

**LOOKING BACK, MOVING FORWARD: LOGICAL DECISION MAKING IN THE
REDEVELOPMENT OF DECOMMISSIONED MILITARY INSTALLATIONS**

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SCHOOL OF ARCHITECTURE, UNIVERSITY OF HAWAII'Ī AT MĀNOA

SUBMITTED TOWARDS THE FULFILLMENT OF THE
REQUIREMENTS FOR THE DOCTOR OF ARCHITECTURE DEGREE

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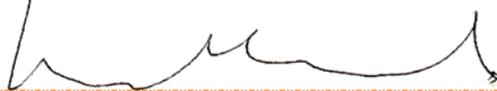
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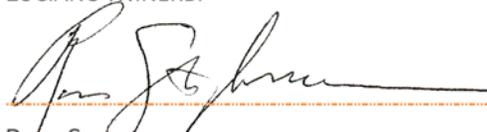
WE CERTIFY THAT WE HAVE READ THIS DOCTORATE PROJECT AND THAT, IN
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SCHOOL OF ARCHITECTURE, UNIVERSITY OF HAWAII' AT MĀNOA



AMY ANDERSON, CHAIRPERSON



LUCIANO MINERBI



ROSS STEPHENSON

FOR:

MY PARENTS, WHO BOUGHT ME MY FIRST *ARCHITECTURAL DIGEST* AND LIT THE PROVERBIAL CREATIVE LIGHT BULB; WHO ALWAYS TOLD ME THAT I COULD DO ANYTHING I SET MY MIND TO; AND WHO HELPED ME ALWAYS PUSH MYSELF FURTHER IN PURSUIT OF THE “TREAT” THAT I KNEW WOULD SHOW UP IN MY BANK ACCOUNT AS A REWARD FOR SUCCESS.

BOBBY AND DYLAN, WHO ALWAYS PROVIDE A LOVING RETREAT FROM WORK AND SCHOOL WHEN I FEEL THE NEED TO PROCRASTINATE; WHO PUT UP WITH MY SOMETIMES ALL TOO COMMON MOMENTS OF STRESS AND TENSION; WHO HAVE BELIEVED IN ME THROUGH THE GOOD AND THE BAD; AND WHO EVERYDAY MAKE ME WANT TO DO THE BEST I CAN POSSIBLY DO.

AMY ANDERSON, WHO ALWAYS HAD NOTHING BUT SUPPORT AND POSITIVE WORDS ABOUT EVERY ONE OF MY THOUGHTS AND IDEAS; WHO ALWAYS REINVIGORATED ME IN MY WORK EVEN WHEN I THOUGHT THAT THE VIGOR HAD SURELY DISAPPEARED; AND WHO HAS BEEN NOT ONLY A GREAT COMMITTEE CHAIRPERSON BUT ALSO TURNED OUT TO BE A WONDERFUL FRIEND.

LUCIANO MINERBI, WHO ALWAYS OFFERED CONSTRUCTIVE CRITICISM AND MADE ME REALIZE THAT THERE WAS A WORLD OUTSIDE OF THE ARCHITECTURE CURRICULUM; WHO HELPED ME SINGLE HANDEDLY FUND THE BOOKSTORE’S PLANNING SECTION WITH ALL OF HIS GREAT BOOK SUGGESTIONS; AND WHO INSPIRED ME TO LEARN ABOUT WHAT URBAN PLANNING ACTUALLY IS.

ROSS STEPHENSON, WHO TOOK ON MY PROJECT AT A LATE REQUEST AND BELIEVED IN IT FROM THEN FORWARD; WHO GAVE UP MANY OF HIS SATURDAY AFTERNOONS TO LET ME SEARCH THROUGH THE WEALTH OF MATERIALS HE HAD AVAILABLE IN HIS OFFICE; AND WHO ALWAYS OWNED AND LOANED ME EVERY BOOK THAT I NEEDED BUT COULDN’T SEEM TO FIND ANYWHERE ELSE.

ANDREA KIRBY, WHO HAS BEEN THE GREATEST FRIEND TO BE STRAPPED IN NEXT TO IN THE FRONT CAR OF THIS ROLLERCOASTER THAT HAS BEEN ARCHITECTURE SCHOOL; WHO ALWAYS OFFERED A WILLING EAR TO LISTEN TO ALL OF MY CRAZY IDEAS OVER THE PAST 4 YEARS; AND WHO ALWAYS KNEW THE RIGHT KIND OF ADVICE TO GIVE DURING STRESSFUL TIMES.

SECTION ONE: ABSTRACT

This project is fundamentally a study of the application of a formal logic system to an urban design problem. This system, which is not often used in the decision making for projects in the built environment, is more specifically of the Deductive Logic field of study. The rules and concepts from Sentential Deductive Logic have been utilized to create a decision-making tool for communities facing the decommissioning of a military base and its subsequent redevelopment. The first step to redevelopment is in deciding which school of urban design to work within. This is often the most difficult decision to make as it really gives structure to the entire redevelopment process. This logical formula, thus, is a scientific approach to determine which urban design approach is most appropriate for an installation: The Congress for the New Urbanism, The Smart Growth Network, LEED 2009 for Neighborhood Development, or Non-Planning. The establishment of the derivation formula is primary, while secondary is where the validity of the derivation is proved through its application to case studies of military bases that have already been redeveloped. A second portion of the document narrows the focus onto a single installation investigated as a case study and proposes a development design based on the outcome of the derivation process.

SECTION TWO: RESEARCH STATEMENT

This document could easily be split into two separate parts, each studying a different primary issue. The first portion of the paper focuses on the closure of military installations around the globe by the Department of Defense's Base Realignment and Closure Commission (BRAC). BRAC has been instituted many times since the 1960's in an effort to reduce military spending and create a more efficient defense network. The BRAC system is a panel that reviews military installations and recommends the cutting of installations deemed no longer essential. This process is very beneficial to the Department of Defense (DoD), as the closure of a few minor bases can save millions in operating costs. This money can then be directed to support more vital operations that better serve the country. The down side to this process, however, is the use of the land that is left behind after the military exits. In the past, many of these lands have been left abandoned because of the real or perceived environmental contamination and the sheer overwhelming nature the redevelopment of these large areas can bring to a community. Furthermore, the disappearance of a base full of soldiers and their families always has a negative effect on the surrounding economy. For these reasons, in the past, BRAC has been a word that communities proud to call themselves home to a military installation, have feared.

Recently, however, there have been a number of redevelopments of decommissioned military bases that have been extremely successful. These cases have proven that BRAC is not necessarily a bad thing for a community, and if done properly, can even prove to be better for the community than the installation was. It is the contention of this project that the key to a successful redevelopment is in knowing from the beginning what end is to be achieved. At times it seems that this particular portion of the decision-making process can sometimes prove to be the hardest. While there is a good amount of support for BRAC communities from the DoD in portions of the decommissioning process, the majority of this assistance does not help a community with deciding how to proceed after the military has gone. That is where this document seeks to be of assistance.

The primary goal of the first portion of this project is to create a decision-making tool that can be applicable to installations that are yet to be closed by the most recent round of BRAC in 2005, as well as those that may be closed in future rounds. While the Department of Defense only helps with conveyance of the site, this tool is meant to provide assistance to communities for redevelopment planning in the form of a Deductive Logic-based derivation. This sort of formal logic approach provides a way to systematically deduce, out of four possible urban design approaches considered by this project, which is the best given the particular context of an individual installation. This is done by selecting key variables that are general enough to pertain to all military installations at the time of closure, yet worded in such a way that they can be used to demonstrate the particular context of a unique installation. In this way, the derivation becomes broadly applicable to all BRAC sites.

Additionally, this document includes a series of cases studies, all of which are BRAC decommissioned installations, that have been or are in the process of being successfully redeveloped. The derivation is applied to these sites according to the context at the time of closure, and determines which urban design approach was appropriate. If the conclusion of the derivation matches the approach implemented, then the case helps to prove the validity of the derivation that has been created within this document.

The second portion of the project focuses and expands upon the final case study presented under the first half of the project. The conclusion found from the derivation process indicates that this project would be most successful following a Non-Plan approach to redevelopment. This intriguing issue is investigated in the second half of the project, with the ultimate goal being a Non-Plan for the site which is yet to be redeveloped following BRAC. First, though, the entire concept of Non-Plan is further analyzed and understood for its intent and its reality. This is accomplished through a series of case studies, the first of which present the cases that were identified under the Non-Plan manifesto and the last of which are examples of Non-Plan-esque examples that can be found within the modern architectural world.

Once Non-Plan is understood to a greater degree, the former installation site is studied and analyzed for its current conditions regarding infrastructure, utility service, existing uses, natural resources, and cultural resources. These factors are essential to understand before a design can be constructed. Another essential portion to precede design is a guideline which indicates the underlying factors and organization for design. Finally the design is proposed that will allow Non-Plan to occur on the project site.

In all, the document begins with a broad focus on decommissioned military installations and attempts to create a formula that can inform redevelopment of any site, and it ends focusing on a single site and specific concerns and issues held therein.

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.LIST OF ABBREVIATIONS.

AIR FORCE BASE	AFB
AIR RESERVE BASE	ARB
BASE REALIGNMENT AND CLOSURE COMMITTEE	BRAC
BOARD OF WATER SUPPLY	BWS
CONGRESS FOR THE NEW URBANISM	CNU
DEPARTMENT OF DEFENSE	DoD
DEPARTMENT OF EDUCATION	DOE
DEPARTMENT OF ENERGY	DOE
DEPARTMENT OF TRANSPORTATION	DOT
DEFENSE REUTILIZATION AND MARKETING SERVICE	DRMS
ENVIRONMENTAL PROTECTION AGENCY	EPA
FORD ISLAND PROPERTIES, LLC	FIP
HAWAII COMMUNITY DEVELOPMENT AUTHORITY	HCDA
HAWAIIAN ELECTRICAL COMPANY	HECO
LAND REUSE AUTHORITY	LRA
LEED 2009 FOR NEIGHBORHOOD DEVELOPMENT	LEED ND
MARINE CORPS AIR STATION	MCAS
NAVAL AIR STATION	NAS
OFFICE OF ECONOMIC ADJUSTMENT	OEA
OAHU RAILWAY AND LAND COMPANY	OR&L
SENTENTIAL LOGIC	SL
SMART GROWTH NETWORK	SGN
UNIVERSITY OF HAWAII'S SCHOOL OF OCEAN AND EARTH SCIENCE AND TECHNOLOGY	SOEST
TAX INCREMENT FINANCING	TIF
UNITED STATES FISH AND WILDLIFE SERVICE	USFWS

. DERIVATION QUICK REFERENCE.

. DERIVATION NUMBER ONE .			
CONCLUSION		ATOMIC SYMBOLIZATION	
PLANNING		NON-PLANNING	
P		~P	
VARIABLE	PARAPHRASE	ATOMIC SYMBOLIZATION	
TIMEFRAME	Near-Term Necessity for Redevelopment	N	
	Not Near-Term Necessity for Redevelopment	~N	
MEANS	Solitary Mode Approach	S	
	Not Solitary Mode Approach	~S	
HISTORY & PRESERVATION	History and Preservation are Influential to Redevelopment	I	
	History and Preservation are Not Influential to Redevelopment	~I	
ADJACENCY & PROXIMITY	Site is Adjacent to Developed Community	A	
	Site is Not Adjacent to Developed Community	~A	
FUTURE USE	Singular Use	G	
	Not Singular Use	~G	
DEVELOPMENT DRIVE	Community Driven Redevelopment	C	
	Not Community Driven Redevelopment	~C	
VARIABLE RELATIONSHIPS	PARAPHRASE	COMPOUND SYMBOLIZATION	
N, ~N S, ~S	IF (<i>Near-Term Necessity for Redevelopment AND Solitary Mode Approach</i>) THEN <i>Planning Approach</i>	$(N \ \& \ S) \cap P$	
	IF (<i>Near-Term Necessity for Redevelopment AND Not Solitary Mode Approach</i>) THEN <i>Planning Approach</i>	$(N \ \& \ \sim S) \cap P$	
	IF (<i>Not Near-Term Necessity for Redevelopment AND Solitary Mode Approach</i>) THEN <i>Planning Approach</i>	$(\sim N \ \& \ S) \cap P$	
	IF (<i>Not Near-Term Necessity for Redevelopment AND Not Solitary Mode Approach</i>) THEN <i>Non-Planning Approach</i>	$(\sim N \ \& \ \sim S) \cap \sim P$	
I, ~I A, ~A	IF (<i>History and Preservation are Influential to Redevelopment AND Site is Adjacent to Developed Community</i>) THEN <i>Planning Approach</i>	$(I \ \& \ A) \cap P$	
	IF (<i>History and Preservation are Influential to Redevelopment AND Site is Not Adjacent to Developed Community</i>) THEN <i>Planning Approach</i>	$(I \ \& \ \sim A) \cap P$	
	IF (<i>History and Preservation are Not Influential to Redevelopment AND Site is Adjacent to Developed Community</i>) THEN <i>Non-Planning Approach</i>	$(\sim I \ \& \ A) \cap \sim P$	
	IF (<i>History and Preservation are Not Influential to Redevelopment AND Site is Not Adjacent to Developed Community</i>) THEN <i>Planning Approach</i>	$(\sim I \ \& \ \sim A) \cap P$	
G, ~G C, ~C	IF (<i>Singular Use AND Community Driven Redevelopment</i>) THEN <i>Planning Approach</i>	$(G \ \& \ C) \cap P$	
	IF (<i>Singular Use AND Not Community Driven Redevelopment</i>) THEN <i>Planning Approach</i>	$(G \ \& \ \sim C) \cap P$	
	IF (<i>Not Singular Use AND Community Driven Redevelopment</i>) THEN <i>Non-Planning Approach</i>	$(\sim G \ \& \ C) \cap \sim P$	
	IF (<i>Not Singular Use AND Not Community Driven Redevelopment</i>) THEN <i>Planning Approach</i>	$(\sim G \ \& \ \sim C) \cap P$	

. DERIVATION NUMBER TWO .		
CONCLUSION	PARAPHRASE	ATOMIC SYMBOLIZATION
THE CONGRESS FOR THE NEW URBANISM	NEW URBANISM	W
SMART GROWTH NETWORK	SMART GROWTH	M
LEED 2009 FOR NEIGHBORHOOD DEVELOPMENT	LEED ND	L
VARIABLE	PARAPHRASE	ATOMIC SYMBOLIZATION
SEQUENCE	Phasing	H
	Not Phasing	$\sim H$
PRESERVATION	Extensive Preservation	E
	Not Extensive Preservation	$\sim E$
REMEDICATION	Necessary Remediation	Y
	Not Necessary Remediation	$\sim Y$
NEED FOR GOVERNMENT SUPPORT	Support Vital	V
	Support Not Vital	$\sim V$
LOCATION	Connected to Existing Urban Environment	U
	Not Connected to Existing Urban Environment	$\sim U$
VARIABLE RELATIONSHIPS	PARAPHRASE	COMPOUND SYMBOLIZATION
H, $\sim H$	IF Phasing THEN (EITHER New Urbanism OR Smart Growth)	$H \cap (W \vee M)$
	IF Not Phasing THEN [EITHER LEED ND OR (New Urbanism OR Smart Growth)]	$\sim H \cap [L \vee (W \vee M)]$
E, $\sim E$	IF Extensive Preservation THEN LEED ND	$E \cap L$
	IF Not Extensive Preservation THEN (EITHER New Urbanism OR Smart Growth)	$\sim E \cap (W \vee M)$
Y, $\sim Y$	IF Necessary Remediation THEN (EITHER LEED ND OR Smart Growth)	$Y \cap (L \vee M)$
	IF Not Necessary Remediation THEN (EITHER New Urbanism OR Smart Growth)	$\sim Y \cap (W \vee M)$
V, $\sim V$	IF Support Vital THEN LEED ND	$V \cap L$
	IF Support Not Vital THEN (EITHER New Urbanism OR Smart Growth)	$\sim V \cap (W \vee M)$
U, $\sim U$	IF Connected to Existing Urban Environment THEN Smart Growth	$U \cap M$
	IF Not Connected to Existing Urban Environment THEN New Urbanism	$\sim U \cap W$

.SENTENCE TYPES.			
CONNECTIVE	NAME	COMPOUND SYMBOLIZATION	PARAPHRASE
&	Conjunction	$A \ \& \ B$	Both A and B
\vee	Disjunction	$A \ \vee \ B$	Either A or B
\sim	Negation	$\sim A$	It is not the case that A
\cap	Material Conditional	$A \ \cap \ B$	If A then B
\equiv	Material Biconditional	$A \ \equiv \ B$	A if and only if B

SECTION FOUR: APPROACHES TO URBAN PLANNING

URBAN PLANNING: HOW DO WE CREATE COMMUNITIES?

A young woman pushes a stroller along a wide sidewalk while an awkward young puppy trots along beside the wheels. She smiles broadly and calls out a greeting to a man who is passing alongside the curb on a bicycle. It is a hot day out, but the woman looks perfectly comfortable as she passes beneath one shade tree and then another. An elderly man leans over from his seat on a bench to take a look inside of the stroller as the woman nears. With his eyes alight from memories past, he talks in the strange noises people often do in the presence of small children. The woman pauses for a moment to speak with the man, whom she obviously knows, and soon begins again along her path. She reaches the corner market where she purchases groceries for the evening meal. As she begins her walk home she decides to stop quickly into the florist shop next door and pick up a bouquet of fresh flowers for the dining room. The arrangement, beautiful and comprised of all her favorite flowers, was made particularly for her. The florist always prepares something special for the young mother each Wednesday, knowing that she will be stopping in. It has become a routine for the women, between who has grown a friendship since the mother and her family moved here only six months ago. Near the end of her walk, the woman again stops at the park near her home to let the dog run around. The air is alive with the smells of freshly cut grass, wild flowers blooming and with the sounds of children at play as she sits on a bench, watching the neighborhood children climbing around the playground equipment like monkeys.

This description of a scene is ideal, something straight from the movies, and is practically a myth in our country today. The idea that anything like this ever existed is actually difficult to believe. The reason being that a drive around major cities in the United States will typically reveal a pattern such as this: a central urban core is connected by roadways, which are lined with commercial strips, to scattered low-density neighborhoods. These neighborhoods are typically located on the fringe, or sometimes well beyond the fringe, of the central urbanization and usually comprised of single-family residences situated upon spacious lots. Furthermore, the living, working, and shopping areas in the city in general are noticeably isolated from one another and only connected by large expanses of roadways jammed with vehicles speeding back and forth. Often times there are an apparent lack of planning and integration between the various parts of the city and an absence of a sense of community. These same conditions are occurring in towns, cities, and metropolitan areas across our nation, and this phenomenon has come to be generally referred to as “urban sprawl.”¹

¹ Benfield, F. Kaid, Matthew D Raimi, and Donald D.T. Chen. *Once There Were Greenfields: How Urban Sprawl is Undermining America's Environment, Economy, and Social Fabric*. New York: The Natural Resources Defense Council, 1999. 11.

Urban sprawl seems like a simple concept, but in reality it is an extremely difficult to define. We can describe what sprawl looks like, we can even describe how it behaves, but ultimately it is much more an attitude than an actual defined set of conditions. For this reason exactly, it is a highly controversial, highly debatable issue. As a result, when it comes to supporting or opposing the phenomenon people tend to stand on one side or the other of the spectrum.² There are always sides to every story, and the case is no different for sprawl: while there is a strong environmental case against sprawl, there is also the “American Dream” case in support of sprawling land use patterns. Despite this inherent dualism, recently the general feeling toward sprawl on an academic level has been a negative one.

Sprawl is occurring at a rapid rate, and is having some undeniably detrimental impacts on our nation. The desirable open space that draws people to the suburbs is rapidly being bought up and developed. Developed lands are in many cases standing empty because commercial areas must go out of business when the fragmented communities cannot sustain them. Woodlands and wildlife habitats are being encroached upon, causing wild animals to show up in residential areas in search of food. Many endangered species important to the natural balance are also beginning to vanish as their habitats are destroyed. Watersheds and aquifers are reaching dangerously low levels as development land is being hardscaped with impervious materials, preventing rainwater from soaking into the ground to restore them. Farmlands and rangeland areas are dwindling, putting an increased demand on those remaining lands to produce a larger yield each season. This additional stress is in turn depleting the soil of its natural nutrients. There are countless other effects that sprawl is having on the natural environment, and after decades of unconcerned development, our nation has finally become aware of the importance of protecting these areas.³ Because of the overwhelming evidence that the current building trends in the built environment are acting as a detriment to both society and the natural environment, there have been a number of different campaigns to change the practice of urban design. Four of these alternative approaches to urban design are presented here, their primary goals and foundations discussed, and the larger reaction to each highlighted. Understanding each of these approaches to urban design becomes extremely important because they become the four possible conclusions for the derivation developed in the following section. This derivation is set up in such a way that it determines, per the context of a BRAC decommissioned site, which of the following four possible paths of urban development is appropriate for a particular installation.

.THE CONGRESS FOR THE NEW URBANISM.

In the late 1980s a forward-thinking group of architects and urban designers took a look at the built environment around them and did not like what they saw. These like thinkers saw that suburbanization was taking over cities across the country and felt it was their duty to

² Bruegmann, Robert. *Sprawl: A Compact History*. Chicago: University of Chicago Press, 2005. 18-20.

³ Flint, Anthony. *This Land: The Battle over Sprawl and the Future of America*. Baltimore: The John Hopkins University Press, 2006. 54-7.

stand up in rebellion against this pattern of growth. Thus was born the 12-person Congress of the New Urbanism (CNU). This group of people met numerous times during the late 1980s and developed a methodology by which the New Urbanist manifesto was developed. The principles that guide the New Urbanist movement are divided into three separate categories, each of which is subdivided into nine different principles relating to the particular category. Over the past two decades the movement has transformed from a group of people educated in urbanism and desiring a change in traditional practices into a grand network with proponents spanning the globe and promoting action on a large scale.⁴

The manifesto of the New Urbanists is a somewhat wordy document that served to declare the Congress' distaste for the state of urban planning in America at the time. It further outlined a number of ways public policy and the planning process could be restructured to reclaim those urban areas lost to years of sprawling, environmentally and pedestrian unfriendly development activities.⁵ While an in-depth discussion of all of the issues covered in the manifesto is outside the scope of this project, there are three main areas covered by the document to be discussed briefly so as to gain an understanding of the beliefs and convictions of the New Urbanists.

The first section of the manifesto is subtitled "The region: Metropolis, city, and town," and it is within this section that broader issues of community development and connection are approached. The CNU calls for communities outside of the urban core to be built as separate villages that pay homage to the historical planning patterns and that are complete with their own job force, services and economic foundation to rely upon without being dependent upon the urban core. Within this section, the CNU also raises the topic of, among other things, transportation linkage and emphasizes the importance of providing many transit alternatives linking the area so as to reduce general automobile dependence. Many broader issues are highlighted within this section as well.⁶

"The neighborhood, the district, and the corridor," which is the title of the second section of the manifesto document, outlines the desired form of New Urbanist developments. That is, being comprised of small, compact neighborhoods that contain a mix of uses that are within walking distance for residents. These neighborhoods are to be connected by corridors supporting a variety of transit options, preferably those that do not center on the use of an automobile, as well as green space to support the recreational needs of the community. The

⁴ Bressi, Todd W., ed. *The Seaside Debates: A Critique of the New Urbanism*. New York: Rizzoli International Publications, Inc., 2002. 21-2.

⁵ Bressi, Todd W., ed. 40-2.

⁶ Congress for the New Urbanism. *The Charter of the New Urbanism*. 2001.
http://www.cnu.org/sites/files/charter_english.pdf.

automobile is not shunned completely rather, there is an emphasis on planning automobile corridors so that they work to enhance a community instead of breaking it apart.⁷

The third section, named “The block, the street, and the building,” has the finest level of detail for individual elements of an urban planning project. This section focuses on individual elements of the built environment and calls for them to work together to create built forms that are all at once safe, integrated with their environment, respectful of the local context, and have a sense of place that promotes communal involvement and use.⁸

In recent decades, the resolutions outlined in the New Urbanist *Charter* have resonated deeply with policy-makers, planners, and individual community members alike. The support for the CNU has continually increased and communities based upon the *Charter* have developed with increasing frequency. As with every controversial issue, there are many in opposition to the ideas set forth by the CNU, and they have made their arguments heard. An oft heard cry from those in opposition is that the communities the CNU is attempting to create are a thing of the past, and that in this world characterized by technology, speed, globalization, and the constant pursuit of the next best thing there is no desire, much less a need, for the type of planning that promotes community and interrelatedness.⁹ A closer look at this argument reveals that it holds little water. While the traditionally planned communities of the late 1980s did indeed support an ever increasing desire for privacy and independence, they could not support community togetherness for those who desired it. The New Urbanist pattern, on the other hand, is designed to support both extremes and allows the individual to have access to whichever opportunity they so choose. Another of the popular critiques of New Urbanism is that the *Charter* essentially calls for a return to a 1920s style of urban planning. It is argued that, if that particular style of planning was so desirable by the American people, then it would have prevailed through the years of its own accord. This argument, which is quite convincing at first glance, fails to fairly recognize that there have been years of policy making and government-placed emphasis and subsidy upon auto-mobilization development patterns in America. These factors alone have virtually rendered the techniques defended by the New Urbanists illegal for many decades.¹⁰

While the two examples discussed here are only a small sample of critiques of New Urbanism, Cliff Ellis, in his article “The New Urbanism: Critiques and Rebuttals” investigates a number of critiques and discusses the rebuttals for each. His final evaluation of the opposition is that it is founded upon an “inadequate sampling of projects, deficient understanding of New Urbanist principles and practices, premature judgments, unrealistic

⁷ Congress for the New Urbanism. 2001.

⁸ Congress for the New Urbanism. 2001.

⁹ Ellis, Cliff. 2002. "The New Urbanism: Critiques and Rebuttals." *Journal of Urban Design* 7, no. 3: 261-291. *Academic Search Premier, EBSCOhost* (accessed October 27, 2009). 268.

¹⁰ Ellis, Cliff. 2002. 270.

expectations and ideological bias.”¹¹ He goes on to give examples demonstrating that the members of the opposition are connected to the Urban Design field in many different ways and as such they present wide and varying views, such that that the New Urbanists could not begin to satisfy them all if even they sought to do so. Despite this finding by Ellis, the CNU has continually sought out criticism from the opponents as a way to advance, correct, and evolve the *Charter*. The lexicon of the document itself was designed so as to facilitate this process of constant evolution to the changing times and changing critique. Due to this, the document accessed today at the CNU website is only one of several versions that have evolved over time from the original.¹²

Despite the critiques throughout the years, New Urbanism continues to be an important community planning approach across the nation today. It has evolved in such a way that many support it completely. It has widespread influence still present today which can be seen in the recent development of the LEED for Neighborhood Development energy efficiency rating system, which was based largely upon the concepts presented by the [Congress for the New Urbanism](#).

.SMART GROWTH.

The Smart Growth Network (SGN) is an initiative in the United States, not unlike the Congress for the New Urbanism, that was developed to help manage our future growth as a nation and to ensure that our cities, both existing and future, begin to grow and develop in ways that most benefit residents and the environment equally. There is overwhelming evidence today that our current planning and designing practices are large contributors to the environmental peril we are now facing. In reaction to this information, the SGN established a series of ten principles that aim to decrease suburban sprawl and redirect development towards a path that our nation, and our planet, can sustain. These ten principles ultimately aim to help determine how and where our cities grow and to improve the quality of life for residents within them. It is the contention of the SGN that there are many factors at risk if Americans and our counterparts around the globe continue to grow the way we have in the past half-century. Each of the ten principles responds to those risks and offers suggestions on how to reduce and reverse them.¹³

A lengthy article could be written to simply describe and define the ten principles of Smart Growth; however, this document simply seeks to gain a broad understanding of this approach to urban planning. Thus, the principles will be outlined and briefly explained here:

.1. *Create a range of housing opportunities and choices:* This principle seeks to provide a community with a number of different housing opportunities. If a community is comprised

¹¹ Ellis, Cliff. 2002. 283.

¹² Bressi, Todd W., ed. 27-32.

¹³ Smart Growth Initiative. Planning, Environmental, and Conservation Services. Department. *Smart Growth Guide: Enhancing Austin's Quality of Life Neighborhood by Neighborhood*. Austin, TX: January 1999. 1.

of diverse housing types combined together in a compact area, it allows residents to find the type of housing that suits their personal needs as well as diversifies the neighborhood.¹⁴

.2. *Create walkable communities:* This principle advocates walking and bicycling as the primary means of transportation, not only in order to keeping people healthy and fit, but also to contribute to the emotional needs of the residents. Walkable cities are envisioned by Smart Growth advocates to both allow for socialization between citizens and to create a tightly-knit community.¹⁵

.3. *Encourage community and stakeholder collaboration:* The SGN understands that not all communities are the same; they all have varied and distinct histories that have brought them to their current state. Therefore, the people of each individual community do not all desire the same thing for the future of their city. For this reason, this principle focuses entirely on the involvement of the community and other stakeholders in the creation of a development plan.¹⁶

.4. *Foster distinctive, attractive places with a strong sense of place:* Every change made within the built environment shapes the legacy that will remain for future residents and generations. It is arguable that at the rate many cities are going, this legacy will be a general, unimpressive one that will not truly speak to that which the people and the city stood for in their day. For this reason the SGN stresses the importance of both preserving historical structures as well as designing new structures that fit gracefully into the existing cityscape, while simultaneously speaking to the nature of those who occupy the area.¹⁷

.5. *Make development decisions predictable, fair, and cost effective:* The fundamental stance of this principle is that there should be common ground among all stakeholders: the community, the developers, and the government. It is only when these parties are equally informed and educated that developments that are in the best interest of the community, fairest for developers, and most cost effective for the government can be constructed.

.6. *Mix land uses:* The need to create areas where people can live, work, and play all in the same locale can be achieved primarily through the redirection of current zoning policies and the integration of different land uses on the same or adjacent parcels.¹⁸ Generally, walking communities with a strong sense of identity, vibrant neighborhoods living in mixed housing types, and people who take pride in their surroundings are all largely created with the foundation of a mixed-use community.

.7. *Preserve open space, farmland, natural beauty, and critical environmental areas:* Nature and natural beauty play an important role in emotional happiness as human beings, and that makes the preservation of natural spaces a priority. The SGN discusses many

¹⁴ Smart Growth Network. *This is Smart Growth*. September 2006. www.smartgrowth.org. 4.

¹⁵ Smart Growth Network. 2002. *Getting to Smart Growth: 100 Policies for Implementation*. International City/County Management Association. 26.

¹⁶ Smart Growth Network. 2002. *Getting to Smart Growth: 100 More Policies for Implementation*. International City/County Management Association. 91.

¹⁷ Smart Growth Network. *This is Smart Growth*. 18.

¹⁸ Smart Growth Network. 2002. *Getting to Smart Growth: 100 Policies for Implementation*. 1.

different ways to preserve open space and natural elements within the metropolitan area, a benefit not only to people but to animal species as well.¹⁹

.8. *Provide a variety of transportation choices:* The eighth principle established by the SGN is that transit alternatives need to be an integral part of communities in order to reduce automobile dependence and consequent pollution. This can be accomplished, according to the SGN, by changing the way we plan communities and through the provision of alternatives.²⁰

.9. *Strengthen and direct development toward existing communities:* In many cities older neighborhoods in and directly surrounding the urban core have often been ignored, allowing the roads, sidewalks, community shops, and infrastructure to fall to the wayside due to disuse and a lack of attention. The same elements have then been constructed further away from the core. This principle aims to redirect development away from greenfield plots on the fringe and back toward existing neighborhoods in the form of infill, brownfield, and revitalization projects.²¹

.10. *Take advantage of compact building design:* The SGN promotes compact communities that tend to support a diversified demographic where people can thrive socially, varied housing and commercial opportunities to ensure the needs of every individual can be met, and the ability to walk or utilize mass transit to reach destinations instead of driving an automobile.²²

Due to the fact that the goals of New Urbanism and Smart Growth are closely aligned, the critiques of one are generally associated with the other as well. As a result, those arguments presented under the New Urbanism section claiming that these approaches to community planning do not support the needs of and are undesirable to communities today are also well cited against Smart Growth. Another argument presented against Smart Growth, by Rob Krueger in his article “Making ‘Smart’ Use of a Sewer in Worcester, Massachusetts: A Cautionary Note on Smart Growth as an Economic Development Policy,” is, although this method of planning can be beneficial, the distribution of those benefits is generally uneven within the community. He cites a particular example in Massachusetts where an area along a canal, which subsequently became a sewer and finally a cesspool, has been ignored and allowed to fall into disrepair for the past century and a half. Over the years, many working poor and those down on their luck have settled among the brownfields in the area and called this place their home. Now, with the rise of Smart Growth and its emphasis on the remediation of lands and renewal of the neighborhoods exactly like this one, the area is slated for redevelopment under SGN standards. The redevelopment document calls for a complete reconstruction of the canal and the renewal of the businesses and buildings in the area to support the pedestrian friendly, mixed use

¹⁹ Smart Growth Network. 2002. *Getting to Smart Growth: 100 Policies for Implementation*. 47.

²⁰ Smart Growth Network. 2002. *Getting to Smart Growth: 100 More Policies for Implementation*. 75.

²¹ Smart Growth Network. 2002. *Getting to Smart Growth: 100 More Policies for Implementation*. 61-2.

²² Smart Growth Network. *This is Smart Growth*. 20-1.

vision described in the plan. This will benefit those people of a more well-to-do stance by providing them a nice area to live, shop, or work. Those who called the place their homes, however, will be displaced, unable to afford to live in the neighborhood once it is redeveloped and becomes desirable once again.²³ This is the sort of unfair result of Smart Growth that opponents often site in their arguments; however, this result comes about when only certain principles are followed and others discarded. A proponent of affordable and mixed housing options within an area to diversify the class and creed of people within an area, the SGN does not promote elitism and it is not an issue when the principles are followed in their entirety instead of piecemeal.

While there will always be opponents to this method of planning, the success of the SGN is undeniable. There are communities across the nation developed under Smart Growth principles, and government bodies have begun to regard and take very seriously this planning approach. As stated by Sarah Lewis in her studying of Smart Growth in Austin, Texas from the graduate department at Texas State University –San Marcos, “Smart Growth can be a very useful tool to combat the negative social, fiscal, and environmental effects of sprawl; however, the policies need to be properly implemented in order to increase density, encourage diversity, and create livable communities. Smart growth advocates need to have significant political and public support in order to fully realize the benefits of these strategies.”²⁴ And this government and public support that Lewis calls for is becoming ever more present, despite the constant critique of the method.

.LEED FOR NEIGHBORHOOD DEVELOPMENT.

One of the more contemporary additions to the urban planning scene has been the creation of the LEED for Neighborhood Development Rating System, which was designed to measure the environmental efficiency and consciousness of community developments. The entire LEED system is comprised of several different rating systems for the design of such things as new buildings, schools, existing buildings, commercial interiors and so on. The LEED ND system, which was as a pilot version in 2007 and is currently in the process of being transformed into a finalized system, is an integration of sustainable development techniques from the Smart Growth Network, the Congress for the New Urbanism, as well as other programs dedicated to supporting environmentally conscious growth. The system, as with other LEED ranking systems, is meant to provide a national way in which neighborhood and community designs across the country can be confirmed to be doing such environmentally friendly things as reducing urban sprawl, encouraging healthy living,

²³ Krueger, Rob. 2007. "Making 'Smart' Use of a Sewer in Worcester, Massachusetts: A Cautionary Note on Smart Growth as an Economic Development Policy." *Local Environment* 12, no. 2: 93-110. *Academic Search Premier*, EBSCOhost (accessed October 27, 2009).

²⁴ Lewis, Sarah Danse. “An Assessment of Smart Growth Policies in Austin, Texas” (Master’s thesis, Texas State University – San Marcos, 2007)

protecting natural habitats, and promoting alternative forms of transportation to name a few.²⁵

The LEED for Neighborhood Development system is comprised of four different focus areas, each of which have numerous subcategories that are referred to as credits. By satisfying the requirements set forth within these credits a project earns points. At the end of the analysis, a project is certified to be one of the following LEED categories: Certified, Silver, Gold, or Platinum. This categories of achievement, listed here in order from least efficient to most, is entirely dependent upon the number of credits satisfied and points earned.²⁶ The movement toward LEED as a standard in many architectural and planning firms is apparent throughout the nation, and cities are even beginning to adopt the system as part of building policy. For example, the City and County of Honolulu now requires that all new government buildings be certified at the LEED Silver level.

LEED, like any planning method or tool that deviates from the traditional, has certainly weathered a fair amount of criticism, some of which has proven to have well grounded claims. Landgon Philip notes in his commentary “What is Right and Wrong with LEED” that the new Neighborhood Development System fills the gaping hole currently present in the LEED family of rating systems, which had until now been operating under the pretence that increasing the efficiency of singular buildings could help to reverse the energy crisis we face, despite the fact that those buildings may be located in such a way that requires major gas consumption to reach them. Langdon also notes that the 238 development projects that participated in the LEED ND pilot program are a tremendous first step toward using this system to take a broader approach to solving the energy problem. While Langdon does commend the system on generating widespread participation, he also mentions some of his reservations about the system in general. His particular concern is that the system is not an actual approach to urban design. While the LEED requirements call for certain elements, it also allows for them to be integrated in such a manner that the credit requirements are satisfied, but which does not actually function appropriately in an urban context. He concludes by remarking upon the success of the more technical aspects of the system, but he reiterates that there is still quite a bit of improvement required before the system can do what he feels is necessary: create neighborhoods that are appropriate for and work within the context of their city.²⁷

An additional review of the LEED ND Pilot Program offered up numerous critiques and suggestions to improve the system. The suggestions by Ajay Garde in his essay “Sustainable

²⁵ United States Green Building Council. “LEED for Neighborhood Development Rating System. Pilot Version.” June 2007. 1-3.

²⁶ United States Green Building Council. 1.

²⁷ Langdon, Philip. “What’s Right and Wrong with LEED.” *New Urban News*. Commentary Section. (September 2007). <http://www.newurbannews.com/CommentarySep07.html> (accessed 28 October 2009)

by Design? Insights from U.S. LEED-ND Projects” were primarily directed at the number of points available in the system and the numerous ways a project could become certified. Garde recommends that a percentage requirement be applied to all focus areas of the system in order to mandate that a project fulfill a portion of each area. The pilot system, instead, was constructed in a way that a project could become certified by choosing to fulfill, for example, all of the site related credits while ignoring the green technology credits, which play an important role in significantly reducing the carbon footprint of a neighborhood. Similarly, he suggests that a method to adapt the requirements to a local context or condition is a vital part of creating a system that is appropriate and efficient.²⁸ This suggestion is one expressed by many reviewers of the system and it is a topic that has been considered throughout the revision of the pilot program during its conversion into a finalized system. Not all reaction to the system is negative by any means, and a positive reaction regarding the system cited by Garde which is unrelated to energy efficiency but should be noted is that “certification generates considerable publicity for projects and gives them a marketing advantage.”²⁹ Additionally, “that certification by a third party helps in the project approval process because planners and local officials are more comfortable with this approach.”³⁰

The LEED ND approach to urban design is still in its infancy and has not yet had time to evolve and develop like the other approaches discussed here have. For this reason there is a lot of criticism and many areas for improvement. This does not mean that the program should be disregarded in any way, rather, it has already proven itself to be a tool capable of systematically demonstrating the efficiency of a neighborhood over a calculated baseline. Additionally, this method is particularly useful because it is able to align with government policy and win the support of local officials in decision-making positions.

.NON PLANNING.

Alex Krieger, in his article “Territories of Urban Design,” speaks about the different roles that the contemporary “urban designer” is expected to play. One of the roles he refers to is “community advocate,” by which he means the urban designer must keep in mind that the residents of a community should always be considered when decisions about the environment in which they live are being made. He makes the point further along in this section of his essay that the traditional planning process, laden with bureaucracy and the formation of policies, tends to alienate the community stakeholders and give the impression that planning is “indifferent to concern or daily needs [of the community].”³¹

²⁸ Garde, Ajay. 2009. “Sustainable by Design?: Insights From U.S. LEED-ND Pilot Projects.” *Journal of the American Planning Association* 75, no. 4: 424-440. *Academic Search Premier*, EBSCOhost (accessed October 27, 2009). 435-8.

²⁹ Garde, Ajay. 427.

³⁰ Garde, Ajay. 427.

³¹ Krieger, Alex. “Territories of Urban Design.” (February 2009).

<http://www.gsd.harvard.edu/people/faculty/krieger/articles/territoriesofud.pdf> (accessed September 29, 2009). 7-8.

This concept is similar to the foundational thoughts found in the “Non Plan” approach to urban planning, which was developed by Rayner Banham, Paul Barker, Peter Hall, and Cedric Price in London in 1967.

The Non-Plan method developed out of the observation that, in London in the 1960s, planning was the all-important key to community development; however, it rarely had substantial positive success unless it was a byproduct of unforeseen circumstances. The planning was seen, by the Non-Planners, to be sporadic and inconsistent, moving from one method to the next, with little thought about the benefit or logic behind each. Additionally, the bureaucracy involved in affecting the built environment, that every project had to jump through a series of planning and approval processes in order to be built, virtually eliminated the possibility of something occurring by simple happenstance. As a reaction to these observations the four men, Banham, Barker, Hall and Price, developed an alternative that nearly eliminated planning altogether and would place the power to shape communities in the hands of the people.³² This planning concept, forward-thinking and controversial for its time, was a practice in hypothetical thinking and experimentation rather than one of practical application, and for this reason there are few tangible case studies to cite here. Despite this, the concept did have a widespread effect in London.

As an interesting point to make, Banham and the rest were able to foresee, should Non-Plan have been implemented, the development of a paradigm in London which is exactly the same as New Urbanism and Smart Growth have attempted to curtail in the United States. They note, in their article, that:

“as people become richer they demand more space; and because they become more mobile, they will be more able to command it. They will want this extra space in and around their houses, around their shops, around their offices and factories, and in the places where they go for recreation. To impose rigid controls, in order to frustrate people in achieving the space standards they require, represents simply the received personal or class judgments of the people who are making the decision.”³³

This comment, fundamentally supporting urban sprawl, caused outrage and disgust in the people of London, and justifiably so. London has always employed urban planning practices that support density and togetherness. It is easy to imagine that, had the Non-Plan method gained speed and popularity in the marketplace, the critics of today would have certainly had a grand time throwing the judgments and arguments its way given statements of this nature.

³² Barker, Paul. Thinking the Unthinkable. In *Non-Plan: Essays on Freedom Participation and Change in Modern Architecture and Urbanism*. Hughes, Jonathan and Simon Sadler, eds. 2-21. (Oxford: Architectural Press, 2000) 8-10.

³³ Barker, Paul. 20.

The important part of the Non-Plan idea is not in the effects it would have had on the landscape had it been implemented in a widespread manner. Nor does the significance lie with the fact that it could be said to support urban sprawl, a phenomena that many view today as being the death of cities. The true worth of this particular method of planning is that it was the first of its kind to truly understand the importance of the resident in the creation of communities and neighborhoods. Planning practices had become so far removed from the actual occupants that plans were being made without the input from or even any regard for those end users who would eventually occupy and utilize the area. The creators of Non-Plan were attempting to redirect the focus back to these invaluable stakeholders.

Now that the basic concepts and ideals of each of these urban design approaches has been discussed and the validity of each system determined, the next section will introduce the concept of deductive logic derivation. This system, which is a philosophical based approach to determining the validity of an argument based on the premises and conclusion, provides the backbone for this research work. The next section discusses the derivation process and the variables that play a part in the formula. Once proven valid through a series of case study applications, this logical formula can be used on BRAC decommissioned sites to determine what method of planning, of the four discussed here, is the proper route given the context of the particular installation. As such, it is important throughout the next two sections to keep in mind these four approaches that have been discussed.

SECTION FIVE: ESTABLISHING THE DERIVATION

The primary goal of this document is to define a logical process that can be applied to different individual military installations that have been decommissioned by the Department of Defense Base Realignment and Closure Commission (BRAC). The fundamental goal of this process is to aid the decision-making process regarding redevelopment. There already exists literature concerning certain aspects of the redevelopment of BRAC sites, mainly issued by the Department of Defense and the U.S. Department of Housing and Urban Development. These are invariably key documents in the early steps of the BRAC Redevelopment process; however, there is a distinct lack of guidance for redevelopment in the later portion of the process. To truly understand this, it is important to have a grasp of the BRAC decommissioning process and requirements.

THE BRAC PROCESS

The entire BRAC process begins with committee hearings. Since 1988 there have been 4 separate rounds of BRAC convened in an attempt to reduce military spending and optimize operations, the most recent of which was in 2005. During the BRAC hearings, elected members follow a strict set of guidelines in order to list various military installations across the branches of service for closure or realignment. The different variables considered during this process are complex and well outside the scope of this research, but it is sufficient to say that there is a rigorous selection process. Following the initial selection process there is a period of time, during which, each of the BRAC listings is investigated by the Department of Defense for possible use by any other branches of the armed forces, and as a result portions of the site may be conveyed to those branches. After this initial round of conveyances to other military branches, remaining portions of the installation are then made available for use by other federal agencies. Following the second round of conveyances, the local or State government is then allowed to create a Land Reuse Authority whose job it is to produce a redevelopment plan for the remaining areas. The importance of this plan is primarily to distinguish those areas that will be used for public benefit and homeless assistance and which portions will not. There are two circumstances under which the remaining land can be conveyed to government agencies. The first circumstance is regarding areas designated as public benefit spaces, such as airports, schools, and conservation or recreation areas, and the second are areas that will be transformed into a program for homeless assistance. The agencies must have the necessary experience to take over the operation of the existing facilities, but the land for these use are transferred over at no cost. Once all conveyances are completed, the remaining land that has not been turned over to service branches or other government agencies in the previous processes is then put up for sale at fair market value.³⁴

³⁴ Office of Deputy Under Secretary of Defense. Installations and Environment Department. 1 March 2006. *Base Redevelopment and Realignment Manual*. Department of Defense. Washington, D.C. 20-30.

There are two primary resources for communities to utilize when facing this complex BRAC decommissioning process, the *Base Redevelopment and Realignment Manual* published by the Department of Defense and *The Guidebook on Military Base Reuse and Homeless Assistance* published by the U.S. Department of Housing and Urban Development. These are invaluable resources that aid a community through the decommissioning process, land conveyance, and even suggest approaches to integrating homeless assistance facilities within the project area. They are organized in a manner that helps communities make decisions regarding these initial steps of the overall process; however, the publications do not introduce the topic of the remaining land nor any possible approaches to its redevelopment. This is where the need for a logical system becomes apparent. It is easy to see that a BRAC redevelopment is highly involved and it is also apparent that steps have been taken to aid communities through portions of the process. There still remains a need, however, for a system to aid decision making regarding the “other” non-conveyed land that will be redeveloped for future use by the community.

THE DEDUCTIVE LOGIC PROCESS

Logic is a vital part of everyday decision making. From the time we are small, we learn the basics of non-formal logic, which includes creating persuasive sentences, determining gaps in reasoning, and solving riddles and puzzles. These are the forms of logic that show up in such things as casual conversations and news stories in the media. All of these are important in constructing arguments and formulating conclusions; however, this informal approach does allow ample room for fallacies to occur within the logical reasoning. For this reason, there does exist a sector of logic that is more structural and founded in actual rules that can be tested and validated. This formal approach to logic is generally associated with fields of practices in the sciences and mathematics. Despite this general conception, formal logic, which is typically referred to as symbolic logic, allows for the symbolization of natural language in such a way that arguments from any field of study can be evaluated for validity and soundness.³⁵

Logic is a broad field of study, and as such there are a number of different approaches to creating logical arguments. The two most commonly known approaches are inductive and deductive logic. In inductive logic, a problem begins with a set of very specific facts and concludes with a general finding. The opposing approach is deductive logic, where one begins with general facts and from them derives a specific conclusion. In this particular document, deductive logic becomes a much more appropriate type of logic to introduce. This is primarily because it allows for a set of general premises to be created, which due to their nature of generality can be applied to a number of different cases. From the broadly applicable premises a specific conclusion can always be determined. Because the ultimate goal of creating a logical system is to be able to derive the proper route of urban

³⁵ Bergmann, Merrie, James Moor, and Jack Nelson. *The Logic Book*, 4 ed. (New York: The McGraw-Hill Companies, 2004) 6.

redevelopment for an individual installation under study, the system is necessarily one that determines a precise conclusion instead of a general one.

Deductive logic consists of two primary syntactical fields, Sentential Logic and Predicate Logic. These two types differ in the way that they approach the symbolization of natural language sentences and arguments. Within this document, the primary approach to creating deductive logic derivations that will be used is Sentential Logic. A derivation exercise is a defined process that operates within the field of deductive logic that has the goal of demonstrating that a conclusion can be validly deduced from a set of defined premises. The process is referred to as a mechanical one by Merrie Bergmann, James Moor, and Jack Nelson in *The Logic Book*, meaning that there is a set of truth preserving rules that must be followed and that following said rules for a finite number of steps will always lead to a positive or negative conclusion to the question being asked by the derivation.³⁶

A derivation consists of a finite number of premises and a single conclusion. The process of creating a derivation that can be broadly applicable to a number of different cases is founded in the definition of key variables that impact the redevelopment direction of a project of this sort. Those variables can be used subsequently, along with their relationships to the four distinct urban design approaches studied, to create deductive logic sentences. These sentences can then be implemented as the premises when setting up a derivation. From these premises the conclusion can be reached through a finite number of steps. The exact number of steps depends largely upon what type of sentences the premises are, but the fact remains that the number of steps is always finite.

There are five types of sentences within the field of Sentential Logic. They all have their own symbolizations and paraphrases, which can be found in the table below.

.SENTENCE TYPES.			
CONNECTIVE	NAME	COMPOUND SYMBOLIZATION	PARAPHRASE
&	Conjunction	$A \ \& \ B$	Both A and B
\vee	Disjunction	$A \ \vee \ B$	Either A or B
\sim	Negation	$\sim A$	It is not the case that A
\supset	Material Conditional	$A \ \supset \ B$	If A then B
\equiv	Material Biconditional	$A \ \equiv \ B$	A if and only if B

³⁶ Bergmann, Merrie, James Moor, and Jack Nelson. 266-8.

Sentences in Sentential Logic can consist of a single one of these connectives or a multiple of them. A rule states that there can only be one atomic or compound sentence on each side of a connective, such is the case with $A \& B$. In order to lengthen this sentence to add more variables, brackets and parentheses must be introduced. In this way, $(A \& B) \equiv C$ is an acceptable sentence because there is a compound sentence $(A \& B)$ on one side of the connective (\equiv) and an atomic sentence on the other (C) . This process of lengthening a sentence in order to show the meaning of a complex sentence can go on infinitely, as in: $(((A \& B) \cap C) \equiv ((D \vee \sim E) \cap (F \& G))) \& \sim(H \vee J)$; however, in this particular document the most complex sentence will not be anywhere near this length or complexity.

As a brief overview to the rules of the derivation process, the table below shows the 11 steps of the Sentential Logic derivation process. These may not make sense at first, but it is important to understand what the steps look like when getting to the case study sections where derivations are actually presented. The lines that make up the framework of the derivation is called fencing. This helps keep the parts of the derivation clear and separated. The numbers to the left relate to the number of the step being done. The justification to the right shows what rule was used and what lines of the derivation make that rule possible.

.DERIVATION RULES.									
REITERATION (R)									
1	P	Assumption							
2	P	1R							
CONJUNCTION INTRODUCTION ($\&I$)			CONJUNCTION ELIMINATION ($\&E$)						
1	P	Assumption		1	P & Q	Assumpt.			
2	Q	Assumption		2	P	1&E			
3	P & Q	1,2 &I		2	Q	1&E			
CONDITIONAL INTRODUCTION ($\supset I$)			CONDITIONAL ELIMINATION ($\supset E$)						
1		P	Assumption		1	P \supset Q	Assumption		
2		Q			2	P	Assumption		
3	P \supset Q	1-2 $\supset I$		3	Q	1,2 $\supset E$			
NEGATION INTRODUCTION ($\sim I$)			NEGATION ELIMINATION ($\sim E$)						
1		P	Assumption		1		$\sim P$	Assumption	
2		Q			2		Q		
3		$\sim Q$			3		$\sim Q$		
4	$\sim P$	1-3 $\sim I$		4	P	1-3 $\sim E$			

DISJUNCTION INTRODUCTION (\vee I)		DISJUNCTION ELIMINATION (\vee E)	
1	P Assumption	1	$P \vee Q$
2	$P \vee Q$ 1 \vee I	2	P Assumption
	OR	3	R
1	P Assumption	4	Q Assumption
2	$Q \vee P$ 1 \vee I	5	R
		6	R 1, 2-3, 4-5 \vee E
BICONDITIONAL INTRODUCTION (\equiv I)		BICONDITIONAL ELIMINATION (\equiv E)	
1	P Assumption	1	$P \equiv Q$ Assumpt.
2	Q	2	P Assumpt.
3	Q Assumption	3	Q 1,2 \equiv E
4	P	3	P 1,2 \equiv E
5	$P \equiv Q$ 1-2,3-4 \equiv I		

Due to the nature of the derivation process within the Sentential Logic (SL) sector of Deductive Logic, there do exist limitations regarding what kind of question an SL derivation can answer.³⁷ In the case of this project, the question being asked is more complex than can be answered by a simple yes or no. This is due to the fact that there are four different possible approaches to urban design that fall under the scope of this work, and the goal is to isolate the single best approach for a project given the unique characteristics and context of the site. For this reason, this document necessarily defines a set of two derivations necessary to determine the proper urban design approach for a decommissioned military installation. The first of the two derivations determines whether the site would be best served by implementing a planning approach or a non-planning approach. This first derivation must be completed before it can be determined if the second derivation is even applicable to the case. The second derivation applies only to those cases where the first derivation has found planning to be the proper path. Implementing the second derivation then goes on to determine which planning approach is the most beneficial for the case under study: the approach according to the CNU doctrine, to the SGN, or to the LEED ND Rating System.

³⁷ Bergmann, Merrie, James Moor, and Jack Nelson. 268.

DERIVATION NUMBER ONE

Within the first derivation, Planning versus Non-Planning, there are three main areas of consideration: Process and Approach, Context at Decommissioning, and The Future. Each of these areas is further subdivided into two issues relating to the topic that must be considered within the context of a particular site. In order to set up the derivation, the site under question must be studied in relation to these six various issues. This will determine whether the affirmation or the negation of the variable is to be utilized in the derivation.

. DERIVATION NUMBER ONE .			
CONCLUSION	ATOMIC SYMBOLIZATION	CONCLUSION	ATOMIC SYMBOLIZATION
PLANNING	P	NON-PLANNING	~P

. DERIVATION NUMBER ONE . SECTION ONE . PROCESS AND APPROACH .

The Process and Approach section of the first derivation deals with the questions *when* and *how*, as they relate to the redevelopment process. There are many different avenues a project can take in relation to the process of redevelopment and the sort of timeframe allowed for the completion of the process. Certain projects may implement the project over 5 phases and 15 years, while others may approach a project as a singular development to be completed in a much shorter span of time. This depends almost solely upon the existing social and economic context surrounding an installation, the needs of the immediate community, and the ability of the government to organize a redevelopment project. The two primary variables that have an influence on the proper redevelopment route for an installation are the timeframe and the means of redevelopment.

TIMEFRAME. The first variable within the Progress and Approach section of the derivation deals with the timeframe for redevelopment after the decommissioning and conveyance processes are completed. There is a required systematic approach to the conveyance of land and redevelopment planning that all projects must adhere to, and the timeframe associated with those steps is determined by the DoD. As a result, the schedule regarding the steps of the BRAC process is non-negotiable. This, however, is not the timeframe to which this variable refers. Instead, the timeframe mentioned here is actually referring to the construction of the redevelopment. Some projects may have a social or economic need for the redevelopment implementation and physical construction to be completed at a quicker rate than others. This idea is clarified by Ryan J. Watson and Terry F. Buss in their article “back to brac” when they state that “some local economies are very dependent on military bases, while others have large enough economies that a single base closing has only minor effects.”³⁸ They go on to say that those communities that depend heavily on the military installation to keep their economy afloat often “fear massive job losses, declining retail sales, a sagging real estate market, social losses in community organizations, schools and places of worship.”³⁹ For this reason, in

³⁸ Watson, Ryan J., and Terry F. Buss. 2004. “back to brac.” *Economic Development Journal* 3, no. 3: 16-24. Academic Search Premier, EBSCOhost (accessed October 7, 2009). 19.

³⁹ Watson, Ryan J., and Terry F. Buss. 17.

communities such as this, there is a greater need to rapidly redevelop in ways that will counteract these negative impacts of BRAC.

The timeframe for a redevelopment project weighs heavily into the derivation because the planning and non-planning approaches have inherently different schedules that can be achieved by each when implemented on a project. Planned urban design approaches, logically, are organized and systematized methods of redevelopment. In fact, the Merriam-Webster dictionary defines urban planning as “the drawing up of an organized arrangement (as of streets, parks, and business and residential areas) of a city.”⁴⁰ It follows then, that the implementation of those drawings into built forms is also well organized. Furthermore, these planned approaches are familiar to governing bodies affiliated with planning and permitting because they are methods often implemented and used on projects. As a result, officials are typically comfortable with the approaches and more likely to give the required approvals and permits rapidly.⁴¹ The distinct connection between a planned approach and the need for a near-term redevelopment is clear. This is not to say that planning approaches cannot also meet the needs of projects that do not require near-term development, rather, in this way, planning can accommodate both the affirmation and negation of this variable.

Contrary to planning, the non-planning approach is much freer of limitations and legislation when it comes to implementing projects on a site. This is not an unorganized system, rather, one that simply places value on aspects different from those emphasized in planning. The most important aspect in Non-Planning, as discussed previously, is the individual community member and the needs of individuals within the community. The Non-Planners argue that the grand community planning schemes that “were designed to resolve social problems, actually exacerbated them,”⁴² and they contend that the solution lies with placing the decision-making power into the hands of the users. The fundamental concept is that if the community needs an area to be revitalized quickly then, because there is a lack of regulations, it will be, and vice versa. For this reason, the speed of a redevelopment under this method is completely dependent upon how quickly the community works to revitalize the area. Consequently, the Non-Planning approach cannot necessarily be relied upon if a near-term redevelopment is necessary. Thus, it is associated with developments that do not absolutely require near-term results.

⁴⁰ Merriam-Webster Online Dictionary. "Urban Planning." 2009. <http://www.merriam-webster.com/dictionary/planning> [accessed 13 November 2009]

⁴¹ Garde, Ajay. 2009. "Sustainable by Design?: Insights From U.S. LEED-ND Pilot Projects." *Journal of the American Planning Association* 75, no. 4: 424-440. *Academic Search Premier*, EBSCOhost (accessed October 27, 2009). 427.

