
**ALTERNATIVES FOR THE SOUTHWEST FLORIDA
ENVIRONMENTAL IMPACT STATEMENT**

FINAL REPORT

December 1998

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by

Alternatives Development Group

with support from

Planning and Management Consultants, Ltd.

Report Submitted to

**U.S. Army Corps of Engineers
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LIST OF ACRONYMS

| Acronym | Description |
|----------------|--|
| ABM | Estero Bay Agency on Bay Management |
| ADG | Alternatives Development Group |
| ARF | Acquire, Restore, and Fix |
| BCACSC | Big Cypress Area of Critical State Concern |
| BMP | Best Management Practices |
| Corps | U.S. Army Corps of Engineers |
| CREW | Corkscrew Regional Ecosystem Watershed |
| CRPA | Critical Resource Protection Area |
| DCA | Florida Department of Community Affairs |
| DEP | Florida Department of Environmental Protection |
| EIS | Environmental Impact Statement |
| EPA | U.S. Environmental Protection Agency |
| FWS | U.S. Fish and Wildlife Service |
| GFC | Florida Game and Freshwater Fish Commission |
| GIS | Geographic Information System |
| Hub | Zoom B of the study area |
| NEPA | National Environmental Policy Act |
| PMCL | Planning and Management Consultants, Ltd. |
| RPC | Southwest Florida Regional Planning Council |
| RRR | Restoration, Retrofit, and Redevelopment |
| SAIC | Science Applications International Corporation |
| SFWMD | South Florida Water Management District |
| SHCA | Strategic Habitat Conservation Area |
| Zoom | Section of the study area |

I. ADG PURPOSE, MEMBERSHIP, AND REPORT

BACKGROUND

The Alternatives Development Group (ADG) was formed to support the U.S. Army Corps of Engineers (Corps) in the drafting of an Environmental Impact Statement (EIS) for a region that spans portions of Lee and Collier counties in southwest Florida (shown in Figure I-1). The increasing number, size, and complexity of development permit requests by the citizens and business interests of southwest Florida have created a condition where the Corps and other regulatory agencies are experiencing difficulty in, on a case-by-case basis, addressing their responsibilities under federal and state law. Thus, the Corps is at the point where permit processing is taking longer, permit denials become more frequent, and the environment may receive less protection than required by law. The subject EIS is designed to offer regulatory and planning-based remedies to these shortcomings, by seeking an effective balance between natural systems and economic stability through the examination of natural and social interactions that occur in the study area.

This EIS has many roots including (1) comments submitted by the public and community organizations on individual permit applications that expressed concerns on cumulative impacts, (2) other studies and work in region, and (3) initiatives to incorporate watershed and ecosystem-based principals into permit reviews. The Corps publicly shared some ideas on whether and how to perform a review of its regulatory program and received many letters and comments from the public, civic and industry associations, conservation organizations, and other agencies. Some supported and encouraged the review or aspects of the review, some advised of the potential detrimental effects of a change in the program or of the review itself, and most had questions or ideas on the scope of the review in relation to Corps authority. The Corps initiated and tailored the EIS process based on this input.

A unique dimension of this EIS is the formation of the ADG, which was tasked with the creation and evaluation of alternatives—a central component for the EIS. The nature of the EIS is to consider the range of important issues guiding the evolution of southwest Florida. Accordingly, the Corps initiated and sought participation from the ADG that consisted of key individuals representing the interests and vision of southwest Florida. The specific charge of the ADG as offered by the Corps was to:

Report on alternatives for improving the regulatory process to:

- *Protect natural environmental values*
- *Provide for sustainable economic growth*
- *Manage appropriate changes in water flows and quality*
- *Respect public involvement and private rights*

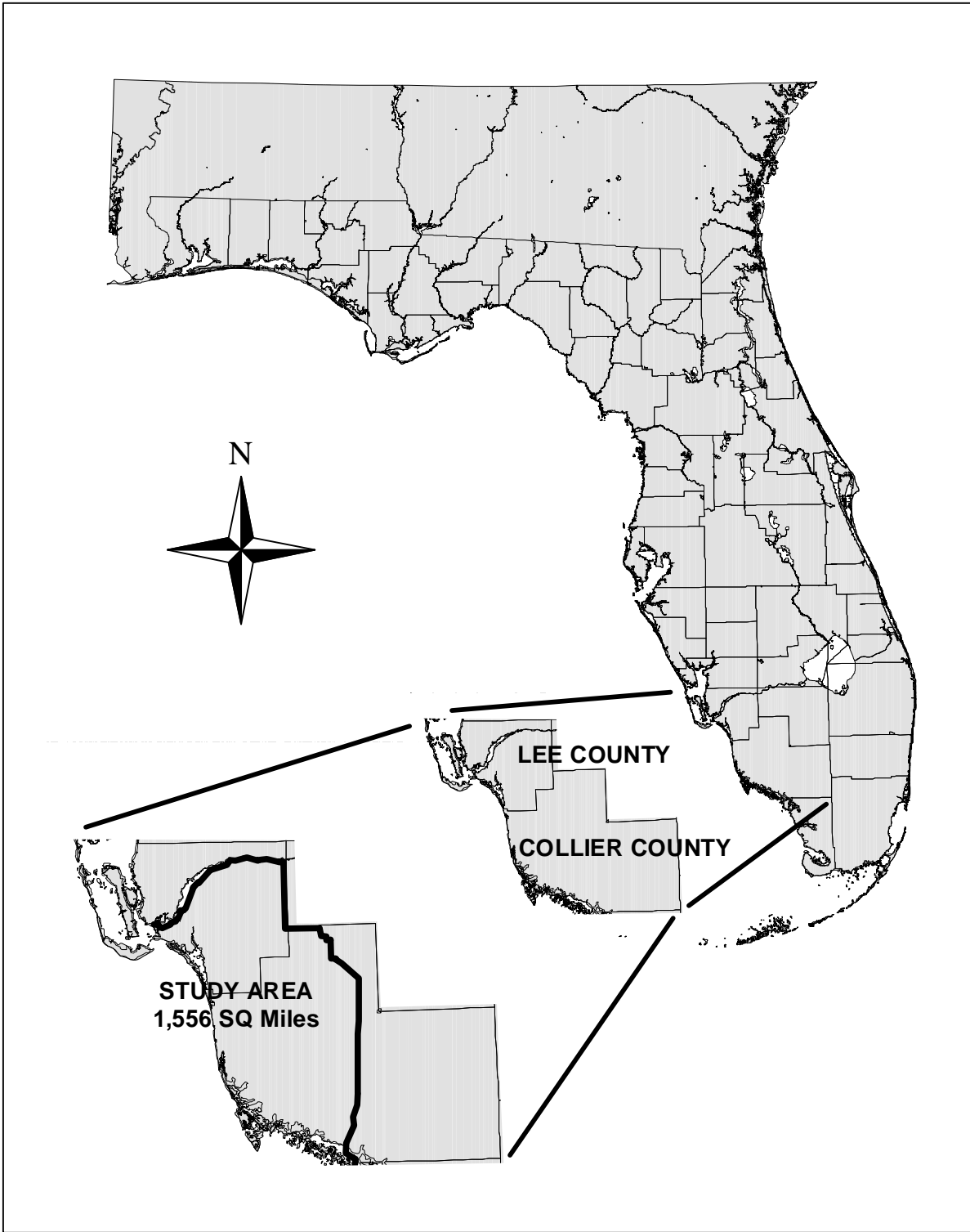


FIGURE I-1

ADG STUDY AREA

The ADG will collectively develop alternatives, evaluate the merits of each, and seek consensus on recommendations.

To effectively accommodate the charge and, more importantly, to create alternatives and evaluation factors that will bring added efficiency to regulatory activities in the future, it was imperative that this be a collaborative effort, drawing upon the perspectives of the key stakeholders in southwest Florida. The Corps worked closely with the Lee and Collier County Commissions and others in selecting, from a large number of interested persons, representatives to the ADG, which are listed in Appendix A. The list reveals a range of backgrounds and interest offering technical and political perspectives as well as interests that are driven by both environmental pursuits and economic development motivations. There was also representation of the general public on the ADG.

REPORT PURPOSE AND ORGANIZATION

This report summarizes the activities and results of the ADG. There was a significant amount of information—to include reports, data, presentations, maps—that was drawn upon during the ADG deliberations. Each of the ten core ADG meetings was documented with meeting notes that provided details of meeting activities. Supplemental process materials and data were provided in the attachments. These meeting notes and attachments and other materials numbered in the hundreds of pages of support materials provided to the ADG. While all of this information will be available to the Corps in the creation and management of the EIS, it was not practical or necessary to include all of that information in the ADG report. However, a listing of all the information presented to and utilized by the ADG is found in Appendix B.

The present document focuses on the results, summarizing the many hours of meeting activities and associated analyses embarked upon by the ADG. This report will be used directly within the EIS documentation to support the “alternatives” section of the EIS. The Corps will use the ADG report to support and guide the Corps in the development of EIS alternatives as required by the National Environmental Policy Act (NEPA). The other portions of the EIS documentation are being developed in parallel with ADG activities. The entire EIS will be assembled to completion and will be worked through standard review channels and public comment.

Following this introductory chapter there are five chapters that describe details of the ADG process and results. The final chapter of this report offers an interpretation of ADG results as compiled by the Corps and the facilitation team. The following is a brief summary of the remaining chapters.

Chapter II - Process Overview. Describes the general activities, style, and rules that guided the ADG’s deliberations.

Chapter III - Issues and Evaluation Factors. Presents the key issues that were raised by the ADG and how they were used to evaluate alternatives.

Chapter IV - Alternatives Developed. Describes how the alternatives were developed making reference to Appendix C, which contains profiles of each alternative.

Chapter V - Evaluation of Issues: Themes and Direction. Offers discussion of key points and trends that were revealed through the development and evaluation of alternatives.

Chapter VI - Concluding Remarks. Closes the report with summary remarks and identification of where additional analysis could be used.

Chapter VII - Interpretation of Results. Offers commentary of how the alternatives were aligned with one another and implications of permit activities.

II. PROCESS OVERVIEW

The ADG embarked upon a process that was designed to elicit the perspectives of a range of stakeholders in the development and analysis of a series of alternatives. A series of ten two-day meetings were held starting in April and ending in August of 1998. Over the course of these ten meetings, a very deliberate process was followed that was designed to satisfy the ADG's charge given the spectrum of representation, the timeframe allowed, and available information. The basic tenets of the process are illustrated in Figure II-1. The meetings were designed, managed, and facilitated by a professional team with the goal of encouraging quality information exchange in an unbiased manner in support of the ADG charge. The meetings were open to the public and several people came to observe, as did members of the press.

This chapter provides an overview of the process defining the framework for the ADG activities. The results of these activities are provided in subsequent chapters. The present chapter also touches on some of the important dynamics of the ADG in terms of how they interacted and postured entering into this process. The overall "group attitude" about the activities is a key dimension of the progress of the ADG. Several points in this regard are made in this chapter.

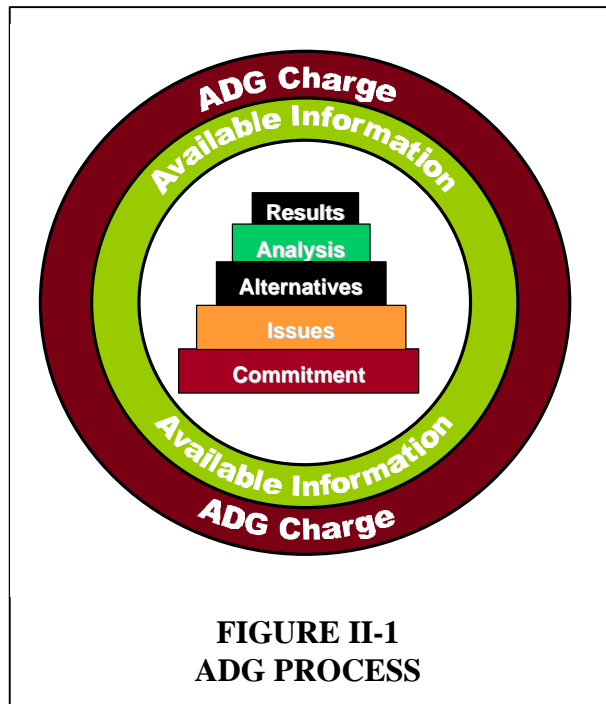
CONTROVERSY AND COMMITMENT

A great deal of controversy surrounded the creation of the subject EIS and the ADG's role in it. Some factions were supportive, while others were either opposed to the idea, reluctant, or skeptical. A significant portion of the first three meetings was dedicated to answering the question of why this initiative was needed and how it was in the Corps purview. Overall, most saw that examining the region in a systemic and holistic manner would improve the regulatory process in southwest Florida. The first meetings were instrumental in solidifying commitment from participants through hearing each other's concerns and defining issues.

Commitment consisted of two elements. First, they would be required to spend twenty working days (ten two-day meetings) over a five-month period plus special assignments and review time. Indeed, participation in the ADG was going to be a time-consuming venture. The second element was commitment to the nature of what was needed to occur within the ADG for it to be truly successful. This required complete and honest delivery of information during the process at all times. Rephrased: Bring everything to the table. Also, ADG members were expected to be able to represent and consider the opposing perspectives requiring creativity, compromise, and negotiations. Holding to positions with no room for compromise was counter to the spirit of what was being sought in the ADG. This commitment, as shown in Figure II-1, was the foundation on which the process could be built.

ISSUES, EVALUATION, AND RESULTS

Information on issues associated with southwest Florida were brainstormed by the ADG. The ADG gained an understanding of each other's perspectives and learned details of the Corps and county regulatory processes. Further discussion of these issues formed the basis for creation of evaluation factors used to examine the merits of alternatives. All issues were reviewed by the ADG and resulted in twelve categories of issues. The ADG agreed that consideration of these twelve categories, as alternatives were analyzed, would accommodate the major areas of impact that could be addressed within an EIS setting.



**FIGURE II-1
ADG PROCESS**

The next stage of the process brought the ADG toward how these issue categories could be utilized to discriminate among proposed alternatives. The discriminators were referred to as evaluation factors. Each of the issue categories was analyzed by factor specialty groups, which were formed within the ADG. These factor specialty groups were tasked with closely considering how a series of measures could be used to represent the issues surfaced by the ADG. Representation in these factor specialty groups was driven by expertise and interest. Specific measures along with data sources were identified by each factor specialty group. Again, these were presented, reviewed, and accepted by the ADG in their entirety.

Alternatives were created for the entire study area by focusing on four subareas that the ADG termed zooms. For each zoom the ADG created a series of alternatives that were intended to represent the range of issues facing southwest Florida. Some alternatives utilized hydrologic features, while others applied selected management criteria. The result was the creation of twenty-eight alternatives. Each of these alternatives was examined according to measures and evaluation factors developed based upon the twelve issue categories.

This analysis of alternatives allowed the members of the ADG to explore the merits of each alternative as well as the motivation, or drivers, behind what made a particular alternative better or worse than its fellows. From this, the ADG was able to provide results to the Corps on a set of alternatives and used the factors to evaluate those alternatives, all of which will be used in the EIS.

AVAILABLE INFORMATION AND BEST PROFESSIONAL JUDGMENT

The ADG was going to be covering some highly sensitive topics, some of which would be based on scientific fact. However, much of what was being addressed in the ADG had to be approached from best professional judgment. Many participants in the ADG were generally uncomfortable with this situation but recognized that assumptions and judgments—sometimes crude—would be unavoidable in order for progress to be made on this initiative.

The concept of using available data as illustrated in Figure II-1 was very difficult to enforce, as the tendency of most members of the ADG was to do higher level, typically quantitative, analyses to support decisions. Fortunately, for many of the issue categories, a great deal of information was already available. For example, many of the layers of GIS data needed to evaluate ecosystem, and wildlife parameters were published and readily available.

