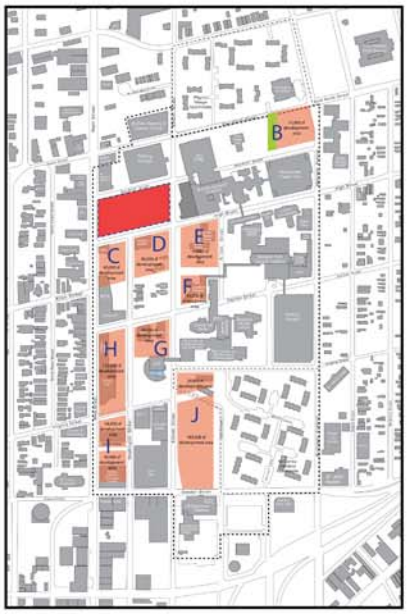


Above: A great deal of construction can be absorbed on these ten sites if the campus builds with an eye towards co-location and greater density.

A

MAIN / HIGH / ELLICOTT

Campus Site Plan



The intersection of High and Ellicott Streets represent the topographic high point of the BNMC. This intersection also holds the greatest opportunity for density and height on the campus. Greater height in the core of the campus will maximize efficiencies with existing buildings and allow for a tapering of scale as the institutions address the neighborhoods to the east and west.

An Ambulatory Care Center is currently being planned along the Main Street portion of the site with Pediatric and adult Women's services. This property along Ellicott Park has the potential to link to an extension of the NFTA rail platform. The buildout of the block should anticipate an internal "coatless" connection between the station itself and Ellicott Park. In light of the opportunity for density in this location, there is a need for some open space relief with a small pocket park at corner of High and Ellicott Streets. The space can be viewed as an extension to the sequence of parks along the Ellicott spine.

Key design considerations: Integrate open space at the corner of High Street and Ellicott Streets, internal connection to an expanded Allen/Medical Campus station platform, active ground floor retail uses along Main and High Streets, integrated below-grade parking to account for the grade change on site.

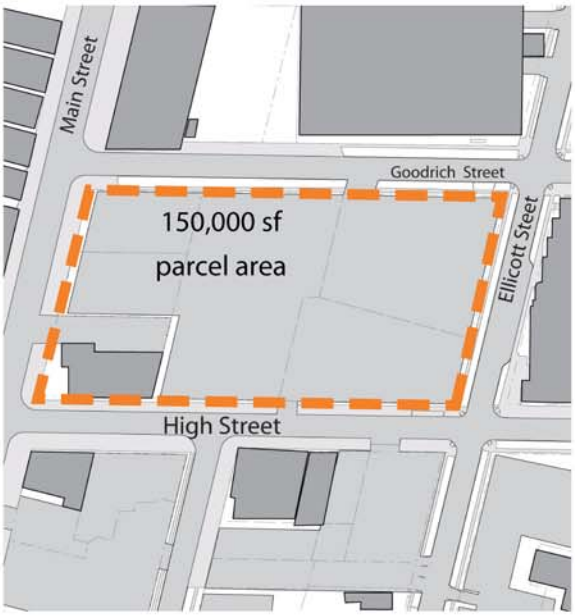
Density Matrix

GSF / FAR	lot coverage 40%	50%	75%	90%
floors 3	180,000 sf 1.2	225,000 sf 1.5	337,500 sf 2.25	405,000 sf 2.7
4	240,000 sf 1.6	300,000 sf 2.0	450,000 sf 3.0	540,000 sf 3.6
5	300,000 sf 2.0	375,000 sf 2.5	562,500 sf 3.75	675,000 sf 4.5
6	360,000 sf 2.4	450,000 sf 3.0	675,000 sf 4.5	810,000 sf 5.4
7	420,000 sf 2.8	525,000 sf 3.5	787,500 sf 5.25	945,000 sf 6.3
8	480,000 sf 3.2	600,000 sf 4.0	900,000 sf 6.0	1,080,000 sf 7.2

key

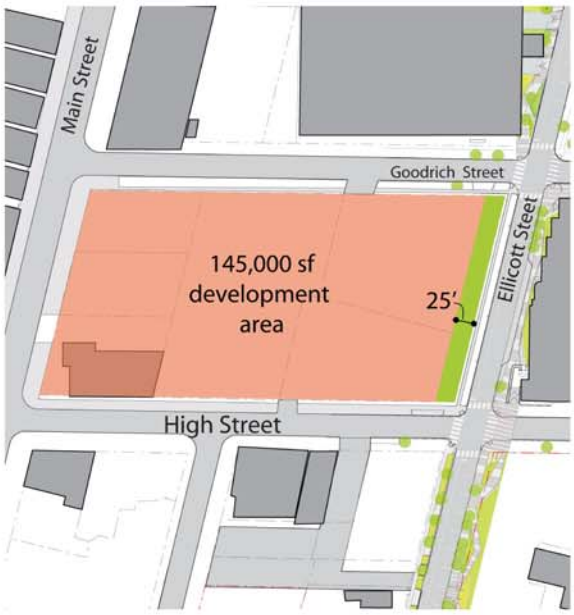
	mid-range density
FAR	floor area ratio
	(not including structured parking)
GSF	gross square footage
1 acre	43,560 sf

Existing Plan



parcel area	150,000 SF (3.44 Acres)
owner	Kaleida and Others
current use	Medical Offices
	Surface Parking

Proposed Parcel Plan



parcel area	145,000 SF (3.33 acres)
recommended use	Medical Offices
	Research Facility
	Clinical Care
	Education
	Below grade parking

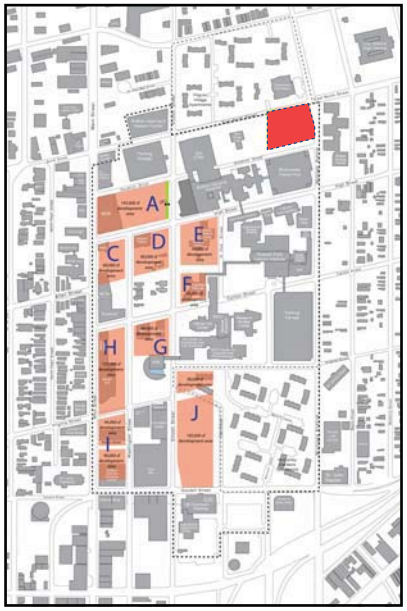
Conceptual Proposal

1) Preserve Ellicott Park Setback
2) Connect to Expanded NFTA Platform
3) 145,000 SF (3.33 acres) Development Area
4) Building frontages address Ellicott, High and Main St

2 buildings @
6, 10 stories
716,000 gsf
FAR 4.9

B GOODRICH / MICHIGAN / EAST NORTH

Campus Site Plan



As a result of the reconstruction of the Buffalo General Hospital Emergency Department, Goodrich Street will become an internal service road for Kaleida Health. The closure of the public right-of-way between Michigan Avenue and the GVI/CTRC allows the institution to foster greater connectivity between new and planned facilities and initiates Kaleida's desire to build to the east. While the aggregation of properties and the closure of streets within medical campuses can cause a variety of negative repercussions, the closure of this tertiary street is warranted as it enables other, more significant redevelopment prospects to advance.

East North Street is a connector. At a city-wide scale, it connects Symphony Circle and Front Park to Masten Park and Martin Luther King Jr. Park. A more robust streetscape along East North Street will reinforce Frederick Law Olmsted's grand open space network. Moreover, as one of the few east-west streets that actually connect neighborhoods through the BNMC, the site at the intersection of Michigan and East North Street offers a gateway development opportunity.

Key design considerations: Extend Colby Park through the site to enhance north-south pedestrian connections, maximize linkages with adjacent buildings.

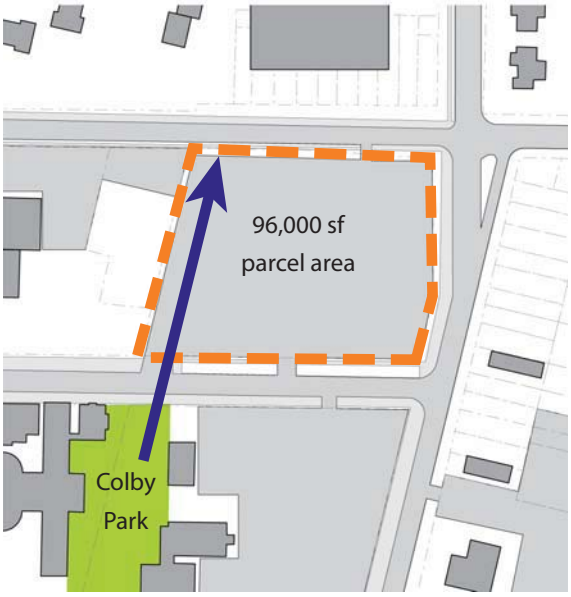
Density Matrix

GSF / FAR	lot coverage 40%	50%	75%	90%
floors 3	115,200 sf 1.2	144,000 sf 1.5	216,000 sf 2.25	259,200 sf 2.7
4	153,600 sf 1.6	192,000 sf 2.0	288,000 sf 3.0	345,600 sf 3.6
5	192,000 sf 2.0	240,000 sf 2.5	360,000 sf 3.75	432,000 sf 4.5
6	230,400 sf 2.4	288,000 sf 3.0	432,000 sf 4.5	518,400 sf 5.4
7	268,800 sf 2.8	336,000 sf 3.5	504,000 sf 5.25	604,800 sf 6.3
8	307,200 sf 3.2	384,000 sf 4.0	576,000 sf 6.0	691,200 sf 7.2

key

	mid-range density
FAR	floor area ratio
	(not including structured parking)
GSF	gross square footage
1 acre	43,560 sf

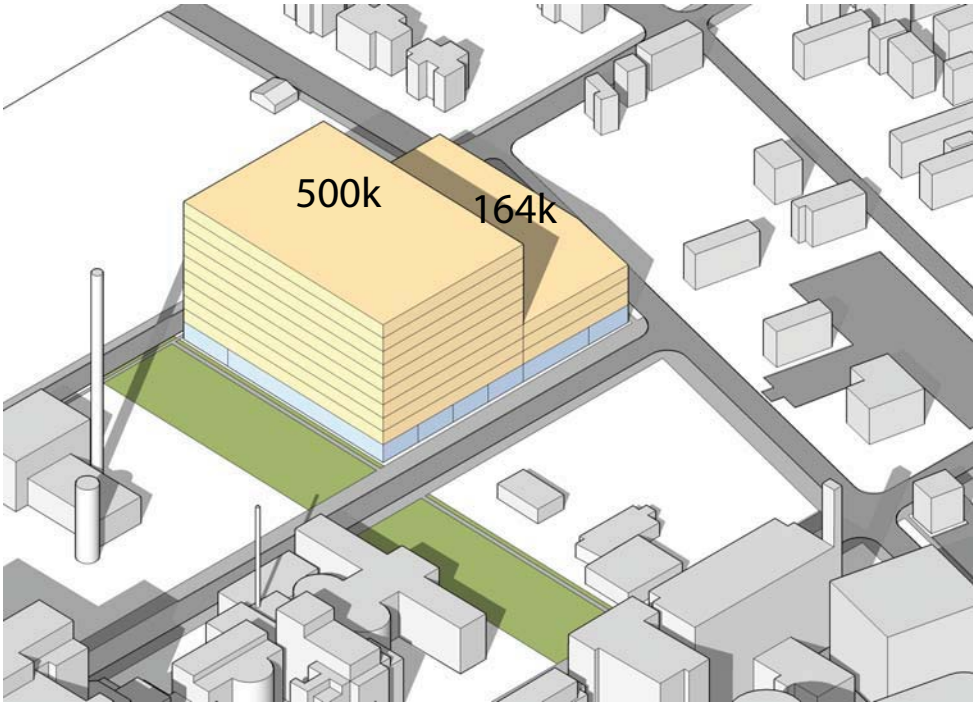
Existing Plan



parcel area	96,000 SF (2.20 Acres)
owner	Kaleida Health
current use	Surface Parking

Proposed Parcel Plan

parcel area	75,000 SF (1.72 Acres)
recommended use	Hospital Related
	Research & Education Facility
	Below Grade Parking



Conceptual Proposal

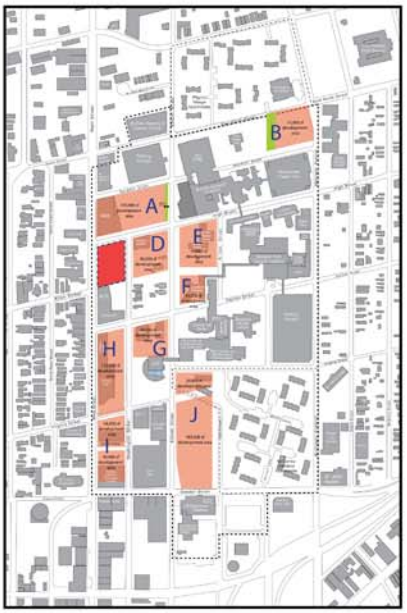
1) Extend Colby Park to North Street
2) 75,000 SF (1.72 acres) Development Area
3) Building frontages address Michigan Ave

1 building @
4-10 stories
664,000 gsf
FAR 8.8

C

MAIN / HIGH

Campus Site Plan



Investing – or reinvesting – in infrastructure that enables downtown to be more accessible is one of the most important components in the revitalization of neighborhoods and the nurturing of the downtown core. Urban TOD's with light rail connections provide mobility options by creating centers of development when use of a car is not a necessity. They increase transit ridership, conserve open space, improve public safety and serve as economic development tools. No site on the medical campus is better positioned to accommodate a large-scale TOD as a gateway to both the BNMC and the neighborhoods than this assemblage of properties.