⁴² Franks, Ben. New Right/New Left: An Alternative Experiment in Freedom. In *Non-Plan: Essays on Freedom Participation and Change in Modern Architecture and Urbanism*. Hughes, Jonathan and Simon Sadler, eds. 32-43. (Oxford: Architectural Press, 2000) 32.

MEANS. When speaking about the means variable within a project it equates to the method of approach for a project. The variable is split into two options: a singular mode approach and a multiple mode approach. To avoid confusion, it is important to note that the latter option is signified in the sentential logic paraphrase as “not singular mode approach” due to the limitations of syntax within SL. How this variable relates to a specific project is largely dependent upon the approach taken by the local authorities in terms of creating a Land Reuse Authority (LRA). Per the requirements of BRAC an LRA is required if the local or State government wishes to convey any land from the base. As discussed earlier, it is their role to determine a plan that outlines the redevelopment of the area, including which spaces will be conveyed as public benefit and homeless assistance areas. The formation of an LRA, however, is not mandatory, and if one is not created then the land simply falls under the jurisdiction of the community where the land is located.⁴³ This is where this variable comes into helping determine whether a planning or a non-planning approach is appropriate.

The different urban design approaches that fall under the scope of planning in this document, New Urbanism, Smart Growth, and LEED ND, are all singular mode approaches. This means that development of an area or site under these methods is viewed as a singular project. Typically there is even an individual document that outlines the plan for the project/community and ensures that the values of the particular system are maintained throughout development. A document such as this is not required by New Urbanism or Smart Growth since they are not formal systems, but LEED ND does have a strict set of paperwork that must be followed on each and every project that incorporates this method. The point to understand here is that these systems all have their own concepts, guidelines, and requirements, and as such, do not readily allow for the assimilation of other methods. It stands to reason that communities that develop an LRA are generally following a single mode approach and allowing a single entity to control the implementation of that approach. It is not outside of the realm of possibility for planning to incorporate more than one approach, it is simply more likely for planning to be a singular approach. For example, a project could follow the principles of the Smart Growth Network while implementing the LEED ND Rating System. For this reason, planning is deeply associated with singular mode approaches in communities that choose to create an LRA, but it can implement multiple modes.

Contrary to planning, which can support both a singular and a multiple mode approach, non-planning can only support a multiple mode approach. This is due to the fundamental idea around which the Non-Planning doctrine is founded. The Non-Planners had a vision that the Non-Planning approach would induce a “reinvigoration of the entrepreneurial spirit” and that businesses would “be given the freedom to build...in the locations they

⁴³ U.S. Department of Housing and Urban Development. Office of Community Planning and Development. July 2006. *Guidebook on Military Base Reuse and Homeless Assistance*. 12.

desired” in order to “promote architectural diversity and bold colourful experiment.”⁴⁴ This approach not only supports, but mandates a piecemeal style of development. A visualization of this is to imagine that instead of a developer building out an entire city block and renting space to businesses, the block would be developed little by little by individual businesses. It is not possible for a development of this sort to occur under a single mode approach, rather it can only be achieved in communities that choose not to implement an LRA to oversee all redevelopment. This kind of piecemeal approach must occur through many modes, implemented by different people with different needs and visions for their individual piece of the built environment. Thus, Non-Planning can only be associated with communities that wish to follow a “not singular mode approach” by choosing to not create an LRA.

The following table outlines the variables established within this Process and Approach Section, as well as their paraphrases and atomic symbolizations that will be used in the derivation process. The second portion of the chart establishes the relationship between these two variables and a planning or a Non-Planning approach.

.PROCESS AND APPROACH.		
VARIABLE	PARAPHRASE	ATOMIC SYMBOLIZATION
TIMEFRAME	Near-Term Necessity for Redevelopment	N
	Not Near-Term Necessity for Redevelopment	~N
MEANS	Solitary Mode Approach	S
	Not Solitary Mode Approach	~S
VARIABLE RELATIONSHIPS	PARAPHRASE	COMPOUND SYMBOLIZATION
N, ~N S, ~S P, ~P	IF (<i>Near-Term Necessity for Redevelopment AND Solitary Mode Approach</i>) THEN <i>Planning Approach</i>	$(N \ \& \ S) \cap P$
	IF (<i>Near-Term Necessity for Redevelopment AND Not Solitary Mode Approach</i>) THEN <i>Planning Approach</i>	$(N \ \& \ \sim S) \cap P$
	IF (<i>Not Near-Term Necessity for Redevelopment AND Solitary Mode Approach</i>) THEN <i>Planning Approach</i>	$(\sim N \ \& \ S) \cap P$
	IF (<i>Not Near-Term Necessity for Redevelopment AND Not Solitary Mode Approach</i>) THEN <i>Non-Planning Approach</i>	$(\sim N \ \& \ \sim S) \cap \sim P$

⁴⁴ Franks, Ben. 35

Context at Decommissioning is the title of the second set of variables that factor into the first derivation, Planning versus Non-Planning. This portion introduces two variables that deal with the *what* and *where* of the site at the time of decommissioning. Military installations are very similar and incorporate a number of the same architectural features, such as a sense of uniformity, hierarchy, security, and Americana. Despite this, they also vary widely depending on the branch they were operated under, what the mission of the installation was, and what units were operated out of the site.⁴⁵ A typical Army infantry post, which is comprised primarily of single and family housing, open spaces used for combat training, and can be located adjacent to an established community, will be extremely different than an Air Force flight testing base, which is comprised of limited housing, large hangars and runways, and is located far removed from any other built structures. These differences between installations are highly influential when it comes to the type of redevelopment that is appropriate for a site. Explained in detail below are two important variables that can be very different from one installation to another and also have a direct influence on the proper redevelopment approach.

HISTORY AND PRESERVATION. Compared to the many of the other countries around the world our nation is young, but in those relatively few years there has accumulated an immense amount of history. The United States of America was born out of a military campaign that began in 1776 and even today American troops wage combat against two different countries. Much of our history in those intervening 239 years has also been associated with the armed forces, and so it comes as no surprise that “a sizeable portion of the valuable historic and cultural resources of our country lie within or are part of the 25 million acres of Department of Defense land.”⁴⁶ The preservation of these resources is important, not to mention required by law, due to the fact that they are material components of our past and they serve to remind us that we should take pride in that past. The Historic Preservation Act of 1966 made it a requirement that redeveloping agencies must take into consideration their effect upon historic properties and that plans must be developed to identify, manage, and nominate to the National Register of Historic Places any historic properties on a military installation.⁴⁷ It seems illogical that preservation would be a factor in this derivation then, since it is a requirement for these types of sites; however, as described above, bases come in many different forms, and so while one decommissioned base may be comprised of 50% historic structures while another may not have a single structure that meets the criteria for the National Register.

Since it has been established that preservation may or may not be a factor in the redevelopment of a BRAC site, it is important to define the way that historical

⁴⁵ United States Army. Construction Engineering Research Laboratories. *Guidelines for Documenting and Evaluating Historic Military Landscapes: An Integrated Landscape Approach*, by Suzanne Keith Loechl, Samuel A Batzli, and Susan I Enscoe. 9-11.

⁴⁶ United States Army. Construction Engineering Research Laboratories. 6.

⁴⁷ United States Army. Construction Engineering Research Laboratories. 8.

preservation relates to the planning process. Mark Fram, in the book *Well Preserved: The Ontario Heritage Foundation's Manual of Principles and Practice for Architectural Conservation*, discusses the relationship between the two at some length. He emphasizes the importance of integrating the preservation process so thoroughly with the development process that the two almost become a singular, unified approach. He describes both planning and preservation as being forward-thinking, and reliant one upon the other.⁴⁸ This description of the relationship between these two elements makes it clear that preservation is extremely difficult, if not impossible, to achieve without a planning approach of some sort. For this reason, those sites where history and preservation do have an impact on redevelopment a planning approach is necessary. Planning will also work for sites that are not affected by preservation issues, but it is not absolutely necessary in such cases.

We know that Non-Planning aims to nearly or completely eliminate all governmental regulations and restrictions regarding urban development. While this allows the community to develop areas according to their particular needs and wants, it also relinquishes all of the local power. One such power that is given up is that regarding the preservation of certain areas or structures. The protection and preservation of historical sites is not possible without a certain amount of legislative policy to ensure that the character of the place is not changed. Moreover, the idea of policy mandating or restricting anything regarding urban development immediately contradicts the fundamental basis for Non-Planning. For this reason, it is impossible for a Non-Planning approach to function properly on a site that has a marked need to preserve portions of the installation. Therefore, Non-Planning only functions appropriately for those sites where history and preservation are not influential to the redevelopment process.

ADJACENCY AND PROXIMITY. Referring back to the introduction to this section of variables, it was discussed that military installations have a number of similar attributes that can be found on sites around the globe, but despite those common attributes one installation can look completely different from another. The two examples given in that argument were an Army infantry post and an Air Force flight testing base. The first of these examples can easily occur on the fringe or even in the center of a civilian community; however, the second, which is an installation performing classified operations, must be in a secluded area. In this way, each military installation can have a different connection to the surrounding urban environment depending on the particular base mission, keeping in mind that there are those that have no connection at all.

The three different approaches to urban design planning considered under the scope of this project have very different approaches to planning, despite the fact that they all share

⁴⁸ Fram, Mark. 2003. *Well Preserved: The Ontario Heritage Foundation's Manual of Principles and Practice for Architectural Conservation*. 3rd ed. Ontario: Boston Mills Press. 46.

the common goals of creating built environments that foster happier and healthier communities. For example, the LEED ND system has been applied to projects as small as 0.17 acres and as large as 12,800 acres, but the locations are all in densely urban areas. In fact, in a zip code analysis of the pilot projects it was found that “the pilot projects’ are in places that have four times the population density of all zip codes and two times the population density of all urban zip codes”⁴⁹ This is because the system is constructed in such a way that many of the credits are dependent upon being located near or within an already urbanized area, and so certification is nearly impossible for sites not in areas such as this. On the other hand, The CNU established their Charter in such a way that it does not require a project to be within a highly urbanized area. In fact, when the CNU first began to gain speed in the marketplace the New Urbanists applied their concepts on a large scale to solely suburban areas across the nation.⁵⁰ Since that time the Charter has gone through revisions that have more highly emphasized development in densely urban spaces, but it is still not an absolute requirement. It is easy to see that the methods that fall under the scope of “Planning” in this document are diverse and can accommodate a number of different situations, and for this reason planning can be associated in this derivation with sites that either are or are not adjacent to developed communities.

The fundamental element of the Non-Planning approach is the individual within a community. Not only is this the fundamental element, but it is also the most important factor for development under this method. Since the community acts as the decision makers, then it follows that without a community present the Non-Planning approach cannot function. Therefore, those installations that do not have an immediate connection to an urbanized space cannot support Non-Planning due to the distinct lack of individuals. For this reason, it must be made clear in the derivation that Non-Planning can only work for those cases where the site is adjacent to an already developed community.

In the same way as the first section, the following table is included to outline the variables that have been established by the Context at Decommissioning Section. The paraphrases and atomic symbolizations to be used in the derivation process are included as well. The relationship between these two variables and a planning or a Non-Planning approach that have been discovered in the above discussion are presented in the second portion of the table.

⁴⁹ United States Green Building Council. “LEED for Neighborhood Development Characteristics of Pilot Projects.” October 2007. <http://www.usgbc.org/ShowFile.aspx?DocumentID=3773> (accessed 15 November 2009) 1.

⁵⁰ Shane, David Grahame. *Recombinant Urbanism: Conceptual Modeling in Architecture, Urban Design, and City Theory*. Great Britain: Wiley-Academy, 2005. 307.

.CONTEXT AT DECOMMISSIONING.		
VARIABLE	PARAPHRASE	ATOMIC SYMBOLIZATION
HISTORY & PRESERVATION	History and Preservation are Influential to Redevelopment	I
	History and Preservation are Not Influential to Redevelopment	$\sim I$
ADJACENCY & PROXIMITY	Site is Adjacent to Developed Community	A
	Site is Not Adjacent to Developed Community	$\sim A$
VARIABLE RELATIONSHIPS	PARAPHRASE	COMPOUND SYMBOLIZATION
I, $\sim I$ A, $\sim A$ P, $\sim P$	IF (<i>History and Preservation are Influential to Redevelopment AND Site is Adjacent to Developed Community</i>) THEN <i>Planning Approach</i>	$(I \ \& \ A) \cap P$
	IF (<i>History and Preservation are Influential to Redevelopment AND Site is Not Adjacent to Developed Community</i>) THEN <i>Planning Approach</i>	$(I \ \& \ \sim A) \cap P$
	IF (<i>History and Preservation are Not Influential to Redevelopment AND Site is Adjacent to Developed Community</i>) THEN <i>Non-Planning Approach</i>	$(\sim I \ \& \ A) \cap \sim P$
	IF (<i>History and Preservation are Not Influential to Redevelopment AND Site is Not Adjacent to Developed Community</i>) THEN <i>Planning Approach</i>	$(\sim I \ \& \ \sim A) \cap P$

. DERIVATION NUMBER ONE . SECTION THREE . THE FUTURE .

The third and final section of the first derivation introduces two variables that are centered on the future of the project, and how that future is to be attained. Every redevelopment project has its own set of needs and desires that are consequent of such things as the location of the site, the needs of the surrounding community, and the former use of the area. Additionally, each community, when losing a portion of their economic and social foundation, has a different vision for how that loss should be recovered and who should spearhead the recovery process. These are the issues that these two variables, Future Use and Development Drive, take into consideration, greatly impacting how a project should approach redevelopment.

FUTURE USE. As mentioned above, each installation is different at the time of decommissioning, and the future envisioned for the site by the local governments or communities are, too, diverse. For this reason, the overall context of one military installation being redeveloped may be particularly conducive to creating a community with dense housing, various commercial entities, and a large amount of residential space; while another installation may be better suited to supporting an office park with only a

modest mixture of uses. This variable seeks to make the distinction between installations with dissimilar future uses by separating installations into two categories: those that will be primarily a singular use and those that will be highly mixed. The latter category is paraphrased as “Not Singular Use” due to the limitations of syntax in Sentential Logic that have been discussed previously. This separation is the first step within this section to distinguishing whether a planning or a Non-Planning approach is best suited for a site.

For the most part, the three urban design approaches that are part of the planning section are generally designed to promote mixed use neighborhoods. For example, within the LEED ND system a project can earn up to four points under Neighborhood Pattern and Design Section, Credit 3, aptly named “Mixed-Use Neighborhood Centers.” Points are allotted for projects that have 50% of the dwelling units with a ¼ mile walk of a certain number of diverse uses, which include everything from schools and places of worship to doctor clinics and grocery stores, to name a few. The greater the number of diverse uses within the allowed walking range, the more points a project earns. In this way, the system heavily emphasizes diversity and a mixture of uses. On the other hand, it is not impossible for a project to become certified without earning these points. This is simply a method to certification, not the only method.⁵¹ Along the same lines, both New Urbanism and Smart Growth have aspects that recommend highly the mixture of uses, but they are not the overall aim of the systems rather simply a part. Technically speaking, a project could adhere to the majority of the principles of Smart Growth, save for the one that emphasizes a mixture of uses, and still be considered a Smart Growth development. Because these systems can support both singular and mixed use developments, the derivation can associate the Planning approach with either singular use or not singular use futures for installations.

At this point, quite a lot of material about the Non-Planners has already been covered, including their primary objectives and concepts about how the urban environment should develop. Because they wish to enhance the entrepreneurial spirit and have individual businesses and community members affect the development of a community, they promote the deregulation of land uses and zoning. The freedom granted by the deregulation of land uses serves to open up the opportunity for a great mixing of uses to occur within a small area. It can be argued that the reason for this is that each member of a community may have a different outlook for their community, and as a result will make very different inputs to the formation of their community. Because of this, the Non-Planning approach cannot be relied upon to establish a singular use within a particular area. The uses that would occur at an installation with a Non-Planning approach would vary widely depending on the people who live there. Consequently, a development that needs a singular use redevelopment could not occur under this approach.

⁵¹ United States Green Building Council. “LEED 2009 for Neighborhood Development Rating System.” 2009. <http://www.usgbc.org/ShowFile.aspx?DocumentID=6406> (accessed 15 November 2009)

DEVELOPMENT DRIVE. The use of a site is not the only important aspect related to the future of a project. The second variable to consider is the body that will drive the development to the desired or envisioned end. When it comes to a BRAC decommissioned site there are three primary bodies that can be the driving factor for a development. The first is the Land Reuse Authority. If an LRA is established, then the development will most certainly be driven by a local or state governing body. The second and third are only options if an LRA is not established and the non-conveyed land is sold at fair market value. One possible route under this set of circumstances is that a developer purchases the remaining land in its entirety and acts as the driving force for the development. The other possible route under these circumstances is that the land is sold little by little to individual purchasers from the community. In this route the driving force for development ends up being the community itself.

Of the three primary bodies that can act as the driving force for a BRAC redevelopment, the LRA and the master developer are the two that are primarily associated with planning activities. In fact, if an LRA is formed, then planning is no longer likely but rather it is mandatory, enforced by the Department of Defense.⁵² While it is recommended that the LRA allow for community input throughout the planning process, community input does not have the same impact on a development as when the community acts as the actual decision-making body. Moreover, when a master developer is acting as the redevelopment body, the business owns the land and does not have to answer to any higher authority save for following zoning and land use regulations. As such, the developer can choose to involve the community as much or as little as it deems appropriate. These two planning oriented approaches are primarily non-community driven, although it is possible for either to involve residents in the planning process to a certain degree.

This variable is really the heart of the Non-Planners stance regarding development. They felt that development regulations and zoning laws were envisioned by an elite group of people who had neither any real connection to nor any appreciation for the needs of the majority of the citizens, those same citizens who would be occupying the spaces being regulated.⁵³ For this reason, they contend that the decision making power regarding development should be the responsibility of the people, so that developments could truly serve the needs of the people. As such, the Non-Planning approach can only work when the community is driving the development. If a government body, such as a LRA, or a major developer is in charge of the redevelopment of an installation, then it goes against the primary contention of the Non-Planning doctrine. As a result, for the purposes of this derivation, Non-Planning can only be associated with those installations whose redevelopment is community driven.

⁵² Office of Deputy Under Secretary of Defense. Installations and Environment Department. 31-2.

⁵³ Franks, Ben. 34.

This final section includes a table below that shows the two variables that exist within The Future section. As in the previous tables, the paraphrases and atomic symbolizations that will be utilized in the derivation process are also included. The way that the two variables and a planning or a Non-Planning approach are connected is presented in the second portion of the table.

.THE FUTURE.		
VARIABLE	PARAPHRASE	ATOMIC SYMBOLIZATION
FUTURE USE	Singular Use	G
	Not Singular Use	~G
DEVELOPMENT DRIVE	Community Driven Redevelopment	C
	Not Community Driven Redevelopment	~C
VARIABLE RELATIONSHIPS	PARAPHRASE	COMPOUND SYMBOLIZATION
G, ~G C, ~C P, ~P	IF (<i>Singular Use AND Community Driven Redevelopment</i>) THEN <i>Planning Approach</i>	$(G \& C) \cap P$
	IF (<i>Singular Use AND Not Community Driven Redevelopment</i>) THEN <i>Planning Approach</i>	$(G \& \sim C) \cap P$
	IF (<i>Not Singular Use AND Community Driven Redevelopment</i>) THEN <i>Non-Planning Approach</i>	$(\sim G \& C) \cap \sim P$
	IF (<i>Not Singular Use AND Not Community Driven Redevelopment</i>) THEN <i>Planning Approach</i>	$(\sim G \& \sim C) \cap P$

This completes the information regarding the first derivation. Within a case study, each of these variables can be determined, and the relationships here utilized to establish the premises for a derivation. Once the premises are established, it is then a matter of utilizing the allowed steps of the Sentential Logic derivation process to derive a conclusion as to whether Planning or Non-Planning is the best approach for the particular site.

DERIVATION NUMBER TWO

For those sites that find Non-Planning to be the most appropriate method at the end of the first derivation, that is the final step in the process. However, for those sites that conclude that Planning is the best approach, a second derivation is necessary to make a conclusion as to whether a New Urbanist plan, a Smart Growth plan, or a LEED ND approach is better suited to the context. There are five different variables that factor into the second derivation: Sequence, Preservation, Remediation, Need for Government Support, and Location. Each of these will be discussed in more detail below, and their individual relationships to the three possible approaches outlined, but before the variables are discussed, the following chart outlines the possible outcomes for this derivation and their symbolizations.

. DERIVATION NUMBER TWO .		
CONCLUSION	PARAPHRASE	ATOMIC SYMBOLIZATION
THE CONGRESS FOR THE NEW URBANISM	NEW URBANISM	W
SMART GROWTH NETWORK	SMART GROWTH	M
LEED 2009 FOR NEIGHBORHOOD DEVELOPMENT	LEED ND	L

SEQUENCE. The three different systems of urban design planning that are covered by this document all have different structures to their method of approach. As such, they each have strengths and weaknesses when it comes to dealing with a certain set of circumstances on a project. One set of circumstances that arises quite often on BRAC decommissioned sites, particularly because the process generally leaves large areas of land to be redeveloped, is the issue of sequencing the job. More specifically, this variable is referring to whether or not a project is incorporating phasing or not.

Both Smart Growth and New Urbanism, because they are not highly structured systems, are able to provide a fair amount of flexibility. These two approaches are nearly identical in their structure as both provide guidelines that a project can either choose to incorporate or not incorporate, all without consequence. There is not a formal evaluation or points system built in as part of the SGN to identify how precisely a Smart Growth community followed the Smart Growth Principles. This is also the case for New Urbanism. For this reason, these systems can work well for a project that is being implemented over the span of numerous phases. This is due to the fact that because there is no scoring system, a set of principles may be approached during one phase while an entirely different set is approached during the subsequent phase and so on throughout the entire process. In the end, looking at the project in a holistic manner it meets the principles of Smart Growth, but one individual phase may have done a better job of meeting principles than another when compared side by side. Clearly these systems work well with phasing,

but that is not to say that they require it. For this reason, we associate the New Urbanist and the Smart Growth approaches both with projects that do and do not incorporate phasing.

On the complete opposite side of the spectrum is the LEED ND system. This approach is an actual rating system that has definitive requirements based on an overall credit system that has corresponding point values. In terms of being a LEED accredited project, unlike in Smart Growth or New Urbanism, there is a measureable standard that must be attained.⁵⁴ In this way, projects can attempt to become LEED certified and actually fail at doing so. Because many of the credits take a holistic look at a project, phasing becomes difficult on a LEED ND project. For example, Credits Nine: Access to Civic and Public Space under the Neighborhood Pattern and Design section requires a project to “Locate and/or design the *project* such that a civic or passive-use space, such as a square, *park*, *paseo*, or *plaza*, at least 1/6 acre in area lies within a 1/4-mile *walk distance* of 90% of planned and *existing dwelling units* and nonresidential building entrances.”⁵⁵ In order to attain this point, all of the housing and nonresidential buildings for the project must be in a completed state of design, right down to the exact location of entrances. In a project with phasing, this level of detail is not usually achieved on the future phases, and so the point cannot be adequately fulfilled. This is merely a single example but many of the credits function in this way, where a finalized layout is necessary to satisfy the credit. As such, it becomes hard for a phased project to achieve certification, and so for the purposes of this derivation the LEED ND system is associated with projects not using phasing.

. DERIVATION NUMBER TWO . SEQUENCE .		
VARIABLE	PARAPHRASE	ATOMIC SYMBOLIZATION
SEQUENCE	Phasing	H
	Not Phasing	~H
VARIABLE RELATIONSHIPS	PARAPHRASE	COMPOUND SYMBOLIZATION
H, ~H	IF Phasing THEN (EITHER New Urbanism OR Smart Growth)	$H \cap (W \vee M)$
	IF Not Phasing THEN [EITHER LEED ND OR (New Urbanism OR Smart Growth)]	$\sim H \cap [L \vee (W \vee M)]$

⁵⁴ United States Green Building Council. “LEED 2009 for Neighborhood Development Rating System.” 2009. xix

⁵⁵ United States Green Building Council. “LEED 2009 for Neighborhood Development Rating System.” 2009. 67

PRESERVATION. During the discussion surrounding the first derivation, the importance of historical preservation was presented. It was determined that the planning approaches are more adept at dealing with the need for preservation than would be a Non-Planning approach free of policy and regulations. The field of urban design planning, though, is a broad one, and each system approached the topic of preservation a little differently.

Of the three systems studied in this project, LEED ND is the most capable of properly assisting a site that requires extensive remediation. The reason for this is that it is structured into the points system, allowing the act of preservation on a site to aid in getting the project certified. The need for points to achieve ever higher levels of certification helps to incentivize the preservation project. This would not be a particularly convincing argument if not for the fact that preservation is structured into the system across multiple credits. Also, particularly innovative approaches in the preserving of history on a site can also qualify a project for points under what is called an “Innovation in Design” credit.⁵⁶ In this way, LEED does not only promote preservation, but it also promotes highly innovative, new approaches to preserving. Consequently, LEED ND is the approach that has a strong relationship with sites that require extensive preservation.

Under this variable it becomes apparent that Smart Growth and New Urbanism are alike in many ways. One such way is their approach to the topic of preservation. Both schools of thought understand the importance of preservation, and they both go so far as to include the topics in their guidelines. The New Urbanists mention the topic, but it is very brief and receives little emphasis. Preservation does not make an appearance within the *Charter* until the very last point, almost as if it were an afterthought or a topic of less importance. Even the way it is presented, “Preservation and renewal of historic buildings, districts, and landscapes affirm the continuity and evolution of urban society,”⁵⁷ is lackluster. Certainly the New Urbanists do not incentivize the preservation process as does LEED. Smart Growth, on the other hand, does slightly more to promote the preservation process. In the document, *Getting to Smart Growth: 100 Policies for Implementation*, the Network outlines a method to incentivize preservation and adaptive reuse by implementing a state tax credit for those developers who undertake such a task.⁵⁸ This incentive, albeit a good one, is the only instance where preservation is discussed. Due to the blasé attitudes toward preservation held by the SGN and the CNU, their relationship is with installations that are found to not require extensive preservation practices to occur on-site.

⁵⁶ United States Green Building Council. “LEED 2009 for Neighborhood Development Rating System.” 2009. 89-92.

⁵⁷ Congress for the New Urbanism. 2001.

⁵⁸ Smart Growth Network. 2002. *Getting to Smart Growth: 100 Policies for Implementation*. 35.

. DERIVATION NUMBER TWO . PRESERVATION .		
VARIABLE	PARAPHRASE	ATOMIC SYMBOLIZATION
PRESERVATION	Extensive Preservation	E
	Not Extensive Preservation	~E
VARIABLE RELATIONSHIPS	PARAPHRASE	COMPOUND SYMBOLIZATION
E, ~E	IF Extensive Preservation THEN LEED ND	$E \cap L$
	IF Not Extensive Preservation THEN (EITHER New Urbanism OR Smart Growth)	$\sim E \cap (W \vee M)$

REMEDICATION. The introduction of remediation as a variable for the second derivation is important because groundwater contamination has proven to be a great problem for many military installations being decommissioned across the nation. For this reason it is important to determine which of the urban design approaches can provide the best foundation for installations that require extensive brownfield remediation.

The CNU does not mention either the issue of contamination on previously developed sites or the necessary remediation of said contamination prior to reuse in any place on their *Charter*. This issue is simply outside of the realm of concern for this approach. It is perhaps unnecessary, then, to state that this approach is affiliated with the installations found not to be requiring remediation. Along with New Urbanism, Smart Growth can also be associated with these installations that do not need remediation.

Smart Growth is versatile when it comes to this particular variable. The issue of Brownfield redevelopment and remediation is part and parcel of the Strengthen and Direct Development Toward Existing Communities principle. Again, there are many recommendations for policies and incentives to promote remediation on previously developed contaminated lands outlined within the *Getting to Smart Growth: 100 Policies for Implementation* document. One such recommendation is to create “legislation that limits and clarifies the liability of prospective purchasers, lenders, property owners, and others regarding their association with activities at a brownfields site.”⁵⁹ In this way, the Network does facilitate remediation efforts and can work for projects that require these activities. On the other hand, remediation is far from being a central concept in the Smart Growth approach. It is definitely a part of the concept, and not by any means an

⁵⁹ Smart Growth Network. 2002. *Getting to Smart Growth: 100 Policies for Implementation*. 53.

unimportant one, but it is not an essential portion for a project. Consequently, this urban design approach can relate to both sites requiring remediation and to those which do not.

Lastly, the LEED ND program works to emphasize the importance of remediation efforts in many ways. The system has many credits that allot points in conjunction with remediation efforts. The first of these is Credit One: Preferred Locations under the Site Location and Linkage Section. This particular credit will automatically award three points for developing a parcel that is on the Environmental Protection Agency (EPA) National Priorities List. Additional points are also available for developing a brownfield, and performing the required remediation before development.⁶⁰ These are only two examples of how remediation can earn LEED points, and there are additional credits that incentivize this type of activity as well. For this reason, of the three urban design planning approaches, LEED is the most closely associated with installations requiring remediation efforts.

. DERIVATION NUMBER TWO . REMEDIATION .		
VARIABLE	PARAPHRASE	ATOMIC SYMBOLIZATION
REMEDIATION	Necessary Remediation	Y
	Not Necessary Remediation	~Y
VARIABLE RELATIONSHIPS	PARAPHRASE	COMPOUND SYMBOLIZATION
Y, ~Y	IF Necessary Remediation THEN (EITHER LEED ND OR Smart Growth)	$Y \cap (L \vee M)$
	IF Not Necessary Remediation THEN (EITHER New Urbanism OR Smart Growth)	$\sim Y \cap (W \vee M)$

NEED FOR GOVERNMENT SUPPORT. Each of the three methods under investigation is considered a widely accepted approach to reducing urban sprawl and combating the negative effects that are a result of many contemporary building trends. As a result, there is an extensive support network available for a project that implements any of these methods today. Over the past decade, local, state, and federal governments have begun to realize the importance of these movements and are enacting laws to provide incentives for projects incorporating them. For example, in the City of Austin, Texas, the city government went so far as to create a Smart Growth Initiative in the late 1990s. It was the job of this body to improve the long range plan for the city utilizing the principles set

⁶⁰ United States Green Building Council. "LEED 2009 for Neighborhood Development Rating System." 2009. 22-6.

forth by the SGN. Utilizing the Smart Growth framework, Austin identified the goals for the city to be achieved through the implementation of Smart Growth methods, and integrated policy into the government framework to encourage developers to adhere to the principles and support development toward the stated goals.⁶¹ It is in places that have environmental values such as this that support can be found for these systems, and the number of cities with similar values to Austin has been on the rise since the inception of the Congress for the New Urbanism and the Smart Growth Network. For this reason, it is probable that support can be found for any of these systems; however, it is not guaranteed. To be conservative we associate both Smart Growth and New Urbanism with projects that are not in dire need of government support.

The other system, LEED ND is an entirely different situation. The entire LEED program and all of its rating systems have acquired huge amounts of support in the marketplace in recent years. So much so that many federal agencies, state and local governments have passed legislation to require LEED certified building under certain circumstances. The Department of Energy (DOE) has made it mandatory that all new building projects that cost greater than \$5 million be certified LEED Gold. They have also made it a requirement that, when considering new spaces to lease, LEED Gold be given preference in these cases. The DOE was also a major contributor to support the development of the original LEED system, organizing workshops, and establishing reference materials. The State of Rhode Island made it a law in 2005 that all new construction or renovation of any public building must be certified LEED Silver or higher.⁶² These are simply two examples of recent legislation mandating the use of the LEED system. As ever more of these regulating bodies require the use of the various LEED systems, so too is support, primarily in the form of rebates and tax credits, from the government becoming more commonplace. For example, in the State of North Carolina a Senate Bill was passed in late 2007 that permits cities and counties to now encourage the use of the LEED system through means of reducing permitting fees and offering partial construction cost rebates for projects that achieve LEED certification. Another example is in the State of Oregon, where a Business Energy Tax Credit was instituted for use by those projects that achieve a minimum of LEED Silver certification.⁶³ Because the LEED system is becoming required in more areas, and as such the support system is expanding, this work associates projects that vitally need support from the government for redevelopment with the LEED for Neighborhood Development Rating System.

⁶¹ City of Austin. "Smart Growth Initiative." The Austin City Connection. 1995.
<http://www.ci.austin.tx.us/smartgrowth/>

⁶² United States Green Building Council. "LEED Initiatives in Governments and Schools." August 2009.
<http://www.usgbc.org/ShowFile.aspx?DocumentID=691>

⁶³ United States Green Building Council. "LEED Initiatives in Governments and Schools."

. DERIVATION NUMBER TWO . NEED FOR GOVERNMENT SUPPORT .		
VARIABLE	PARAPHRASE	ATOMIC SYMBOLIZATION
NEED FOR GOVERNMENT SUPPORT	Support Vital	V
	Support Not Vital	~V
VARIABLE RELATIONSHIPS	PARAPHRASE	COMPOUND SYMBOLIZATION
V, ~V	IF Support Vital THEN LEED ND	$V \cap L$
	IF Support Not Vital THEN (EITHER New Urbanism OR Smart Growth)	$\sim V \cap (W \vee M)$

LOCATION. It has become clear during the course of discussing the previous variables involved in this derivation that Smart Growth and New Urbanism have many common indicators. In Section Four: Approaches to Urban Planning it was shown that these two modes of urban design are entirely separate approaches with distinct viewpoints and objectives; however, per the variables of this derivative and the structure of a Sentential Logic derivation in general, they end up being quite similar. For this reason, it becomes necessary to introduce a variable that will distinguish between the two in the derivation. There are a few different variables that could fulfill this need; however, the clearest cut of them is regarding location and how that location relates to a larger community.

The CNU movement began as a neighborhood based architectural movement that was working to develop mixed used communities reminiscent of those from the early 20th century in America. The majority of the early New Urbanist developments were located on Greenfields, a trend that was not necessarily working against the Charter principles in any way. This is due to the fact that the Congress' ideals place the greatest amount of importance on the architectural character of the development itself, and less emphasis on the connections to a larger district or region.⁶⁴ It was also previously discussed that early New Urbanist developments were implemented in suburban areas without strong attachments to adjacent urbanized areas. This is not to say that the method is not an effective one by any means, because New Urbanist communities do promote walkable, mixed use communities where social interaction is paramount and there is reduced automobile dependence within the bounds of the development. Based on the general approach for the method, New Urbanism is associated with locations that may be within a

⁶⁴ Haines, Anna L. 2003. Smart Growth: A Solution to Sprawl? *Center for Land Use Education*. Vol 2. Issue 4. (Spring) <http://www.uwsp.edu/CNR/landcenter/tracker/spring2003/SmartGrowth.html>

suburban area but are not strongly connected to an existing urban environment. In this context, by urban we mean an area with a high density per unit of land area.

Conversely, the SGN is structured in such a way that it approaches the same issues of mixing uses, compacting development, and reducing automobile dependence, but it does this from a planning-oriented perspective. Architectural features are less important in this system, and instead regional policy is utilized to affect a broader area. One of the primary principles of Smart Growth emphasizes the need to *Strengthen and direct development toward existing communities*. In the document *Getting to Smart Growth: 100 Policies for Implementation*, which is directed at a governmental audience likely to have the ability to beget changes in a community, the network describes in detail a number of incentives, programs, and organizations that can be instituted to aid in the achievement of this goal for a community.⁶⁵ Due to this particular emphasis within the principles of Smart Growth, this particular approach does not function as well in areas that are suburban or rural. Because of this different emphasis on developing within and adjacent to highly urbanized areas, Smart Growth becomes associated with installations that have strong connections to the existing urban environment for the purposes of the derivation.

. DERIVATION NUMBER TWO . LOCATION .		
VARIABLE	PARAPHRASE	ATOMIC SYMBOLIZATION
LOCATION	Connected to Existing Urban Environment	U
	Not Connected to Existing Urban Environment	~U
VARIABLE RELATIONSHIPS	PARAPHRASE	COMPOUND SYMBOLIZATION
U, ~U	IF Connected to Existing Urban Environment THEN Smart Growth	$U \cap M$
	IF Not Connected to Existing Urban Environment THEN New Urbanism	$\sim U \cap W$

⁶⁵ Smart Growth Network. 2002. *Getting to Smart Growth: 100 Policies for Implementation*. 51-60.

SECTION SIX: CASE STUDIES

.I. THE GLEN . NAVAL AIR STATION GLENVIEW . GLENVIEW, ILLINOIS

NAME: The Glen

FORMER NAME: Naval Air Station Glenview

FORMER USE: The site was utilized from the years 1937 to 1995 as a Naval Air Station (NAS)

SIZE: The base is 1360 acres in area, which comprises approximately 15% of the entire area of the Village of Glenview. 1028 acres of which was turned over to the LRA.

LOCATION: The base is located completely within the limits of the Village of Glenview. The small village that calls The Glen home is situated twenty miles north of Chicago, Illinois and five miles west of the coast of Lake Michigan.⁶⁶

REDEVELOPMENT ARCHITECT/DEVELOPER: The Village of Glenview, Land Reuse Authority. Skidmore, Owings and Merrill LP, Planners. Peter Lindsay Schaudt Landscape Architecture, Inc, Landscape Architect.

COMPLETION STATUS: Completion scheduled for the end of 2010.

Glenview was never planned to be a military installation in the beginning of its creation, instead, it envisioned at its groundbreaking in early 1929 to be a major airport for the Midwest. The unfortunate timing of the project could have spelled disaster for the site; however, two major issues ensured the project survival, though not specifically as an airport. The first was that there was a substantial amount of construction completed before the stock market crashed and the economy plummeted. For this reason the airport was able to struggle along, barely making ends meet for several years. The second thing that facilitated the continued existence of the airfield was that a nearby Naval Air Reserve had outgrown its installation and needed a place where future growth was possible. The abandoned air station in Glenview provided the perfect opportunity for this desired growth and in 1937 the Navy officially commissioned the majority of the airfield for use as a training station, but allowed a limited amount of commercial activities already taking place at the site to continue.⁶⁷ In this way, the foundation for a long and peaceful coexistence between the Navy and the Village of Glenview began.

With the bombing of Pearl Harbor in December 1941, the Navy purchased the entire area and began an extensive construction campaign in order to bring the area up to the standards of an outright Naval Reserve Aviation Base. Along with the increase in buildings

⁶⁶ Village of Glenview. 1996. *Glenview Naval Air Station*. Skidmore, Owings and Merrill LP, and Peter Lindsay Schaudt Landscape Architecture, Inc. <http://www.glenview.il.us/glen/Download%20Files/Master%20Plan%20&%20Design%20Guidelines.pdf> (accessed 7 October 2009)

⁶⁷ "History." *Glenview Hangar One: Preserving the Past, Shaping the Future*. Glenview Hangar One Foundation. 2002. <http://www.hangarone.org/history1.asp> (accessed 21 October 2009)

also came an increase in operations, and soon the installation was one of the foremost areas for aircraft carrier and aviation training. The success of the site was largely a result of the security of the location, tucked away in the center of the nation. Throughout the years the Naval Air Station served the country proudly and trained many important historical figures, including Neil Armstrong and Gerald Ford. For 58 years the installation was an invaluable asset in service to the defense of the nation.⁶⁸ In 1993, however, because of funding cutbacks and a desire to more efficiently direct military spending, BRAC recommended Naval Air Station Glenview for closure. Two years later, in September 1995, the station was permanently decommissioned and turned over to the Village of Glenview.⁶⁹

DERIVATION NUMBER ONE

This portion of the case study will briefly discuss the installation in terms of each variable that comprises the first derivation. At the end of the discussion, the determined variables will be utilized in the construction of the actual derivation and the formula solved in order to determine if Planning or Non-Planning is appropriate given the context of the site.

. DERIVATION NUMBER ONE . SECTION ONE . PROCESS AND APPROACH .

TIMEFRAME. At the time of the BRAC announcement in 1993 that NAS Glenview was scheduled for closure the local government immediately sprung into action. The Village immediately contacted the Office of Economic Adjustment (OEA) to begin communications regarding the effect of the closure upon the local community. It was determined that the closure in 1995 would have a significant adverse effect upon the Village during the decommissioning and at the time of closure. As a consequent of this determination, the OEA granted the Village a grant to fund the start of the redevelopment planning.⁷⁰ The planning process was designed for maximum efficiency and took place over a twelve month span of time so that a consensus reuse plan could be in place by the time that the final closure of the base took place and the land was transferred to the Village of Glenview.⁷¹ This immediate action was a direct result of the fact that NAS Glenview comprised 15% of the center of the Village of Glenview, and that it contributed greatly to the economic and social welfare of the place. The local government realized the impact the closure would have on the community and realized the importance of a near-term redevelopment.

DETERMINATION: N (NEAR-TERM NECESSITY FOR REDEVELOPMENT)

⁶⁸ "History." *Glenview Hangar One: Preserving the Past, Shaping the Future*.

⁶⁹ U.S. Naval Air Station Glenview: "The Final Salute." GNAS Base Closure Magazine. July 1995. (accessed 7 October 2009) 33-4. <http://www.glenview.il.us/glen/Download%20Files/GNAS-The%20Final%20Salute-1937-1995.pdf>

⁷⁰ Glenview Community Reuse Planning Group. June 1995. *Glenview Naval Air Station Consensus Reuse Plan*. Volume I – Executive Summary. 3. (accessed 7 October 2009) <http://www.glenview.il.us/glen/Download%20Files/Consensus%20Reuse%20Plan-Vol%201.pdf>

⁷¹ Glenview Community Reuse Planning Group. June 1995. *Glenview Naval Air Station Consensus Reuse Plan*. Volume II – Expanded Report. 3-5. (accessed 7 October 2009) <http://www.glenview.il.us/glen/Download%20Files/Consensus%20Reuse%20Plan-Vol%202.pdf>

MEANS. An additional reason that the local government jumped to establish relations with the OEA immediately after the BRAC announcement is that the OEA is the acting body for the DoD to officially recognize an LRA. When the OEA gave the Village a grant to begin the redevelopment planning they also recognized the Village of Glenview as the acting LRA for the installation. Additionally, the Board of Trustees for the Village decided, shortly after the closure was announced and the grant approved, to create a GNAS Task Force. The group would be tasked with the planning and redevelopment of the non-conveyed lands turned over to the town.⁷² The Task Force developed the Consensus Reuse Plan in 1995, headed all negotiations concerning Economic Development Conveyance, played a major role in the creation of the comprehensive Land Use Plan for the site, and directed the development of the final Master Plan which took the vision from the Land Use Plan to a greater level of detail.⁷³ From the level of involvement of the Task Force, it is apparent that the means of redevelopment in this case study was a solitary one.

DETERMINATION: S (SOLITARY MODE APPROACH)

As established in the previous chapter, the relationship between these two variables is such that: **IF (Near-Term Necessity for Redevelopment AND (&) Solitary Mode Approach) THEN (∩) Planning Approach.** As such, the compound symbolization **(N & S) ∩ P** becomes one of the premises for the first derivation for NAS Glenview.

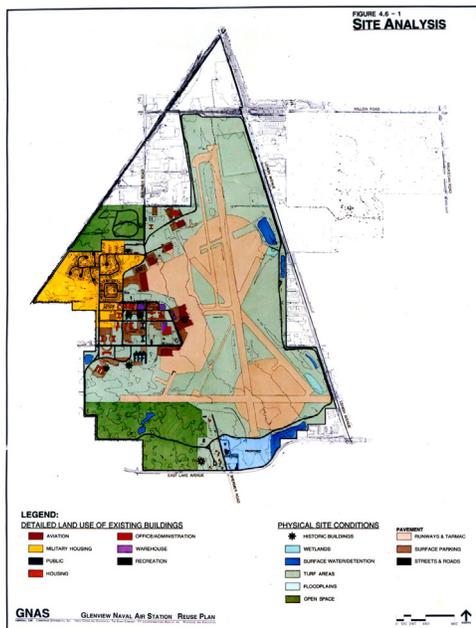


Figure .I.1. Land Uses at Closure.⁷⁴

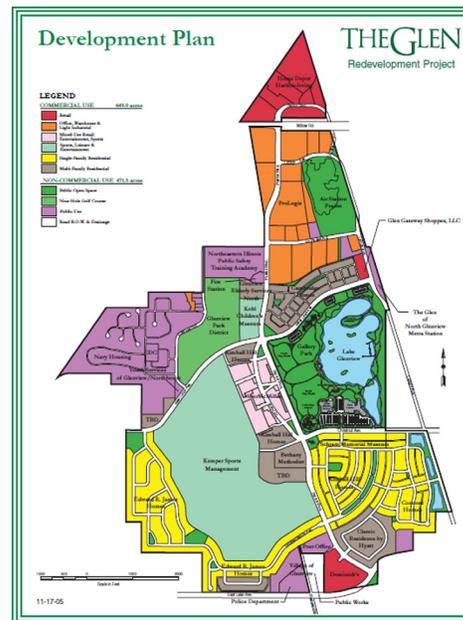


Figure .I.2. Land Uses in Master Plan⁷⁵

⁷² Glenview Community Reuse Planning Group. June 1995. *Glenview Naval Air Station Consensus Reuse Plan*. Volume II – Expanded Report. 3-2, 3-3.

⁷³ Village of Glenview. 1996. 1.3.

⁷⁴ Glenview Community Reuse Planning Group. June 1995. *Glenview Naval Air Station Consensus Reuse Plan*. Volume II – Expanded Report. 4-35.

HISTORY AND PRESERVATION. By studying Figures .I.1. and .I.2. on the previous page it is immediately clear that little of the original structure of the site was left unchanged in the final design for the project. The housing at the westernmost point of the site (shown in purple on the map to the right) is unchanged because it was retained by the Navy, but the other portions have been changed completely. Despite this, the issue of preservation is one of importance in the redevelopment of NAS Glenview to a certain extent. The Task Force headed a survey of the site at decommissioning and found a singular building to be a historical site. The adaptive reuse of this particular building, Hangar One, was then incorporated into all of the subsequent planning efforts. The building reuse was in the form of a mixed use retail and entertainment center, a function that easily integrates into the remainder of the overall plan. Road infrastructure was also focused on this building to place ensure that its location was emphasized as important.⁷⁶ For this reason the historic Hangar One becomes a landmark of The Glen, and we must conclude that Preservation did indeed inform the project.

DETERMINATION: I (HISTORY AND PRESERVATION ARE INFLUENTIAL TO REDEVELOPMENT)

ADJACENCY AND PROXIMITY. The following maps show the location and boundaries of NAS



Figure .I.3. Location of NAS Glenview⁷⁷

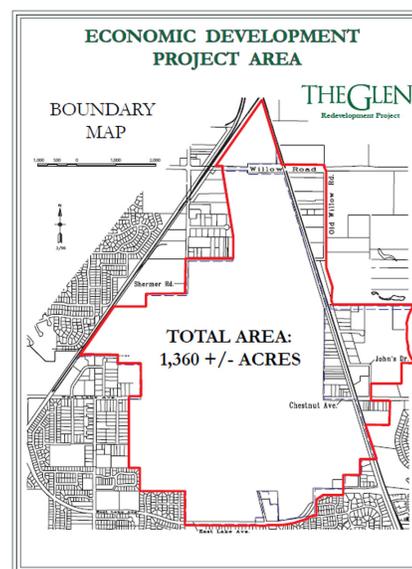


Figure .I.4. Boundaries of NAS Glenview⁷⁸

⁷⁵ Village of Glenview. 2005. *The Glen Redevelopment Project Information Package*. "Development Plan." November 17, 2005. (accessed 7 October 2009)

<http://www.glenview.il.us/glen/Download%20Files/Parcel%20RFP/RFP%20Exhibits/05-The%20Glen%20Marketing%20Packet/The%20Glen%20Marketing%20Folder-November%202017,%202005.pdf>

⁷⁶ Glenview Community Reuse Planning Group. June 1995. *Glenview Naval Air Station Consensus Reuse Plan*. Volume II – Expanded Report. 9-12.

⁷⁷ Village of Glenview. 2005. "Project Location Map."

⁷⁸ Village of Glenview. 2005. "Economic Development Project Area."

Glenview. Figure .I.3. depicts the location in relationship to the overall boundary of the Village of Glenview. Figure .I.4. shows the existing level of development along the boundaries of the former military installation. These depictions make it clear that not only did the installation comprise 15% of the overall Village, but it was also in the center of urban development. The town literally grew up around the installation and so the proximity in question under this particular variable must be concluded to be adjacent to a development community.

DETERMINATION: A (SITE IS ADJACENT TO DEVELOPED COMMUNITY)

The relationship between these two variables that was established in the previous chapter is such that: **IF** (*History and Preservation are Influential to Redevelopment AND (&) Site is Adjacent to Developed Community*) **THEN** (\cap) *Planning Approach*. The corresponding compound symbolization (**I & A**) \cap **P** is thus one of the premises for NAS Glenview’s first derivation.

. DERIVATION NUMBER ONE . SECTION THREE . THE FUTURE .

FUTURE USE. The Master Plan presents a highly mixed community with many different amenities located in various areas across the 1028 acres of land that turned over the Village of Glenview for redevelopment. The mix is as follows⁷⁹:

Single Family Residential	231.90 acres	658 single-family homes
Multi-Family Residential	42.80 acres	518 multi-family housing units
Senior Housing	38.10 acres	676 senior housing units
Retail/Commercial	83.60 acres	925,200 square feet
Office/Business/Light Industrial	87.77 acres	1,033,414 square feet
Sports & Leisure/Open Space	403.00 acres	Golf Courses, Children’s Museum, Parks
Public Service & Safety Total	105.00 acres	Schools, Metra Station, Museum, Fire/Police

Due to the large area of the site and its location almost entirely surrounded by the existing community, a mixed use community was necessary to meet the needs of those affected by the closure.

DETERMINATION: ~G (NOT SINGULAR USE)

DEVELOPMENT DRIVE. As it was mentioned previously, the Village of Glenview was granted the power to act as the LRA for the redevelopment planning activities concerning the installation. Although the GNAS Task Force, discussed earlier, was the driving factor for the majority of the planning activities, they are a subcommittee acting as representatives to the Village proper. There was a public participation component integrated into the overall planning process to allow members of the community to become involved, including community advisory sessions and publicly held task force meetings.⁸⁰ Despite

⁷⁹ Village of Glenview. 2005. “Project Summary.”

⁸⁰ Glenview Community Reuse Planning Group. June 1995. *Glenview Naval Air Station Consensus Reuse Plan*. Volume II – Expanded Report. 3-9,3-10.

the allowed participation by community members, the overall driving force for the redevelopment was still the Village of Glenview local government.

DETERMINATION: $\sim C$ (NOT COMMUNITY DRIVEN REDEVELOPMENT)

These two variables relate to each other such that: **IF (Not *Singular Use* AND (&) Not *Community Driven Redevelopment*) THEN (\cap) *Planning Approach***. As such the corresponding compound symbolization that becomes one of the premises for NAS Glenview's first derivation is **($\sim G$ & $\sim C$) \cap P**.

From these determinations and corresponding relationships we have established the four premises for the first derivation:

$$(N \ \& \ S) \ \& \ [(I \ \& \ A) \ \& \ (\sim G \ \& \ \sim C)]$$

$$(N \ \& \ S) \ \cap \ P$$

$$(I \ \& \ A) \ \cap \ P$$

$$(\sim G \ \& \ \sim C) \ \cap \ P$$

Formula I.1 shows the derivation process and steps in the first three columns from the left. The fourth column briefly describes the rationale for that particular step to help clarify the process.

NAS GLENVIEW . DERIVATION I.1 . PLANNING VERSUS NON-PLANNING .			
LINE	DERIVATION SENTENCES	JUSTIFICATION	EXPLANATION
.1.	$(N \ \& \ S) \ \& \ [(I \ \& \ A) \ \& \ (\sim G \ \& \ \sim C)]$	Premise	This sentence combines all of the variables that have been determined for this case by creating conjunctions (&). This requires that all variables be taken into consideration in the derivation
.2.	$(N \ \& \ S) \ \cap \ P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, Process and Approach
.3.	$(I \ \& \ A) \ \cap \ P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, Context at Decommissioning
.4.	$(\sim G \ \& \ \sim C) \ \cap \ P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, The Future
.5.	$N \ \& \ S$	1 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .1. (N&S)
.6.	P	2,5 \cap E	The antecedent of Line .2. (N&S) has been isolated in Line .5.. Perform a conditional elimination (\cap E) to isolate the consequent of Line .2. (P)
.7.	$(I \ \& \ A) \ \& \ (\sim G \ \& \ \sim C)$	1 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .1. [(I&A) & (~G&~C)]
.8.	$I \ \& \ A$	7 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .7. (I&A)
.9.	P	3,8 \cap E	The antecedent of Line .3. (I&A) has been isolated in Line .8. Perform a conditional elimination (\cap E) to isolate the consequent of Line .3. (P)
.10.	$\sim G \ \& \ \sim C$	7 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .7. (~G&~C)
.11.	P	4,10 \cap E	The antecedent of Line .4. (~G&~C) has been isolated in Line .10. Perform a conditional elimination (\cap E) to isolate the consequent of Line .4. (P)
CONCLUSION : P PLANNING			Conclusion P has been reached three times in the derivation, occurring in Lines 6, 9, and 11. Sentential Logic only requires reaching a conclusion a single time is to prove that a derivation is true, but here we show that each premise in Lines 2-4 lead to the same conclusion.

Since this derivation concluded with Planning, the second derivation is required to determine with of the three possible urban design approaches is appropriate.

DERIVATION NUMBER TWO

SEQUENCE. The Glen, a redevelopment project affecting 1028 acres of land turned over to the Village of Glenview, was a very large undertaking for the community. The community had a desire to redevelop as quickly as possible to regain the lost jobs and counteract the adverse economic effect that the base closure had. Despite this, the project did require a certain extent of phasing in order to make the redevelopment manageable. The project split the construction into two primary phases and a secondary phase. Phase 1 established a mixture of uses that could accommodate the first families to move into the community. A large mixed use retail area, an office park, a large portion of the single-family residential, and the whole of the senior housing was completed during this phase. Phase 1A added some single and multi-family housing areas but primarily focused on building out the remainder of the office spaces, retail, and outdoor recreation spaces. And finally, Phase 2 completed the construction of the single and multi-family housing and also added a large entertainment complex to round out the community.⁸¹

DETERMINATION: H (PHASING)

The relationship between the variable and the possible planning urban design approaches is such that: **IF Phasing THEN (\cap) (EITHER *New Urbanism* OR (**v**) *Smart Growth*)**. The corresponding compound symbolization that becomes one of the premises for this second derivation is **H \cap (W v M)**.

PRESERVATION. Preservation became an issue in the first derivation as well, and it was discussed that the installation was found to have a single historic building during a review of the historical resources present at the time of decommissioning. While it was concluded that preservation was important under the terms of that variable, this particular variable creates a different distinction. Here we must determine whether the preservation requirements are extensive or not. The fact is that out of the 1028 acres of the former installation that were turned over to the Village, only a singular building was found to be worth preserving. Furthermore, even the majority of the existing infrastructure was removed and replaced with new, including the destruction of all runways and the construction of new roadway, sewer, sanitary, and water systems.⁸² With very little retained from the old installation, it is impossible to say that the preservation efforts were extensive.

DETERMINATION: \sim E (NOT EXTENSIVE PRESERVATION)

The relationship between the variable and the possible planning urban design approaches is such that: **IF Not Extensive Preservation THEN (\cap) (EITHER *New Urbanism* OR (**v**) *Smart Growth*)**. And the corresponding compound symbolization that becomes one of the premises for this second derivation is **\sim E \cap (W v M)**.

⁸¹ Village of Glenview. 2005. "Parcel Plan."

⁸² Village of Glenview. 2005. "Project Summary."

REMEDIATION. The Navy performed an Environmental Baseline Survey at NAS Glenview following the announcement by BRAC that the installation was marked for closure. The Survey identified nine major areas of concern that required further investigation and, eventually, remediation efforts before the lands could be redeveloped. The reason for the required remediation was generally due to the storage of hazardous materials related to the maintenance of aircraft and support service automobiles. There were also numerous underground and above-ground fuel tanks throughout the site that had to be removed and the surrounding area treated. Additionally, a few demolition sites were found to have asbestos contaminated soil and the firing ranges had soil contaminated with lead.⁸³ Because of the many types of contamination and the large areas requiring treatment and remediation on the site, the efforts for this case are considered extensive.

DETERMINATION: Y (NECESSARY REMEDIATION)

The relationship between the variable and the possible planning urban design approaches is such that: **IF Necessary Remediation THEN (\cap) (EITHER LEED ND OR (v) Smart Growth)**. The corresponding compound symbolization that becomes one of the premises for this second derivation is **$Y \cap (L \vee M)$** .

NEED FOR GOVERNMENT SUPPORT. For the Glenview redevelopment, the acting LRA was the Village of Glenview local government itself. For this reason, the issue of government support really becomes a non-issue. This variable mostly pertains to sites that are being redeveloped by a master developer and the company requires support from the government to make the project feasible either financially or logistically. Or, if the project is indeed being headed by a governmental agency, an example where this sort of support might be required is if there is something extremely unique or extraordinary about the site itself or about the plans for redevelopment. Such might require special considerations or help from other governing bodies to proceed with the project. For the case of the Glenview redevelopment, though, there was not any special need for government support in order to redevelop.

DETERMINATION: $\sim V$ (SUPPORT NOT VITAL)

The relationship between the variable and the possible planning urban design approaches is such that: **IF Support Not Vital THEN (\cap) (EITHER New Urbanism OR (v) Smart Growth)**. The corresponding compound symbolization that becomes one of the premises for this second derivation is **$\sim V \cap (W \vee M)$** .

LOCATION. The former NAS Glenview installation had a relationship with the Village of Glenview proper such that the Village actually grew up around the base. For 58 years the installation was integral to the economic and social welfare of the civilian community and the two coexisted within a mutually beneficial, symbiotic relationship. The location map

⁸³ Glenview Community Reuse Planning Group. June 1995. *Glenview Naval Air Station Consensus Reuse Plan*. Volume II – Expanded Report. 4-27, 4-28. .

(Figure .I.3.) shown earlier makes it clear the the former base boundaries lie within the core of the village and adjacent to the major circulation routes through the area. As a result, the connection between the community and the military in this case study is a strong one and it must be concluded that the installation already had a connection to the larger, existing urban environment.

DETERMINATION: U (CONNECTED TO THE EXISTING URBAN ENVIRONMENT)

The relationship between the variable and the possible planning urban design approaches is such that: **IF** *Connected to Existing Urban Environment* **THEN** (\cap) *Smart Growth*. The corresponding compound symbolization that becomes one of the premises for this second derivation is **U \cap M**.