In order for the ADG to have the best available information to support its analyses, several presentations were made by experts inside and outside the ADG. Each presentation was requested specifically by the ADG and was typically scheduled at the beginning of a pertinent session. Thus, the information offered would be fresh to the ADG participants. Typically, presenters would provide handouts to the ADG members and would utilize overheads/slides to support their remarks. All of this information was made part of the record, and technical reports provided were made part of the ADG's library of information. This information was frequently referred to during the analyses and deliberations of the ADG, and will be utilized further by the Corps as it develops other sections of the EIS. A full listing of the references brought to the ADG is found in Appendix B.

FACILITATION AND MANAGEMENT OF MEETINGS

The ADG meetings were professionally designed and facilitated and generally followed the design shown in Figure II-1. The meetings were structured to ensure efficient and effective communication of information in moving toward completion of the ADG charge. The process moved forward at a pace the group was able to handle, depending on progress. An iterative system of checks and balances was instituted with a steady push to completion of the ADG goals.

The facilitation team was commissioned to operate in an unbiased manner giving all involved parties an opportunity to offer ideas. All members of the ADG were given the opportunity to provide their perspectives in this process. Consensus was sought at critical junctures. Ground rules, designed specifically for and by the ADG, were established at the first meeting and governed all activities. For example, a policy for alternate members was established, and a system of showing thumbs up or down was used to quickly demonstrate agreement.

The facilitation team documented all activities and kept records of the proceedings. Each set of meeting notes was reviewed and subsequently approved by the ADG as an accurate reflection of what occurred at each meeting. The facilitation team with assistance from the Corps developed the present report, acting as a ghost-writer for the ADG.

III. ISSUES AND EVALUATION FACTORS

The identification of issues relevant to the study area is an important step in the development of alternatives. Also, all stakeholders are made aware of issues they may not have considered prior to this process. Thus, a varied group of stakeholders assures that relevant issues are identified and considered in the alternatives development and evaluation process. Issues addressed a myriad of perspectives such as economic, social, and environmental. This chapter presents the ADG's identification of issues and development of evaluation factors by which the ADG could ensure that the alternatives developed addressed the group's concerns.

ISSUES IDENTIFICATION

Each member of the ADG represents one or many perspectives. The affiliation(s) of the ADG members and alternates is presented in Appendix A. Given these different perspectives, members of the ADG identified and presented their own various key issues to the ADG. The thirty-three members of the ADG were divided into four subgroups to help find commonality in the issues presented by the members of that subgroup. The use of subgroups allowed the ADG to more quickly and openly discuss the key issues.

These small groups presented nearly one hundred issues to the ADG. There was much commonality among them. The task of the subgroups was to identify those issues that were common, thus significantly reducing the number of issues. Lastly, the ADG identified from the remaining issues those that were similar and categorized them. The ADG identified the following twelve issue categories.

1. Property rights
2. Water management
3. Water quality
4. Ecosystem function, wildlife habitat, and listed species
5. Regulatory efficiency and effectiveness
6. Economic sustainability
7. Local land use policy
8. Avoidance of wetland impacts
9. Mitigation
10. Cumulative/secondary impacts
11. Restoration/retrofit
12. Public lands management/use

The ADG identified two issues that did not fit within the twelve issue categories: (1) a holistic approach to management and (2) higher standards of data and information. The ADG concluded that these were goals to strive for in southwest Florida, not issues that could be addressed in the development of alternatives.

EVALUATION FACTORS BY ISSUE CATEGORY

To ensure that the alternatives developed for the study area addressed these twelve issue categories that encapsulate the key issues of the ADG, the group developed factors by which to evaluate the alternatives. These factors were both qualitative and quantitative. Thus, at minimum twelve evaluation factors, one for each issue category, had to be developed by the ADG. The purpose of the evaluation factors are to aid the ADG in discriminating among alternatives. The ADG divided again into four subgroups, factor specialty groups, to efficiently address the development of evaluation factors.

First, the ADG grouped the issue categories into four sets of three issue categories. These were grouped according to similarity among the issue categories and the expertise of the ADG. The twelve issue categories were grouped as follows;

1. Property rights, local land use policy, and economic sustainability
2. Regulatory efficiency and effectiveness, avoidance of wetland impacts, and mitigation
3. Water management, water quality, and restoration/retrofit
4. Ecosystem function, wildlife habitat, and listed species, cumulative/secondary impacts, and public land management/use

The factor specialty groups were formed based on member expertise or interest in the issue categories. Each factor specialty group developed factors for each of their three issue categories. The factor specialty groups defined the evaluation factors, determined the type of measurement, and identified the associated data sources and reference materials. All factors were reviewed by the ADG prior to their use in the evaluation of alternatives.

The ADG was reminded that they were directed by the ADG charge, time, and available data. Time was a significant constraint in the development and evaluation of alternatives. For instance, economic models were available to address the issue of economic sustainability. However, the complexity of the models discouraged the use of these models in the time frame in which the ADG was operating. The use of available geographic information system (GIS) data supported the ADG and added efficiency to some analyses. Also, driven by these constraints, is distinguishing between “need to know” and “nice to know” information in terms of evaluation factors. ADG members were encouraged to focus on data and issues that were central to the task at hand. The development of evaluation factors by issue category is described in the following sections and summarized in Table III-1.

TABLE III-1**SUMMARY OF EVALUATION FACTORS BY ISSUE CATEGORY**

| Issue Category | Number of Factors | Summary Points |
|--|--------------------------|---|
| Property Rights | 3 | Comprehensive plan established expectations |
| | | Comprehensive plan is the standard to which all other alternatives were compared |
| Water Management | 7 | Improve flowways, reduce flood damages, and improve water supply |
| | | Best professional judgment |
| Water Quality | 5 | Land use types used to estimate water quality |
| Ecosystem Function, Wildlife Habitat, and Listed Species | 12 | GIS assist qualitative judgement |
| | | Current habitat and sighting maps compared to all alternatives to determine impacts |
| Regulatory Efficiency and Effectiveness | 3 | Many factors but hard to measure |
| | | Use quantity and functionality of wetlands and habitat impacted as a surrogate for permit review time and level of effort |
| Economic Sustainability | 7 | Models identified but require greater detail and time than available |
| | | Best professional judgment |
| Local Land Use Policy | 2 | Comprehensive plan is the local land use policy |
| | | Comprehensive plan is the standard to which all other alternatives were compared |
| Avoidance of Wetland Impacts | 2 | GIS assisted |
| | | Index of number of acres at risk calculated |
| Mitigation | 2 | GIS assisted |
| | | Index of mitigation opportunities calculated |
| Cumulative & Secondary Impacts | 10 | Social and environmental impacts |
| | | Best professional judgment used to rank the alternatives |
| Restoration/Retrofit | 5 | Flowways and habitat restoration |
| | | Opportunities seen within residential and agricultural land |
| Public Lands Management/Use | 1 | Adjacent land use types indicate compatibility |
| | | GIS utilized |

Property Rights

The factor specialty group that addressed this issue described property rights as the right to use your property as you choose without harming others, subject to:

- Applicable law and regulation (local government land plan and state and federal permitting regulations)
- Timely compensation for value lost due to regulatory change
- Timely compensation for taking

The group cited the property owner's constitutional right as a given. However, the ADG recognized the local government's comprehensive plan generally sets forth the current expectation of land use and contributes significantly to expectations of land value.

The factor specialty group identified three factors to evaluate the extent to which the alternatives addressed the issue of property rights. These factors were (1) fair market value, (2) vested rights, and (3) reasonable expectation for use of land and return on investment.

The factor specialty group suggested means by which to measure these factors as well as data sources (i.e., property appraiser records, tax records, and independent appraisals). However, given the time available, the factor specialty group relied on the members best professional judgment. The group graded the alternatives by evaluation factor on a scale of one to four where one was worst and four was best in terms of property rights. The comprehensive plan was considered the standard from which to compare all alternatives.

Water Management

The factor specialty group that addressed this issue described that the purpose of water management is to provide adequate water supply for human consumption, agriculture, and commercial, recreational, and natural resource demands while balancing these with the need to provide flood protection.

The factor specialty group identified seven evaluation factors to ensure the alternatives addressed fully the issue of water management. The seven evaluation factors are as follows;

1. Infrastructure existence (stormwater utility/maintain and improve)
2. Home damage during storm events (level of flood protection)
3. Home construction to meet the one-hundred-year storm event
4. Flood depth and duration
5. Historic flow patterns (maintain and improve)
6. Adequate water storage (balance consumption with hydroperiods)
7. Groundwater data floors and ceilings (aquifer zoning)

To measure infrastructure existence, the group decided to compare the impact the alternatives would have on capital costs and maintenance costs. The group addressed home damage during storm events by estimating the number of homes affected. The group also evaluated whether the alternative increased, maintained, or decreased flood depth and duration. Also, alternatives were evaluated on whether they destroyed, maintained, or improved historical flow patterns, including

the timing, direction, quantity, quality, and duration of these flows. Water supply was evaluated with respect to needs for natural resources, water storage, and groundwater floors and ceilings.

Given all of these possible means for measuring the impacts of the alternatives by evaluation factor, the group utilized the professional judgment of its members to aid in the evaluation of the alternatives. The factor specialty group applied a scoring method of +, 0, - to signify whether each alternative addressed, did not address, or negatively addressed the evaluation factor, respectively.

Water Quality

The factor specialty group that addressed this issue defined that the purpose of the water quality issue is to ensure the maintenance of surface- and groundwater quality.

Several presentations were made to the ADG concerning the status of water quality of the region's rivers and tributaries, estuaries, and bays. Presentations made it clear that there is a lack of data to answer some questions regarding water quality. The group first recommended that more data collection and monitoring are needed to fully understand water quality trends and related issues in southwest Florida.

The factor specialty group identified four factors that can be applied to evaluate whether the alternatives developed by the ADG address the issue of water quality. The identified factors are as follows:

1. Pollution loading
2. Freshwater pulses
3. Habitat loss
4. Groundwater impact

The group noted several items that the factors needed to address, such as establishing standards for point and nonpoint pollution, impacts on marine plant and animal communities, recreation, and health. All of these items are addressed in the four evaluation factors.

Groundwater impacts were estimated by analyzing acres of development in significant recharge locations. The number of acres converted to impermeable surfaces by alternatives was utilized to estimate the impact of freshwater pulses. Habitat loss was derived by the acres of alterations to wetlands and mangroves. Pollution loading was addressed utilizing a water quality index that was estimated for each alternative.

Pollutant-loading estimation was done based on land use types and land use criteria defined in the alternatives. Thus, the acreage of the different land use types defined by the alternatives drives the estimation of water quality. This screening method was developed and tailored to the ADG process by the consulting firm Science Applications International Corporation (SAIC), contracted by the U.S. Environmental Protection Agency (EPA). The pollutant ranges and definitions are based upon those utilized by the Florida Department of

Environmental Protection (DEP). Given these calculations and best professional judgment, the factor specialty group equally weighted the factors during the ranking of alternatives.

Ecosystem Function, Wildlife Habitat, and Listed Species

The factor specialty group addressed upland, wetland, and aquatic habitat changes, effects of fragmentation on listed species and ecosystem functions, and the maintenance of ecological integrity and biodiversity.

The factor specialty group identified twelve factors that can be applied to evaluate whether the alternatives developed by the ADG address the topics of the issue category ecosystem function, wildlife habitat, and listed species. The twelve evaluation factors are listed below.

1. Effects on Florida Game and Freshwater Fish Commission's (GFC) Strategic Habitat Conservation Area (SHCA) habitat-planning objectives
2. Effects on Priority I and II Florida Panther habitat
3. Effects on Southwest Florida Regional Planning Council (RPC) resource regional significance goals
4. Effects on U.S. Fish and Wildlife Service (FWS) Multi-species Recovery Plan and the Florida Panther Habitat Preservation Plan
5. Effects on occurrences of listed species
6. Effects on occurrences of rookeries
7. Effects on loss of native plant communities (common and rare)
8. Effects on fragmentation and connectivity of plant and animal habitats
9. Effects on loss of seasonal wetlands
10. Effects on integrity of flowways (rivers, sloughs, and strands)
11. Effects on wetland dependant species
12. Effects on aquatic resources

Much of the information, primarily maps, utilized by the factor specialty group was available and able to be readily digitized for analysis using geographic information system (GIS) capabilities. Thus, digitized alternatives compared against digitized natural resource maps were able to generate acres or counts of impacted areas or species, respectively. As a result, the units impacted can be compared among alternatives to determine, with judgment, which is better or worse for that particular factor. However, the evaluation factor, effects on FWS Multi-species Recovery Plan and the Florida Panther Habitat Preservation Plan, was not GIS applicable.

Regulatory Efficiency and Effectiveness

The factor specialty group that considered this issue defined its intent as the effort to add certainty, consistency, clarity, and celerity to the permitting process while improving its integrity and effectiveness. The basis for analysis of this factor was the amount of area on the alternatives maps that was or was not filled. Areas not filled suggested that agreement could not be reached which reflected negatively on regulatory efficiency and effectiveness. The factor specialty group originally identified three factors that could be applied to evaluate whether the alternatives developed by the ADG addressed the issue category regulatory efficiency and effectiveness. These evaluation factors are listed below.

1. Permit review time and level of effort
2. Pre-identified impact/mitigation and preserve areas
3. FWS/GFC general concerns addressed

After applying these factors to several alternatives, the factor specialty group concluded that the means by which the factors were being measured did not discriminate among alternatives which was one of the main objectives of the evaluation activities. Thus, at the tenth meeting, the factor specialty group revisited the measures and created a series of measures that supported the three named factors. The first factor assesses the level of restrictions on an alternative land use legend. The second factor considered the degree of commonality between the alternatives as well as current regulatory processes. These two are in addition to the original measure that quantified the area of the alternative map that was filled in. For the third factor, measures were identified to reflect: potential need for section 7 coordination; potential that permit review will be slowed due to the sensitivity of natural resources within nonpreserve designations; effectiveness of the program to meet federal mandates and charges; and efficiency in the timelines and cost.

Economic Sustainability

The factor specialty group defined the purpose of this issue as the protection, enhancement, and expansion of the long-term economic viability of the region, including agricultural, commercial, construction, environmental, fisheries, industrial, residential, and recreational and tourism elements. Given these many purposes addressed by this issue category, the group had to develop a number of evaluation factors to adequately address these purposes.

The factor specialty group identified seven factors that were applied to evaluate whether the alternatives developed by the ADG address the purposes of economic sustainability. The seven evaluation factors are listed below.

1. Job creation
2. Home affordability
3. Cost of living
4. Property tax base
5. Cost to implement

6. Increased taxes
7. Environmental justice

The use of economic-based models and projections was discussed as an option to address several of these factors. However, given the time and data available, this was not a viable option. Although these models could not be applied at this time, they should be included in the Corps' conclusion of the EIS. Given that the factor specialty group did not apply these models, the group relied on their best professional judgment in the evaluation of alternatives utilizing the seven factors. The group scored the evaluation factor on a scale of one to four where one was worst and four was best in terms of economic sustainability. Since the comprehensive plan was created with economic sustainability as one of its primary objectives, it was considered the standard to compare all alternatives.

Local Land Use Policy

The factor specialty group that considered this issue wanted to ensure that alternatives recognized the local land use plans and regulations. To ensure this, the group evaluated each alternative's consistency with these plans and regulations. The Lee and Collier County Comprehensive Plans are the legally adopted local land use plans and establish regulations for unincorporated areas. Thus, all other alternatives are compared with these comprehensive plans making this a rather straightforward analysis.

The factor specialty group identified two factors that can be applied to evaluate whether the alternatives developed by the ADG address the issue category local land use policy. The two evaluation factors are (1) significance of conflicts with local land use plans and regulations and (2) hurricane preparedness (i.e., evacuation routes and shelter availability).