The current NFTA rail boardings at the Allen/Medical Campus Station is 500,000 passengers per year. This number could be greatly increased with a well designed and appropriately scaled development. A project on this site that engages transit will foster greater cohesion across Main Street and offer a range of ground floor amenities that focus on commuter services. However, new programs located on the ground level should not be developed at the expense of nearby commercial space that is struggling to succeed.

Key design considerations: Incorporate Allen Street extension (pedestrian only or vehicular and pedestrian), include ground floor commercial services and build at a height that is consistent with the adjacent, historic Roosevelt Building (between 8-10 stories).

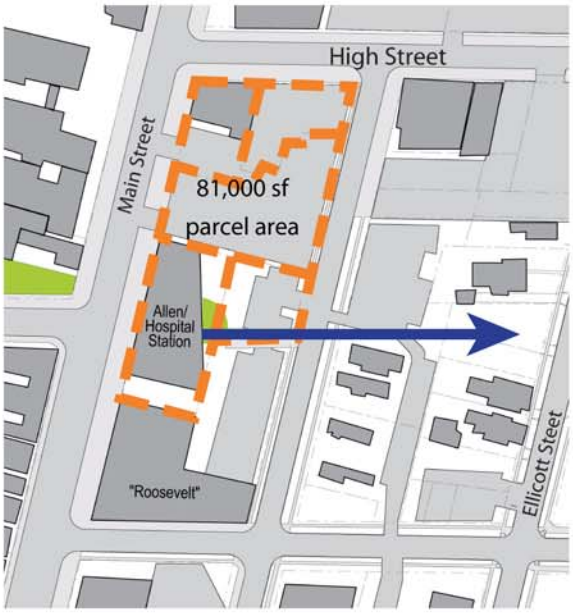
Density Matrix

GSF / FAR	lot coverage 40%	50%	75%	90%
floors 3	72,000 sf 1.2	90,000 sf 1.5	135,000 sf 2.25	162,000 sf 2.7
4	96,000 sf 1.6	120,000 sf 2.0	180,000 sf 3.0	216,000 sf 3.6
5	120,000 sf 2.0	150,000 sf 2.5	225,000 sf 3.75	270,000 sf 4.5
6	144,000 sf 2.4	180,000 sf 3.0	270,000 sf 4.5	324,000 sf 5.4
7	168,000 sf 2.8	210,000 sf 3.5	315,000 sf 5.25	378,000 sf 6.3
8	192,000 sf 3.2	240,000 sf 4.0	360,000 sf 6.0	432,000 sf 7.2

key

▭	mid-range density
FAR	floor area ratio
	(not including structured parking)
GSF	gross square footage
1 acre	43,560 sf

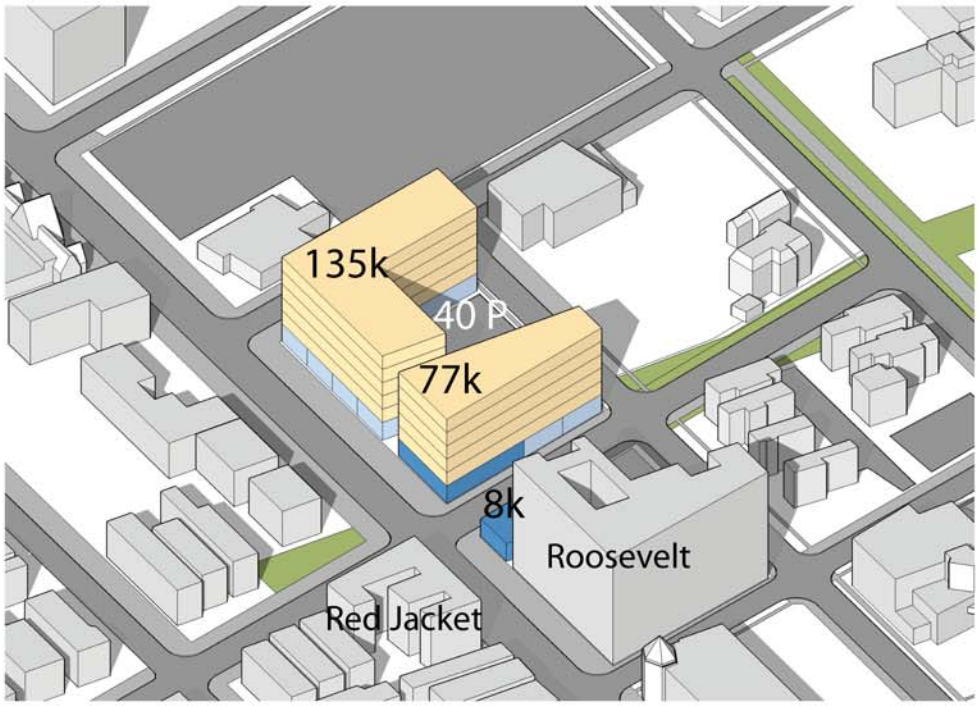
Existing Plan



parcel area	81,000 SF (1.9 Acres)
owner	NFTA, HSBC Bank
current use	Transit Stop
	Surface Parking
	Bank Branch

Proposed Parcel Plan

parcel area	60,000 SF (1.38 Acres)
recommended use	Research and Academic Space
	Medical Offices
	Resident/Doctor Housing
	Transit-Oriented Development



Conceptual Proposal

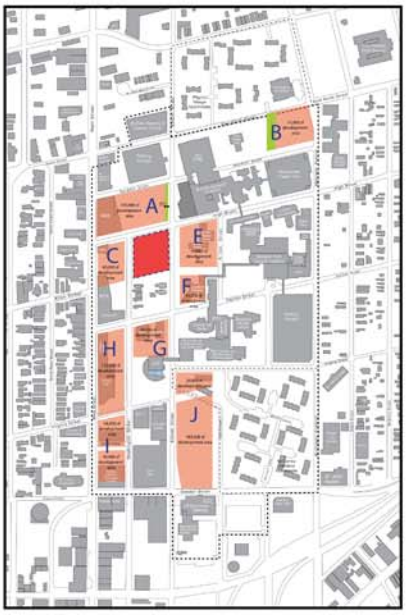
1) Allen Street extends to the East (vehicular/pedestrian)
2) Ideal for Transit Oriented Development [TOD]
3) Incorporate Transit Station
3) 60,000 SF (1.38 acres) Development Area
4) Building frontages address Main, Allen & High St

3 buildings @
6 stories + surface parking
220,000 gsf +
40 parking spaces
FAR 3.7

D

WASHINGTON / HIGH / ELLICOTT

Campus Site Plan



The sole art-related institution on the BNMC is Langston Hughes Art Center. While a cultural presence on the medical campus is an important component to the health and well being of the entire campus community, the age, condition and scale of the buildings on this property signals that redevelopment is likely. Site D is adjacent to Kevin Guest House and aligned along Allen Street extension that provides enhanced visibility for the property. The UB2020 Downtown Plan conceptualizes Washington Street (north of the Allen Street extension) as pedestrian corridor leading to the UB Research Institute on Addictions.

Key design considerations: Capitalize on the close proximity to RPCI and Kaleida with significant density, incorporate Ellicott Park, provide opportunities for ground floor retail space.

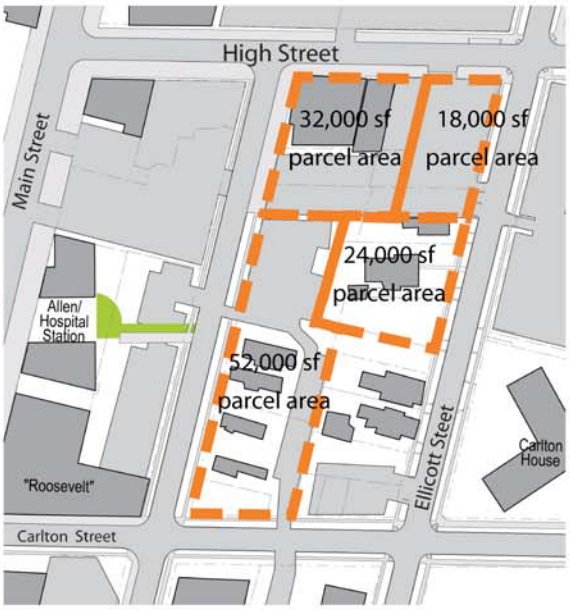
Density Matrix

GSF / FAR	lot coverage 40%	50%	75%	90%
floors 3	96,000 sf 1.2	120,000 sf 1.5	180,000 sf 2.25	216,000 sf 2.7
4	128,000 sf 1.6	160,000 sf 2.0	240,000 sf 3.0	288,000 sf 3.6
5	160,000 sf 2.0	200,000 sf 2.5	300,000 sf 3.75	360,000 sf 4.5
6	192,000 sf 2.4	240,000 sf 3.0	360,000 sf 4.5	432,000 sf 5.4
7	224,000 sf 2.8	280,000 sf 3.5	420,000 sf 5.25	504,000 sf 6.3
8	256,000 sf 3.2	320,000 sf 4.0	480,000 sf 6.0	576,000 sf 7.2

key

▭	mid-range density
FAR	floor area ratio (not including structured parking)
GSF	gross square footage
1 acre	43,560 sf

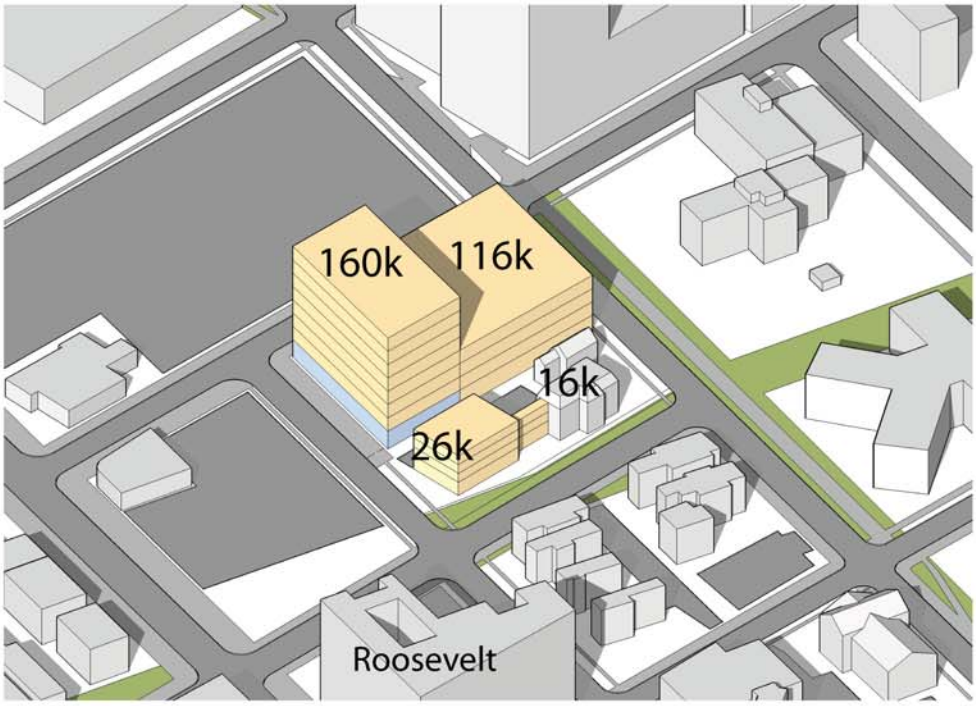
Existing Plan



parcel area	126,000 SF (2.89 Acres)
owner	Kevin Guest House, BNMC, Kaleida, Ciminelli Development
current use	Art Gallery, Kevin Guest House, Offices
	Surface Parking

Proposed Parcel Plan

parcel area	80,000 SF (1.84 Acres)
recommended use	Kevin Guest House
	Clinical Space
	Research or Education Facility
	Ground floor retail
	Surface / Structured Parking



Conceptual Proposal

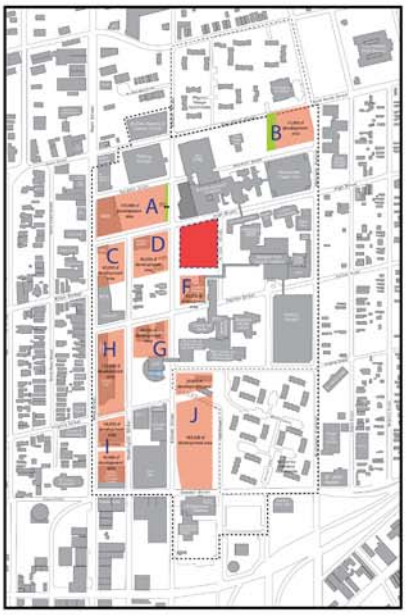
1) Create Allen Street Extension
2) 80,000 SF (1.84 acres) Development Area
3) Building frontages address Ellicott & Allen St

2 buildings
3, 4, 6 stories
318,000 gsf
FAR 4.0

E

ELLICOTT / HIGH / NORTH OAK

Campus Site Plan



The confluence of Ellicott Park and High Street is a site currently occupied by the Buffalo Medical Group and Cleveland Biomedical Labs. This site is a "100% corner" for the BNMC with strong opportunities for connection in every direction. In particular, this site has enormous potential to be a link between Roswell Park and Kaleida Health.