After having assessed all of the variables for the second derivation and made determinations for each based on the information regarding the NAS Glenview redevelopment. The corresponding relationships have been established and the following become the premises for the second derivation:

(H & \sim E) & [(Y & \sim V) & U]
 H \cap (W \vee M)
 \sim E \cap (W \vee M)
 Y \cap (L \vee M)
 \sim V \cap (W \vee M)
 U \cap M

The derivation process can now commence in Formula I.2 using these six premises. The actual steps of the derivation are shown in the first three columns from the left. The final column gives the reasoning or corresponding derivation rule for that particular step so as to help make the process more understandable.

NAS GLENVIEW . DERIVATION I.2 . NEW URBANISM VERSUS SMART GROWTH VERSUS LEED ND .			
LINE	DERIVATION SENTENCES	JUSTIFICATION	EXPLANATION
.1.	$(H \ \& \ \sim E) \ \& \ [(Y \ \& \ \sim V) \ \& \ U]$	Premise	This sentence combines all of the variables that have been determined for this case by creating conjunctions (&). This requires that all variables be taken into consideration in the derivation
.2.	$H \ \cap \ (W \ \vee \ M)$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Sequence
.3.	$\sim E \ \cap \ (W \ \vee \ M)$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Preservation
.4.	$Y \ \cap \ (L \ \vee \ M)$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Remediation
.5.	$\sim V \ \cap \ (W \ \vee \ M)$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Need for Government Support
.6.	$U \ \cap \ M$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Location
.7.	$H \ \& \ \sim E$	1 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .1. ($H \ \& \ \sim E$)
.8.	H	7 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .7. (H)
.9.	$W \ \vee \ M$	2,8 \cap E	The antecedent of Line .2. (H) has been isolated in Line .8. Perform a conditional elimination (\cap E) to isolate the consequent of Line .3. ($W \ \vee \ M$)
.10.	M	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem
.11.	M	10 R	Reiteration (R) of Line .10. This allows a previously determined factor to be utilized in a subderivation.
.12.	W	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem
.13.	$\sim U$	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem

NAS GLENVIEW . DERIVATION I.2 . NEW URBANISM VERSUS SMART GROWTH VERSUS LEED ND . CONTINUED .					
.14.			$(Y \& \sim V) \& U$	1 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .1. [(Y&~V)&U]
.15.			U	14 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .14. (U)
.16.			$\sim U$	13 R	Reiteration (R) of Line .13. This allows a previously determined factor to be utilized in a subderivation.
.17.			U	13-16 \sim E	Sentential Logic rules allow the subderivation on Line .13. to be discharged when a contradiction is formed within (Line .15. and Line .16.). The discharge is a negation elimination (U)
.18.			M	6,17 \cap E	The antecedent of Line .6. (U) has been isolated in Line .17. Perform a conditional elimination (\cap E) to isolate the consequent of Line .6. (M)
.19.			M	9, 10-11, 12-18 \vee E	Sentential Logic rules allow disjunction elimination (\vee E) by creating two subderivations, one of each disjunct (Line .10. and Line .12.) Each must discharge the same value (M). The same value can then be discharged from the larger subderivation (M)
				CONCLUSION : M SMART GROWTH	Conclusion M has been reached through the process of disjunction elimination in the derivation, occurring on Line 19.

The second derivation concluded that, based upon the context of the particular installation, a Smart Growth approach is the most appropriate of the three different possible planning conclusions. This conclusion substantiates the validity of the derivation process and the variables identified to inform the derivation process because The Glen is actually a Smart Growth development. And the redevelopment has been generally regarded as a successful one in regards to building a community that meets the needs of those residents who live in the area.⁸⁴ As such, this particular case study works to validate the derivation that was established in the previous chapter.

⁸⁴ Unites States Environmental Protection Agency. January 2006. *Turning Bases Into Great Places: New Life for Closed Military Facilities*. Washington, DC. (accessed 22 November 2009) 16.
http://www.epa.gov/dced/pdf/bases_into_places.pdf

.II. LOWRY . LOWRY AIR FORCE BASE . DENVER, COLORADO

NAME: Lowry

FORMER NAME: Lowry Air Force Base

FORMER USE: For 55 years, the base conducted peacetime training and air operations as its primary mission for the U.S. Army Air Force

SIZE: The entire decommissioned area is approximately 1866 acres in area, which equates to roughly three square miles.

LOCATION: The former base is situated on the border of Denver and Aurora, in central Colorado. Primarily situated within Denver, 1661 acres is within Denver city limits and 105 acres is with the city limits of Aurora.

REDEVELOPMENT ARCHITECT/DEVELOPER: Lowry Redevelopment Authority, The City of Aurora, and the City of Denver.

COMPLETION STATUS: As of February 2009, the redevelopment initiative build-out reached 80 percent completion, and the entire project is scheduled to be completed in the year 2010.⁸⁵

Lowry Air Force Base (AFB) began as a simple peacetime training facility in the year 1937. The installation soon grew into a fully operational base with the construction of Lowry Field and, later, the installation of the Army Air Corps Technical School and the Army Air Forces Technical Training School. During the Second World War and the Korean War, the base mission focused primarily on wartime flight operations. Despite the years that the base served as an important strategic post for the United States Military, it was marked for closure by the first Base Closure and Realignment Act in 1988. It was not until 1992 that Lowry AFB officially ceased operations, and officially closed in 1994.⁸⁶ After having served in defense of the nation for 55 years, it had officially come time to direct the area into a new kind of community service. It was at this moment that the cities of Aurora and Denver came together to begin planning the redevelopment of the former installation into a new vibrant community, designed to breathe new life into the surrounding suburban community.

DERIVATION NUMBER ONE

. DERIVATION NUMBER ONE . SECTION ONE . PROCESS AND APPROACH .

TIMEFRAME. When the impending closure of Lowry AFB was announced in 1992, following the BRAC recommendations made at the 1990 summit, two councilwomen from Aurora and Denver toured bases that had been closed previously. What they saw was a base, already decommissioned for 20 years, sitting abandoned with absolutely no

⁸⁵ Lowry Redevelopment Authority. February 2009. *Lowry Quick Facts*. (accessed 21 October 2009) http://www.lowry.org/news/QuickFacts2_09.pdf

⁸⁶ Bronski, Peter. 2008. "Lowry Lowdown. (Cover story)." *Planning* 74, no. 10: 6-13. *Academic Search Premier*, EBSCOhost (accessed October 19, 2009). 8-9.

redevelopment effort having been put into the land. They vowed that the same fate would not come to Lowry. With that, the cities of Aurora and Denver began a journey to turn a military installation into an integrated community.⁸⁷ The closure of the installation had eliminated 7000 jobs and took away roughly \$295 million in annual spending by those stationed at the base that had helped to sustain the economies in the two cities for over a century.⁸⁸ These two women knew that the jobs and the economic foundation had to be regained, and quickly. For this reason we can easily deduce that there was a need for near-term redevelopment in this particular case study.

DETERMINATION: N (NEAR-TERM NECESSITY FOR REDEVELOPMENT)

MEANS. When the partnership between Aurora and Denver was created, it was done so in the form of a Land Redevelopment Authority. In the case of this particular LRA, the body created to oversee planning and redevelopment was named the Lowry Redevelopment Authority. The Authority is comprised of three staff members and a Board of Executives consisting of nine different members from both cities. These members, appointed by the mayors of the cities, were tasked with creating a reuse plan for the installation. Due to the economic importance to both cities of redeveloping the area quickly, it was necessary that this plan be complete at the time the installation was officially closed. Besides having an equal amount of power in the decision making regarding the redevelopment, the two cities also agreed to create a plan that was income neutral to both economies, assuring no one city gained more from the plan than the other.⁸⁹ Although it may seem that two cities means that the means for redevelopment was a multiple one; however, Aurora and Denver came together, putting their personal interests aside, and created a unified authority to ensure the best plan for the community to be redeveloped. For this reason, this is a solitary method of approach to redevelopment.

DETERMINATION: S (SOLITARY MODE APPROACH)

The relationship between these two variables and the possible conclusions for this particular derivation is such that: **IF (Near-Term Necessity for Redevelopment AND (& Solitary Mode Approach) THEN (\cap) Planning Approach.** And the corresponding compound symbolization that becomes one of the premises for this first derivation is **(N & S) \cap P.**

. DERIVATION NUMBER ONE . SECTION TWO . CONTEXT AT DECOMMISSIONING .

HISTORY AND PRESERVATION. During the redevelopment process; many of the buildings from the former military installation were demolished; however, there were a number that were preserved and adaptively reused in ways that would support the upcoming community. The buildings selected to remain a part of the built environment were chosen for different reasons. Some were preserved because they were considered historic

⁸⁷ Lowry Redevelopment Authority. 2004. *Lowry Ten Years in the Making: A Report to the Community.* (accessed 21 October 2009) http://www.lowry.org/news/10_Year_Report.pdf 4

⁸⁸ Lowry Redevelopment Authority. 2004. 4.

⁸⁹ Urban Land Institute. April 2006. *Lowry Development Case Study.* (accessed 21 October 2009) http://www.lowry.org/images/news_images/press_room/LowryULIStudy.pdf 3-4.

structures and others because they were structurally sound and adaptable to a new use required by the redevelopment plan. For example, the historic Hangar One was redeveloped into the Wings Over the Rockies Museum and the former Base Headquarters became the Grand Lowry Lofts apartment complex. These two buildings provide examples of historic places the plan was obligated to preserve. On the other hand, the base commissary became the Bonfils Blood Center, the fire station was turned into the Colorado Free University, and the old liquor store was adaptively reused as the Lowry Community Christian Church. These examples were not particularly spectacular works of historic architecture that needed to be saved. Instead, these structures were sound, they were approximately the right area for the new use, and they were able to be reused versus demolishing and rebuilding.⁹⁰ They also maintained some of the history and through the architecture were able to speak to what the site was used for historically. These are not the only examples of buildings reused on the site, and as there are numerous other examples, it becomes clear that history and preservation were influential to the site.

DETERMINATION: I (HISTORY AND PRESERVATION ARE INFLUENTIAL TO REDEVELOPMENT)

ADJACENCY AND PROXIMITY. When Lowry AFB was officially closed, it sat in the middle of a suburban community surrounded by low density, single-family residential neighborhoods. For the particular portion of Denver and Aurora, the base itself provided many of the more urban amenities for the area with its more than 1000 structures on the site. The boundaries of the site lie within what is generally referred to as the Denver metropolitan area. As show in Figure .II.1., the highly defined boundaries of the site are lined with streets and streets of homes. As such, we can conclude that the site does have a connection to the larger community. At the time of decommissioning, the site was



Figure .II.1. Aerial of former Lowry AFB in 2002⁹¹

⁹⁰ Lowry Redevelopment Authority. 2004. 17.

⁹¹ Freeman, Paul. 2002.

somewhat separated from the highly urban spaces of the cities, but it always had a connection to the suburban community surrounding it. For this reason, we determine that the project did indeed have a connection to a larger outside community.

DETERMINATION: A (SITE IS ADJACENT TO DEVELOPED COMMUNITY)

The relationship between these two variables and the possible conclusions for this particular derivation is such that: **IF** (*History and Preservation are Influential to Redevelopment AND (&) Site is Adjacent to Developed Community*) **THEN** (\cap) *Planning Approach*. And the corresponding compound symbolization that becomes one of the premises for this first derivation is **(I & A) \cap P**.

. DERIVATION NUMBER ONE . SECTION THREE . THE FUTURE .

FUTURE USE. When the Lowry Redevelopment Authority was formed, they immediately began to formulate a Master Plan for the redevelopment of the area. The planning process took 18 months of intensive work to understand the needs of the community, the requirements for the local economy, and the context of the site. At the end of this rigorous research, interview, and planning process the finalized document. The Lowry Community Reuse Plan, was adopted by the LRA, the City of Denver, and the City of Aurora. Since that time in 1993, all work done at the site has been with the intent of fulfilling the vision outlined in that document. The document itself called for a highly mixed community complete with “4,500 homes, two million square feet of commercial space, 800 acres of parks and recreational amenities, and schools for children and adults”⁹² The total percentages of usage is as follows:

Residential	21%
Commercial/Mixed Use	5%
Educational Campus/Schools	8%
Open Space/Recreation	43%
Community Use/Non-Profit	23%

This mixture of uses makes for a community with diversity, resulting in the conclusion that this is not by any means a singular use redevelopment plan.

DETERMINATION: ~G (NOT SINGULAR USE)

DEVELOPMENT DRIVE. As mentioned before, the project was headed by the Lowry Redevelopment Authority. This body was the driving force for planning the redevelopment and for creating the Lowry Community Reuse Plan that governed all planning decisions made on site. This same body has also been charged with implementing the redevelopment activities that have taken place at the site over the past 15 years. The planning process was devised in such a way that it included community input, and for several months the LRA interviewed community members and help open design charrettes to allow individual members of the community to participate in the planning process.⁹³ Despite this community participation, the primary driving force

⁹² Lowry Redevelopment Authority. July 2006. *Lowry Master Plan*. (accessed 21 October 2009) http://www.lowry.org/news/Master_Plan.pdf

⁹³ Urban Land Institute. April 2006. 4.

behind the redevelopment was always the governments of Aurora and Denver sprouting from the moment the two councilwomen made the pact not to let their base turn out like the abandoned base in Texas. Therefore, although the community was involved in the planning process, it was never allowed to be the driving force behind the redevelopment. The government backed body was always in the position of making the final decision.

DETERMINATION: $\sim C$ (NOT COMMUNITY DRIVEN REDEVELOPMENT)

The relationship between these two variables and the possible conclusions for this particular derivation is such that: **IF** (Not *Singular Use* **AND (&)** Not *Community Driven Redevelopment*) **THEN** (\cap) *Planning Approach*. And the corresponding compound symbolization that becomes one of the premises for this first derivation is **($\sim G$ & $\sim C$) \cap P**.

From the determinations that have been established here and their defined relationships established in the previous chapter, we can state the four premises for the first derivation as being:

$$(N \ \& \ S) \ \& \ [(I \ \& \ A) \ \& \ (\sim G \ \& \ \sim C)]$$

$$(N \ \& \ S) \ \cap \ P$$

$$(I \ \& \ A) \ \cap \ P$$

$$(\sim G \ \& \ \sim C) \ \cap \ P$$

and now the derivation process can begin. The Formula II.1 shows the derivation process to determine Planning or Non-Planning. The actual derivation steps are located in the first three columns from the left, while the fourth column summarizes the rationale for each particular step in order to help clarify the process. The determinations for this case study are identical to those in the previous case, and so the derivation is exactly the same as well. It is included as a reference despite it being the same. The conclusion, as we already know, is for Planning, and so this case too must incorporate the next derivation to determine what the system finds to be the most appropriate approach to redevelopment.

LOWRY AFB . DERIVATION II.1 . PLANNING VERSUS NON-PLANNING .

LINE	DERIVATION SENTENCES	JUSTIFICATION	EXPLANATION
.1.	$(N \ \& \ S) \ \& \ [(I \ \& \ A) \ \& \ (\sim G \ \& \ \sim C)]$	Premise	This sentence combines all of the variables that have been determined for this case by creating conjunctions (&). This requires that all variables be taken into consideration in the derivation
.2.	$(N \ \& \ S) \ \cap \ P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, Process and Approach
.3.	$(I \ \& \ A) \ \cap \ P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, Context at Decommissioning
.4.	$(\sim G \ \& \ \sim C) \ \cap \ P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, The Future
.5.	$N \ \& \ S$	1 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .1. (N&S)
.6.	P	2,5 \cap E	The antecedent of Line .2. (N&S) has been isolated in Line .5.. Perform a conditional elimination (\cap E) to isolate the consequent of Line .2. (P)
.7.	$(I \ \& \ A) \ \& \ (\sim G \ \& \ \sim C)$	1 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .1. [(I&A) & (~G&~C)]
.8.	$I \ \& \ A$	7 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .7. (I&A)
.9.	P	3,8 \cap E	The antecedent of Line .3. (I&A) has been isolated in Line .8. Perform a conditional elimination (\cap E) to isolate the consequent of Line .3. (P)
.10.	$\sim G \ \& \ \sim C$	7 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .7. (~G&~C)
.11.	P	4,10 \cap E	The antecedent of Line .4. (~G&~C) has been isolated in Line .10. Perform a conditional elimination (\cap E) to isolate the consequent of Line .4. (P)
CONCLUSION : P PLANNING			Conclusion P has been reached three times in the derivation, occurring in Lines 6, 9, and 11. Sentential Logic only requires reaching a conclusion a single time is to prove that a derivation is true, but here we show that each premise in Lines 2-4 lead to the same conclusion.

DERIVATION NUMBER TWO

SEQUENCE. Lowry, in the same way as the previous Case Study, approached the massive redevelopment project in a manner that incorporated the phasing of development. The phases of the project generally follow the order that the land was conveyed from the military. As such, the project was split into four phases that comprise the four quadrants of the site. There are three residential neighborhoods, in order of earliest to most recent: the Southwest Neighborhood, the Northwest Neighborhood, and the East Neighborhood. The fourth phase, or neighborhood, is called the Town Center. This is the location for a number of the commercial, retail, and office sites. The LRA chose to incorporate phasing into the plan because they felt that it would allow them to learn and adapt the plan as the construction evolved. In this way, something they saw from the completion of the first neighborhood that wasn't working properly could be changed to work better in the future neighborhoods.⁹⁴

DETERMINATION: H (PHASING)

This particular variable has a relationship to the three possible urban design conclusions such that: **IF Phasing THEN (\cap) (EITHER *New Urbanism* OR (\vee) *Smart Growth*)**. And the corresponding compound symbolization that becomes one of the premises for this second derivation is **$H \cap (W \vee M)$** .

PRESERVATION. This variable seeks to understand if the preservation of history on the site was extensive or not. This goes further than the variable for derivation number one, which only aims to find out if the preservation was at all influential to the design. As such, a single structure preserved could say that preservation was influential, but it was not necessarily extensive. So, we must consider the extent of the preservation. At Lowry, a number of large buildings that were already on the site at the time of closure were adaptively reused to serve new purposes for the redeveloped community. Several of these preserved sites, which were discussed earlier under the first derivation, were actually historic buildings, while others were simply appropriate structures to be reused in order to save on materials and costs. Beyond the preservation of actual structures, the preservation of the memory of the Air Force base was important as well. The guidelines for design discussed under the Lowry Community Reuse Plan strongly suggested to architects and developers to incorporate features reminiscent of the area's past. Such things as blond brick, curved hangar shapes, the Air Force's emblem, industrial materials and finishes, and 1930's architectural styles have been integrated to preserve the history of the site, even through newly built structures.⁹⁵ As such, for the sensitivity to preservation of both structure and memory, this case is determined to have used extensive preservation strategies.

DETERMINATION: E (EXTENSIVE PRESERVATION)

⁹⁴ Urban Land Institute. April 2006. 10.

⁹⁵ Urban Land Institute. April 2006. 4.

The relationship between the variable and the possible planning urban design approaches is such that: **IF Extensive Preservation THEN (\cap) LEED ND**. The corresponding compound symbolization that becomes one of the premises for this second derivation is $E \cap L$.

REMEDIATION. An analysis of the soils and groundwater following the official closure of the base found many sites on the former installation to be contaminated and in need of remediation. The types of remediation required were diverse. Due to the different activities that had been going on above ground, there were several areas where the below-ground aquifer had been contaminated. These areas are often referred to as plumes because of the feather-like shape that the contaminated area takes as it spreads outward. Luckily, none of the plumes were in the drinking water for the site, as that came from the nearby mountains. But remediation for the contamination was still required. Asbestos in the soils had also been found in many locations due to unsafe demolition activities that had taken place historically. Consequently, this type of remediation too has become necessary. Traditionally, the Air Force would have the ultimate liability for the cost of the cleanup of the area, but they signed an agreement to allow the LRA to implement the remediation activities. This is unprecedented and has allowed for some state of the art remediation activities to occur on the part of the Lowry Redevelopment Authority.⁹⁶ Figure .II.2. shows the extent of the necessary remediation on the site through the outlining of contaminated areas. This makes it quite clear that the remediation areas were vast that the required efforts were extensive.

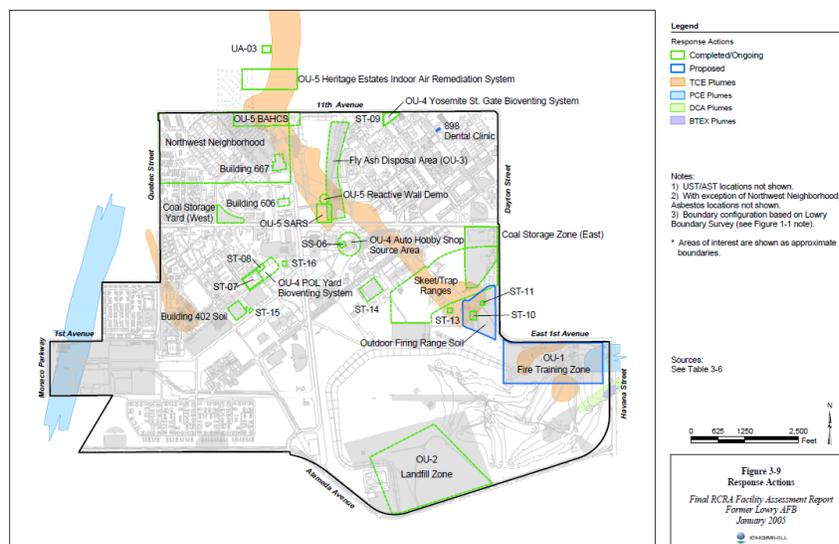


Figure .II.2. Map of Remediation Efforts on the former Lowry AFB.⁹⁷

⁹⁶ Lowry Redevelopment Authority. May 2008. *Lowry Environmental Program*. (accessed 21 October 2009) <http://www.lowry.org/ecology/ENVProgramfact%20sheet052008.pdf>

⁹⁷ CH2MHILL. January 2005. "Figure 3-9: Response Actions" from *Final RCRA Facility Assessment Report: Former Lowry AFB*. (accessed 25 November 2009) http://www.lowryafbcleanup.citymax.com/f/Response_Action_Locations.pdf

DETERMINATION: Y (NECESSARY REMEDIATION)

The relationship between this variable and the three possible conclusions for this particular derivation is such that: **IF Necessary Remediation THEN (\cap) (EITHER LEED ND OR (\vee) Smart Growth)**. The corresponding compound symbolization that becomes one of the premises for this first derivation is **$Y \cap (L \vee M)$** .

NEED FOR GOVERNMENT SUPPORT. The redevelopment at Lowry has been funded in many different ways. The process at Lowry has been such that the LRA took responsibility for the planning as well as the construction of all of the remediation efforts, the infrastructure improvements, the development of the recreational open spaces and other quality of life projects. Fundamentally, the LRA prepared the site for the residential and commercial construction activities to then take place according to the Reuse Plan. The land was then sold to developers according to phase, or neighborhood, to begin the construction of the residences, retail, office and other public service buildings.⁹⁸ In this way, nearly 70% of the total cost of redevelopment has come from private sources. The initial site preparation overseen by the LRA, however, was an expensive venture, to the tune of \$555 million dollars, and was funded publically through such methods as Federal, State, and Local Grants. The purchase of the land itself from the Air Force was through a system of conveyances in which the Department of Defense sold the land at fair market value, did not charge interest, and agreed to a manageable repayment schedule.⁹⁹ Due to this, the redevelopment was able to begin immediately after closure. It is true that the LRA has received aid from government entities; however, the reliance upon these sources was not large considering only 30% of the multi-billion dollar redevelopment has been from government sources. Furthermore, the LRA is fundamentally a government entity, comprised of members from the Aurora and Denver city governments. Therefore, it becomes difficult to say that the project needed government support, when all activities were being guided and managed by the government. We must here conclude that, due to the small percentage of actual funding from government sources and the nature of the LRA itself, that the need for government support was not vital.

DETERMINATION: $\sim V$ (SUPPORT NOT VITAL)

The relationship between this particular variable and the three different conclusions possible for this particular derivation is such that: **IF Support Not Vital THEN (\cap) (EITHER New Urbanism OR (\vee) Smart Growth)**. The corresponding compound symbolization that becomes one of the premises for this first derivation is **$\sim V \cap (W \vee M)$** .

LOCATION. Due to the location of the former Lowry AFB in relationship to the two cities, it was determined under the Adjacency and Proximity variable in the first derivation that the installation did indeed, at the time of closure, have an established adjacency with the

⁹⁸ Lowry Redevelopment Authority. July 2006.

⁹⁹ Urban Land Institute. April 2006. 6.

developed civilian community. This variable, however, asks a rather different question of the relationship between the base and its surroundings. Here it must be determined whether the installation is within an existing *urban* environment. It is indeed within an existing built environment; however, for the purposes of this paper, we take the word urban to mean an area with a high density and an already established diversity of uses present. Because of this point of view on what constitutes an urban environment, we must conclude that Lowry, while completely surrounded by suburban development, was not located within an existing urban environment at the time of decommissioning. The suburban surroundings can be seen in Figures .II.3. and .II.4. below. Figure .II.3. shows the vast separation between the installation and the built up urban environment of the area.



Figure .II.3. Lowry in relation to downtown Denver in the background, 1997.¹⁰⁰



Figure .II.4. Lowry's main northern, western, and eastern boundaries, 2002.¹⁰¹

DETERMINATION: $\sim U$ (NOT CONNECTED TO EXISTING URBAN ENVIRONMENT)

This variable has a relationship to the possible urban design approach conclusions for this particular derivation such that: **IF Not Connected to Existing Urban Environment THEN (\cap) New Urbanism**. And the corresponding compound symbolization that becomes one of the premises for this first derivation is $\sim U \cap W$.

Now that each of the five variables for this second derivation has been determined, we can see that the six established premises are as follows:

$$(H \ \& \ E) \ \& \ [(Y \ \& \ \sim V) \ \& \ \sim U]$$

$$H \ \cap \ (W \ \vee \ M)$$

$$E \ \cap \ L$$

$$Y \ \cap \ (L \ \vee \ M)$$

$$\sim V \ \cap \ (W \ \vee \ M)$$

$$\sim U \ \cap \ W$$

¹⁰⁰ Lowry Redevelopment Authority. 2004. 4.

¹⁰¹ Freeman, Paul. 2002.

With these variable determined, the derivation process can begin as seen in Formula II.2. As with the others, the actual derivation steps are located in the first three columns from the left, while the fourth column summarizes the rationale for each particular step in order to help clarify the process. The determinations for this case are similar to those that were found for NAS Glenview, so the steps are mostly the same. The contexts, however, were slightly different, resulting in some distinct changes in the sentences for this derivation.

LOWRY AFB . DERIVATION II.2 . NEW URBANISM VERSUS SMART GROWTH VERSUS LEED ND .			
LINE	DERIVATION SENTENCES	JUSTIFICATION	EXPLANATION
.1.	$(H \& E) \& [(Y \& \sim V) \& \sim U]$	Premise	This sentence combines all of the variables that have been determined for this case by creating conjunctions (&). This requires that all variables be taken into consideration in the derivation
.2.	$H \cap (W \vee M)$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Sequence
.3.	$E \cap L$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Preservation
.4.	$Y \cap (L \vee M)$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Remediation
.5.	$\sim V \cap (W \vee M)$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Need for Government Support
.6.	$\sim U \cap W$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Location
.7.	$H \& E$	1 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .1. (H&E)
.8.	H	7 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .7. (H)
.9.	$W \vee M$	2,7 \cap E	The antecedent of Line .2. (H) has been isolated in Line .8. Perform a conditional elimination (\cap E) to isolate the consequent of Line .3. ($W \vee M$)
.10.	W	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem
.11.	W	10 R	Reiteration (R) of Line .10. This allows a previously determined factor to be utilized in a subderivation.

LOWRY AFB . DERIVATION II.2 . NEW URBANISM VERSUS SMART GROWTH VERSUS LEED ND . CONTINUED .			
.12.	M	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem
.13.	U	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem
.14.	$(Y \ \& \ \sim V) \ \& \ \sim U$	1 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .1. [[$(Y \ \& \ \sim V) \ \& \ \sim U$]
.15.	$\sim U$	14 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .14. ($\sim U$)
.16.	U	13 R	Reiteration (R) of Line .13. This allows a previously determined factor to be utilized in a subderivation.
.17.	$\sim U$	13-16 \sim I	Sentential Logic rules allow the subderivation on Line .13. to be discharged when a contradiction is formed within (Line .15. and Line .16.). The discharge is a negation introduction (\sim U)
.18.	W	6,17 \cap E	The antecedent of Line .6. ($\sim U$) has been isolated in Line .17. Perform a conditional elimination (\cap E) to isolate the consequent of Line .6. (W)
.19.	W	9, 10-11, 12-18 \vee E	Sentential Logic rules allow disjunction elimination (\vee E) by creating two subderivations, one of each disjunct (Line .10. and Line .172.) Each must discharge the same value (W). The same value can then be discharged from the larger subderivation (W)
CONCLUSION : W NEW URBANISM			Conclusion W has been reached through the process of disjunction elimination in the derivation, occurring on Line 19.

By completing the second derivation, it has been determined that the best approach of the three alternatives to urban design, based on the distinct context of the former Lowry AFB, is New Urbanism. This determination is simply the first step, while the more important thing to consider is if this successful redevelopment is actually a New Urbanist development. If it is, then this case study helps to substantiate the validity of the derivation process that has been created under the scope of this project. By going to the New Urbanist website and scouring through the list of projects, you can find Lowry listed among them. It is considered a successful redevelopment by the Congress of the New Urbanism. So much so that when

the Congress of the New Urbanism held its 17th annual convention in Denver in June 2009, Lowry was one of the tours offered as an example of an exemplary New Urbanist redevelopment project.¹⁰² This proves that this case is indeed an example of a redevelopment that did apply the New Urbanist approach to redevelopment.

¹⁰² CNU News. September 30, 2008. "Touring New Urbanism in Denver with Next American City." (accessed 25 November 2009) <http://www.cnu.org/node/2411>

.III. AUSTIN-BERGSTROM INTERNATIONAL AIRPORT . BERGSTROM AIR RESERVE BASE . AUSTIN, TEXAS

NAME: Austin-Bergstrom International Airport

FORMER NAME: Bergstrom Air Reserve Base

FORMER USE: Home Air Force Base for the 924th Fighter Wing, the 67th Reconnaissance Wing, and Headquarters to the 10th Air Force.

SIZE: 3000 acres

LOCATION: The site is situated on the Southwestern edge of the city of Austin, Texas.

REDEVELOPMENT ARCHITECT/DEVELOPER: The City of Austin

COMPLETION STATUS: Complete. Operations at the Austin-Bergstrom International Airport began in early 1998 with cargo operations in full service. The passenger operations did not begin until the middle of 1999.¹⁰³

The acquisition of the land that Bergstrom Air Reserve Base (ARB) was located on for many years was quite different from the other case studies that have been presented in this document. In November 1941, officers from the U.S. Army Air Corps visited Austin to look at land in the Del Valle area, presently the southwestern portion of Austin city proper, as a possible location for a new air base. The Army, interested in the land, came to an agreement with the City in late 1942. The agreement was such that the local government would purchase the 3000 acres of land with city bonds and give it to the Army on loan. This was done on the condition that the land would be returned to the city when the military decided the site was no longer needed, but no formal documents were signed. During the course of World War II, the base grew rapidly and became an important training location. In fact, the pilots involved in the D-Day invasion of Normandy were trained at Bergstrom. Through the Korean War, the Cold War, and the Vietnam War, the base continued to play a vital role in Tactical Air Command for the United States Air Force. The costs of maintaining Bergstrom were always high, and the base had faced closure numerous times. However, its importance as a training base always outweighed the costs. In 1984, the City of Austin proposed a joint venture with the Air Force to operate their commercial flight activities on the same airfields. The Air Force rejected the proposition, ensured the city that the base would not be closing in the near future, and continued to run tactical operations out of the area. In 1990, however, Bergstrom was recommended for closure by BRAC and it was approved in 1991. The operations finally ceased in 1993, and the land was transferred back to the City of Austin. The Texas Air National Guard was allowed to operate out of the facility until 1995, at which point all military operations were officially ended at the site, after 52 years of service.¹⁰⁴ At least, that is, until after the year 2000, when two Army National Guard units once again made their home at the Bergstrom site, beginning a new

¹⁰³ City of Austin. 2005 "Building the Airport." Austin-Bergstrom International Airport. 4. (accessed 28 November 2009) <http://www.ci.austin.tx.us/austinairport/projsumnr.htm>

¹⁰⁴ City of Austin. 2005 "Bergstrom Air Force Base: A 52-Year History of Service." Bergstrom-Austin Community Council. (accessed 28 November 2009) <http://www.ci.austin.tx.us/austinairport/bergstromhistory.htm>

chapter in the tightly knit relationship between the military and the community at this particular location.

DERIVATION NUMBER ONE

. DERIVATION NUMBER ONE . SECTION ONE . PROCESS AND APPROACH .

TIMEFRAME. The City of Austin realized in the early 1980s that the Robert Mueller Municipal Airport was rapidly nearing its maximum capacity for travel into and out of the capitol city. The location of the airport was such that the city had literally grown up around the area and there was no opportunity for expansion. Additionally, the population of the city was booming due to many of the large technological firms moving in and locating their headquarters in the city. It became clear that remodeling or trying to continue using the old municipal airport was not a viable option for the long term. It was at this point that the city proposed the joint venture with the Air Force and was rejected. There was growing concern about how to solve the problem, and so the city had begun to identify potential sites to build a new airport and to investigate them when the 1991 BRAC decision to close the Bergstrom ARB was announced. This was fortuitous timing for Austin, and the city immediately began planning how the base could be adapted into a commercial airport for the city.¹⁰⁵ The final closure of the base was over a decade after the time when the City had tried to negotiate with the Air force, and the problem with Mueller had only grown worse as the city had rapidly grown. There was a sense of urgency in the planning and redevelopment of the site for use as the city's new international airport.

DETERMINATION: N (NEAR-TERM NECESSITY FOR REDEVELOPMENT)

MEANS. The redevelopment process for this particular case was somewhat different than the others that have been studied thus far. This is primarily due to the fact that, although it was a BRAC decommissioned installation, there was a previous standing agreement regarding the ownership of the land. The City of Austin purchased the land first and then loaned it to the DoD, and so technically the land already belonged to the City and had to be transferred back at the time of decommissioning.¹⁰⁶ Therefore, the conveyance process and the creation of a Land Reuse Authority and the other processes set forth by BRAC did not apply in this particular case. The ultimate authority on the redevelopment process became the City of Austin, whose actions were aided by the support of the community. As is popular among many planning activities in the not-so-distant past, the city solicited a good amount of public input about the plans by including community members on the Advisory Committee associated with the redevelopment and by holding a number of open houses where anyone could come and express their thoughts and

¹⁰⁵ City of Austin. 2005 "Building the Airport." 1-2.

¹⁰⁶ City of Austin. 2005 "Bergstrom Air Force Base: A 52-Year History of Service." 1.

concerns.¹⁰⁷ In this way, the main means of redevelopment was through a solitary body directing the redevelopment activities.

DETERMINATION: S (SOLITARY MODE APPROACH)

The relationship between these two variables and the possible conclusions for this particular derivation is such that: **IF (Near-Term Necessity for Redevelopment AND (&) Solitary Mode Approach) THEN (\cap) Planning Approach.** The corresponding compound symbolization that becomes one of the premises for this first derivation is **(N & S) \cap P.**

. DERIVATION NUMBER ONE . SECTION TWO . CONTEXT AT DECOMMISSIONING .

HISTORY AND PRESERVATION. The Master Plan for the redevelopment of Bergstrom ARB called for a rather large amount of reuse of certain elements already present on the site. Primarily, these elements marked for reuse were such things as existing pavement, fuel tanks, as well as some hangars and other support structures. One of the major initiatives on-site was the removal and relocation of over 700 homes left by the military. They were sold to low income families using low-interest loans. Once sold all the brick was removed, the structure was unbolted from the slab, the home was transferred to the new site, and new aluminum siding was installed as the finish system. This process actually saved the City over \$1 million over the cost of demolishing and disposing of the homes. Another major initiative was the reuse of the fuel storage tanks that were already located on the site. These were not in the proper places and had to be moved according to the new plan, but it still saved the city roughly \$200,000. A last major initiative was the reuse of concrete that had been demolished from the paving that had existed on-site. Some of the paving was left in place, but that which needed to be removed was demolished and crushed on-site for reuse in the concrete that would create all of the new paving and foundations for the new structures.¹⁰⁸ From these examples, it would seem that preservation was an important factor in the redevelopment; however, the truth is that these actions were done primarily with the cost and environmental benefits in mind rather than the historical ones. For this reason, we must conclude that history and preservation were not influential to the redevelopment plan.

DETERMINATION: ~I (HISTORY AND PRESERVATION ARE NOT INFLUENTIAL TO REDEVELOPMENT)

ADJACENCY AND PROXIMITY. One of the primary reasons that the redevelopment of Bergstrom into the main airport for the city was so strongly supported by both those in the local government as well as those in the community, besides the fact that many of the necessary elements required for an airport were already in place, was its location. The site is located in an area that is for the most part surrounded by sparsely inhabited lands, mostly consisting of large ranches and plantation-style homes. The location is on the

¹⁰⁷ P& D Aviation for The City of Austin, Department of Aviation. October 2003. *Austin-Bergstrom International Airport Master Plan Update. Final Report.* Austin, Texas. 1-8, 1-9. (accessed 28 November 2009) <http://www.ci.austin.tx.us/austinairport/finalmasterplan.htm>

¹⁰⁸ Austin-Bergstrom International Airport. March 1998. *ABIA Environmental Initiatives.* (accessed 28 November 2009) <http://www.ci.austin.tx.us/austinairport/downloads/envirninits.pdf>

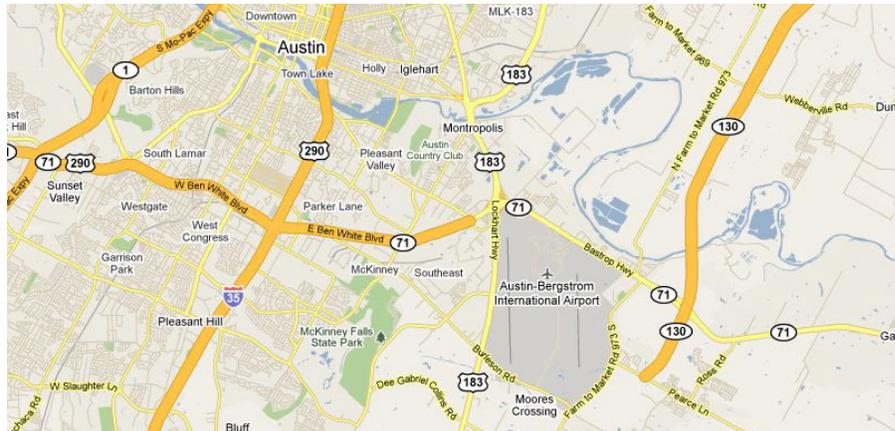


Figure .III.1. Map of Austin-Bergstrom in relation to the city of Austin¹⁰⁹

southwestern fringe of the city. This would allow for expansion if the future, unlike what was possible with Mueller Municipal Airport. Also, the open lands around the site meant that few people would be affected by the noise of airplanes taking off and landing.¹¹⁰ This can be easily seen in Figure .III.1. above which shows the location of Bergstrom in relation to the rest of Austin. From this it is easily determined that the location of Bergstrom is not adjacent to the developed community.

DETERMINATION: ~A (SITE IS NOT ADJACENT TO DEVELOPED COMMUNITY)

The relationship between these two variables and the possible conclusions for this particular derivation is such that: **IF (History and Preservation are Not Influential to Redevelopment AND (&) Site is Not Adjacent to Developed Community) THEN (∩) Planning Approach.** The corresponding compound symbolization that becomes one of the premises for this first derivation is **(~I & ~A) ∩ P.**

. DERIVATION NUMBER ONE . SECTION THREE . THE FUTURE .

FUTURE USE. From the moment the BRAC recommendation that Bergstrom be closed was announced, the City of Austin began to look at the site for one and only one reason: they needed a new airport. It is quite apparent that city officials had their eye set on the location well before the closure was even discussed. The singular approach solved three problems for the city. First, it saved a great deal of money on the construction of the city airport facility because many of the structures and materials were already at the Bergstrom site. Second, it reduced the negative economic impact that an outright closure would have had, and because the redevelopment was of the same land use already present construction took place quickly and had the area contributing back to the economy faster than if the land uses would have been different. Finally, this path of

¹⁰⁹ "Austin-Bergstrom International Airport." Street Map. (accessed 28 November 2009) <http://www.maps.google.com>

¹¹⁰ City of Austin. 2005 "Building the Airport." 2.

redevelopment did not leave a vast area abandoned within the city for an extended period of time and needing special care and planning before it could be reused.¹¹¹

DETERMINATION: G (SINGULAR USE)

DEVELOPMENT DRIVE. In the redevelopment of Bergstrom there was, like in the other cases, a single body that was in charge of the planning process and the decision-making. What makes this case different from the others is that this body, the City of Austin, was wholly dependent upon the approval of the voting citizens in the community. Fundamentally, the city saw that the land was available and began to do a feasibility study to determine how well the site and the existing facilities would work for a commercial airport. Out of that study, as well as numerous methods of soliciting input from the community about the project, the Master Plan for the redevelopment was created. Once this was complete, it was presented to the Austin City Council, who approved the plan unanimously. Despite this, the final say lay with the actual community, who voted on the project in the open election in 1993. It was overwhelmingly approved, and so the project continued.¹¹² In this way, the City of Austin itself did not actually hold all the power in the making of decisions. After the project was approved by the community, the power returned to the city and redevelopment activities were able to proceed. Had the community not voted to proceed, the city would have had to return to the drawing board. In this way, the community really did serve as the driving force for the project by allowing for it to proceed.

DETERMINATION: C (COMMUNITY DRIVEN REDEVELOPMENT)

The relationship between these two variables and the possible conclusions for this particular derivation is such that: **IF** (*Singular Use AND (&) Community Driven Redevelopment*) **THEN** (\cap) *Planning Approach*. And the corresponding compound symbolization that becomes one of the premises for this first derivation is **(G & C) \cap P**.

It has been determined, then that the premises for the first derivation are:

$(N \ \& \ S) \ \& \ [(\sim I \ \& \ \sim A) \ \& \ (G \ \& \ C)]$

$(N \ \& \ S) \ \cap \ P$

$(\sim I \ \& \ \sim A) \ \cap \ P$

$(G \ \& \ C) \ \cap \ P$

The following Formula III.1 shows the derivation process in the same manner as all of the previous derivation charts. The process for this case study is identical to that in the previous case, but the determinations are different. So there are subtle differences.

¹¹¹ City of Austin. 2005 "Building the Airport." 2.

¹¹² City of Austin. 2005 "Building the Airport." 2.

BERGSTROM ARB . DERIVATION III.1 . PLANNING VERSUS NON-PLANNING .			
LINE	DERIVATION SENTENCES	JUSTIFICATION	EXPLANATION
.1.	$(N \& S) \& [(\sim I \& \sim A) \& (G \& C)]$	Premise	This sentence combines all of the variables that have been determined for this case by creating conjunctions (&). This requires that all variables be taken into consideration in the derivation
.2.	$(N \& S) \cap P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, Process and Approach
.3.	$(\sim I \& \sim A) \cap P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, Context at Decommissioning
.4.	$(G \& C) \cap P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, The Future
.5.	$N \& S$	1 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .1. (N&S)
.6.	P	2,5 \cap E	The antecedent of Line .2. (N&S) has been isolated in Line .5.. Perform a conditional elimination (\cap E) to isolate the consequent of Line .2. (P)
.7.	$(\sim I \& \sim A) \& (G \& C)$	1 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .1. $[(\sim I \& \sim A) \& (G \& C)]$
.8.	$\sim I \& \sim A$	7 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .7. ($\sim I \& \sim A$)
.9.	P	3,8 \cap E	The antecedent of Line .3. ($\sim I \& \sim A$) has been isolated in Line .8. Perform a conditional elimination (\cap E) to isolate the consequent of Line .3. (P)
.10.	$G \& C$	7 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .7. (G&C)
.11.	P	4,10 \cap E	The antecedent of Line .4. (G&C) has been isolated in Line .10. Perform a conditional elimination (\cap E) to isolate the consequent of Line .4. (P)
CONCLUSION : P PLANNING			Conclusion P has been reached three times in the derivation, occurring in Lines 6, 9, and 11. Sentential Logic only requires reaching a conclusion a single time is to prove that a derivation is true, but here we show that each premise in Lines 2-4 lead to the same conclusion.

Despite the different determinations in this case, the conclusion was still planning. Thus, it is required that we perform the second derivation to determine the appropriate urban design approach for this particular case.

DERIVATION NUMBER TWO

SEQUENCE. The sequence of this redevelopment was different than the other case studies that have been discussed thus far in the document for a number of different reasons. Primarily that the redevelopment was for a single function and land use. Additionally, the land use being developed on the site was the same as the one that had been there historically. For this reason, the redevelopment was much more a singular project than a series of several projects, which is the case in the mixed use developments of the previous two case studies. In a way, the Master Plan for the redevelopment created in 1993 could be considered by some as the first phase of the airport itself, since there has been a Master Plan Update created in 2002 that is meant to guide the development until the year 2022.¹¹³ When looking deeper, however, this update is more a guideline for future growth of the site, and not an actual added phase. The intent of the variables is to look at the context of the project around the time of military closure. For this reason, it must be determined that this case was approached as a singular project constructed within a singular phase.

DETERMINATION: $\sim H$ (NOT PHASING)

The relationship between the variable and the possible planning urban design approaches is such that: **IF Not Phasing THEN (\cap) [EITHER LEED ND OR (\vee) (New Urbanism OR (\vee) Smart Growth)].** The corresponding compound symbolization that becomes one of the premises for the second derivation is **$\sim H \cap [L \vee (W \vee M)]$.**

PRESERVATION. This variable strongly relates to the History and Preservation variable discussed within the first derivation for this case study. It was discussed there that a number of the materials already on the site were adapted in some way to be reused within the new construction. As much paving as possible was kept on site to be used for the new facility, and that which could not be left in place was crushed on-site for use in the concrete used for the new construction. Also, building materials were salvaged from demolition sites to be reused where they could in the redevelopment process. Former houses were relocated off-site; the duplexes were cut in half and retrofitted to be two separate homes. All of these measures saved the city money and also helped to prevent good materials from ending up in a landfill.¹¹⁴ These measures are not really considered preservation, but instead a form of recycling and reuse. In fact, the only building that was actually preserved in whole and adaptively reused is the building once used as the 12th Air Force Division Headquarters, converted into a Hilton Hotel in 2000.¹¹⁵ Thus, while the

¹¹³ P& D Aviation for The City of Austin, Department of Aviation. October 2003. 1-1.

¹¹⁴ Austin-Bergstrom International Airport. March 1998. 13-16.

¹¹⁵ Agency Group, 09. n.d. "Economic Renewal: Community Reuse of Former Military Bases." FDCH Regulatory Intelligence Database, Military & Government Collection, EBSCOhost (accessed 26 October 2009). <http://eres.library.manoa.hawaii.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=mth&AN=111735490714&site=ehost-live>

issues of recycling and environmentally conscious construction were paramount issues, historic preservation was not the underlying reason for these actions.

DETERMINATION: $\sim E$ (NOT EXTENSIVE PRESERVATION)

The relationship between the variable and the possible planning urban design approaches is such that: **IF *Not Extensive Preservation* THEN (\cap) (EITHER *New Urbanism* OR (v) *Smart Growth*)**. The corresponding compound symbolization that becomes one of the premises for the second derivation is $\sim E \cap (W v M)$.

REMEDIATION. There were a number of contaminants used during Bergstrom's more than fifty years of service as a military installation that posed a problem following the closure of the site. Volatile Organic Compounds, pesticides, petroleum-based products, and low-level radioactive materials are just some of the contaminants that were found on the site. The location of these materials were spread out over the site and had to be remediated before much of the construction on the new facility could proceed. The cleanup of these contaminants was initially the responsibility of the Air Force; however, because the remediation needed to occur quickly in order to meet the strict opening date for the airport in 1999, the City of Austin took administrative control in 1994 when it became clear that the cleanup was not progressing as quickly as necessary. The extent of the contamination was quite extensive, and so too was the remediation required to begin redevelopment. The cost of remediation, paid for by the Air Force, totaled about \$55 million.¹¹⁶

DETERMINATION: Y (NECESSARY REMEDIATION)

The relationship between the variable and the possible planning urban design approaches is such that: **IF *Necessary Remediation* THEN (\cap) (EITHER *LEED ND* OR (v) *Smart Growth*)**. The corresponding compound symbolization that becomes one of the premises for the second derivation is $Y \cap (L v M)$.

NEED FOR GOVERNMENT SUPPORT. Government support usually takes one of two forms, or at times a combination of both. Primarily in redevelopment projects, government support comes in the form of monetary aid to fuel the project. To a lesser extent, government support can also come in the form of pushing the project through the red tape that surrounds the typical redevelopment of sites this document deals with, a "driving force" for the project so to speak. Redevelopment for Bergstrom was structured in such a way that the power to be the driving force was given to the public when they were allowed to vote on if the project would be seen to fruition or not.¹¹⁷ Furthermore, the project did not use any tax dollars to pay for the redevelopment. This was a decision made early on in the process to pay for the entire construction and operating costs through the people and businesses that use the facility. Although the City owns the property, the revenue

¹¹⁶ Austin-Bergstrom International Airport. March 1998. 10-11.

¹¹⁷ City of Austin. 2005 "Building the Airport." 2.

produced by the airport goes back into the budget to help with the operating costs.¹¹⁸ In this way, the project did not rely heavily on the government regarding the redevelopment.

DETERMINATION: $\sim V$ (SUPPORT NOT VITAL)

The relationship between the variable and the possible planning urban design approaches is such that: **IF *Support Not Vital* THEN (\cap) (EITHER *New Urbanism* OR (v) *Smart Growth*)**. The corresponding compound symbolization that becomes one of the premises for the second derivation is $\sim V \cap (W v M)$.

LOCATION. The location of this redevelopment site is quite unique. The project is not directly adjacent to a highly developed community along the majority of its boundaries. It would seem to follow, then, that under this variable it would be found that it is also not a part of the urban fabric. This is not exactly true, however, primarily because of the function and the use of the project. In her article “City Airports-Part of the Urban Fabric,” Catherine Lafferty contests that an airport can be part of the urban fabric so long as it is near the financial center, and that the more important part of the equation is the mass transit linkage to the downtown sector.¹¹⁹ In the case of Bergstrom, the financial district and downtown sector is seven miles away. This is neither a great nor a small distance, but the important factor is the linkage between the two locations. Austin currently has numerous regular and express buses that serve the airport as well as the MetroRapid, which is a bus system that is connected to the traffic signals and is given preference when approaching a light getting ready to change to red. This shortens the commute times. There are also plans in the future to connect the commuter rail currently being constructed in the northern and downtown parts of the city to the airport as well.¹²⁰ In this way, in addition to the airport serving a vital function to the urban core, it is also well connected and becomes an extension of that core. For this reason, we must say that the project is indeed well connected to the urban environment.

DETERMINATION: U (CONNECTED TO EXISTING URBAN ENVIRONMENT)

The relationship between the variable and the possible planning urban design approaches is such that: **IF *Connected to Existing Urban Environment* THEN (\cap) *Smart Growth***. The corresponding compound symbolization that becomes one of the premises for the second derivation is $U \cap M$.

From these five different variables associated with the second derivation, we have been able to determine the following six premises for use in the formula:

¹¹⁸ City of Austin. 2005 “Building the Airport.” 2

¹¹⁹ Lafferty, Catherine. April 15, 2008. “City Airports-Part of the Urban Fabric.” [airport-technology.com](http://www.airport-technology.com/features/feature1776/). (accessed 30 November 2009)

¹²⁰ Capital Metro. 2008. *All Systems Go: Long Range Transit Plan*. City of Austin. (accessed 5 October 2008) http://allsystemsgo.capmetro.org/downloads/ASGBrochRev_eng_lores_8-10.pdf

$$(\sim H \ \& \ \sim E) \ \& \ [(Y \ \& \ \sim V) \ \& \ U]$$

$$\sim H \ \cap \ [L \ \vee \ (W \ \vee \ M)]$$

$$\sim E \ \cap \ (W \ \vee \ M)$$

$$Y \ \cap \ (L \ \vee \ M)$$

$$\sim V \ \cap \ (W \ \vee \ M)$$

$$U \ \cap \ M$$

This rather long derivation, III.2, follows the general layout of the previous derivations.

BERGSTROM ARB . DERIVATION III.2 . NEW URBANISM VERSUS SMART GROWTH VERSUS LEED ND .			
LINE	DERIVATION SENTENCES	JUSTIFICATION	EXPLANATION
.1.	$(\sim H \ \& \ \sim E) \ \& \ [(Y \ \& \ \sim V) \ \& \ U]$	Premise	This sentence combines all of the variables that have been determined for this case by creating conjunctions (&). This requires that all variables be taken into consideration in the derivation
.2.	$\sim H \ \cap \ [L \ \vee \ (W \ \vee \ M)]$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Sequence
.3.	$\sim E \ \cap \ (W \ \vee \ M)$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Preservation
.4.	$Y \ \cap \ (L \ \vee \ M)$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Remediation
.5.	$\sim V \ \cap \ (W \ \vee \ M)$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Need for Government Support
.6.	$U \ \cap \ M$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Location
.7.	$\sim H \ \& \ \sim E$	1 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .1. ($\sim H \ \& \ \sim E$)
.8.	$\sim H$	7 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .7. ($\sim H$)
.9.	$L \ \vee \ (W \ \vee \ M)$	2,7 \cap E	The antecedent of Line .2. ($\sim H$) has been isolated in Line .8. Perform a conditional elimination (\cap E) to isolate the consequent of Line .3. $L \ \vee \ (W \ \vee \ M)$
.10.	L	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem

BERGSTROM ARB . DERIVATION III.2 . NEW URBANISM VERSUS SMART GROWTH VERSUS LEED ND .
CONTINUED .

.11.		$\sim U$	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem
.12.		$(Y \ \& \ \sim V) \ \& \ U$	1 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .1. $[(Y \ \& \ \sim V) \ \& \ U]$
.13.		U	12 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .12. (U)
.14.		$\sim U$	10 R	Reiteration (R) of Line .12. This allows a previously determined factor to be utilized in a subderivation.
.15.		U	11-14 \sim E	Sentential Logic rules allow the subderivation on Line .11. to be discharged when a contradiction is formed within (Line .13. and Line .14.). The discharge is a negation elimination (U)
.16.		M	6,15 \cap E	The antecedent of Line .6. (U) has been isolated in Line .15. Perform a conditional elimination (\cap E) to isolate the consequent of Line .6. (M)
.17.		$W \vee M$	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem
.18.		W	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem
.19.		$\sim U$	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem
.20.		$(Y \ \& \ \sim V) \ \& \ U$	1 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .1. $[(Y \ \& \ \sim V) \ \& \ U]$
.21.		U	20 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .20. (U)
.22.		$\sim U$	19 R	Reiteration (R) of Line .19. This allows a previously determined factor to be utilized in a subderivation.

BERGSTROM ARB . DERIVATION III.2 . NEW URBANISM VERSUS SMART GROWTH VERSUS LEED ND . CONTINUED .				
.23.		U	19-22 ~ E	Sentential Logic rules allow the subderivation on Line .19. to be discharged when a contradiction is formed within (Line .21. and Line .22.). The discharge is a negation elimination (U)
.24.		M	6,23 \cap E	The antecedent of Line .6. (U) has been isolated in Line .22. Perform a conditional elimination (\cap E) to isolate the consequent of Line .6. (M)
.25.		M	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem
.26.		M	26 R	Reiteration (R) of Line .25. This allows a previously determined factor to be utilized in a subderivation.
.27.		M	17, 18-24, 25-26 \vee E	Sentential Logic rules allow disjunction elimination (\vee E) by creating two subderivations, one of each disjunct (Line .18. and Line .25.) Each must discharge the same value (M). The same value can then be discharged from the larger subderivation (M)
.28.	M		9, 10-16, 17-23 \vee E	Sentential Logic rules allow disjunction elimination (\vee E) by creating two subderivations, one of each disjunct (Line .10. and Line .17.) Each must discharge the same value (M). The same value can then be discharged from the larger subderivation (M)
			CONCLUSION : M SMART GROWTH	Conclusion M has been reached through the process of disjunction elimination in the derivation, occurring on Line 28.

The second derivation has reached the conclusion of Smart Growth for this case study. This conclusion helps to validate the derivation further because the project is actually a Smart Growth project. The City of Austin has committed itself to the implementation of Smart Growth principles in major developments, and it was no different for Bergstrom.¹²¹ The City Council even stated that Smart Growth principles were a major concern for the city during the planning. In fact, the city has since gone on to begin the redevelopment of the former

¹²¹ Air Force Real Property Agency. July 2007. *Community Relations Plan for the Former Bergstrom Air Force Base, Austin, Texas*. San Antonio, Texas. 6. (accessed 30 November 2009)
<http://www.safie.hq.af.mil/shared/media/document/AFD-070717-081.pdf>

airport, Robert Mueller Municipal Airport, into a Smart Growth-based mixed use community. The project has been hailed as one of the earliest examples of how BRAC can actually benefit the community. The airport helps contribute \$1.8 billion per year to the city, created 35,700 jobs, and also made way for 21,500 visitor-related jobs in the community.¹²² As such, this highly successful redevelopment does indeed help substantiate the validity of the derivation process proposed in this document.

¹²² Sample, Doug Sgt. 1st Class. March 14, 2005. "BRAC Turned out to be Good News for Texas Capital." FDCH Regulatory Intelligence Database, Military & Government Collection, EBSCOhost (accessed October 26, 2009) <http://eres.library.manoa.hawaii.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=mth&AN=32W2106860207&site=ehost-live>

.IV. THE NAVY YARD AT NOISETTE . CHARLESTON NAVY YARD . CHARLESTON, SOUTH CAROLINA

NAME: The Navy Yard at Noisette

FORMER NAME: Charleston Navy Yard

FORMER USE: For 94 years the area served as a Naval Base and Shipyard to the North Charleston area in South Carolina.

SIZE: 340 acres in total, 304 of which have been transferred over from the Navy.

LOCATION: The area of Noisette is located in the Lowlands of South Carolina, in the area referred to as North Charleston. The Navy Yard itself is centrally located within the larger Noisette area.

REDEVELOPMENT ARCHITECT/DEVELOPER: The Noisette Company, LLC

COMPLETION STATUS: In the beginning of Phase Two of Three, projected completion in 2018.