Avoidance of Wetland Impacts

The factor specialty group that considered this issue wanted to ensure that alternatives avoided to some degree impacts to wetlands. The group addressed both the acres of wetlands at risk as well as the functional importance of the wetland acres at risk by an alternative. The two evaluation factors identified by the group were (1) total acres at risk and (2) total wetland acres by functionality at risk by each alternative. Thus, this factor specialty group relied heavily on the outputs of GIS.

The basic premise behind the two factors is determining the number of wetland acres and functions at risk by an alternative. For instance, the acres at risk are the total wetland acres within a particular use type (i.e., agricultural, residential, and urban) multiplied by a risk factor. The factor specialty group relied on their best professional judgment to determine risk factors by land use type. Likewise, those acres at risk are identified as having high, medium, or low wetland function. Each level of function has a multiplier representing the relative level of function associated with the acres within that level of function.

Mitigation

The factor specialty group that considered this issue wanted to ensure appropriate mitigation for unavoidable wetland impacts. The group addressed both the acres of wetland mitigation opportunity as well as the functional importance of the wetland acres available for mitigation by an alternative. The two evaluation factors identified by the group were (1) total acres provided for mitigation opportunity and (2) total wetland functional improvement opportunity provided. These evaluation factors were dependent upon GIS outputs of acres of opportunity.

The basic premise behind the two factors is designating lands for potential mitigation (opportunity) versus the number of wetland acres and functions at risk by an alternative. For instance, the number of acres proposed for preservation versus the number of wetland acres at risk by a given alternative provides a useful measure by which to compare other alternatives. The concept of risk is discussed under the topic of avoidance of wetland impacts.

Likewise, the level of wetland function of the proposed preservation acreage is taken into account. The factor specialty group, relying on best professional judgment, assigned factors indicating the functionality of the potential mitigation acres. Wetland areas were identified as either high-, medium-, or low-functioning wetlands within various levels of opportunity of mitigation identified based on geographical context. This weighted index is then compared with the index of wetland functions at risk. The concept of risk is discussed under the topic of avoidance of wetland impacts.

Cumulative/Secondary Impacts

The factor specialty group first defined the terms cumulative and secondary impacts as they apply to the study area. Cumulative impacts are the impacts on the environment resulting from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal and nonfederal) or person undertakes such other actions. Secondary impacts are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.

The factor specialty group developed ten factors by which to evaluate alternatives. These ten factors fall within two categories: (1) environmental and (2) social impacts. Below are the ten evaluation factors.

1. Impacts on infant mortality
2. Impacts on road needs
3. Impacts on air pollution loading
4. Impacts on water pollution loading
5. Impacts on crime rates
6. Impacts on hurricane vulnerability
7. EPA Index of watershed indicators

8. Impacts on wetlands only
9. Impacts on hydrology
10. Amount of lands in public and private ownership in protected status

To measure these factors, several models that could be driven by GIS were recommended. However, given the time and available data, in addition to GIS, the factor specialty group applied their best professional judgment to compare the alternatives for the study area by each of the ten factors.

Restoration/Retrofit

The factor specialty group defined restoration/retrofit as the act of mimicking natural functions and re-creating urban areas related to water management, water quality, and ecological systems, and to provide economic sustainability and quality of life by upgrading existing infrastructure to current standards. The factor specialty group recognized the benefit of a larger planning vision and investment in regional natural systems.

To address the items raised in the factor specialty group's definition of restoration/retrofit, the group identified five factors to evaluate the alternatives. The evaluation factors are listed below.

1. Natural functions maintained in natural systems (i.e., flowways)
2. Exotics control (percent and size of parcels treated and restored)
3. Percent of residents using self-supplied infrastructure (i.e., septic tanks)
4. Percent of agricultural land applying Best Management Practices (BMP)
5. Wildlife habitat restoration

Originally the group identified a factor that addressed quality of life. However, during the process of evaluation, it was concluded that this was an overall goal for the region and not a factor by which to evaluate alternatives. Given limited data, the factor specialty group applied professional judgment in the evaluation of alternatives using the five evaluation factors listed above. Using best professional judgment, the factors specialty group applied a scoring method of +, 0, - to signify whether each alternative addressed, did not address, or negatively addressed the evaluation factor, respectively. GIS outputs were utilized to aid the group in their determinations.

Public Lands Management/Use

The factor specialty group developed evaluation factors to ensure that the alternatives did not negatively impact the management and use of public lands. The two factors were (1) compatibility with land management plans and (2) degradation or improvement of resources on public lands. The compatibility of various on-site and adjacent land use was considered. The measure of whether an alternative negatively or positively impacted public lands was the land use type identified adjacent to the boundary of current public lands. Thus, an industrial park adjacent

to public lands would be less compatible than agricultural activities. Also, the factor specialty group took into consideration indirect impacts of land uses not adjacent to public lands, such as activities upstream. The use of GIS was beneficial in allowing the factor specialty group to identify land use types and their extent of potential impact.

SUMMARY

The ADG identified twelve issue categories from nearly one hundred individual issues presented by the ADG members. These issues were important to consider in the development of alternatives. To ensure that the alternatives addressed these issues, the ADG developed evaluation factors by which to measure the extent to which alternatives addressed the issues, thus allowing the comparison of alternatives. The number of evaluation factors by issue category ranged from one to twelve. GIS maps and resulting tables played an important role in the graphical depiction and evaluation of the alternatives. Chapter IV presents the alternatives development process as well as the alternatives for the study area. Chapter V applies the evaluation factors to those alternatives.

IV. ALTERNATIVES DEVELOPED

The primary objective of the ADG was to create alternatives for the study area. These alternatives and the analysis of the alternatives are presented in the “alternatives” section of the Corps EIS. This section describes how the ADG proceeded in creating the alternatives. A map with a brief description of key features of each alternative is provided in Appendix C.

The ADG examined the study area in four subareas, or “zooms,” as shown in Figure IV-1. The ADG first created alternatives for Zoom B, also referred to as the “hub.” This term “hub” was brought into the process by the Corps to demonstrate the notion that this area, roughly the Estero Imperial Integrated Watershed boundary, was the central analytical focus of the EIS. This was not to suggest that the other portions of the study area would not be addressed by the ADG. The remaining areas were examined in the following sequence: C, D, and A.

An existing alternative for each of the four zooms was the respective county comprehensive plan(s). The comprehensive plans were provided to the ADG as the preferred alternatives by the participating county governments and Florida’s Department of Community Affairs (DCA). The comprehensive plans were some of many alternatives evaluated by the ADG. The comprehensive plans were created using a planning process that received a great deal of input from the public on a wide range of issues. Thus, the future land use maps of comprehensive plans are accompanied by detailed documentation that supports certain features presented graphically.

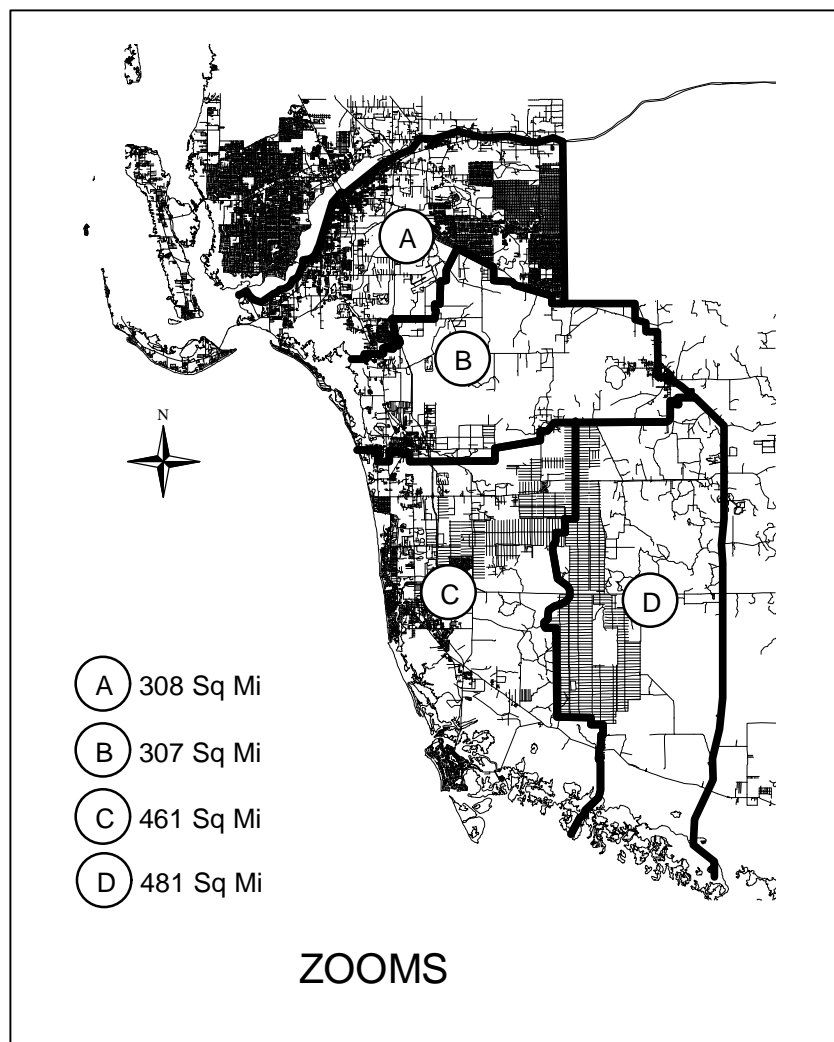


FIGURE IV-1

PROSPECTIVE ZOOMS

Additional alternatives for each zoom were created by dividing the ADG membership into four subgroups tasked with developing up to two alternatives for each area. The alternatives were to be created recognizing the range of issues described in Chapter III. The groups were formed randomly, with the objective of getting members representing a variety of interests in each subgroup. Likewise, the alternatives created by each subgroup would represent a range of interests. However, the way the process actually unfolded, some of the subgroups were dominated by particular interests, which resulted in alternatives that were more indicative of particular interests. In the end though, given the input of the different subgroups, the ADG had an adequate range of alternatives to evaluate for each zoom.

These alternatives were presented on maps where land use and hydrologic features and enhancements were shown. Many alternatives were supported with conditions and criteria that described land use designations. The alternatives were created by drawing features on maps, using different shading to represent selected aspects. Each alternative was presented to the ADG by the subgroup that authored the alternative. It should be noted that while appropriate for the level of analysis being conducted by the ADG, the resolution of some of the alternatives drawings varied in precision because of scale, tools used, and transfer of data to the GIS. The precise location of the lines drawn should be interpreted cautiously. Also, some existing land use features (e.g., existing rock mines) were not depicted on the maps.

Typically, descriptions of land features accompanied the alternatives maps. Early on, during the alternatives development phase of the process, many representatives of environmental interests collaborated on a set of permit conditions that was used to further elaborate standards and strategies deemed critical to the environmental perspective. Other sets of criteria were developed for certain areas such as Lehigh Acres and Golden Gate Estates. Both the land use configurations depicted on the alternative maps and associated narratives were considered in the evaluation of the alternatives. The evaluation of the alternatives is presented in Chapter V and Chapter VII.

V. EVALUATION OF ISSUES: THEMES AND DIRECTION

The ADG evaluated each of the alternatives developed for the four zooms in the study area. The factor specialty groups used the evaluation factors described in Chapter III to evaluate each alternative. The factor specialty groups placed the alternatives on a continuum from best to worst according to the factor they were considering. All twelve evaluation factors were presented to the entire ADG with the alternatives positioned on the continuum according to the deliberations of the factor specialty groups. Questions from the ADG on the evaluations presented were entertained and discussion, mainly in the form of clarification, was offered. This communicated the important aspects of each alternative in terms of the measures defined through the evaluation factors. The resultant continuums are shown in Appendix D by issue category.

As the results of these analyses were presented, certain themes based upon the trends in the analyses surfaced. These themes are central to what was being sought from the ADG in support of the EIS process. The resulting themes, organized by issue category, are presented in the remaining sections of this chapter.

PROPERTY RIGHTS

The comprehensive plans of Lee and Collier counties, while adding a layer of further restriction from the constitutional perspective, were viewed by the ADG's property rights advocates as acceptable, having been developed through an intensive participatory political process. The comprehensive plans have established landowner expectations of potential property values and land uses. Any alternative being more restrictive than the comprehensive plans was viewed as reducing property rights. The evaluation factors applied to the alternatives were (1) fair market value, (2) expectation of land use and value, and (3) vested rights.

At one end of the spectrum of property rights are the landowner's constitutional rights allowing the landowner to use his or her property as he or she chooses without harming others. But for the good of the community, government, using zoning and other means, has placed additional restrictions on property owners. The factor specialty group looked for alternatives that would minimize these types of restrictions.

The comprehensive plan is considered the standard by which all other alternatives must be compared. The comprehensive plan alternative, was generally regarded as the best alternative in terms of property rights. However, several alternatives were considered equal or better to the comprehensive plan by expanding the rights of the property owner. For instance, Alternative 4A of Zoom B showed a more realistic urban area designation for areas surrounding Immokalee than that estimated by the comprehensive plan. Those alternatives typically placed at the worst end of the continuum were those that presented restrictive criteria, expanded preservation areas, and decreased urban and agricultural areas. For example, Alternative 5 for Zoom A included detailed

criteria and was considered over restrictive within the property rights category. Thus, the more restrictive the criteria the less appealing in terms of property rights.

WATER MANAGEMENT

The factor specialty group applied seven evaluation factors addressing flooding, flowways, and water storage. Several presentations were made to the ADG concerning water management issues in the study area. One such study was the South Lee County Watershed Plan coordinated by the South Florida Water Management District (SFWMD). This plan presented several proposed alternatives with respect to water management. Likewise, the Big Cypress Basin Watershed Study that addressed many of the same issues was conducted in Collier County. Also, the Estero Bay Agency on Bay Management (ABM) presented an alternative restoring and preserving the connectivity of habitats and flowways.

The concepts of these studies were included in a number of alternatives. Also, one member of the ADG presented a flowway concept that was referred to in many alternatives. This flowway concept emphasized recognition and preservation of historic flow patterns and isolated wetlands. The best alternatives typically provided flowway restoration and maintenance concepts. Alternative 4B for Zoom B raised much discussion during several meetings. This alternative applied South Lee County Watershed Study's berm alternative. Although the berm was controversial, it was part of a proposed water management alternative.

WATER QUALITY

The factor specialty group applied four evaluation factors: (1) pollution loading, (2) freshwater pulses, (3) habitat loss, and (4) groundwater impacts. Several presentations were made to the ADG addressing water quality issues in the study area. All presenters stated that water quality is expected to continually decline in the study area. Water quality indicators such as vegetation and other marine life attest to decline that has already occurred. Freshwater pulses have impacts on certain fisheries. Heavy metals and other nutrient loadings impact marine habitats. Impervious surfaces such as parking lots impact groundwater recharge and pollution loading.

Land use was the basis for evaluating impacts to water quality. Alternatives that allowed more development were not favorable to water quality. Thus, the comprehensive plan was typically the worst alternative in terms of water quality impacts. Other alternatives proposed ways to decrease the duration and volume of freshwater pulses. Many alternatives suggested improving and maintaining isolated wetlands and the connectivity of habitats and flowways, all of which were perceived to improve water quality.

ECOSYSTEM FUNCTION, WILDLIFE HABITAT, AND LISTED SPECIES

The factor specialty group relied heavily on GIS outputs in their evaluation of alternatives. Many resource agencies such as the Florida Game and Freshwater Fish Commission (GFC), U.S. Fish and Wildlife Service (FWS), and the U.S. Environmental Protection Agency had data and maps that were applied to the alternatives. The use of GIS provided the group a relatively clear picture of the quantitative and spatial impacts of alternatives and allowed the group to use their best professional judgment to determine the qualitative impacts. The factor specialty group evaluated alternatives on such things as impacts to panther habitat, listed species, rookeries, seasonal wetlands, and native plant communities.