Site E lies along Ellicott Park and is adjacent to the terminus of the Allen Street extension. The Master Plan Update envisions an open space connection between the Allen Street extension at Ellicott Park and Roswell Park's primary open space to the east. The BNMC "Common" is envisioned as an active gathering space between this site and the Carlton House site directly to the south.

Key design considerations: Capitalize on the close proximity to RPCI and Kaleida with significant density, engage the BNMC Common towards Carlton House, incorporate Ellicott Park.

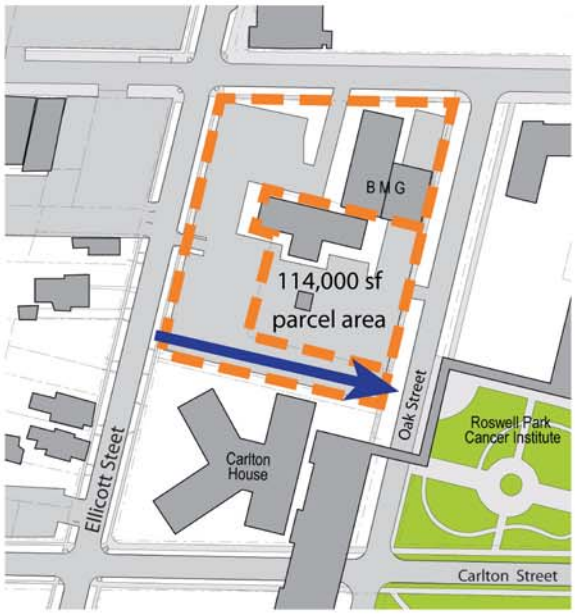
Density Matrix

GSF / FAR	lot coverage 40%	50%	75%	90%
floors 3	118,800 sf 1.2	148,500 sf 1.5	222,750 sf 2.25	267,300 sf 2.7
4	158,400 sf 1.6	198,000 sf 2.0	297,000 sf 3.0	356,400 sf 3.6
5	198,000 sf 2.0	247,500 sf 2.5	371,250 sf 3.75	445,500 sf 4.5
6	237,600 sf 2.4	297,000 sf 3.0	445,500 sf 4.5	534,600 sf 5.4
7	277,200 sf 2.8	346,500 sf 3.5	519,750 sf 5.25	623,700 sf 6.3
8	316,800 sf 3.2	396,000 sf 4.0	594,000 sf 6.0	712,800 sf 7.2

key

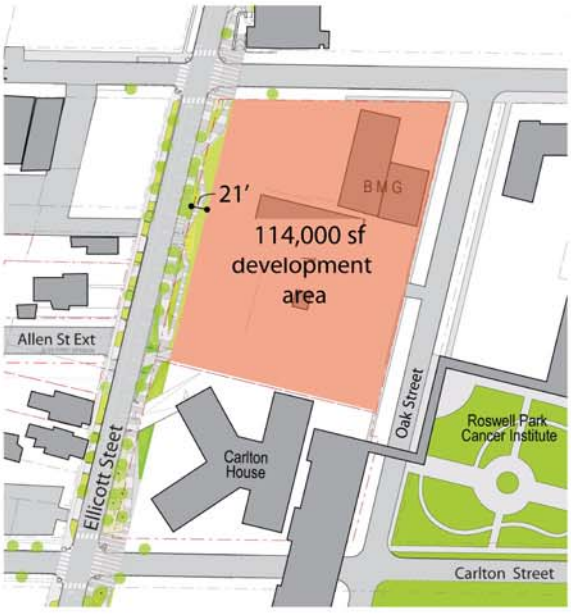
	mid-range density
FAR	floor area ratio
	(not including structured parking)
GSF	gross square footage
1 acre	43,560 sf

Existing Plan

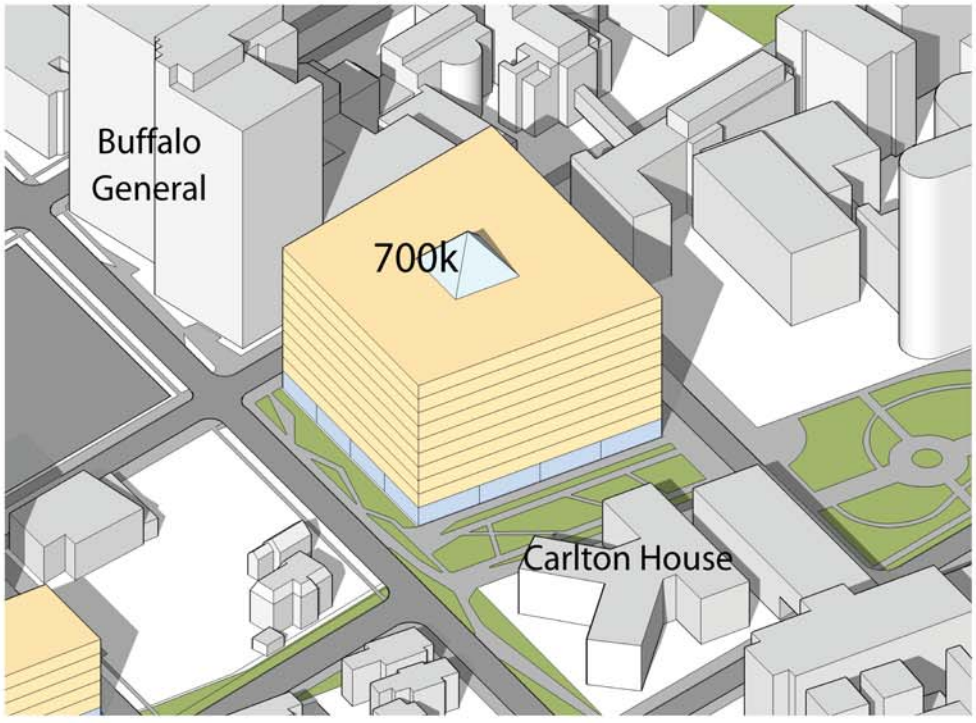


parcel area	114,000 SF (2.62 Acres)
owner	BMG and Cleveland BioLabs
current use	Medical Offices & Research Labs Surface Parking

Proposed Parcel Plan



parcel area	114,000 SF (2.62 acres)
recommended use	Clinical Care Research or Education Facility Shared Food Service Medical Offices Below Grade Parking



Conceptual Proposal

1) Create BNMC "Common" aligned w/ Extension
2) 114,000 SF (2.62 acres) Development Area
3) Building frontages address Ellicott St, High St & BNMC "Common"

8-10 stories + underground parking
700,000 gsf
FAR 6.1

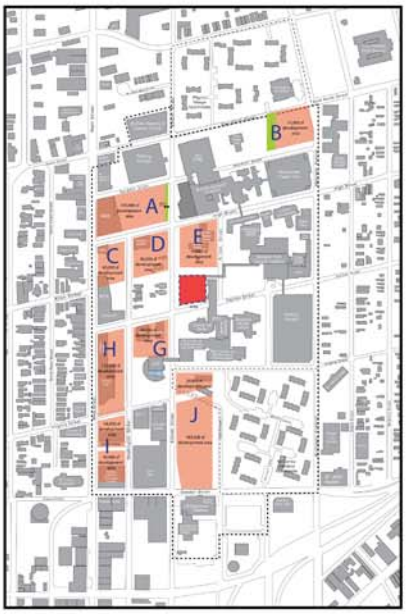
F

ELLICOTT / CARLTON

The confluence of Ellicott Park and Carlton Street is an important corner for RPCI. Site F lies along Ellicott Park and is adjacent to the terminus of the Allen Street extension. The Master Plan Update envisions an open space connection between the Allen Street extension at Ellicott Park and Roswell Park's primary open space. The BNMC "Common" is envisioned as an active gathering space between this site and Buffalo Medical Group / Cleveland Bio Labs site directly to the north.

Key design considerations: Capitalize on the close proximity to RPCI and Kaleida with significant density, engage the BNMC Common to the north, incorporate Ellicott Park.

Campus Site Plan



Density Matrix

GSF / FAR	lot coverage 40%	50%	75%	90%
floors 3	58,800 sf 1.2	73,500 sf 1.5	101,250 sf 2.25	132,300 sf 2.7
4	78,400 sf 1.6	98,000 sf 2.0	147,000 sf 3.0	176,400 sf 3.6
5	98,000 sf 2.0	122,500 sf 2.5	183,750 sf 3.75	220,500 sf 4.5
6	117,600 sf 2.4	147,000 sf 3.0	220,500 sf 4.5	264,600 sf 5.4
7	137,200 sf 2.8	171,500 sf 3.5	257,250 sf 5.25	308,700 sf 6.3
8	156,800 sf 3.2	196,000 sf 4.0	294,000 sf 6.0	352,800 sf 7.2

key

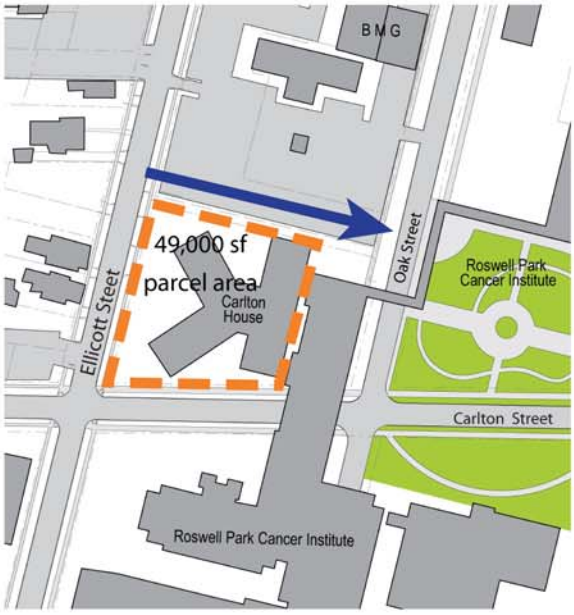
mid-range density

FAR floor area ratio (not including structured parking)