The Charleston Navy Yard was first established by the United States Navy in 1903. This was around the time when the military was making a push to have government-owned ship building facilities to support the growth of the ever expanding naval forces. The most emphasis on this task was around the year 1910, and it caused an expansion of the base facilities and gave a certain amount of importance to the operations occurring on site. The installation played an important role in WWI and with the war came another great expansion of the operations on-base to include “ship repair and construction, the clothing factory, a naval training camp, the machinist mates’ school, a naval ammunition depot, and a naval radio station.”¹²³ The interwar years saw a decline in the number of men stationed at the Navy Yard, but that changed as the nation entered into WWII. During the war, the base was busier and more vital than it had ever been, with the primary task of building and repairing destroyers for the U.S. fleet. The operations that occurred at the shipyard during this time played an important role in the outcome of the war. After the victory by the Allies, the shipyard continued to play a significant role in operations, but never again reached the level that had been seen during the Second World War. Charleston continued to be a main repair center during the Cold War, but following that era slowly fell out of importance. In 1993 BRAC recommended that the Yard be decommissioned, and in 1996 military operations were halted.¹²⁴

DERIVATION NUMBER ONE

. DERIVATION NUMBER ONE . SECTION ONE . PROCESS AND APPROACH .

TIMEFRAME. The Charleston Navy Yard was recommended for decommissioning during the 1993 round of BRAC committee, and upon final closure in 1996 the shipyard portions of the site were immediately privatized and leased to a local ship repair company, Detyens Shipyard, Inc. The lands covered under this lease included the graving docks, the cranes, the machinery shops, and the additional support facilities necessary for the operation of

¹²³ *National Register of Historic Places Registration Form*. February 14, 2006. Section 8. 20.

¹²⁴ *National Register of Historic Places Registration Form*. February 14, 2006. Section 8. 15-30.

the yard.¹²⁵ The other portions of the former navy installation, however, were not immediately turned over to a redeveloper. The Noisette Company LLC began the intensive planning process in 2003. The Master Plan, which is the product of the planning process, outlines a 3 phase approach to the redevelopment spanning from 2004 until at least 2018.¹²⁶ Given the fact that it took seven years for the formal redevelopment planning process to actually begin, it must be found that there was not a particular need for near-term redevelopment.

DETERMINATION: ~N (NOT NEAR-TERM NECESSITY FOR REDEVELOPMENT)

MEANS. The overall approach to the redevelopment of this particular installation has occurred in a manner much different than any of the other cases presented by this document. In fact, the entire area known as Noisette has a completely different context than any of the other areas that have been studied. This is primarily due to the fact that Noisette as a whole is a redevelopment sector within the larger region of North Charleston. As such, the Navy Yard is simply a portion of the overall area being revitalized by private developer, the Noisette Company, LLC. The developer has purchased 305 of the total 340 acres that constitute the former installation, save what has already been leased to Detyens Shipyard, Inc. They have undertaken all of the planning activities and developed the Master Plan for Noisette, which includes the specific plans for the Navy Yard as well. The company has established a close relationship with the North Charleston City Council in order to ensure their vision for the Noisette community can indeed be realized. Despite this working relationship with the City, the redevelopment is being undertaken by a single master developer, and thus the means of approach is a solitary one.

DETERMINATION: S (SOLITARY MODE APPROACH)

The relationship between these two variables and the possible conclusions for this particular derivation is such that: **IF (Not Near-Term Necessity for Redevelopment AND (&) Solitary Mode Approach) THEN (\cap) Planning Approach.** The corresponding compound symbolization that becomes one of the premises for this first derivation is **(~N & S) \cap P.**

. DERIVATION NUMBER ONE . SECTION TWO . CONTEXT AT DECOMMISSIONING .

HISTORY AND PRESERVATION. According to the National Register of Historic Places, there were a total of 86 structures within the boundaries of what is now considered the Navy Yard when the base was officially closed in 2006. After analyzing the structures it was found that, of the 86, a total of 57 of them actively contribute to the historic character of the area. This means that well over half of the built environment left behind by the Navy after closing was eligible for spots on the National Register. The base was heavily

¹²⁵ "History" 2007. Detyens Shipyard, Inc. (accessed 1 December 2009) <http://www.detyens.com/history-detyens-shipyard-east-coast-united-states-ship-repair-charleston-sc-dry-docks.htm>

¹²⁶ "Project Phasing." December 2003. *The New American City: City of North Charleston, Noisette Community Master Plan*. Chapter Seven. The Noisette Company. 7.4. (accessed 16 November 2009) <http://www.noisettesc.com/masterplan.html>

expanded during WWI, the federal works period of the Depression, and WWII, and as such the architecture represents the styles of those time periods. The architectural styles themselves play a part in the historical value of the buildings; however, there is a historical aspect about the base that adds an even greater importance to the structures. The Charleston Navy Yard was one of the most influential naval bases that our nation operated out of during World War II, and the functions that took place at the site contributed greatly to our nation's success during that military period.¹²⁷ For this reason, the issues of history and preservation both play a large role in influencing the attitude towards redevelopment at the site.

DETERMINATION: I (HISTORY AND PRESERVATION ARE INFLUENTIAL TO REDEVELOPMENT)

ADJACENCY AND PROXIMITY. The entire area of North Charleston developed as a mercantile center along the Cooper River and Noisette Creek, which both run through the modern day community of Noisette. The area became a valuable asset to the lowland area of the state, and as a result the transit linkage to the area increased. Because of the location, the area began to specialize in ship repair near the turn of the twentieth century, and in 1901 the United States Navy purchased 340 acres along the banks of the Cooper River to develop the Charleston Navy Base. The purchase was timely, as the

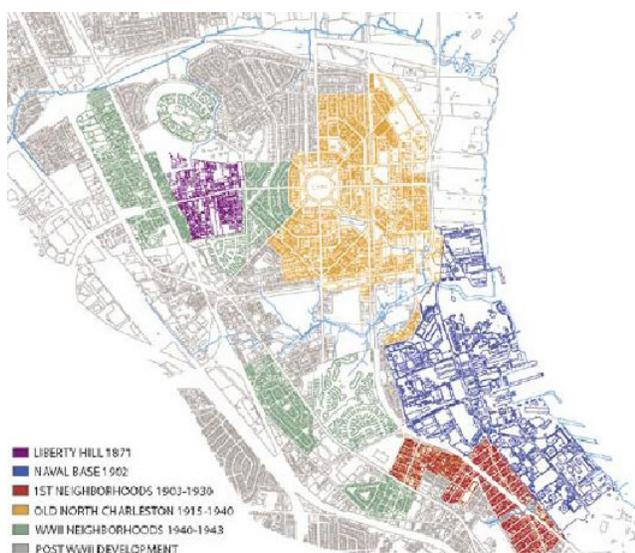


Figure .IV.1. Noisette Area Development Map, 1871-post WWII

construction of the base and docks coincided with the drawing of the plat map for the community of North Charleston. The planners saw the area as one with many potential employment opportunities at the base, and as such, a great location for development. Shortly after the base was established, the historic urban core for North Charleston was developed a short distance from the installation. Throughout the first half of the twentieth century, civilian neighborhoods rapidly began to emerge surrounding the base at the same time as the naval housing and operations at the site continued to expand.¹²⁸ In this way, the community developed around the base and relied on the base for a large

¹²⁷ *National Register of Historic Places Registration Form*. February 14, 2006. United States Department of the Interior National Park Service. NPS Form 10-900. 7.5, 8.14. (accessed 2 December 2009)

<http://www.nationalregister.sc.gov/charleston/S10817710175/S10817710175.pdf>

¹²⁸ "Regenerative Land Use Strategy." December 2003. *The New American City: City of North Charleston, Noisette Community Master Plan*. Chapter Two. The Noisette Company. 2.3 (accessed 16 November 2009) <http://www.noisettesc.com/masterplan.html>

part of its economic support. Figure .IV.1. shows the naval base area in blue, with the first area neighborhoods in red and the old North Charleston urban core in yellow. It is clear that it must be determined that there is a strong connection between the base and the adjacent community.

DETERMINATION: A (SITE IS ADJACENT TO DEVELOPED COMMUNITY)

The relationship between these two variables and the possible conclusions for this particular derivation is such that: **IF** (*History and Preservation are Influential to Redevelopment* **AND (&)** *Site is Adjacent to Developed Community*) **THEN** (\cap) *Planning Approach*. The corresponding compound symbolization that becomes one of the premises for this first derivation is **(I & A) \cap P**.

. DERIVATION NUMBER ONE . SECTION THREE . THE FUTURE .

FUTURE USE. The redevelopment of the area is divided into six different miniature districts. Figure .IV.2.¹²⁹ shows the redevelopment plan for the Navy Yard at Noisette. The area shown in pink is the Noisette Marina, an area envisioned to become a center for maritime industry in the area. The green area is known as Chicora Gardens, which includes a large area know as Riverfront Park that has been redeveloped and open since 2005. Chicora Gardens used to be the naval military housing, but the plan calls for the historic homes to be adaptively reused in many different ways, including bed and breakfasts, restaurants, and more. In maroon is the Steel Crib district, planned to be the commercial and office center for the area. The tan color delineates the West Yard, which will be a new residential neighborhood with a variety of single-family and multi-family housing types. The yellow sector is called Storehouse Row and is the artistic and cultural center for the area. The area consists of numerous historic storehouse buildings planned to be adaptively reused in manners that facilitate the creation of art, including: live/work lofts, artist's studios, and offices. Finally, the blue sector shows the Powerhouse Basin. This area is the mixed use area of entertainment, dedicated to theatres, museums, galleries, and other



Figure .IV.2. The Navy Yard at Noisette redevelopment district map.

¹²⁹ Knott, John L., Jr. April 4, 2006. "Noisette: The New American City, a time whose idea has come." Presentation to The Counselors of Real Estate. (accessed 10 November 2009) http://www.cre.org/images/events/ch_06/John%20Knott2.pdf

areas where artists can display their works.¹³⁰ These mini districts together provide a diverse mixture of uses for the neighborhood, making it clear that this is most certainly not a singular use project.

DETERMINATION: ~S (NOT SINGULAR USE)

DEVELOPMENT DRIVE. The Noisette Company approached the redevelopment with a strong emphasis on community input. The process began with an analysis of the assets on site and then a period to identify patterns in the area and within the larger community. After these initial steps, the community was sought through the means of community forums in order to obtain information about the needs and wants of the individual community members. The product of these meetings was a set of principles to guide the master plan for the entire community of Noisette. The six principles were:

- Re-weave and strengthen the City tapestry
- Rekindle the City as a great place to grow
- Respect individuals, the community, and the natural environment
- Restore and enhance the environment
- Rediscover opportunities for sanctuary, spiritual renewal, and inspiration
- Regenerate places for people to live, work, and learn

These principles were the foundation for the subsequent phases of creating concepts, defining core elements, and establishing an implementation and funding strategy.¹³¹ It becomes clear that the community was a vital part of portions of the planning sequence, but the larger planning process was always driven by the Noisette Company.

DETERMINATION: ~C (NOT COMMUNITY DRIVEN REDEVELOPMENT)

The relationship between these two variables and the possible conclusions for this particular derivation is such that: **IF (Not *Singular Use* AND (&) Not *Community Driven Redevelopment*) THEN (\cap) *Planning Approach***. The corresponding compound symbolization that becomes one of the premises for this first derivation is **(~G & ~C) \cap P**.

After analyzing these six different variables and determining the result of each in direct relationship to the context of the specific installation, it can be seen that the four premises for the first derivation are:

- (~N & S) & [(I & A) & (~G & ~C)]
- (~N & S) \cap P
- (I & A) \cap P
- (~G & ~C) \cap P

¹³⁰ Knott, John L., Jr. April 4, 2006.

¹³¹ "Planning for Integrated Restoration: The Vision of Noisette." December 2003. *The New American City: City of North Charleston, Noisette Community Master Plan*. Chapter One. The Noisette Company. 1.3-1.4. (accessed 16 November 2009) <http://www.noisettesc.com/masterplan.html>

In the same way as the previous case studies, Formula IV.1. outlines the derivation process for this installation. The determinations for this case study vary slightly and are distinct from the previous case studies. The overall process, however, is the same.

CHARLESTON NAVY YARD . DERIVATION IV.1 . PLANNING VERSUS NON-PLANNING .			
LINE	DERIVATION SENTENCES	JUSTIFICATION	EXPLANATION
.1.	$(\sim N \ \& \ S) \ \& \ [(I \ \& \ A) \ \& \ (\sim G \ \& \ \sim C)]$	Premise	This sentence combines all of the variables that have been determined for this case by creating conjunctions (&). This requires that all variables be taken into consideration in the derivation
.2.	$(\sim N \ \& \ S) \ \cap \ P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, Process and Approach
.3.	$(I \ \& \ A) \ \cap \ P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, Context at Decommissioning
.4.	$(\sim G \ \& \ \sim C) \ \cap \ P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, The Future
.5.	$\sim N \ \& \ S$	1 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .1. ($\sim N \ \& \ S$)
.6.	P	2,5 \cap E	The antecedent of Line .2. ($\sim N \ \& \ S$) has been isolated in Line .5.. Perform a conditional elimination (\cap E) to isolate the consequent of Line .2. (P)
.7.	$(I \ \& \ A) \ \& \ (\sim G \ \& \ \sim C)$	1 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .1. $[(I \ \& \ A) \ \& \ (\sim G \ \& \ \sim C)]$
.8.	$I \ \& \ A$	7 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .7. (I&A)
.9.	P	3,8 \cap E	The antecedent of Line .3. (I&A) has been isolated in Line .8. Perform a conditional elimination (\cap E) to isolate the consequent of Line .3. (P)
.10.	$\sim G \ \& \ \sim C$	7 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .7. ($\sim G \ \& \ \sim C$)
.11.	P	4,10 \cap E	The antecedent of Line .4. ($\sim G \ \& \ \sim C$) has been isolated in Line .10. Perform a conditional elimination (\cap E) to isolate the consequent of Line .4. (P)
CONCLUSION : P PLANNING			Conclusion P has been reached three times in the derivation, occurring in Lines 6, 9, and 11. Sentential Logic only requires reaching a conclusion a single time is to prove that a derivation is true, but here we show that each premise in Lines 2-4 lead to the same conclusion.

This case, like the ones before it, has determined planning to be the proper course or action based upon the context of the site.

SEQUENCE. The Master Plan for the community of Noisette is divided into three primary phases of redevelopment, each split into timeframes of five years from 2004 through 2018 and beyond. The plan further subdivides the approach into phases for the off-base redevelopment activities and the phases for the on-base redevelopment activities. The approach to financing the redevelopment is Tax Increment Financing (TIF), meaning that the Noisette Company and the City are helping to incentivize the development in this area by private companies, and also that the development is highly dependent on the economic context in the area. Therefore, the phasing timeline is a highly educated guess, but could change as time goes on. The sequence of the infrastructure redevelopment and the target locations, however, should remain the same even if the timeline does get longer or shorter. This sequence for the on-base redevelopment activities is shown in Figure .IV.3. The areas 1-5 are meant to be the target areas in Phase One, areas 6-7 the targets in Phase Two, and area 8 the target of Phase Three.¹³² These phases tend to generally follow the district pattern discussed earlier and are a large part of the overall approach to the redevelopment.



Figure .IV.3. Phasing Map for On-Base Target Redevelopment Areas

DETERMINATION: H (PHASING)

The relationship between the variable and the possible planning urban design approaches is such that: **IF Phasing THEN (\cap) (EITHER *New Urbanism* OR (\vee) *Smart Growth*)**. The corresponding compound symbolization that becomes one of the premises for the second derivation is **H \cap (W \vee M)**.

PRESERVATION. The Noisette Company contracted with a historic preservationist to study the context of the site after the final closure of the installation. The findings are described in the National Register of Historic Places Registration Form cited in the earlier derivation, where it is stated that over half of the buildings and structures remaining on the site were

¹³² "Project Phasing." December 2003. 7.4.

considered historical. The reasons cited by the form for the historic importance of the structures was that the “Property is associated with events that have made a significant contribution to the broad patterns of our history,”¹³³ and the “Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.”¹³⁴ By studying the maps included with the document it becomes clear that a number of the structures in question actually fall within the Shipyard area that has been contracted to Detyens Shipyards, Inc; however, there are still a number of historic structures within the boundaries of the actual Navy Yard at Noisette site as well. Among these are the storehouse buildings of Storehouse Row district, the power plant building of the Powerhouse Basin district, and many of the historic officer’s houses of the Chicora Gardens district.¹³⁵ The plans for the area show that all of these are to be adaptively reused in ways that both promote the creation of a vibrant community while also reminding residents and visitors of the important history of the site.

DETERMINATION: E (EXTENSIVE PRESERVATION)

The relationship between the variable and the possible planning urban design approaches is such that: **IF Extensive Preservation THEN (\cap) LEED ND**. The corresponding compound symbolization that becomes one of the premises for the second derivation is **E \cap L**.

REMEDICATION. At the time of official closure, there was required remediation for the site prior to any redevelopment activities taking place. The Department of the Navy was the party responsible for the cleanup of the site, and they worked in conjunction with CH2M HILL to remediate the contaminated areas. There were numerous areas of concern found in the soils and groundwater testing stage, and the majority of the cleanup process involved soil and groundwater treatment, lead paint abatement, and asbestos removal. The contract between the Navy and CH2M HILL is such that the private party has taken over the responsibility and liability for the remediation for 20 years from the start of the service.¹³⁶ Some of the remediation techniques involved in the cleanup were injections of vegetable oil-type substances into the ground to clean up the soil, removal of contaminated soils, as well as Electrical Resistance Heating and lactate injections to clean contaminated groundwater.¹³⁷ It becomes apparent that some intensive remediation activities were necessary at the site prior to redevelopment.

¹³³ *National Register of Historic Places Registration Form*. February 14, 2006. 3.

¹³⁴ *National Register of Historic Places Registration Form*. February 14, 2006. 3.

¹³⁵ *National Register of Historic Places Registration Form*. February 14, 2006. Section 7; 5-12.

¹³⁶ CH2MHILL. 2005. “Charleston Naval Complex: Insured Environmental Remediation Contract.” (accessed 2 December 2009)

http://www.ch2m.com/corporate/services/environmental_management_and_planning/assets/ProjectPortfolio/Charleston.pdf

¹³⁷ Charleston Naval Complex Restoration Advisory Board Meeting. January 10, 2006. 9:00am EST. Meeting Minutes. Department of the Navy, Base Realignment and Closure, Program Management Office Southeast.

DETERMINATION: Y (NECESSARY REMEDIATION)

The relationship between the variable and the possible planning urban design approaches is such that: **IF Necessary Remediation THEN (\cap) (EITHER LEED ND OR (\vee) Smart Growth)**. The corresponding compound symbolization that becomes one of the premises for the second derivation is **$Y \cap (L \vee M)$** .

NEED FOR GOVERNMENT SUPPORT. The funding for the revitalization and redevelopment of the Noisette community has come largely from the implementation of TIF by the local government. This type of financing works in such a way that,

During the development period, the tax base is frozen at the predevelopment level. Property taxes continue to be paid, but taxes derived from increases in assessed values (the tax increment) resulting from new development go to pay for the redevelopment costs.¹³⁸

This approach to funding is viable because it finances the initial public improvements in blighted areas, which in turn draws businesses to the area, which in turn provides more funding for more public improvements. This also allows areas to be revitalized without raising the community's general taxes, and also provides for the initial investment from the city to be repaid in due time.¹³⁹ This approach has provided the entire funding for the redevelopment. If the government had not approved and instituted such a program, it would have most likely taken a lot more effort and time to find the funding for the project.

DETERMINATION: V (SUPPORT VITAL)

The relationship between the variable and the possible planning urban design approaches is such that: **IF Support Vital THEN (\cap) LEED ND**. And the corresponding compound symbolization that becomes one of the premises for the second derivation is **$V \cap L$** .

LOCATION. That the former naval installation in Noisette was the catalyst for much of the growth in the area and was one of the primary economic drivers for the community when it was still in operation. This was especially true during the early half of the twentieth century, when the area experienced the greatest amount of rapid growth. Due to this, the community really grew up around the naval base and established very strong connections with the installation.¹⁴⁰ Figure .IV.4. shows the street map of the area. There

(accessed 2 December 2009)

http://www.bracpmo.navy.mil/base_docs/charleston/documents/RAB_meeting_minutes/2006/022206_min.pdf

¹³⁸ "Initiative and Strategies." December 2003. *The New American City: City of North Charleston, Noisette Community Master Plan*. Chapter Eight. The Noisette Company. 8.6. (accessed 16 November 2009)

<http://www.noisettesc.com/masterplan.html>

¹³⁹ "Initiative and Strategies." December 2003.

¹⁴⁰ "Regenerative Land Use Strategy." December 2003. 2.3.

are major connections between the former base location, which is the area shaded grey, and the communities to the southwest of the site. There are also three major transit linkage connections between the site and what was once the vibrant urban core of the community, located to the northwest of the former base. This area is simultaneously being revitalized with the Navy Yard project. A highway runs nearly adjacent to a portion of the western boundary, serving to essentially disconnect the base from the built environment immediately to the west. Despite that, however, the site is well connected to the surrounding urban environment.

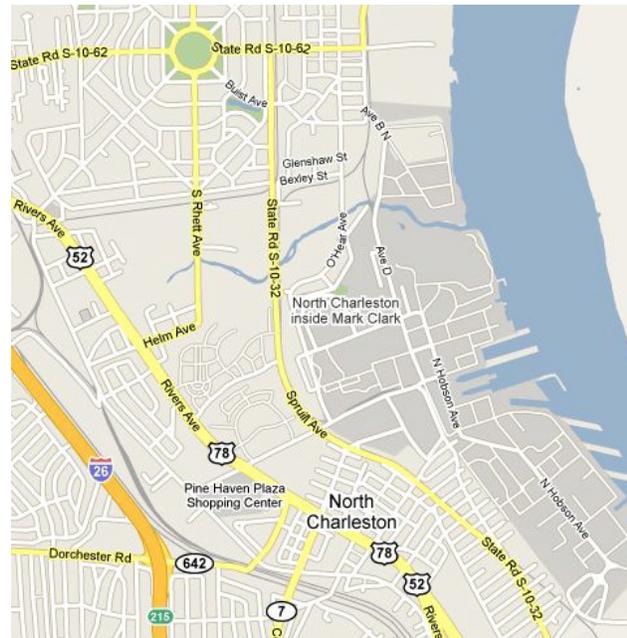


Figure .IV.4. Noisette Community, Area Street Map

DETERMINATION: U (CONNECTED TO EXISTING URBAN ENVIRONMENT)

The relationship between the variable and the possible planning urban design approaches is such that: **IF** *Connected to Existing Urban Environment* **THEN** (\cap) *Smart Growth*. The corresponding compound symbolization that becomes one of the premises for the second derivation is **$U \cap M$** .

These five variables of the second derivation have established the following premises:

$$(H \ \& \ E) \ \& \ [(Y \ \& \ V) \ \& \ U]$$

$$H \ \cap \ (W \ \vee \ M)$$

$$E \ \cap \ L$$

$$Y \ \cap \ (L \ \vee \ M)$$

$$V \ \cap \ L$$

$$U \ \cap \ M$$

The following derivation, Formula IV.2, differs quite a lot from the second derivation examples presented so far. This derivation follows more closely the repeated form we have seen in many of the first derivation examples.

CHARLESTON NAVY YARD . DERIVATION IV.2 .
NEW URBANISM VERSUS SMART GROWTH VERSUS LEED ND .

LINE	DERIVATION SENTENCES	JUSTIFICATION	EXPLANATION
.1.	$(H \& E) \& [(Y \& V) \& U]$	Premise	This sentences is combines all of the variables that have been determined for this case by creating conjunctions (&). This requires that all variables be taken into consideration in the derivation
.2.	$H \cap (W \vee M)$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Sequence
.3.	$E \cap L$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Preservation
.4.	$Y \cap (L \vee M)$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Remediation
.5.	$V \cap L$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Need for Government Support
.6.	$U \cap M$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number Two, Location
.7.	$H \& E$	1 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .1. (H&E)
.8.	E	7 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .7. (E)
.9.	L	3,8 \cap E	The antecedent of Line .3. (E) has been isolated in Line .8. Perform a conditional elimination (\cap E) to isolate the consequent of Line .3. (L)
.10.	$[(Y \& V) \& U]$	1 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .1. [(Y&V)&U]
.11.	$Y \& V$	10 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .10. (Y&V)
.12.	V	11 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .11. (V)
.13.	L	5,12 \cap E	The antecedent of Line .5. (V) has been isolated in Line .12. Perform a conditional elimination (\cap E) to isolate the consequent of Line .5. (L)
.14.	Y	11 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .11. (Y)
.15.	$L \vee M$	5, 14 \cap E	The antecedent of Line .4. (Y) has been isolated in Line .14. Perform a conditional elimination (\cap E) to isolate the consequent of Line .4. (LvM)

CHARLESTON NAVY YARD . DERIVATION IV.2 .

NEW URBANISM VERSUS SMART GROWTH VERSUS LEED ND . **CONTINUED** .

.16.	L	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem
.17.	L	16 R	Reiteration (R) of Line .16. This allows a previously determined factor to be utilized in a subderivation.
.18.	M	Assumption	Sentential Logic rules allow making intermediate assumptions within a subderivation for the purpose of reaching a conclusion. This does not affect the validity of the problem
.19.	H & E	1 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .1. (H&E)
.20.	E	19 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .19. (E)
.21.	L	$3,20 \cap E$	The antecedent of Line .3. (E) has been isolated in Line .20. Perform a conditional elimination ($\cap E$) to isolate the consequent of Line .3. (L)
.22.	L	$15, 16-17,18-21 \vee E$	Sentential Logic rules allow disjunction elimination ($\vee E$) by creating two subderivations, one of each disjunct (Line .16. and Line .18.) Each must discharge the same value (L). The same value can then be discharged from the larger subderivation (L)
CONCLUSION : L LEED 2009 FOR NEIGHBORHOOD DEVELOPMENT			Conclusion L has been reached three times in the derivation, occurring on Lines 9 and 13 by conditional elimination, and on Line 22 by disjunction elimination. Sentential Logic only requires reaching a conclusion a single time is to prove that a derivation is true, but here we show that each premise in Lines 3-5 lead to the same conclusion.

The derivation has determined LEED to be the best urban design approach to follow for redevelopment given the context of the site. This project was actually a participant in the LEED ND Pilot Program, which involved projects around the world in order to gain feedback and evaluate the system before the rating system became finalized. The project is in Phase 2 of the LEED ND certification, meaning that the approved plan has been certified. The final

step occurs when the neighborhood development has been completed.¹⁴¹ The fact that the derivation conclusion matches the actual approach that the project has taken in the redevelopment thus far helps to further prove the validity of both the variables and the process.

¹⁴¹ United States Green Building Council. Updated December 2009. "LEED for Neighborhood Development Registered Pilot Projects and Plans List." (accessed 3 December 2009)
<http://www.usgbc.org/ShowFile.aspx?DocumentID=3546>

.V. KALAELOA . NAVAL AIR STATION BARBERS POINT . KAPOLEI, HAWAII

NAME: Kalaeloa

FORMER NAME: Naval Air Station Barbers Point

FORMER USE: For 58 years Barbers Point served as the primary naval air station in the Pacific region until its closure in 1999.

SIZE: The former installation size in total is about 3,700 acres in area.

LOCATION: The project site is located south of the City of Kapolei and west of the City of Ewa on the expanse of the Ewa Plain on Oahu, Hawaii.

REDEVELOPMENT ARCHITECT/DEVELOPER: The Hawaii Community Development Authority, The United States Navy, The Hawaii National Guard, and Ford Island Properties/

COMPLETION STATUS: This case study has not begun the actual redevelopment process, but is still in the planning stages of the process.

The construction of NAS Barbers Point officially began in November 1941, and was to be an expansion of the Marine Corps Air Station (MCAS) in Ewa that had been constructed throughout the 1930s. The attack on Pearl Harbor in December 1941, however, delayed the construction of the new NAS Barbers Point, and the start of World War II caused an adjustment in the mission of the NAS. No longer was the area meant to be an auxiliary expansion of MCAS Ewa, but was now envisioned to be its own self-sustaining installation. Throughout WWII the NAS serviced aircraft, trained pilots, and had the ability to service up to 80 aircraft at a single time. Barbers Point was an essential base, “believed to control more takeoffs and landings in a 24-hour period than any other airfield in the world,”¹⁴² at the time. Following the war, the NAS was considered the primary air station, “responsible for all naval air operations in the Pacific,”¹⁴³ and the MCAS Ewa was incorporated into its boundaries. The base continued to grow throughout the Korean and the Cold War, and the installation became an ever increasingly important installation for the naval forces in the Pacific. Along with this growth, the number of facilities and structures on the site continued to increase rapidly. From the 1970’s on, the building was focused mainly on quality of life issues, all the way up until 1993, when new residential housing was still being contracted.¹⁴⁴ It was also during this year that the 1993 summit of BRAC suggested that the NAS be decommissioned. The recommendation was approved and the installation was officially closed in July 1999.

The purpose of this particular case study is somewhat different from the previous ones discussed. The four other case studies are all well into or have completed the

¹⁴² International Archaeological Research Institute, Inc. July 1997. *A Cultural Resource Inventory of Naval Air Station, Barbers Point, O’ahu, Hawai’i: Part I: Phase I Survey and Inventory Summary*, by H. David Tuggle and M.J. Tomonari-Tuggle. Honolulu, Hawaii. 179.

¹⁴³ International Archaeological Research Institute, Inc. July 1997. 181.

¹⁴⁴ International Archaeological Research Institute, Inc. July 1997. 186.

redevelopment process; however, the redevelopment of Barbers Point is still in the planning stages. Despite this key difference, the case study is important because the variables determined provide a conclusion different from that which we have seen under the previous cases.

DERIVATION NUMBER ONE

. DERIVATION NUMBER ONE . SECTION ONE . PROCESS AND APPROACH .

TIMEFRAME. NAS Barbers Point was decommissioned at a time when the City of Kapolei, located along the Northern border of the installation, was in full development mode. Kapolei is a community whose Master Plan began to be implemented in 1990. By 1999, when the military officially ceased operations at Barber Point, the development of the outside community had been moving along for some time. The Barbers Point NAS Redevelopment Commission was appointed in 1993 to assume responsibility for the redevelopment efforts at the location. Despite this appointment, the primary focus in the area was on the implementation of the Kapolei Master Plan, and the attention to the former installation was somewhat hesitant. Ultimately the progress from the commission left quite a lot to be desired, and in 2002 the State Legislature voted and approved the bill that transferred the responsibility to the Hawaii Community Development Authority (HCDA).¹⁴⁵ The HCDA began to work on a Master Plan, which was released in early March 2006. The plan called for Phase One to begin in 2007, but due to conflicting interests of the parties involved, there has been very little accomplished within the area. Due to the focus within the area being primarily on the development of the City of Kapolei itself combined with the issues over authority for the former Barbers Point, there has not been a near-term necessity for large scale redevelopment in the area.

DETERMINATION: ~N (NOT NEAR-TERM NECESSITY FOR REDEVELOPMENT)

MEANS. Since 2002 the primary authority for the Barbers Point redevelopment has been the HCDA. Despite this, there are actually a number of different authorities that have decision-making power regarding the project, and the HCDA is simply the primary state representative among them. In addition to the HCDA, the Navy is also still very active on the site. This is because they retained 499 acres of the installation following the operational closure of the station, shown in Figure .V.1.¹⁴⁶, which has recently been conveyed to Ford Island Properties (FIP), LLC, a subsidiary of Hunt Companies, in 2009. The conveyance to FIP was a fair market value sale, done so that the Navy can focus its attentions on the revitalization of Ford Island at Pearl Harbor. The FIP has gone on record as saying that it is committed to making Kalaeloa a better place to live and that their

¹⁴⁵ "About the Hawaii Community Development Authority." 2005. Hawaii Community Development Authority. (accessed 4 December 2009) <http://hcdaweb.org/about/about-the-hawaii-community-development-authority/>

¹⁴⁶ Commander, Navy Region Hawaii. *Conveyance of Navy Retained Land and Utility Systems at Kalaeloa, O'ahu, Hawai'i. Environmental Assessment.* Naval Facilities Engineering Command, Hawaii.

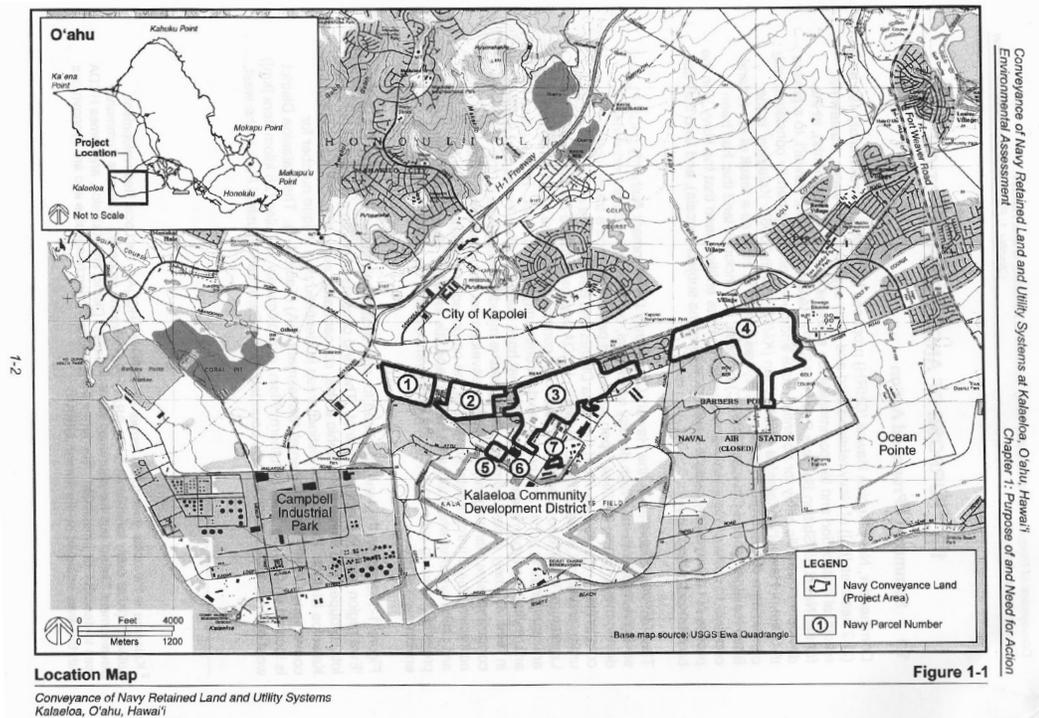


Figure .V.1. Navy Retained Lands and Utility Systems

vision is in line with that of HCDA.¹⁴⁷ While these are the two primary decision-making bodies, the Hawaii Army National Guard has also taken over a portion of the site and is conducting operations from the area. Due to this mixture of land owners and decision makers, it must be determined that this case does not employ a solitary mode of approach.

DETERMINATION: ~S (NOT SOLITARY MODE APPROACH)

The relationship between these two variables and the possible conclusions for this particular derivation is such that: **IF (Not Near-Term Necessity for Redevelopment AND (&) Not Solitary Mode Approach) THEN (∩) Non-Planning Approach.** The corresponding compound symbolization that becomes one of the premises for this first derivation is **(~N & ~S) ∩ ~P.**

. DERIVATION NUMBER ONE . SECTION TWO . CONTEXT AT DECOMMISSIONING .

HISTORY AND PRESERVATION. Following the BRAC announcement of the impending closure of Barbers Point in 1993, the International Archeological Research Institute in Honolulu conducted a survey of the site in order to inventory the structures and objects that were to remain after closure. One purpose of this survey was to understand the historical importance of these structures and objects well before redevelopment planning began in

¹⁴⁷ Tauyan, Agnes. October 6, 2008. "Navy reaches Kalaeloa land agreement with Ford Island Properties." Navy Region Hawaii, Public Affairs Office. New Release #044-08. (accessed 5 December 2009) <http://hcdaweb.org/kalaeloa/news/Kalaeloa%20Conveyance%20Press%20Release.pdf/download>

order to be able to plan for the preservation of any historic buildings. In the end, there were a few elements found to be potentially eligible for the National Register of Historic Places due to their association with important historical events. The first building was a massive hangar that was the center for intelligence functions during the Cold War, and the other building is the Headquarters building. In addition, there were a number of objects on-site that were deemed to be of historic value, including 3 Cold War planes, the 50th Anniversary monument for the installation, and the original mooring mast site that served as the first marker of military operations on the site. While the two aforementioned buildings on the site were recommended by the survey to be preserved through reuse, this is a small percentage of the 128 buildings that were on the site at the time of the survey.¹⁴⁸ Furthermore, the land upon which Building 282 is situated was conveyed to the Hawaii National Guard for use in its operations.¹⁴⁹ As a result, the preservation of this particular structure does not even fall under the jurisdiction of the HCDA. For this reason, it must be concluded that preservation is not necessarily a leading priority for this installation.

DETERMINATION: ~I (HISTORY AND PRESERVATION ARE NOT INFLUENTIAL TO REDEVELOPMENT)

ADJACENCY AND PROXIMITY. During the early part of the Twentieth Century, the Ewa plain was used mostly for the cultivation of sisal and sugar cane and the raising of stock. The signs of urban development were limited to two small communities at the northeastern edge of the plain in Honouliuli and at the Ewa Plantation and a railroad line used for the shipment of goods around the island. This is pretty much the environment that the military found when they focused on Ewa as a point of operations. The construction of MCAS Ewa was upon lands leased from the Campbell estate Ranch. With the construction of these bases and the introduction of military families in the area, the outside communities began to grow up about the site.¹⁵⁰ In this way, there is an established community along the boundaries of the former installation. Campbell Industrial Park is situated along the western boundary of the site, Kapolei lies along the boundary, and the westernmost extents of Ewa border the site's easternmost boundary. In this way, there is a direct adjacency between the site and the outside community along all inland boundaries.

DETERMINATION: A (SITE IS ADJACENT TO DEVELOPED COMMUNITY)

The relationship between these two variables and the possible conclusions for this particular derivation is such that: **IF** (*History and Preservation are Not Influential to Redevelopment* **AND (&)** *Site is Adjacent to Developed Community*) **THEN** (\cap) *Non-Planning Approach*. And the corresponding compound symbolization that becomes one of the premises for this first derivation is **(~I & A) \cap ~P**.

. DERIVATION NUMBER ONE . SECTION THREE . THE FUTURE .

¹⁴⁸ International Archaeological Research Institute, Inc. July 1997. 188-194.

¹⁴⁹ Hawaii Army National Guard. Engineering: Environmental Section. January 2008. *Final: The Hawaii Army National Guard Integrated Cultural Resources Management Plan, 2008-2012*. Honolulu, Hawaii.

¹⁵⁰ International Archaeological Research Institute, Inc. July 1997. 26-27.

FUTURE USE. Kapolei to the North of the installation is comprised primarily of single-family residential homes, as is the Ewa to the West. In fact, the primary means of approaching the built environment on the Ewa Plain as a whole has been of this same land use.¹⁵¹ Because of this, there is a distinct need to introduce new uses to the area to increase the economic base and the number of jobs available to the people of the surrounding communities. These two ends are the primary goals for a redevelopment of the NAS Barbers Point. To achieve this vision, the map of land usage in a previous master planning exercise for the site is included below in Figure .V.2. Shades of orange indicate mixed use zones of varying intensities, with the lightest being the least intense. The brown and brown striped zones indicate eco-industrial use. Olive green shows the areas conveyed to the Hawaii Army National Guard and the United States Coast Guard for continued military usage. Tan outlines protected coastal and nature conservation zones, while the shades of green delineate recreational areas. Purple areas are schools and other public cultural facilities, and the two shades of blue show areas that relate to the existing airport facilities that will continue to operate on-site.¹⁵² Although this is only a single plan, it shows the mixture of uses important to the redevelopment of this area.

DETERMINATION: ~G (NOT SINGULAR USE)



Figure .V.2. HCDA Master Plan Land Use Map, 2006.¹⁵³

¹⁵¹ State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. 2.2.

¹⁵² State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. Figure 4-1.

¹⁵³ State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. Figure 4-1.

DEVELOPMENT DRIVE. Perhaps because there has been such a long pause between the official closure of the installation and the redevelopment activities, there has been a fair amount of community driven reuse on the site. Many of the current uses that have popped up around the former installation are small, community-driven ventures. For example, there is a veterinary clinic operating out of a former warehouse on Franklin D. Roosevelt Boulevard along the site's Northern Boundary. Another example of this is in the Oahu Horseshoe Pitcher's Association Club that has established itself on Enterprise Street near the center of the site. This is a small, members only horseshoe club with private courts for practice and tournaments. Additionally, there is a horse stable on-site that operates out of former WWII bunkers and aircraft revetments located immediately east of the crossing runways of the airport zone.¹⁵⁴ Another example is the Hope Chapel Kapolei that operates out of the former fitness center and pool building on the Barbers Point site. All of these examples show how individual members of the community have taken it upon themselves to begin utilizing what the site as to offer. Despite the presence of larger appointed authorities for the redevelopment, much of the actual reuse of the site has been driven by actual members of the community.

DETERMINATION: C (COMMUNITY DRIVEN REDEVELOPMENT)

The relationship between these two variables and the possible conclusions for this particular derivation is such that: **IF** (Not *Singular Use* **AND (&)** *Community Driven Redevelopment*) **THEN** (\cap) *Non-Planning Approach*. The corresponding compound symbolization that becomes one of the premises for this first derivation is **($\sim G \ \& \ C$) $\cap \ \sim P$** .

These six different variables combined together form the first premise, and their direct relationships to planning or non-planning form the second, third, and fourth premises. Thus, it can be seen that the four premises for the first derivation are:

$$(\sim N \ \& \ \sim S) \ \& \ [(\sim I \ \& \ A) \ \& \ (\sim G \ \& \ C)]$$

$$(\sim N \ \& \ \sim S) \ \cap \ \sim P$$

$$(\sim I \ \& \ A) \ \cap \ \sim P$$

$$(\sim G \ \& \ C) \ \cap \ \sim P$$

Derivation V.I outlines the derivation process for this installation. The overall process is familiar at this point, but the determinations for this case study vary from the previous case studies.

¹⁵⁴ "About BPRC." 2010. Barbers Point Riding Club. (accessed 5 December 2009)
http://www.bprc.us/About_Us.html

NAS BARBERS POINT . DERIVATION V.I . PLANNING VERSUS NON-PLANNING .			
LINE	DERIVATION SENTENCES	JUSTIFICATION	EXPLANATION
.1.	$(\sim N \ \& \ \sim S) \ \& \ [(\sim I \ \& \ A) \ \& \ (\sim G \ \& \ C)]$	Premise	This sentence combines all of the variables that have been determined for this case by creating conjunctions (&). This requires that all variables be taken into consideration in the derivation
.2.	$(\sim N \ \& \ \sim S) \ \cap \ \sim P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, Process and Approach
.3.	$(\sim I \ \& \ A) \ \cap \ \sim P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, Context at Decommissioning
.4.	$(\sim G \ \& \ C) \ \cap \ \sim P$	Premise	This relationship was determined in Section Five: Establishing the Derivation, Derivation Number One, The Future
.5.	$\sim N \ \& \ \sim S$	1 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .1. ($\sim N \ \& \ \sim S$)
.6.	$\sim P$	2,5 \cap E	The antecedent of Line .2. ($\sim N \ \& \ \sim S$) has been isolated in Line .5.. Perform a conditional elimination (\cap E) to isolate the consequent of Line .2. ($\sim P$)
.7.	$(\sim I \ \& \ A) \ \& \ (\sim G \ \& \ C)$	1 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .1. $[(\sim I \ \& \ A) \ \& \ (\sim G \ \& \ C)]$
.8.	$\sim I \ \& \ A$	7 & E	Conjunction elimination (&E) to isolate the first conjunct of Line .7. ($\sim I \ \& \ A$)
.9.	$\sim P$	3,8 \cap E	The antecedent of Line .3. ($\sim I \ \& \ A$) has been isolated in Line .8. Perform a conditional elimination (\cap E) to isolate the consequent of Line .3. ($\sim P$)
.10.	$\sim G \ \& \ C$	7 & E	Conjunction elimination (&E) to isolate the second conjunct of Line .7. ($\sim G \ \& \ C$)
.11.	$\sim P$	4,10 \cap E	The antecedent of Line .4. ($\sim G \ \& \ C$) has been isolated in Line .10. Perform a conditional elimination (\cap E) to isolate the consequent of Line .4. ($\sim P$)
CONCLUSION : $\sim P$ NON-PLANNING			Conclusion $\sim P$ has been reached three times in the derivation, occurring in Lines 6, 9, and 11. Sentential Logic only requires reaching a conclusion a single time is to prove that a derivation is true, but here we show that each premise in Lines 2-4 lead to the same conclusion.

From this conclusion we can see that there are indeed installation contexts that lead to the conclusion of Non-Planning. This particular approach to urban design, however, is not widely implemented in the United States today. Even in its conception, it was only an experiment in thought about how spatial planning should work. For this reason, there is not an example of a BRAC decommissioned site that has actually employed cognitive Non-Planning. Perhaps Non-Planning has occurred by default in some abandoned installations, but highly thought-out Non-Planning has yet to occur. It is the position of this document that Non-Planning has a rightful place among the planning approaches as a valid means of redeveloping former military installations, given the appropriate context. This case study helps to show that there are installations out there that have a particular context under which the derivation would recommend this method of approach.

SECTION SEVEN: NON-PLANNING: EXPERIMENT VERSUS REALITY

In Section Four, the different approaches to urban design that are considered by this particular work were discussed. The section gave an overview of the four approaches in order to attain an understanding of the various concepts and ideologies held by the different schools of thought. It was presented in that section that the Non-Plan approach by Richard Banham and others was primarily focused on the role of the planner as a community advocate that allows members of the neighborhood to collectively decide for themselves what kind of built environment satisfies their needs. According to the Non-Plan article published in *New Society*, this ability was to be afforded to the community through a complete elimination or drastic reduction in policy and regulations concerning land use planning.¹⁵⁵ The collaborators for the Experiment went on to envision three different areas of the English countryside under the Non-Plan setup. These “case studies” of sorts were meant to give readers an idea about how the Non-Plan method could work in a community. As it turns out, the experiment was never actually implemented in its pure form in any of these or other areas. Despite this, however, the ideals held by the experiment did not completely disappear with time, and there do exist examples of degrees of Non-Planning in the built environment today.

The concept of Non-Planning versus the reality of Non-Planning can at times be quite dissimilar from one another. This can be attributed, perhaps, to the fact that Non-Plan, in its most pure experimental form, was a call to action and a highly controversial issue that appealed for not only extreme change, but the outright reversal of the typical method of practice for planners at the time. Because society rarely accepts major changes abruptly, it is not all too surprising that the Non-Plan experiment was not widely accepted in its era. The interesting aspect is that, while not widely accepted at the time, it did have the ability to infiltrate planning practices in moderation and have a long term effect on the field even until the present day. This can be seen in several examples around the world, where portions of the ideals presented by the Non-Plan doctrine have been implemented in planning practices. This chapter is meant to outline the Non-Plan experiment and its related case studies alongside case studies that demonstrate the reality of how degrees of Non-Plan can be found in the world today. The rest of this chapter first discusses the three case studies that were published in the *New Society* article along with Banham and his collaborators’ article. Then, the second half of the chapter outlines three more contemporary case studies that help demonstrate the reality of the concept today.

. NON-PLANNING THE EXPERIMENT .

The following three case studies will discuss the three areas envisioned under the Non-Plan experiment. The purpose of the short overviews is to show what those behind this controversial idea thought Non-Plan could accomplish, and how it could be done in these particular portions of the English countryside.

¹⁵⁵ Barker, Paul. 10-11.

LAWRENCE COUNTRY.

The Lawrence Country case study focused on the area of the East Midlands. At the time of the study the area was quickly developing as an industrial area. The place under consideration was a large area, shown generally in Figure 7.1, and it had a quickly growing population of people. The rapid growth over a large, spread out area meant that most of the people were relying on automobiles to get them to their destinations. The trend at the time was toward decentralized industrialization, meaning that most of the job centers in the area were being constructed outside of the limits of the village proper. These people were in general willing to drive longer distances and spend longer commuting times to get to their jobs. Because of the decentralization there was, at the time of the study, already a tendency toward rapid growth in countless small towns scattered about the region.¹⁵⁶

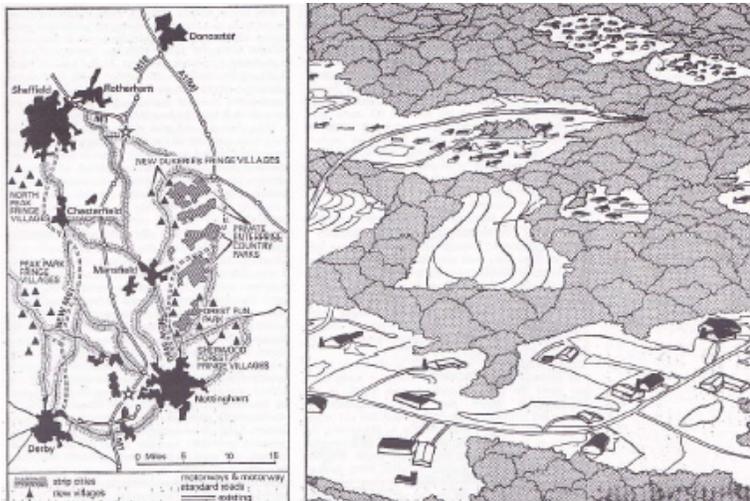


Figure 7.1 Map and Projected Aerial for Lawrence Country¹

The major problem that the authors pointed out for Non-Plan is that the area of the East Midlands is gifted with a beautiful countryside and landscape that people will want to live near, but not necessarily see developed. Thus, the major problem with Non-Planning in the area would be to ensure that the open space be preserved. The problem occurs on two different levels, the first is the normal open spaces

within or immediately surrounding a village and the second is the larger scale forests and national parks. The solution proposed to the first issue is that the necessary amounts of land to serve the projected populations could just be bought on the market and designated and developed into open spaces the community could use. The second issue of larger national parks could be solved by having the land bought and protected by what is referred to as the Countryside Commission (presumably the equivalent of our National Parks Service). The cost of purchasing the land could be recovered through the charging of admission to visit the park, with the intent that the park would aim to just break even on its operating costs.¹⁵⁷

¹⁵⁶ Banham, Reyner, Paul Barker, Peter Hall, and Cedric Price. "Non-Plan: An Experiment in Freedom." *New Society*. No 338. March 20, 1989. 437-8.

¹⁵⁷ Banham, Reyner, Paul Barker, Peter Hall, and Cedric Price. 438.

The reason that Non-Planning was thought to be applicable in this areas was the way in which it was already developing and the fact that the emphasis on automobile transit was strong. The authors foresaw the result of Non-Planning being a series of low-density, small villages depending upon strip malls, commercial areas, and entertainment venues along major thoroughfares. It would not look like a planned city, but it would function well for the development in the area, which is the whole intent of Non-Plan

CONSTABLE COUNTRY.



Figure 7.2. Constable Country Area Map

The Constable Country experiment focuses on an area little more than 30 miles from London, which can be seen in Figure 7.2. The area, at the time of the experimental thinking, was countryside full of small villages connected by a couple of primary motorways. It was also, at the time, the projected site for a new “Northampton Airport,” the result of which would be a rather large influx of growth in the area. The authors of the Non-Plan theory remarked that this area was characteristic of “a dying way of life that [had], so far, escaped pressures that [were] normal in the rest of London’s exurbanite belt,”¹⁵⁸ and that the pressures could not be held at bay much longer by planning restrictions if large scale developments like airports kept being slated for the area.

The thinkers behind the theory went on to further state that the concept of Non-Plan in the area was of particular interest because of the fact that the strong resistance against development demonstrated by those living in the area far outweighed the actual scale or beauty of the countryside nearby. For the most part the countryside that the residents wanted to protect were greenbelts and parks located between the villages located along the primary corridor. It is because of this that Banham and others felt that Non-Plan in the area would actually reveal how much of the concern for the environment was true and how much of it was just worry over lower classes invading the primarily upper class and retirement villages.¹⁵⁹ In this way, one of the most valuable traits of this site was that Non-Plan could expose that many planning regulations are based on unfounded concerns over what could happen when people are allowed to decide how neighborhoods develop.

The study goes on to remark on Non-Plan for the area and claims that it could have potentially had very beneficial outcomes. This is because the regulations at the time were centered on preserving the area and making sure no new development could destroy the villages, but in reality the same regulations were prohibiting progress in the area. For this reason, the primary concern with planning for the area at the time was that such strict

¹⁵⁸ Banham, Reyner, Paul Barker, Peter Hall, and Cedric Price. 438.

¹⁵⁹ Banham, Reyner, Paul Barker, Peter Hall, and Cedric Price. 438.

regulations would lead the area to stagnation. Thus, Non-Plan was seen as a way to allow the areas to naturally infill with the particular uses necessary to the local. And although it would be a planners nightmare to let an area develop without constraints, the approach could lead to a highly functional setup for the future of the area with all of the necessary uses for air travel, such as hotels and long term parking lots, right around the projected site for the airport and not encroaching on the villages. The ultimate result was seen to be that Non-Plan saved the area from its possible descent into decline.¹⁶⁰

MONTAGU COUNTRY.

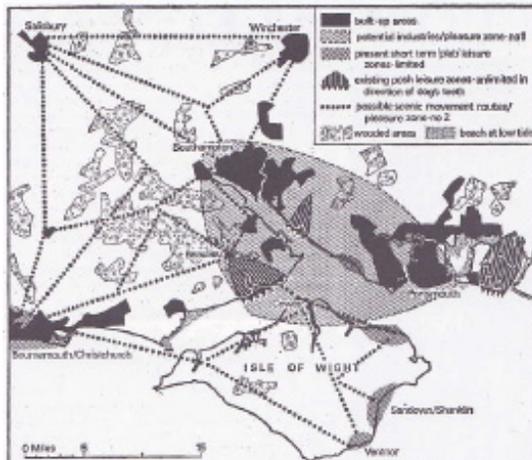


Figure 7.3 Montagu Country Area Map

The Montagu Country case study focuses on an area called Solent, seen in Figure 7.3. The area is made up of several villages with very eclectic backgrounds and states of being at the time the study was conducted. Two of the major villages were areas of growth and industrial progress. One of the cities was home to an oil refinery, the largest in Europe at the time, while the other was leading the industry in hovercraft and synthetic rubber production. On the other hand, though, one of the villages that used to be a favorite getaway for royalty was losing its population, while another had declined from a once-great shipyard to a rundown home for skilled, out-of-work laborers. And between the two polar opposites of the area are villages that are just remaining stagnant from preservation efforts. The heritage that the area was so desperately trying to retain had been slowly slipping away, but in the hopes of preserving it the majority of the area was experiencing decline, or at the very least stagnation.¹⁶¹

The Montagu Country case study focuses on an area called Solent, seen in Figure 7.3. The area is made up of several villages with very eclectic backgrounds and states of being at the time the study was conducted. Two of the major villages were areas of growth and industrial progress. One of the cities was home to an oil refinery, the largest in Europe at the time, while the other was leading the industry in hovercraft and synthetic rubber production. On the other hand, though, one of the villages that used to be a favorite getaway for royalty was losing its population,

The authors pointed out that the area had amazing potential to not only be a great zone for making jobs, but also for providing recreational activities for holidays and short trips. The area has a wealth of natural resources in the form of forests and lakes, all of which can provide great fun on a short vacation. The problem was that the preservation attempts in the area to maintain the heritage were actually disallowing these tourist activities to really take off and prosper. The Non-Plan initiative, as the authors saw it, could be very beneficial to the area in that it would allow the communities to prosper. This would occur when the restraints regarding preservation were lifted and the areas could begin to progress in the same ways as their neighboring villages. Some of the areas had the makings of becoming great job centers, if they were so allowed, while others seemed more apt to provide activities and recreational opportunities. Despite the

¹⁶⁰ Banham, Reyner, Paul Barker, Peter Hall, and Cedric Price. 440.

¹⁶¹ Banham, Reyner, Paul Barker, Peter Hall, and Cedric Price. 440.

differences in the villages, the authors foresaw the area becoming a true live, work and play mixed use area when under the direction and left to the discretion of the community without planning restriction.¹⁶²

Another benefit of the Non-Plan that was suggested was the potential to make money. With the area becoming a live, work, play zone just outside of London, it could become a major destination for Londoners on short holiday as well. The area could implement sales taxes, sail taxes, and other sorts of fees to earn money on the fortunate way that the area developed under Non-Plan.¹⁶³

All three of the original case studies foresaw that the Non-Plan initiative could have hugely beneficial results in the respective areas. The reason, however, that they remained only experiments was most probably largely due to the selection of highly controversial areas with intense preservation agendas. The Non-Plan probably could have helped the areas in some ways, but the selection of controversial areas alongside the fact that the whole plan is rather controversial made for quite a lot of contention and dispute over the entire idea. This is not saying that the ideas were not good, it is simply to say that the concept may have had more in-real-life results had the authors thought to target less controversial places first in order to prove the theory, before moving on to the grander issues.

. NON-PLANNING THE REALITY .

There are current examples that demonstrate how ideals or goals of Non-Planning are being carried out today. These examples don't claim to be a part of the Non-Plan agenda, but they do work in some ways toward the same common end goals. Three short case studies will be presented here to show how portions of the Non-Planning agenda still exist today.

NON-ZONING IN HOUSTON, TEXAS.

The city of Houston, Texas is a sprawling metropolis that is located on over 600 square miles of land and is home to more than 2 million residents. The idea that a city of this size does not implement the traditional planning tool of zoning can be shocking to hear. However, in Harris County, within which part of Houston is located, the concept of Non-Zoning is rather common. The overall county does not implement a zoning code and neither do a number of the towns situated within the county. And what's more, Houston and one other nearby city have allowed the decision of whether or not to utilize zoning codes to be left up to a democratic vote. Both times the issue was brought to a vote, the residents voted against the implementation of zoning. This is how Houston became the only major city in the United States to have developed without the use of zoning.¹⁶⁴

¹⁶² Banham, Reyner, Paul Barker, Peter Hall, and Cedric Price. 441.

¹⁶³ Banham, Reyner, Paul Barker, Peter Hall, and Cedric Price. 441.

¹⁶⁴ McDonald, John F. "Houston Remains Unzoned." *Land Economics*. Vol 71, No 1. February 1995. 137-140. (Accessed 20 January 2010) <http://www.jstor.org/stable/3146764> 138.

