Phoenix Biomedical Campus

2010 COMPREHENSIVE MASTER PLAN UPDATE

Ayers|Saint|Gross Architects + Planners

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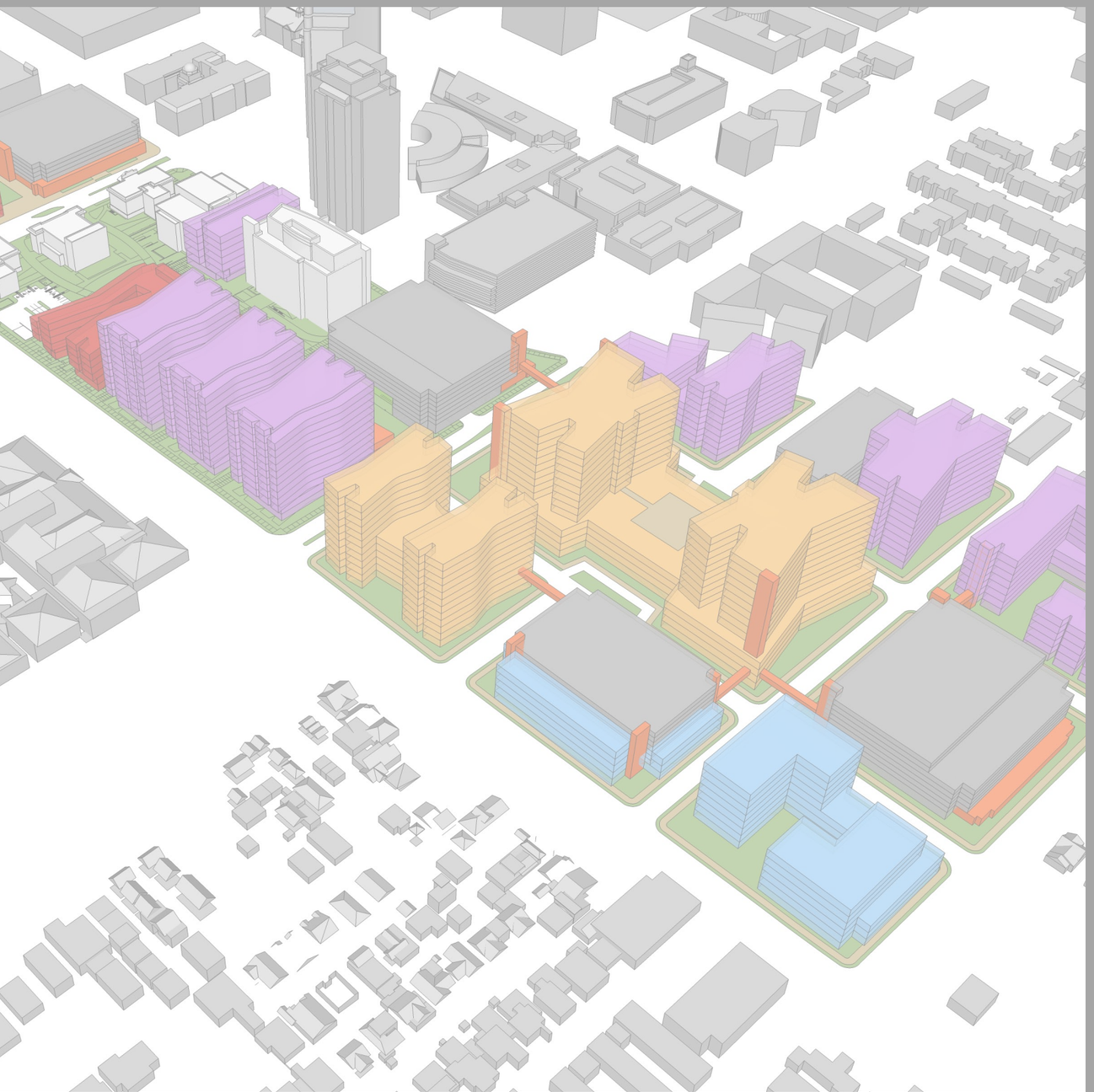


Executive Summary

Summary

The 2010 Comprehensive Development Plan Update is an extension of the land planning, urban design principles, development concepts and design guidelines of the 2008 plan for the Phoenix Biomedical Campus.

Since 2008, the campus has seen advancement toward developing several key facilities, including new construction, undergone detailed planning efforts and expanded in land area due to recently acquired land parcels. The 2010 plan incorporates and builds upon these planned improvements.

The scope of this update is to provide specific planning scenarios for the overall campus and address potential programs and land use options. These scenarios generate viable paths to satisfying the targeted built yields, land uses and programmatic needs of the campus over the next 20 years.

The development scenarios are described as concepts A1, A2, B and C. Each concept examines specific uses in various configurations on the campus and then compares the program locations, overall yields and densities which are likely to result. Further, the plan provides an overview regarding the population projections, service options and other benefits or challenges of each scenario.

A1 + A2 – Research-Based Approach
These concepts consider developing research space as a priority for the campus, while still including a significant clinical facility. The strategy focuses development and overall density along 7th Street, reinforcing the gateway to downtown. The difference between the options A1 vs. A2 considers the best format and configuration for a clinical facility.

B – Balanced Approach
This concept generates a more balanced program for the campus that includes both research and clinical uses in more comparable programmatic quantities on campus. The strategy focuses on developing a prominent clinical use on 7th Street with additional research facilities on 4th Street. This scheme also considers access and other impacts of increased public visitors.

C – Clinical-Centered Approach
This concept focuses on the “hub” model, centralizing the clinical use surrounded by supporting facilities. This strategy also incorporates additional land within the planning boundary to create land use continuity. This is the most effective and efficient model for incorporating a major clinical facility in a large-format, urban setting. The overall development includes expanded medical offices, parking structures and other supporting uses.

The resulting development yield profiles of the campus are increased over the 2008 projections. The scenarios range from 7.1 to 7.8 million square feet of development. The projections are gross building areas and include parking and other service elements.

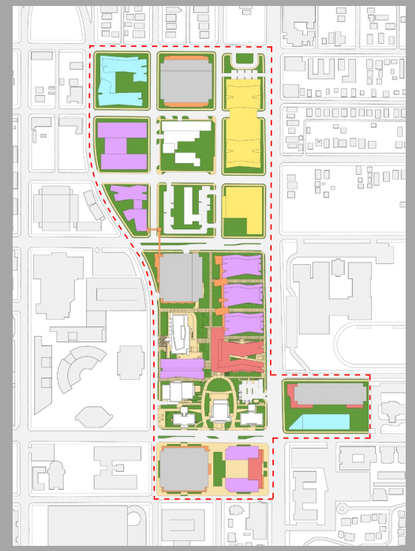
The campus presents a unique opportunity to forecast programmatic needs and build both sequentially and more predictably than other similar campuses. Due to the vacant land area and evolving programmatic needs, the campus can be readily adjusted to support and balance the needs of clinical uses, academic initiatives and research capacity.

Development Concept A1

Total Development:	7,235,250 gsf
Population:	13,005
Parking:	3,500

Development Concept A2

Total Development:	7,180,250 gsf
Population:	12,907
Parking:	3,500



Development Concept B

Total Development:	7,150,250 gsf
Population:	12,223
Parking:	4,800

Development Concept C

Total Development:	7,829,250 gsf
Population:	13,504
Parking:	6,300

Purpose + Process

Need for an Update

Downtown Phoenix has evolved significantly since the 2008 plan. Construction and plans for development are occurring in and around the Phoenix Biomedical Campus. This plan incorporates current and planned projects for the campus, considers the impacts of the proposed expansion and realigns the resulting yields and planning options for future development.

Recent + Planned Development

The campus has been the focus of multiple planning and building efforts since the 2008 plan. The University of Arizona's Health Science Education Building is under construction and scheduled for completion in mid-2012. The Arizona Biomedical Collaborative Building II and Arizona Cancer Center are scheduled to begin construction in the near future. In addition, the City of Phoenix has sought partners to develop a parking garage and Collaborative Research Building on campus. These projects are resulting in different development densities, program locations and relationships, than previously predicted.

Updated Planning Boundary + Downtown Code

With the renewed development in downtown Phoenix, the city has refocused its efforts to help create the most viable and sustainable development possible. This has included developing a form based code and character areas, which include the Biomedical Campus. It has also, in partnership with the University of Arizona, expanded the development and planning area for the campus. This allows for better planning and more cohesive development in the future. The expanded planning boundary and land ownership information can be seen in the graphic on the adjacent page.

Scope of planning

This plan update included a thorough review of the issues while also focusing on time and scope. Targeted workshops and sessions were held with primary stakeholders and City staff to identify future trends and priorities for development. The fundamental vision for the campus from 2008 was carried forward, and therefore did not include extensive public participation. Alternatives for development were created to depict different growth trend opportunities for the campus. Ultimately, one development scenario was not picked over the others but the series of alternatives were refined and kept for assistance in future decision-making.

Some issues were revisited in more detail during this update while others were not reworked as their intent was still valid and should be considered a part of the plan moving forward.