GSF gross square footage

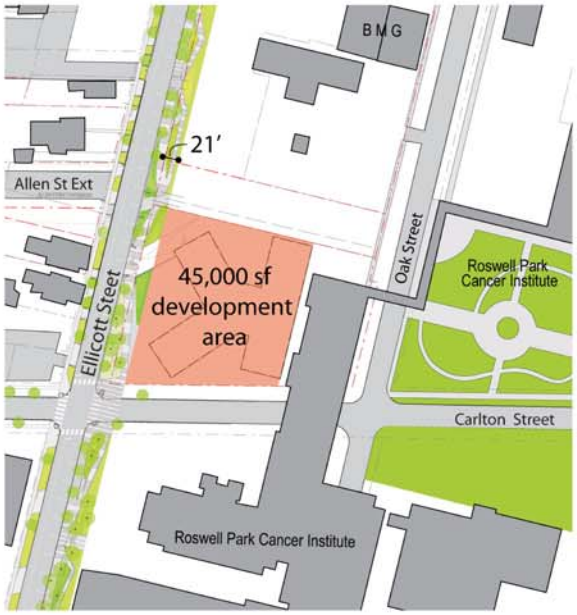
1 acre 43,560 sf

Existing Plan

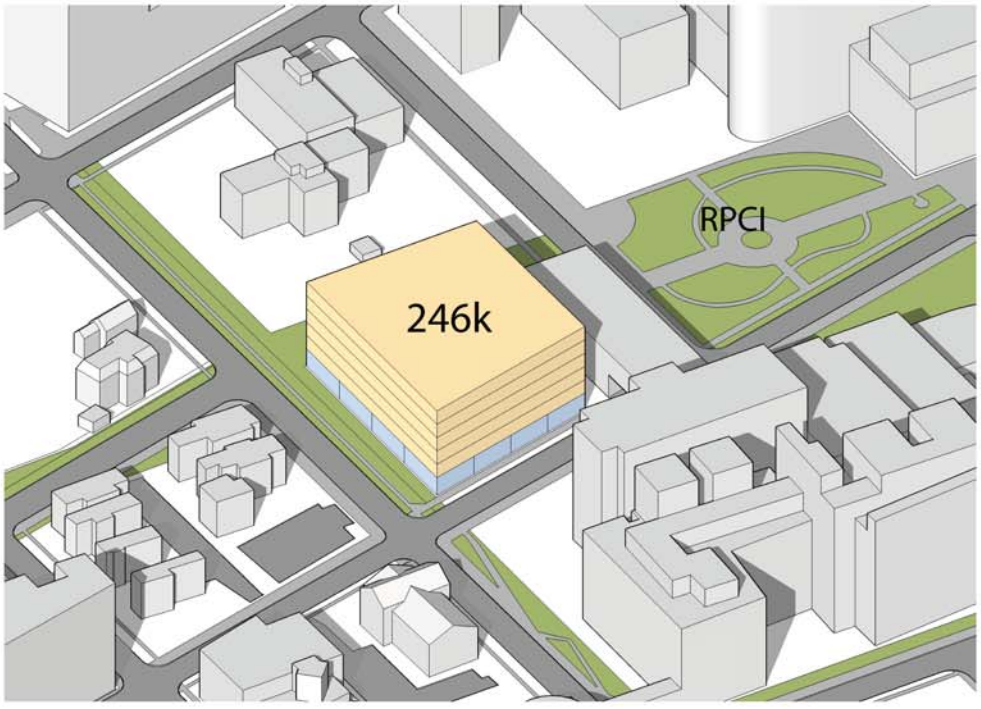


parcel area	49,000 SF (1.12 Acres)
owner	RPCI
current use	Cancer Prevention, Offices and Records

Proposed Parcel Plan



parcel area	45,000 SF (1.03 acres)
recommended use	Research Facility
	Medical Offices



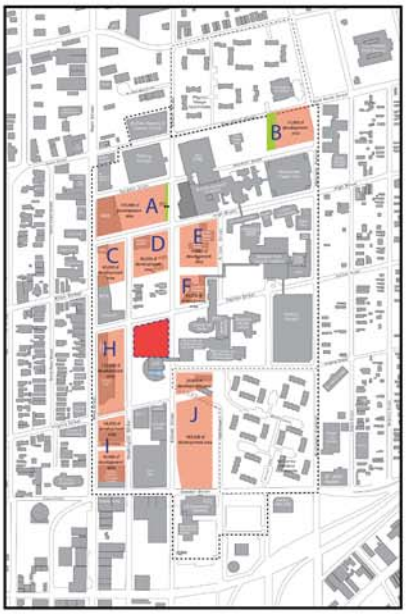
Conceptual Proposal

1) Preserve Ellicott Park Setback
2) BNMC "Common" to North of Parcel
3) 45,000 SF (1.03 acres) Development Area
4) Building frontages address Ellicott and Carlton St

1 building
@ 6 stories
246,000 gsf
FAR 5.5

G WASHINGTON / CARLTON / ELLICOTT

Campus Site Plan



Combining the former Cornerstone Manor property with the 901 Washington site creates a more attractive development opportunity of 1.5 acres. While the 901 Washington building is still in active use and works well for administration space, the building is suburban in character and does not fully maximize the site's footprint. Similar to Roswell's Carlton House site diagonally across Ellicott Street, new development on Site G enables RPCI to increase its Carlton Street presence and grow west in the direction of Main Street.

Key design considerations: Build to the property lot lines, integrate building access on Carlton Street and/or Washington Street, minimize on-site surface parking and service access.

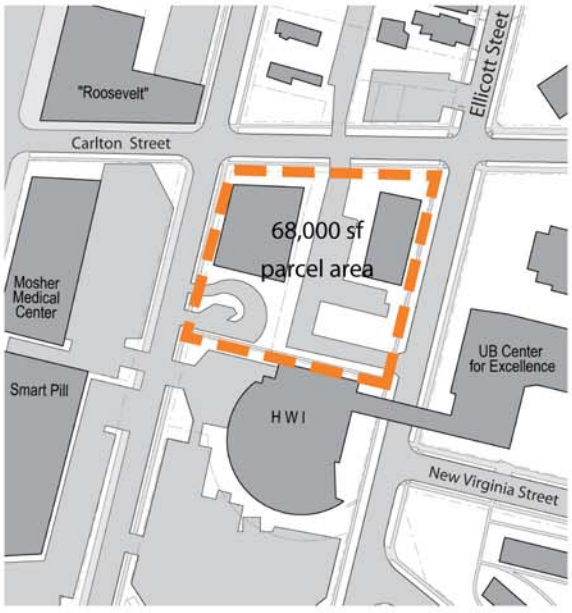
Density Matrix

GSF / FAR	lot coverage 40%	50%	75%	90%
floors 3	81,600 sf 1.2	102,000 sf 1.5	153,000 sf 2.25	183,600 sf 2.7
4	108.800 sf 1.6	136,000 sf 2.0	204,000 sf 3.0	244,800 sf 3.6
5	136,000 sf 2.0	170,000 sf 2.5	255,000 sf 3.75	306,000 sf 4.5
6	163,200 sf 2.4	204,000 sf 3.0	306,000 sf 4.5	367,200 sf 5.4
7	190,400 sf 2.8	238,000 sf 3.5	357,000 sf 5.25	428,400 sf 6.3
8	217,600 sf 3.2	272,000 sf 4.0	408,000 sf 6.0	489,600 sf 7.2

key

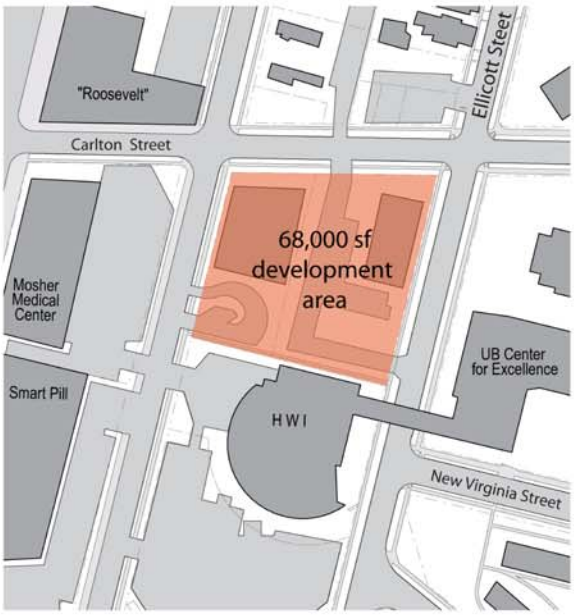
	mid-range density
FAR	floor area ratio
	(not including structured parking)
GSF	gross square footage
1 acre	43,560 sf

Existing Plan

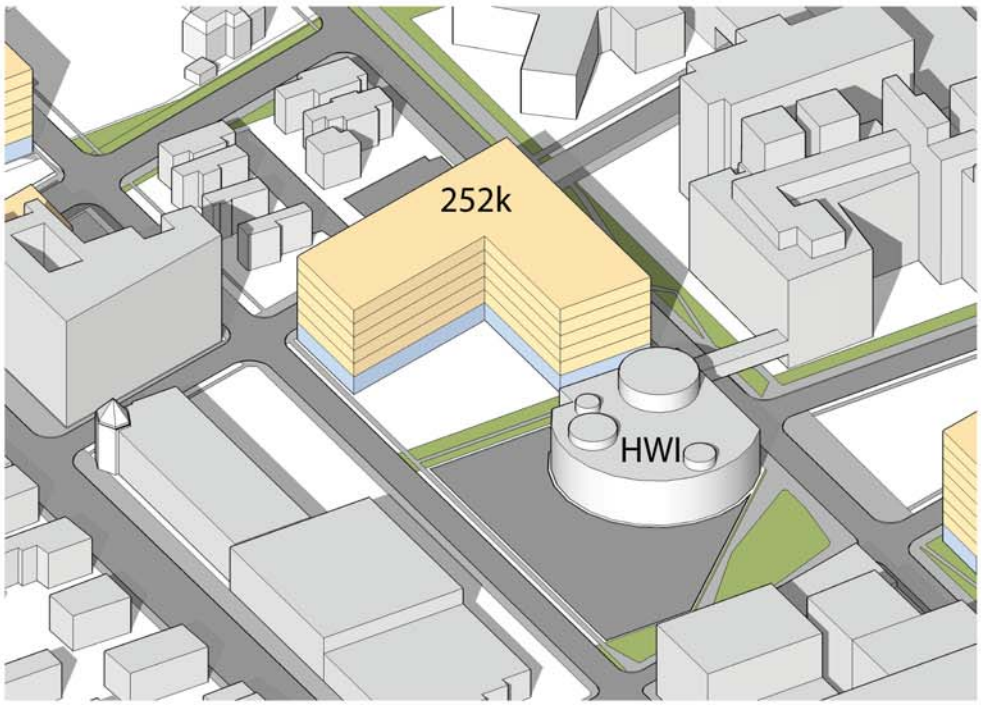


parcel area	68,000 SF (1.56 Acres)
owner	RPCI
current use	Offices (Cornerstone Manor scheduled for demolition)
	Surface Parking

Proposed Parcel Plan



parcel area	68,000 SF (1.56 Acres)
recommended use	Offices
	Research & Education Facility



Conceptual Proposal

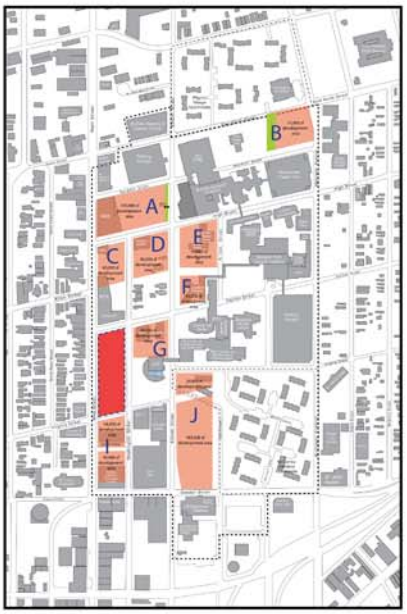
1) Key Site at Corner of Ellicott & Carlton St
2) 68,000 SF (1.56 acres) Development Area
3) Building frontages address Ellicott & Carlton St

1 building @
6 stories
252,000 gsf
FAR 3.7

H

MAIN / CARLTON / WASHINGTON

Campus Site Plan



Main Street is the city's principal address. It is the location of the NFTA's only light rail corridor and the most important thoroughfare linking the medical campus north-south. As such, there is a need for densification along Main Street on both sides of the corridor. While efforts should be made to preserve and rehabilitate the remaining historic fabric on the westside of the street, there is greater opportunity (and fewer significantly historical buildings) on the eastside.

As development pressures dictate, existing one and two story structures should be replaced by four to eight story developments that are at a scale befitting an urban campus. One need not look too far away for appropriate building precedents. The adjacent buildings of the Roosevelt and the Red Jacket are significant architectural resources and were designed at appropriate urban scale for the width of Main Street. As development pressures are making their way north from the downtown core, and more interest is developing around transit stations, the rehabilitation of these historic resources will entice adjacent redevelopment on Site H.

Key design considerations: Increase scale of new development, ground floor programs should enhance pedestrian experience along Main Street, dedicate building setback on southern portion of property to extend planned Virginia Street Park to connect to Main Street.