This is not to say, however, that the local government of Houston has relinquished all control over how land in the city is to be developed. There have been certain ordinances implemented that control individual factors of a development, however this is mostly true for residential areas. Some of the elements that are controlled through the use of ordinances include the minimum building lot size, setbacks, and off street parking requirements. These types of requirements are usually found within a zoning code, but in this case these operate independently of zoning. Fundamentally, the City of Houston is not concerned whether a certain portion of land is used for a retail shop, or a residential home, or even an industrial factory.¹⁶⁵ These types of regulations ensure a common usage of land among land use types, but do not ensure a common type of usage among a community. There are, however, elements in place in Houston that can be employed to ensure that a particular site is utilized in a desired manner, and this is with the “Restrictive Covenant.”

Restrictive covenants are not created but the local government, but they are enforced by the local government. The creators of these covenants are the developers along with their lawyers. Fundamentally, the owner of a plot of land can create a covenant that stipulates how a plot is to be utilized, and it can also govern other elements like architectural design, aesthetics, and maintenance of the exterior. These elements would not normally be found in zoning documents even if the city had them. The person who buys or builds on the land is required to adhere to the covenant, and if it is broken a lawsuit can be issued through the local government.¹⁶⁶ These types of covenants are most commonly found in residential suburbs where adherence to a particular use and style are seen to be important, but they can also be found in industrial or business parks as well. The covenants do have a time period attached to them, though, and will eventually expire. Once that happens the plot is able to be used for any use. The trend for plots with expired covenants seems to be that they continue in their original use due to developmental pressure in the area and by neighboring residents, but occasionally a land use will be changed following the expiration of a covenant.¹⁶⁷

As with anything that goes against the norm, there are supporters and there are opponents to the non-zoning that occurs in Houston. Opponents could certainly identify areas of the city and use them as examples of how a lack of zoning can fail a community, but these types of areas could also be found in zoned cities by proponents of non-zoning and cited as examples of how zoning can fail a community. There are three distinct areas, identified in a thorough study by Bernard Siegen, where non-zoning clearly benefits the city where zoning would not have. The first of these is that there is an abundance of

¹⁶⁵ Siegen, Bernard H. “Non-Zoning in Houston.” *Journal of Law and Economics*. Vol 13, No 1. April 1970. 71-147. (Accessed 20 January 2010) <http://www.jstor.org/stable/724839> 75-6.

¹⁶⁶ Siegen, Bernard H. 79-80.

¹⁶⁷ Siegen, Bernard H. 83

apartments at affordable rates due to the lack of control over the development of land into apartment buildings. Also, areas along thoroughfares are used for a mixture of uses including multi-family housing and various commercial uses, where zoning would have most likely limited the uses allowed in such areas. And lastly, there is a mixture of uses within traditional single-family suburbs that would have been limited under zoning.¹⁶⁸ It is hard to deny the validity of these claims when the majority of zoning codes do prohibit these sorts of developments from taking place. So, as many examples there are for why non-zoning doesn't work, there are always these three crucial arguments that prove that there is a certain amount of benefit to the approach.

Overall, the lack of zoning allows for the community to decide what types of uses should be able to occur in different locations. While there are other manners in which certain uses can be prohibited on certain sites, this is done on a case by case manner where zoning prohibits uses in entire districts. Fundamentally, by eliminating zoning restrictions in a city the residents of the area are suddenly able to have a strong affect on their community surroundings. This type of approach can be considered a form of Non-Planning, as the end results are basically the same with the community in control of how the area develops. And as such, this method could be beneficial as a case study for Kalaeloa as the Non-Plan for the area is developed.

SIMPLIFIED ZONING APPROACH.

Donald Elliott, in his book [A Better Way to Zone: Ten Principles to Create more Livable Cities](#), argues that there are many problems with the current approach to zoning that is found in the majority of cities across the nation. While each city creates and enforces its own zoning code, or in the case of Houston no zoning at all, they are all quite similar in format and approach. It is this typical approach to zoning that Elliott claims has become much more complex than it needs to be. Furthermore, he argues that the way in which these codes organized often prevent desirable development uses that the city, if not for the limitations inherent within code, would like to approve. Finally, another of his critiques on the zoning codes typically utilized in cities today is that they are created for a particular time and within a certain situation for the city, and as the city grows and changes the code has a difficult time adjusting to the changes.¹⁶⁹ Due to the various weaknesses cited by Elliott, he has proposed an alternative approach to zoning for cities, which will be discussed within this case study.

Elliott's "Better Way to Zone" consists of ten different principles that he feels would improve the zoning process. This case study will discuss a few of these, starting with the first, entitled "more flexible uses." Fundamentally this first principle claims that the zoning uses should be broader so that there is a fewer total number of uses and each one

¹⁶⁸ Siegen, Bernard H. 128-9.

¹⁶⁹ Elliot, Donald L. [A Better Way to Zone: Ten Principles to Create More Livable Cities](#). Washington: Island Press, 2008. 2.

is not so limiting. For example, instead of listing every possible type of service as a different zoning use, to simply divide it into personal services and business services. He argues that instead of using these countless numbers of minutely defined uses a city could control the scale of the building on a site instead. This would allow quite a lot of flexibility, but it would be limiting in the fact that certain undesired uses could not conform to the regulation on the scale in certain areas.¹⁷⁰ The second principle discussed is a continuation of the first and takes this concept one step further to the point where the majority of zoning use divisions are eliminated until only three very broad categories remain. These three are the (1) pure residential districts which are areas that are only single- or multi-family housing areas, (2) the mixed use district which would include the now commercial and light industrial uses and would basically cover most of the previous zoned uses, and (3) the special purpose district which could include any number of things ranging from airport zones to open space zones to historic zones, the number and types would depend completely on the city. The organization of these zones allows the development to be directed in certain ways while also allowing for a certain amount of flexibility. Because of the simplified zoning, however, any flexibility would become regular and predicable within the limitations of the broadened zones.¹⁷¹ These two particular principles relate to one another strongly and the second almost acts as a further extension of the first.

Another of the principles to fix the current condition of zoning, according to Elliott, is to begin “Living with Nonconformities.” Often times when zoning codes are changed and new regulations put in place, those buildings that were built before the changes and no longer meet the requirements that have changed are classified as nonconformities. In essence these structures are not allowed to expand or redevelop or do anything until the structure is adapted to meet the new regulations. The argument is that many of the buildings that no longer conform to zoning changes give the neighborhood a character and add to it history. To force these buildings to adapt and modernize can rob an area of some special qualities. Therefore, only the buildings that pose a public life, health, or safety risk should be branded as nonconforming and forced to change, as it is in the public’s best interest. However, those that do not pose such a risk should be allowed to go on as normal and continue contributing to the character of the area.¹⁷² An extension of this can be seen in another of his principles, “Dynamic Development Standards.” This speaks about nonconforming buildings as well and how perhaps changes to a zoning code should not be done as one big blanket change. One example the author gives is how if every house on a block was built under a code that required a 10’ driveway and then the code changes to a 20’ requirement, any new buildings are going to be considerably different than others. Changes like this can degrade the similitude in the neighborhood, and this is not generally desired by those living in the neighborhood. In situations like

¹⁷⁰ Elliot , Donald L. 141.

¹⁷¹ Elliot , Donald L. 150-2.

¹⁷² Elliot , Donald L. 171-4.

this, the author proposes that the changes to certain requirements should only be required where the context makes sense.¹⁷³

These are simply a few of the principles discussed by Elliott in his book, but they are good examples of the fundamental theory steering his proposal. Some of the principles, like “Living with Nonconformities,” serve to make the zoning code more accepting of anomalies due to the fact that they often add character to the city. These types of principles can give communities the opportunity to conserve and preserve their historical resources more easily. But the principles that relate more directly to Non-Planning are those that reduce the number of zoning use divisions and increase the flexibility of zoning maps. This sort of change allows individuals in the community to have a lot more impact on how their neighborhoods develop and in providing the uses that the community members need and want in their area. This is directly related to Non-Planning in a sense because of the freedom of choice it grants to individuals. However, it is not the purest form of Non-Planning because there still are restrictions on what can be built in certain areas. These restrictions, though, are primarily related to health, safety, and welfare issues and are only in place to ensure that development occurs in a safe manner.

This case study shows a balance between planning and Non-Planning, where the two can both make certain sacrifices until there is a balance between the control the government has and the power the community has in deciding what and where different types of development occur. The issue with this case study, though, is that it is just another proposal, much like Non-Planning was when it first appeared in *New Society*. The value of it, though, is that it shows that moving toward a more flexible system is being considered and proposed by intellectuals in the field. And sometimes this is the first crucial step along the path towards change.

CREATING A FRAMEWORK IN MELÚN SENART, FRANCE.

When Rem Koolhaas and his Office of Metropolitan Architecture developed a design for a new city competition in 1987, they took a fundamentally different approach to urban planning. Instead of focusing on the architectural requirements and opportunities for a plan, the design instead used conservation and operation as the defining variables. The competition was to design Melún Senart, the last of the nine *Ville Nouvelles* (New Towns) to be developed under the 1960’s project to create new, highly planned cities in previously undeveloped areas around large cities of France in order to control expansion in the areas. The location for the Melún Senart *ville* was just outside of Paris, in a relatively undeveloped area of farmlands and forests. When OMA saw the location for the new town, they were at once appalled to learn that the vast, pure landscape then dotted with farms and forests would be destroyed by development. And for this reason they began to

¹⁷³ Elliot, Donald L. 177-8.

plan a way to ensure that the landscape could be preserved and planned, even if the built environment were to spin into chaos.¹⁷⁴

The program for the town required the development of residential neighborhoods, public uses such as schools, museums, and recreational facilities, and areas dedicated to industrial uses. But instead of focusing on how and where these uses should occur, the plan instead focused on what should not be built in the town. Fundamentally, the design team felt that, in an urban design project, what is built is and should be out of the control of the planners and other regulating bodies and that the built environment is not meant to be mastered in a holistic manner. It was their contention, instead, that nothingness is the only thing a planner can truly be certain of. Out of this concept came an approach to plan the site, and the team first identified the most precious areas of Greenfields and open spaces on a map. Next, they created a framework integrating these areas that should be part of the planned void spaces. The uses for these areas were varied with some of them identified because of the need to preserve the area for agricultural activities while others were identified because they ran along a major thoroughfare and could be utilized to increase the aesthetic quality of the street. Whatever the reason for their value, the identified areas were rather numerous and interconnected in such a way that they created a continuous network throughout the site.¹⁷⁵ The general areas of green space can be seen in Figure 7.4 and their corresponding landscapes can be seen in Figure 7.5, where the network is shown without reference to the map of the site. This network of green space then became to be understood as the positive space most important to the design, while the islands left existing in the negative space were less of a concern to the proposal.



Figure 7.4. Open Space Framework Diagram¹⁷⁶

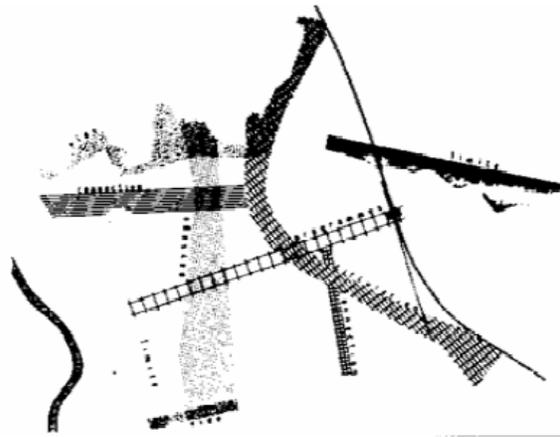


Figure 7.5. Landscape Types Diagram¹⁷⁷

¹⁷⁴ Office of Metropolitan Architects. "Ville Nouvelle Melun Senart, France, Melun, 1987." (Accessed 22 December 2009) http://www.oma.eu/index.php?option=com_projects&view=portal&id=716&Itemid=10

¹⁷⁵ Lohrberg, Frank. 2006 "Recultivation 21: Defining the Urban Landscape with Agriculture and Forestry." Impressum. (accessed 3 February 2010) <http://www.rali.boku.ac.at/7644.html>

¹⁷⁶ Lohrberg, Frank. 2006

While the landscapes became the backbone of the plan and the only truly planned areas for the design, the island spaces found within the voids of the framework were considered as well for their most appropriate urban uses. They were analyzed for the best use according to their sizes, shapes, relationships to the open space framework, and in relation to the requirements for the city. After the analysis each island was given a use and the street system within the island was designed to best fulfill the use. In this way, the design could ensure that each island has a certain relationship to the framework as well as a unique identity within the city, regardless of how the future development in the areas would occur.¹⁷⁸ In this way, the design team really explored the concept of chaos in the built environment. Chaos was not viewed as a bad thing, but more so an inevitable one. In response to this, they created a way to direct, if not completely define, how the chaos would occur within the development of the islands.¹⁷⁹ Figures 7.6 and 7.7 first show the island areas of the plan as the positive space and then with the urban street layouts defined within each.



Figure 7.6. Island Spaces shown as Positive Space¹⁸⁰



Figure 7.7. Street Definition of Island Spaces¹⁸¹

These figures have thus far shown the frameworks and spaces without any context to the actual site, and so Figure 7.8 shows how this design relates in scale to the scale of the city and Figure 7.9 shows the final proposal for the city with the areas of the framework and island defined.

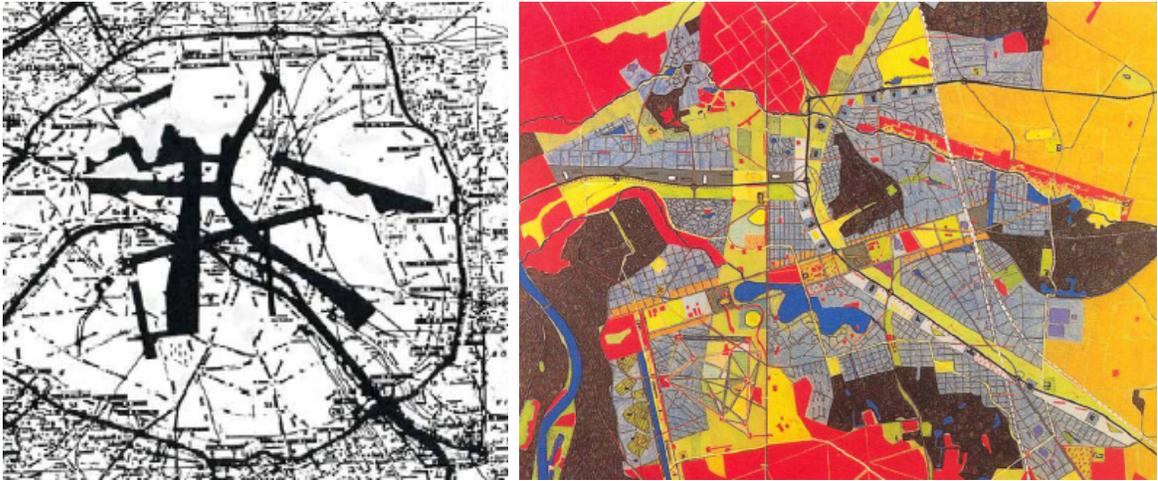
¹⁷⁷ Lohrberg, Frank. 2006

¹⁷⁸ Lohrberg, Frank. 2006

¹⁷⁹ Graafland Arie, and Ad Graafland. The Socius of Architecture: Amsterdam, Tokyo, New York. The Netherlands: 010 Publishers, 2000. 115-9.

¹⁸⁰ Lohrberg, Frank. 2006

¹⁸¹ Lohrberg, Frank. 2006



Figures 7.8, 7.9 OMA plans for Melún Senart in relation to city scale and with planned areas defined.¹⁸²

The OMA design for Melún Senart is an example of Non-Planning thinking to a certain degree. In this design the team realizes and accepts that the built environment cannot be truly master-planned, that there are too many variables and that a strong community will inevitably make their mark on the development direction of a city no matter what the master plan may say. As such, the plan subsequently makes provisions for the development of the built environment to be left to the discretion of the community so long as it operates within the framework created by the street plan within the islands. The design proposed by OMA realizes that there is an opportunity to plan the open space such that it will be preserved and portions of the beauty of the former rural town could remain. This open space could create a framework to direct future development. The concept is really partially a Non-Planning one in that the community makes the majority of decisions about the development. But it is not truly Non-Planning in that there are certain things, like the landscape and the streets, planned in order to ensure that there isn't complete chaos in the city. It, like the previous case study, creates a balance between planning and Non-Planning, where the community can have a degree of control over their neighborhoods, but the city can also rest assured that certain things will not be allowed to occur simply due to the regulating framework that has been established. As such, this is a viable method and an important example to keep in mind as the Non-Plan for Kalaeloa is established.

Overall the real life examples of types of Non-Planning that can be found in the present day are quite a lot more subdued than the original theory. This is perhaps a beneficial trait, as the original plans never had much of a footing while the contemporary examples are out there in the world today. It also goes to show that the concepts originally proposed by Banham and the rest were legitimate and respectable ideas that are still making an impact several decades later.

¹⁸² Lohrberg, Frank. 2006

SECTION EIGHT: UNDERSTANDING THE SITE: AN ANALYSIS OF KALAELOA

. BASIC INFORMATION .

The Kalaeloa site is located on the Ewa Plain in the southwestern portion of the Island of Oahu. The site itself is coastal along the southern boundary and is surrounded by various degrees of development and different types of land usage along the other boundaries. This site analysis is meant to identify the particulars of some of the main issues regarding the site. The first portion explores the types of existing uses that are occurring on the site at the present time. This portion is split into three primary areas: urban, agricultural, and environmental usage. The second primary portion identifies the surrounding areas and how they do or do not connect with the site, either physically or socially. This portion is meant to identify the existing and potential areas for interaction beyond the boundaries. The third portion regards the transportation infrastructure, and discusses the current condition and future plans for the street, bike, and bus transit networks. In much the same way, the fourth area, the basic utility infrastructure, includes an overview and analysis of the existing conditions for the water, wastewater, electrical, and communications networks. Issues with the on-site soils, hydrology, forestry, and coastline conditions are outlined in the fifth portion, which is entitled Natural Resources. And, finally, the sixth area of study is the historical and cultural resources that are present from the different areas of occupation on the site. The information gathered in this section is meant to inform the creation of a Non-Plan framework for the site.

. EXISTING USES .

Although the NAS Barbers Point was decommissioned, that does not mean that all activities on the site ceased to occur following official closure. Quite the opposite is true, in fact, and there are a number of continued existing uses that can be identified that regularly occur within the boundaries of the former installation. The way in which these uses are identified and catalogued below is derived from a system for identifying Land Use Classification that is presented by Edward Kaiser and others in the book Urban Land Use Planning.¹⁸³ As such, this portion of the analysis begins by investigating the urban uses, followed by the agricultural uses, and finally the environmental uses. A map of the area (Figure 8.1) shows the location of these various uses at the end of this portion of the analysis.

URBAN.

RESIDENTIAL.

There are two different kinds of residential services in Kalaeloa. The first is the four communities of rental homes clustered on the northern border of the site along Roosevelt Avenue. Three of the residential areas were conveyed to Caramel Partners for leasing to the general public. The former military housing is dated, and all of the units are one and two-story attached structures. One neighborhood, Orion Park has been recently refurbished and offers 120 units on 16 acres of land west of Fort Barrette Road. Another

¹⁸³ Kaiser, Edward J., David Godschalk, and F. Stuart Chapin, Jr. Urban Land Use Planning. Fourth Edition. Chicago: University of Illinois Press, 1995. 207.

neighborhood, which has not yet been remodeled but is newer in age, is the Orion neighborhood. This is a 13 acre site east of Fort Barette Road and has 116 multi-family units. The last of the neighborhoods conveyed to Caramel partners is the Makai neighborhood, which is the largest of the three but also in the worst condition. This 43 acre site offers 280 units and is adjacent to the Orion neighborhood.¹⁸⁴ Although these areas are open to the public at large, there does reside a large population of families with military affiliation in the neighborhoods. This is partially due to the fact that a discount on rent is offered to active duty families. The fourth residential neighborhood was conveyed to Ford Island Housing LLC. This neighborhood is comprised of single family detached homes that once served as officer's quarters and is now referred to as On-Station Housing. The 28 homes that are located on the 53 acre parcel are all well over 50 years old and in various states of disrepair, most not even with utility service. For this reason, only 11 homes are currently being rented on the market while the others stand abandoned on the site.¹⁸⁵

Apart from the typical residential units, there is another type of residential service being provided on the site. This is being done in the form of transitional shelters for the homeless. What began in 2006 as a single 200-bed shelter has grown into a community of five different transitional shelters, all closely situated to one another. The shelters housed in former barracks which previously held enlisted sailors, and are located in what used to be the urban core of the installation, immediately north of the airport operations area. Because the existing built structures were in decent condition and made of durable construction materials, the buildings were selected to be quickly and cost efficiently remodeled to serve the homeless needs as the beaches of the Waianae Coast were cleared beginning in 2006. Apart from the fortunate availability of buildings, Kalaeloa was also a prime location for this sort of community because of the secluded atmosphere that allows people to focus on rebuilding their lives, rehabilitating their bodies, and providing a support network to their fellow residents. As the program has expanded in the Kalaeloa area, the families are being adapted and accepted into the community.¹⁸⁶ Furthermore, there are residential services provided by U.S. Vets for homeless military veterans. The three facilities provided by U.S. Vets provide for a total of 260 beds for disabled vets. The types of housing available to these people are in the form of permanent housing, transitional housing, and a treatment facility, and, as in the case of the public shelters, the services are all provided out of refurbished buildings left after the closure of the

¹⁸⁴ State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. 2-9.

¹⁸⁵ State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. 2-9.

¹⁸⁶ Pang, Gordon Y.K, "Growing cluster of shelters in Kalaeloa a safe, quiet haven for homeless." *Honolulu Advertiser*, July 22, 2008. (Accessed 11 February 2010)
<http://www.ihshawaii.org/IHS%20News/upload/2008/07.22.08%20Growing%20cluster%20of%20shelters%20in%20Kalaeloa.pdf>

installation.¹⁸⁷ And finally, from Kalaeloa the Hawaii National Guard operates the Youth Challenge Academy, a five month-long “last chance” program where troubled teens live on-site and learn important skills relating to life, jobs, leadership, community service, physical fitness, and responsible citizenship.¹⁸⁸

COMMERCIAL AND SERVICES.

When the installation was operational there was a so-called “urban core” on the site. It was here that the one could access all of the commercial facilities, the restaurants, the medical services, different forms of entertainment such as bowling and movies, and other types of offices that comprised the residential support network. This also happens to be the area where the bachelor’s quarters that have now been converted into various types of shelters were located.¹⁸⁹ Unfortunately the majority of these services, run by the Navy, were not continued after the land conveyances. And now there sit empty the buildings that used to house the department store and the bowling alley, and so forth. There are, however, some operational facilities still offering their services. For instance, a fast-food Subway franchise still offers meal options from what used to be a mini food court but is now boarded up save for the corner where the Subway is located. Also, the commissary still operates out of this area, but is only accessible by those with military identification cards. Just across the street from the commissary is a small used car lot that still offers its services. Near to these is the privately operated Horseshoe Pitcher’s Association Club that was discussed previously in this paper and offers pitching fields to members for practice or tournaments. Only a few streets away the Hope Chapel Kapolei provides Christian services out of the old fitness center building. Some small operations have established themselves in the old industrial warehouses along Roosevelt Avenue, such as the veterinary clinic that operates from there.

All in all there are still a good number of services that are operating from the site considering that the area was decommissioned and has yet to be redeveloped. These services, in general, are somewhat ad hoc and they range from those left over from the days when the NAS still operated to those that seem to have found a way to benefit economically by making their new home in the abandoned buildings of the former installation.

INDUSTRIAL.

In the area just east of Enterprise Street, sandwiched between the former urban core and the airport boundaries, lies what used to be the main industrial support area. There is also a second area that was primarily industrial, located in the northeast portion of the

¹⁸⁷ Cunningham, Jai. “New housing Facility Opens for Homeless Veterans.” KHON2 News, September 2, 2009. (Accesses 11 February 2010) <http://www.khon2.com/news/local/story/New-Housing-Facility-Opens-for-Homeless-Veterans/OmIbF4hf10WT6R3q6AjO1Q.csp>

¹⁸⁸ Hawaii Youth Challenge Academy. “Foundation.” National Guard Youth Challenge Program. (Accessed 11 February 2010) <http://www.ngycp.org/site/state/hi/node/5001>

¹⁸⁹ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. 2-3.

site along Roosevelt Avenue. The area closer to the flight line used to house a number of operational facilities related to the function of the airport, including maintenance facilities and storage warehouses. Some of these are still in use to support the airport operations. Currently, however, there are a number of different agencies and businesses operating out of the old buildings that were abandoned after the closure. One of these such agencies in this area is the Defense Reutilization and Marketing Service (DRMS), which is a military office that works to assess those lands left over on the site that were not reutilized or conveyed for their safety and appropriateness for sale, and then attempts to market and sell the parcels.¹⁹⁰ The military is not the only organization to be using the industrial structures that have been abandoned, though. The Hawaii Carpenters Union has their training center housed in one of the former industrial buildings in this area. Nearby Straube's Aircraft Services, Inc. provides custom aircraft painting services out of a similar facility. Another business in the area, Containers Hawaii, rents and sells different sorts of containers to safely store vehicles, boats, and even to use as modular housing. In the same vicinity is the Professional Driving Academy, which offers training classes and certification for the operation of commercial vehicles and heavy machinery.

This mixture of services is much like the commercial offerings on the site, meaning that they are quite varied. Some services, like the DRMS, are there only because of the situation that the site is in currently following decommissioning. Other services, like Straube's Aircraft Services, are there because of the proximity to the airport which is their main marketing demographic. And yet other services, like Containers Hawaii, seem to be there only because of the appropriateness of the site as an industrial area and, probably, the availability of well constructed, abandoned buildings to operate out of.

TRANSPORTATION.

The transportation sector is the largest land use operating out of the site at this time. The airport itself, including the airstrips, the control tower, the administration building, the hangars, the aprons for tie downs and future expansion, and the surrounding open areas required for safety account for nearly one third of the total land area of the Kalaeloa site.¹⁹¹ The airport has been conveyed to the State of Hawaii's Department of Transportation (DOT) and renamed Kalaeloa Airport. The primary function of this airport has been designated as a reliever airfield to the larger Honolulu International Airport, but in addition to that use it is also a general aviation airport, meaning that private lessons and flights can occur from the area.¹⁹² The area is also a learning institution, and one of the hangars is owned by the University of Hawaii for their Pacific Aerospace Training Center. In the northeastern portion of the site there are two airfields which have been

¹⁹⁰ Defense Reutilization and Marketing Service. October, 15, 2009. "About DRMS." (Accessed 11 February 2010) <http://www.drms.dla.mil/about.shtml>

¹⁹¹ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. 2-3.

¹⁹² State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. 2-7.

abandoned and are no longer operational. For the most part these areas have been allowed to become overgrown with trees and foliage.¹⁹³

Like many of the things in Kalaeloa, the airport facilities are dated and in need of some reinvestment. Also, the facilities were designed by the Navy and to the standards set forth by the military, and for this reason some of the facilities do not meet the standards that the DOT operates under. For this reason the DOT began a project in 2006 to renovate some of the portions of the airport that were deteriorating. The \$10.6 million project was funded by grants from the Federal Aviation Administration, and was meant to bring the facility to a level of performance so as to ensure it would be able to continue to operate as an active airfield. The various improvements included such things as repaving the runways and taxi areas, installing more adequate lighting, and implementing an instrument approach landing system.¹⁹⁴ These necessary improvements help to ensure that the primary land use and large creator of jobs will be able to continue service on the island.

PUBLIC AND INSTITUTIONAL.

There are two different uses that fall into this category of the analysis. The first is the Post Office, which is located in the former urban core of the site and continues to provide service to those living in the area.¹⁹⁵ The structure itself is rather small and the range of services is limited to only the basic ones of sending, receiving, and renting a mailbox, but it provides adequate services for those who require it. The area served directly by the post office is limited to that which lies within the boundaries of the site. While citizens of Kapolei, Ewa and other surrounding areas are free to use the Kalaeloa facility, Kapolei is serviced by a larger main post office in their town center and Ewa, too, has its own primary post office.

The other use that falls under this particular category is the Barbers Point Elementary School, which is located just off of Roosevelt Avenue in the area north of the old urban core. This elementary facility was previously run by the Navy before the installation was decommissioned, but the land and the facilities were conveyed to the State Department of Education (DOE) just after the base was closed. The school, which provides classes to children in kindergarten through the sixth grade, has an enrollment exceeding 500 students. The pupils attending classes are not only from the Kalaeloa area, but they also come from homes in Kapolei, Honokai Hale, and Makakilo alike.¹⁹⁶

¹⁹³ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. 2-3.

¹⁹⁴ State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. 2-7.

¹⁹⁵ State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. 2-6.

¹⁹⁶ State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. 2-6, 2-7.

AGRICULTURE.**STABLES.**

While there is a lot of open land on the Kalaeloa site, very little of it is put to agricultural use. The densely wooded areas are not used for forestry activities, nor are the open areas used for pasture lands or any type of crop yielding, due to the generally poor quality of soil on the site. The only use that occurs within the boundaries currently that can be classified as an agricultural activity is the horse stables operating on-site. The Barbers Point Stables are operated by the Barbers Point Riding Club, Inc. and offers boarding services for those affiliated with the military. The stables operated out of old military bunkers from the WWII days that have been repurposed, and the business also has two outdoor arenas that are located in old aircraft revetments from the same historical period. All in all the facility offers a full range of services to the horse owner, from the equipment needed for equestrian endeavors to that used for a complete rodeo.¹⁹⁷

Save for this singular business, the agricultural types of land uses are distinctly missing from this particular site. This is important to note due to the fact that the area seems to have adequate accommodations for more agricultural uses. As a framework is developed it will be important to understand if the situation is as such because the land use was not supported under the previous landowner, or because it is not an economically viable venture in the area, or if it has something to do with the environmental makeup of the site. The feasibility of the land will be further investigated in a later portion of the site analysis.

ENVIRONMENTAL.**FOREST.**

There are large portions of the site that have become densely overgrown. Some of these areas were once open recreational areas that have been forgotten and left unmaintained, while others have purposely remained undeveloped and left to nature due to open space requirements for the airport operations. The reasons for the amount of overgrown open space on-site notwithstanding, the conveyance of these lands was and continues to be a major part of the closure process. As it stands now, there has only been one agency to actually receive portions of the forested area through conveyance and that is the U.S. Fish and Wildlife Service (USFWS). The portion of the site they were granted is in the very southwest corner between the border with Campbell Industrial Park and the end of the runways, and it bounded in the south by the ocean. This area is to become part of the Pearl Harbor National Wildlife Refuge because it contains rare and endangered plant species that need to be protected.¹⁹⁸

¹⁹⁷ "About BPRC."

¹⁹⁸ State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. 2-6.

As for the other areas, there is still another agency whom is still in negotiations with the U.S. Navy over the conveyance of various plots of land. The Department of Parks and Recreation, an agency operated by the City and County of Honolulu, has proposed a 485 acre public benefit conveyance of open space lands to be used to establish various recreational areas such as beach parks, public parks, and a sports facilities. While the two parties continue to negotiate the terms of any conveyance of lands, the Department of Parks and Recreation have taken over operation of one beach park location and two basketball courts that are located on the installation.¹⁹⁹ Despite this, there still remains a lot of open land on the site that could be utilized for public benefit in a redevelopment effort.

WETLANDS.

In general, the Kalaeloa project area does not have a wealth of wetland resources within its borders. Despite this, the University of Hawaii's School of Ocean and Earth Science Technology (SOEST) expressed interest in 2002 for the conveyance of one small parcel of land that includes a water resource. SOEST, which has a primary research mission regarding the acquisition of knowledge about the ocean and the earth in order to understand the natural environment and simultaneously promote sustainable use of the natural resources available, is interested primarily in the parcel containing Ordy Pond.²⁰⁰ This permanently flooded sinkhole on the site is a valuable area for research because it "contains 13.5 m of aquatic sediment dating from just under 10,000 years to present. This laminated sequence is the best-preserved, continuous, high resolution Holocene sedimentary record in the Hawaiian Islands, and probably in the central Pacific."²⁰¹ While the specifics of this particular water environment are not within the expertise of this project, it is sufficient to say that the preservation of the pond is an essential resource and the preservation thereof is important to marine studies researchers. For this reason, the 9 acre area has now become a field station for research and preservation activities taken by the SOEST.

This is an example of a primary natural resource with important species that should be studied and preserved. Areas like this on-site are important to consider when creating a framework for development for the area.

COASTLINE.

The coastline on the site is being utilized in a number of different ways. In two areas along the coast the crossing airport runways actually run straight up to Coral sea Road, making the stretches of coast to the south of them little more than a sliver of land. Furthermore,

¹⁹⁹ State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. 2-8.

²⁰⁰ The University of Hawaii at Manoa. The School of Ocean and Earth Science Technology. October 19, 2009. "About the School." (Accessed 13 February 2010) http://www.soest.hawaii.edu/soest_web/soest.school.htm

²⁰¹ The University of Hawaii at Manoa. The School of Ocean and Earth Science Technology. Marine Geology and Geochemistry Division. September 19, 2007. "MGGD Research Areas: Paleoenvironment." (Accessed 13 February 2010) http://www.soest.hawaii.edu/oceanography/mggd/mggd_paleo.htm

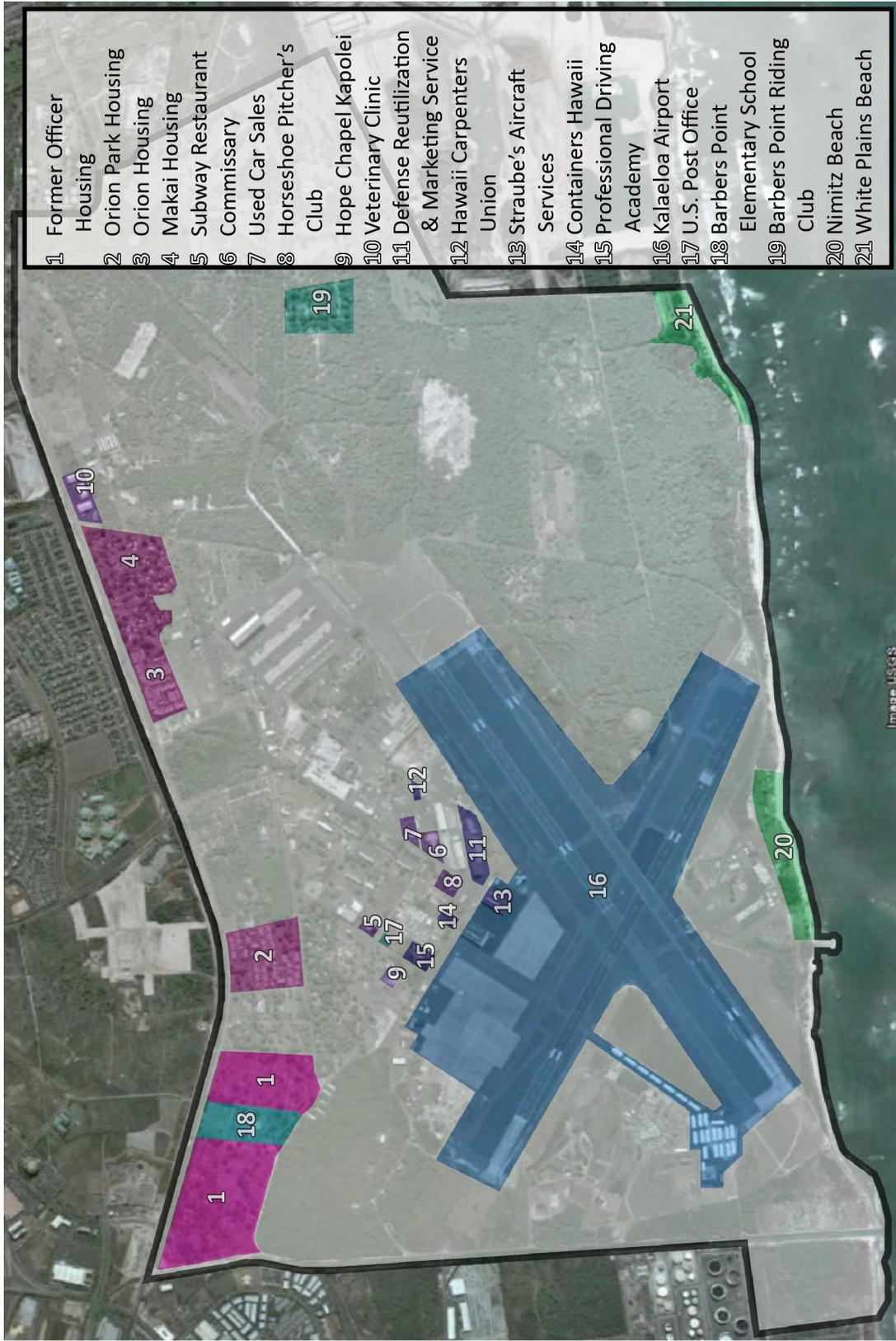


Figure 8.1 Existing Uses Map

the area in between the two runways along the coast is the location of the U.S. Coast Guard Airwing Headquarters. This important facility is in charge of enforcing boating safety laws, homeland security, and search and rescue for the Pacific region.²⁰² While the Coast Guard Station utilizes a good portion of the coastline in this area for their activities, the actual facility itself is located north of Coral Sea Road and the area south is the publicly accessible Nimitz Beach, though the land has been retained by the Navy. There is another public beach park that is in the eastern portion of the site's coastline. This beach, called White Plains Beach, has also been retained by the Navy. The facilities at the beach, which include surfboard rentals, a snack bar, and even rental cottages, continue to be operated by the military.

Although a large portion of the coast was retained by the Navy after closure, the entire stretch between Nimitz Beach and White Plains Beach were conveyed after the closure of the installation. The land north of this area was conveyed as well. Although there are not any activities currently taking place in these areas, the current master plan marks them for use as publicly owned and operated recreational parks.²⁰³

Overall, this long portion of the site analysis may seem as if it is a simple recounting of what is happening on the site, and it may seem as if it isn't of much importance to a non-plan framework design. This is exactly the opposite of true, however, and these functions are vital to understand as a design is developed. These functions have occurred on the site despite the fact that the redevelopment efforts have not moved forward following the closure of the installation. In effect, what is occurring right now on the site is a non-plan of the sort that occurs by default when the proposed planning doesn't proceed. It is thus important to understand how the default non-planning occurs and how this can and should relate to a conscious non-plan framework design.

. SURROUNDING AREA LINKAGE .

This portion of the site analysis is focused on the areas surrounding the Kalaeloa borders. As the framework for a non-plan is developed it is important to understand how the area currently and should in the future interact with those established communities located adjacent to the boundaries. For this reason, this section will focus on the three areas that lie adjacent to Kalaeloa to understand where linkages do and do not occur. These three areas are the urban areas of Kapolei, Campbell Industrial Park, and Ewa. A fourth portion of the section will briefly discuss those areas that are not adjacent to the development area but still could have an effect on the development framework for the area. This portion will include KoOlina and Makakilo. The relationships between these different areas can be seen in Figure 8.2 on the following page.

²⁰² State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. 2-6.

²⁰³ State of Hawaii. March 2006. Hawaii Community Development Authority. *Kalaeloa Master Plan*. 4-9, 4-10.

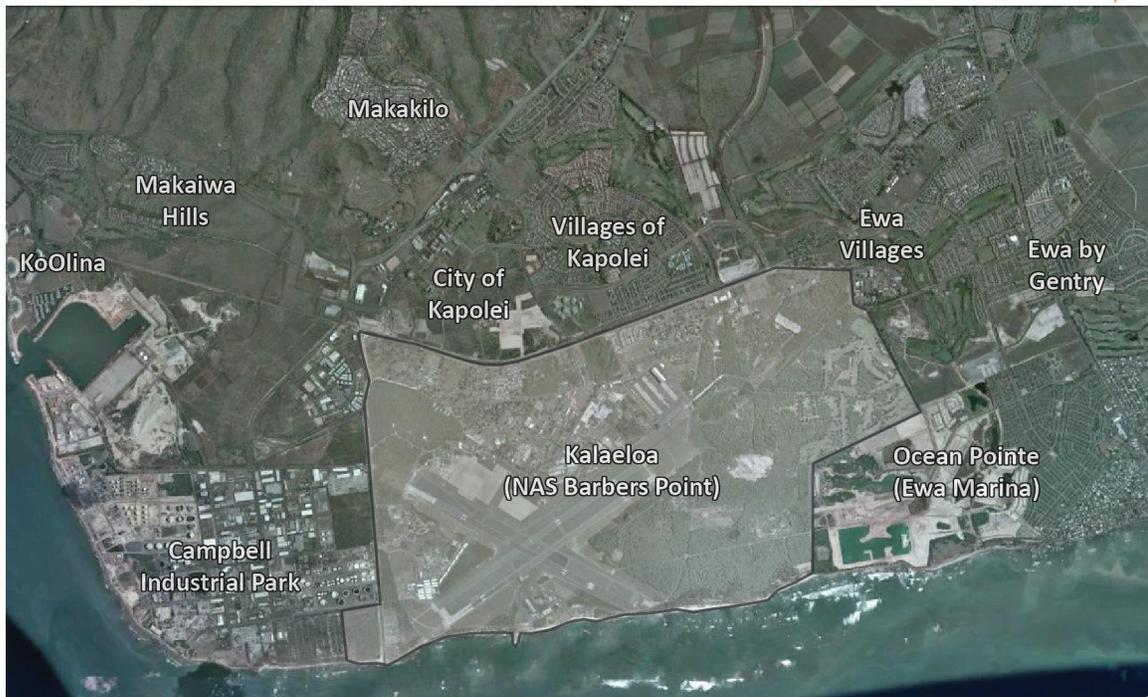


Figure 8.2 Surrounding Area

KAPOLEI.

Immediately north of the Kalaeloa development area lies the City of Kapolei. This city is a rather new area to be developed on the island of Oahu, but plans for large scale development in the area go back many decades starting with the Campbell Estate. For a large span of time the area was zoned as agricultural land, and there was a strong movement to prevent development in the area. The latest push for development in the area was envisioned and planned under the Jeremy Harris administration in the years 1994 to 2004. Development had already begun to make a distinct mark on the lands that were once solely agricultural and it was becoming apparent that a development plan would be vital to the success of the area. The plan under the Harris administration called for not only residential units but commercial and business ones as well. The vision set forth by former Mayor Harris for Kapolei was that of “second city” for Oahu, an urban core with the required amount of residential units, commercial services, and office buildings to support another major city on the island. This vision was planned so as to solve many of the islands problems: it would provide more housing for the booming population and it would be environmentally effective by creating a new city in which people could work and not have to commute to downtown Honolulu each day.²⁰⁴ In the years following the planning efforts, the majority of the construction efforts in Kapolei have focused on satisfying residential needs. And a large portion of the current

²⁰⁴ Harris, Jeremy. The Renaissance of Honolulu: The Sustainable Rebirth of an American City. Honolulu: City and County of Honolulu, 2004. 196.

development being planned or under construction are focuses on this goal as well. The theory behind the approach is that the residential sector must be developed first in order to provide the support for the commercial and office sectors when they begin to develop more quickly. As it stands today, however, Kapolei is really just a bedroom community exurb with the majority of its residents commuting to work closer to the already established urban core of Honolulu.

Interestingly, in all of the construction efforts occurring in Kapolei, the former air station area has had little interaction with the development of the city. This is despite the fact that the two areas share a lengthy boundary along Franklin D Roosevelt Avenue. Along this border, however, are physical boundaries that have separated the two and could play apart in their continued independence from one another. The first boundary is the old Oahu Railway & Land Company (OR&L) train tracks that continue to operate today. The second barrier is the old military security fence that still exists just south of the railroad tracks. And, third, is the drainage ditch that is situated outside of the of the former installation boundaries, and runs along the southern boundary of the Villages of Kapolei residential community. Due to these various boundaries or other issues, Kalaeloa has not had an impact on or been impacted by the Kapolei development. In fact, the only direct influence that the station has had on the development is the layout of the residential community, the Villages of Kapolei, and some of the land uses for the area. This is due to the fact that the flight paths for the airstrip still in operation at Kalaeloa have an impact on things such as building heights, not to mention that the noise can disturb residents.²⁰⁵ Apart from this singular issue, the two areas have remained completely independent from one another.

CAMPBELL INDUSTRIAL PARK.

The Kalaeloa development area and Campbell Industrial Park are adjacent to one another along the southern half of the western edge of the former air station. On the western side of this adjacency the Campbell Industrial Park is a major employer for the region. The area is the largest industrial park in the entire state at 1,367 acres in total.²⁰⁶ Within that area there are over 250 businesses that operate and employ over 4,000 people. The majority of the businesses operating out of the Park are heavy industrial uses, such as concrete companies like Island Ready-Mix Concrete and Architectural Precast, or petroleum corporations such as Chevron Products Company and Tesoro Hawaii Refinery, or the city-owned trash recovery power plant, Covanta Energy (H-Power). Despite this majority of heavy industrial, there are light industrial uses operating out the area as well, like the Surfboard Factory Outlet, Ohana Frozen Drink Rentals, and Pictures Plus.²⁰⁷

²⁰⁵ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. *Naval Air Station Barbers Point, Oahu, Hawaii: Community Redevelopment Plan. 2-4.*

²⁰⁶ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. 2-7.

²⁰⁷ Kapolei Property Development, LLC. 2010. "Campbell Industrial Park." (Accessed 10 February 2010) http://www.kapolei.com/kapolei_businesses.cfm?locationID=2

Although Campbell Industrial Park is a major center of employment and activity, there is very little interaction with Kalaeloa along their shared border. On the eastern side of the adjacency in the Kalaeloa area the land is generally overgrown wooded areas. The land is covered in dense vegetation and trees, most in the 20 to 30 foot height range. This is due in part to the regulations regarding development in the area next to the airfield due to landing patterns. This thick coverage from the vegetation does well to screen views from the station out toward the industrial activities as well as the other way around. And if this visual barrier isn't enough, there is also a physical barrier separating the two areas. Like the rest of the boundaries of the former station, there is a security fence along this edge of the site as well. While this fence served a necessary purpose when the area was a functioning military installation, it now seems only to serve as a physical separation between Kalaeloa and its neighbors.

EWA.

Another well established community lies to the east of Kalaeloa, and a portion of the community even shares a border with the site. Ewa is a large suburban community devoted primarily to meeting the residential needs of the residents of Oahu. The city itself is comprised primarily of three different neighborhoods: Ewa Villages, Ewa by Gentry, and Ocean Pointe (formerly referred to as the Ewa Marina).²⁰⁸ Ewa Villages lies north of Roosevelt Ave and Renton Road, and a portion of the community shares a boundary along Kalaeloa's northern border. Ewa by Gentry is a massive housing development made up of numerous different communities with unique names and styles. All in all the neighborhoods developed by Ewa by Gentry already provide over 6,000 homes to Oahu residents, and a portion of its border is adjacent to the northern half of Kalaeloa's eastern boundary. And the last area to be situated adjacent to the site under study is Ocean Pointe, which lies along the southern half of the site's eastern boundary. Ocean Pointe is a 15 to 20 year project that is still under construction, but the final plans include numerous housing neighborhoods which feature everything from townhomes to duplex homes to small single-family cottages to luxury single-family estates, a golf course owned by the renowned golfer Ernie Els, and a new marina complete with a commercial district and a luxury resort.²⁰⁹

While it is clear that Ewa is relatively far along in the development process, it is quite clear that the city has a distinct lack of office buildings and commercial services. Ewa is primarily a residential area, and has a residential area that is well over double the size of that in Kapolei proper. All in all, the final plan for the neighborhoods of Ewa calls for a total number of residences in excess of 15,000 homes.²¹⁰ The layout is due to the fact

²⁰⁸ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. Figure 2-2.

²⁰⁹ Ocean-Pointe. "The Master Plan." Ocean Pointe Sales. (Accessed 10 February 2010) <http://www.ocean-pointe.com/proposedmasterplan.html>

²¹⁰ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. 2-6.

that the overall plan for the Ewa plain intends for these neighborhoods to depend largely upon the urban core that is to be further developed in Kapolei. That is to say that the basic services needed by residents are provided for in Ewa in various commercial strips and office complexes, so the majority of the jobs and various services are to be located in Kapolei.

Again, while the proximity between the Kalaeloa site and these various neighborhoods in Ewa is close, there is little to no interaction between the two. There are a couple of different reasons for this, and one is the already oft cited physical boundary that remains in the form of a security fence from the days when the area was a military installation. The other reason for this minimal interaction is that the areas of Ewa that lie adjacent to Kalaeloa are the areas that are just now being or yet to be developed. Furthermore, on the station side of the adjacency, the land is mostly wooded areas with overgrown trees and foliage to the south, and along the northern portion of the border is the 18-hole Barbers Point Golf Course facility. These land uses, or lack thereof, effectively creates a large separation buffer between the two areas and prevents direct interaction.

BEYOND THE BOUNDARIES.

While Kapolei, the Campbell Industrial Park, and Ewa are the only three areas to directly border Kalaeloa, there are other development areas in the vicinity that could have a connection or an impact on an area redevelopment. To the northeast there is the residential community of West Loch in northern Ewa near Honouliuli. To the east there is yet another residential community called Iroquois Point, which lies due east of the already mentioned Ocean Pointe. Directly north of Kapolei is Makakilo, which is a residential area that has several public services but very little in the form of job and commercial centers. Due west of Makakilo are the planned neighborhoods of Makaiwa Hills and Honokai Hale, which are envisioned to be primarily single-family residential with some medium density apartment projects. And finally, west of Kapolei and south of the Honokai Hale area is KoOlina, a major resort destination for west Oahu. The KoOlina area is comprised of some residential, a portion of which are summer homes and vacation rentals, and a neighborhood commercial center that is currently under construction. The area also contains several high end vacation resorts with more, like the Disney Vacation Resort and Spa 'Aulani', under construction.

While all of these areas seem to have enough services to satisfy the basic needs of the residents that live there, they also all have in common the fact that Kapolei is planned to be the true urban center for these areas. And, since the former station is directly south of Kapolei, it could mean that there is potential for a redevelopment of the former installation to serve the needs of these communities and thereby create linkages to them.

To truly understand the condition of the Ewa plain and how thoroughly focused the development has been on satisfying residential needs, the Table 8.3 shows the different housing developments that border or are situated near Kalaeloa. Some of them are still

under development, but this table clearly shows what the overall residential situation will be by the year 2020.

The established communities around the Kalaeloa site are important concerns when creating a framework for the site. It is important that a redevelopment of the area work to make the former station site an essential part of the urban fabric on the Ewa Plain. One of the primary ways to do this is to ensure that there are interdependencies between Kalaeloa and all of the areas discussed in this section of the analysis. The dependencies can work in either direction, with the outside community at times being the provider and the study site taking that role at other times. The important thing is that, no matter the direction of the dependence, there is an ultimate link established.

PROJECT	TOTAL UNITS	PROJECT	TOTAL UNITS
	2,939	MAKAKILO	3,446
EAST KAPOLEI I	403	MAKAKILO SUBTOTAL	3,446
EAST KAPOLEI II	2,170	MAKAIWA HILLS	4,100
KAPOLEI KNOLLS	425	MAKAIWA HILLS SUBTOTAL	4,100
KAPOLEI WEST	2,370	KOOLINA	4,450
VILLAGES OF KAPOLEI	4,143	KOOLINA SUBTOTAL	4,450
KAPOLEI SUBTOTAL	12,450	REGION TOTAL	39,397
EWA BY GENTRY	7,087		
EWA MAKAI BY GENTRY	1,590		
EWA VILLAGES	1,424		
OCEAN POINTE	4,850		
EWA SUBTOTAL	14,951		

Table 8.3 Completed & Planned Housing Developments for the Ewa Plain. Adapted from cited source.²¹¹

. TRANSPORTATION INFRASTRUCTURE .

The transportation network is an important component to understand when analyzing an area. The way in which people move through the site, whether it be in an automobile, on a bicycle, or by foot, must correspond adequately to the built environment in order for the neighborhood to function properly. The land uses and the transportation network are thus interdependent, as one becomes useless without the other. That is to say, residential and commercial areas cannot thrive if they don't have roads and sidewalks to accommodate vehicular or pedestrian access, and, on the other hand, roads become unnecessary if they do not support any structures or services.²¹² The same source, Urban Land Use Planning

²¹¹ Commander, Navy Region Hawaii. 3-12: Table 3-3.

²¹² Kaiser, Edward J., David Godschalk, and F. Stuart Chapin, Jr. 231.

from 1995, states that the automobile network is the most important aspect of study relating to transportation as it accounts for well over the majority of urban trips. That point has less validity in today's society, however, where the pursuit to green the planet is continuously promoting biking, walking, and public transit as viable alternatives to the personal automobile. Therefore, this study attempts to gain an overview of several different transportation networks contained within the site.

STREET SYSTEM.

Figure 8.4 shows the present roadway system in the area. There are two major *arterial roads* as well as two minor ones that service the entire area. Arterial roads are designed to allow the flow of traffic between primary locations and are generally do not service residential functions.²¹³ The first major arterial, Enterprise Street, begins as Fort Barrette Road when it exits the H-1 freeway about 1.5 miles northwest of the former main gate of the community. Immediately following the main gate, Fort Barrette turns into Enterprise Street which services the north-south traffic flow for the area that constitutes the main urban core for the locale. Saratoga Road is a minor arterial that services this same core area only in an east-west direction. Another major arterial road is Franklin D. Roosevelt Avenue, a main thoroughfare that runs along the northern boundary of the community and connects to Campbell Industrial Park in the west and eventually turns into Geiger Road which connects to Ewa in the east. And the final minor arterial is Midway Street into which Enterprise Avenue dead-ends. This street creates an almost u-shape as it runs along the crossing airport runways, flight lines, and surrounding support structures. These four roads are very important to movement throughout the site, however, they do not constitute the entire roadway system.

There are also dozens of *collector streets* that connect between the main arterials and to the less prominent areas of the site.²¹⁴ One of the primary examples of this type of street can be found in Coral Sea Street which runs from FDR Avenue on the eastern portion of the site, down along coastline just to the south of the airfield and connects to Campbell Industrial Park. This is an important route for beach goers and some industrial vehicles, but is not considered an arterial. There are dozens of other examples of collector streets throughout the site, and most of them have been maintained to such a degree that they are still easily passable by both passenger vehicle and commercial or industrial automobiles.

On an even finer scale, there are several *local streets* in the area, whose purpose it is to connect the areas between collector streets.²¹⁵ These streets typically served the residential areas in the form of cul-de-sacs and the business areas as grid layouts. As a general observation about this type of road, many of the local streets in Kalaeloa have

²¹³ Kaiser, Edward J., David Godschalk, and F. Stuart Chapin, Jr. 231.

²¹⁴ Kaiser, Edward J., David Godschalk, and F. Stuart Chapin, Jr. 231.

²¹⁵ Kaiser, Edward J., David Godschalk, and F. Stuart Chapin, Jr. 231.

been allowed to fall into a state of disrepair while others have been blocked off altogether and the natural environment allowed to overtake the areas.

In addition, the majority of the main arterial streets do not have pedestrian sidewalks or pathways included for the safe passage of people traveling on-foot. Also, there are a number of collector and local streets that do not have sidewalks either. There are some networks of local streets that have sidewalks, however, this is primarily seen in the two main residential neighborhoods. Furthermore, these sidewalks tend to only serve the housing community and do not connect the housing division to the surrounding areas. Other sidewalks that are in existence, primarily along collector streets, in Kalaeloa have been allowed to fall into disrepair from lack of maintenance.

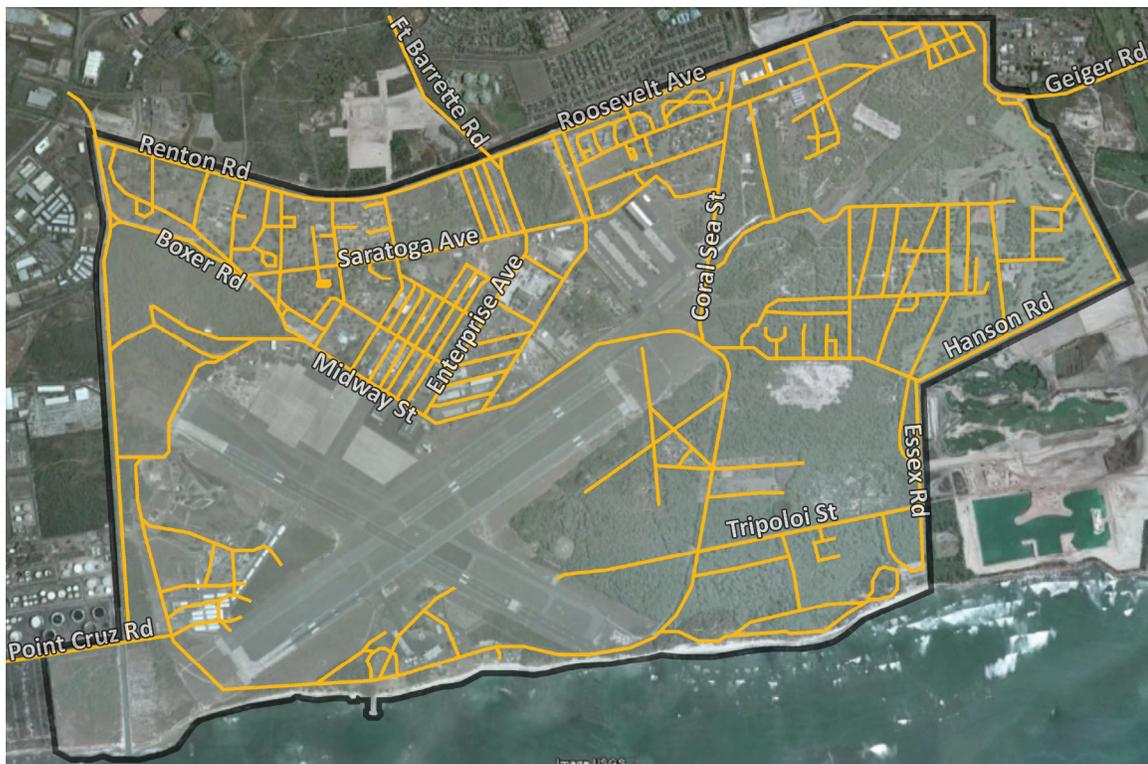


Figure 8.4 Street System

Adapted from cited source.²¹⁶

BICYCLE SYSTEM.