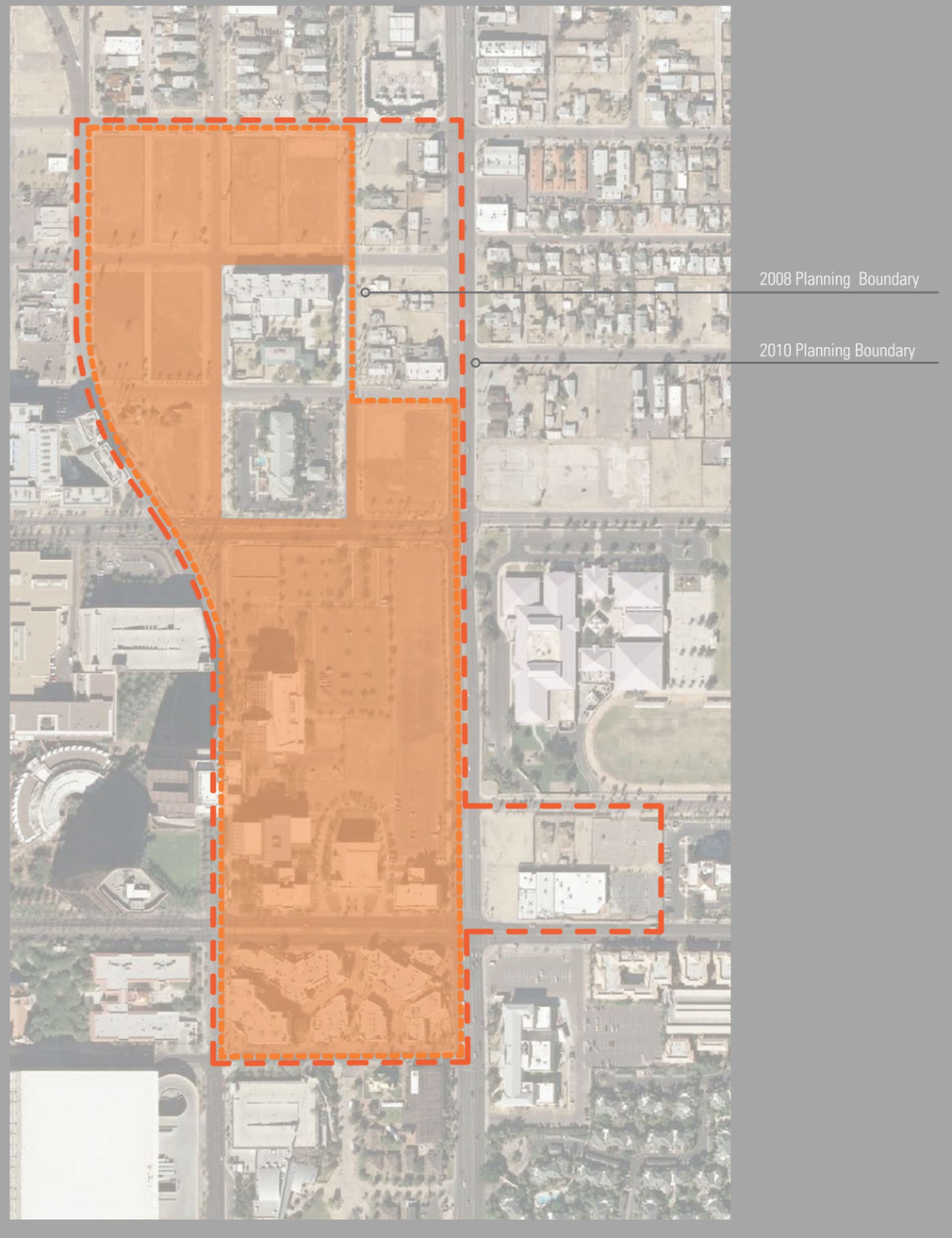
Issues reassessed since last plan

- Density profiles
- Programmatic locations across the campus
- Actual or proposed footprints of near term projects
- Open space + connectivity
- Service, traffic + parking connections
- Campus identity

Issues not assessed since last plan

- Architectural + landscape guidelines
- Public transit changes
- Detailed traffic analysis
- Utility and infrastructure planning
- Change in institutional participation

Updated Planning Boundary



The 2008 Plan

2008 Plan Recap

The 2008 Comprehensive Development Plan focused on developing a “build-out” schematic that utilized the Biomedcial Campus area from the ASU Mercado north to Garfield Street. The guiding concept of the plan was to promote interrelationships between academic, research and clinical uses. Fundamentally, the plan describes a dense area with a network of compact, active green spaces connected by pedestrian linkages, all intertwined with an active, urban ground plane.

- Specific planning features included defining the academic hub with an organizing, central green space as an exterior connector supported by a parallel chain of interconnected interior spaces that link facilities together. Similarly, below grade, the plan devised a serviceable core research facility as a shared resource with access tunnels providing interconnections between functions. At grade, active social gathering spaces, including lobbies, conference facilities, lecture halls and other shared uses, are organized to support ground level activity and public access. This series of active functions constitutes a spine that formalizes the edge of the central space and integrates private and public pedestrian amenities.

- The planning effort carefully considered the potential configurations and functionality of future academic programs with a defined concept for the siting of the University of Arizona’s Health Science Education Building (HSEB), Arizona Biomedical Collaborative II (ABC II) research facility and their relationship to the supporting core facilities. The planned areas north of Fillmore Street remain substantially in their existing urban format with the street grid extending through this area. It is important to note that some combined blocks would likely be required to accommodate the anticipated large-scale clinical uses.

Plan Successes

The success of the 2008 plan has been in a few areas, mainly its findings regarding capacity and collaboration as well as its long-term adaptability to meet future needs and changing market conditions.

Capacity; physical planning success
Much of the viability of the plan lies in its ability to respond to market demands. It demonstrates that the planned land area will accommodate viable quantities of each program element with desirable adjacencies. This combination of characteristics creates a nationally-competitive biomedical campus. Secondly, it demonstrates that the facilities can be configured in ways that foster functional interconnections with collaborative uses and will allow multiple user groups to have access to shared core research facilities.

Collaboration; process success
The plan created a general consensus about the sequence and content of the campus and the general pattern of development. Previous plans were more generic because they demonstrate locations and general capacity but not programmatic interconnectivity. The proposed direction suggests the viability of partnerships, shared resources and varying scales of participation. This supports the City’s mission and other entities’ efforts to demonstrate a unified campus vision and exhibit comprehensive development strategies.

Adaptability; future success
There is no mechanism that can control the organic flow of the economy, responsive development and its various funding streams, so the plan needs to allow for seemingly out-of-sequence implementation. The development plan is not intended to dictate prescriptive footprints for each building but rather provide guidelines for program adjacencies, while fostering a logical overlay of campus-wide pedestrian and vehicular organizing elements and service networks, all under the umbrella of adherence to city design standards.

2008 Comprehensive Development Plan

The 2008 Plan

Plan Deviations

The 2008 Plan was not intended to dictate exact development details for the campus. Rather, the plan is best seen as a flexible framework that responds to current needs and economic realities. As a result, the development of the campus has not identically matched the plan. The following are a few key deviations from the plan that have occurred and the implications to the overall campus considered in this update.

HSEB was reduced in scale and in program areas, removing the need for the larger proposed footprint shown in the plan. The remaining plan, however, still sets the stage for future campus interconnectivity by strategically locating public amenities.

ABC II was not constructed at the same time as HSEB as anticipated. This creates overall less development in the early phases and reduces the desired 'critical mass' to be present in the early phases on the PBC site.

In an effort to supply some research space and maintain densities, a private development project called CRB was brought forward. It also did not satisfy the immediate need for research space on the campus. As a result, it has pushed the CRB (a private development south of TGen) to the forefront of site development.

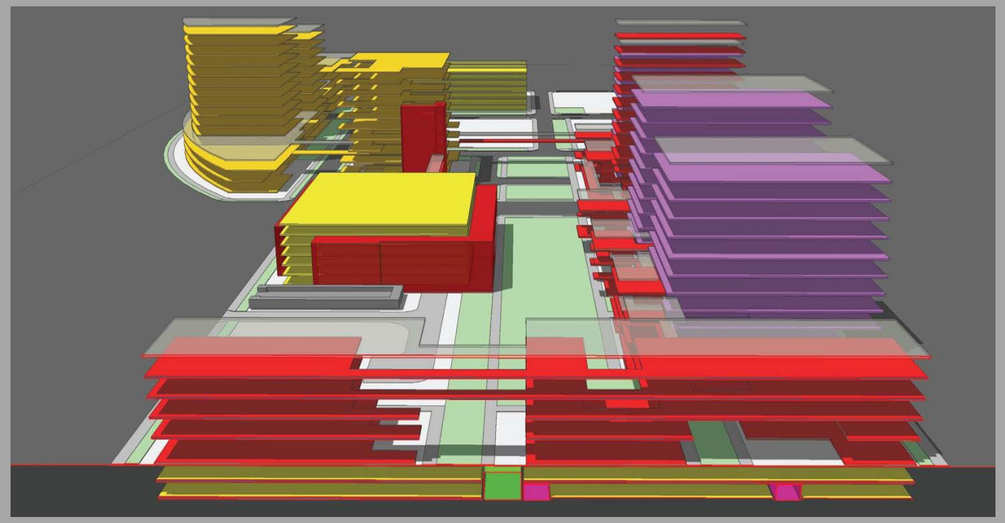
The Arizona Cancer Center is proposed north of Fillmore Street, also in a smaller scope than anticipated. The proposed program has very specific entry and first floor configurations the plan could not have anticipated.

Overall, the concern began to surface that the campus total density and build out would not be achieved due to each recent component falling short of planning goals. The urban density, however, is being developed per the City of Phoenix's Downtown Code by street frontage siting and achieving lot coverage requirements.

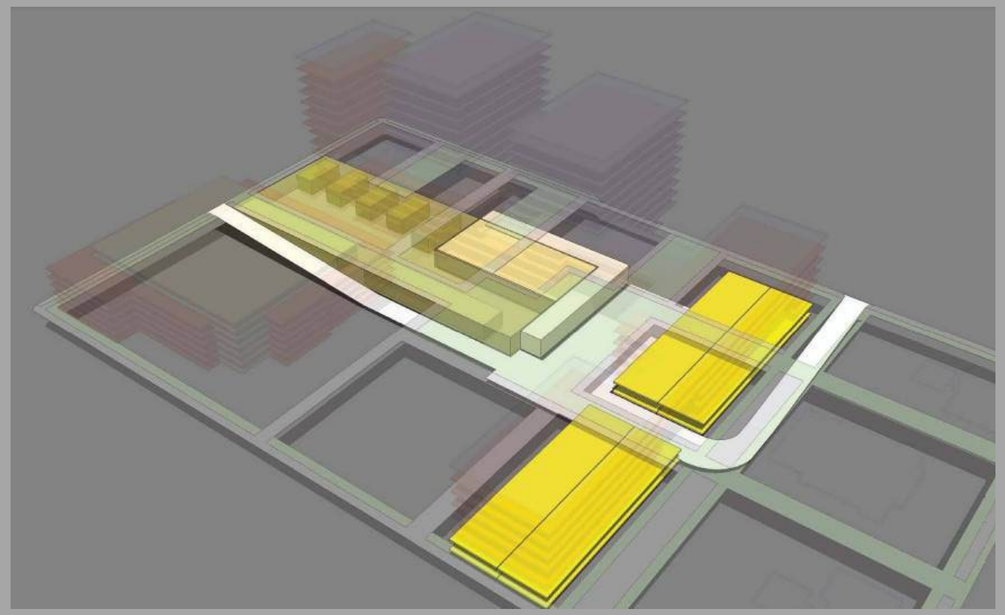
New Challenges

As the campus continues to develop, a new set of challenges exist to continue real and sustainable development. A few of those challenges are as follows:

- Necessitate density and yields to reflect the infrastructure and long-term development goals
- Develop identity markers and features to support the branding, gateways and edges of campus
- Sustain the development of central spine and active ground plane
- Update landscape and streetscape standards to be meet city code while creating a unique campus atmosphere
- Continue to develop and support large-scale infrastructure network from disparate delivery sources
- Create a campus-wide service and delivery strategy that focuses on efficiency and shared storage opportunities



2008 Campus Section



2008 Below Grade Service Concept

Concept Development

Development Criteria for the Update

Elements and issues that must be achieved through the planning effort include:

- Expand campus boundaries and incorporate a larger planning area
- Document projects that are underway
- Describe key connections and features that will drive decisions for future projects
- Model the future by analyzing some predictable land uses - this will demonstrate program viability, suggest density and present desirable qualities of projects
- Preserve and improve the overall yield and density model of the campus
- Continue to build in the green space network as a fundamental planning device

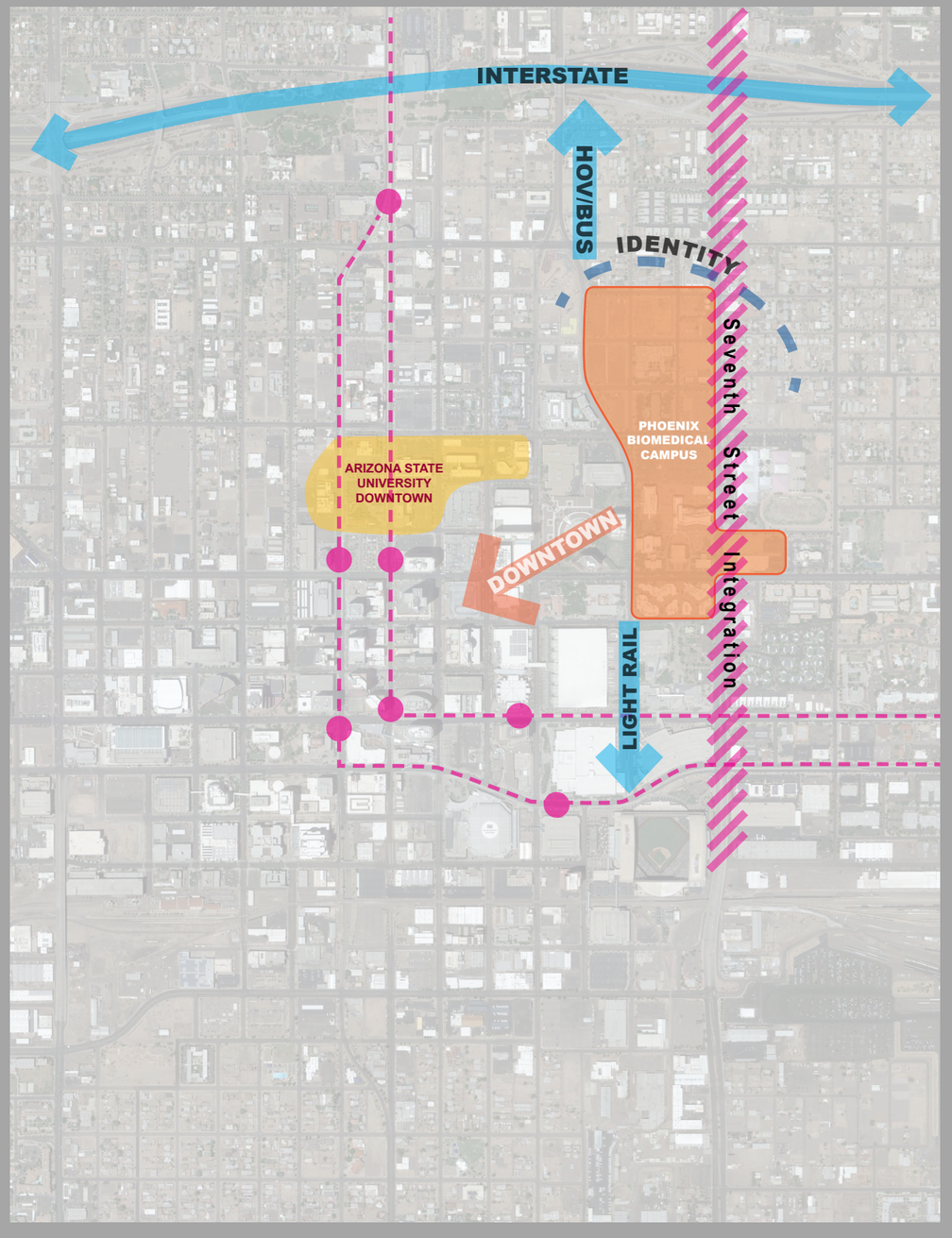
- Demonstrate the Integration with current and planned transit, both local and regional options
- Develop logical vehicle, pedestrian and service patterns for the complexity of uses and users
- Build an interesting, vital, collaborative community at each step through cohesive long-term development
- Consistently seek to plan and coordinate utility placement and capacity with long-term development in mind
- Accept and support that versatility and flexibility of options will promote development and maximize programmatic opportunities

With the first phase of the campus underway and the next series of project conceived, a more refined set of opportunities and expectations are emerging, and this phase of the campus planning will need to advance them.

These opportunities include:

- Maximizing the opportunity along 7th Street as a gateway to the campus
- Seeing the campus as the eastern threshold to downtown
- Using the Mercado as a bridging device to the south and connector into light rail and other City facilities
- Preserving capacity of the campus as a venue to accept and support varying scales of development and variable types of programs
- Developing campus visibility at its perimeter and within through an integrated greenspace network and identity package

Concept Plan




ACADEMIC
RESEARCH
CLINICAL
SPECIALY/MEDICAL OFFICE
GARAGE PARKING
MIXED USE/ACTIVE (10%)

Development Concept A1

Concept A1

A1 and A2 are site planning studies which consider the impact and yield of developing research space as a priority for the campus.

The desire to study a program emphasizing research space on this campus is in response to the projected underserved demand for consolidated wet laboratory facilities within the valley. The opportunity to develop a consolidated, convenient program and to collect a significant quantity of research space is unusual within major metropolitan areas.

The type of research building depicted is substantially composed of wet lab research space and is constructed in predictable and efficient formats. These consistent building characteristics are:

- compliant with DTC;
- bay size;
- core positions;
- floor-to-floor heights;
- significant rooftop mechanical provisions;
- and layers of sequential, shared elements in plan.

These buildings primarily serve end-users and dedicated visitors. Despite greater building area than other potential uses, the research buildings usually operate with reduced parking demand, receive fewer visitors and have decreased mixed-use opportunities. Research-oriented buildings do require greater infrastructure access and have higher utility demands than other uses which might be found on the campus. These buildings require inter access below grade for support services and have a highly- preferred connection to core facilities.

For Phoenix, the location of the land near downtown and the adjacent medical and university uses -without the required redevelopment or removal of significant structures- is in contrast to other cities.

Additionally, the desire to reserve the neighborhoods and define the urban core can be accomplished by positioning the research along 7th Street. This creates an identifiable bank of research buildings and marks the east side of the downtown core.

The location of the individual building pads allows, over time, for incremental growth northward and the expansion of the below-grade utilities to be constructed in phases.

The predictable format of the research lab buildings are oriented east/west with courtyards preventing a walled or continuous elevation of effect of a single building. The building forms also correlate with the existing street grid and make use of street service and access.

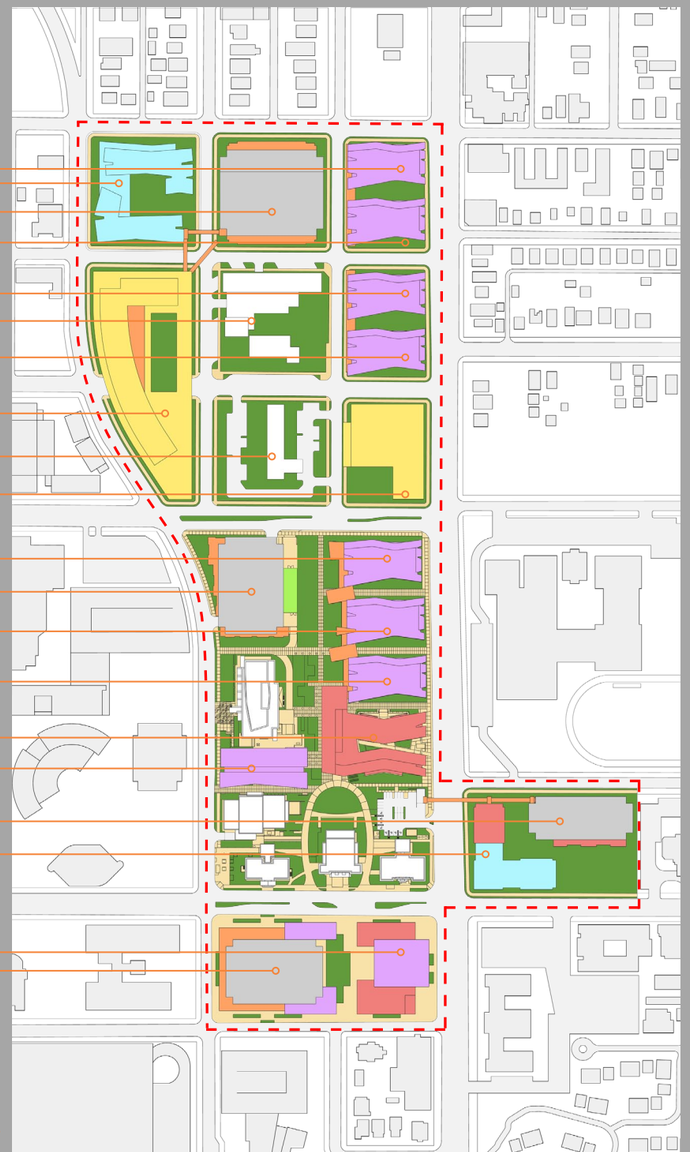
Parking garages can can remain to be planned consolidated to the north and south parcels of the north campus.