Natural resource agencies have collected data, conducted field surveys, written many plans, and drawn many maps. Examples of resource information utilized by the factor specialty group included the Closing the Gaps in Florida's Wildlife Habitat Conservation System (GFC), the Draft Multi-species Recovery Plan for South Florida (vol. 1) (FWS), the Florida Panther Habitat Preservation Plan (Florida Panther Interagency Committee), the Estero Bay Agency on Bay Management's Conservation Lands Map, and National Wetland Inventory Maps (FWS). All data and information were available and able to be compiled into maps that were GIS applicable. The outputs of the GIS were a foundation for the evaluations of this factor specialty group. However, the factor specialty group did not make decisions on numbers alone. Many of the alternatives and their respective land use types had criteria and standards associated with them. These criteria influenced the evaluations of this group. For example, criteria that called for non-intensification of agricultural activities was viewed as favorable to wildlife. This strategy was used to allow for continued agricultural activity while addressing wildlife concerns. An example of this type of criteria was found in Alternative 2B for Zoom B.

Alternatives that increased habitat preservation, addressed restoration of habitat areas, or considered criteria for existing land uses that would improve habitat were ranked high by the group. Alternatives that did not address these items were ranked low for ecosystem function, wildlife habitat, and listed species. Also, alternatives that expanded urban areas and did not propose habitat protection criteria on agricultural and residential areas east of Interstate 75 were ranked low in terms of this issue. Thus, the comprehensive plan was typically viewed as least favorable for this factor.

REGULATORY EFFICIENCY AND EFFECTIVENESS

The factor specialty group initially found the evaluation of this issue to be complex in terms of being able to evaluate alternatives. However, the ADG pressed forward, recognizing that regulatory efficiency and effectiveness are central and essential to the regulatory review and permitting process. This prompted the factor specialty group to offer some level of comparative analysis. The two evaluation factors applied by the factor specialty group were (1) permit review time and level of effort and (2) preidentified impacts. The factor specialty group anticipated that the alternatives maps would reflect areas of regulatory difficulty by locations of contention not

being identified by any particular land use. This was not the case. All alternatives had all locations identified with some land use type as well as associated criteria. Thus, the methodology by which the factor specialty group had hoped to measure permit review time and level of effort was unable to distinguish among alternatives.

At the tenth meeting, the factor specialty group with the assistance of additional ADG members went to the drawing board to identify new means by which to more appropriately measure the issue of regulatory efficiency and effectiveness. Since the new measures were defined at the tenth meeting, the group applied a subset of these measures for which tabular information was available. The new approach was applied to Zoom B of the study area. An alternative that was considered the best in terms of regulatory efficiency and effectiveness for Zoom B placed the fewest acres of wetlands and panther habitat at risk.

ECONOMIC SUSTAINABILITY

The factor specialty group considered the comprehensive plan the standard to compare all alternatives. The seven factors applied to evaluate the alternatives were (1) job creation, (2) home affordability, (3) cost of living, (4) property tax base, (5) cost to implement, (6) increased taxes, and (7) environmental justice.

Several economic growth models were suggested for use in the evaluation of alternatives. However, data were not readily available for the development and use of such models. The composition of the factor specialty group allowed them to apply their best professional judgment in the evaluation of alternatives. Similar to the issue of property rights, the county comprehensive plans established some expectation of economic growth. The comprehensive plans and those alternatives that expanded upon the comprehensive plans growth potential were viewed as the most favorable for economic sustainability.

Alternatives that constrained the intent of the comprehensive plans were regarded as poor for economic sustainability. For instance, the criterion of nonintensification of agricultural activities was viewed as constraining job creation. The factor specialty group provided the ADG an example. The farming of row crops requires seasonal labor during the fall, winter, and spring but not in the summer. Whereas, citrus farming requires yearround labor. Thus, conversion to citrus would provide yearround employment rather than seasonal employment. Restricting the location of homes also constrains the potential number of homes that could be built, ultimately decreasing the ability to afford a home. A general theme of the evaluations is the more criteria and standards the less favorable for economic sustainability.

LOCAL LAND USE POLICY

The factor specialty group addressing the issue category of local land use policy evaluated the alternatives developed for zooms A, B, C, and D of the study area. The factor specialty group

considered the comprehensive plan the standard by which all other alternatives are evaluated as noted in the evaluation factors. The factors applied in the evaluation of alternatives were (1) significance of conflicts with the local land use plans and regulations and (2) hurricane preparedness evacuation routes. The comprehensive plan is the local land use policy, thus, it is typically the best alternative. Alternatives with more restrictive land use criteria ranked lower than the comprehensive plan. Hurricane preparedness was discussed and brief presentations were made on this topic. This continues to be an important issue in southwest Florida, which has a deficit of shelters and long evacuation times. The alternatives offered typically did not present a great deal of variability with respect to hurricane preparedness. For instance, all the alternatives developed for Zoom B of the study area were all viewed to be equal in terms of addressing hurricane preparedness. None of them proposed any significant strategies for improving hurricane preparedness.

AVOIDANCE OF WETLAND IMPACTS

The factor specialty group applied two factors in the evaluation of alternatives for the study area: (1) total acres at risk from impact and (2) total acres at risk weighted by function. The factor specialty group relied on GIS maps and tables of the alternatives to determine the acres at risk. Those alternatives placing the least number of acres of highly functional wetlands at risk are favorable.

Using best professional judgment, the factor specialty group categorized wetlands by perceived functionality into the categories of high-, medium-, and low-functioning wetlands. Also, the group established risk factors based on land use types (i.e., agricultural, residential, and urban). Risk factors were typically higher for urban and residential land uses. Thus, alternatives proposing the greatest number of urban and residential land use acres were typically considered the worst in terms of avoiding wetland impacts. Alternative 5 for Zoom A was an example of an alternative with favorable characteristics relating to this factor. This alternative used both land use features and criteria to put relatively few high-functioning acres at risk. Typically, the comprehensive plans were among the alternatives that placed the most wetland acres as well as function at risk.

MITIGATION

The factor specialty group applied two factors in the evaluation of alternatives for the study area: (1) total acres of opportunity and (2) total acres of opportunity by level of wetland functionality. The factor specialty group relied on GIS overlays of the alternatives and wetlands to determine the acres at risk and the functionality of those wetland acres at risk. The wetland acres at risk were then compared with the acres of opportunity for mitigation (proposed preservation acres). Also, the functionality of the wetland acres at risk was compared with the functionality of the wetland acres being proposed for preservation.

Those alternatives placing less acres of highly functional wetlands at risk are favorable. This is addressed specifically by the issue category of avoidance of wetland impacts. However, the values derived in the calculations for avoidance of wetland impacts are utilized in the calculations performed for mitigation. Mitigation is somewhat reliant upon the issue of avoidance of wetland impacts. Also, those alternatives that provide for greater acres of wetland mitigation to offset those impacted were favored by the factor specialty group. The functionality of those mitigation acres was also very important. The comprehensive plans in certain zooms were among the alternatives that placed the most wetland acres at risk and proposed the least amount of acres for mitigation opportunities.

CUMULATIVE/SECONDARY IMPACTS

The factor specialty group applied ten factors in the evaluation of alternatives for the study area. The ten evaluation factors addressed both social and environmental impacts. Social impacts included (1) infant mortality, (2) road needs, (3) crime rate, and (4) hurricane vulnerability. Environmental impacts included (1) air pollution, (2) water pollution, (3) watershed, (4) wetlands, (5) hydrology, and (6) amount of lands in protected status.

As the dominant land use type shifts from preservation to agriculture to residential to urban, infant mortality typically rises. Likewise, the crime rate increases but the nature of the crimes between rural and urban areas is different. Increased development requires more infrastructure. The increased development, depending on the location, may increase vulnerability of citizens to hurricane-related damages.

Similarly, increased development depending on how and where it occurs may have negative environmental impacts. One of the main reasons the Corps initiated the ADG was to address cumulative environmental impacts in southwest Florida. For instance, the permits of singular projects may have merit on their own, but as they accumulate, the result is cumulative and secondary impacts. This issue reflects the cumulative impacts realized by several other issue categories such as water quality, water management, and avoidance of wetland impacts. The comprehensive plan was generally associated with more negative cumulative and secondary impacts than the other alternatives for the majority of the study area.

RESTORATION/RETROFIT

The factor specialty group applied five factors in the evaluation of alternatives for the study area. These factors addressed the natural system of southwest Florida by restoring natural functions, through removing exotics, decreasing septic tanks, increasing the use of best management practices, and restoring wildlife habitat and historic flowways.

These concepts of restoration/retrofit were addressed throughout the study area. Many of the alternatives discussed restoring flowways, wetlands, and the connectivity of habitats. The

greatest debates and ingenuity of the restoration/retrofit concepts were related to Lehigh Acres and Golden Gate Estates. Alternatives 1, 3A, and 5 of Zoom A proposed strategies of restoration for Lehigh Acres, such as the Three R's (restoration, retrofit, and redevelopment) and ARF (acquire, restore, and fix), respectively. Alternative 2A of Zoom D proposed that east Golden Gate Estates be used for mitigation to help restore flowways and wildlife habitat. Landowners would be able to build rural residences in west Golden Gate Estates while utilizing east Golden Gate Estates for mitigation and restoration purposes. These alternatives received the favor of the factor specialty group.

PUBLIC LANDS MANAGEMENT/USE

The factor specialty group applied one composite factor in the evaluation of alternatives for the study area. This factor evaluated each alternative's compatibility with public land management plans, compatibility of adjacent land use with public land management plans, and whether the alternative improved or degraded the resources and public use on public lands.

The factor specialty group determined whether an alternative improved or degraded public lands by viewing the land use type adjacent to the boundary of current public lands. For instance, a residential area adjacent to public lands that need to be managed with prescribed burning would be less compatible than adjacent agricultural activities. The idea is that some land use types buffer public lands better than others. For example, public lands near Belle Meade and CREW Trust were viewed as relatively well protected by Alternatives 1A and 2 in Zoom C because they showed the least amount of development adjacent to these lands. Likewise, the factor specialty group took into consideration indirect impacts of land uses not adjacent to public lands, such as agricultural activities upstream. Criteria associated with land use types (e.g., agriculture) were considered important attributes to differentiate alternatives in considering both direct and indirect impacts. The use of GIS was beneficial in allowing the factor specialty group to identify land use types and their extent of potential impact.

VI. CONCLUDING REMARKS

The ADG, through a series of eleven two-day meetings, has addressed the charge set forth by the Corps to support the creation of an EIS for southwest Florida. Specifically, the ADG was tasked with developing a series of alternatives that accommodate the range of environmental and socioeconomic interests in the region. In addition, the ADG developed a series of evaluation tools that embody the critical issues being faced in southwest Florida. These tools were used by the factor specialty groups to evaluate and rank the proposed alternatives. The alternatives and evaluation tools should be used to serve the appropriate section of the EIS. Thus, the ADG successfully completed its charge.

The ADG was successful in developing and evaluating alternatives. Given the evaluation tools created and the dialogue offered, it appears that a smaller set of alternatives is within reach. This smaller set of alternatives will be developed by the Corps and made part of the EIS. After public comment on the draft EIS, the ADG will reconvene to assist the Corps in responding to public comments on the alternatives.

The accomplishments of the ADG go beyond contribution to the standard EIS process. The activity of communicating the various perspectives and issues of a very environmentally complex region is an important by-product of the ADG. It is essential as southwest Florida continues to grow that it be done in a way that environment and economy are mutually supported and sustained. This can most readily be accomplished if collaborative examination of the issues, in a systemic way, continues to be conducted in the future.

VII. INTERPRETATION OF RESULTS

The ADG was tasked with fully exploring and evaluating a series of alternatives for southwest Florida. The ADG was not directly tasked with identifying a consensus-based, preferred alternative. While the spirit of consensus and seeking agreement was certainly apparent at the ADG meetings, the time frame for this process did not allow for the delivery of one fully defined alternative that the Corps could use in the EIS. Some argued that coming to a single consensus alternative would nearly be impossible. Others within the ADG thought that it might be possible, suggesting that the twenty-eight alternatives could at least be reduced in number through compromise and negotiation.

Thus, the interpretation of analysis and results does not lead to a single alternative. However, as the alternatives are reviewed in aggregate, selected inferences can be made from the ADG's deliberations. This chapter provides selected observations that define overall trends in terms of specific alternatives. These observations are further processed to offer concluding remarks about how the ADG's results may be used to solidify permit improvements. **The analyses, methodology, and conclusions presented in this chapter are authored solely by the facilitation team and the Corps.** Based on the ADG's products, this chapter presents one interpretation of the synthesis of alternatives and analysis provided by the ADG.

EXAMINATION OF ALTERNATIVES: AREAS OF AGREEMENT

A significant amount of work went into the development of alternatives. The intent of the ADG was not to necessarily bring out "the best" alternative or identify a consensus alternative. However, as the alternatives were offered, it was very clear that the alternatives were in agreement for a majority of the study area. That is, all four subgroups designated that land for the same purposes/strategy to support their vision for southwest Florida. In total, approximately 67 percent of the study area analyzed by the ADG was characterized by full agreement at the general level of land use. However, there were many areas for which ADG members had varying ideas. The value of the work from the ADG is where there is disagreement; the Corps has a very good understanding of the nature of disagreement.

To get to these general statements of inference, a fair amount of analysis of the alternatives was required. The following sections describe this analysis leading to a graphical portrayal of the areas of agreement and disagreement. A synopsis of each alternative is presented in Appendix C.

Description of Alternative Families and Subfamilies

The ADG prepared twenty-eight alternatives. A list of all the legends finds a total of 137 names. This is too large a number to begin comparing and contrasting the alternatives. Further study shows 59 unique names. For example, one unique name is “Urban and Industrial” that was used by ten alternatives as-is without any additional remarks. However, two other alternatives used this designation but with the additional proposal for flowway improvements. So this would be a second unique name. On the other hand, the name “Rural Residential” in Zoom A in Lee County and “Rural Residential” applied to Golden Gate Estates in Collier County do not imply the same review and permitting standards.

The Corps developed two indices to cross-reference each of the legends to a uniform set of names. This retains the original legends as written by the members of the ADG and also provides for a systematic analysis. The first index is referred to as Families. Each of the 137 legends are cross-referenced to one of eight Families.

The second index is referred to as Subfamilies. Each of the 137 legend names are cross-referenced to one of thirty-eight Subfamilies. Although this is a large number of Subfamilies, in many cases there does not appear to be a major difference between Subfamilies within their parent Family. A complete list of Families, Subfamilies, and respective legends are provided in Appendix E.

Development (100)

Family 100 is called Development. Legend names that are cross-referenced to 100 are Development, Urban and Industrial, Urban, Airport, Urban Land Uses, Transition, Industrial, and Rural Residential (for Zoom A).

Within the Development (100) Family are six Subfamilies: 110 is indexed to those names that added no additional modifiers; 120 is indexed to legends that proposed flowway improvements; 130 indexed to the Zoom B (hub) Alternative 2A legend proposing off-site compensation for wide-ranging species; 140 to the proposal for regional/comprehensive stormwater management; 150 to the Zoom C Alternative 1B proposal to replumb Henderson Canal and for culverts under Tamiami Trail; 160 to the criteria found in Attachment S of meeting 8 for the urban area. Three of these directly speak to flowway improvements and could be combined.

Lehigh Acres (200)

Family 200 is called Lehigh Acres. Legend names that are cross-referenced to 200 are Urban Zone (Lehigh Acres); Restoration, Retrofit, Redevelopment; Acquire, Restore, Fix; Redevelopment; Lehigh Acres Zone; Lehigh Acres Greenway; and Water Storage. The 200

Family was created distinct from the 100 Family to highlight the level of discussion given this area by the ADG.