There is currently not an existing bicycle network that services the Kalaeloa District along its borders or on the interior of the site. However, the City and County of Honolulu Department of Transportation has proposed a master plan for creating, enforcing, and maintaining a bicyclist transportation network for the island of Oahu. This plan details an extensive system that would serve the Ewa, Kapolei, Kalaeloa area of the island. The plan

²¹⁶ "Barbers Point, Oahu." maps.google.com (Accessed 24 February 2010)

calls for three different types of infrastructure to serve bicyclists in the area: bike lanes, bike paths, and bike routes. The lanes are located on-street and are a separate lane for bicyclists moving in the direction of traffic and delineated from the automobile lanes by a thick white line and a special bike symbol in the lane. The bike paths are located parallel to but off of the street, and they are individual lanes that allow for bicycle traffic in both directions side by side. And the final type, bike routes, are located on-street in a wide outside lane both shared with automobiles and wide enough for cars to safely pass the bicyclist. The routes are marked with signs along the street and pavement marking at



Figure 8.5 Bicycle System (City and County of Honolulu Plan)

Adapted from the cited source.²¹⁷

times.²¹⁸ The proposal for Kalaheo combines these three different types of thoroughfares in order to create a system that connects the areas of the site itself for bicyclists as well as the site to the surrounding cities of Kapolei, Ewa, the Campbell Industrial Park, and even the KoOlina Resort. Figure 8.5 shows the proposed system. Although this network is now only a proposal, it is important to understand the plans for infrastructure improvements in the areas as a framework proposal is drafted.

²¹⁷ City and County of Honolulu. Department of Transportation. July 2009. "Figure 1: O'ahu Bikeway Network: 'Ewa.'"

²¹⁸ City and County of Honolulu. Department of Transportation. July 2009. *O'ahu Bike Plan: A Bicycle Master Plan*. (accessed 8 February 2010) 5-1, 5-2.
http://www.oahubikeplan.org/downloads/Draft%20Bike%20Plan_July09_stnd.pdf

Some example of the proposed routes include a bike path that branches off from the existing path along Fort Weaver Road in Ewa and follows Roosevelt Avenue the entire length of the site and beyond all the way to KoOlina and even further on toward Waianae. Another example is a bike lane that extends from the existing path along Geiger Road in Ewa and continues through Kalaeloa along Saratoga Avenue where it shortly after branches off in one direction north to meet up with the path along Roosevelt Avenue while the southern branch runs through Campbell Industrial Park and continues on westward until it reaches the Barbers Point Harbor. A bike route would extend off of Fort Barrette and run the length of Enterprise Street and a path would be constructed along the length of Coral Sea Street around the southern portion of the airstrip and along the area's coastline.²¹⁹

BUS SYSTEM.

The city bus network on the Ewa plain in general is quite sparse and not as comprehensive as some of the other places on the island that are closer to the urban core. The bus service for Kalaeloa (Figure 8.6) , however, is quite possibly the worst of any other neighborhood in the area. There are a total of three buses that stop in areas considered part of Kalaeloa and two such buses only stop along the periphery of the site. The one bus stop located within the interior of the site is for the 415 bus that only runs between Kalaeloa and the Kapolei transit center. The particular bus line only runs three times in the early morning hours and three times in the evening, and the stop is only about a half mile into the site along Enterprise Street serving very little of the patrons on the site.²²⁰

The route 44 bus has a stop at the most northeastern corner of the Kalaeloa site, but the stop is not located near any residential or commercial services and it is intended for use primarily by people living at or visiting the Hawaiian Railway Society across Roosevelt Avenue. On the other hand, the route 41 bus has several stops along Roosevelt Avenue between Fort Barrette and Fort Weaver in Ewa to the east.²²¹ However, the bus does not service the half of Kalaeloa that lies between Fort Barrette and Campbell Industrial Park to the west, leaving about half of the residential areas on the site without and practical access to a city bus line whatsoever.

Kalaeloa has developed a free, private shuttle bus to serve the area, but the services are geared primarily toward the people living in the five transitional shelters within the site. The shuttle runs hourly during the weekdays and every 1.5 hours on Saturdays, giving these particular people in Kalaeloa a much broader access to public transit. The bus only goes to the Kapolei Transit Center, however, and then the people must then catch a city

²¹⁹ City and County of Honolulu. Department of Transportation. July 2009. "Figure 1: O'ahu Bikeway Network: 'Ewa.'"

²²⁰ TheBus. "Routes and Timetables." City and County of Honolulu. (Accessed 8 February 2010) <http://www.thebus.org/Route/Routes.asp>

²²¹ TheBus.

bus to their ultimate destinations.²²² While this shuttle is an improvement for the homeless, it does not serve the general public who are also in need of broader access to public transit options. And so, overall, the city bus transit system for the area is quite weak and does not function to meet the needs of the public in the area.

Overall, the transportation systems in-place on the site today are barely functional for the sparse activity occurring in the area. The strongest system at the moment is that which is geared to automobiles, and the networks for alternative forms of transit are extremely weak and do not meet the needs of even the sparse number of people in the area. This network would need to be improved vastly if it were to support an influx of residents and redevelopment.

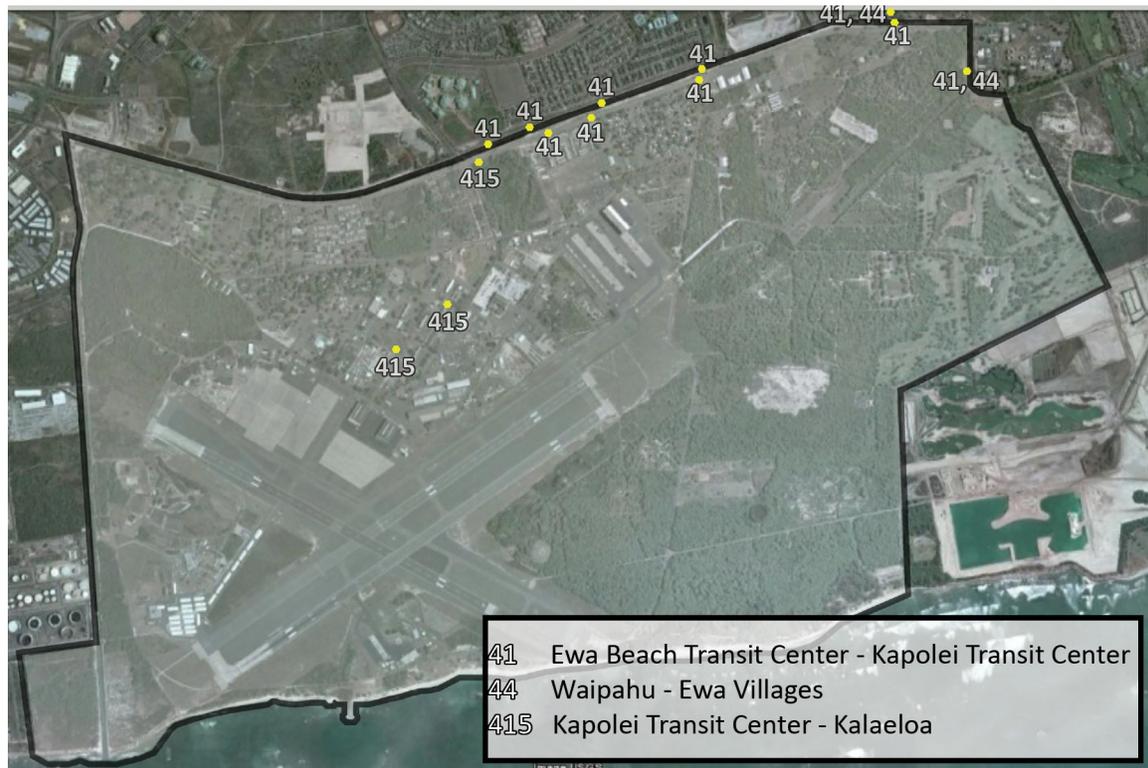


Figure 8.6 Bus System

Adapted from the cited source.²²³

. BASIC UTILITY INFRASTRUCTURE .

An important aspect to consider when attempting to understand and create a framework for the site is the utility infrastructure already present. Because this is a former government area, it becomes necessary to investigate the potential for crossover of former government owned and operated systems to the private sector. The adequacy of the system to serve

²²² "Shuttle Vehicles Now Serving Kalaeloa Transitional Shelters." 2008. Hawaii Community Development Authority. (accessed 8 February 2010) <http://hcdaweb.org/kalaeloa/news/shuttle-vehicles-now-serving-kalaeloa-transitional-shelters-1>

²²³ TheBus.

redevelopment functions also becomes a crucial element to recognize. For the Kalaeloa site there are four primary systems that should be understood: the water delivery network, the sewage and wastewater treatment system, the electrical system, and the telecommunications network.

WATER DISTRIBUTION SYSTEM.

The primary source of water for the Kalaeloa area is a deep well powered by turbine pumps located north of Farrington Highway by about 3 miles. It is an aging well that was built in the 1940s. The water is delivered to the site by 24 inch pipes that traverse Campbell Estate lands and eventually end up at the boundary of the former Air Station. This well system is owned and maintained by the U.S. navy even after lands from the former station were conveyed. Also still owned and maintained by the Navy is the distribution network within the site itself. The entire network, shown in Figure 8.7, includes over 50 miles of pipe in total, the majority of which is now well over 50 years old.²²⁴

Furthermore, the water distribution system currently on the site was designed and constructed in accordance with the Navy standards and regulations, which are quite different from those held by the Board of Water Supply (BWS). This was the primary reason that the BWS decided not to take control of the water system, but instead left it under ownership of the Navy to maintain and operate. This is not to mention that the condition of the distribution lines on the site is generally unknown, and in many cases assumed to have exceeded the expected useful life for these types of fixtures. And it is certain that the existing system is not adequate to serve an increased population that would inhabit the area due to redevelopment. For this reason, those lands that were conveyed from the Navy require a new water supply system that meet the requirements of the BWS and will be adequate to support an increased usage caused by area reinvestment.²²⁵

Because of the ownership situation, the Navy is presently being required to supply water to non-retained lands, essentially supplying water for other agencies. For this reason, there was a proposal in 2004 to connect the BWS system in Kapolei and Campbell Industrial Park to the existing system in Kalaeloa by means of two transmission lines.²²⁶ The proposal can be seen in Figure 8.7. Though, the project was not initially approved due to the perceived environmental impact and the BWS was instructed to further

²²⁴ KFC Engineering Management, Inc., for the City and County of Honolulu Board of Water Supply. June 2004. "Final Environmental Assessment: Kalaeloa Redevelopment Area Transmission Mains." (Accessed 9 February 2010) 10. http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Oahu/2000s/2004-06-23-OA-FEA-KALAELOA-REDEVELOPMENT-TRANSMISSION-MAINS.pdf

²²⁵ KFC Engineering Management, Inc., for the City and County of Honolulu Board of Water Supply. June 2004. 8.

²²⁶ KFC Engineering Management, Inc., for the City and County of Honolulu Board of Water Supply. June 2004. 4.

investigate the impact of the proposal. Thus, the water distribution issue remains an important concern for the area that must be remedied before redevelopment can occur.



Figure 8.7 Water Distribution System

Adapted from the cited source.²²⁷

WASTEWATER SYSTEM.

The wastewater from the site is treated through the City and County of Honolulu owned and operated Honouliuli Wastewater Treatment Plant (WWTP). However, the actual on-site infrastructure has been retained by the Navy. The system operates such that the sewage and wastewater generated by the site is collected by an on-site sewer system in sewage lift stations. Once the sewage is collected, it is then transferred to the Honouliuli WWTP. As soon as the sewage reaches the WWTP, it is treated and then disposed of at the Barbers Point Ocean Outfall.²²⁸

As far as the system itself is concerned, which can be seen in Figure 8.8, it is in much the same condition as the water distribution network. And although the actual condition of the pipes in many areas of the site is unknown it is generally perceived that the system is nearing the end of the useful life expectancy.²²⁹ In a study conducted at the time of the

²²⁷ Commander, Navy Region Hawaii. *Conveyance of Navy Retained Land and Utility Systems at Kalaeloa, O'ahu, Hawai'i. Environmental Assessment.* Figure 3-3.

²²⁸ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. 2-13.

²²⁹ State of Hawaii. March 2006. 28.

creation of the March 1997 Redevelopment Plan for the community, it was found that the sewage system currently present on the site was adequate for the existing usage at the time.²³⁰ This is to imply that any redevelopment that would cause an increase in occupancy and general utilization would then require improvements and expansion to the system.



Figure 8.8 Wastewater Distribution System

Adapted from the cited source.²³¹

ELECTRICAL SYSTEM.

Like the other utility systems on the Kalaeloa site, the on-site electrical system is owned and operated by the Navy. The one exception to this is the Barbers Point Elementary School, which is powered directly by the electrical provider on the island of Oahu, Hawaiian Electrical Company (HECO). Besides this singular exception, the former base has its own system of electrical power lines that receive power from three different HECO feeds located at points along Roosevelt Avenue, the northern boundary of the site. This system, too, was designed and developed according to the standards set forth by the navy, which do not correspond to those maintained by HECO.²³²

²³⁰ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. 2-13

²³¹ Commander, Navy Region Hawaii. *Conveyance of Navy Retained Land and Utility Systems at Kalaeloa, O'ahu, Hawai'i. Environmental Assessment.* Figure 3-4.

²³² Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. 2-13, 2-15.

So, although HECO provides the power to the system, the company was unwilling to take control of the system following conveyance. This resistance by HECO is primarily a result of the questionable condition of the system and the compliance of the design with the standards required by the company. These questions have led HECO to be concerned about the liability they would incur if they took ownership of the system.²³³ The system was found to be adequate as far as power supply in a study conducted in coordination with the March 1997 Redevelopment Plan. The study showed that the average post-BRAC demand is around 9.8 MVA and the system as designed can satisfy a demand up to 25 MVA.²³⁴ However, if it becomes necessary to satisfy additional demand then the future electrical system will have to be developed in such a way that it meets the requirements set forth by HECO.

COMMUNICATIONS SYSTEM.

The two primary communications systems found on-site are the telephone service and the cable television service. The telephone system is a dual system, one of which caters to the needs of the families in residential areas while the other was primarily geared for service to former and still extant government businesses on the site. Those lines that provide service to the non-secure uses for residents were originally Hawaiian Telephone Company lines, and the more restricted, operational lines were originally line associated with the government's Oahu Telephone System. The two systems are separate and operate out of two completely different locations. However, like all utilities discussed regarding the site thus far, the entire system is the property of the U.S. Navy Computer and Telecommunications Area Master Station. Following the conveyance of land, the residential phone lines were allowed to continue to operate through a service agreement made between the U.S. Navy and Hawaiian Telecom.²³⁵

As for the cable telecommunication lines, each and every line on the site is owned and operated by the private Oceanic Cable company. The system is a combination of overhead and underground. All overhead lines belong to Oceanic, but are mounted on government-owned communication poles. The underground system utilizes a series of underground ductlines, a portion of which are owned by Oceanic while the rest are owned by the Navy.

In general, the telecommunications system meets more modern requirements for such a network, and both have the potential to much more easily integrate into the surrounding private sector systems than some of the other utility networks discussed in this section. Figure 8.9 shows the locations of the system controllers for the electrical and communications systems on the site.

²³³ State of Hawaii. March 2006. 28.

²³⁴ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. 2-13, 2-15.

²³⁵ State of Hawaii. March 2006. 28.

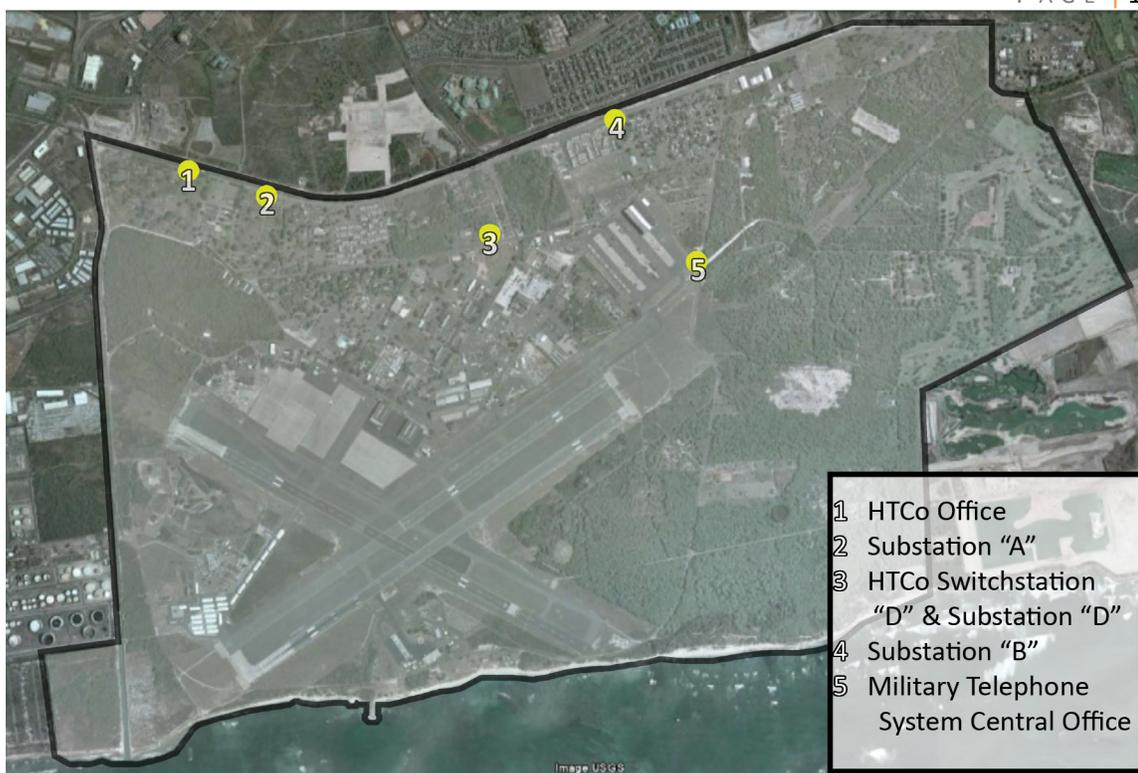


Figure 8.9 Electrical and Communications Distribution System

Adapted from the cited source.²³⁶

. NATURAL RESOURCES .

The Kalaheo site is rich in natural resources, some of which have been mentioned in previously. This portion of the analysis, however, looks in detail at the makeup of the natural environment, and the potential of different areas to supporting different land uses.

SOILS.

In a custom soil resource report from an online database provided by the United States Department of Agriculture, the Kalaheo area was found to have 6 different soils and soil conditions. The locations of these types are shown in Figure 8.10 on the following page. The most prevalent of these, Coral Outcrop (CR), comprise 65.4% of the area. This type of soil has little to no soil cover and is generally not suitable for any type of agricultural usage. Second to this type of ground cover, Fill Land (FL) is the next most prevalent type found on the site, which accounts for 19.1% of the area. The location of this soil type is limited to the areas used for the airport functions, including the lands for the runways, tie-down areas, and control tower. Due to the properties of this type of cover these areas have only limited potential for supporting dwellings and small commercial buildings,

²³⁶ Commander, Navy Region Hawaii. *Conveyance of Navy Retained Land and Utility Systems at Kalaheo, O'ahu, Hawai'i. Environmental Assessment.* Figure 3-5.

landscaping, camp areas, or excavated ponds due to the propensity for flooding on this

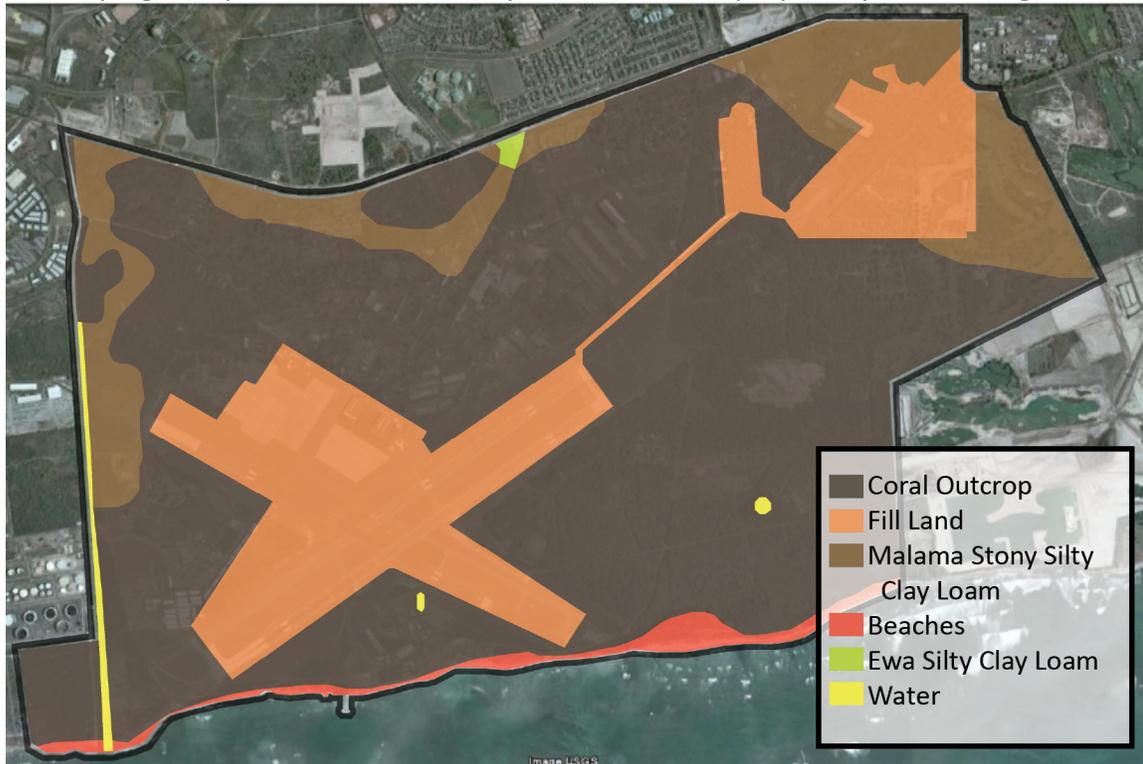


Figure 8.10 Soils

Adapted from the cited source.²³⁷

type of land. It is, however, more adept to usage for paths or trails, and forestland harvesting. The third most common soil found on the site is Malama Stony Silty Clay Loam (MnC), which covers 12.9% of the site. This type is primarily clustered along the western and eastern boundaries of the site. Like the Fill Land, this soil too is not well disposed to the building of dwellings and small commercial buildings because it is predisposed to flooding and the depth to the bedrock is quite deep. The same reasons make it a bad choice of location for roads and streets, landscaping, camping and picnic areas, and pond excavations. The rest of the soil conditions tend to occur randomly on the site and are found in very small amounts: beaches (BS) account for 1.5% of the site area, water (W) comprises 0.6%, and Ewa Silty Clay Loam (EmA) is only 0.2% of the area.²³⁸

From the soils report it seems that the primary issue with the soils preventing them from being suitable for certain uses is a flooding issue. There is, in some areas, the issue of a

²³⁷ United States Department of Agriculture Natural Resources Conservation Service. February 5, 2010. "Custom Soil Resource Report for Island of Oahu, Hawaii." Web Soil Survey. Interactive Map. Version 2.1. (Accessed 10 February 2010) <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

²³⁸ United States Department of Agriculture Natural Resources Conservation Service. February 5, 2010.

low strength or inconvenient access to the solid bedrock. Some other cited issues are soils that are too clayey or sandy. These are all important factors to consider, because while some of these problems can be surmounted others cannot. As such, as a framework is created this may prove to be an important issue.

HYDROLOGY.

It was mentioned previously that the site is relatively dry and there are no active streams and minimal waterbodies located within the project boundaries. There is, naturally, a wealth of marine life located in the waters off of the coast of the site, including a large population of the endangered green sea turtles who like to feed on the abundance of seaweed that grows immediately offshore. Within the site, however, the hydrological condition is somewhat of a different story. The extent of wetlands on the site can be described in three different areas. The first is the Ordy Pond location, which is the area that is of interest to the University of Hawaii's SOEST. The pond contains the only freshwater fish found on the site, and this attracts the native, but not endangered, Black Crowned Night Heron for feeding. The second site is located along the boundary between the site and Campbell Industrial Park. Unlike Ordy Pond which is a permanent wetland, this second site is only seasonal. Like Ordy Pond, however, it is a freshwater site and there is some research that suggests that it could occasionally act as a habitat for some endangered bird species. Finally, the third area is a salt flat located east of the crossing runways of the airport that measures 2 acres in size. This area is also only a waterbody seasonally with it holding water only during the rainy seasons. It is clear that the area is frequented by shorebirds, such as the Hawaiian Black-Necked Stilt which is endangered, because of the large number of bird tracks that can be found in the area.²³⁹

These wetland areas, though only a few in number and relatively small in area, provide important habitats to animals and birds in the area. As such, it is important to understand that the preservation of these three primarily locations could prove to be an important concern when developing a framework for redevelopment.

FORESTRY.

The western and southeastern portions of the site, it has already been mentioned, are densely forested and have become overgrown for the most part. In general, the majority of the trees found onsite are Kiawe trees, which are an invasive species naturally adept to surviving in dry climate like that of the Ewa Plain. This family of trees tends to take over a site and kill off other trees in the area by depriving them of water, and that is certainly the case in the Kalaeloa site.²⁴⁰ Despite this, there are areas where other species of plants and shrubs are prevalent. East of the crossing runways there is a large expanse of land

²³⁹ R.M. Towill Corporation, for The Barbers Point Naval Air Station Redevelopment Commission. December 200. "Kalaeloa Redevelopment Plan: A Special Area Plan of the Ewa Development Plan, Ewa, Oahu, Hawaii." (Accessed 13 February 2010) 2-20, 2-21. <http://www.honoluludpp.org/planning/Kalaeloa/KalaeloaSA1.pdf>

²⁴⁰ United States Department of Agriculture Natural Resources Conservation Service. 2010. "PLANTS Database: *Prosopis pallida*." (Accessed 13 February 2010) <http://plants.usda.gov/java/profile?symbol=PRPA4>

where the *chamaesyce skottsbergii* var. *skottsbergii* grows. This plant, better known by its common name the 'Ewa plains 'akoko, is an endangered species with only about 200 plants left, and the project site is where the largest population of the shrub can be found. While it is endangered, little is being done to protect the declining species due to land ownership issues.²⁴¹ The Navy owns the habitat where the species is growing and would like to convey it to the USFWS to ensure its protection, but the land used to be utilized as a shooting range and, as a result, now contains lead contamination in the ground. The land needs to be cleaned up before it can be conveyed and the USFWS will not take ownership before the remediation occurs. The cleanup process, however, is hazardous to the health of the plants. These factors leave the Navy in a sticky situation, and the future of the plants unknown.

The situation of the fauna on the site may prove to be influential to a framework that wishes to ensure the continued habitat for these endangered species of plants. For this reason, it is important to understand what different species are on the site and how well they are maintaining their populations unaided.

COASTLINE.

The final environmental resource to be discussed as a part of this analysis is the coastline. We have already discussed the ownership of these prime land areas, but this portion is meant to investigate why the coastline is important and what resources it has to offer. The coastal area, too, is home to an endangered species of plants. This other endangered species found on the site is the *Achyranthes splendens* var. *rotundata*. A small population of these plants, better known as the Maui chaff flower, grows on the coastline along the western border between the site and the Campbell Industrial Park. This habitat is one of four on the western coast Oahu, which constitute between 2000 and 3000 plants in total. Currently there are no management activities occurring to save the species, despite its endangered classification.²⁴² This coastal area in the southwest is "considered one of the best examples of the coastal plant ecosystem in the state."²⁴³ For this reason, the conservation of this area during a redevelopment could be an important factor to consider.

This entire portion of the analysis on natural resources helps to clarify what areas of the site have particular significance. This section has also helped to identify what portions of the site are better adept to supporting certain types of constructions and usage. Utilizing this information in a framework proposal could help to ensure that these resources remain present on the site even as the community begins to develop and fill in.

²⁴¹ Center for Plant Conservation. November 20, 2009. "*Chamaesyce skottsbergii* var. *skottsbergii*." (Accessed 13 February 2010) http://www.centerforplantconservation.org/collection/cpc_viewprofile.asp?CPCNum=1914

²⁴² Center for Plant Conservation. November 20, 2009. "*Achyranthes splendens* var. *rotundata*." (Accessed 13 February 2010) http://www.centerforplantconservation.org/collection/cpc_viewprofile.asp?CPCNum=26

²⁴³ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. 2-19.



Figure 8.11 Hydrology, Forestry, and Coastline Resources

Adapted from the cited source.²⁴⁴

. HISTORICAL/CULTURAL SITUATION .

There have been several distinct periods in the history of the Ewa plain and in the history of the former installation site as well. Each of these periods of use and inhabitation have left a number of significant sites help tell the story of the past establishment. In this site analysis, the significant sites of three different periods will be discussed. The first of these three is the period of inhabitation by native Hawaiians prior to settlement of the region, the second is the era when the Plain was used for cultivation and ranching activities under James Campbell, and the third is the time of military presence. The physical forms left behind from these periods are important to identify as they help to tell the story of the area and recall the historical events that took place on the site.

NATIVE HAWAIIAN RESOURCES, PRE-19TH CENTURY.

Until 1851, the area that comprises the former NAS Barbers Point was owned by Native Hawaiian families. It was only after the last native owner of the Honolulu ahupua'a, Kekau'ōnohi, died that the land was left to her non-native husband. The area was an important part of the ahupua'a system for many years, primarily serving the community as a minor dryland cultivation area and a spot for fishing grounds. It is likely, judging by the soil types and the existing type of foliage still growing on-site, that the cultivation

²⁴⁴ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. Figure 2-7.

activities were centered primarily around breadfruit and sweet potato crops. In a more physical form, however, there do remain some remnants of religious shrines in honor of the coastal fishing activities that occurred offshore from the site.²⁴⁵

In general, the radiocarbon testing that has been done on the site has indicated the possibility of very limited inhabitation prior to 1000 AD. There is more evidence to show that there were more inhabitants on the site, in scattered locations, in the years between 1000 and 1400 AD. Despite this, the testing indicates that the inhabitation probably occurred for only short time periods, and began only to be a more permanent settlement after 1400 until European contact in 1778.²⁴⁶ It is to this period of time that the religious fishing shrines are attributed. Also, there are a few trails and springs along the coast that still exist from this era previous to European contact. For the most part, however, there is a relatively small number of physical historical elements that remain from this time period.

POST CONTACT RESOURCES, LATE 19TH AND EARLY 20TH CENTURIES.

It was mentioned previously that the Honouliuli ahupua'a was transferred from native Hawaiian ownership in 1851, but in 1877 it was sold to James Campbell. Under the new ownership an intensive ranching initiative was pursued. This new usage required the construction of fencing and a system of irrigation and watering holes so that stock could be efficiently raised and organized. This new usage for the land required a certain degree of land preparation, and there are physical remnants of this era found on the site even today. The most prominent of these is a length of fence that begins in the northwest corner of the site and continues southwest until it ends in the area of the present day Nimitz Beach. Also, along the entire length of the coast on the Plain, there are waterholes. Two of these existed within the boundaries of the former Station. Numerous trails were also developed, primarily along the coast but also occur in the northwestern portion of the site.²⁴⁷

In addition to ranching, the area was also used as a plantation. The Ewa sisal plantation was situated in part on land that was later developed by the military into NAS Barbers Point. The sisal plant was important in the post contact era, as the plants produce a high-strength fibre traditionally used for making agricultural twine, ropes, and textiles. This type of usage on the site could only be sustained through some changes to the landscape. For this reason there were alterations to the general landscape, all of which remain and were influential to the way that the NAS developed when the land was turned over to the military²⁴⁸. These changes, though it is not possible to identify them on an individual basis on the site today, do continue to influence the way the land is developed by subsequent

²⁴⁵ International Archaeological Research Institute, Inc, July 1997. 18.

²⁴⁶ International Archaeological Research Institute, Inc, July 1997. 18.

²⁴⁷ International Archaeological Research Institute, Inc, July 1997. Figure 6, 25.

²⁴⁸ International Archaeological Research Institute, Inc, July 1997. 27.

generations. The physical remnants that do still exist on the site, however, are certainly candidates for preservation, and they serve as yet more important physical reminders of the site's history.

MILITARY RESOURCES, MID-20TH CENTURY.

The topic of historically significant buildings and objects left over from the era of military presence on the site was discussed in some detail in Case Study V, in Section Six of this document. It can be reiterated here, however, that there are certain structures on the site that are tied to historically significant events or missions that occurred throughout the course of the use of the site by the military.

The evaluation performed on the buildings left on the site found that were structures that should be marked for potential preservation due to their significance related to a particular event in history. The first of these was a hanger that served as the control center of operations and also provided intelligence support. Because of the critical nature of this building during the Cold War, this structure could potentially be eligible for listing on the National Register. The other building was the Headquarters Building, which was also exceptionally valuable in performing the Cold War administrative activities out of the Station. While there were other buildings that played critical roles, many were valuable due to their technological nature. And, since the technology no longer exists within the building, the structure itself becomes somewhat less significant.²⁴⁹

As far as objects go, a 50th anniversary memorial and monument exists northwest of the crossing runways. The monument is not easily accessible and has been allowed to become overgrown, but it tells the story of the December 7, 1941 attack on the airfield. The second important object identified was the mooring mast, which marked the beginning of military presence on the Ewa Plain. The mooring mast site, which is located just north of the crossing runways, consisted of a building and an apron.²⁵⁰ These objects have been left to the elements, but they were important to Station during the wartimes of the past. For this reason, they are potentially worthy of preservation, maintenance, and general identification due to the fact that they further aid in telling the history of the site.

The three primary areas of occupation on the site have been drastically different, and the area has seen a number of various uses. The one thing that has been consistent is that there have been remnants left behind by each group of people that have occupied the site. This makes for some eclectic, seemingly out of place physical features on the site that speak to the varied history of the area. The locations and relationships between the resources can be seen in Figure 8.12 on the following page.

²⁴⁹ International Archaeological Research Institute, Inc, July 1997. 192-3.

²⁵⁰ International Archaeological Research Institute, Inc, July 1997. 194.

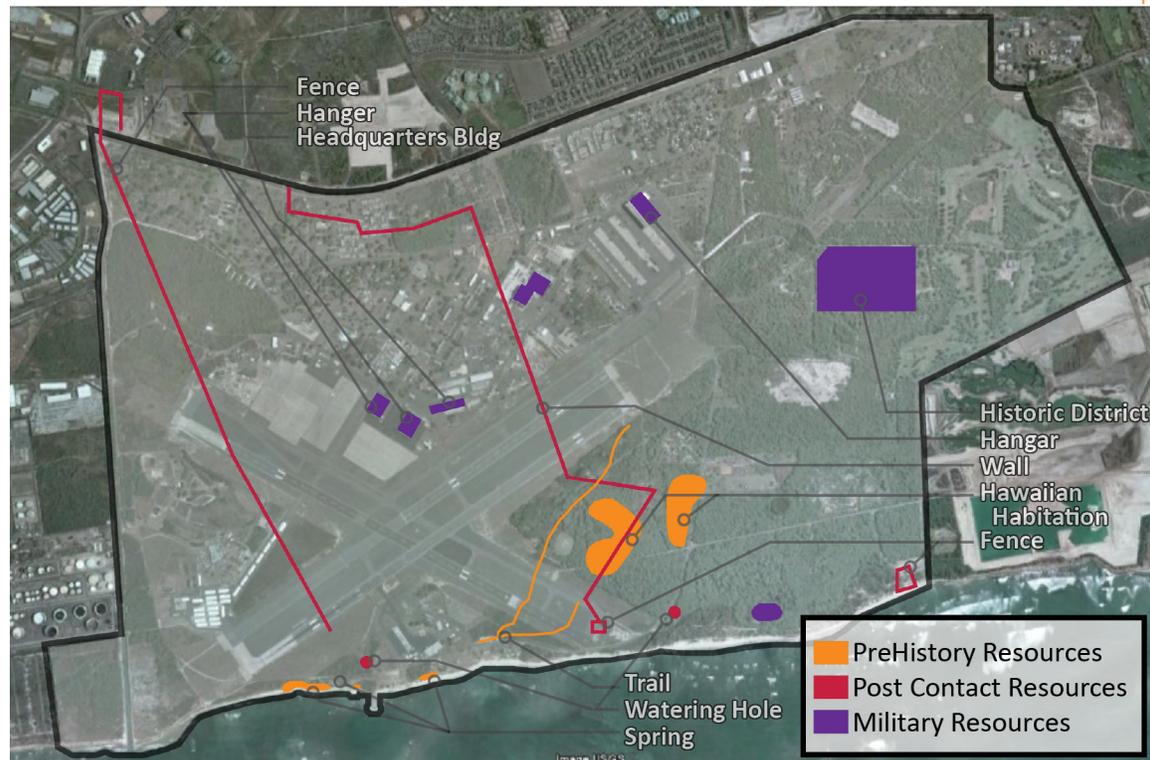


Figure 8.12 Historical and Cultural Resources

Adapted from the cited sources.^{251 252}

All of these areas of study are important to understanding the overall context of the site, but in the next section certain ones will be given more importance than others. The next section begins by looking at three different Non-Plan framework proposals. Each of these looks at a different series of three specific elements from the site analysis, chosen at random by a non-biased randomizing tool, for interactions and overlaps. These three elements, for example, could be the bike network, the wastewater system, and the natural resources. Or, it could be completely different, as the selection is completely random and non-biased. This approach leaves planning aside and allows a degree of Non-Planning. The specific process will be discussed in more detail in the following section of the project; however, it is important to understand that this section is important beyond just providing a thorough view of the conditions relating to the site.

²⁵¹ Helber, Hastert & Fee, Planners, for Barbers Point Redevelopment Commission. March 1997. Figure 2-8.

²⁵² International Archaeological Research Institute, Inc, July 1997. Figure 6.

SECTION NINE: NON-PLANNING FRAMEWORK GUIDELINES

It has already been discussed, in Section Seven, that the most pure form of Non-Plan is simply a controversial idea, and cannot be found in reality. The different case studies presented in that section, however, show that Non-Planning does exist to some degree in reality in the present day. There is some validity to this concept, which started as merely an experiment. And in this section of the document a framework for Non-Planning to occur within the former Barbers Point site, similar to the concept of the Melún Senart case, will be developed. In this, the development is twofold, first studying three different randomized cases for the site, and then a final proposal which maximizes the conditions of one of the studies into a final framework proposal for the site.

The first three preliminary studies presented in this section are based upon layers derived from the site analysis. The site analysis section was not only included within the scope of this project as an informative way to understand the intricacies of the former installation site, but also because the areas of investigation presented within the analysis become integral factors in the creation of a Non-Plan framework for redevelopment. The primary portions of the analysis have been designated as individual layers that have the potential to be a factor in the framework. Each of the preliminary studies looks at three unique layers simultaneously for interactions and potential for development into a cohesive system. The three layers included for each of the studies were selected at random by a random sampling tool provided to researchers online by the Social Psychology Network. The layers and the randomized series provide the foundation for the studies, and so it is important to first discuss the organization of these two factors before the studies are actually conducted.

. THE LAYERS .

In the site analysis there were a total of twenty-seven different subsections, but for the purposes of framework creation and layers analysis, these have been organized into a total of 10 different layers. The first two sections of the analysis, the discussion surrounding Existing Uses and the Surrounding Area Linkages, have not been converted into layers to be studied separately according to random sampling. This is due to the fact that these elements are important factors to consider in all studies. The uses that already exist on the site are representative of the type of unconscious non-planning that has already started to occur on the site due to the inability for the landholders to work together towards a plan. Thus, the associated inaction that has been seen regarding the site redevelopment has allowed this unconscious non-planning to occur. The uses that are occurring onsite are important to consider in all framework studies because they are demonstrative of the community fulfilling its needs within the abandoned military framework. The issue of linkage is similarly important to all studies because, under the present conditions, the Kalaeloa area stands as an isolated island surrounded by areas of development. In order for the area to become an integrated part of the Ewa Plain community, there must be linkages created to connect the former installation to the surrounding cities and neighborhoods. For these reasons, these two areas of analysis are

not considered separate layers. The areas that are considered layers for the analysis can be seen in the following Table 9.1.

TABLE 9.1: FRAMEWORK ANALYSIS LAYERS	
	TRANSPORTATION INFRASTRUCTURE
LAYER ONE	STREET SYSTEM
LAYER TWO	BICYCLE SYSTEM
LAYER THREE	BUS SYSTEM
	BASIC UTILITY INFRASTRUCTURE
LAYER FOUR	WATER DISTRIBUTION SYSTEM
LAYER FIVE	WASTEWATER SYSTEM
LAYER SIX	ELECTRICAL SYSTEM
LAYER SEVEN	COMMUNICATION SYSTEM
	NATURAL RESOURCES
LAYER EIGHT	SOILS
LAYER NINE	HYDROLOGY, FORESTRY AND COASTLINE
	HISTORICAL AND CULTURAL RESOURCES
LAYER TEN	NATIVE HAWAIIAN, POST CONTACT, AND MILITARY RESOURCES

The following sections serve to both outline in more detail the different layers one by one while also pointing out the particular conditions that should be considered in a framework plan that attempts to integrate that particular layer. In essence the sections are meant to briefly state the highlights that must be thought about if the layer is involved in a framework design.

LAYER ONE: TRANSPORTATION INFRASTRUCTURE, STREET SYSTEM.

The street system layer is one of the more complete of the layers that fall under the scope of study for this project. The dynamics of this particular layer must be considered from two different perspectives, from the aerial view of the system as seen on a map and also from the section view of the system as seen from the ground. The former installation, like the majority of the Ewa plain, was designed in such a way to promote automobile dependence, and as a result the street system was thoroughly designed and constructed to service all of the commonly occupied areas of the site. As such, the aerial view of the system appears rather complete and adequately designed. This, however, does not mean to imply that the street system is not in need of improvement due to various different conditions. Typically these conditions are those that can be seen from a section kind of view, and they include the inadequacy of the system for pedestrians, roads that have been blocked off since the time of BRAC closure to prevent loitering in the abandoned cul-

de-sacs and parking lots, and severely neglected maintenance in the lesser used portions of the site. So, although the coverage of the system may be rather complete, the other conditions mentioned must become important aspects to consider when developing and maximizing this particular layer.

LAYER TWO: TRANSPORTATION INFRASTRUCTURE, BICYCLE SYSTEM.

The bicycle system is a unique condition from all of the other layers defined for the project. The uniqueness comes from the fact that there is not any portion of the bicycle system that actually exists on the site at the present time. This factor can work for and against the system at the same time. The positive side of this particular characteristic is that there are no existing boundaries within which any changes or improvements to the system are required to function. Consequently, the way in which this system interacts with others has not yet been established on the site, and so there is room for innovation and creativity in the design of the system. There is also the possibility for alternative suggestions for how the system can operate on the site of the former installation. The negative side to this layer, however, is that there have been several different biking network plans proposed for the City and County of Honolulu over the years, of which only a handful of examples of bicycle infrastructure have actually materialized. As such, the design of the island wide network may change one or several more times before a system is actually constructed. Therefore it becomes important to understand the intent and design of the system proposed at this time, but to also allow for flexibility in any local area designs as island-wide plans may continue to change.

LAYER THREE: TRANSPORTATION INFRASTRUCTURE, BUS SYSTEM.

It has already been discussed that the area of the site serviced by the Oahu's public bus system can be considered limited at best. The limited number of stops along the northern boundary of the site in combination with the two stops within the boundaries, all of which are serviced a rather few number of times throughout the day, are not even able to adequately serve the sparsely populated residential areas on the site presently. As a result, the concern for this particular system revolves around maximization and expansion. In terms of planning and non-planning alike, the community often has the predisposition to develop in areas that are well serviced by many types of community infrastructure, of which public transportation is one. This system needs to expand or otherwise adapt to adequately service the community in order to promote further development of the area. The focus on this layer could be on maximization in a couple of different ways. One way to approach the expansion would be to completely maximize the system on the site as part of the framework that will then promote development, while another could be to create a framework that supports a phased expansion of the system as development occurs. Any way that the system is integrated into a framework will require that expansion be a concern.

LAYER FOUR: BASIC UTILITY INFRASTRUCTURE, WATER DISTRIBUTION SYSTEM.

The portions of the water distribution network that have been examined on-site have been found to be in varying conditions. And, as will all physical elements, the components

of the system do have a limited lifespan for which they are fully functioning and useful. Simply due to the length of time between when the year in which the distribution network was constructed and the year we find ourselves in today, combined with the fact that the system was all but abandoned after the BRAC closure, this layer is undoubtedly nearing the its end of their useful life. Although the coverage and location of the pipes in the existing system can be quite telling of how the system needs to cover the site, there has been indication that the current coverage was only barely adequate at the time of base closure and that extended coverage would be essential to supporting further development. This is an important factor to keep in mind when designing a framework that includes the water distribution network. The deteriorated and inadequate condition of the pipes themselves is important when considering the layer from the sectional perspective. The fact that the pipes are deteriorating and old is only one reason that redevelopment is necessary, while the fact that the system does not comply with the regulations of the Board of Water Supply is another. Because it is necessary for the system to be updated and improved, it could also be possible for more environmentally friendly and better integrated approaches to be used.

LAYER FIVE: BASIC UTILITY INFRASTRUCTURE, WASTEWATER SYSTEM.

The wastewater system has many of the same negative circumstances as the water distribution system in that the condition of the majority of the system is unknown, however it is expected that due to age and relative disuse over the past decade the elements are beginning to near their end of useful life. The system does not comply with the City requirements for wastewater collection and disposal either. And, finally, the system was surveyed after the imminent closure was announced, and the system was found to be adequate at the then-current level of occupancy and use but unable to support further densification or development. For this reason the compliance of the design and the service coverage are two important aspects related to this particular layer. Another important factor unrelated to the condition of the current system is that of innovation. The wastewater treatment options of the present day are vast in comparison to what was available in the middle of the last century when this system was being constructed. With the nation's trend toward energy efficiency and conservation always growing there have been strides made in the field of wastewater treatment and reuse. And since the system will need to be expanded and redeveloped to support any future redevelopment activities, there is the possibility that these innovative systems could inform the design for the layer.

LAYER SIX: BASIC UTILITY INFRASTRUCTURE, ELECTRICAL SYSTEM.

The electrical system serving the site is currently, as mentioned in Section Eight, powered by HECO but the lines are owned by the Navy because the system infrastructure does not comply with the standards held by the private company. It would be to the benefit of the area if the lines were conveyed to HECO because the Navy does not want to retain the utility systems on-site, but has to as of right now because the private companies are unwilling to accept liability for systems while they are still in questionable condition. Also, an integrated system that is owned and operated by a single company with a presence in

the area would seem to be more beneficial to ensuring that the needs of community are being met. For this reason some important factors to consider in a design are a way to update the system so that it complies with HECO's requirements and a way to renovate the condition to allow for expansion. The expansion issue comes from the fact that the system, as it currently exists, can support about triple the current usage on the site. However, if the site becomes densely populated as development occurs it will then become necessary to expand the system. The easier it is for the system to allow for such expansion the better, as even a lack of available power in the area for a short time can prove to be detrimental to the development process.

LAYER SEVEN: BASIC UTILITY INFRASTRUCTURE, COMMUNICATIONS SYSTEM.

Until this point, the utility systems on the site have all had similar issues of deterioration due to age and disuse, inadequate infrastructure or coverage, and continued retention by the Navy due to inability to convey the assets which need to be addressed in a redevelopment or framework design. The communications system, however, is a unique set of circumstances compared to the other utility systems on-site, as the lines are completely owned and operated by a public communications company. This eliminates the issue of conveyance entirely, but the issue lies within the fact that the lines are placed on military-owned communications poles. Therefore, should the military decide to eliminate the poles, the communications system would be rendered non-functioning. This is a concern that should be addressed in a redesign as to how the overlap between public and private property can be eliminated in order to avoid a disturbance in service if anything were to happen in the future. Furthermore, the coverage area for the communications system was limited to only the areas of the site that were being used by the military, and should be either expanded or given the opportunity to easily to other developable areas in order to promote use throughout the entire site. Communications service is a utility that the general population has come to expect in most if not all areas, and if the system is not expandable those areas that are not covered will be more difficult to promote development within.

LAYER EIGHT: NATURAL RESOURCES, SOILS.

The soils that are found on the former installation site are of a range of varying types. While some are found in larger quantities than others, they all have their individual associated benefits and limitations. Since the goal of this design is to create a framework for non-planning to occur within the proposal will not be using such planning tools as contemporary zoning on the site, which helps to keep inappropriate uses off of certain soils. Therefore, one of the concerns relating to the design of the soils layer will be to incorporate some sort of recommendations or perhaps a form of simplified zoning in coordination with the design to ensure that inappropriate uses do not occur on soils that are inadequate for the use. If the negative space within the framework is to be left to the community regarding development decisions, the creation of limitation guidelines according to the abilities of the particular systems would need to be in some way built into the design of the system. Another concern relating to the soils layer could be the preservation of native soils on the site. As occurred in the construction of the airport

area, many development projects can be accomplished on weak or inadequate soils by adding certain types of fill land to the site. However, it may be important to preserve the natural soils as they are the most appropriate for natural site drainage as well as providing habitats for some of the endangered plant species found on the site. As such, a method to conserve the original soils found on the site could be another important consideration in the design for this particular layer.

LAYER NINE: NATURAL RESOURCES, HYDROLOGY, FORESTRY AND COASTLINE.

The hydrology, forestry, and coastline resources found on the site are important areas that need to be conserved due to the fact that they provide habitat for endangered species of plants and animals. This is not to mention that the bodies of water on the site are some of the best examples of hydrological assets on the island and are important to scientists to study and learn from. For this reason the issue of conservation is extremely important for this particular layer. The conservation of these areas is one concern, but expansion could possibly be another since the endangered species of plants on the site are growing within limited habitat areas. Expansion would require an understanding of where on the site conserved habitats are appropriate regarding overall community benefit and use as well as what areas have the appropriate soils to provide for the needs of the endangered species. Beyond the issues of conservation and expansion is another concern altogether, that of remediation. There are many areas on the former Barbers Point site that require extensive remediation efforts. Some of these areas are highly polluted and cannot be developed until they are cleaned up properly. As far as the habitat areas, the polluted soils can have a negative effect on the species in the area and so cleanup is essential to the health of the plants and animals. The remediation efforts can also be destructive to the land, and so a manner that allows remediation to occur while not destroying the sensitive habitats may prove to be essential in contaminated areas.

LAYER TEN: HISTORICAL AND CULTURAL RESOURCES, NATIVE HAWAIIAN, POST CONTACT, AND MILITARY.

The final layer consists of the historical and cultural resources located on the site. There are a number of different resources left behind from different eras and occupations that can be found within the former installation boundaries. The primary concern for this layer is the conservation of these resources in such a way that protects them from damage due to development or use, but also displays them proudly in a way of visually paying homage to the past. This first concern is primary, but there could also be the concept of allowing integration between the relics left behind from the past and the development of the future. If this becomes part of a design for this layer, then devising a manner of allowing the interaction to occur while at the same time deferring to the more important goal of preservation will be important. And, as an extension of this concept, there could be the differentiation between interaction between new and old for simply the sake of interaction or interaction between the two for the sake of use and integrated function. If integration occurs in such a way that the historical resource becomes useful in the present day development, there must always be a means of ensuring that the resource is at the same time protected from any damaging activities. So, in short, preservation is the

leading concern for a design involving this layer, but some other concerns could be integrated into a design if the desire and the potential were part of the framework design.

The first step to approaching a framework design that is made up of layers is in understanding the concerns and needs for each layer. Section Eight identified a lot of the characteristics of the site analysis areas that became the layers, but this portion has worked to identify the major elements that will actually inform and play a decision-altering role in the development of a framework design. These elements are part and parcel of the conditions of the site, but they have been distilled down into the concise needs and areas of concern in this portion of the project. Therefore, as the series are randomized and the preliminary studies are developed, it will be important to keep this section in mind as one of the elements that helps to inform the decisions made regarding the design.

. THE SERIES .

As was mentioned previously, the layers just discussed make up the basis for the preliminary framework analyses. For these analyses, a random series of three layers was generated for each of the three studies. The tool uses to create these random selection series is a simple online generator which is provided to students and researchers.²⁵³ The researcher is allowed to control the data sets to a certain degree by setting determinants for several variables. The first of these variables is how many series are to be generated, the answer to which was three for this particular study. It was also specified that each set

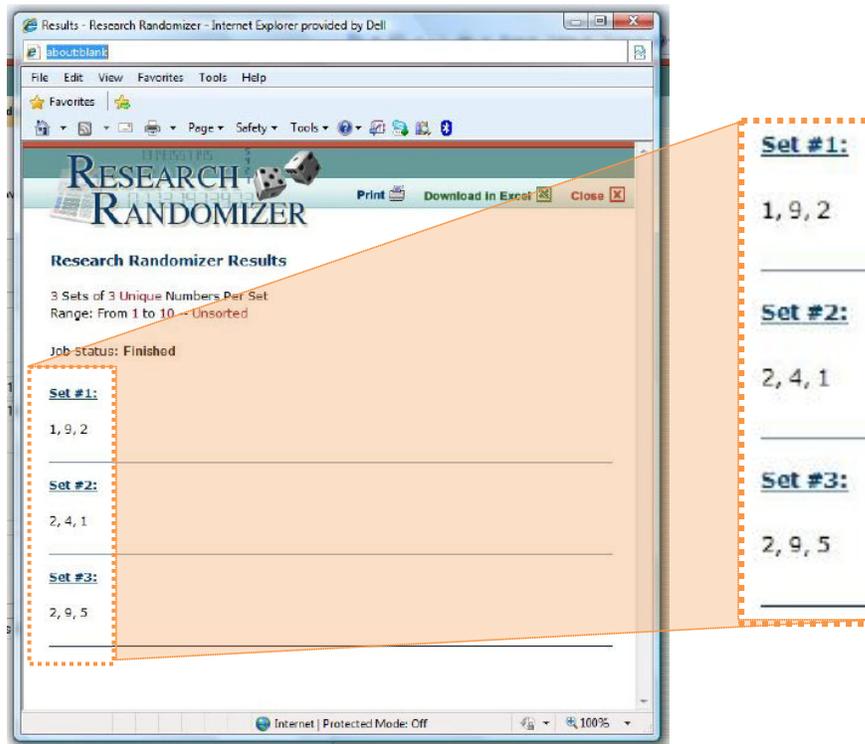


Figure 9.2. "Research Randomizer" Results.

²⁵³ Urbanaik, Geoffrey C. and Scott Plous. 2008. "Research Randomizer." *Social Psychology Network*. Accessed 20 February 2010. <http://www.randomizer.org/form.htm>

contain three numbers, in a range from one to ten, of which all were to be unique within a set. The unbiased randomizer then output three different series based on these parameters, and the results can be seen in the screenshot on the previous page (Figure 9.2).

The three different series, while completely randomized, do present quite a lot of overlap to certain layers being integrated into multiple series. Not every one of the layers that was identified is being utilized in the studies, but this is the way of randomization and really speaks to the issue of Non-Planning. Certainly if this were a project founded in traditional planning practices, the layers with the most potential or those that seemed the most appropriate to future development could have been specifically selected by hand for analysis. However, since this is an investigation into the concept of Non-Plan and to what degree it can work for a modern-day design project, the randomization proves to be a manner more fit for determining the layer interactions to be studied. The following three subsections present the preliminary studies and the layers that are involved in each. This is meant to give a general overview of each compilation of layers previous to the next chapter where the actual studies are presented.

PRELIMINARY STUDY NUMBER ONE: SERIES 1, 9, 2

1: STREET SYSTEM; 9: HYDROLOGY, FORESTRY, AND COASTLINE RESOURCES; 2: BICYCLE SYSTEM

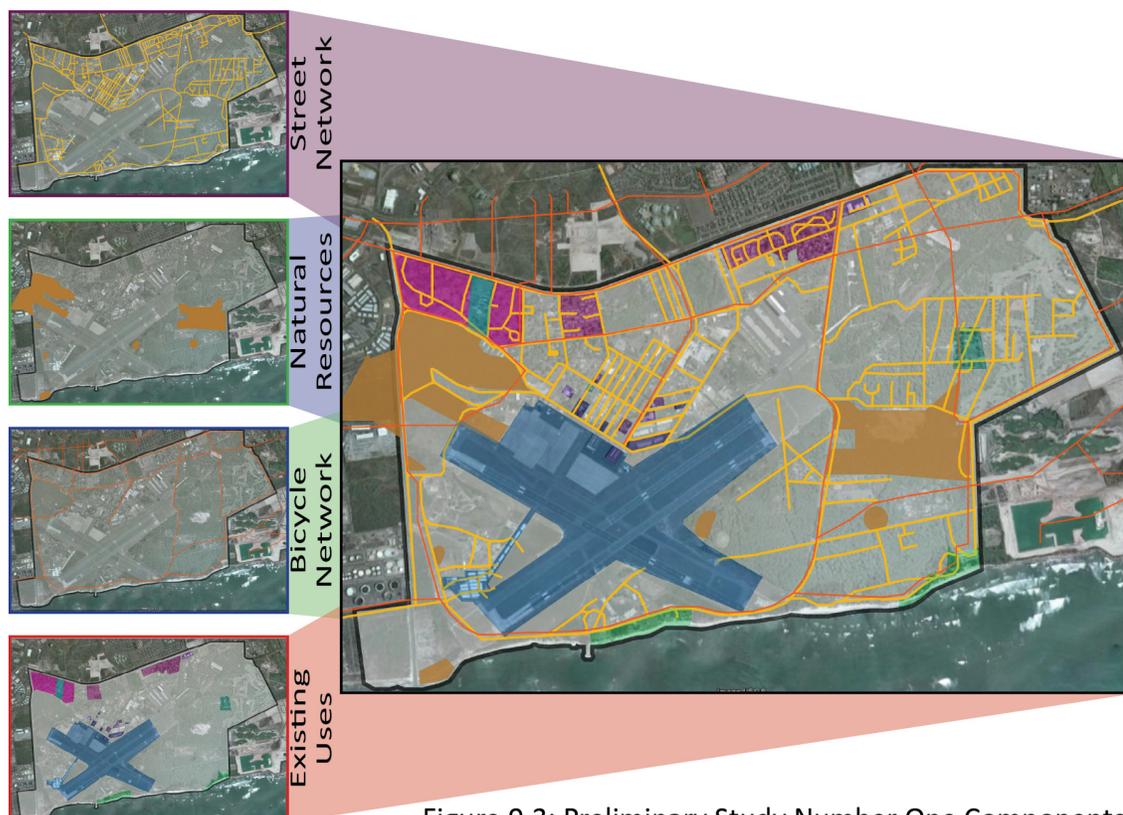


Figure 9.3: Preliminary Study Number One Components

These three layers are shown in their individual forms as thumbnails in the left portion of Figure 9.3 and combined altogether in the larger map in the right portion of the figure. This combination of layers that will be analyzed in this particular study tend to have a lot of areas of overlapping and interaction with one another. From first glance, there are also many different areas where the layers have connections with the existing uses that are currently on the site as well as area of potential connection with the outside areas surrounding the site. These overlaps, intersections, interactions and connections will all be further investigated in the first part of Section Ten where the preliminary studies are presented.