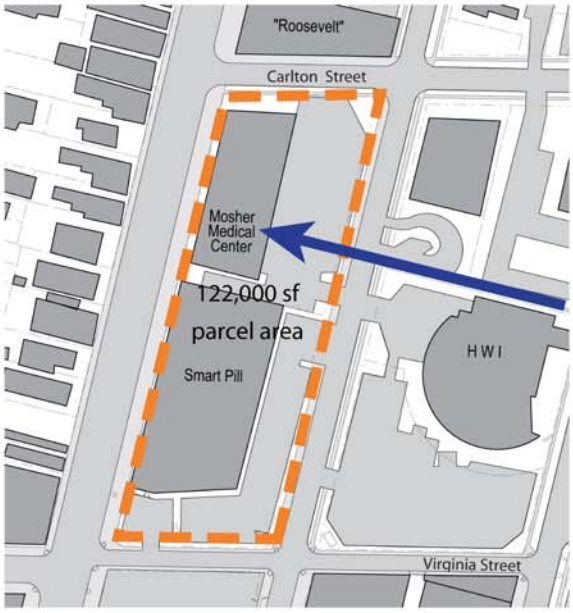
Density Matrix

GSF / FAR	lot coverage 40%	50%	75%	90%
floors 3	146,400 sf 1.2	183,000 sf 1.5	274,500 sf 2.25	329,400 sf 2.7
4	195,200 sf 1.6	244,000 sf 2.0	366,000 sf 3.0	439,200 sf 3.6
5	244,000 sf 2.0	305,000 sf 2.5	457,500 sf 3.75	549,000 sf 4.5
6	292,800 sf 2.4	366,000 sf 3.0	549,000 sf 4.5	658,800 sf 5.4
7	341,600 sf 2.8	427,000 sf 3.5	640,500 sf 5.25	768,600 sf 6.3
8	390,400 sf 3.2	488,000 sf 4.0	732,000 sf 6.0	878,400 sf 7.2

key

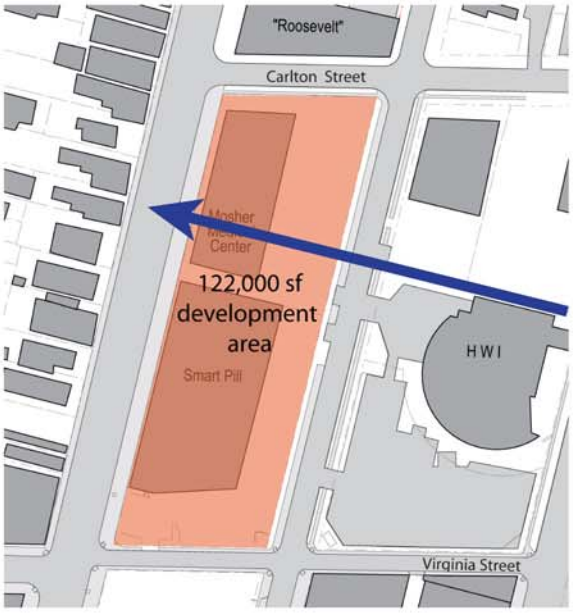
	mid-range density
FAR	floor area ratio
	(not including structured parking)
GSF	gross square footage
1 acre	43,560 sf

Existing Plan

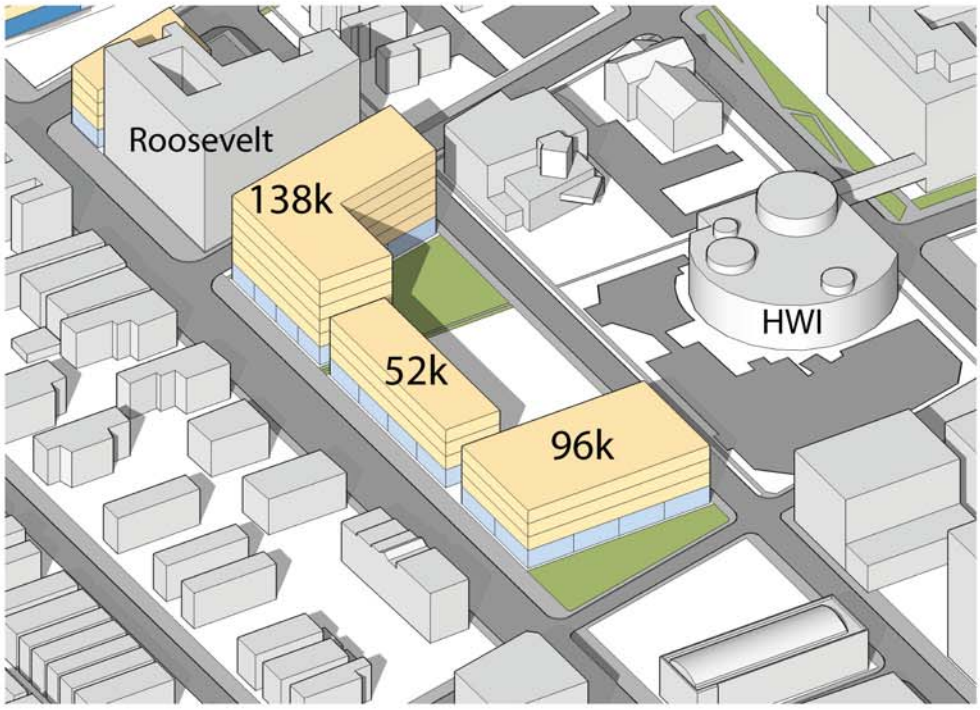


parcel area	122,000 SF (2.80 Acres)
owner	Private
current use	Medical Offices & Research Facility
	Surface Parking

Proposed Parcel Plan



parcel area	122,000 SF (2.80 Acres)
recommended use	Mixed Medical
	Housing
	Research/Education
	Surface Parking



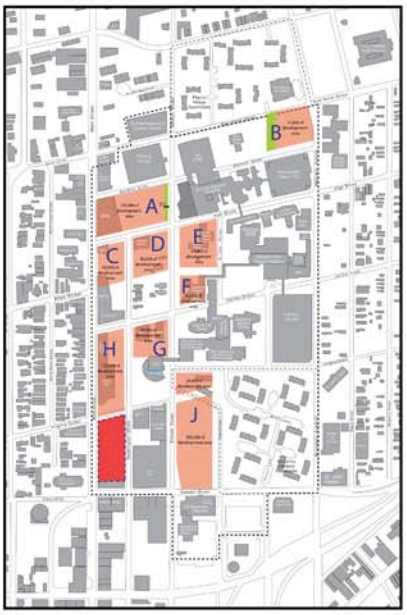
Conceptual Proposal

1) Key Site at Corner of Main and Carlton Streets
2) 122,000 SF (2.80 acres) Development Area
3) Building frontages address Main, Carlton, & Virginia St
4) Allow for public space connections
5) Ground floor retail

3 buildings @
4-8 stories
286,000 gsf
FAR 2.3

MAIN / VIRGINIA / WASHINGTON

Campus Site Plan



As the interface between Main Street and the BNMC extends further downtown to the south, historical resources become more frequent and significant. St. Louis Church, the Dioceses Buildings and the University's first medical school building at the corner of Virginia Street and Main are wonderful cultural assets. New development on the east side of Main Street on Site I should be built to assist in connecting these historic resources.

Key design considerations: Increase scale of new development, ground floor programs should enhance pedestrian experience along Main Street.

Density Matrix

GSF / FAR / floors	lot coverage 40%	50%	75%	90%
3	108,000 sf 1.2	135,000 sf 1.5	202,500 sf 2.25	243,000 sf 2.7
4	144,000 sf 1.6	180,000 sf 2.0	270,000 sf 3.0	324,000 sf 3.6
5	180,000 sf 2.0	225,000 sf 2.5	337,500 sf 3.75	405,000 sf 4.5
6	216,000 sf 2.4	270,000 sf 3.0	405,000 sf 4.5	486,000 sf 5.4
7	252,000 sf 2.8	315,000 sf 3.5	472,500 sf 5.25	567,000 sf 6.3
8	288,000 sf 3.2	360,000 sf 4.0	540,000 sf 6.0	648,000 sf 7.2

key

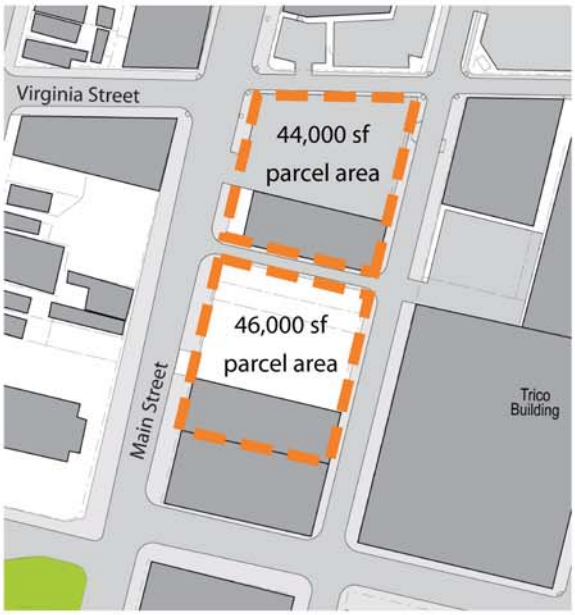
mid-range density

FAR floor area ratio
(not including structured parking)

GSF gross square footage

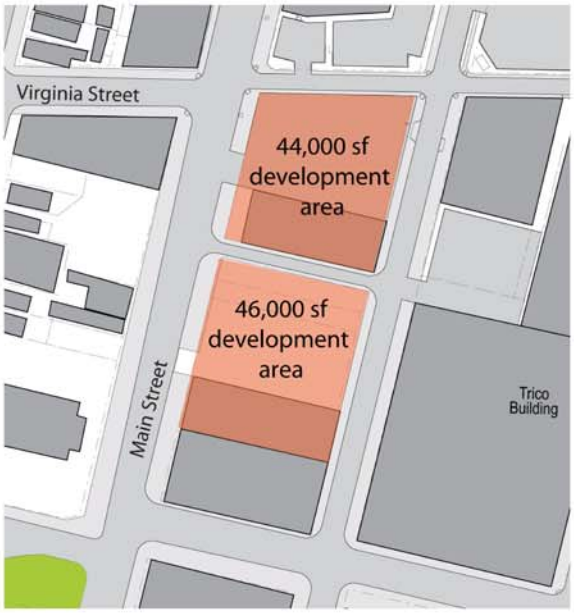
1 acre 43,560 sf

Existing Plan

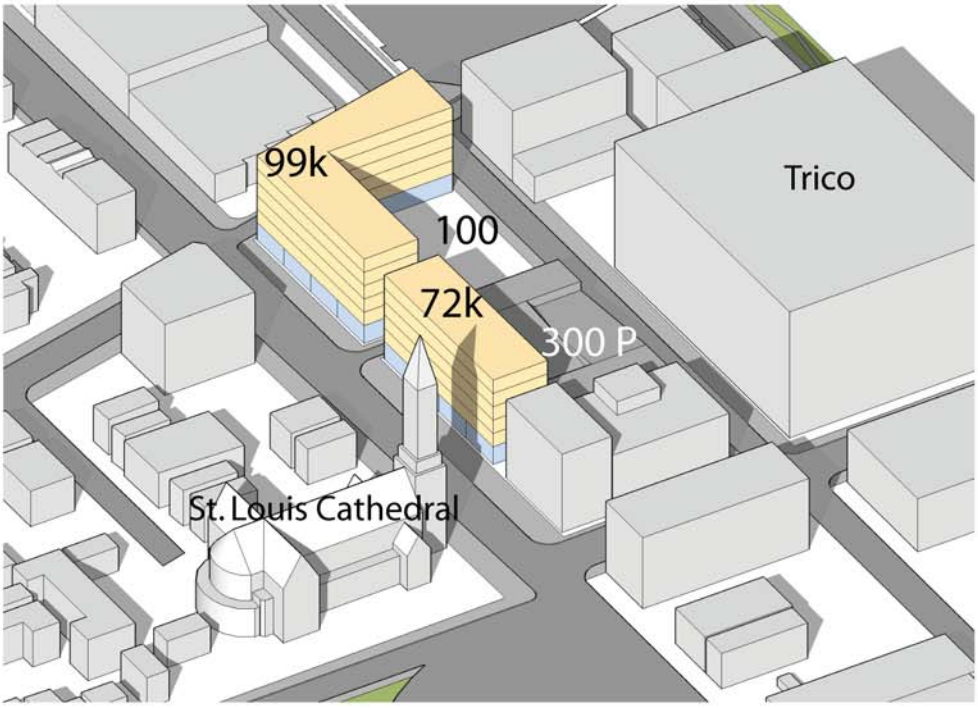


parcel area	90,000 SF (2.07 Acres)
owner	Diocese & Other
current use	Diocese
	Structured & Surface Parking

Proposed Parcel Plan



parcel area	90,000 SF (2.07 Acres)
recommended use	Research & Education Facility
	Housing
	Structured Parking



Conceptual Proposal

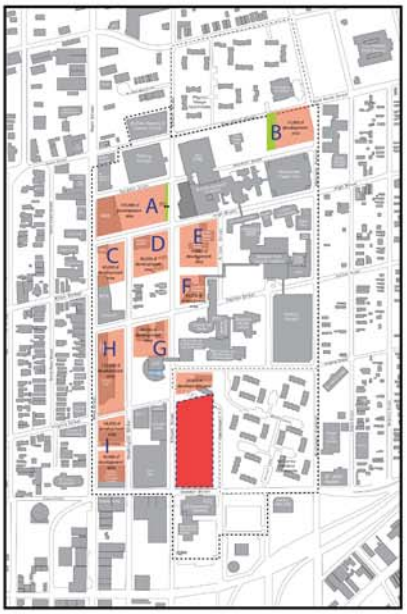
1) Mediate the scale between Allentown and the BNMC
2) 90,000 SF (2.07 acres) Development Area
3) Reinforce the street wall Along Main Street
4) Incorporate Commericial / Retail Activity

2 buildings @ 6 stories
+ parking structures
171,000 gsf +
400 parking spaces
FAR 1.9

J

ELLICOTT / VIRGINIA / NORTH OAK

Campus Site Plan



Currently a highly-used surface parking lot, Site J holds immense development potential for the campus. The property is aligned along the emerging campus spine of Ellicott Park and there are multiple opportunities for site access. The property has excellent visibility along the southern corridor into downtown via Goodell Street. Moreover, Site J is large enough to absorb both structured parking and significant new institutional development.