Program Assignments and Capacity Yields

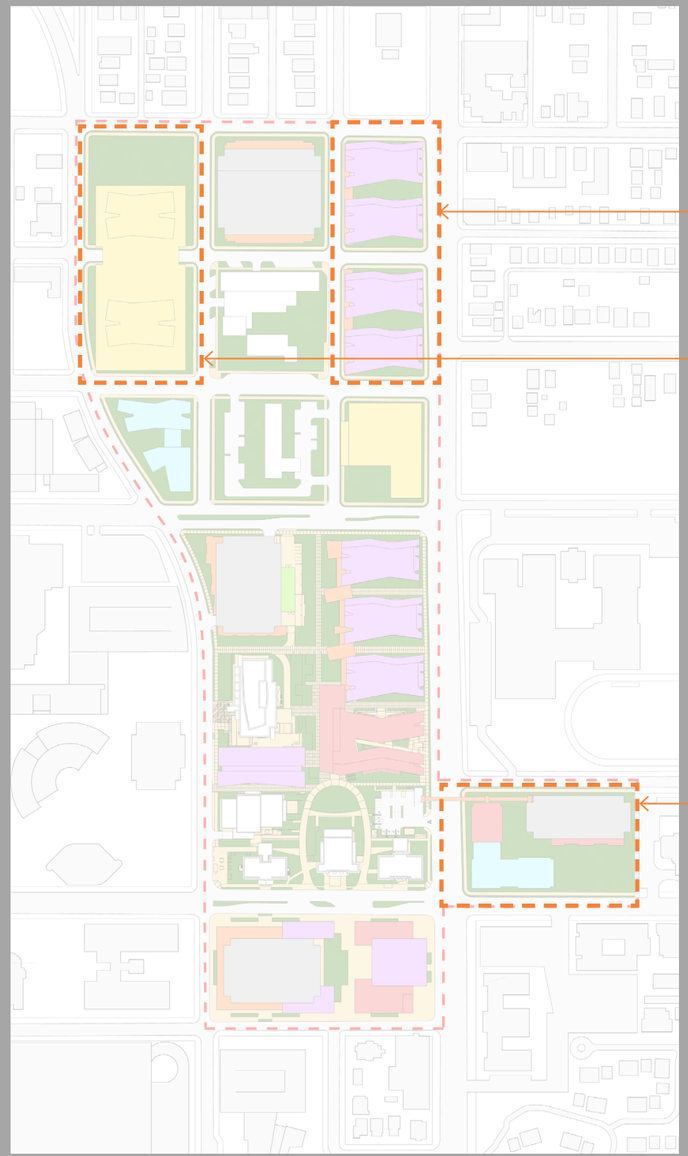
RESEARCH BUILDING IV	250,000 GSF
RESEARCH BUILDING IV	250,000 GSF
GARFIELD GARAGE	380,000 GSF
RESEARCH BUILDING III	250,000 GSF
RESEARCH BUILDING II	350,000 GSF
TECH HIGH SCHOOL	
RESEARCH BUILDING I	350,000 GSF
IN-PATIENT FACILITY	650,000 GSF
HOTEL	
AZ CANCER CENTER	200,000 GSF
ABC IV	250,000 GSF
FILLMORE GARAGE	260,000 GSF
ABC III	250,000 GSF
ABC II	250,000 GSF
HSEB	260,000 GSF
TGEN II	175,000 GSF
VAN BUREN GARAGE	227,500 GSF
COM IV	200,000 GSF
COM V	750,000 GSF
MERCADO GARAGE	260,000 GSF

Summary

ACADEMIC	550,000 GSF
RESEARCH	3,340,000 GSF
CLINICAL	850,000 GSF
SPECIALY/MEDICAL OFFICE	530,000 GSF
GARAGE PARKING	1,135,000 GSF
MIXED USE/ACTIVE (10%)	657,750 GSF
TOTAL	**7,062,750 GSF**



Development Concept A1



RESEARCH FOCUS

A research focus along 7th street allows for increased density and connections along the major urban corridor allowing for easier access to support services and core facilities.

MEDICAL CENTER

Medical Center development along 4th Street allows for a smaller but workable platform for the clinical user, while leaving room for future stand-alone clinical or supporting MOB.

VAN BUREN DEVELOPMENT

A decentralized development on Van Buren Street allows for a more shared and public use which accents the other development around it.

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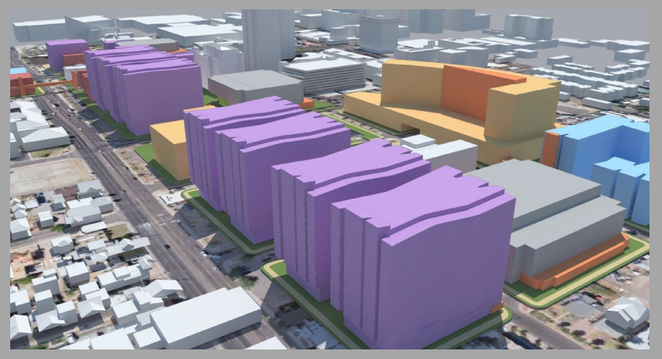


Development Concept A2

Concept A2

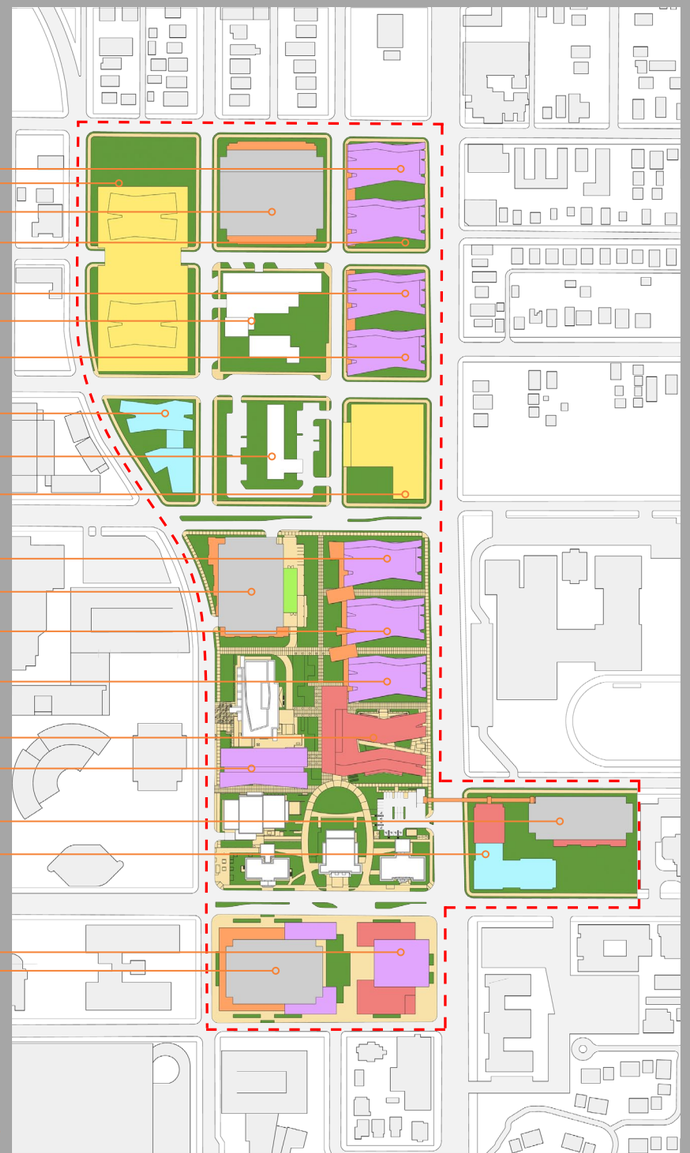
Concept A1 and A2 share much of the same development concepts. See description of A1 for additional details on the base development ideas for Concept A2

Concept A2 preserves the Research Bank along 7th Street but considers the use of the smaller, combined land parcels along 5th above Garfield as the site for the clinical user.

This particular combined site configuration provides a smaller but workable platform for the clinical user while preserving the far north block for a stand-alone clinical use or a supporting MOB.

Program Assignments and Capacity Yields

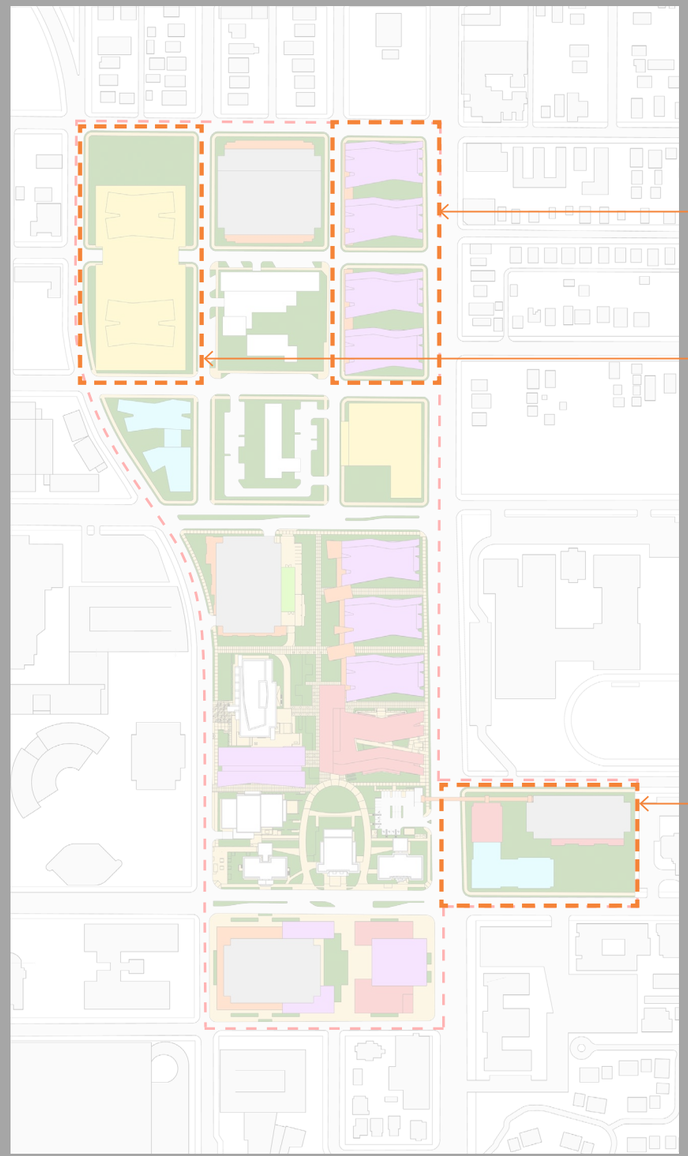
RESEARCH BUILDING IV	250,000 GSF
RESEARCH BUILDING IV	250,000 GSF
GARFIELD GARAGE	380,000 GSF
RESEARCH BUILDING III	250,000 GSF
RESEARCH BUILDING II	350,000 GSF
TECH HIGH SCHOOL	
RESEARCH BUILDING I	350,000 GSF
IN-PATIENT FACILITY	650,000 GSF
HOTEL	
AZ CANCER CENTER	200,000 GSF
ABC IV	250,000 GSF
FILLMORE GARAGE	260,000 GSF
ABC III	250,000 GSF
ABC II	250,000 GSF
HSEB	260,000 GSF
TGEN II	175,000 GSF
VAN BUREN GARAGE	227,500 GSF
COM IV	200,000 GSF
COM V	750,000 GSF
MERCADO GARAGE	260,000 GSF



Summary

ACADEMIC	550,000 GSF
RESEARCH	3,340,000 GSF
CLINICAL	850,000 GSF
SPECIALY/MEDICAL OFFICE	530,000 GSF
GARAGE PARKING	1,135,000 GSF
MIXED USE/ACTIVE (10%)	657,750 GSF
TOTAL	**7,062,750 GSF**

Development Concept A2



RESEARCH FOCUS

A research focus along 7th street allows for increased density and connections along the major urban corridor allowing for easier access to support services and core facilities.