PRELIMINARY STUDY NUMBER TWO: SERIES 2, 4, 1

2: BICYCLE SYSTEM; 4: WATER DISTRIBUTION SYSTEM; 1: STREET SYSTEM

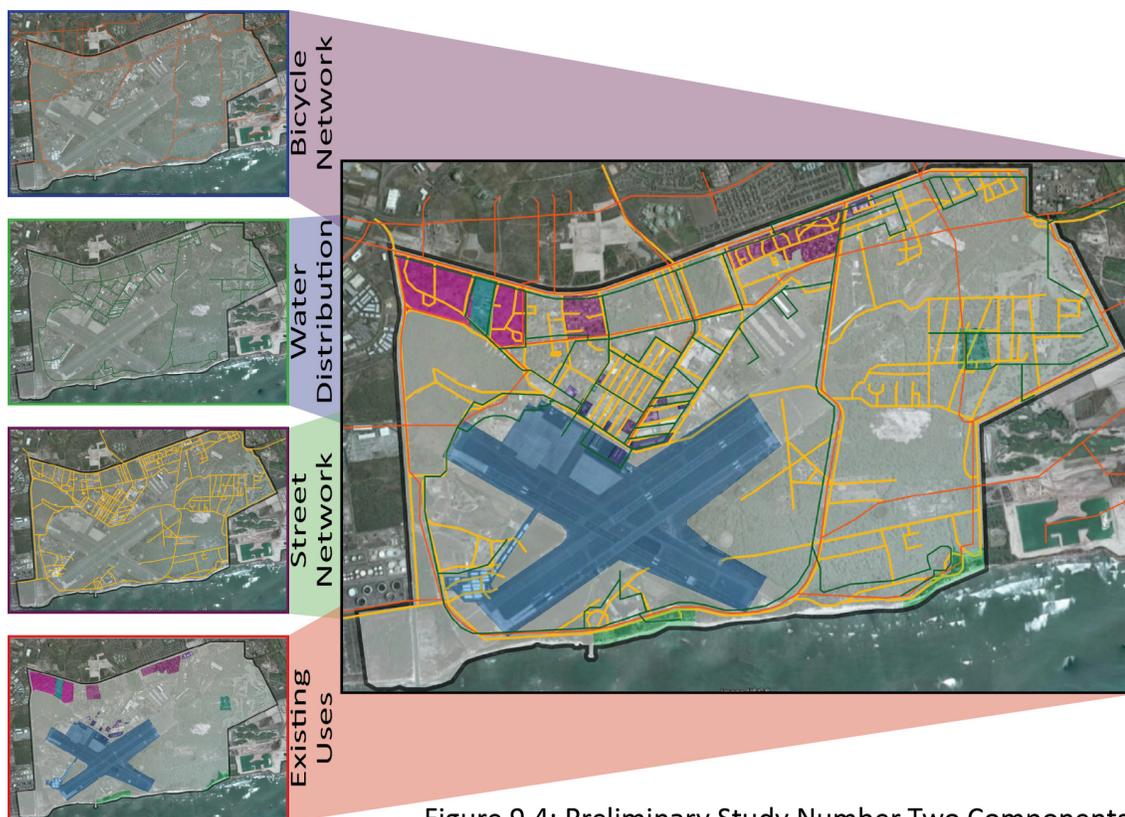


Figure 9.4: Preliminary Study Number Two Components

The three layers randomly selected to be a part of the second preliminary study are shown in a similar way to the first study combination, with their individual forms as thumbnails in the left portion of Figure 9.4 and combined altogether in the larger map in the right portion of the figure. This combination of layers seems to have even more areas that overlap and follow the same paths through the site. The interactions between layers are perhaps even more in number than appear to be in the first study. From first glance, there seems to be about the same number of possible connections to the outside surroundings as could be seen in the first study, but perhaps more locations where the layers have connections with the existing on-site uses. These overlaps, intersections,

interactions and connections will all be further investigated in the first part of Section Ten where the preliminary studies are presented.

PRELIMINARY STUDY NUMBER THREE: SERIES 2, 9, 5

2: BICYCLE SYSTEM; 9: HYDROLOGY, FORESTRY, AND COASTLINE RESOURCES; 5: WASTEWATER SYSTEM

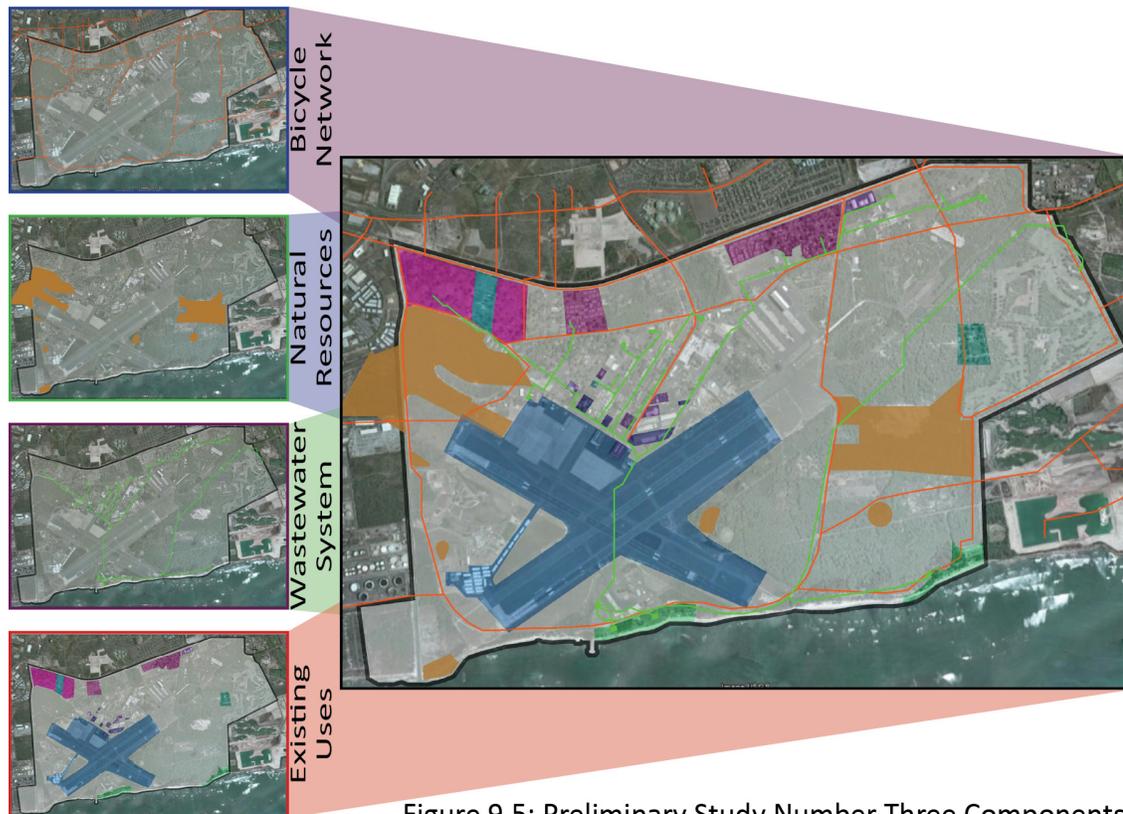


Figure 9.5: Preliminary Study Number Three Components

The three layers that are shown above in Figure 9.5 make up the series for the third preliminary study. In the same way as the two above overviews, the layers are shown in small thumbnails as their individual forms along the left portion of the figure and on the right portion is the map showing the layers combined altogether. The combination of the three layers that will be analyzed in this particular study tend to be very separated and do not interact with one another much. There are few areas where the layers overlap with one another and not many areas where they overlap with the existing use areas. One of the layers demonstrates several area of potential connections with the outside surroundings, a second shows a single possible connection of this sort, while the third is completely self-contained within the site boundaries. In general, this study appears as if it will be much more self-contained than the others. These overlaps, intersections, interactions and connections will all be further investigated in the first part of Section Ten where the preliminary studies are presented.

Now that the concept of the layers is understood, it is important to outline the structure of the studies and the intents with which the studies will be performed. The next portion of this chapter will outline organization and goals of the studies and final design proposal.

Due to the fact that the preliminary analyses and final design are all investigating the relationships between different layers, each with their own unique and varying characteristics, it becomes important to define a process by which the layers and the site as a whole can be analyzed in an organized fashion. The first step in defining the structure of the analyses is thus in outlining this organized approach to analysis.

IDENTIFY THE OVERLAPS AND INTERSECTIONS

The first step in the process will be to identify where the overlaps and intersections between layers occur. In this process only the layers need to be looked at in comparison with one another, and such things as existing uses and site surroundings are not factored in to the process at this point. This particular step will be a two part process because these overlaps can occur in two different ways. The first way that overlaps can occur is between two layers only, and because there are three layers involved in each study there are three different combinations where two different layers can be involved. Identifying the areas where these overlaps occur will be the first step in the process. The second step then, naturally, is to identify the areas where all three layers converge in the same place. The areas where this happen are likely to be less prevalent than the areas where only two layers come into contact; however, they are just as if not more important since they offer a full cross section of what could be a cohesive network of all the layers working together.

IDENTIFY THE PRIMARY CONNECTIONS POINTS

Once the overlaps and intersections are identified the next step is to then investigate where the most natural connections occur. It is in this step of the process that elements outside of the layers become important, such as the existing uses on the site and the areas surrounding the boundary. Like the previous step, this portion of the process consists of two separate parts. The first part will be to investigate where the layers naturally connect to the existing uses. While any connection is important, including those areas where a single layer encounters a use, the most important areas for the sake of a cohesive design are where all three layers together encounter an area being currently utilized. This is because the areas where all three layers are involved give the most opportunity to understand how the layers can work together while at the same time supporting and being supported by an area under current utilization. The issue is much the same for the second part of this portion of the investigation where connections to the surrounding areas are identified. While the identification of potential for connection by a single layer is important, the connection areas involving two or more layers become more informative to the design.

CREATE AN PREDOMINANT FRAMEWORK PATHWAY

Once the overlaps and connections are all identified, it becomes important to organize the areas identified in an organized manner so that they can function together as a predominant framework for the site. There will be some areas where there are overlaps or connections areas which are unable to be integrated with the rest of the framework either due to isolation or some other characteristic, and this is perfectly acceptable. The

concept of the framework is not to ensure that every area that included an overlap or a connection be integrated, but rather that the identified areas which function together and relate to one another be combined into a framework that can run throughout the whole of the site. The primary goal of a framework system is to develop a continuous pathway throughout the site that can be designed and utilized to direct and promote future development within the surrounding negative space. This pathway does not have to consist of only areas that combine all three layers. Instead, the pathway can have some portions where all three layers are represented, some portions where two layers interacting can be represented, and some portions where a single layer exists on its own. The important part is that the interaction and coexistence between layers are emphasized within the pathway, even if not ever-present. This level of detail and perspective of the design is referred to as the predominant framework, which is a plan level design.

DEFINE INTEGRATED SYSTEMS COORDINATION

Up until this point all of the steps have emphasized analysis from an aerial perspective looking at the different layers how they fall on a map. The previous step concluded with the creation of a connected framework that passes through the entire site as seen in a plan view. What has not yet been approached is how the layers look and interact in a sectional view. Thus, this portion of the process begins to look at the layers for integration with one another in a sectional view. This again becomes a two part process by first looking at the different combinations possible of two layers being integrated together and then at the integration of all three. Because there are three different possible combinations of two layers together and one where all three come together, there are four different sectional views that must be developed in each study. The systems working together will be in a relatively compact space for the framework, and so the sections developed within this portion of the process will be close-up views looking in detail at how the interactions are accomplished. This is the level to which each preliminary study will be completed, as the identification of interactions, connections and ability to create a cohesive framework from both the plan and section views is a level far enough developed to truly understand the fundamental situation for the integration of those particular layers. This level of detail and perspective of the design is referred to as the integrated system, which is a tight site section. The steps that follow are particular to the final design proposal, which is the maximization and further development of one of the three preliminary studies.

IDENTIFY SPECIAL CONCERN AREAS

This next step in the process will only be applied to a single preliminary study. This step is the beginning of the process of further developing one study into a finalized framework design proposal. This portion of the process identifies areas of special concern. Unlike the other steps which mainly focused on the layers and the different connection areas, this step looks at both the framework portion of the site but also the surrounding negative space. There are portions of the site that, due to such things as location, context within the framework, or actual or intended use, become a concern within the design. It may be that the location dictates a certain use because of the surroundings. Or it could

be that the way a portion of the site interacts with the framework suggests potential for certain activities or development to prosper. Or, it could also be that the existing use for a portion of the site requires that the interaction between the framework and the use occur in some certain way. It could be any number of things that makes an area a special concern. There is the possibility that each area of the site could be seen to have the makings of a special concern area in some way, but the intent with which these areas are identified is such that the special concern areas are to relate directly with the future development by the community. These special concern areas are most likely areas that, without some special consideration within the design, will not be able to be utilized to their fullest potential under the future community-led development. As such, the intent of this step is to identify those areas and what the special concern actually is.

INTEGRATE SPECIAL CONCERN AREAS UTILIZING DESIGN INTENT

Once the areas that are of some special concern in some way are identified, the next step is to integrate them into the framework design. The integration can be done holistically and literally, in such that the areas actually become part of the framework pathway and the areas become a new section view study to understand and integrate. Or the special areas of concern may be integrated into the framework only partially. This would mean that the entire area does not become part of the framework, but perhaps a portion of the area does. For example, perhaps only the very edge of the area is considered a special concern. In this case, the defined portion may be studied and the interaction between it and the integrated layers system making up the rest of the framework can be defined within the design proposal. Furthermore, the integration of these areas is dependent upon more than just how they interact with the framework. The intent of the project and the design guidelines, which will be discussed in the final portion of this section, must be integrated as well. The design guidelines speak of such things as landscaping, street frontage, open space and parking. All of these elements need to be addressed when creating a manner in which areas outside of the framework can be integrated into the system and the design proposal.

DESIGN A COHESIVE NETWORK

Once the framework and the special areas are fully understood and their relationships to one another defined, a final cohesive network along the ground can be designed. Once again the past three steps have looked at the project from an aerial perspective by investigation relationships and interactions in the plan view. This final step of the design process once again moves back into a sectional perspective of looking at the elements. The only sectional work done until this point has been a very detailed and close up look at how the layers interact with one another. In this portion, however, the section will be zoomed out to incorporate the entirety of the streets, the pathways, and even the built environment along the edges of the framework. These larger sections will primarily deal with the areas of special concern and visually demonstrate how the concerns of the area as well as the design guidelines can be implemented in such a way that the area becomes an integrated part of the framework. This level of detail and perspective of the design is referred to as the cohesive network, which is a larger site section.

Now that the organizational process for the preliminary studies and the final design has been laid out, the last factor relating to the design that needs to be well defined is the ultimate intent and guidelines for design. This next portion of the section will do just that, with the first subsection outlining the primary goals and the second subsection outlining the fundamental design guidelines.

INTENT OF THE DESIGN

There is not a single goal or intent for the entire design, but rather there are a few different intents that need to all be met for the design to be able to both function properly as a Non-Planning design as well as benefit the community. Therefore, the three most prevalent goals that guide the design for the framework are flexibility, connectivity, and sustainability.

Flexibility is a fundamental goal that is important in the design for many reasons. Primarily, flexibility will allow the uses currently at the site to remain in place and functioning. In a more rigid framework there could be areas where the framework and the use come into apparent conflict, in which case the underlying plan usually wins the battle over the independent business. However, due to the fact that community led development is the key to Non-Planning, conflicts like these are undesirable. If a plan cannot be flexible to allow for an anomaly to exist, then it certainly cannot support the sort of development that is led by and caters completely to the needs and wants of the community. Furthermore, flexibility within a framework will allow for a greater variety of uses to occur on the site. This mixture of uses within streets, blocks, sectors, and throughout the site as a whole is highly desirable as far as providing residents with all the basic services and fulfilling their needs close to home. Lastly, flexibility allows the community to develop over time as the community and services grow and new services and investors are attracted to the area. It is for these reasons that flexibility is primary among the goals for the design.

The second goal is connectivity. As of right now the population actually living, working, and playing within the boundaries of the Kalaeloa site is relatively small, and most of those who utilize the site on a regular basis come in from the outside. While this outside usage of the site is important, the future development of the site also depends upon the residential population of the area growing in number. As it is right now, Kalaeloa is still viewed as an abandoned military base that continues to offer various services for which surrounding community member at times enter the property to utilize. The perspective of the area needs to change into one that sees the area as a part of the Ewa Plain community versus being an outsider to it. A lot of this perception is still prevalent, however, due to the fact that there is still little connection to the site by automobile or pedestrian means, the fence still blocks off views and access, and there hasn't been any sort of attempt to connect with the larger community. Of all of these, though, the largest inhibitor of the site becoming integrated with the larger community is the lack of

connection. Once the community has greater access into a particular area then inevitably that area will begin to become accepted into the larger community. And once the area is accepted into the larger community, it will become a more desirable place to live, work, and socialize.

The third and final goal of the design is sustainability. Sustainability is an important aspect in the world today as it becomes ever more apparent that the world's populations are consuming resources at rates that are not sustainable for an extended number of generations. Keeping this in mind, it could be argued that sustainability should be a goal for every design project for the built environment. Beyond that, however, sustainability is especially important for the development of this particular site. This is due to a number of reasons. The first of these is that, save for the existing uses and the areas of conservation on the site, Kalaeloa could be a relatively blank slate concerning redevelopment. Many of the infrastructure and utility systems are old and inadequate for the type of growth that is desired on the site, and for this reason many of them will have to be at least partially, but more likely completely, replaced. Since the systems will have to be replaced anyway, it is the perfect opportunity to switch out inefficient systems for ones that will benefit the environment, be more efficient, and even reduce energy costs to the owners and end users. Secondly, most energy efficient infrastructure is less expensive when integrated with new buildings or projects. Typically, projects that use active methods in refurbishment projects end up spending more on the system, making the switch to sustainability less financially lucrative. But, because a lot of the systems will be requiring replacement anyway, the projects can save money installing environmentally friendly systems from scratch versus trying to integrate them in refurbishments.

FUNDAMENTAL DESIGN GUIDELINES

These guidelines work alongside the underlying goals for the design to help outline the general direction for the design. However, the guidelines are more focused on actual, tangible elements within the built environment, whereas the design goals are more fundamental, intangible ideals. In a typical planning document, the design guidelines can become rather lengthy in order to ensure that the intent of the project is maintained. In this sort of design though, the intent is that the design portion is nearly completely contained within the framework, which in turn positively influences further development. For this reason the number of elements within the guidelines have been kept to a minimum and have been developed to ensure that development benefits the community while still allowing flexibility. The four guidelines that will be outlined here are relating to landscaping, street frontage, open space, and parking.

Landscaping should include trees wherever possible along roads and pedestrian pathways, as well as in open spaces. Trees are important providers of shade that not only helps to keep pedestrians cool but also greatly reduces the amount of heat absorbed and retained by hardscaped surfaces. While shade trees are all beneficial for this particular use, this

does not necessarily mean that all trees are equally efficient in terms of the environment. Some species of trees require much more water to survive than others. For this reason, the trees that are utilized on the Kalaeloa site should be indigenous to the Ewa Plain area. Indigenous plants are always the best type of plant to use in a project, environmentally speaking, due to the fact that the plant is common to the area and was able to grow and thrive in the climate before the aid of sprinkling systems and the like. The theory, thus, is that these species of plants will require little or no additional watering beyond what the climate of the area can already provide through precipitation. As such, the recommendation to use indigenous plants does not only apply to trees but to all forms of natural ground cover utilized on the site. In general, the landscaping on the site should add to the aesthetic quality of the site and enhance the residents' experiences, but doing so should only be a secondary concern to utilizing the landscaping in an effective, sustainable manner.

The street frontage conditions in the site requires that any guidelines be very flexible, primarily because there are already buildings being adaptively reused on the site that interact with the street in a different manner than is desired in new constructions. Typical construction of commercial and office buildings places the building in the back of the lot with any parking areas easily visible right in the front of the lot along the street. This arrangement gives the impression that the businesses are catering to the needs of the automobile before the needs of the pedestrian. For this reason the guidelines emphasize and promote the placement of public business directly along the pedestrian walkways in the front of the lot. This creates a stronger interaction between the pedestrian and the business and gives the street a more small-town Main Street atmosphere. This is not to say that buildings being adaptively reused already should have to change to meet this suggestion, as doing so would surely waste building materials and be quite costly. As said before, this is a suggestion more directed toward new developments. The streetscape in both conditions, however, must be made to be more pedestrian friendly. The trees mentioned previously will offer wanted shade, but other elements can help attract pedestrians and promote walking as well. One such element is the street bench or tables to sit at. Pedestrians get tired when walking and often desire a place to sit and relax in the shade for a bit. If street benches are combined with patio seating in restaurants or cafes, the bond between pedestrian and business can be further developed. The last concern for the street front is adequate lighting that allows pedestrians walking in the evenings to feel as if the space is well lit enough to give a sense of heightened security.

Open space is a concern for the site simply due to the fact that there is so much open space available on the site at the present, and it is important that a degree of that atmosphere be retained. Densification is certainly a goal in the general Ewa area as Kapolei attempts to become a second urban center, but this does not mean in any way that the Kalaeloa site should be developed entirely as residential and nothing more. The general guideline would state that plots of land have to leave a certain percentage of the

area as open space. This increases water absorption by the ground back in to the aquifers, reduces the general temperature of the area as there is less hardscaped surfaces to retain and radiate heat, and it increases general resident satisfaction with the area. By requiring that open space be prevalent, it also promotes vertical construction for residential and other uses versus single-story design. Midrises are easily adapted to allow for a mixture of uses in a compact area, giving residents easier access to fulfill their needs without depending upon an automobile. In this way the open space not only allows residents to enjoy parks, playgrounds, and recreational areas, but it also indirectly promotes a desired building type.

Parking is the final concern for the site and it can be relatively simply stated. The parking for the new buildings on the site, not including those already being adaptively reused for the same reasons as indicated previously, should be located in the backs of lots to allow the buildings to be along the street front. This promotes interaction with the pedestrian but also hides unsightly parking lots and stalls. The relocation does not place the automobile driver at any disadvantage, as the parking is not located any farther away from the building, this configuration simply allows for pedestrians and automobiles to have the same level of access to businesses. Also, if necessary, these back lots can be conveniently accessed by alleyways, which could almost form a street system that is secondary to that serving the higher speed vehicular traffic.

This final portion of the guidelines had concluded the section describing the structure of the preliminary studies and final design proposal. In all, this entire section of the paper describes the makeup of the design work. Now, the following section integrates all of this information and applies it to the actual studies being performed.

SECTION TEN: NON-PLANNING FRAMEWORK PROPOSALS

PRELIMINARY STUDY NUMBER ONE: SERIES 1, 9, 2

This initial preliminary study focuses on the street network, the hydrology, forestry and coastline resources, and the bicycle network. In the previous section of the paper, we briefly took a look at the different layers and how they overlap. It was said there that, at first glance, it seemed as if the three layers were relatively similar in their primary locations and that it appeared the overlaps and intersections would be numerous. It can be seen in Figure 10.1, which points out the overlaps as well as the connection points for this study situation, that the areas where two layers converge is much more common than where all three layers converge. These convergences become more telling when studied alongside of the existing uses on the site, which is shown in Figure 10.1.1. This particular map ignores the landscape entirely and simply presents the overlaps and connections in relation to the areas that are already being utilized on the site. In this particular diagram it becomes clear that, despite the fact that there are places where the identified areas of overlap and connection do not coexist with any uses, the majority of the residential, public, and commercial areas do have a strong relationship to the areas discovered under the first steps of the analysis. This is especially true along Enterprise Street in what was the former urban center for the base and along Saratoga Avenue in the eastern portion of the site along the residential neighborhoods and the existing elementary school. There are, however, areas like the horse stables and the White Plains Beach Park which do not have any direct interaction with the areas identified in the study.

The next image, Figure 10.1.2, shows the actual path of a site-wide framework plan. After studying the first two images, this plan was deduced from the information withdrawn about the layers and their convergences. The plan is a compilation of different components working together to create the predominant network for the site. At times there are singular systems functioning alone in the framework, while other times there are different combinations of two and even all three layers that help form the framework. In this particular case the number of times that a layer exists alone is relatively small compared to the total breadth of the system. This is desirable for a framework since more layers functioning together give more opportunity for the systems to work together toward a common goal. The section marks on the map refer to the figure number of the convergence section that is representative of that symbol on the map. The section drawings can be found following this particular figure.

The last portion of the study includes four different convergence section sketches. The first three of these refer to the different combinations of two layers converging, and the last depicts the convergence of all three layers. Figure 10.1.3 shows the convergence of the street and bicycle layers, where coexistence of the two types of transit is shown. The two also aim to reduce stormwater runoff and instead promote the collection and reuse thereof

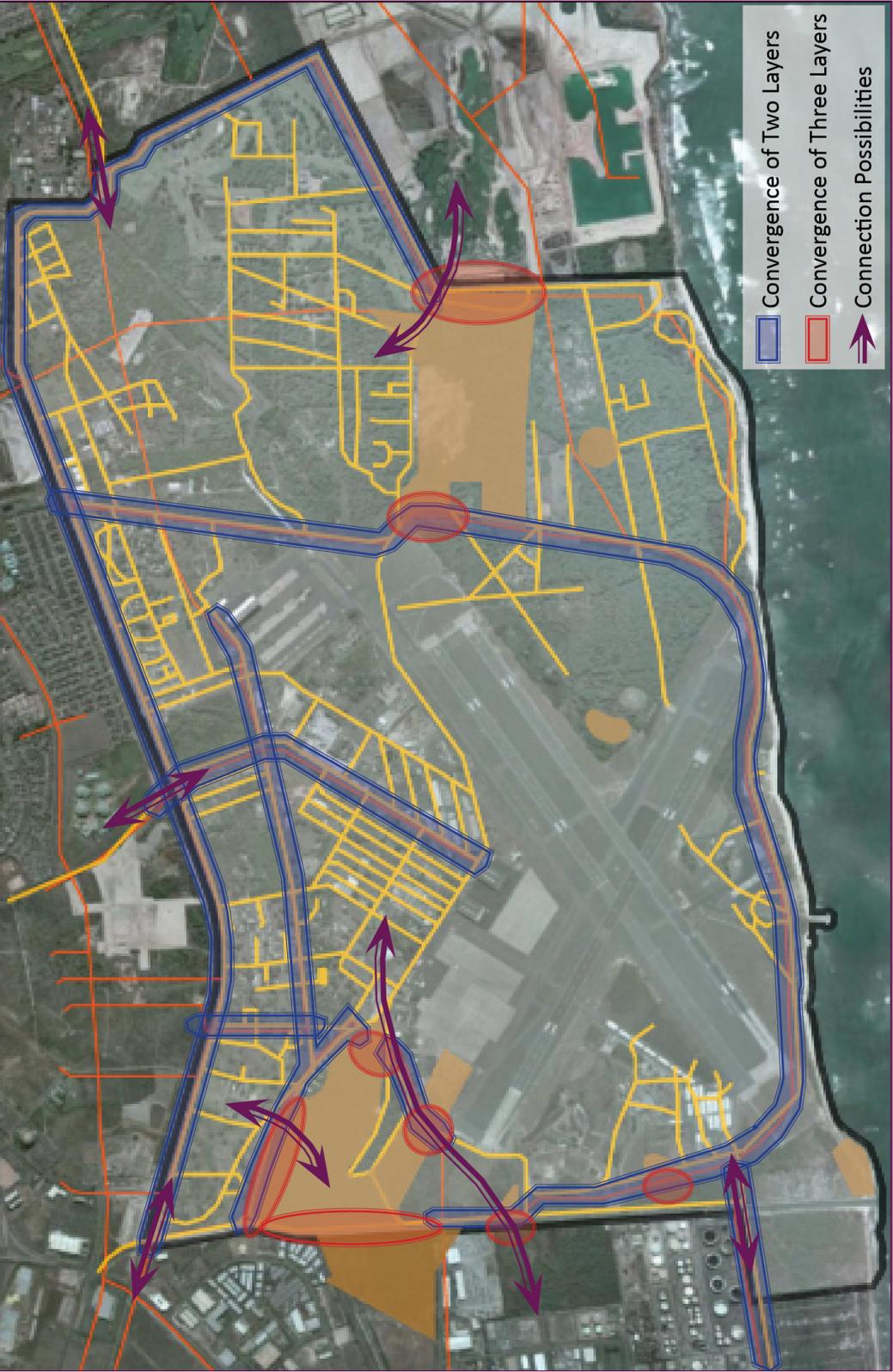


Figure 10.1: Study Situation Number One
BICYCLE NETWORK · HYDROLOGY, FORESTRY, AND COASTLINE RESOURCES · STREET NETWORK

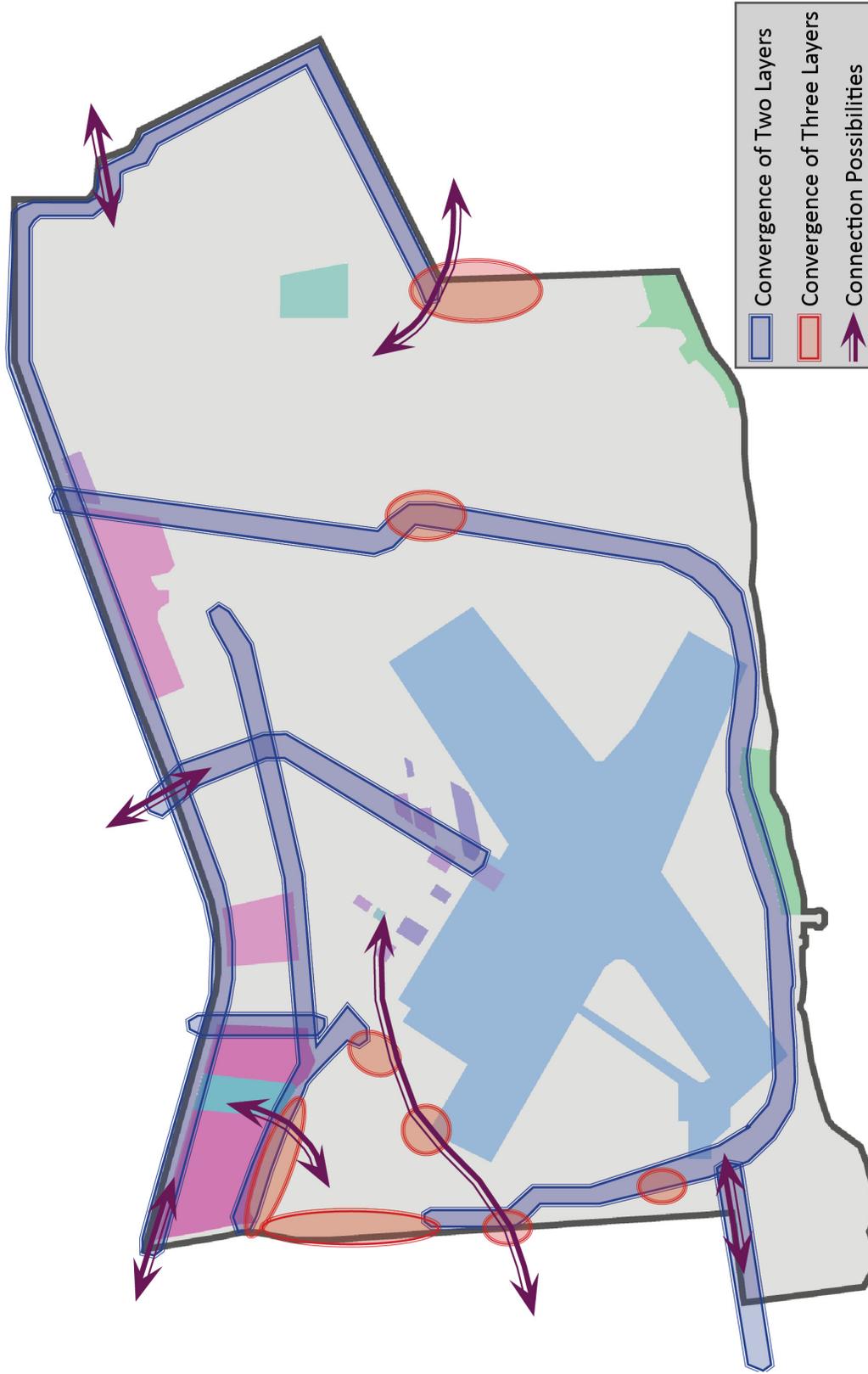


Figure 10.1.1: Study Situation Number One with Existing Uses
BICYCLE NETWORK . HYDROLOGY, FORESTRY, AND COASTLINE RESOURCES . STREET NETWORK

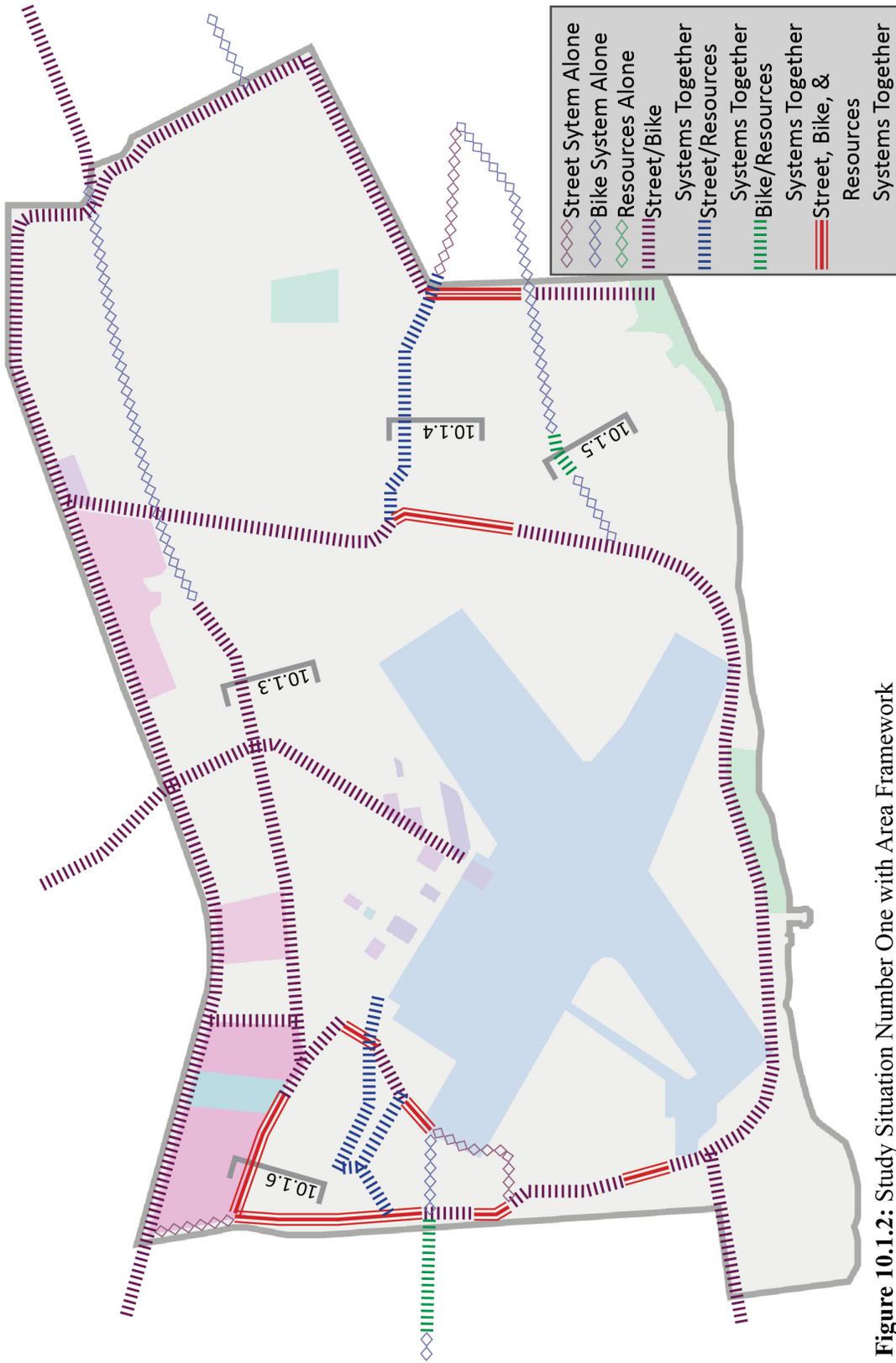


Figure 10.1.2: Study Situation Number One with Area Framework
BICYCLE NETWORK . HYDROLOGY, FORESTRY, AND COASTLINE RESOURCES . STREET NETWORK

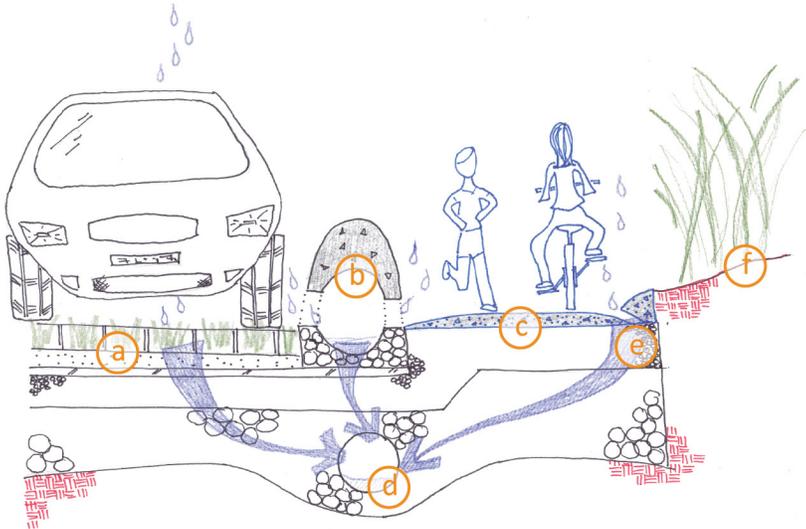


Figure 10.1.3: System Convergence of Street and Bicycle Layers

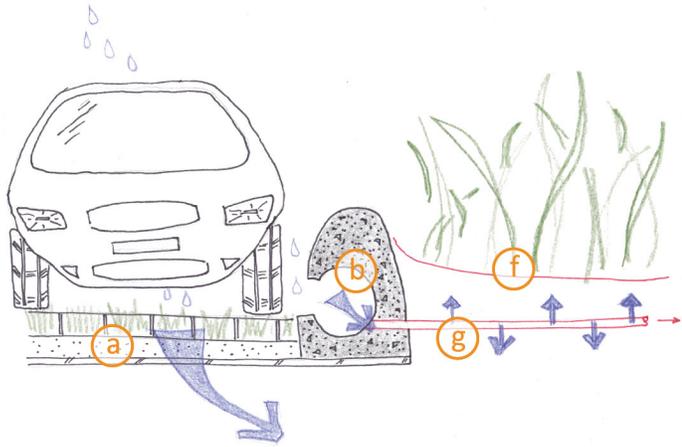


Figure 10.1.4: System Convergence of Street and Hydrology, Forestry and Coastline Resources Layers

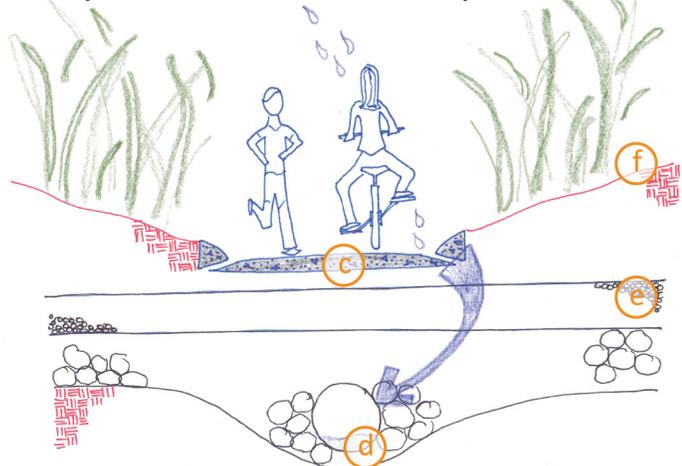


Figure 10.1.5: System Convergence of Bicycle and Hydrology, Forestry, and Coastline Resources Layers

- (a) Open Grid Paving System
- (b) Stormwater Runoff Collection Drain
- (c) Bicycle/Running Pathway
- (d) Stormwater Collection Tank
- (e) Loose Packed Gravel Filtration
- (f) Conserved or Constructed Natural Habitat
- (g) Subsurface Drip Irrigation System

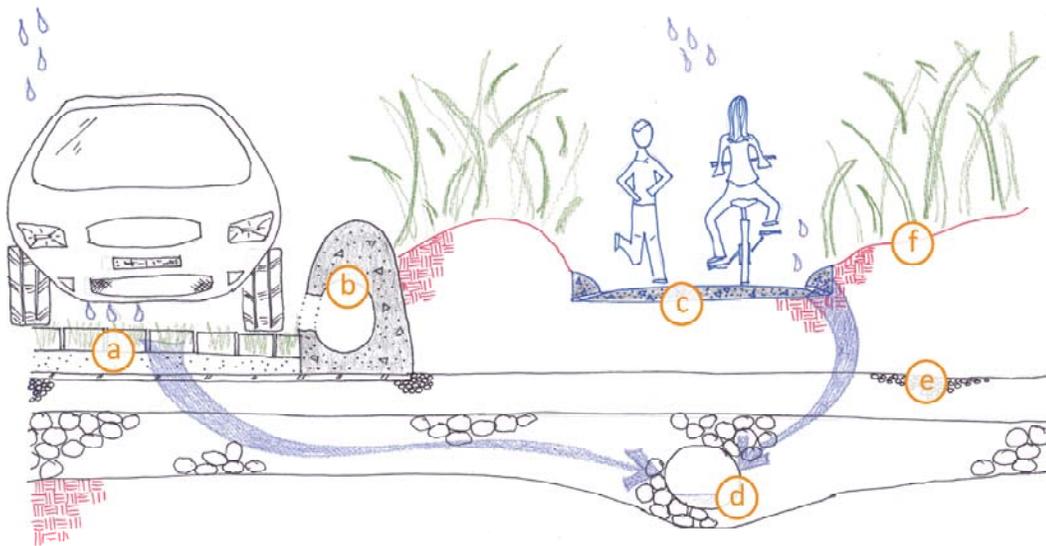


Figure 10.1.6: System Convergence of All Three Layers

in a sustainable way. The open grid paving system on the street slows traffic and also allows rainwater to absorb into the ground and be directed to a subsurface stormwater retention tank. The same is true of the bicycle path, which has a gutter system that collects and transfers water to the same storage tank system, but not before passing through loosely packed gravel to help with natural filtration and removal of sediment from the water. The path is also situated higher than the road with a large decorative barrier separating the two forms of traffic in order to insure the safety of bicyclists and pedestrians on the pathway. Figure 10.1.4 shows the convergence of the street and the hydrology, forestry, and coastline layers. The street system is similar to the first section with the paving being an open grid system. While this still serves to slow traffic, it is also a reminder of the area one is in as driving on the grass paving correlates for the driver that the area is a conservation zone for endangered species of plants and birds. In this system, though, stormwater passing through the paving is allowed to soak into the earth and that which makes its way into the curbside collection drain is directed into a subsurface drip irrigation system that supplies additional water to the habitat areas. When the bicycle and hydrology, forestry, and coastline layers converge, as shown in Figure 10.1.5, the system is fairly simple. The bicycle lane still has gutters to collect and direct the rainwater to an underground storage tank for stormwater collection, but otherwise the section is straightforwardly a path surrounded by the habitat. The concept is that in these areas the complete emersion of nature can both calm and invigorate cyclists and runners, and also pedestrians can feel close to nature in an otherwise urbanized environment. Finally, in Figure 10.1.6 all three layers converge. The open paving street system and the bike path still serve to collect and direct stormwater to subsurface collection areas for later use on the site. Here, the habitat area acts as a buffer, reminding the automobile drivers of the area in which they are driving and offering pedestrians and cyclists the feeling of removal from the streetscape.

PRELIMINARY STUDY NUMBER TWO: SERIES 2, 4, 1

Due to the fact that there is an underlying organization to the way that the preliminary studies are performed, the documentation for this second study resembles closely that which was presented for the first. The information therein, however, is different due to the fact that this study deals with the bicycle network, the water distribution system, and the street network layers. The first map, Figure 10.2, shows the identified areas of overlap between two and three layers as well as the primary connection zones within and out of the site. The number of convergence areas is quite large in this particular study overall, but what is more interesting in comparison to study number one is that the majority of the areas identified are the convergence of 3 layers. These three particular layers follow roughly the same primary paths throughout the site, making the creation of a framework with these layers seem almost natural. When, in Figure 10.2.1, the aerial background is removed and the convergence and connection zones are investigated in relation to the existing uses on site, it becomes apparent that every usage is connected to the identified zones in some way. Much like the previous study, the most complete connections occur in the northwest corner of the site by the residential and school areas. The old urban center of the site is also well connected to the convergences as well. But in this study even the horse stables and the White Plains Beach area come in contact with the areas.

Figure 10.2.2 shows the pathway for the framework throughout the entire site. This pathway, like the one in the previous study, is made up of different elements. At some points a single layer alone makes up part of the framework while at others convergences of two or three layers make up parts of the framework. Despite the mixture of elements that make up the framework, they all work together in the end to create a continuous pathway throughout the site. This pathway, in the end, would act as the organizing factor that would direct future development within the site. In this example there are few portions, however, that are single layers acting individually. Thus, the majority of the framework in this study is made up of areas that have two or more layers converging. And what's more, the majority of these layers of overlap involve all three of the layers at once. This condition is preferable simply because, as stated before, the areas where all layers converge provide the most opportunity to create a cohesive system that directs development, promotes sustainability, and provides for the needs of the community.

The first of the sectional sketches, Figure 10.2.3, shows how what kind of system could be in place in areas where the street and bicycle layers converge. The intent in this system is foremost to provide cyclists and pedestrians using the pathway with adequate safety. Again the decorative concrete barrier atop the storm drain is utilized to act as a physical separation between the two types of transit. Also, on the pedestrian side of the barrier is some green space for plants and shrubs to grow and block out the view of the traffic from the pedestrians. Both the street and the bicycle lanes direct stormwater to the collection drain, and from there it is deposited in the collection tank for treatment and reuse. The

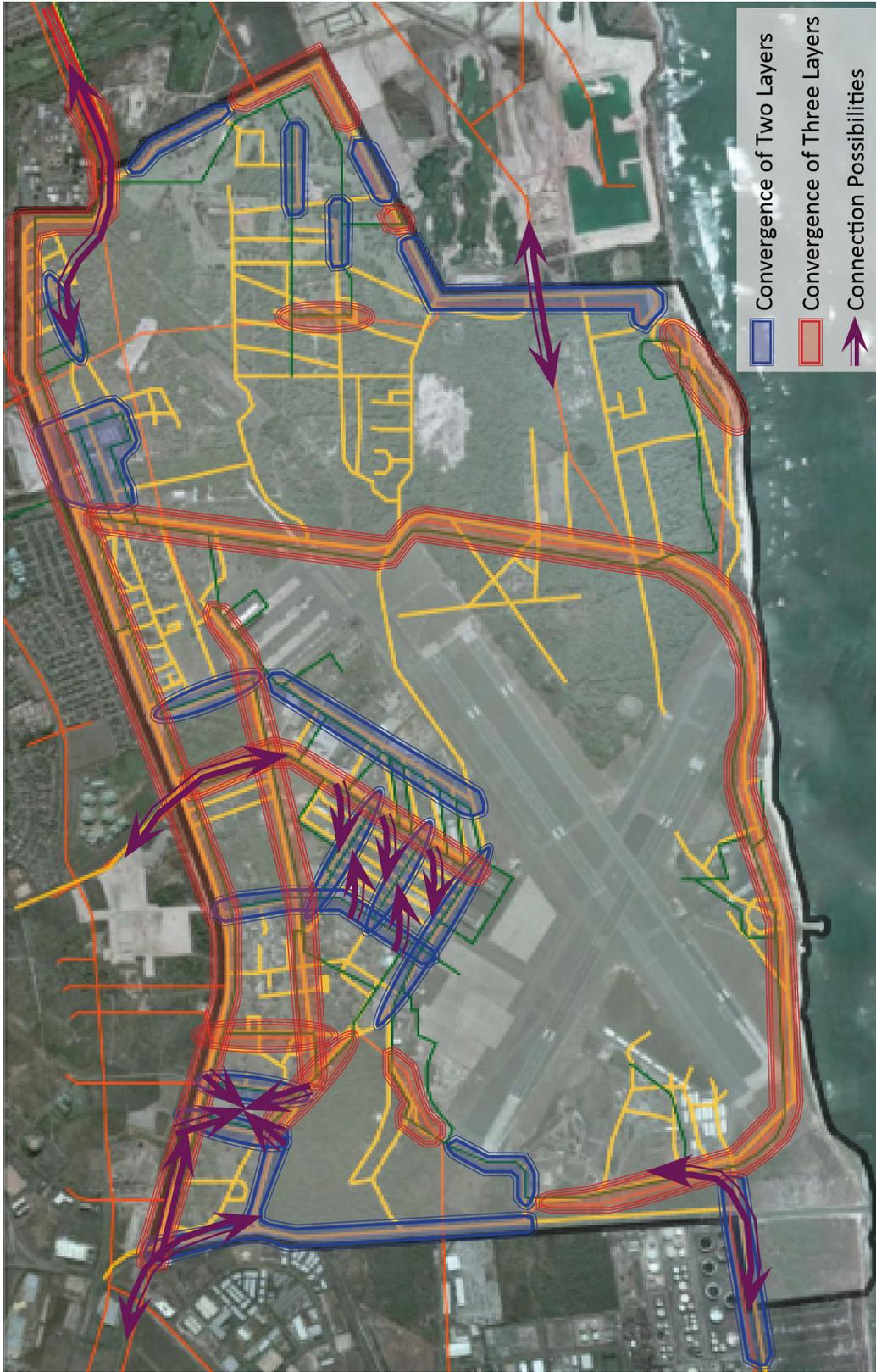


Figure 10.2: Study Situation Number Two
BICYCLE NETWORK . WATER DISTRIBUTION SYSTEM . STREET NETWORK

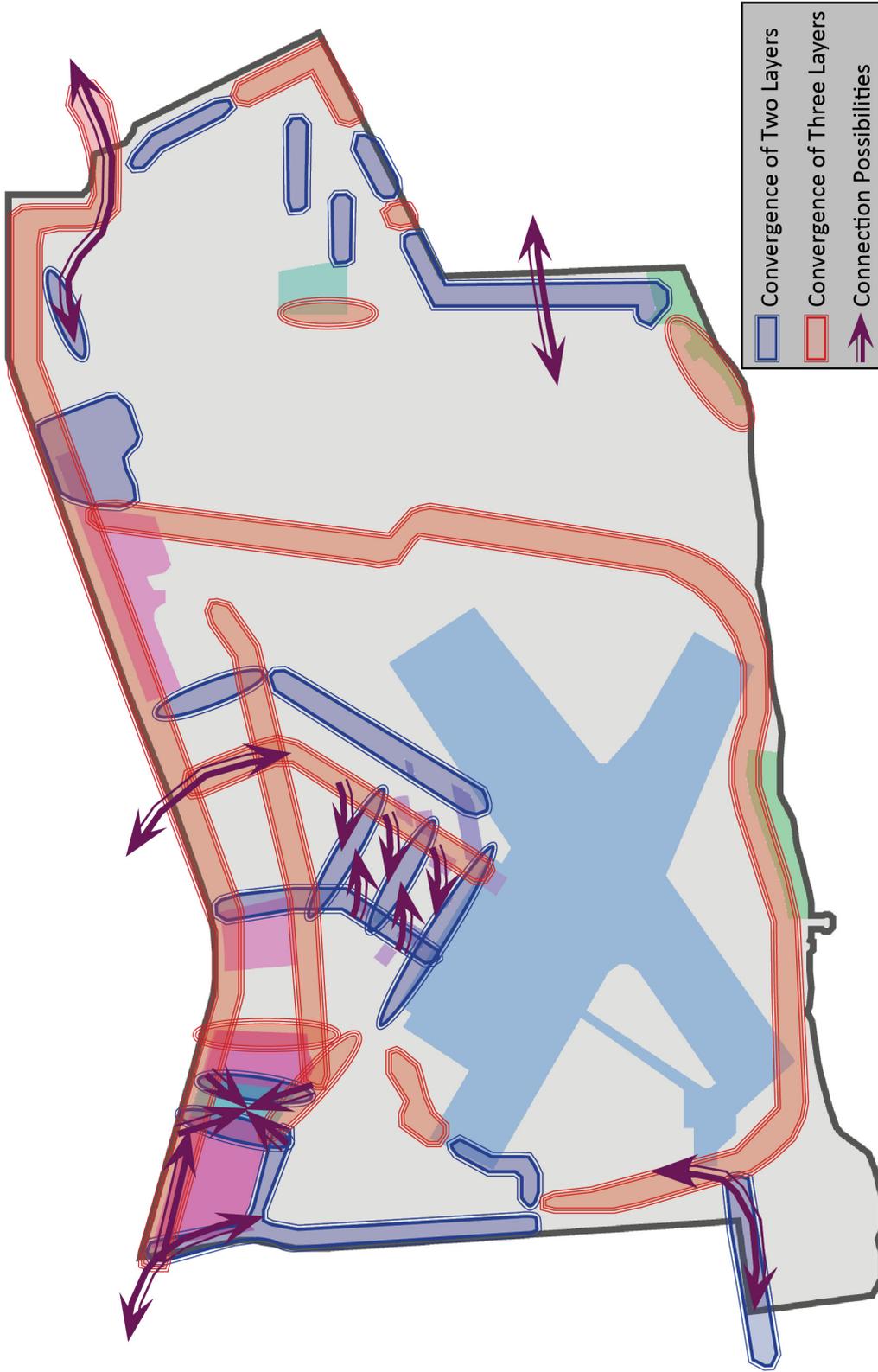


Figure 10.2.1: Study Situation Number Two with Existing Uses
BICYCLE NETWORK . WATER DISTRIBUTION SYSTEM . STREET NETWORK

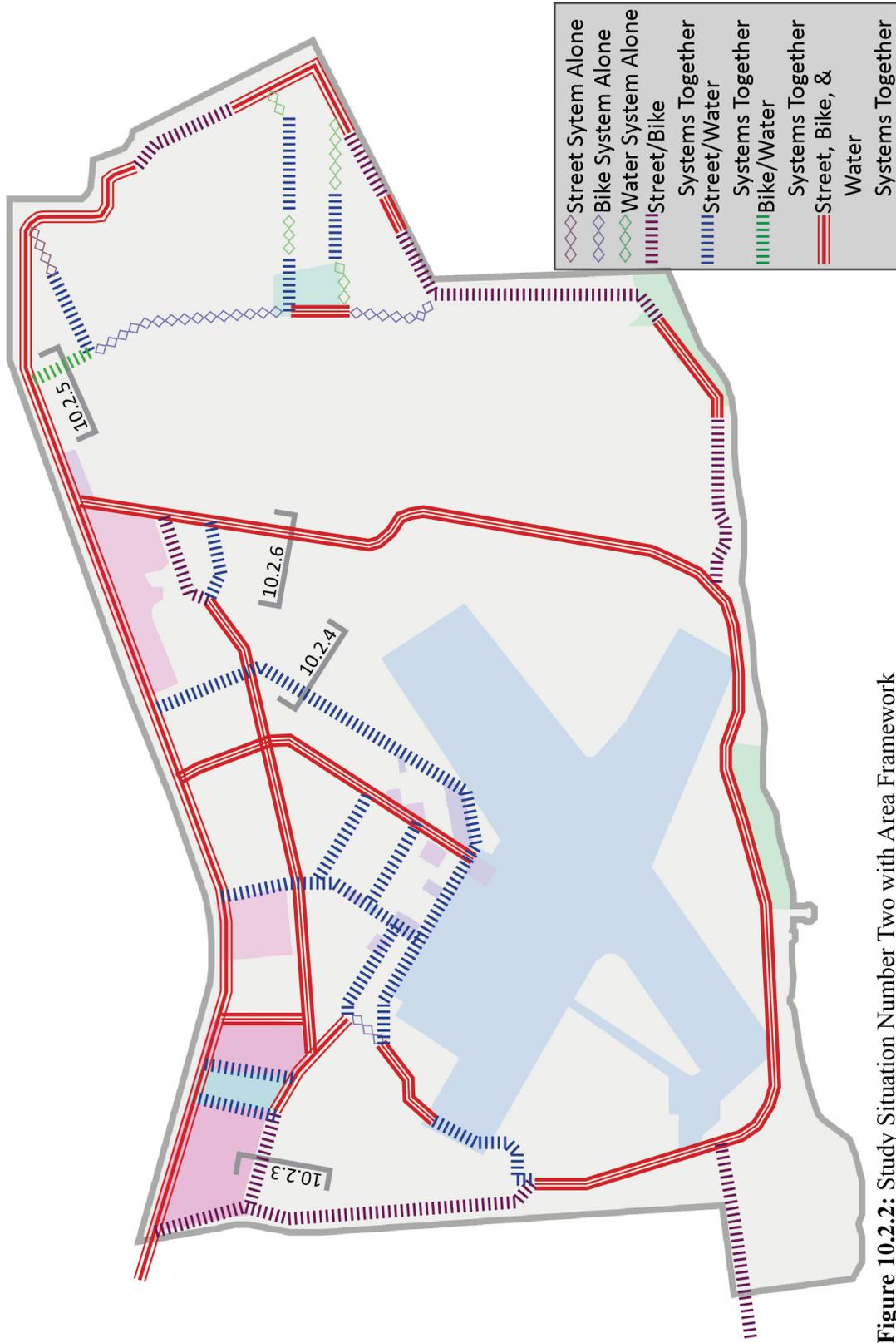


Figure 10.2.2: Study Situation Number Two with Area Framework
BICYCLE NETWORK . WATER DISTRIBUTION SYSTEM . STREET NETWORK

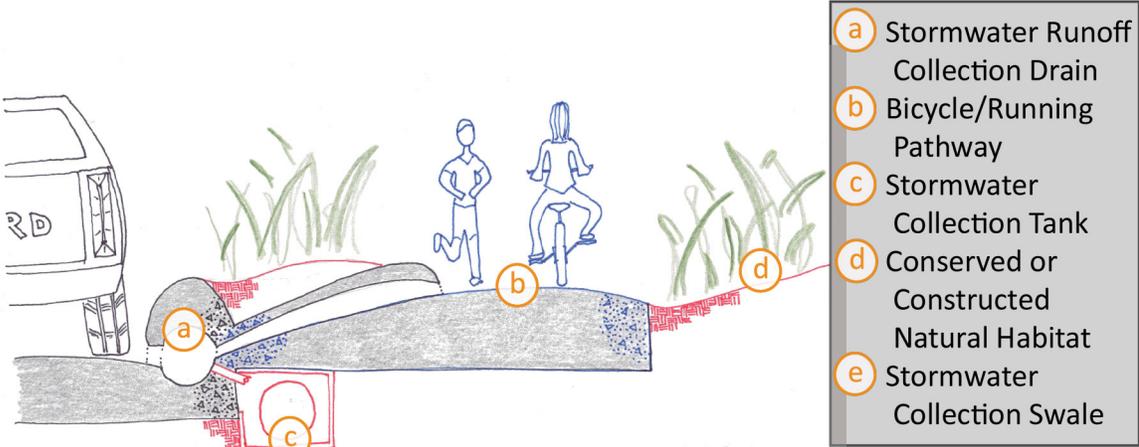


Figure 10.2.3: System Convergence of Street and Bicycle Layers

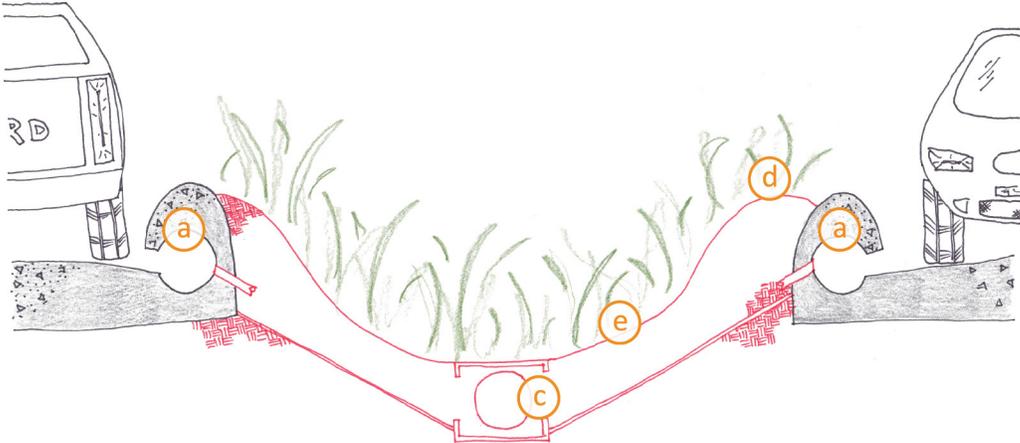


Figure 10.2.4: System Convergence of Street and Water Network Layers

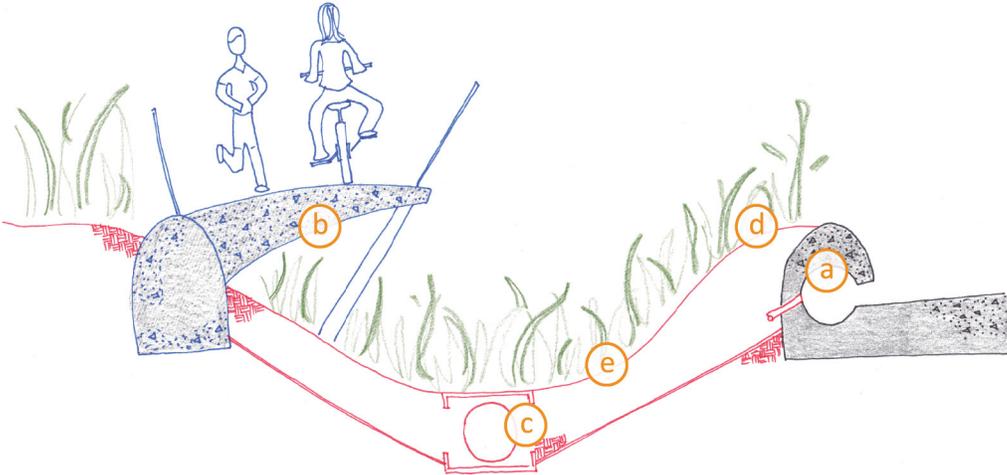


Figure 10.2.5: System Convergence of Bicycle and Water Network Layers

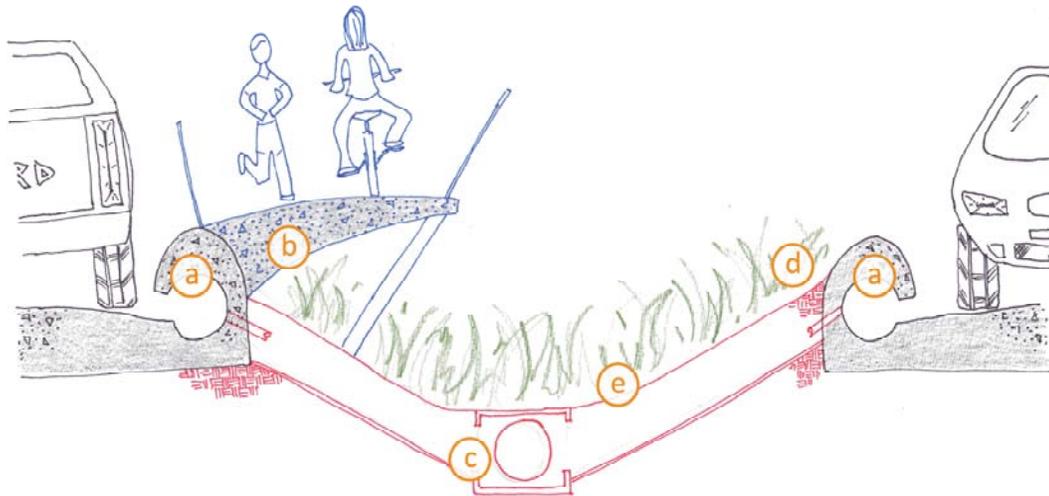


Figure 10.2.6: System Convergence of All Three Layers

second section shows what happens when the street and water distribution layers converge. In this section the two directions of automobile traffic are separated by a large bioswale which collects rainwater and stormwater runoff. The stormwater is filtered through the earth to remove sediment until it reaches a liner which then directs the water toward the collection tank. The earth within the swale can be used to provide habitat for indigenous and endangered plants, as well as adding an enhanced aesthetic quality to the roadside. When the water distribution and bicycle layers converge, depicted in Figure 10.2.5, the bioswale is utilized again to direct any stormwater that is deposited either directly from rain or indirectly through storm drains into a collection system for future reuse. This, again, can work equally well as a habitat for indigenous species of plants on the site. The bicycle system is cantilevered over the swale in order to create a connection between the two while also ensuring that the swale can perform as necessary. Finally, in Figure 10.2.6 all of these different concepts come together to create the system that occurs when all three layers converge in the same spot. Here the sides of the street are again separated and direct their stormwater through collection drains and into the earth to be filtered and deposited into the collection tank. The bicycle system cantilevers over the centrally located swale on one side to help connect the habitat and the runners. The swale again adds a level of aesthetic quality for both pedestrians and cyclists on the bike path as well as for drivers in their vehicles. The separation between the automobile lane and the bicycle lane on the side where they are adjacent is twofold, in that there is a steel barrier but also that the bike path is actually elevated to a height greater than the traffic lane.