The North End Projects are not the only new buildings to emerge in the next few years on the BNMC. This property will experience greater development pressure as the University at Buffalo constructs the UB Downtown Gateway across Goodell Street. UB's presence on the southern edge of the BNMC creates a second cluster of new construction activity. Site J is a link between the north and south nodes of activity along the Ellicott axis.

Key design considerations: Structured parking should be embedded in the middle of the block with parking access via Oak Street, new facilities should address Ellicott Park and book-end a mid-block parking structure, ground floor commercial space should enhance the pedestrian experience.

Density Matrix

GSF / FAR	lot coverage 40%	50%	75%	90%
floors 3	244,800 sf 1.2	306,000 sf 1.5	459,000 sf 2.25	550,800 sf 2.7
4	326,400 sf 1.6	408,000 sf 2.0	612,000 sf 3.0	734,400 sf 3.6
5	408,000 sf 2.0	510,000 sf 2.5	765,000 sf 3.75	918,000 sf 4.5
6	489,600 sf 2.4	612,000 sf 3.0	918,000 sf 4.5	1,101,600 sf 5.4
7	571,200 sf 2.8	714,000 sf 3.5	1,071,000 sf 5.25	1,285,200 sf 6.3
8	652,800 sf 3.2	612,000 sf 4.0	1,224,000 sf 6.0	1,468,800 sf 7.2

key

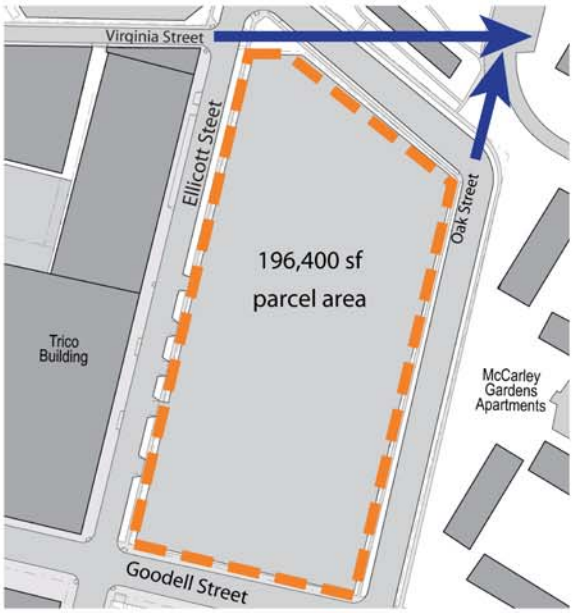
mid-range density

FAR — floor area ratio (not including structured parking)

GSF — gross square footage

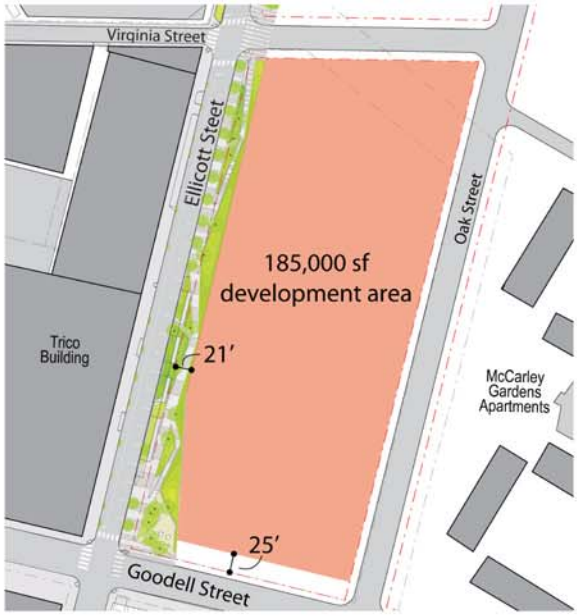
1 acre — 43,560 sf

Existing Plan

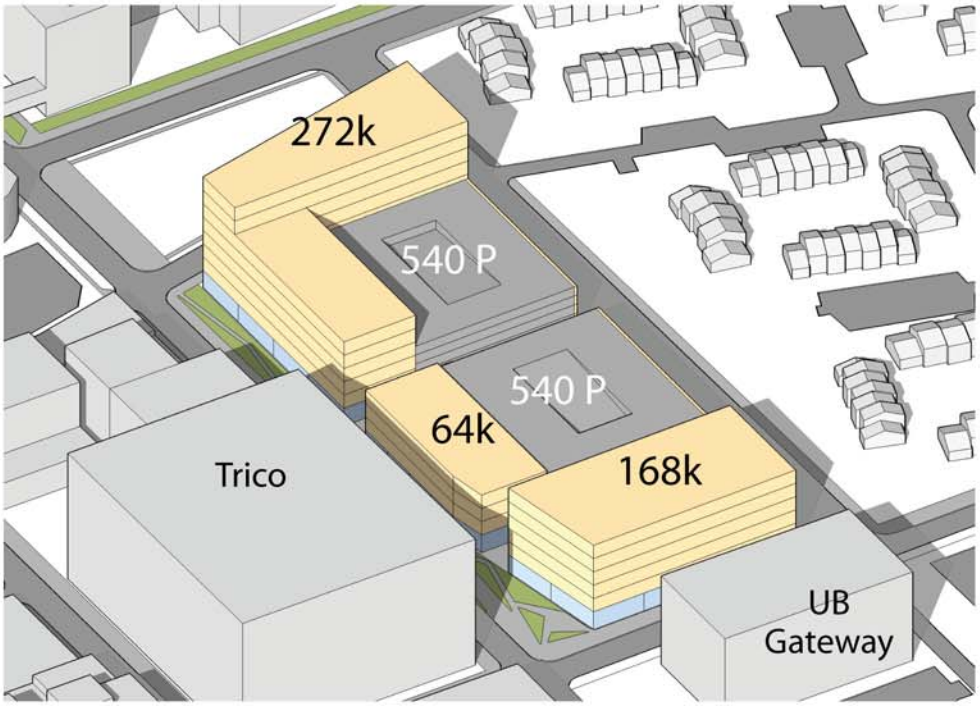


parcel area	196,400 SF (4.5 Acres)
owner	BNMC Inc
current use	Surface Parking

Proposed Parcel Plan



parcel area	185,000 SF (4.25 acres)
recommended use	Research & Education Facility
	Medical Offices
	Structured Parking
	Ground floor commercial space



Conceptual Proposal

1) Preserve Ellicott Park Setback
2) Extend Virginia and Oak Streets
3) 185,000 SF (4.25 acres) Development Area
4) Building frontages address Ellicott and Goodell

3 buildings @ 4-8 stories
+ parking structure
504,000 gsf +
1080 parking spaces
FAR 2.7

VIII. IMPLEMENTATION PLAN

Ten Collaborative Opportunities for Moving Forward

Planning assignments are often thought of as sober, analytical, thoughtful, consensus-building endeavors, and they must be. But they must also have a celebratory and promotional aspect. Seldom is planning an occasion to be timid. Without a commitment to innovation or excellence, the likelihood of real progress diminishes. There is no need for a document to occupy a shelf, nor for a plan to be developed that is unencumbered by the expectations of pragmatic execution. **Inspiration and insight to achievement are required; implementation is the key**.

The underlying purpose of the BNMC Master Plan Update is to establish a vision for the future and move the campus from an aggregation of individual plans towards the creation of a first-rate Community Engaged Academic Health Center where research, clinical care, education and entrepreneurship are cultivated.

Even in this uncertain economic climate, intensive development is going to occur downtown. **Though it may take time to transpire, the full vision of a world-class, medical center is imminent.**

The following ten steps (listed in no particular order) were identified by campus stakeholders as important and necessary initiatives. They build off of the collaborative efforts already underway and will help the BNMC move towards its next phase of development.

1. Strategic Plan

Functional alignments between institutions and within departments are necessary that provide strong rationale to co-locate. Detailed discussion are needed that include physicians, researchers, educators and staff that will assist in the implementation of the physical vision. These discussions could be facilitated by health care specialists around themes that emerge from the Expert Focus Teams (See Step 8).

2. Generic Environmental Impact Statement

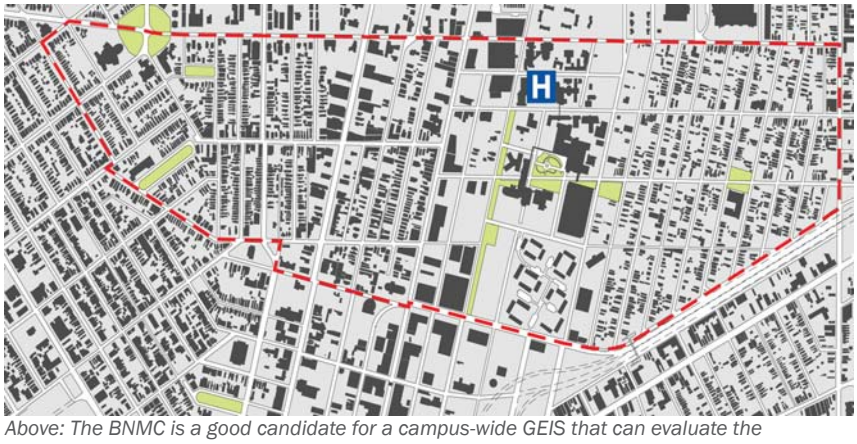
As the BNMC grows, there will be new types and intensities of land uses and impacts. A Generic Environmental Impact Statement (GEIS) is well suited for the campus as a whole as it will allow for broad environmental review of projects where specific components may not be fully developed or known at the time of review.

Similar to the GEIS process that was undertaken with the North End Project, a campus-wide GEIS will enable the city to assess known plan components and impacts in detail while the constraints and consequences of less defined elements could be discussed in general terms. Importantly, a BNMC GEIS would establish conditions under which future actions would be undertaken, including those actions which require supplemental reviews.

In the past, the City of Buffalo has suggested using State Environmental Quality Review Act (SEQRA) to create formally approved Area Plans, which would provide a rigorous public involvement and a "clear, supportable record of the agency's decision-making." This process makes sense for the BNMC given the amount of anticipated growth. An alternate, larger study area would include the neighborhood plans that were developed as part of the Four Neighborhoods, One Community planning process.

SEQRA would provide a neutral platform within which all the various agencies and proponents could contribute information and weigh development options and impacts in a public forum. Decisions made during this process will likely be very enforceable.

Ideally, the City of Buffalo would be the lead agency and would submit a full Environmental Assessment Form (EAF), cooperating with UB, Kaleida, RPCI, the BNMC and other agencies.



Above: The BNMC is a good candidate for a campus-wide GEIS that can evaluate the potential impacts of growth in both detailed and general terms. The inclusion of the adjacent neighborhoods in the GEIS would demonstrate the cohesiveness of an "Area Plan".

3. Land Use and Zoning

THE NEED FOR REFORM

The City of Buffalo is beginning a comprehensive overhaul of the city's zoning code for the first time in nearly sixty years. The zoning reform, which is a multi-year effort, will act as the foundation for the development of a new "place-based economic development" strategy for all of Buffalo's neighborhoods.