MEDICAL CENTER

Medical Center development along 4th Street allows for a smaller but workable platform for the clinical user, while leaving room for future stand-alone clinical or supporting MOB.

VAN BUREN DEVELOPMENT

A decentralized development on Van Buren Street allows for a more shared and public use which accents the other development around it.

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A2 LOOKING SOUTHWEST

Development Concept B

Concept B

Concept B focuses on developing a prominent clinical use on 7th street with additional research facilities on 5th. This strategy seeks to analyze a program for the campus that demonstrates both research and clinical uses in more comparable programmatic quantities on campus.

RESEARCH CONFIGURATION

In contrast to Concept A, the research bank is moved to 5th Street. This positioning responds to the lessened public access required by the use type and smaller land areas these blocks provide. This location does limit the interconnectivity to the core research facilities and other activities south of Garfield. However, it is consistent with extending the development of further research into a bank by collecting new research space northward from TGen and the current proposal for a wet lab space research building just south of it.

CLINICAL CONFIGURATION

The clinical use or hospital is moved to the two northern blocks between Pierce Street and Garfield Street and are combined to form a super block.

This location for clinical uses creates a strong visible identity for the campus on 7th Street and also establishes a front door for campus visitors on the north side of campus for drop off, public arrival and emergency access.

The two-block configuration with direct access to 7th Street, supports multiple building entry points for service, access, lobbies or building interconnections. This larger building area can also support two patient towers over time.
Note: Primary public traffic access would not be from 7th Street. Circulation of vehicles would be oriented to the secondary street system.

The 7th Street frontage could be activated with public assembly, mixed use or other active uses.

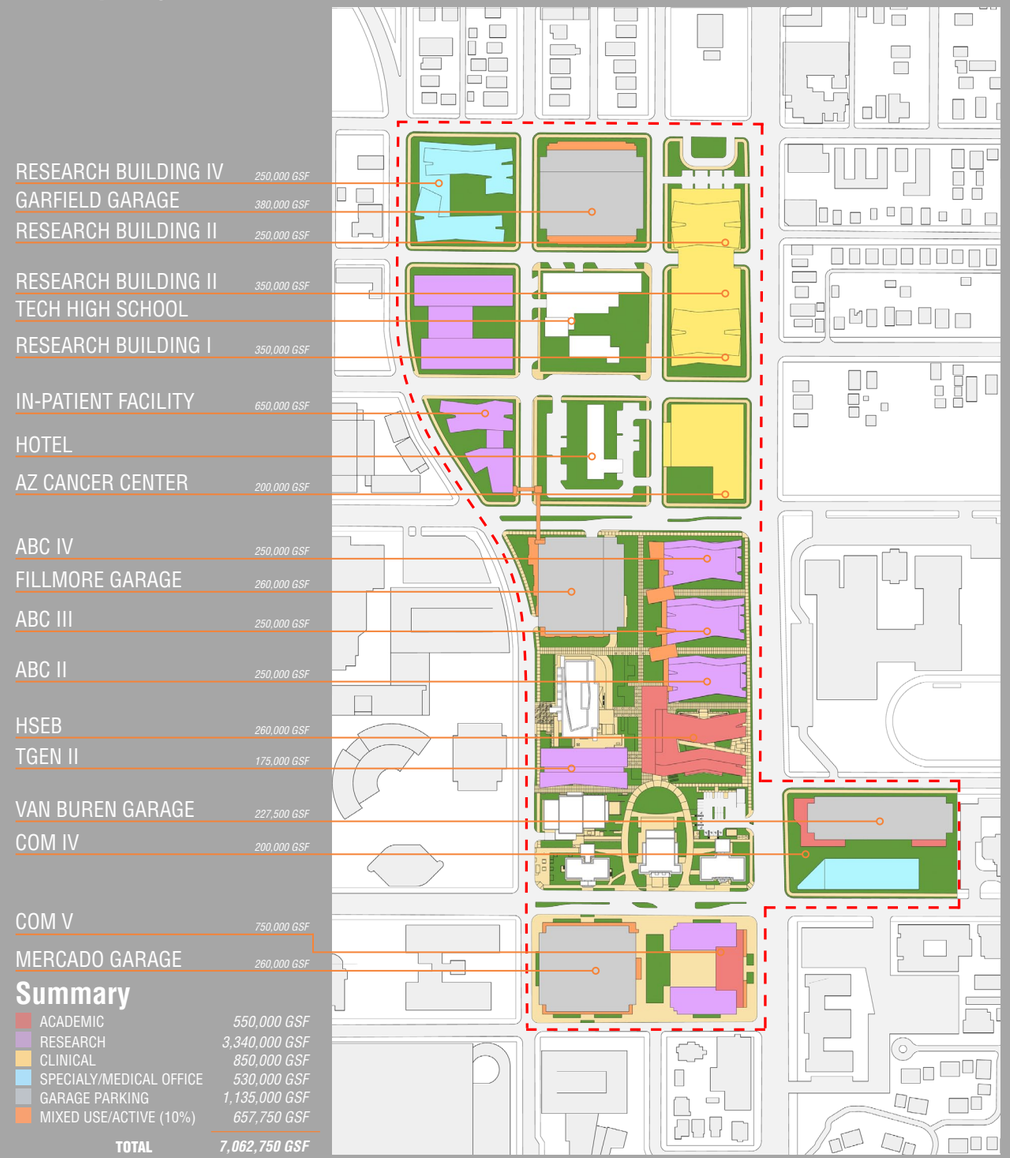
This land use also reinforces access with desirable proximity to the future parking structure on the north side of the campus. The campus plan established this edge condition as desirable for parking and transitional uses to the neighborhood.

The Cancer Center to the south will have direct access and strong connections to theses clinical facilities.

Pierce Street is the site of mechanical and electrical support for the Arizona Cancer Center. Similar uses for the clinical program could be consolidated.

The site position also supports multiple entry points for service access, emergency drives, drives or other ground-floor access points.

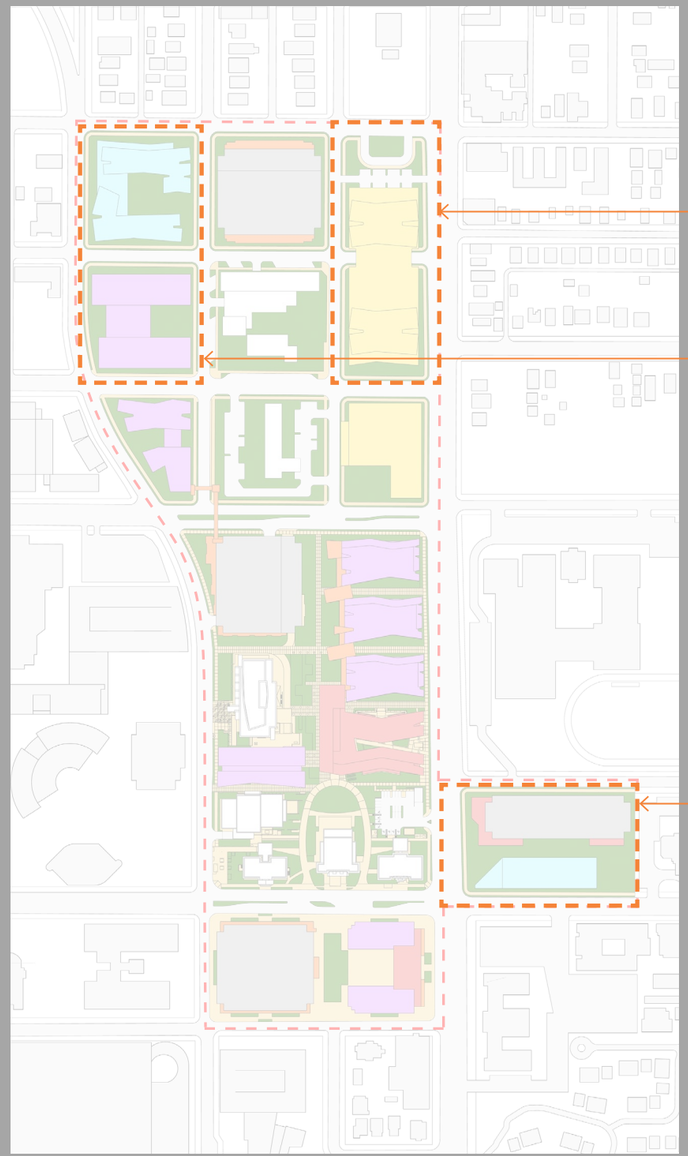
Program Assignments and Capacity Yields



Summary

ACADEMIC	550,000 GSF
RESEARCH	3,340,000 GSF
CLINICAL	850,000 GSF
SPECIALY/MEDICAL OFFICE	530,000 GSF
GARAGE PARKING	1,135,000 GSF
MIXED USE/ACTIVE (10%)	657,750 GSF
TOTAL	**7,062,750 GSF**

Development Concept B



MEDICAL CENTER

Medical Center development along 7th Street to create a strong visible identity for the campus, while establishing a front door for campus visitors.

RESEARCH FOCUS

The research focus along 5th Street responds to the lessened public access required by the use type and smaller land area these blocks provide.

VAN BUREN DEVELOPMENT

A decentralized development on Van Buren Street allows for a more shared and public use which accents the other development around it.

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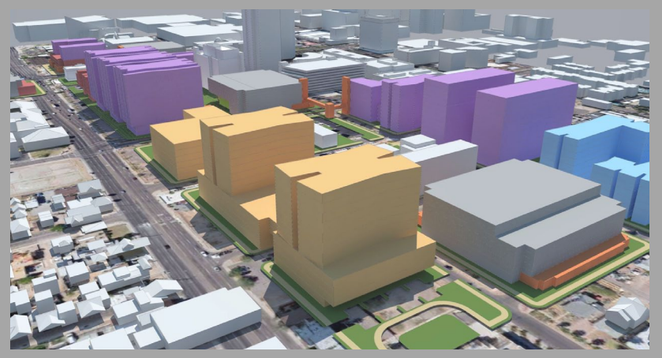


Development Concept C

Concept C

Concept C, the Hub Concept, focuses on a centralized clinical use while maximizing campus yield.

This concept seeks to depict the impact of a programmatic configuration often seen at older, existing healthcare campuses. On those campuses, hospitals were often the center or hub of development with new MOB's and research buildings added concentrically over time. These rings of new and expanded uses are a natural result of growth occurring around the originating hospital facility. In growing urban areas, street grids and open space are often absorbed into the campus and then into the building footprint. See University of Maryland, Baltimore as an example.

The intent of this site study on the PBC is to analyze the planning results of a large clinical facility centered in the middle of the north campus. Here, the study describes the opportunities and the impacts of placing the clinical use within the undeveloped north side of the Phoenix Biomedical Campus. Once in this position, the approximate yield of the use as whole is considered as well as which bed tower configuration might be practical.