Within the Lehigh Acres (200) Family are seven Subfamilies: 210 is indexed to the “Urban (Lehigh Acres)” name that had no additional modifiers; 220 is unassigned; 230 through 270 are indexed to the various names by which several Zoom A alternatives proposed various ideas for redevelopment and restoration within Lehigh Acres.

Golden Gate (300)

Family 300 is called Golden Gate. Legend names that are cross-referenced to 300 are Golden Gate Estates, Golden Gate Estates Zone 1, Golden Gate Estates Zone 2, Estates (Rural Residential), and Rural Residential (from Zooms C and D). This Family was created to highlight the unique characteristics of this area. In Zoom C, Alternatives 1A, 1B, 2, 3A, and 3B used the various Golden Gate names for the same area named in Alternative 1 as “Rural Residential.” Alternative 1 used the name “Rural Residential” over a portion of this footprint and “Urban” over the rest. In Zoom D, Alternatives 2A and 2B used Golden Gate names for the same area named “Rural Residential” in Alternatives 1 and 4. Alternatives 1A and 3 used Golden Gate names over a portion of this footprint and “Preservation Lands” over the rest.

Within the Golden Gate (300) Family are five Subfamilies: 310 is indexed to the names that had no additional modifiers; 320 is unassigned; 330 through 360 are indexed to the various names by which several alternatives in Zooms C and D proposed various criteria to be applied to projects within Golden Gate Estates.

Agriculture (400)

Family 400 is called Agriculture. Legend names that are cross-referenced to 400 are Agriculture, Agricultural Preserve, Agriculture (Limited Intensification), Agriculture - Maintain Intensity; Agriculture - go to preserve, Agriculture (BCACSC), Mining, and Mining Lands. Only three alternatives actually designated mining. Some of the other alternatives indicated in their remarks that mining was an authorized land use within their agricultural designation.

Within the Agricultural (400) Family are Seven Subfamilies: 410 is indexed to the names that had no additional modifiers; 420 is indexed to names designating areas for mining; 430 is indexed to the names proposing nonintensification of agriculture, while 440 is indexed to those names proposing limited intensification; 450 is indexed to the Zoom D Alternative 2B proposal to remove the exemption from the Big Cypress Area of Critical State Concern; 460 is indexed to the proposal that if agricultural activity ends, the land reverts to preservation; 470 is indexed to the criteria found in Attachment S of meeting 8 for agriculture. Three of these directly speak to degrees of intensification and could be combined.

Rural (500)

Family 500 is called Rural. Legend names that are cross-referenced to 500 are Rural, Rural Development, and Rural Cluster (Agriculture). These legends could almost be placed in the Agriculture (500) Family. In Zoom B (hub), Alternative 2A assigns two names, “Rural” and “Agriculture,” to approximately the same lands assigned a single “Agricultural” name in Alternatives 1, 1A, 3B, and 4A. Note the use of the word “approximately” as these alternatives include subareas designated with various mining and urban names. In Zoom C, Alternatives 1A, 1B, and 2 assign “Rural” and “Agricultural” names to approximately the same area as the single “Agriculture” in Alternative 1. Alternative 3B names “Rural Cluster” and does not have a separate agriculture name. Alternative 3A does not use the term rural. Alternatives 1 and 4 apply “Rural Residential” to the Golden Gate Estates proper. In Zoom D, Alternatives 2A and 2B assign “Rural” and “Agricultural” names to approximately the same area as the single “Agriculture” of Alternative 1. Alternatives 1A and 3 do not use the term “Rural.” Alternatives 1 and 4 apply “Rural Residential” to the Golden Gate Estates proper. However, in Zoom A, all the alternatives clearly name approximately similar areas using various “Rural” names. The impression is that most of the rural names reflect a view of a mixture of existing ranchette, nursery, and similar uses in a fabric of natural vegetative cover. Therefore, the Rural Family was created in the interest of capturing the alternatives in Zoom A but with the recognition of the overlap with the Agriculture (400) Family in the other zooms.

Within the Rural (500) Family are Seven Subfamilies: 510 is indexed to the “Rural Residential” or “Rural Development” names in Zoom A that had no additional modifiers; 520 through 560 are indexed to the various names by which several alternatives proposed various ideas for rural development criteria, including clustering and provision for maintenance of historic flowways. In addition, a detailed draft for clustering criteria was presented and found in Attachment E of meeting 9.

Preserve (600)

Family 600 is called Preserve. Legend names that are cross-referenced to 600 are Preservation Lands, Preserve (Existing and Proposed), Preservation/Conservation, Preservation, and Conservation Lands.

Within the Preserve (600) Family are five Subfamilies: 610 is indexed to those names that had no additional modifiers; 620 is indexed to those names that proposed improvement of flowways; 630 is indexed to the name “Preserve (Existing and Proposed)” of Alternatives 2A and 3B of Zoom B (hub) that noted their delineation was based on the Land Conservation/Preservation Strategy Map adopted July 13, 1998, by the Estero Bay Agency on Bay Management; 640 is indexed to the criteria found in Attachment S of meeting 8 for preserves.

Permit Standards (700)

Family 700 is called Permit Standards. Legend names that are cross-referenced to 700 are Critical Resource Protection Area, Preservation Zone, Buffer Transitional Zone, Agricultural Zone, and Urban Zone (two names, one in Zoom A and one in Zoom B (hub)). These are proposed criteria and standards to be used in permit review. In Alternative 4B of Zoom B (hub), these criteria were described as an overlay on the underlying designations: in other words, the “Agricultural” designation of Alternative 4A is used, but in addition the criteria for “Critical Resource Protection Area (CRPA)” would be applied. In Alternative 4B, CRPA overlaps areas designated as “Agricultural,” “Preservation Lands,” and a sprinkling of others. In Zoom A, Alternative 5 subdivides the criteria between agricultural and preservation and other uses, but there remains the fundamental premise that these criteria are focused on the permitting process. This separate Family has been created to capture the unique thoughts presented by these alternatives and how they were evaluated. However, note that Zoom C’s Alternative 2 and Zoom D’s Alternatives 1A, 2A, 2B and 3 included in their definition of “Golden Gate Estates Zone 2” the criteria for the Buffer Transition Zone. These were cross-referenced to the Golden Gate (300) Family, since these were mixed with other criteria clearly identified with Golden Gate.

Within the Permit Standards (700) Family are six Subfamilies: 710 is unassigned; 720, 730, and 740 are assigned to the criteria proposed by Alternatives 2C, 3A, and 4B in Zoom B (hub) and are found in Attachment E of meeting 7; 750, 760, and 770 are assigned to various criteria proposed by Alternative 5 in Zoom A and are found in Attachment W of meeting 9.

Nonagreement (800)

Family 800 is called nonagreement. Legend names that are cross-referenced to 800 are Pending Review and Berm. Alternative 4A of Zoom B (hub) and 3A of Zoom C both identified areas where the groups preparing the alternatives could not agree whether to designate the location as development or preservation. Alternative 4B of Zoom B (hub) identified a Berm that the group could not agree to add to Alternative 4A. This Family was to capture these three circumstances that did not fall cleanly into any of the other alternatives.

Within the Non Agreement (800) Family are two Subfamilies: 810 is unassigned; 820 is indexed to the Berm proposed by Alternative 4B of Zoom B (hub); 830 is indexed to the name “Pending Review” where the group developing the alternative could not agree.

Agreement Map Structure

These Family and Subfamily indices were then added to the geographic information system (GIS) maps of the alternatives. The alternatives were then stacked on top of each other using the GIS software.

The steps of the GIS process were (1) dividing each alternative's map into a grid of squares measuring approximately 90 feet wide; (2) transferring the index value from the map into the grid cell; (3) comparing the Family and Subfamily indices found in the grid cells at the same geographic location for each of the alternatives; (4) creating two maps showing the number of different Family and Subfamily, respectfully, index values at a grid cell location; (5) checking the "slivers" of cell locations where the mapping of alternatives did not exactly line up and adjusting the maps accordingly; and (6) producing a final map.

The resulting map, "Overlay of Alternatives," shows for a large portion of the study area that the alternatives assigned the same Families. The various crosshatching shows the Family designation in those areas where the alternatives assigned the same Family. This overlay did not include the Permit Standards (700) nor the Non Agreement (800) Families.

The solid gray shows areas where there were two different Families assigned by the alternatives. For example, if four alternatives assigned Preserve (600) Family and the fifth assigned Agriculture (400), then there were two different Families and the area would be shaded gray. Typically, the two Families within the gray area can be determined by looking at the Families indexed adjacent to the gray. For example, a gray area found sandwiched between an area designated as "Preserve" and another as "Agricultural" is typically reflecting that some alternatives assigned the Preserve Family and the others the Agriculture Family.

The white areas, unshaded and not crosshatched, are those with more than two families. These areas of disagreement are a very small proportion of the total area.

The number of Subfamilies is strongly correlated to the zoom. For example, whenever all of the alternatives indexed the Development (100) Family within Zooms C and D they also agreed on the Subfamily. In Zoom B (hub), there were two Subfamilies, and in Zoom C, three Subfamilies. There are six Subfamilies in the Development (100) Subfamily. The number of Subfamilies is probably a combination of the (1) characteristics of each zoom and (2) the creativity of the group when the alternatives were developed.

IMPLICATIONS FOR PERMIT STRATEGIES

The agreement map shown in Figure VII-1 provides a basis for subsequent analysis and application to the permit program. The following are some examples picked out from the large mass of information represented by this map.

Within Zoom D, there was agreement to designate the center of Camp Keais Strand as "Preserve." However, there was a difference in how wide the Preserve should be. One alternative delineated as Preserve only those areas that are covered with natural vegetation. The adjoining farmlands were designated "Agriculture." Other alternatives included in their delineation of Preserve some of these adjoining farm fields. The farm fields that are delineated as Preserve in one alternative and Agricultural in the others are colored gray on the map. The next

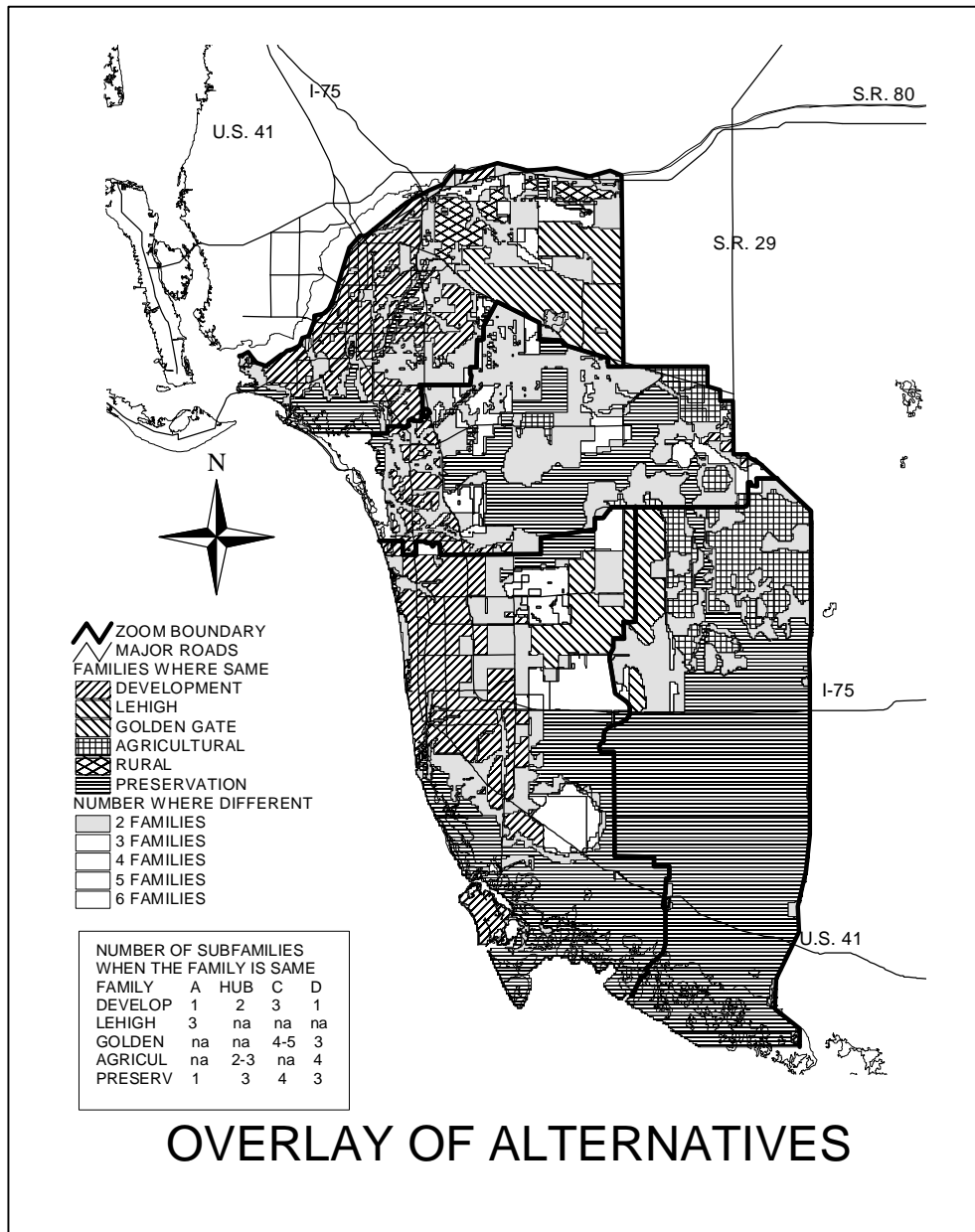


FIGURE VII-1

task would be to study the evaluations of the one alternative and compare it with the evaluations of the other alternatives to understand the ramifications of choosing one width over the other.

Potential Permit Implications: Zoom D

Within Zoom D, all of the alternatives delineated Southern Golden Gate Estates as Preserve. For Northern Golden Gate Estates, the alternatives did not agree for the portion of the Estates adjacent to I-75. Two alternatives delineated that portion as Preserve to show the historic assemblage and interconnection of the wetlands. The other three alternatives delineated

continued residential development. This area is shown in gray. However, one of the three alternatives included criteria to preserve these wetlands but did not explicitly map them. For the remainder of Northern Golden Gate Estates, all the alternatives agreed to residential development.

The area of agreement is crosshatched on the map as Golden Gate. Three of these alternatives proposed additional criteria for project review. The next task would be to compare the evaluations of those alternatives proposing preservation with the evaluations of the other alternatives to understand the benefits and impacts of adopting one or a combination of the preservation proposals.

Potential Permit Implications: Zoom C

Three patches of white are mapped within Zoom C. These are areas where the alternatives did not agree. One location of disagreement is on Immokalee Road; one is in Belle Meade; and the third is off of I-75. All three areas are just outside (east of) the urban boundary. Within all three areas, alternatives delineated a wide variety of project types. For example, in the Immokalee area: one alternative delineated part of the area as Agriculture and part as Urban; three alternatives delineated part Rural with varying amounts of Preserve and Urban; one alternative delineated a part of the area as Transition and the rest either Urban or Mining; and the group that prepared one alternative could not agree whether to delineate it as Development or Preserve. All three of these white areas are expected to be the locations of future development, yet there is no agreement that development is appropriate. One can anticipate contentious permit reviews in these areas.

Within Zoom C, an area along Tamiami Trail south of Naples is shaded gray. South of the gray area (along the coast), all of the alternatives agreed on Preservation. North of the gray area all of the alternatives agreed on Development. The alternatives delineated various proportions of the gray area as Preserve and Development. This indicates the appropriate boundary between the Preserve and Development is unclear. A study of the evaluations may provide insight into the ramifications of the different boundaries.