Dubbed the 'Buffalo Green Code,' it will embody 21st century values about economic development, stainability, pedestrian movement and green urbanism. Chicago-based Camiros Ltd., (in partnership with Goody Clancy of Boston) was selected to revise the City Zoning Code beginning in May 2010. The goal of the effort is to move away from development initiatives that are based on traditional zoning mechanisms of "districts" and "zones" differentiated by land use.

The Buffalo Green Code will be an inclusionary process, actively engaging citizens in the formulation of the regulatory effort. Since the BNMC already has strong partnerships with neighborhood groups and an internal structure of Work Councils, it should convene a group specifically dedicated to interfacing with the rezoning initiative.

The new code will be centered on the physical and spatial assets in a neighborhood that define a sense of place. The code will help support public transit and reduce the dependency on automobile use. It will also make it easier for neighborhoods to develop within close proximity to jobs and daily amenities.

THE AHC as CASE STUDY

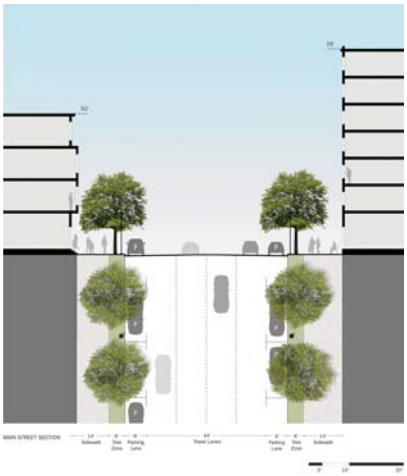
By streamlining the regulatory process, new economic development opportunities will emerge around the city. This makes the Academic Health Center, as a consortium of major institutions, a great candidate for further study and initial application of the code within the rezoning process.

Current land use on the BNMC is guided by the 1965 Oak Street Urban Renewal Plan that does not reflect the urban character of the medical campus. The creation of new precincts within the Academic Health Center are necessary that emphasize a mix of uses and reinforce build-to lines (as opposed to set-backs) that encourage densification and enhance pedestrian activity.

A medical district with a stronger mix of uses is envisioned versus a singular "zone" approach where academic, research and clinical care functions are separated. A Form Based Code, which could emerge out of the rezoning process, will place less emphasis on specific uses, allowing for greater flexibility with programming. It will concentrate more on physical and spatial aspects of the campus as well as building character, acknowledging that uses are dynamic and change over time.

Lot and area requirements currently reflect suburban standards and restrict opportunities for innovative infill projects. In particular, a stronger, collective sense of urban design needs to be developed all over the medical campus and especially the seams with the neighborhoods along Main Street, High Street and Michigan Avenue.

Inspiration and insight are required to achieve success; implementation is the key.



Above: A Form Based Code for the AHC would closely evaluate the context of the area and develop a regulatory framework that more clearly delineates the massing and character of the architecture, while leaving flexibility in terms of use. Section of Main Street courtesy of Sasaki/Madden Planning Group.

PROTOTYPES

Prototypes need to be developed for areas on and around the campus that are largely well-formed and whose patterns of development are strong. For example, the westside of Main Street, portions of Allen Street and the UB Gateway would fit into this category. Other areas, such as the eastside of Main Street, Michigan Avenue or High Street in the Fruit Belt, which have lost much of their historic patterns, also warrant attention and are good candidates for the development of new prototypes.

4. Transportation Planning

One of the most important and pressing goals for the BNMC in 2010 is to develop and implement a transportation system that supports the evolving needs of an Academic Health Center and that addresses the short and long term needs of a growing population of patients, visitors, employees and students. The campus is working to achieve this goal through four initiatives.

One, the construction of a new north end parking structure at High Street and Michigan Avenue will help to meet the demand generated by the North End Projects. Two, an integrated shuttle system and satellite parking initiative will coordinate off-campus parking opportunities. Three, existing parking spaces will be maximized and four, efforts will be made to finalize the lease agreements on the 900 space City Ramp to the west of Buffalo General Hospital.

In addition to these initiatives, the BNMC is mobilizing to address the Howard/Stein-Hudson and Walker Parking Consultants short-term recommendations from the *Comprehensive Transportation Study*. The recommendations are being viewed in the context of current BNMC capacity to implement the initiatives.

This work includes the establishment of a Transportation Demand Management Association, general transit improvements, on and off street parking improvements and improvements in valet service, data tracking and addressing traffic safety and congestion issues.

5. Safety and Security

A primary goal of the BNMC public safety planning process is to determine where greater collaboration, coordination, and communication among BNMC member institutions (as well as with Federal, State and local law enforcement) can work to enhance the safety of today's campus, and ensure ongoing safety as the campus continues to develop in the future.

The effort is a charge of the BNMC Board of Directors and is being carried out through a collaborative effort among BNMC administrative staff and the appropriate member institutions' personnel who have been assigned to participate in public safety sub-committees.

Over the course of the last 18 months, members of the BNMC Public Safety Project Management Group have established a vision statement to help further the ongoing development of a collaborative and evolving public safety plan for the campus: "To provide the greatest possible services, protection and infrastructure to ensure the safety of the campus community through better collaboration, coordination, and communication among BNMC member institutions." The purpose of the document is to aid in the development and implementation of a collaborative and feasible BNMC Public Safety Plan.

Public safety is a multifaceted component of both the daily operations and physical environment of the BNMC, responsible for ensuring the actual and perceived welfare of the campus population; therefore, it is important that this document take a comprehensive approach to planning for the current and future safety of the medical campus.

The BNMC Public Safety Plan will:

1. Examine the existing safety and security resources and operations of current public safety entities on the BNMC.

Above: As the BNMC grows, more commercial opportunities will emerge within and around the campus historic context. The Granite Works along Main Street is a good example of historic reuse that incorporates a mix of uses with ground floor retail space.

2. Assess the existing safety and security conditions of the exterior campus environment.
3. Identify both real and perceived safety and security issues.
4. Set realistic public safety goals for the immediate, short, and long terms.
5. Develop a phasing and implementation strategy based on priorities, plans, and funding streams.
6. Determine best practices by performing a case study on the organization and operations of a comparable, multi-partner public safety program.

6. Retail Strategy

In many cities, medical campuses grow faster than downtown centers. However, the tendency is for institutions to grow inward. Often, commercial and retail amenities are internalized to maximize convenience. In addition, many health care related professionals do not have the time (or take the time) to eat out or shop beyond the confines of their building.

To address these issues, the BNMC is in the process of developing a comprehensive retail strategy. The purpose of the initiative is to provide the campus appropriate retail amenities to service its growing population of employees, patients, visitors, and students. With over 8,500 employees currently, and potentially 10,000 students in the future, there is a remarkable opportunity to create retail amenities that can service the growing population.

The retail study must support a healthy balance between on-campus and neighborhood retail providers. Careful dialogue is necessary to ensure that commercial interests and economic development opportunities for the neighborhoods can be realized as the Academic Health Center grows.

Off campus retail opportunities must focus on Main, Allen and High Streets. There is a high percentage of vacant storefronts on Main Street and - while some rehabilitation of a number of properties has already occurred - many more opportunities exist.

The Allen/Medical Campus NFTA station is an obvious candidate for a transit-oriented redevelopment. Ground floor retail at this site will draw employees towards Allentown and promote transit users. Allen Street is already known as a strong commercial corridor, but there are gaps and retail linkages that could be strengthened.

In the Fruit Belt, High Street needs to be the focus of a broader array of neighborhood services. Through the *Fruit Belt Neighborhood Strategy,* the community identified a site at the corner of Mulberry and High Street for an active community center. RPCI has been working with the Community Action Organization in developing initial concept plans for a similar program that is emerging into a Community Wellness and Neighborhood Development Center.

Similar to this intersection, other neighborhood corners to the east of Michigan Avenue have the potential for a mix of uses with some retail in the base of the building. As a major transportation corridor for bus transit, High Street has good visibility and access.

Careful dialogue is necessary to ensure that commercial interests and economic development opportunities for the neighborhoods can be realized as the Academic Health Center grows.

Michigan Avenue - while not a retail street historically - should bridge the gap between the large institutional scale of the BNMC and the residential scale of the Fruit Belt with some dedicated ground floor space to amenities that both the campus and the neighborhood could share. Virginia and Carlton Streets are mainly residential in nature and are, therefore, unlikely retail candidates.

As a general rule, retail amenities that emerge through the analysis need to complement and minimize competition with commercial activity in the neighborhoods and seek to minimize the possible negative environmental impacts.

For example, the nearby Elmwood Village is an attractive and vibrant pedestrian environment, in part, because local amenities and services entice people from Women and Children's Hospital to frequent their businesses. Such an environment needs to emerge on the BNMC in phases that recognize the realities of market conditions.

7. Utility Plan

A campus-wide utility plan will examine the opportunities for improving energy costs and efficiencies across institutional boundaries. The plan should first identify and analyze the locations of all existing campus infrastructure and determine the capacity present in the systems.

Second, the plan should align the physical development plans of the institutions with anticipated future energy and information technology needs associated with those developments. Third, given the amount of new development on the BNMC, the study should recommend sites for the location of a new (and possibly shared) substation to reduce campus-wide electrical costs and associated line loss.

8. Expert Focus Teams

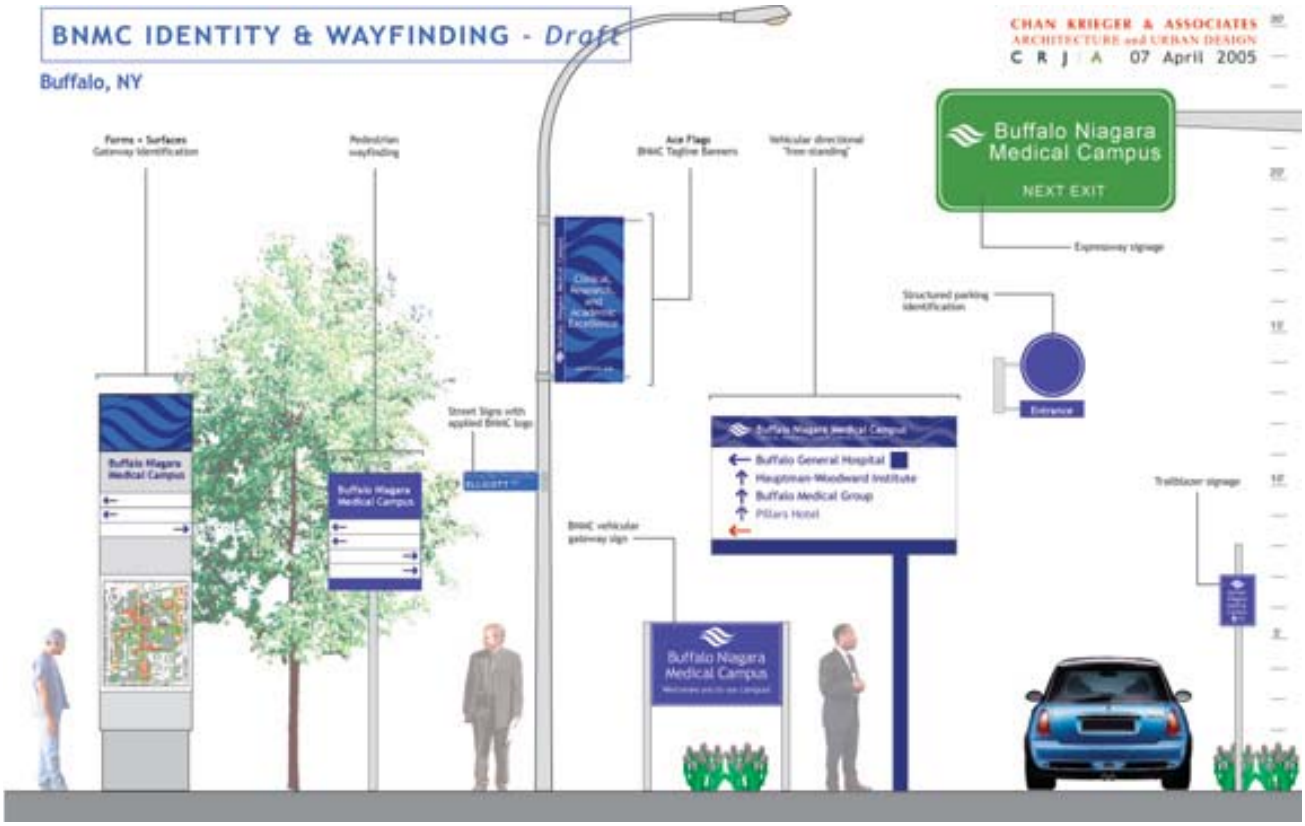
The medical campus is filled with technical experts in all areas of the organization. Tapping into that expertise will enable greater communication between institutional departments and lead to enhanced collaboration.