This particular location of using blocks (and) location demonstrated by Concept C, provides the greatest land area by combining two of the largest complete city blocks within the PBC. This direction does, however, require the removal of the existing educational and hotel uses. Within the long-term planning of many campuses, such changes in land use are typical to building life cycles with biomedical campus growth and development patterns.
Benefits include preserving the traffic access and multiple points-of-entry onto on the edges of campus. It also provides multiple points for service access and pedestrian linkages.

Supporting and allied clinical buildings and parking structures can be arranged around the central use. Bridges and below-grade access into the central facility are achievable.

Development patterns and phasing of the supporting elements can occur somewhat independently. The physical location of the clinical use is the center of the upper north end of the campus.

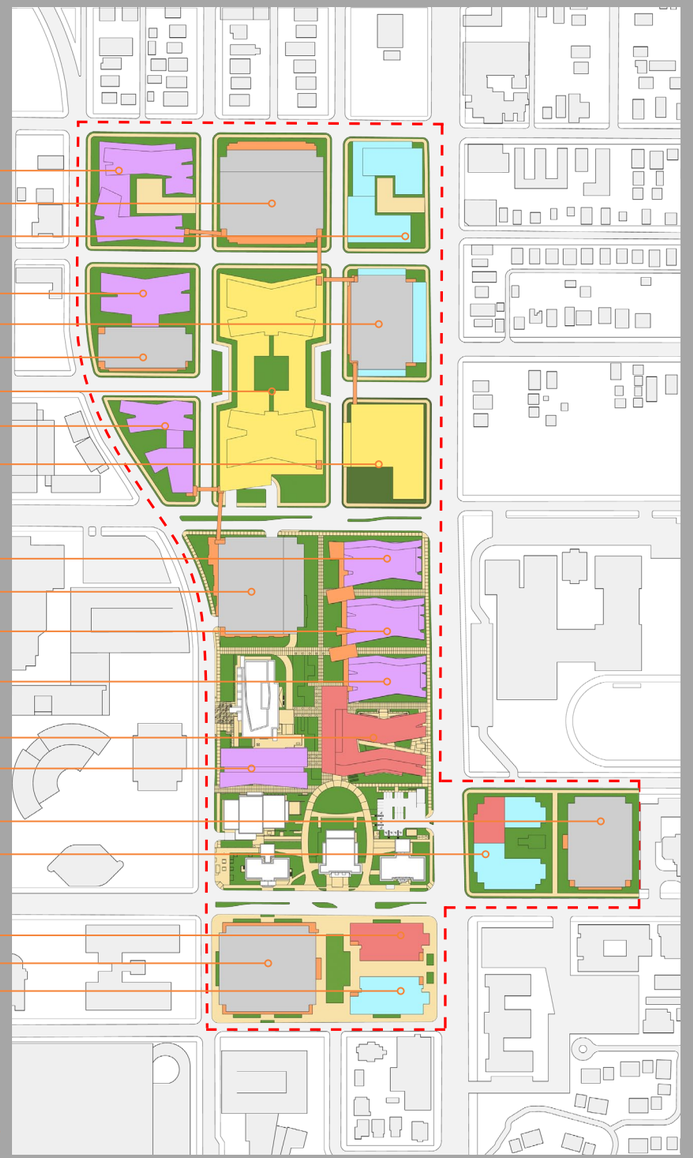
Block-by-block development can occur around the hospital with temporary land uses occurring. These uses may include campus open space, surface parking, construction staging and short-term, low density construction.

Program Assignments and Capacity Yields

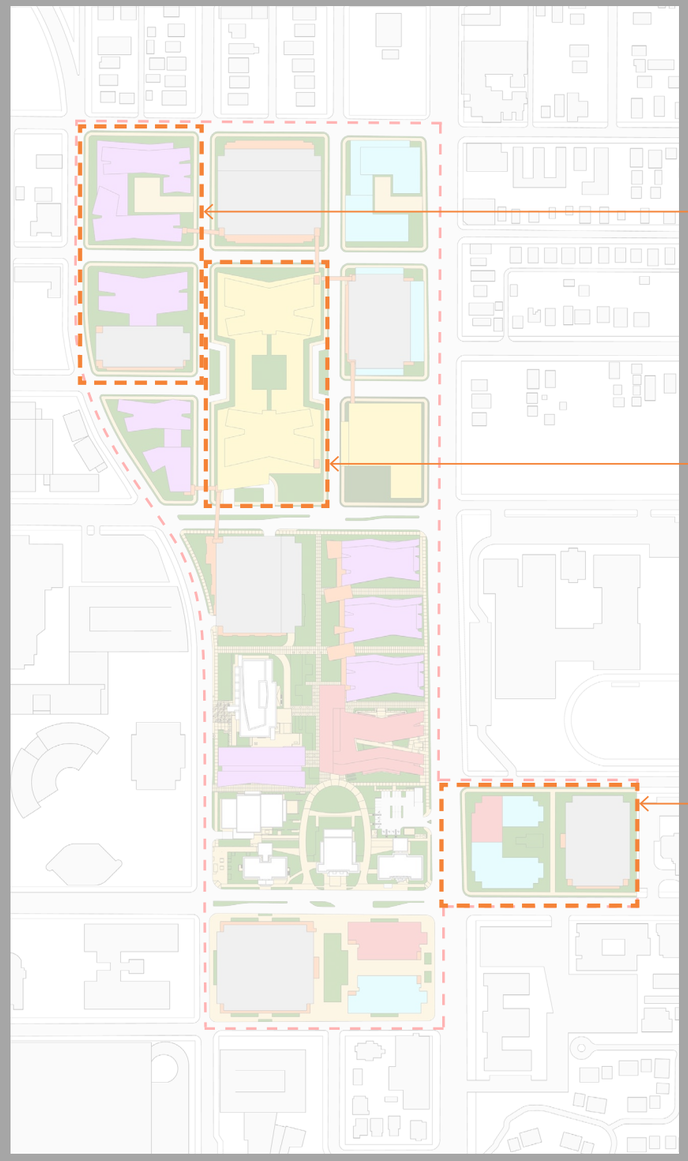
RESEARCH BUILDING III	400,000 GSF
GARFIELD GARAGE	380,000 GSF
CLINICAL SPECIALTY I	300,000 GSF
RESEARCH BUILDING II	250,000 GSF
CANCER CENTER GARAGE	325,000 GSF
4TH STREET GARAGE	1,000,000 GSF
IN-PATIENT FACILITY	1,200,000 GSF
RESEARCH BUILDING I	300,000GSF
AZ CANCER CENTER	200,000 GSF
ABC IV	250,000 GSF
FILLMORE GARAGE	260,000 GSF
ABC III	250,000 GSF
ABC II	250,000 GSF
HSEB	260,000 GSF
TGEN II	175,000 GSF
VAN BUREN GARAGE	243,750 GSF
COM IV	200,000 GSF
COM V	200,000 GSF
MERCADO GARAGE	390,000 GSF
SPECIALTY FACILITY II	200,000 GSF

Summary

ACADEMIC	530,000 GSF
RESEARCH	2,690,000 GSF
CLINICAL	950,000 GSF
SPECIALY/MEDICAL OFFICE	600,000 GSF
GARAGE PARKING	1,560,000 GSF
MIXED USE/ACTIVE (10%)	650,000 GSF
TOTAL	**6,980,000 GSF**



Development Concept C



RESEARCH FOCUS
The research focus along 5th Street responds to the lessened public access required by the use type and smaller land area these blocks provide.

MEDICAL CENTER
A centralized Medical Center development in the middle of the north campus to maximize campus yields throughout.

VAN BUREN DEVELOPMENT
A decentralized development on Van Buren Street allows for a more shared and public use which accents the other development around it.