Potential Permit Implications: Zoom B (Hub)

Within Zoom B (hub), the majority of the area west of I-75 is delineated Development. The streaks of gray through the Development crosshatching follow existing waterways. Two alternatives delineated these areas simply as Development. Four alternatives proposed various widths and extents of flowways through developed areas and delineated them as Preserves. Three other alternatives proposed permitting criteria that would require these flowways with development. None of the groups attempted to draw exact boundaries between the flowways and development. A comparison of the evaluations between the Alternatives may validate the concept with the details to be addressed during individual project review.

Within Zoom B (hub), all of the alternatives agreed on delineating an area centered on the Corkscrew Swamp as Preserve. However, the lands surrounding that Preserve are shaded gray. One alternative delineates this gray area as Agriculture. One delineates a portion as Agricultural and the rest as mining. Two alternatives delineate a part as Agriculture and the rest as Preserve or Mining. Two delineate part as Preserve and the rest as Rural or Agriculture with a limitation on the intensification of current activity. Three alternatives overlay permit criteria that preclude expansion into existing natural areas. Essentially, each Alternative selects one of three approaches: current Agricultural and other uses; explicitly map an expansion of the Corkscrew Preserve; or impose constraints on project activity to maintain the existing natural areas.

Potential Permit Implications: Zoom A

Within Zoom A, all of the alternatives gave special attention to Lehigh Acres. All but one of the alternatives described a variety of ideas for redevelopment. This presents an opportunity to discuss these ideas now before their implementation is precluded as houses are built.

Within Zoom A, several gray areas are shown around the perimeter of Lehigh Acres. In each gray area, the alternatives delineated two types of projects. The combination of which two varied: for two patches the difference is between Development and Preservation and in the others between Development and Rural. The Development includes not only the “Urban” legend but also the various ideas for redevelopment. The differences reflect three broad categories of ideas for the fringe around Lehigh Acres: establish Preserves surrounding the remaining natural areas at the headwaters of various waterways; limit to Rural; or develop as Urban.

Permit Generalizations

In conclusion, three generalizations can be made.

Within the crosshatched areas, there is fundamental agreement on the appropriate type of future projects but variations in the criteria to be applied to their review. The next step should be to review what the evaluations reported for the range of criteria. This will improve the understanding of which criterion or combination of criteria could be incorporated into review processes to increase permitting efficiency.

Within the shaded areas, there is disagreement on the appropriate type of future projects, but generally the disagreement is where to locate the geographic boundary between the two types. The next step should be to review the evaluations that bracket the range of disagreement. This will improve the understanding of which issues are most affected by permitting decisions that cumulatively will establish this boundary.

Within the white areas, the disagreement indicates that any individual project review will be very challenging. These evaluations would provide a starting point if an opportunity arises to open discussions prior to formal project review.

APPENDIX A

ADG MEMBERS, ALTERNATES, AND SUPPORT TEAM

**LIST OF MEMBERS
ALTERNATIVES DEVELOPMENT GROUP**

| NAME | AFFILIATION |
|----------------------------|---|
| Baker, Bob | Council of Civic Associations |
| Barber, Rick | Lee and Collier County Commissions |
| Beck, Tom | Department of Community Affairs |
| Cassani, John | Lee County Hyacinth Control District |
| Daltry, Wayne | SW FL Regional Planning Council |
| Davenport, Claudia | Big Cypress Basin Board |
| Douglas, David | David Douglas Assoc., N Ft. Myers Chamber of Commerce |
| Dryden, Kim | U.S. Fish and Wildlife Service |
| Durham, Tim | Wilson, Miller, Barton & Peek, Inc. |
| Folks, John | Department of Agriculture and Consumer Services |
| Graham-Elliott, Clara Anne | League of Women Voters of Lee County |
| Griffith, Ed | WCI Communities |
| Guggenheim, David | The Conservancy of Southwest Florida |
| Hall, John R. | U.S. Army Corps of Engineers |
| Hammond, Bill | South Florida Water Management District |
| Hartman, Bradley J. | Florida Game and Fresh Water Fish Commission |
| Highsmith, Peggie | Department of Environmental Protection |
| Inge, Ronald | Lee County Horizon Council, Harper Bros., Inc. |
| Kain, Wallace | City of Sanibel |
| Kegg, Earl | Collier County |
| Klaas, Richard | Florida Real Estate Consultants |
| Kranzer, Bonnie | Governor's Commission for Sustainable South Florida |
| Lucas, Al | U.S. Environmental Protection Agency |
| Merriam, Chip | South Florida Water Management District |
| Montgomery, Neale | Pavese, Garner, Haverfield, Dalton, Harrison & Jensen |
| Mulhere, Bob | Collier County Planning |
| O'Connor, Paul | Lee County: Planning Division |
| Roth, Robert H. | Barron Collier Partnership/Silver Strand Division |
| Stallings, Fran | General Public – Several Environmental Organizations |
| Strain, Mark P. | Gulf Bay Communities, Inc. |
| Thoemke, Kris | National Wildlife Federation |
| Uhle, Matthew D. | Economic Dev. Coalition of Lee Co. |
| Ward, Whit | Collier Building Industry Association, Inc. |

**LIST OF ALTERNATES
ALTERNATIVES DEVELOPMENT GROUP**

| NAME | AFFILIATION |
|---------------------|---|
| Barron, Bob | U.S. Army Corps of Engineers |
| Beardsley, Gary | League of Women Voters of Lee County |
| Beever, Jim | Florida Game and Fresh Water Fish Commission |
| Brundage, Daniel | Lee and Collier County Commissions |
| Burr, David | SW FL Regional Planning Council |
| Dolan, Terrance | WCI Communities |
| English, Katherine | Pavese, Garner, Haverfield, Dalton, Harrison, and Jensen |
| Gauthier, Charles | Department of Community Affairs |
| Goldman-Carter, Jan | National Wildlife Federation |
| Hasty, Collum | General Public – Several Environmental Organizations |
| Hayden, Tracy L. | Harper Bros., Inc. |
| Johnson, Karen | South Florida Water Management District |
| Jolly, William | Department of Agriculture and Consumer Services |
| Loflin, Rob | City of Sanibel |
| Maier, Gary | Department of Environmental Protection |
| Morton, Mark | Barron Collier Partnership |
| Noble, Matt | Lee County, Division of Planning |
| Olds, W. Tom | U.S Fish and Wildlife Service |
| Rhodes, Jeff | Science Applications International Corporation (SAIC) (EPA) |
| Rice, Terry | Science Applications International Corporation (SAIC) (EPA) |
| Rietmann, Michael | Collier Building Industry Association, Inc. |
| Roeder, Mike | Economic Dev. Coalition of Lee Co. |
| Simonik, Michael | The Conservancy of Southwest Florida |
| Tears, Clarence | South Florida Water Management District |

**ADG SUPPORT TEAM
ALTERNATIVES DEVELOPMENT GROUP**

| NAME | AFFILIATION |
|-------------------|---|
| Feather, Timothy | Planning and Management Consultants, Ltd. |
| Brown, Dale | Planning and Management Consultants, Ltd. |
| Beezhold, Michael | Planning and Management Consultants, Ltd. |

APPENDIX B

REFERENCE LIST

Reference List

- Alternatives Development Group Meeting Notes (1-11)
- An Environmental Characterization of the Rookery Bay National Estuarine Research Reserve: Phase I (1993)
- Bio-diversity Hot Spots
- Charlotte Harbor NEP Area Studies
- Closing the GAPS in Florida Wildlife (Habitat Conservation System, 1994)
- Collier County Environmental Services Division: Pollution Control Department, 1993, Assessment Report: Inland Surface-Water Quality Monitoring Network: (January 1979 to December 1989), Publication Series PC-AR-91-02
- Collier County Manatee Mortality: 1/74-10/97 (map)
- Collier County Manatee Mortality: February 1998 (map)
- Collier, Hendry, and Lee County Future Land Use 2010: (Southwest Florida Regional Planning Council)
- Composite Strategies Conservation Map - Work in Progress
- Environmentally Sensitive Index maps: Peninsula 2 Florida
- EPA Wetlands map
- Estero Bay Drainage Basin: Lee, Collier, and Hendry County
- Florida Black Bear: Potential Habitat (map)
- Florida Department of Environmental Protection, 1997, Rookery Bay National Estuarine Research Reserve and the Ten Thousand Islands Aquatic Preserve: Estuarine Habitat Assessment
- Florida Panther Habitat Preservation Plan. Florida Panther Interagency Committee. (April 1991.)
- Florida Panther: Potential Habitat (map)
- FTP Site: <ftp://ftp.saj.usace.army.mil/pub/bbarron/readme.htm>
- Future Land Use Map: Collier County
- Future Land Use Map (map 1): Lee County
- Generalized Existing Land Use Map, Collier County, Florida (1-7)
- Henderson Creek Canal: request for consideration by concerned citizen
- Hurricane Preparedness/ Evacuation Study
- Hurricane Shelter Deficit Reduction Report
- Interim Final Guidance for Incorporating Environmental Justice Concerns in EPA's
- Lee County Comprehensive Plan
- Lee County land use database
- Lee County Manatee Mortality: February 1998 (map)
- Lee County: Planning Community Existing Conditions Summary
- Lee County Planned Development Update: revised 1998
- Lee County projects development approvals
- Map of Lee County: Existing Land Uses
- Microcomputers and Economic Analysis: Spreadsheet Templates for Local Government (revised and expanded edition 1987)

Mollusk and Sediment Contaminant Levels and Trends in South Florida Coastal Waters (1986 to 1994)

Multi-species Recovery Plan for South Florida (Vol. 1). U.S. Fish and Wildlife Service. (March 1998)

National Association of Home Builders Local Impact of Home-building Model (1997)

NEPA Compliance Analysis (EPA 1997)

Nominations with Secondary Screening Criteria Ratings: Lee County (map)

Open Spaces: Collier County (map)

Roadway Cost Analysis – Local Mines Versus Non-Local Mines: Daniels Road Case Study. Inge. August 1998.

Soil Survey of Collier County

Soil Survey: Detailed Reconnaissance Collier County, Florida: Series No. 8 (1942)

Soil Survey of Lee County, Florida

South Florida Study - 1973

South Lee County Watershed Plan: draft (1998)

Southwest Florida District Water Quality – 1996 305(b) Technical Appendix

Southwest Florida Region Regionally Significant Natural Resources (map)

Southwest Florida Strategic Regional Policy Plan (1995)

State of Bay - Agency for Bay Management

Storm Surge Atlas - Lee & Collier Counties

Strategic Habitat Conservation Areas (map)

Study Area of the Caloosahatchee Water Management Plan (SFWMD)

Sustainable America: A New Consensus For Prosperity, Opportunity, and a Healthy Environment for the Future. (February 1996)

Takings Law in Plain English (Christopher Duerksen and Richard Roddewig)

The 1994 Lee Plan: 1996 Codification: as amended through May 1997

The Local Impact of Home Building in Lee County, Florida (1997)

The Local Impact of Home Building in Naples, Florida (1997)

Wading Bird Rookery, Bald Eagle, and Florida Scrub Jay locations

Wetlands Regulation and the Takings Issue (Robert Multz)

APPENDIX C

PROFILES AND MAPS OF ADG ALTERNATIVES

ZOOM A—COMPREHENSIVE PLAN

This alternative represents Lee County's Comprehensive Plan (Ordinance 89-02 with amendments), including the implementing policies and procedures for approval of projects.

The Lee County Ordinance at Chapter II (Future Land Use), states the first goal is "To maintain and enforce a Future Land Use Map showing the proposed distribution, location, and extent of future land uses by type, density, and intensity..." Under this first goal are listed approximately 22 categories. Other goals in this chapter and other chapters in the Ordinance provide specific policies for evaluation of proposed development designs or rezoning. Chapter XIII (Procedures and Administration) states "...all development and all actions taking in regard to development orders shall be consistent with the plan..." The Ordinance also provides for a Year 2010 Overlay which divides the County into 105 Subdistricts. Within each district is assigned an acreage for each land designation within that district. The number of acres are those proposed for the year 2010. No development orders will be issued exceed these acreage numbers. This overlay is being replaced by a Year 2020 Overlay which divides Lee County into 20 Planning Communities. Therefore, the Future Land Use Map shows "build-out" acres for each designation, but the acres projected for the year 2020 will be something less. The Ordinance itself states "With the exception of Cape Coral and Lehigh Acres, the county's urban areas will be built out by 2020." Due to the difficulty of mapping these 2020 projections, the alternative was created using the "build-out" map. It appears the evaluations were generally performed using "build-out" although at least one sub-group discussed the 2020 overlays while preparing their evaluations.

The alternative uses five land use legends: Agricultural; Industrial; Preservation; Rural Residential; Urban; and Urban (Lehigh Acres). The Lee County Future Land Use Map shows 22 land use designations. These designations were collapsed into six simply to ease the preparation of other alternatives and for convenience in evaluation. Agricultural represents Density Reduction/Groundwater Resource. Industrial represents Industrial Development, Industrial Interchange, and Industrial Commercial Interchange. Preserve represents Wetlands and those portions of Density Reduction Groundwater Resource, Wetland and Suburban that currently are or are proposed to be preserved and managed to maintain natural resource values. Rural Residential represents Rural and Rural Community Preserve. Urban represents Intensive Development, Central Urban, Urban Community, Suburban, Outlying Suburban, the Interstate Highway Interchange designations except for the Industrial and the Industrial Commercial types, Public Facilities, New Community, and the various Airport areas. Urban (Lehigh Acres) is portions of Central Urban and Urban Community within Lehigh Acres.

ZOOM A—ALTERNATIVE 1A

This alternative generally seeks to provide greater interconnection of existing natural areas.

Within Lehigh Acres, this alternative proposes a Restoration, Retrofit, and Redevelopment (3 R's) approach for those areas least built-out. Strategies to implement would include use of clustering and multi-family to create areas of high density to provide opportunity for restoration in other portions. This would require retrofitting and redevelopment of the existing roads and other infrastructure.

In Urban and Industrial areas, this alternative proposes adoption of regional stormwater management. This approach would: develop a plan for each watershed; identify the location of a single stormwater detention facility to serve a region (several development projects); provide channel improvements; use non-structural measures (such as acquiring parkland or floodproofing) to supplement structural control measures; and coordinate infrastructure improvements with point and non-point source management.

In Rural Residential, the alternative proposes development of greater planning detail to identify existing flowways, forested habitats, and seasonal wetlands that are large or contiguous to each other. This information would then be used to protect these areas in a connected landscape as the area develops.

The area of Conservation Lands was drawn to emphasize connections between the Rural Residential to the Six Mile Cypress Slough and between the Slough and Estero Bay.

ZOOM A—ALTERNATIVE 2

This alternative emphasizes restoration within Lehigh Acres and maps interconnection of natural areas.

A Lehigh Acres Greenway is proposed for the eastern two miles of Lehigh Acres. The remainder of Lehigh Acres would be designated Lehigh Acres Zone. A list of specific development criteria is found at [Attachment V of Meeting Minutes 9](#). The criteria calls for: the mapping of wetlands, flowways, xeric oak scrubs, and development concentrations; reassign densities and provide transfer of development rights to cluster residences toward the central area of Lehigh Acres where the highest elevation and fewest wetlands are located; and create regional stormwater and water storage facilities.

In Rural Residential, this alternative adds development of greater planning detail to identify existing flowways, forested habitats, and seasonal wetlands that are large or contiguous to each other. This information would then be used to protect these areas in a connected landscape

as the area develops.

Other areas of Preservation Lands were drawn to emphasize connections between the Rural Residential and Airport preservation areas to the Six Mile Cypress Slough and between the Slough and Estero Bay. The Preservation Lands were also drawn in wetland areas in the Rural areas between Lehigh Acres and the Caloosahatchee River.

ZOOM A—ALTERNATIVE 3A

This alternative generally seeks to “fix” Lehigh Acres and enlarge the value of some wetland features.

Within Lehigh Acres, this alternative proposes an Acquire, Restore, Fix (ARF) Restoration, Retrofit, and Redevelopment (3 R’s) approach, particularly noting the Halfway Pond feature.