PRELIMINARY STUDY NUMBER THREE: SERIES 2, 9, 5

The third, and final, preliminary study investigates the integration of the bicycle network, the hydrology, forestry, and coastline resources, and the wastewater system layers. Again, the documentation for this study follows the same format and organization as the previous two, and so the figures appear to be similar to those already presented. These maps, however, contain information particular to the characteristics of these three layers working in coordination with one another. By looking at the first map for this study, Figure 10.3, it can immediately be seen that these three particular layers do not have very much in common with one another as far as their paths throughout the site. There are, in general, few places on the site where two of the layers converge at all. And there are even fewer areas where all three come together in the same location. For this reason alone, it becomes questionable whether these three layers together are capable of creating a predominant network that can be continuous throughout the site and direct future development toward the goals for the site. Although the areas of convergence and connection are limited under the conditions of this study, it can be seen on Figure 10.3.1 that the areas where these situations do occur are typically near the existing uses on-site. These connections with the existing uses occur in the northwestern area of the site for the most part, along the residential areas and the existing elementary school. The connections are also strong along the southern extents of the site, along the boundaries of the Nimitz and White Plains Beach Parks. In the central part of the site there are some strong connections as well, occurring along Enterprise Street with the commercial and business services that still exist along that corridor.

Figure 10.3.2 shows that, due to the nature and location of the convergence and connection areas, it becomes difficult to create a continuous framework throughout the site without utilizing a lot of areas that are made up of only a single layer. In the previous studies there were areas that required single layers to be utilized in portions of the framework, but in both cases the occurrence of this was rather limited in number. In this third study, though, the locations that consist of single layers acting as a portion of the framework makes up the majority of the system versus the minority. In fact, there are only three small portions of the framework that have all three layers involved in the same area. Overall, this particular set of conditions regarding the layers makes for a framework that is primarily consisting of individual layers functioning alone. This is generally not the intent of the framework, which is aimed at creating beneficial systems out of the convergences of two or more layers.

The ways in which the few convergences that do occur within the framework can be treated are shown in the sectional sketches starting with Figure 10.2.3, which shows how the bicycle and wastewater layers can work together to create a system. In this combination of layers the bicycle system is much like any normal bicycle or pedestrian path, bordered on one side by either natural habitat or a street, and bordered on the other side by a subsurface wastewater treatment system. This system is a constructed wetland which can

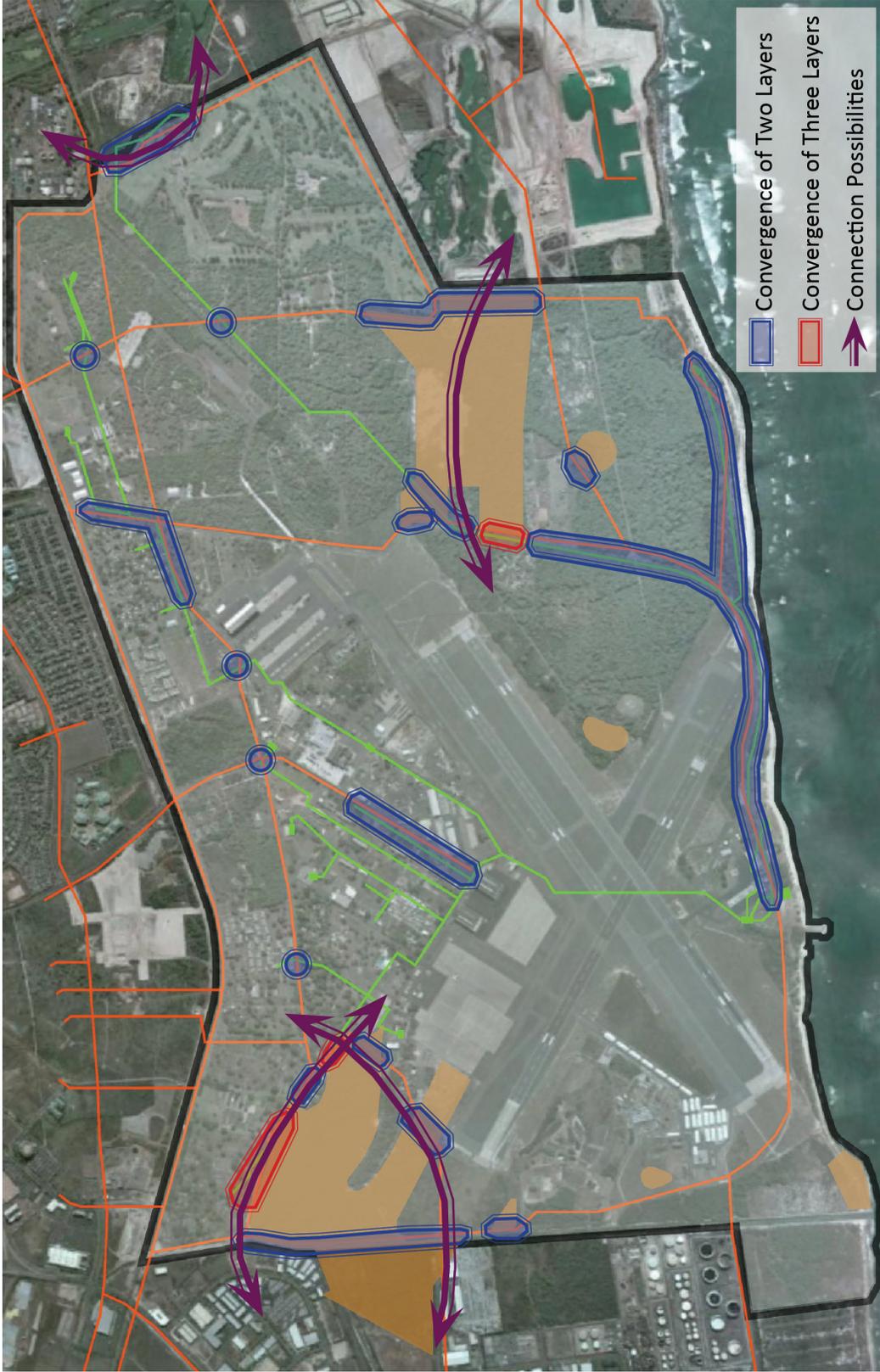


Figure 10.3: Study Situation Number Three
BICYCLE NETWORK . HYDROLOGY, FORESTRY, AND COASTLINE RESOURCES . WASTEWATER SYSTEM

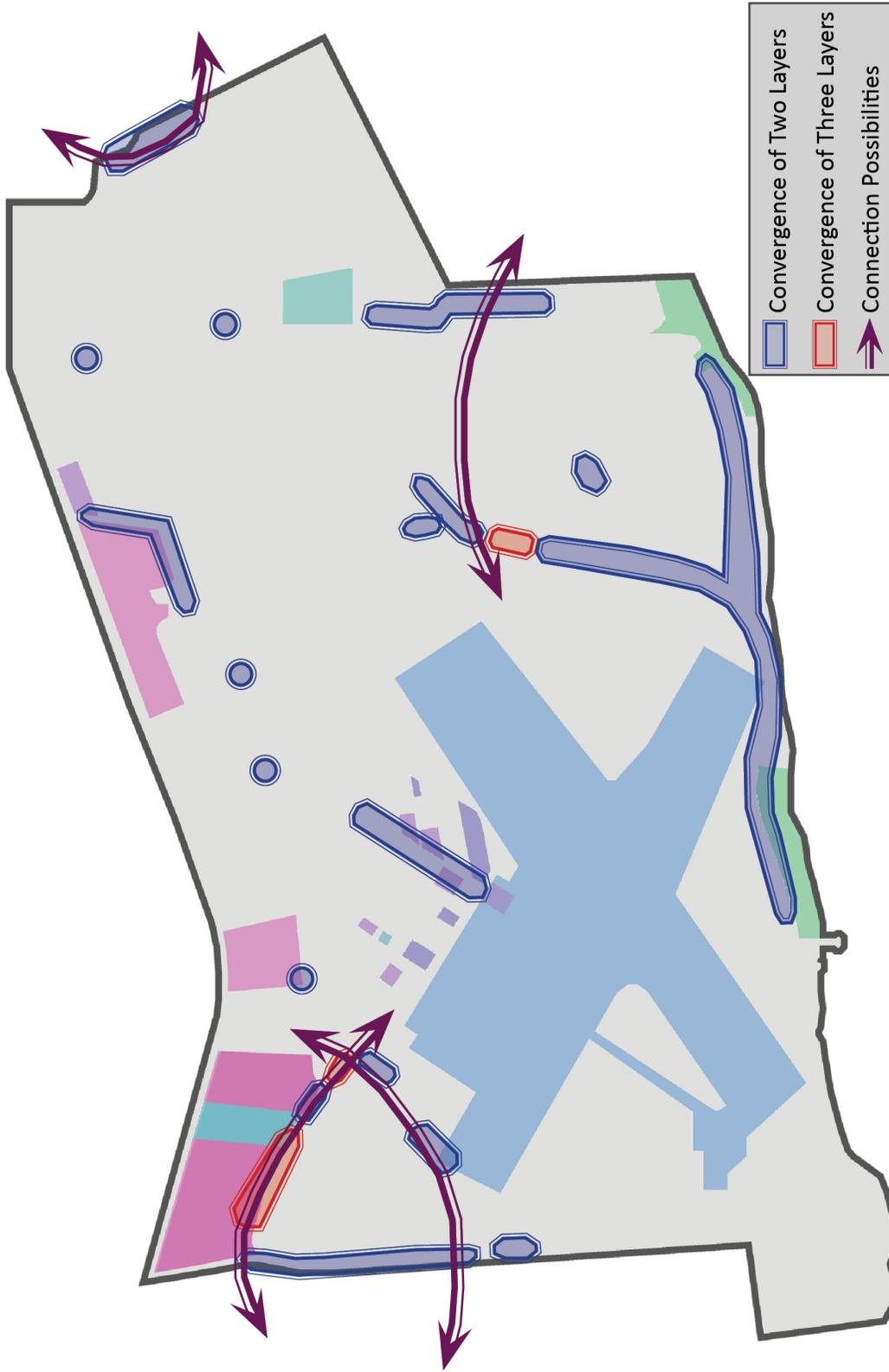


Figure 10.3.1: Study Situation Number Three with Existing Uses
BICYCLE NETWORK . HYDROLOGY, FORESTRY, AND COASTLINE RESOURCES . WASTEWATER SYSTEM

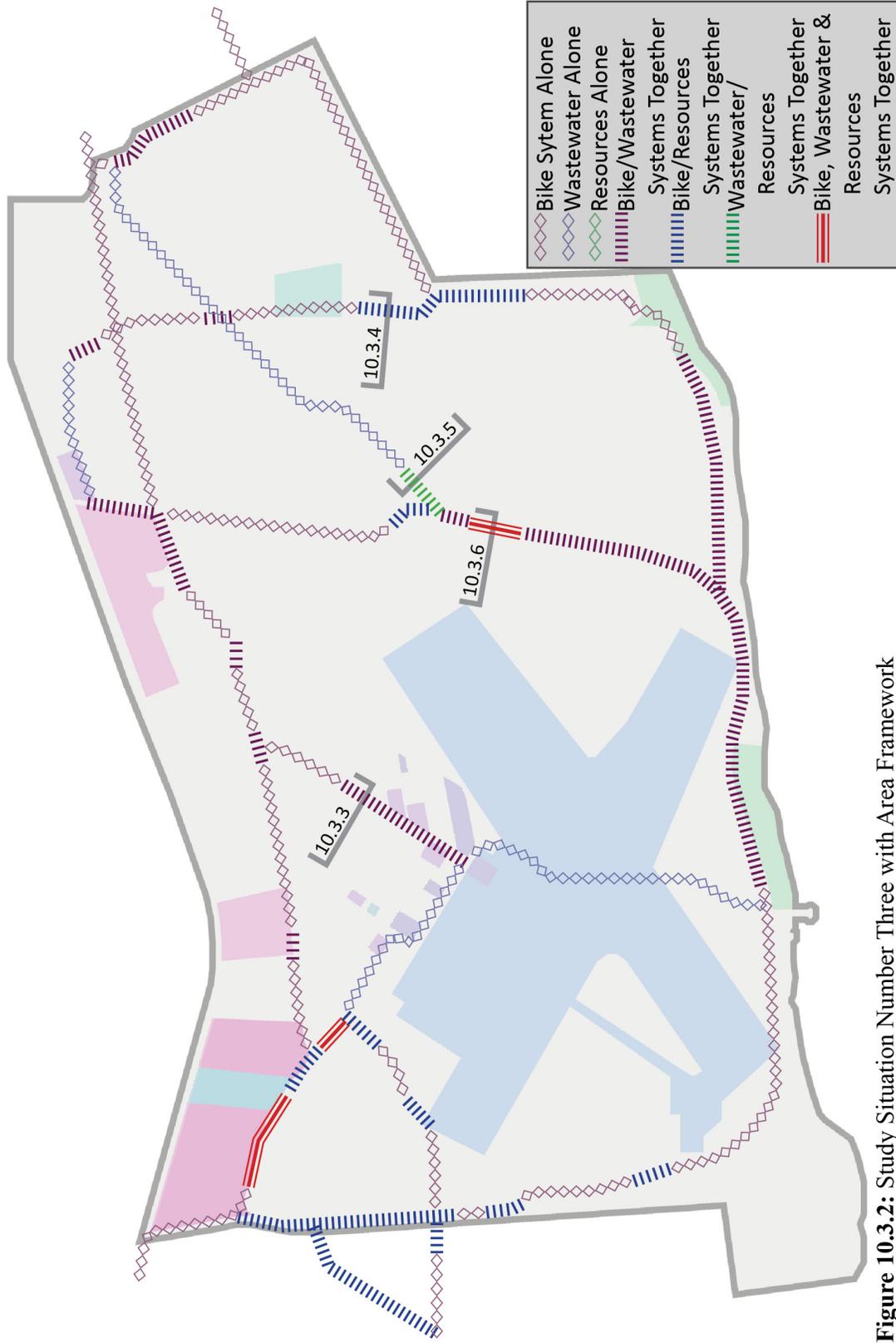


Figure 10.3.2: Study Situation Number Three with Area Framework
BICYCLE NETWORK . HYDROLOGY, FORESTRY, AND COASTLINE RESOURCES . WASTEWATER SYSTEM

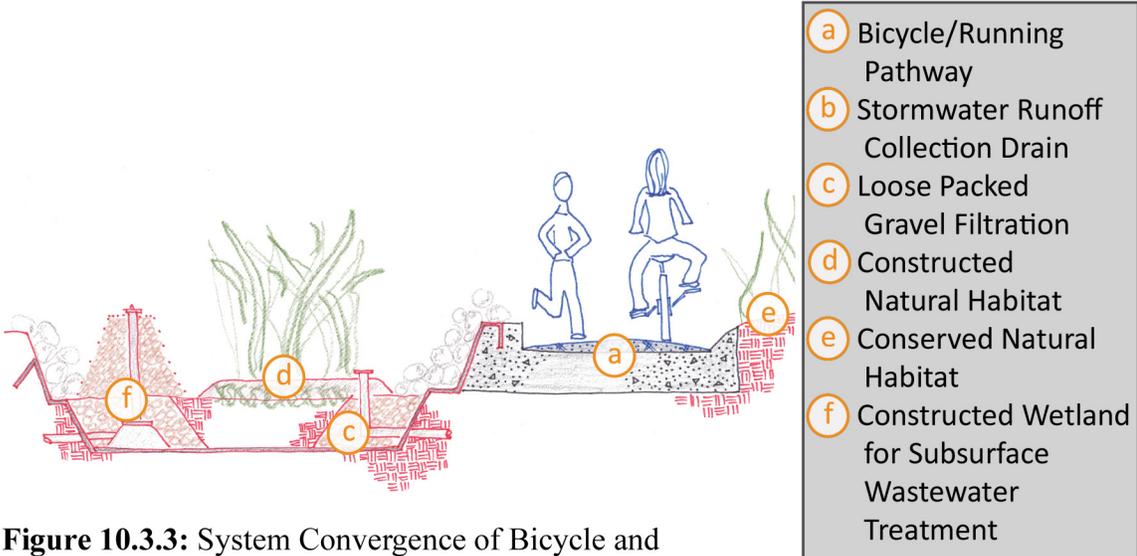


Figure 10.3.3: System Convergence of Bicycle and Wastewater System Layers

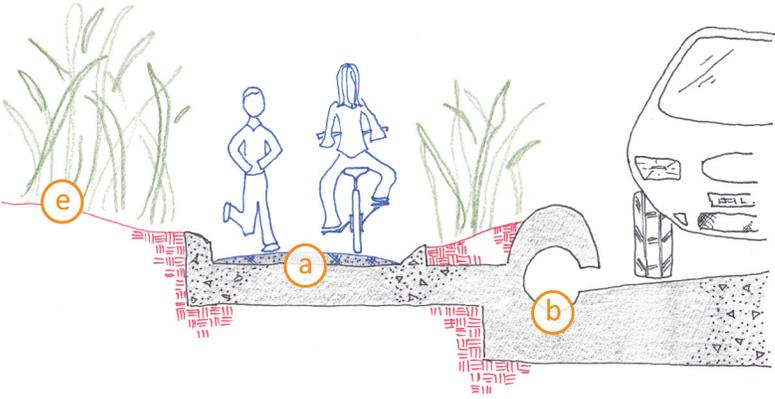


Figure 10.3.4: System Convergence of Bicycle and Hydrology, Forestry and Coastline Resources Layers

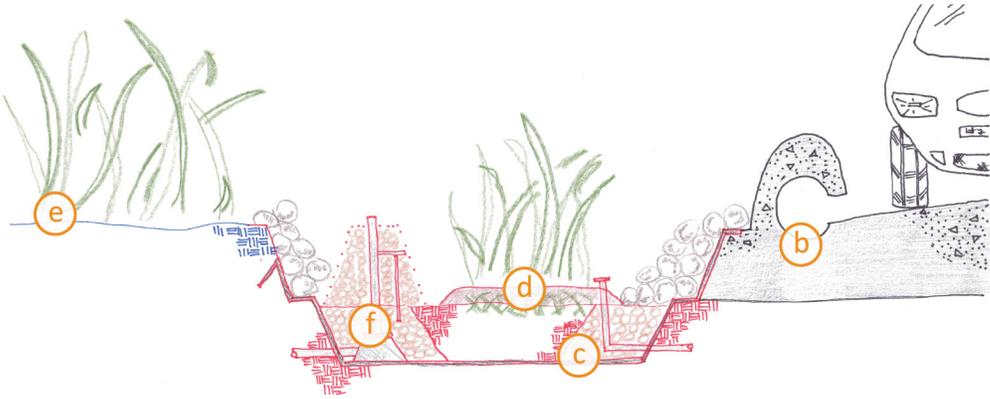


Figure 10.3.5: System Convergence of Wastewater System and Hydrology, Forestry, and Coastline Resources Layers

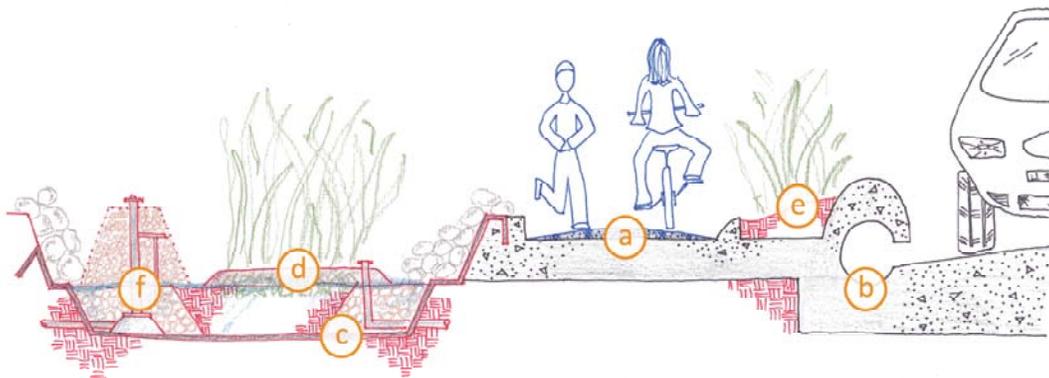


Figure 10.3.6: System Convergence of All Three Layers

be designed to support some of the endangered species in the area that are in need of more habitat area. The system pumps wastewater through a series of ever finer gravel beds until it reaches a rooting zone 1-2 feet below the actual surface, which keeps odors concealed. The wastewater is then passed through the roots which have naturally occurring microbes that work to break down the waste and absorb the nutrients. In this way the water is naturally purified to a level that it is safe to reuse in subsurface irrigation systems. The system doesn't require typical water storage tanks or treatment plants, and because the process is a natural one the maintenance of the system is minimal.²⁵⁴ In Figure 10.3.4, the convergence is between the bicycle and the hydrology, forestry and coastline resources. The system is a simple one with the pedestrian zone passing through the resource zone with habitat on both sides in order to give the users a sense of connection with the environment. Figure 10.3.5 shows the system when the wastewater and the natural resource zones come in contact. The wastewater system is still a constructed wetland with subsurface treatment, but it can either be surrounded on both sides by habitat, or may be bordered by a street or other built environment on one side. The constructed habitat that provides the rootbeds for the wastewater system can serve as an extension for the habitat area while also adding aesthetic value to any infrastructure or service that may border the system. And finally, when all three layers converge all of these systems work together to form one cohesive system where the bicycle lane borders the street but is well protected from automobiles by a decorative concrete barrier as well as a small constructed habitat to block some views and noise from traffic. On the other side of the bicycle lane is the subsurface wastewater treatment system that not only purifies wastewater but also provides habitat areas. And beyond the wastewater treatment portion of the system the natural, conserved habitat areas already existing on the site can remain.

²⁵⁴ Natural Systems International. 2010. "Constructed Wetlands." Mindshare Studios. (accessed 13 February 2010) <http://www.natsys-inc.com/resources/about-constructed-wetlands/>

FINAL DESIGN PROPOSAL . CONTINUATION OF STUDY NUMBER TWO: SERIES 2, 4, 1

The final design proposal is simply a further development of one of the studies just presented. The final design could have been a development of any one of the three studies, as they all present valid arguments for how a framework system could be constructed based on their particular layers. The study that is furthered, however, is number two, and the reason for this is that the conditions of the study made for the most complete and most cohesive framework to run throughout the entire site. Study number two presented the interactions of the bicycle network, water distribution system, and street network. This study had the largest number of naturally overlapping areas in general, and by far the most areas that showed a convergence of all three layers. It was due to this factor that the second study was chosen to be further developed into a final cohesive network.

The first step of the process was to look at the negative spaces outside of the framework and understand which areas were of special concern. The result of this analysis can be seen in Figure 10.2.7. There were four different reasons that an area was marked as a special concern. The first of these was in regards to open space. The open space in some areas is necessary because of the endangered habitats that grow there, in other areas of the site is it required as a buffer for the airstrips in case of an issue during takeoff or landing, and along the southern boundary the coastline is marked for open space because both the soil type is not compatible with most kinds of development as well as the spaces provide valuable recreational opportunities for residents. The second type of special concern area was the ones with requirements concerning special uses. The large scale uses, the Army National Guard, the U.S. Coast Guard Station, and the Barbers Pint Golf Course, all utilize the land in a way that is unique. This is primarily due to the fact that two of the areas are still militarized operation posts. The golf course, however, is also a special type of land utilization as it impacts the surrounding area in terms of real estate value and buyer attraction. The third type of special concern area was concerning industrial land usage. This only occurs in the southwestern portion of the site along the site boundary because this is where the site borders the Campbell Industrial Park. This is not the most appropriate place to build a subdivision of single family homes or even a pedestrian boulevard of commercial spaces because of the types of noises and smells that can come from the operations of an industrial area. Therefore, the area bordering the park should at first be industrial as well, and the usage should be decreased in intensity the further away from the boundary until finally there exists uses that are appropriate to be near residential and other uses. The final special concern area was in regards to mixed use requirements. There is an emphasis towards mixed use throughout the entire project, but there are some areas where it becomes crucial. These areas are primarily located along the major boundaries of the site as well as the main boulevard into the area. These areas are the first things that people traveling along the major transit routes will see, and so it is important that they be lively areas that attract people to visit and even live. Furthermore, these areas are close to the existing residential areas on the site, which are in desperate need of even the most basic services, as well as the soon to be developed areas of the Ewa Marina. These areas can integrate the existing and future communities into the former installation site.

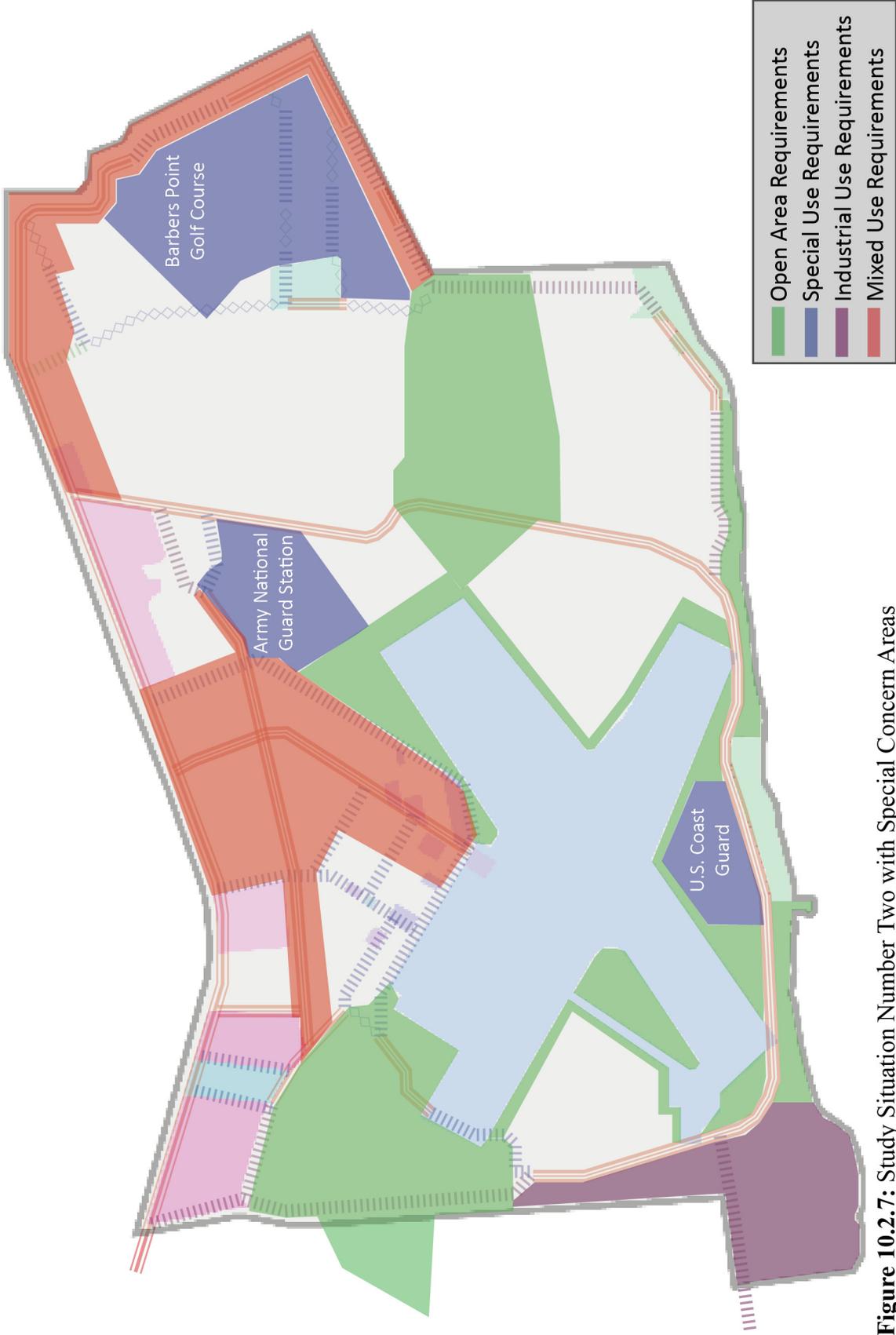


Figure 10.2.7: Study Situation Number Two with Special Concern Areas
BICYCLE NETWORK . WATER DISTRIBUTION NETWORK . STREET NETWORK



Figure 10.2.8: Study Situation Number Two with Cohesive Network

BICYCLE NETWORK . WATER DISTRIBUTION NETWORK . STREET NETWORK

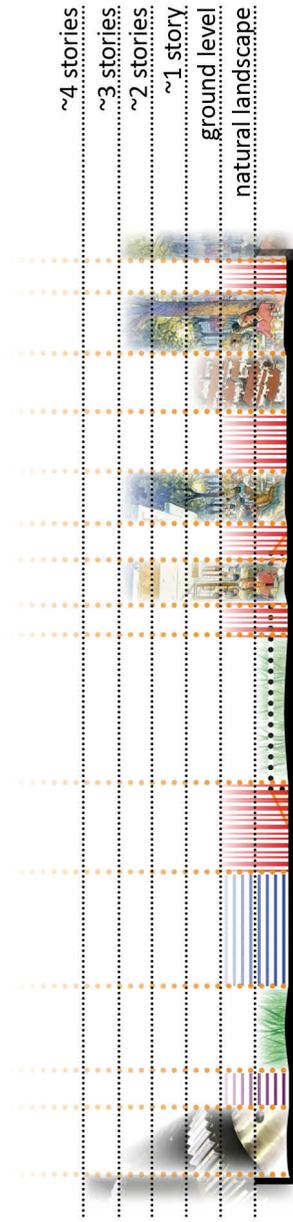


Figure 10.2.9: Conceptual Site Section Number One

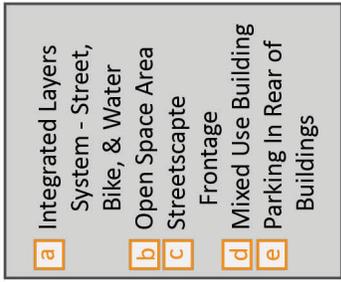
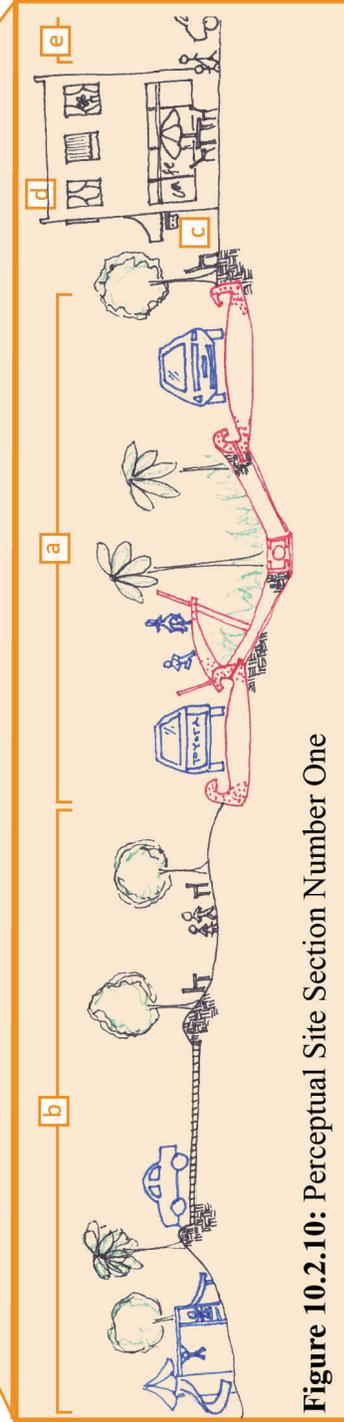
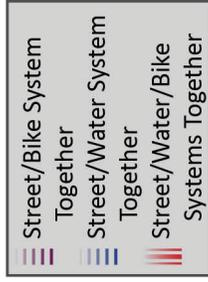


Figure 10.2.10: Perceptual Site Section Number One

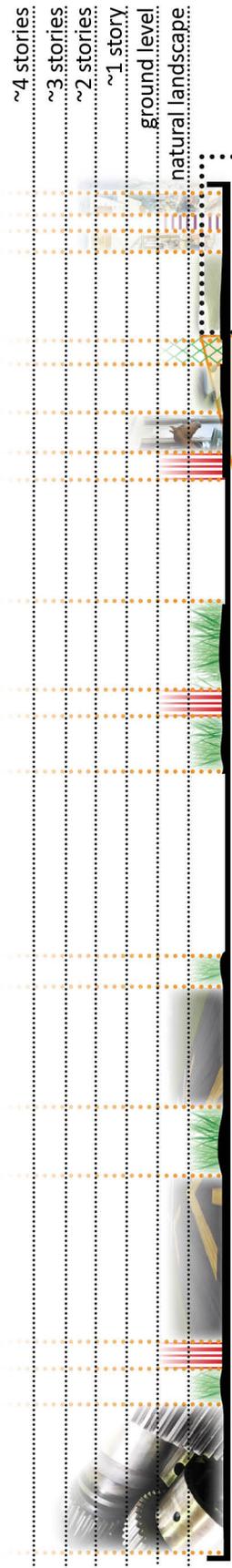


Figure 10.2.11: Conceptual Site Section Number Two

	Water System Alone
	Street/Bike System Together
	Street/Water/Bike Systems Together

a	Streetscapte Frontage
b	Mixed Use Building
c	Parking In Rear of Buildings
d	Special Use: Barbers Point Golf Course
e	Integrated Layers
f	System - Street & Bike Kalaeloa Boundary

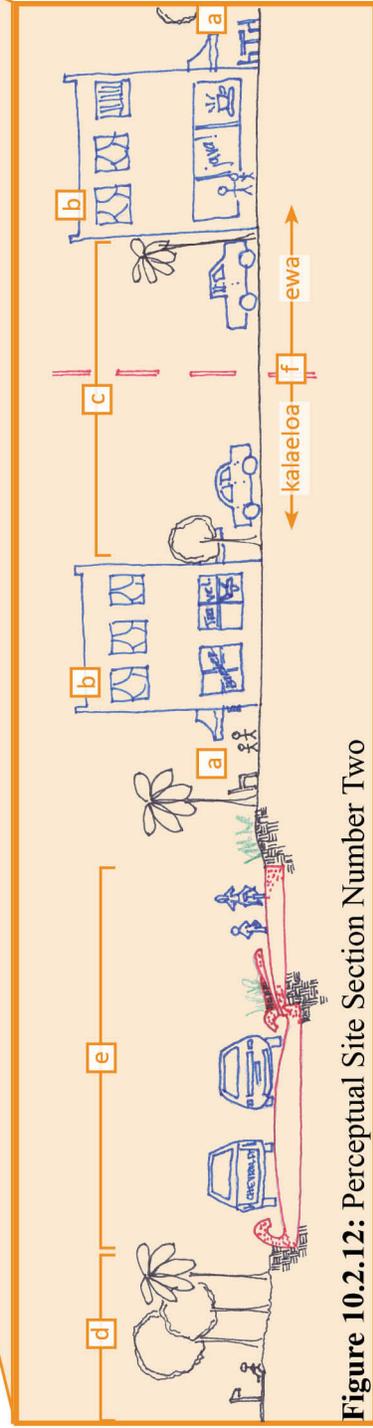


Figure 10.2.12: Perceptual Site Section Number Two

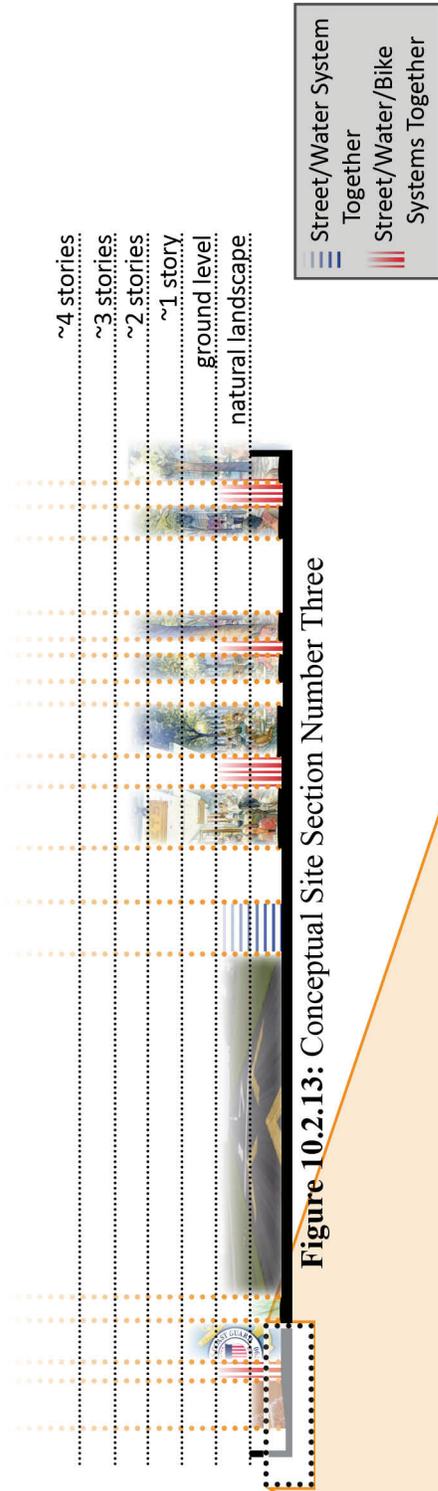


Figure 10.2.13: Conceptual Site Section Number Three

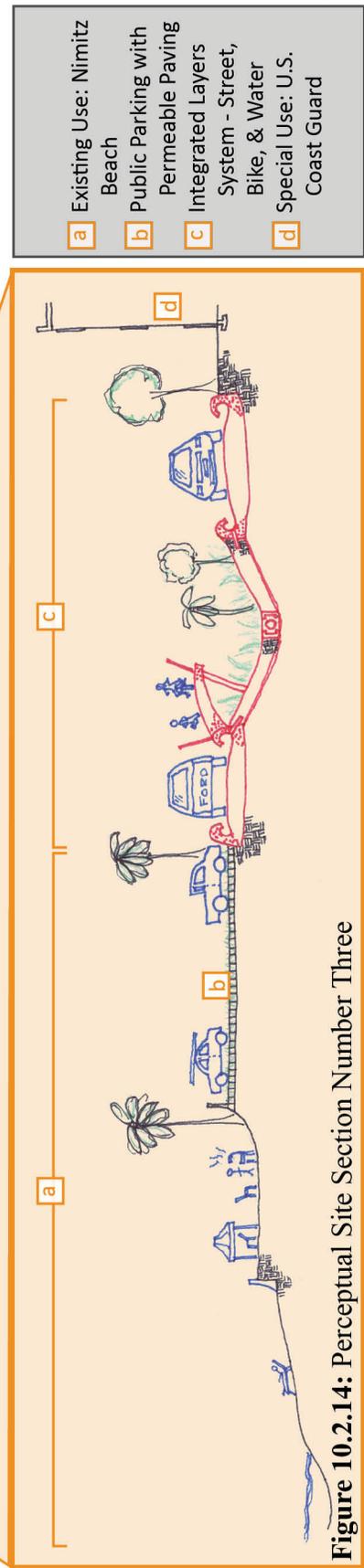


Figure 10.2.14: Perceptual Site Section Number Three

While the first step of the process looked generally at special concern areas, the second steps attempts to refine these areas. The Figure 10.2.8 shows this refinement on the map where areas that were first marked in a broad way are now only marked where they are truly needed. This process was done to ensure that only areas that have some impact on the betterment of the final development are regulated to some degree. The development direction for majority of the site, however, is intended to be left to the community. The purpose of the design is to create an outline that can guide development, and these areas of special concern are important factors to consider when attempting to ensure that the outline is constructed so as to provide the potential for the best possible end product.

The final step following the denotation of the areas outside the framework that require some development guidance was to show how these areas can interact with the network developed out of the randomized layers. The details of these systematic interactions of the layers were discussed in detail earlier in this section of the project under the second preliminary study, and as such they will not be discussed in detail here. The more important consideration at this stage is to understand how the framework of layers can interact at the larger level of a cohesive network when other elements, like special concern areas, become factors of the design. Various interactions at a narrow focus can be seen in Figures 10.2.10, 10.2.12, and 10.2.14. The areas where these sections occur on the site can be seen in the section lines on the Figure 10.2.8 map. The sections can be seen in their larger site context, however, in Figures 10.2.9, 10.2.11, and 10.2.13. These sections show the areas for their experiential quality and not necessarily their architectural one, as this is something that will be later developed by the community.

Figure 10.2.9 shows a section through the entire site, which cuts through industrial, open space, mixed use, and existing residential areas. These can all be seen according to their relative heights and are depicted through pictures that show their general experiential qualities. Figure 10.2.10, which depicts a small portion of the section from Figure 10.2.9 in more architectural terms, cuts through a portion of the framework where all three layers have merged into a single system. To the right of the system is an area that has been marked as a mixed use special concern area due to the fact that the area is a primary thoroughfare for visitors and residents. To the left is an area that has been marked as open space special concern area because it is the location of the habitat for endangered indigenous plant species. Parking in both special concern areas is located off of the street leaving pedestrian pathways to have the primary right-of-way in these locations. The mixed use area shows a multi-level building that contains ground floor commercial uses coupled with second floor residential lofts. The parking for visitors and residents is in the back of the building while the streetscape becomes an area for pedestrians to walk or even sit on a bench under a shade tree. On the other side of the interaction of layers is an open space park with a tree-lined walkway closest to the street. The parking is hidden from sight behind the trees and incorporates permeable paving to help restore the groundwater and decrease the amount of stormwater runoff. Further away from the street, in an area without as much noise or fumes from automobiles, is a children's park and activity center.

Figure 10.2.11 is another larger site section with shows areas with their general heights and anticipated experience. This site cuts through the industrial area, the existing airport runway, the existing horse stables, the existing Barbers Point Golf Course, and mixed use zones. The nomenclature for the section is systematically the same at the first, but it shows the particular conditions of this section of the site. And, in the same manner as the first, Figure 10.2.12 shows a portion of the section in a more detailed, architectural manner. This section is located on the northwestern portion of the site along Saratoga Avenue. The section cuts through the eastern boundary of the site that borders the future site of the Ewa Marina. This section cuts through a part of the framework that has the bicycle and street networks in interaction. To the left is the existing Barbers Point Golf Course and to the right is a mixed use special concern area along the site boundary. The section shows a similar setup within the mixed use area with a multi-story building allowing for live-work residents or even just families who enjoy living in areas where their needs can be met within a short walk. The parking is located in the back of the buildings again, allowing the streetscape to be a pedestrian zone free of parking. The mixed use zone shows another mixed use building on the other side of the parking zone in the Ewa territory. This is showing a way that a mixed use area can bridge the boundary between the two areas and begin to integrate Kalaeloa with its surroundings. In this way the commercial services are no longer solely a Kalaeloa provider, but instead the definition between the areas begins to become less distinct.

Figure 10.2.13 is another conceptual site section utilizing depictions of experiences and approximate height values to give an overall view of what the section could look like when redeveloped. This particular section cuts through Nimitz Beach, the existing Coast Guard Facility, and mixed use zones. The Figure 10.2.14 shows a portion of the section architecturally and occurs along the southern boundary of the site where the layers framework passes along Nimitz Beach to the south and the U.S. Coast Guard Station to the north. The section shows how the framework can interact efficiently with these uses that are already present on the site. The design for the section utilizes the existing uses but integrates permeable paving into the parking area for the beach visitors. This change can slow traffic in an area that has many pedestrians, it relates to the environmental focus of the place and the use, it can help prevent large amounts of runoff during rainy seasons, and it can reduce the amount of radiant heat in the area in comparison to standard asphalt paving. Overall, the use of a permeable system in this location can be beneficial to this particular recreational use. Shade trees in the parking areas and along the streetscape are not only aesthetically beneficial but also help keep the area cooler for pedestrians in general.

These sections are in no way development plans for how the area must develop. They are instead concepts for how they could develop based on the intent of the project. The community still needs to have a say in how the development occurs so as to provide the best service possible for the residents. These sections simply show a way that it could be

done to meet the goals of the design as well as create a type of role model for future developments to emulate and expand upon.

As this final design comes to a close it is important to understand that the entire premise of Non-Planning that flexibility be a key and that the community be the key decision makers regarding the direction of their neighborhood. This is merely a framework for guidance and a launching point for development. While it has been established that the pure form of Non-Planning is simply not practical, a Non-Plan can occur with the minimum amount of planning possible. And that is the concept that this design represents.

SECTION ELEVEN: CONCLUSION

In the past 180 pages this document has focused on a number of topics, has presented a number of cases, and has come to a number of conclusions as the focus progressed from infinitely broad to infinitely narrow. The document began studying four different approaches to redevelopment within the field of urban planning and moved on to investigate formal logic systems and how they can inform decision-making regarding the built environment. Then the focus on military installations that have been decommissioned and left abandoned by the government came to light. Subsequently, deductive logic was utilized to create a formula that was broad enough in scope that it could be applied to any decommissioned military base in the nation and always produce a conclusion in the form of a recommendation regarding a redevelopment pathway. This formula was then verified through application to bases that had already undergone successful redevelopments in order to see if the formula concluded the same redevelopment direction that was successfully utilized. The fifth application, however, was done to an installation that had not been redeveloped but concluded a unique development path. This path, Non-Planning, was then further investigated to see how the experiment of the concept differed from the actuality of the concept within the built environment. This allowed the project to be fully understood and conclusions made regarding to what extent Non-Planning could be utilized in the redevelopment of an area. The site was then analyzed in order to inform a randomized combination of elements to be included for analysis under a Non-Plan design. Conclusions were made about how the process for design had to be organized in order to be considered true Non-Planning instead of just reduced planning, and the design was created. While there have been a number of topics and a number of foci, summarizing the project in this concise form makes it apparent that a lot of territory has been covered in this study over the past year. The consistent factor has been, however, the project's continual progression with the single aim of understanding the redevelopment of military installations. In the beginning this was done in a broad way and by the end it was done in a narrow way, but the focus never shifted from military installations.

To speak more specifically about the project, the first half of the document focused almost completely upon a deductive logic approach, particularly a formalized one that included the creation of a formula that could be tested and utilized for any military installation. The fundamental basis for a deductive logic approach focuses upon broad variables that are applicable across ranges of cases within a defined study set, but that always work to create a specific conclusion. As a result, this first portion was able to demonstrate that a number of variables common to military installations are identifiable and can be utilized in such a way as to create a logical formula. Additionally, because of the commonality inherent in military installations and within the variables, the formula can then be utilized to draw conclusions about any military installation. The particular formula created within this document was successful in creating a valid logical argument, which was proven when the derivation was applied to successful redevelopment projects and the derivation's conclusions matched the redevelopment routes actually taken. As such, the formula can be

used as a tool for any community that has or will face a BRAC decommissioning. This has the potential for becoming a useful and informative tool for communities should it be utilized. This usefulness stems from the fact that not only is the conclusion itself valuable, but the analysis process of investigating the conditions of the site in order to properly determine the variables can also be quite telling and beneficial to the redevelopment of a site. This process of analysis forces the community to more intricately understand the conditions surrounding the site before being able to properly utilize the derivation formula.

The second portion of the project investigated the former Barbers Point Naval Air Station, now known as Kalaeloa, which has been decommissioned for years but has not been redeveloped due to the number of landowners with opposing visions about the future of the site. Once the derivation was applied and the most appropriate redevelopment path determined, a design would be created for the area. Because of the Non-Planning path though, the project had to first understand how Non-Planning can work in the urban environment since the original theory was idealized and not plausible in its purest form. While understanding Non-Planning was the first step, the bulk of the second portion of the document focused on developing a Non-Planning approach. This second portion of the document took an alternate approach to the development of a conclusion. Where deductive logic ruled the systematic approach in the first half of the document, inductive logic was utilized in the second half of the work. And here there was no formalized formula created, but rather the logic was utilized in a more informal manner. The goal here was to begin with a very specific site and set of circumstances, and create a system that could generate many plausible conclusions from the initial set of data. The underlying approach here was equally systematic to the first, but because of the nature of Non-Planning there could be no singular conclusion. Instead, the system applied in this second portion was designed so as to create a number of conclusions that could be utilized. The system created thus began after analyzing the concept of Non-Planning. First the ultimate goal was stated to form a framework that could guide redevelopment activities, and this was done by initially studying layers of the site determined from the site analysis. A randomizer determined the three layers that would be under consideration, making the process less rigid and more closely resembling the fundamental ideals of Non-Plan in regards to the organization. These layers were analyzed for intersections and overlaps, and the analysis eventually led to the creation of an integrated framework that passed throughout the entire site which could be developed in such a way that it would guide redevelopment toward a successful end. In this way the design aimed to “plan” only to the point necessary to protect resources and ensure that the goals of the site be met without further regulation and policy control regarding development.

And in the end neither deductive logic nor inductive logic reigns supreme, as they both point to the same underlying conclusion which can be drawn from this entire process, and that is that these decommissioned installations that have been regarded as surplus or inefficient by the military can once again become useful contributors to the built

environment. There is no reason for these spaces to be left abandoned and empty when there are ways to help the cities and communities rebuild. From the broader perspective, the formalized deductive logic formula created in the first half of this document is a beginning step towards helping cities make the crucial first decisions about redeveloping these sites into successful, flourishing areas once again. There are so many more tools that could be created, based on logic or not, that can help make this process easier and give the projects more potential for success. In the more narrow perspective, the inductive portion of the document shows also that there are innovative ways to approach redevelopments. Not every installation is the same, and not every site will succeed under the same approach. Depending on the current situation for a particular site, there sometimes needs to be more atypical approaches utilized. There are different approaches already developed, if only we take the time to search for, understand, and recognize the potential within them. Beyond that, there are approaches that have yet to be discovered and are only awaiting the right mind to happen upon them.

To speak more specifically on the topic of Non-Planning, it was a concept that appealed to me particularly because it began as such a strong statement against the institution of urban planning but was so quickly discounted by professionals of the time as somewhat of a dream and not worth further investigation. It became immediately apparent to me that it is certainly not a typical approach, but that that does not discount it as a plausible one. While the concept was certainly intriguing to me, it was more valuable because it actually has quite a lot of potential and is an atypical approach that focuses on allowing the community to participate in the development of their neighborhoods and communities. The entire concept surrounding Non-Planning seems foreign because it goes against everything that was standard practice for developments at the time as well as today. It was certainly not an easy process to try to understand, interpret, and finally incorporate something so foreign into this document. And I can say without a doubt that this project has not been able to understand all of the intricacies of the Non-Plan agenda and how it can be utilized in the world of architecture and urbanism today. Furthermore, the design created in the second half of the project may or may not be considered a successful one, but perhaps success was not the primary intent. This second portion of the project, instead, has been an attempt to heighten awareness about Non-Plan and, more generally, the fact that there are alternative approaches to urbanism that have the potential to be completely valid approaches to urban development. Non-Plan was an idea that caused a lot of controversy and was almost immediately discounted by most people involved in the field of urban development, and as such the topic was not further researched on any large scale. It therefore needs more research and understanding, and this project has simply been a first attempt. For example, as I went through this process I utilized my background in architecture and design to focus specifically on issues related to architecture and the built environment. The project could easily be redone with the focus more upon issues that are important to planners such as population trends, housing needs, and job market indicators.

Overall, as this project comes to a close, it really seems as if these 200 pages do not have any conclusion at all. What they really have is an infinite possibility for more research and development. Instead of writing a succinct conclusion and closing the book on this topic, this project really orients itself to become simply a page in a larger pursuit to develop answers for those installations that still stand empty and abandoned.

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