^ ABOVE
AERIAL MASSING OF CONCEPT C LOOKING NORTHWEST

< LEFT
AERIAL MASSING OF CONCEPT C LOOKING NORTHEAST

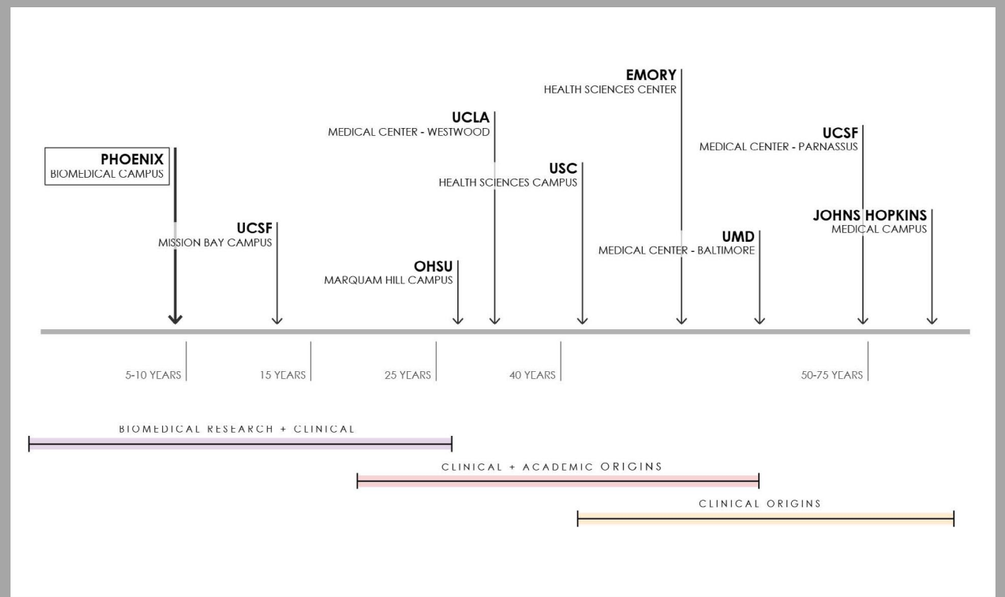
RIGHT >
AERIAL MASSING OF CONCEPT C LOOKING SOUTHWEST

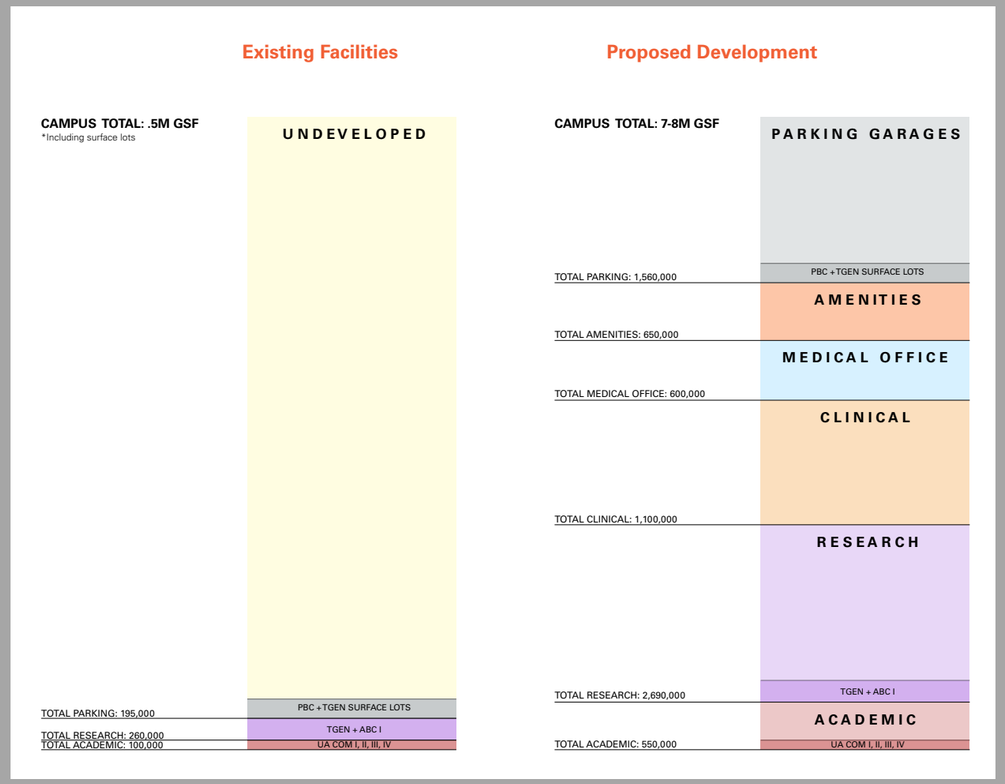
Precedents + Historic Growth

Peers + Precedents

Through the process of the 2008 Comprehensive Development Plan, numerous peer institutions were identified through comparative review to aid in the development of the campus. These examples helped us to understand desired programmatic adjacencies, appropriate densities and in part, design aesthetic and development phasing. As the initial development of this campus comes into completion and the possibility of a major clinical facility comes closer, two peers were re-evaluated for their possible beneficial benchmarks for the campus.

The best comparatives are urban integrated campuses such as University of Maryland, Baltimore and University of California San Francisco at Mission Bay. UMB has a long history of growth and urban infill and UCSF is an integrated start up campus on a brownfield site.
The Phoenix Biomedical Campus is the product of applying the City of Phoenix's DTC and other overlay measures which seek to create vibrant urban environments. These development priorities emphasize building density, connections to public transit, limited surface parking and promote an active, walkable, shaded ground plane. The scenario studies provided in the update preserve these characteristics. They propose an integrated campus but with variations on program capacity and campus position. Each demonstrates a potential direction for the campus as the next set of projects is introduced over a five to 10 year period.





Historic Growth Patterns vs. Biomedical Growth

The Phoenix Biomedical Campus differs from peer campuses in two key comparisons, parallel programming and development opportunity.

Biomedical campuses are typically the product of long institutional transformations. Many peer campuses began as clinical institutions then expand their missions to include research and academic uses. Similarly, many other comparative campuses have historically academic roots which have been expanded to include research and clinical programs. In contrast, The Phoenix Biomedical Campus will continue to develop all three programmatic needs in parallel and with an emphasis on balanced and proportional growth.

Often, a key aspect of planning and development is the removal and or repurposing of existing campus building stock in a complex series of sequenced moves just to create new building parcels or room for infrastructure. On this campus, the planning effort and available land area reduces this development hurdle. With planning foresight, as demonstrated on other campuses such as UCSF, development can occur readily and provide early success due to this inherent agility. The Phoenix Biomedical Campus offers the opportunity of growth and flexibility of land use without the burden of facility sequencing problems faced on other campuses.

Program Yields + Comparisons

Program Yields

The program yields represent a range of possible development solutions for the PBC. These reflect the various respective scenarios with emphasis in different areas as the campus develops. Specifically, Concept C utilizes additional land area in the center of campus to allow for the most advanced models of campus development.

Concept A1

Concept A2

Concept B

Concept C

	2008	A1	A2	B	C
Existing Facilities	330,000	330,000	330,000	330,000	330,000
New Academic Facilities	275,000	500,000	500,000	480,000	520,000
New Research Facilities	2,257,000	3,080,000	2,780,000	2,430,000	2,190,000
New Clinical Facilities	1,500,000	1,000,000	1,350,000	1,100,000	1,550,000
New Clinical Specialty / Medical Office	350,000	530,000	430,000	600,000	740,000
New Garage Parking	1,787,500	1,137,500	1,137,500	1,560,000	2,047,500
- Parking Stalls	5,500	3,500	3,500	4,800	6,300
Campus Building Development Subtotal	6,500,000	6,577,500	6,527,500	6,500,000	7,117,500
Mixed Use/Active Space (10%)	--	657,750	652,750	650,000	711,750
Campus Development Total	**6,500,000**	**7,235,250**	**7,180,250**	**7,150,000**	**7,829,250**
Population	--	13,005	12,907	12,223	13,504
Campus Development Density (GSF/Acre)	185,966	185,966	184,582	183,805	177,132

* *All calculations are in Gross Square Feet (GSF) of development*

** *Detailed data for each development concept can be found in the Appendix of this document. The 2008 plan used a different mechanism for calculating development and therefore not all categories are comparable.*

Population Projections

Overall population projections for the campus can vary greatly depending on the ultimate type of use for each parcel as well as its development density. The projections for each scenario below reflect these varying profiles. Specific research uses vary greatly in their need for space. Some are compact while others require large spaces, bringing population per GSF and overall building area down. In addition, many of the future clinical uses may have 24-hour utilization, further skewing the projections. These projections do not include visitors or clinical facility patients.

Academic Population

- Academic population projections encompass a variety of users, including students, faculty and staff. This population has been approximated at 250 GSF / person.

Research Population

- Research population projections encompass a variety of users, including principal investigators, researchers, and other general staff and facilities personnel. This population projection had been approximated at 600 GSF / person.

Clinical Population

- Clinical population projections include doctors, nurses and general support staff. This population projection had been approximated at 500 GSF / person.

Clinical Specialty / Medical Office Population

- Clinical Specialty and Medical Office population projections encompass physicians nurses, and general support staff. This population projection had been approximated at 350 GSF / person.

Mixed-Use Population

- Mixed-Use population projections encompass a variety of users, including retail, restaurants and other support functions for the campus. This population projection had been approximated at 400 GSF / person.

Total Buildout Population Projections*

	2008	A1	A2	B	C
Academic	--	2,280	2,280	2,200	2,360
Research	--	5,567	5,067	4,483	4,150
Clinical	--	2,000	2,700	2,200	3,100
Clinical Specialty / Medical Office	--	1,514	1,229	1,714	2,114
Mixed Use	--	1,644	1,632	1,625	1,779
Total Population	**6,000**	**13,005**	**12,907**	**12,223**	**13,504**

* *Projections based on profiles of comparative campuses, not institutional calculations.*

Concepts Summary

PHASE	GSF	POPULATION
EXISTING	*330,000 GSF*	*400 FTE*
1-3 YEARS	*635,000 GSF*	*1,043 FTE*
4-6 YEARS	*1,860,000 GSF*	*2,258 FTE*
7-10 YEARS	*3,477,500 GSF*	*4,238 FTE*
11-15 YEARS	*4,667,500 GSF*	*5,138 FTE*
16-20 YEARS	*6,317,500 GSF*	*5,738 FTE*
BUILDOUT	*7,235,250 GSF*	*5,738 FTE*

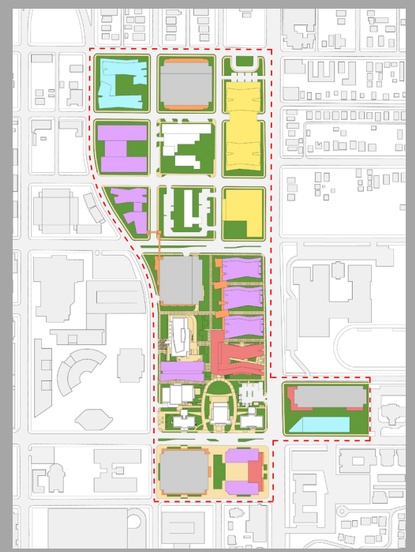
Development Concept A1

Total Development: 7,235,250 gsf
Population: 13,005
Parking: 3,500

PHASE	GSF	POPULATION
EXISTING	*330,000 GSF*	*400 FTE*
1-3 YEARS	*635,000 GSF*	*1,043 FTE*
4-6 YEARS	*1,860,000 GSF*	*2,258 FTE*
7-10 YEARS	*3,827,500 GSF*	*4,938 FTE*
11-15 YEARS	*4,817,500 GSF*	*5,638 FTE*
16-20 YEARS	*6,267,500 GSF*	*6,238 FTE*
BUILDOUT	*7,180,250 GSF*	*6,238 FTE*

Development Concept A2

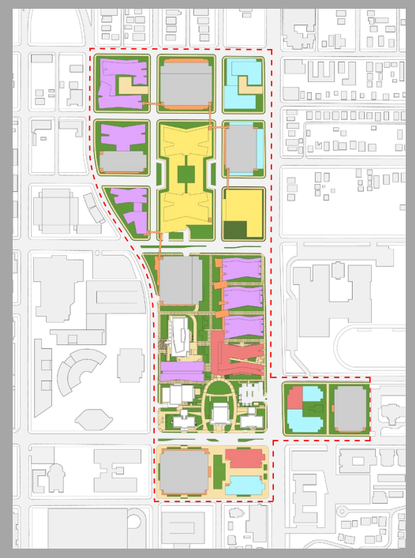
Total Development: 7,180,250 gsf
Population: 12,907
Parking: 3,500



PHASE	GSF	POPULATION
EXISTING	*330,000 GSF*	*400 FTE*
1-3 YEARS	*635,000 GSF*	*1,043 FTE*
4-6 YEARS	*1,990,000 GSF*	*2,258 FTE*
7-10 YEARS	*3,822,500 GSF*	*4,398 FTE*
11-15 YEARS	*5,110,000 GSF*	*5,298 FTE*
16-20 YEARS	*6,110,000 GSF*	*5,448 FTE*
BUILDOUT	*7,150,000 GSF*	*5,448 FTE*

Development Concept B

Total Development: 7,150,000 gsf
Population: 12,223
Parking: 4,800



PHASE	GSF	POPULATION
EXISTING	*330,000 GSF*	*400 FTE*
1-3 YEARS	*635,000 GSF*	*1,043 FTE*
4-6 YEARS	*1,990,000 GSF*	*2,258 FTE*
7-10 YEARS	*4,641,250 GSF*	*5,278 FTE*
11-15 YEARS	*5,502,500 GSF*	*5,728 FTE*
16-20 YEARS	*6,702,500 GSF*	*5,928 FTE*
BUILDOUT	*7,829,250 GSF*	*5,928 FTE*