The Preservation Lands mapping included providing filter marshes along Ten Mile Canal, canals leading from Lehigh Acres. In addition, lands south of the Airport are proposed to be preserved.

ZOOM A—ALTERNATIVE 4

This alternative generally emphasizes restoration of flowways and addition of storage.

Within Lehigh Acres, this alternative suggests Lee County, using Greenbriar as a model, should consider redevelopment alternatives such as curvilinear streets and the retention of natural areas to restore flowways for the rest of Lehigh Acres. An area in southeast Lehigh Acres was identified as potential use for water storage.

Preservation Lands included lands surrounding Ten Mile Canal and certain flowways leading to Six Mile Cypress Slough and others leading to the Caloosahatchee River.

ZOOM A—ALTERNATIVE 5

This alternative focuses on the Corps permit review process by proposing particular criteria.

The geographic map is the same as for Alternative 3A. The criteria and rationale in detail is found at Attachment W of Meeting Minutes 9.

Within the Preservation Zone, denial of all permits. The proposal states the vision is, in part, that these areas would be “...off limits to future development activity.”

For the Acquire, Restore, Fix Zone within Lehigh Acres, the alternative proposes that the “Corps strictly applies the Section 404(b)(1) Guidelines, including: (1) a strong presumption that practicable alternatives exist outside of the ARF Zone to dredge and fill activities (except restoration/retrofit activities)...” The proposal also describes numerous criteria for the Corps to apply during permit review, for example, certain limits to the use of nationwide and general permits, application of the criteria of the Big Cypress Area of Critical State Concern regulations, and restoration of flowways. The proposal states the vision is, in part, to “...protect and restore critical resources...”

For the Urban Zone, the alternative proposes...” a presumption that alternatives exist to locating dredge and fill activities in creeks, rivers, other historic flowways and adjacent wetlands; and to locating dredge and fill activities in isolated wetlands identified as important to wading birds, other species of concern, water quality, groundwater recharge or flood control.” The proposal also describes numerous criteria for the Corps to apply during permit review, for example, certain limits to the use of nationwide and general permits, promotion of the restoration of flowways, and restoration of buffer zones. The proposal states the vision is, in part, to “..direct development into this zone...while maintaining watershed integrity within the zone.”

The proposal provides criteria for an Agricultural Zone and a Buffer Zone. This would be applied to the Rural Residential designation of this alternative. The proposal provides “...a strong presumption that alternatives exist outside..” either the Buffer Zone or Agricultural Zone and includes numerous criteria for the Corps to apply during permit review. The proposal states the vision is, in part, that agricultural “...should remain in agricultural use, compatible with conservation purposes...” and to “...discourage urban expansion in and through...” the Buffer Zone.

These criteria are an update and refinement of those presented for Zoom B (hub) by Alternatives 2C, 3A, and 4B.

ZOOM B (HUB)–COMPREHENSIVE PLAN

This alternative represents Lee County’s Comprehensive Plan (Ordinance 89-02 with amendments) and Collier County’s Future Land Use Element of the Growth Management Plan (Ordinance 97-67), including the implementing policies and procedures for approval of projects. For a discussion of these ordinances, see the second paragraph at Zoom C – Comprehensive Plan (Collier County) and Zoom A – Comprehensive Plan (Lee County).

The alternative uses five land use legends: Agricultural; Industrial; Preserve; Rural; and, Urban. The Lee County Future Land Use Map shows 22 land use designations and the Collier County Future Land Use Map shows 12. These 34 designations were collapsed into five

simply to ease the preparation of other alternatives and for convenience in evaluation. For this zoom: Agricultural represents Density Reduction/Groundwater Resource (Lee) and Agricultural/Rural Mixed (Collier); Industrial represents Industrial Development (Lee) and Industrial District (Collier); Preserve represents Wetlands (Lee) and portions of Density Reduction Groundwater Resource (Lee), Wetland (Lee) and Agricultural/Rural Mixed Use District (Collier) that currently are or are proposed to be preserved and managed to maintain natural resource values; Rural represents Rural (Lee); Urban represents Suburban (Lee), Outlying Suburban (Lee), Urban Community (Lee), University Community (Lee), the various Interstate Highway Interchange areas (Lee), Public Facilities other than certain parks that were placed in the preserve legend (Lee); and Mixed Use Activity Center SubDistrict (Collier).

ZOOM B (HUB)–ALTERNATIVE 1A

This alternative defined the Preservation Lands overlapping maps from other efforts.

Preservation lands were identified by overlapping the Strategic Habitat Conservation Areas, the Land Conservation/Preservation Strategy Map adopted by the Estero Bay Agency on Bay Management, the boundary of the Corkscrew Regional Ecosystem Watershed (CREW), and the Environmental Protection Agency map of priority wetlands.

The Agricultural designation is the same as for comprehensive plan.

Within the Urban and Industrial, the alternative proposes flowway improvements such as those described in the South Lee Watershed Plan presented by the South Florida Water Management District .

ZOOM B (HUB)–ALTERNATIVE 2A

This alternative give particular emphasis to the needs of wide-ranging species.

The mapping of Preserve used the Land Conservation/Preservation Strategy Map adopted by the Estero Bay Agency on Bay Management, and added connections to the boundary of the Corkscrew Regional Ecosystem Watershed (CREW) for wide-ranging species. The alternative also proposes riparian corridors through the urban areas.

For Agriculture, the alternative “assumes limited intensification of use, that is, no changes that require additional loss of native habitat, no changes (such as intensification of citrus) that would lower hydrology. For example, range and improved range stay the same, vegetable crops change or go to fallow field and back again.”

In Rural, the alternative proposes development of greater planning detail to identify

existing flowways, forested habitats, and seasonal wetlands that are large or contiguous to each other. This information would then be used to protect these areas in a connected landscape as the area develops.

The alternative did not separately identify mining as a category but classified mining as either Rural or Preserve depending on the ultimate use.

An area is mapped for Development with a requirement for off-site compensatory mitigation for wide-ranging species.

The alternative proposes flowway improvements for the Development area.

Zoom B (Hub)—Alternative 2B

This alternative builds on the mapping of natural resources by others.

The mapping of Preserve started with the Preserves shown in comprehensive plan, then added the following: all proposed acquisitions; the Strategic Habitat Conservation Area mapping for the Florida Panther; and the Priority 1 and 2 areas of the Florida Panther Habitat Preservation Plan. Found that within these areas were found all mapped eagle nests, rookeries, rare native plant communities, seasonal wetlands and flowways, and various coastal resources of interest.

The alternative proposes area Agricultural would remain agricultural but also delineated a sub-area where there would be no intensification in activity. Mining is considered in the Agricultural category to the extent consistent with the comprehensive plan.

The alternative notes that whatever the mapping shows, existing Development Orders remain vested.

Zoom B (Hub)—Alternative 2C

This alternative focuses on maintaining a mix of natural areas, urbanization, and agriculture through use of certain criteria to be applied in project review.

The detailed description of the mapping of each designation and of the criteria proper are found at [Attachment E of Meeting 7](#).

Within the Critical Resource Protection Area, the alternative proposes that projects: meet the Big Cypress Area of Critical State Concern Development Criteria and Standards (with agriculture not exempted); result in no net loss of wetland acreage and function; result in no net loss of active agricultural area; meet total maximum daily loads set for the area of the watershed; improve water quantity, quality, timing and direction; protect on-site wetlands with an easement;

do not fragment or sever a wetland system; and meet the criteria of the Buffer Transitional Zone. Also, agricultural activities would remain but with no intensification. Existing mining is captured under the Agricultural zones. However, there are restrictions on new mines.

Within the Buffer Transitional Zone, the alternative proposes that projects: result in no net loss of wetland acreage and function; result in no net loss in historical water table height and recharge area; do not alter water sheet flow characteristics; contribute to the restoration of historic flowways; preserves buffer zones around wetlands, flowways, natural streams, rivers, and creeks; do not impact water quality; do not contribute to hurricane shelter deficit nor increase evacuation times; and implement the principals adopted by the Estero Bay Agency on Bay Management.

Within the Urban Zone, the alternative proposes that projects: restore flowways; retrofit residential septic systems and package treatment plants; provide adequate hurricane shelters and evacuation routes; restore or retrofit buffer zones around wetlands, flowways, natural streams, rivers and creeks; and meet Pollution Reduction Goals when set.

ZOOM B (HUB)–ALTERNATIVE 3A

The developers of this alternative emphasized that the large area mapped Critical Resource Protection Area was not Preserve, but a mix of preserve and other uses.

The detailed description of the mapping of each designation and of the criteria proper are found at [Attachment E of Meeting 7](#).

Within the Critical Resource Protection Area, the alternative proposes that projects: meet the Big Cypress Area of Critical State Concern Development Criteria and Standards (with agriculture not exempted); result in no net loss of wetland acreage and function; result in no net loss of active agricultural area; meet total maximum daily loads set for the area of the watershed; improve water quantity, quality, timing and direction; protect on-site wetlands with an easement; do not fragment or sever a wetland system; and meet the criteria of the Buffer Transitional Zone. Also, agricultural activities would remain but with no intensification.

Within the Buffer Transitional Zone, the alternative proposes that projects: result in no net loss of wetland acreage and function; result in no net loss in historical water table height and recharge area; do not alter water sheet flow characteristics; contribute to the restoration of historic flowways; preserves buffer zones around wetlands, flowways, natural streams, rivers, and creeks; do not impact water quality; do not contribute to hurricane shelter deficit nor increase evacuation times; and implement the principals adopted by the Estero Bay Agency on Bay Management.

Within the Urban Zone, the alternative proposes that projects: restore flowways; retrofit residential septic systems and package treatment plants; provide adequate hurricane shelters and evacuation routes; restore or retrofit buffer zones around wetlands, flowways, natural streams,

rivers and creeks; and meet Pollution Reduction Goals when set.

ZOOM B (HUB)–ALTERNATIVE 3B

This alternative built on the work of the Estero Bay Agency on Bay Management.

The areas designated Preserve were based on the Land Conservation/Preservation Strategy Map adopted by the Estero Bay Agency on Bay Management. Included are flowways through the urban areas and within existing agricultural areas. Agriculture would remain with no intensification. Development would be guided by the principles of the Estero Bay Agency on Bay Management.

The alternative also maps mining lands with no comment.

ZOOM B (HUB) - ALTERNATIVE 4A

This alternative builds on comprehensive plan.

In this alternative, Mining lands are shown separate from Agriculture. The definition for Agriculture is the same as comprehensive plan.

This alternative proposes implementation of flowways through the urbanized areas and, within Preservation Lands, removal or culverting of various roads to restore flowways. These are as described in the South Lee Watershed Plan presented by the South Florida Water Management District.

Two areas are designated Pending Review as the group preparing the alternative could not agree whether to designate the location as development or preservation.

ZOOM B (HUB)–ALTERNATIVE 4B

This alternative builds on Alternative 4A by adding criteria and a water control berm.

The alternative proposes the construction of a berm as described in the South Lee Watershed Plan presented by the South Florida Water Management District. The berm will store water when downstream conveyances are at capacity. All of the evaluations were performed using the berm located as mapped. Three of the evaluations also included evaluations of two other possible alignments, described in Attachment AG of Meeting #10.

The detailed description of the mapping of each designation and of the criteria proper are found at Attachment E of Meeting 7.

Within the Critical Resource Protection Area, the alternative proposes that projects: meet the Big Cypress Area of Critical State Concern Development Criteria and Standards (with agriculture not exempted); result in no net loss of wetland acreage and function; result in no net loss of active agricultural area; meet total maximum daily loads set for the area of the watershed; improve water quantity, quality, timing and direction; protect on-site wetlands with an easement; do not fragment or sever a wetland system; and meet the criteria of the Buffer Transitional Zone. Also, agricultural activities would remain but with no intensification.

Within the Buffer Transitional Zone, the alternative proposes that projects: result in no net loss of wetland acreage and function; result in no net loss in historical water table height and recharge area; do not alter water sheet flow characteristics; contribute to the restoration of historic flowways; preserves buffer zones around wetlands, flowways, natural streams, rivers, and creeks; do not impact water quality; do not contribute to hurricane shelter deficit nor increase evacuation times; and implement the principals adopted by the Estero Bay Agency on Bay Management.

Within the Urban Zone, the alternative proposes that projects: restore flowways; retrofit residential septic systems and package treatment plants; provide adequate hurricane shelters and evacuation routes; restore or retrofit buffer zones around wetlands, flowways, natural streams, rivers and creeks; and meet Pollution Reduction Goals when set.

ZOOM C–COMPREHENSIVE PLAN

This alternative represents Collier County’s Future Land Use Element of the Growth Management Plan (Ordinance 97-67), including the implementing policies and procedures for approval of projects.

The Collier County Ordinance states the goal is “To guide land use decision-making...” and provides several objectives and policies. The ordinance also defines approximately twelve

land use designations that “...generally indicate the types of land uses for which zoning may be requested.” For each designation, the ordinance describes the uses and standards to be applied and shows the properties affected on the Future Land Use Map. Note that Ordinance 97-67 is the amendment of the current Future Land Use Element and is not in effect (as of May 11, 1998) while concerns raised by the Florida Department of Community Affairs are resolved. The Land Development Code (Ordinance 91-102) implements applicable portions of the Growth Management Plan. Article 2, Zoning, includes, among other things, a requirement for open space and for special requirements in areas of environmental sensitivity designated as Special Treatment Overlay District. Article 3, Development Requirements, includes, among other things, a requirement for an Environmental Impact Statement for certain projects, and various requirements for protection of natural vegetation and endangered species.

The alternative uses five land use legends: Agricultural; Industrial; Preservation/Conservation; Rural Residential; and Urban Land Uses. The Collier County Future Land Use Map shows 12 land use designations. These designations were collapsed into five simply to ease the preparation of other alternatives and for convenience in evaluation. Agricultural represents Agricultural/Rural Mixed Use District; Industrial represents Industrial District; Preservation/Conservation represents portions of the Agricultural/Rural Mixed Use District that are or are proposed to be preserved and managed to maintain natural resource values; Rural Residential represents the Estates Designation and the Rural Settlement Area District. Urban represents the various Urban and Commercial subdistricts under the Urban Designation except for the Industrial District.

ZOOM C—ALTERNATIVE 1A

This alternative is particularly concerned with the nature of development in the rural areas.

Within areas designated Rural Development Criteria, the alternative proposes application of the criteria drafted for the Twin Eagles project. These areas are found in southern Belle Meade and the Immokalee Road corridor.

The Preservation Lands area is larger than comprehensive plan.

For Golden Gate Estates, the alternative suggests a flowway program though without details.

ZOOM C–ALTERNATIVE 1B

This alternative emphasizes need for flowway improvements along Tamiami Trail.

This alternative proposes designating a portion of the existing agricultural area in Belle Meade as Rural Development. The balance would be Urban and Industrial, along with flowway improvements to direct water from Henderson Creek into sheet flow across Tamiami Trail.

ZOOM C–ALTERNATIVE 2

This alternative expands preserves beyond comprehensive plan and provides criteria for project design and review.

The criteria for each land use designation are summarized below. The detailed list is described in [Attachment S of Meeting 8](#).

Preservation Lands include some lands in Belle Meade north of I-75 as well as lands around Naples Bay. The alternative proposes additional criteria. These include: No public utilities; no new or expanded transportation; no wellfield expansion; restoration or retrofit of certain areas with hydrologic problems; and use as mitigation receiving areas only those portions of Preservation Lands that are currently not in public ownership.

The alternative proposes two sets of criteria for Golden Gate Estates. Zone 1, the more densely developed western Golden Gate Estates includes: avoid/minimize and mitigate wetland impacts; culverting entrance roads; address listed species concerns; development of a educational pamphlet on resource issues; and implementation of a Florida Yards and Neighborhood program. Zone 2, toward Picayune Strand, criteria includes: no more than 10 percent fill; no more than 50 percent fill in pervious areas; no impeding sheet flow; elimination of exotics; develop pamphlet on resource issues; Florida Yards and Neighborhood program; and culverting entrance roads. Zone 2 would also be designated a receiving area for mitigation.