These Focus Teams could work within the existing BNMC organizational structure (i.e. Project Management Groups and Work Councils) centered around specific disciplines such as Information Technology, Utilities and Infrastructure, Zoning and a Transportation Management Association.

9. AHC Branding

The need for urban institutions to establish and maintain identity in their respective communities is imperative. Branding is important for establishing a sense of campus which is distinct from the surrounding area, yet also making the campus an attractive and welcoming neighborhood.

Branding for an institution is particularly important in generating an immediate public identity which will become all the more important as the BNMC develops into a world-class Academic Health Center. **Employing an engaging and comprehensive graphic identification system at all scales for the Community Engaged AHC will lead to greater local, national and international recognition and identity.**



Above: A cohesive branding initiative is needed that will improve wayfinding around the campus and create a recognizable image for the Academic Health Center. (Image taken from the 2003 Chan Krieger & Associates BNMC Master Plan).

Wayfinding elements as a component of branding involves the coordination of a wide range of informational, directional and regulatory signage elements. Wayfinding acts as a "user's manual" for both those who pass through the environment and those for whom the AHC is the destination. At one scale, the wayfinding strategy needs to generate visibility for vehicles from the highway and major transportation corridors, and at another scale the elements need to orient pedestrians.

Symbols and colors on various forms of signage need a clear hierarchy of elements that respects and recognizes the individual identity of the member institutions within the context of the AHC. In addition, the development of the AHC branding needs to delicately consider the boundary between the campus and Allentown and the Fruit Belt, creating unity within the area while allowing each sub-district to maintain its own unique character.

Two of the most challenging issues regarding the branding of the AHC will surround the representation of individual member institutions and how the Community Engaged AHC interfaces with the adjacent neighborhoods.

10. Conflict Resolution

Much good work has been done to foster clear lines of communication between the institutions. As the campus moves to its next stage of development, and as the BNMC grows into a world-class Academic Health Center, promoting adherence to agreed upon guiding principles for campus development will become more and more important.

The structure of BNMC Inc. with board positions at the leadership level and Project Management representation at the staff level is well suited to deal with opportunities for collaboration when they arise. With the addition of Expert Focus Teams (See Step 8 above), these lines of inter-institution communication can effectively gather the necessary information, identify underlying needs and individual interests and develop mutually acceptable solutions that can provide win-win situations for all parties involved.

As the campus moves to its next stage of development, promoting adherence to agreed upon guiding principles for campus development will become more and more important.

Above: The future environment of the Community Engaged AHC must be of exceptional health care venues, but also an exceptional public realm to complement existing open spaces such as Kaleida's Colby Park and RPCI's Kaminski Park and Gardens.

IX. RECENT INSTITUTION HIGHLIGHTS

BNMC PARTNER INSTITUTION ACCOMPLISHMENTS

While the majority of new construction on the medical campus will occur as a result of the expansion of the three largest member institutions – Kaleida, RPCI and UB – each BNMC partner, regardless of size, plays a significant role in the evolution and reputation of the collective organization.

Leadership from each of the nine institutions sit on the BNMC Board of Directors, making sure that individual aspirations are reflected in the common vision for the campus. In addition, staff members from all the institutions collaborate to achieve common goals in areas such as planning, security, government affairs, and communications.

Close coordination and constant dialogue is necessary as the campus continues to expand into new areas of health care, research and education. **What follows is an abridged synopsis of just several highlights from member organization's activities and accomplishments from over the past few years**.

Buffalo Hearing and Speech Center

The Buffalo Hearing and Speech Center (BHSC) is considered the largest independent community based center in the United States with 35 locations across Western New York (WNY). Their main headquarters is located on the north edge of the campus. Since 1953, BHSC has provided comprehensive evaluations and therapy for people of all ages in areas such as language disorders, literacy, communication and cognitive difficulties, brain injury and progressive neurological diseases.

In recent years, BHSC has achieved numerous successes in terms of establishing new programs to diagnose and treat these ailments on the local, state and national levels. These include specialized educational and therapeutic programs for children and adolescents with autism related problems; state and national literacy programs for preschool and school-aged children; cochlear implant programs as well as oral deaf education programs setup throughout WNY to help the deaf community better communicate with the hearing world; and an accent modification program established to improve business, professional, and speaking skills for people with foreign accents.

In addition, BHSC has developed an extensive Continuing Clinical Competency Workshop Series for WNY professionals in Speech-Language Pathology, Audiology, Occupational Therapy, Physical Therapy, and Special Education Teachers to better serve the region.

Future plans for BHSC include establishing a Charter School to focus on language and literacy excellence in children grades K – 4 in Buffalo. The opening of the school is anticipated for 2011.

Buffalo Medical Group

Founded in 1946, Buffalo Medical Group (BMG) is among the oldest and largest multi-specialty physician practice groups in New York State and the largest in WNY with one of three main locations on the BNMC and 23 satellite sites located throughout Erie and Niagara counties. During the past decade, BMG has continued to grow and enhance its reputation as a major provider of medical, surgical and diagnostic services in WNY. With 90 primary care physicians, medical and surgical sub-specialists, and 40 mid-level providers as well as a team of more than 600 nurses, technologists and other health care professionals, BMG records more than 400,000 outpatient visits annually.

In recent years (2006-2009), BMG has achieved a number of key accomplishments, such as being selected by the Medical Group Management Association (MGMA) as one of the highest-performing medical group practices in the United States – earning MGMA elite performance status compared with other medical group practices across the country. In addition, BMG became the first health care provider in WNY to be awarded recognition as Physician Practice Connections-Patient Centered Medical Home by the National Committee for Quality Assurance.

In terms of growth, BMG sees approximately 200,000 active patients annually with outpatient

visits growing from 390,000 in 2006 to 415,000 in 2008. BMG has also taken major steps towards enhancing patient care by implementing electronic medical records (EMR) technology among its primary care physicians. In 2008, BMG rolled out its patient portal known as MyChart, enabling BMG patients to view their personal health information anywhere in the world using a secure internet connection. BMG is currently the only local health care provider that offers such service to its patients.

Hauptman-Woodward Institute

The Hauptman-Woodward Medical Research Institute (HWI) began in 1956 an independent, nonprofit research facility specializing in structural biology. One of the institute's major claims to fame is their president and namesake, Dr. Herbert A. Hauptman, who was awarded the Nobel Prize in Chemistry in 1985.

Since 2001, HWI has served as the University at Buffalo's Department of Structural Biology in the School of Medicine and Biological Sciences. Today, the faculty of 24 HWI researchers, as well as additional faculty from the University, perform advanced research initiatives and train scientists in the methods of modern structural biology, offering both M.S. and Ph.D. degrees. Recently, the first class of Ph.D recipients graduated from the HWI/UB program in June 2008.

Perhaps no BNMC institution has more recently changed their physical presence on the campus more than HWI. Since April of 2005, HWI has been housed in a 73,000sf state-of-the-art biomedical research facility which has provided the organization with the ability to have scientists work in a world-class facility that complements the quality of work performed in the building's labs.

HWI also hosts a large number of tours, events and programs – such as the Science Seminar Series, the Pioneers of Science, and the Summer Internship Program. All of these programs are designed to focus local and national attention on the high caliber of scientific work that is thriving at HWI as well as encourage young people to pursue careers in the sciences and to keep them in the region beyond completion of their studies.

In January 2010, HWI began a new venture when it assumed management of an experimental station at the Argonne National Laboratory Synchrotron Advanced Photon Source (APS) located outside Chicago, Illinois. HWI scientists, along with crystallographers around the world, will conduct research at the experimental station at Argonne known as IMCA-CAT.

With a new CEO in place, future initiatives for HWI include plans to hire a new chair in 2010 for the soon to be renamed Department of Structural and Computational Biology as well as hiring 14 new scientists and at least 20 new technical staff members over the course of the next seven years.

Center for Hospice & Palliative Care

The Center for Hospice & Palliative Care (est. 1978) serves individuals with serious illness by providing exceptional hospice, palliative care, grief support, education advocacy and other life-enhancing services to them, and those who share their lives. The Center provides care to more than 800 patients per day with its nationally recognized programs and award winning staff, such as Dr. Robert Milch, CHPC emeritus medical director and staff physician who recently received the first Hastings Center Cunniff-Dixon Foundation Physician Award.

In recent years, the Center for Hospice & Palliative Care has greatly extended their services by developing a number of new partnerships and facilities throughout WNY. These initiatives include the creation of the Palliative Care Institute by partnering with the University at Buffalo; the development of Palliative Care programming and dedicated staffing at Kaleida and Catholic Health acute care facilities; and expansion of the Home Connections Palliative Care Case Management program.

Located directly to the east of the BNMC on Maple Street, the opening of the St. John Baptist-Hospice Buffalo House in July 2008 was the nation's first partnership between a faith-based community and hospice for hospice inpatient care focused on the African-American community. On the west edge of campus, major renovations took place at the Hospice Buffalo, Caring Hearts Home Care, and Home Connections offices at 892 Main Street, Buffalo.

In terms of future growth, the Center will continue to enhance partnerships with acute care facilities on the BNMC, including the flagship Hospice Palliative Care Unit at Buffalo General Hospital; Palliative Care Emergency

Department diversion partnership with the coming soon Kaleida Skilled Nursing Facility; furthering the Palliative Care partnership with Roswell Park; and expanding their downtown staffing presence.

Olmsted Center for Sight

The Olmsted Center for Sight is guided by the agency's mission: to help individuals with visual and other physical challenges achieve their highest levels of independence in their homes, communities and places of work. The Olmsted Center was established in 1907.

The Olmsted Center Campus on Main Street includes three interconnected buildings - the Main Building, the National Statler Center for Careers in Hospitality Service, and the Ira G. Ross Eye Institute (operated by the University at Buffalo School of Medicine and Biomedical Sciences). The Main Building also houses a manufacturing business staffed entirely by blind individuals who perform packaging, sewing and other sub-contracting manufacturing services. The agency also owns five apartment buildings custom designed for physically disabled and visually impaired tenants.

The Olmsted Center for Sight currently employs 150 people, some of whom have been committed to the agency for more than 30 years. Their dedication is what makes Olmsted Center the premier provider of services to the visually impaired community in WNY.

In recent years, the Olmsted Center for Sight has acknowledged three major achievements:

• The Statler Center is the first and only program of its kind in the nation, and was awarded major national grants to train and establish career opportunities for blind and/or otherwise disabled adults through their comprehensive curriculum and placement service.

• The Nelson Hopkins Apartment Project, a 24 unit apartment complex specifically designed for physically disabled families and individuals broke ground in Lockport, NY where there is a substantial need for this type of affordable housing.

• The Bulger Vision Rehabilitation Clinic, which addresses not only vision loss, but other physical, cognitive and emotional issues related to vision impairment, has expanded its patient base for diagnostic treatments in the past 24 months by 20 percent.

Future plans include expansion of the Staler Center Program to include disabled veterans; increasing the accessibility of the Bulger Vision Clinic; and exploring new locations and funds to provide affordable housing for blind and physically disabled individuals.

Upstate New York Transplant Services

Upstate New York Transplant Services (UNYTS) is a major nonprofit procurement organization serving all eight counties of WNY. UNYTS is headquartered on Broadway Street in Downtown Buffalo, approximately 0.5 miles south of the campus. In 2007, UNYTS started the Community Blood Service at the request of area hospitals. Over the last 2 years, it has become the sole provider of blood products for the Kaleida Health System and hospitals in Niagara and Wyoming Counties.

In recent years, UNYTS has nearly doubled their community partners for a total of approximately 700 community partners in WNY. In addition, UNYTS has increased the number of blood drives held by 44 percent from 2008 to 2009 and increased the number of presenting blood donors by 23 percent from 2008 to 2009.

UNYTS has also been actively involved in educational outreach programs throughout the local community, being the only organization in WNY that is undertaking a Donate Life Education Program. This is a year-long, multi-disciplinary program designed to assist secondary level students (grades 9-12) to provide education on organ, eye, tissue and blood donation and transplantation to their peers. Currently in the 6th year of this program, it has grown from 5 schools in 2004 to 32 schools in 2010.

In terms of physical growth, construction is underway on a Family Resource Center for UNYTS to be located on the first floor of the Broadway location. This will function as an all-encompassing space for many different activities, including bereavement services, support groups, educational programs and blood donation. It is anticipated that construction will be complete by the end of January 2010.

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