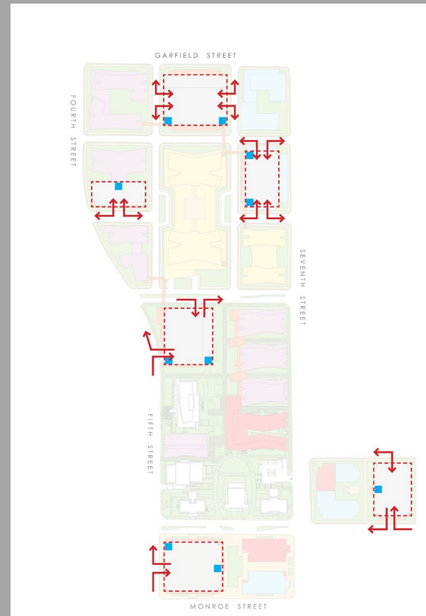
Development Concept C

Total Development: 7,829,250 gsf
Population: 13,504
Parking: 6,300

Circulation + Infrastructure

Centralized Parking

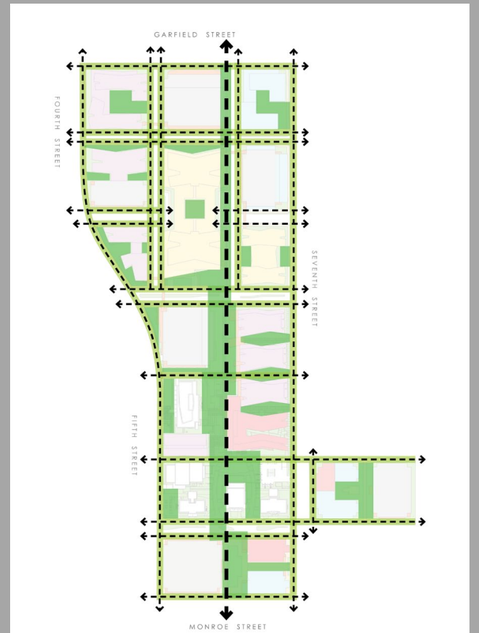
Effective parking and traffic management is a major factor in the viability of the Biomedical Campus. While surface lots exist today and facilitate parking needs, land use will be at a premium and consolidated structures will soon be necessary. These need to take into consideration the traffic flows of the city and the potential users of the facilities. While daily workers may be able to walk a reasonable distance, clinical patients will have different expectations of safety and walkability.



Circulation Network

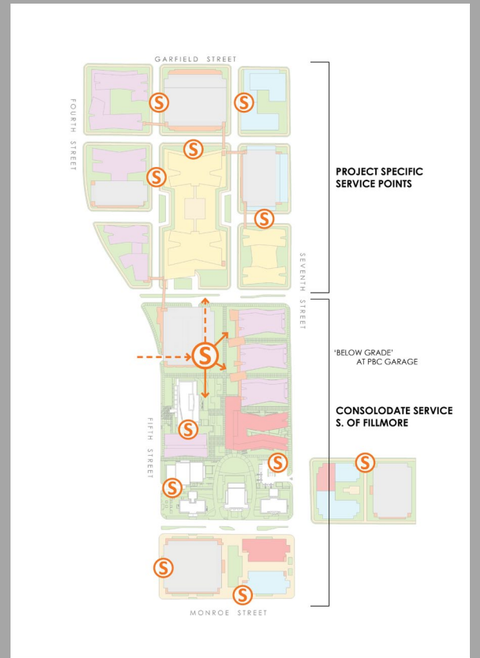
The current area of campus that has been developed is within a “super-block” and has a major greenspace as its orienting device. This supports the academic nature of the area and creates desirable indoor/outdoor spaces. As the campus expands in the the more regularized street grid, specific strategies will need to be employed to maintain the connectiviety and walkability of campus.

Priority should be placed on 6th Street and other internal streets to facilitate connections. While 7th Street will have significant development, it will remain more car oriented and other areas can be more pedestrian and bicycle friendly.



Consolidated Service

Campus Service has been limited to localized locations for past development. This has been acceptable as the total development and density has not been significant. The need for additional facilities overall and incresed level of service will dramtically increase with additional research and clinical uses. This will drive the need for consolidated service locations, most desirably underground and associated with projects such as parking garages, where vehicles and access drives will be developed.

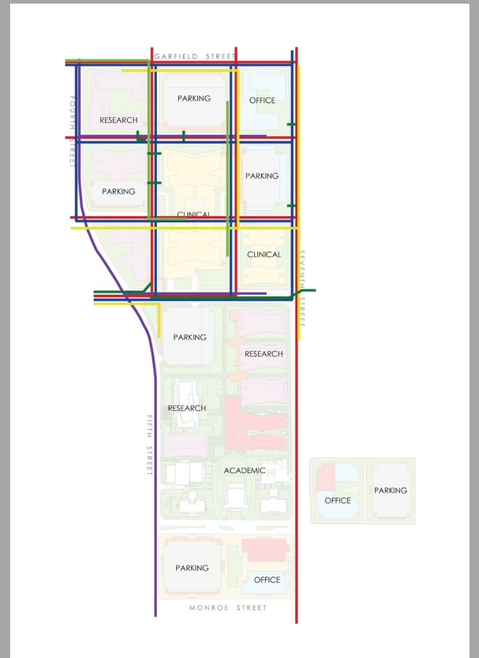


Utility Improvements

Much of the infrastructure in the area has been improved as a result of recent development on campus. These systems will likely have a capacity for additional development.

NRG Phoenix delivers centralized chilled water to the area and there is currently excess capacity from its facilty adjacent to Chase Field for additional chilled water.

Per City of Phoenix development standards, each new project must upgrade it’s adjacent off site, undergrounds and piped infrastructure to satisfy the new demand created by the project.



Implementation + Phasing

Flexibility of the Plan

Flexibility is key to any development plan and has been considered for this one. Many factors, not yet determined, will have an impact on the development patterns for the campus. Timelines and spatial needs of uses, such as a clinical hospital, will significantly impact the form of campus. In addition, City priorities and economic realities will also shape the land-use and development density of the campus. Flexibility to make decisions is key to allowing for overall success with changes in details.

Upholding the Framework

A framework for the plan is important as a guiding measure for decision-makers in the future. While many detailed decisions will be made in the future to meet the updated needs, upholding the framework will assist in campus continuity and quality.

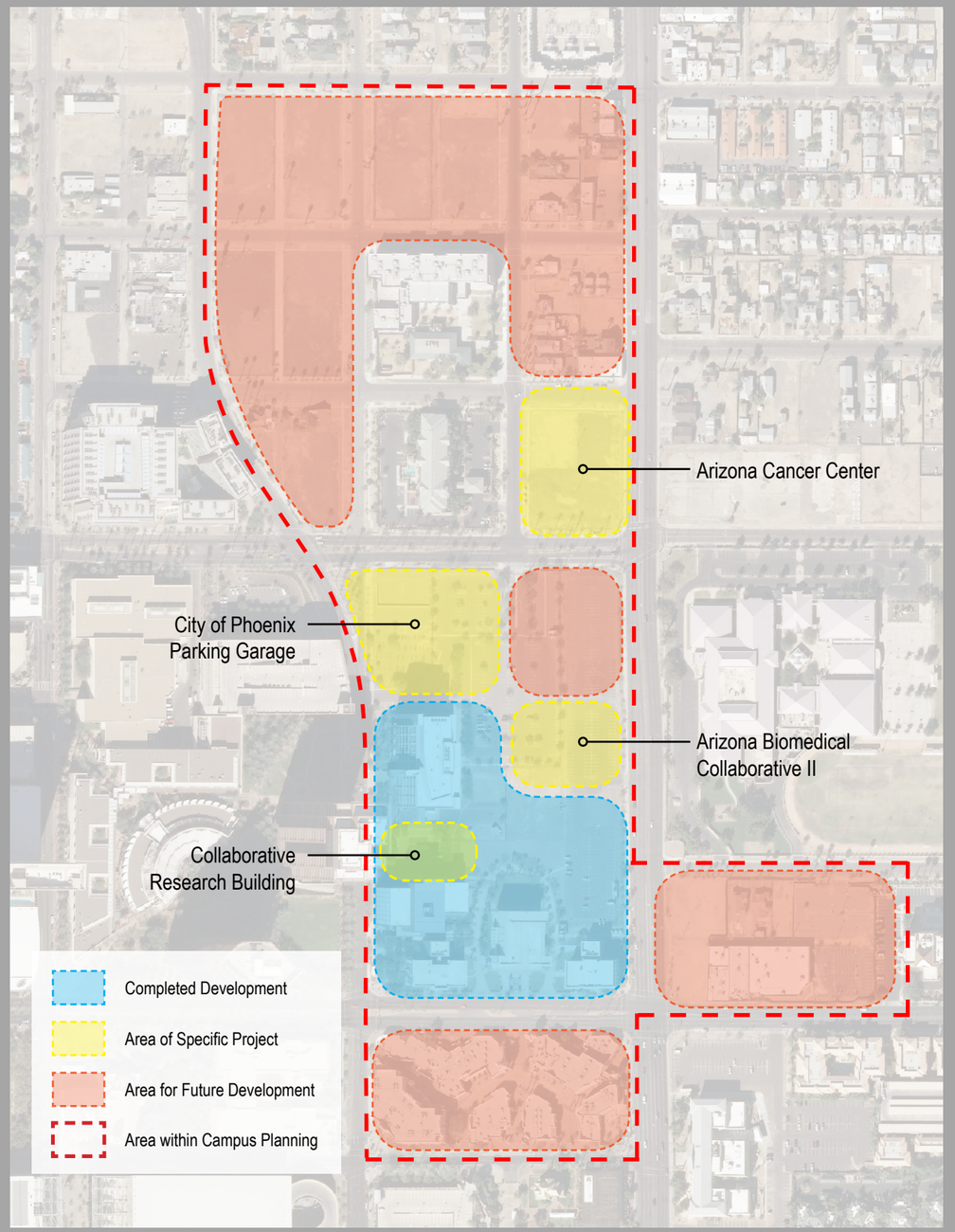
General Phasing Plan

This development plan does not lay out exact steps for constructing future facilities, but does consider the previous and likely development patterns as they will occur in the future. To date, all development has been focused south of Fillmore Street, and north of Van Buren Street.

Under Construction - Health Science Education Building

Proposed - Arizona Cancer Center

Proposed - Collaborative Research Building



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