The alternative shows two areas as Rural, one north and the other south of Golden Gate Estates. For the north, the criteria includes: avoiding and minimizing impacts to wetlands; protecting nesting areas; mitigating wide-ranging species including fox squirrels off site; and, maintain or improve hydrology (for example, weirs in Cocohatchee Canal. For the south, the criteria includes: avoiding and minimizing impacts to wetlands; protecting Red cockaded woodpecker habitat or mitigating off-site when viability affected; mitigating off-site for wide ranging species (bear); and maintaining or improving hydrology (for example, the depth of the I-75 canal). For both north and south, the alternative also adopts the Buffer Transition Zone criteria as described in Alternative 4B of Zoom B (hub), described in detail at [Attachment E of Meeting 7](#).

For lands designated Agricultural, the alternative states no golf course or ranchettes as these are not associated with true agriculture. The alternative also “assumes limited intensification of use, that is, no changes that require additional loss of native habitat, no changes (such as intensification to citrus) that would lower hydrology. For example, range and improved range stay the same, vegetable crops change or go to fallow field and back again.”

For lands designated Urban and Industrial, the alternative proposes encouraging planting of emergent and shoreline planting in stormwater retention lakes and continuation of the Corps standards for wetland protection. The alternative also adopts the Urban Zone criteria as described in Alternative 4B of Zoom B (hub), described in detail at [Attachment E of Meeting 7](#).

ZOOM C—ALTERNATIVE 3A

This alternative recognizes continued expansion of development to the west.

The area designated Golden Gate would continue under the current processes but with additional protection afforded isolated wetlands by proposing: no general permits; determination of wetland jurisdiction prior to Collier County permitting; reconnection of wetlands along historic flowways; and, limitations on the clearing of the lot.

Within the Urban and Industrial, provide flowway improvements along the Cocohatchee Canal, Golden Gate Canal, and sloughs in eastern Naples, coordinated with improvements within Preservation Lands.

Two areas are designated Pending Review as the group preparing the alternative could not agree whether to designate the location as development or preservation.

ZOOM C—ALTERNATIVE 3B

This alternative seeks to maintain 50 percent of the rural landscape in natural area.

Within the Rural Cluster designation, the alternative proposes preserving 100 percent of the wetland, maintain 50 percent as natural area, maintenance of corridors and flowways to interconnect wetlands, and provide facilities to protect water quality. The alternative proposes applying this criteria also to the Golden Gates Estates, which is designated Estates (Rural Residential).

Within the Urban and Industrial Area, the alternative proposes restoration of flowways through acquisition, though no detail was presented.

ZOOM C–ALTERNATIVE 4

This alternative describes various areas east of the current urban area that are in transition from current uses.

The areas designated Transition are those lands currently in agriculture that will likely change to the Urban designation.

The western end of Golden Gate Estates was included in the Urban designation. The alternative proposed no increase in density within Golden Gate City. The rest of Golden Gate Estates would retain the same Rural Residential designation as found in the comprehensive plan.

Within the Urban areas, flowways improvements were shown in various locations and connected to the Preservation areas.

The alternative proposed, within the Preservation/Conservation designation, improvements to culverts under I-75 and Tamiami Trail for sheetflow.

ZOOM D–COMPREHENSIVE PLAN

This alternative represents Collier County’s Future Land Use Element of the Growth Management Plan (Ordinance 97-67), including the implementing policies and procedures for approval of projects. See the second paragraph at Zoom C – Comprehensive Plan for a discussion of this Ordinance.

The alternative uses five land use legends: Agricultural; Industrial; Preserve; Rural; and, Urban. The Collier County Future Land Use Map shows 12 land use designations. These designations were collapsed into five simply to ease the preparation of other alternatives and for convenience in evaluation. Agricultural represents Agricultural/Rural Mixed Use District; Industrial represents Industrial District; Preserve represents portions of the Agricultural/Rural Mixed Use District that are or are proposed to be preserved and managed to maintain natural resource values; Rural represents the Estates Designation. Urban represents the Urban Residential Subdistrict.

ZOOM D–ALTERNATIVE 1A

This alternative proposes no intensification of the development with existing agricultural and Golden Gate areas.

This alternative proposes to include as Preservation Lands historic flowways within Golden Gate Estates and along Camp Keais Strand. However, current activities would remain.

For the Agricultural Preserve designation, current agricultural activities would continue but intensification would be limited.

Within Golden Gate Estates, the alternative proposes criteria that includes: no more than 10 percent fill; no more than 50 percent fill in pervious areas; no impeding sheet flow; elimination of exotics; develop pamphlet on resource issues; Florida Yards and Neighborhood program; and culverting entrance roads. This area would also be designated a receiving area for mitigation. The criteria for each land use designation is summarized below. The detailed list is described in Attachment S of Meeting 8.

ZOOM D—ALTERNATIVE 2A

This alternative applies additional criteria for the review of projects in the non-urban areas.

For Agriculture, the alternative assumes limited intensification of use, that is, no changes that require additional loss of native habitat, no changes (such as intensification to citrus) that would lower hydrology. For example, existing range and improved range use stay the same, vegetable crop uses could change or go to fallow field and back again. The alternative assumes rotation of crops but no additional clearing.

Within Golden Gate Estates, the alternative proposes criteria that includes: no more than 10 percent fill; no more than 50 percent fill in pervious areas; no impeding sheet flow; elimination of exotics; develop pamphlet on resource issues; Florida Yards and Neighborhood program; and culverting entrance roads. This area would also be designated a receiving area for mitigation. The criteria for each land use designation is summarized below. The detailed list of criteria is described in Attachment S of Meeting 8.

For areas designated Preservation, the alternative proposes criteria that include: no public utilities; no new or expanded transportation; no wellfield expansion; restoration or retrofit of certain areas with hydrologic problems; and use as mitigation receiving areas only those portions of Preservation Lands that are currently not in public ownership. The detailed list of criteria is described in Attachment S of Meeting 8.

A small area is designated Rural to reflect the low density mix of current land uses.

ZOOM D–ALTERNATIVE 2B

This alternative is identical to Alternative 2A except it adds restrictions to certain areas currently in agriculture.

Certain areas of agriculture are within the boundaries of the Big Cypress Areas of Critical State Concern and are currently exempt from the implementing criteria. This alternative proposes removing that exemption.

ZOOM D–ALTERNATIVE 3

This alternative envisions most of the area ultimately going to preserve.

For the Agricultural areas, the alternative proposes that current agriculture would continue with limited intensification but if agriculture ceases then the lands would be placed in preservation.

Within Golden Gate Estates, the alternative proposes criteria that includes: no more than 10 percent fill; no more than 50 percent fill in pervious areas; no impeding sheet flow; elimination of exotics; develop pamphlet on resource issues; Florida Yards and Neighborhood program; and culverting entrance roads. This area would also be designated a receiving area for mitigation. The criteria for each land use designation is summarized below. The detailed list of criteria is described in Attachment S of Meeting 8.

Within areas designated Preservation, the alternative proposes culverts within Camp Keais Strand and across Tamiami Trail to improve flowways.

One area of Industrial is designated to reflect the current land use (Ford Test Track).

ZOOM D–ALTERNATIVE 4

This alternative preserves the status quo for current land uses.

Of the alternatives, this one proposes the narrowest footprint for Preservation Lands within Camp Keais Strand, restricting it to areas not currently under agriculture. The alternative does propose culverts under existing road crossing in the Strand to improve flowways.







One area of Industrial is designated to reflect the current land use (Ford Test Track).



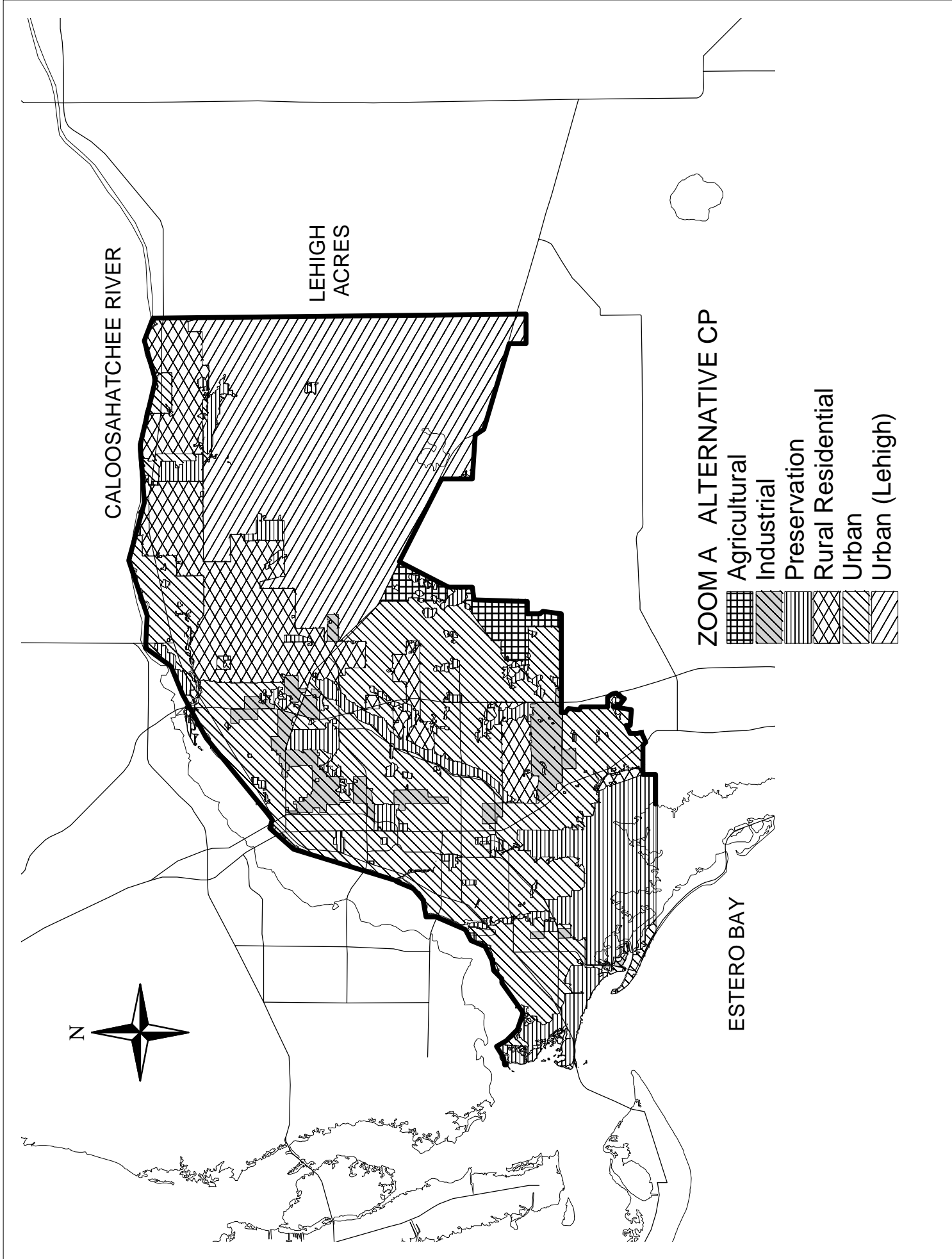
CALOOSAHATCHEE RIVER

LEHIGH ACRES

ZOOM A ALTERNATIVE CP

-  Agricultural
-  Industrial
-  Preservation
-  Rural Residential
-  Urban
-  Urban (Lehigh)

ESTERO BAY





CALOOSAHATCHEE RIVER

LEHIGH ACRES

ESTERO BAY

ZOOM A ALTERNATIVE 1A

AIRPORT

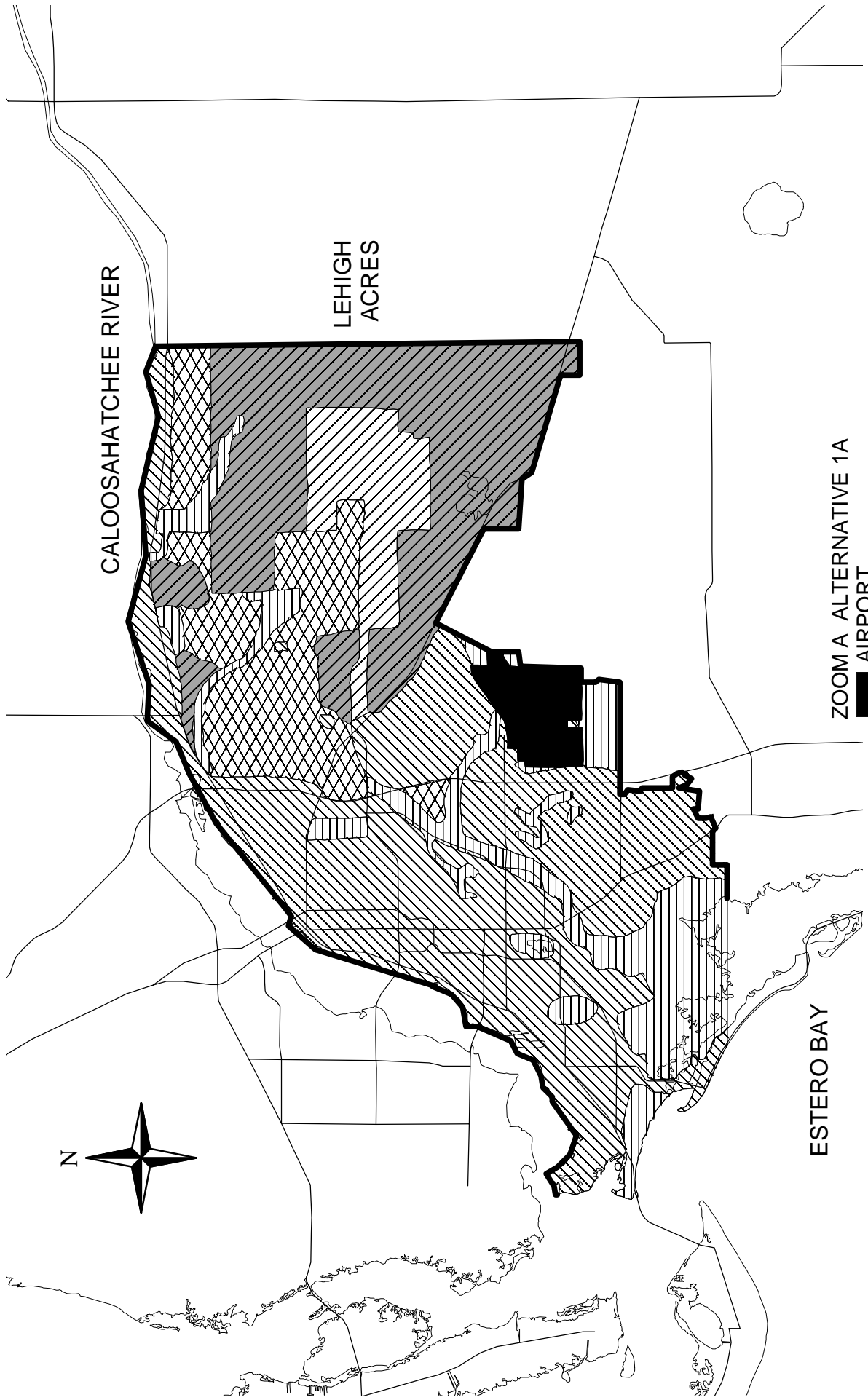
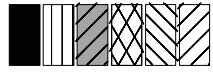
CONSERVATION LANDS

RESTORATION, RETROFIT, REDEVELOPMENT (LEHIGH)

RURAL RESIDENTIAL

URBAN & INDUSTRIAL

URBAN (LEHIGH)





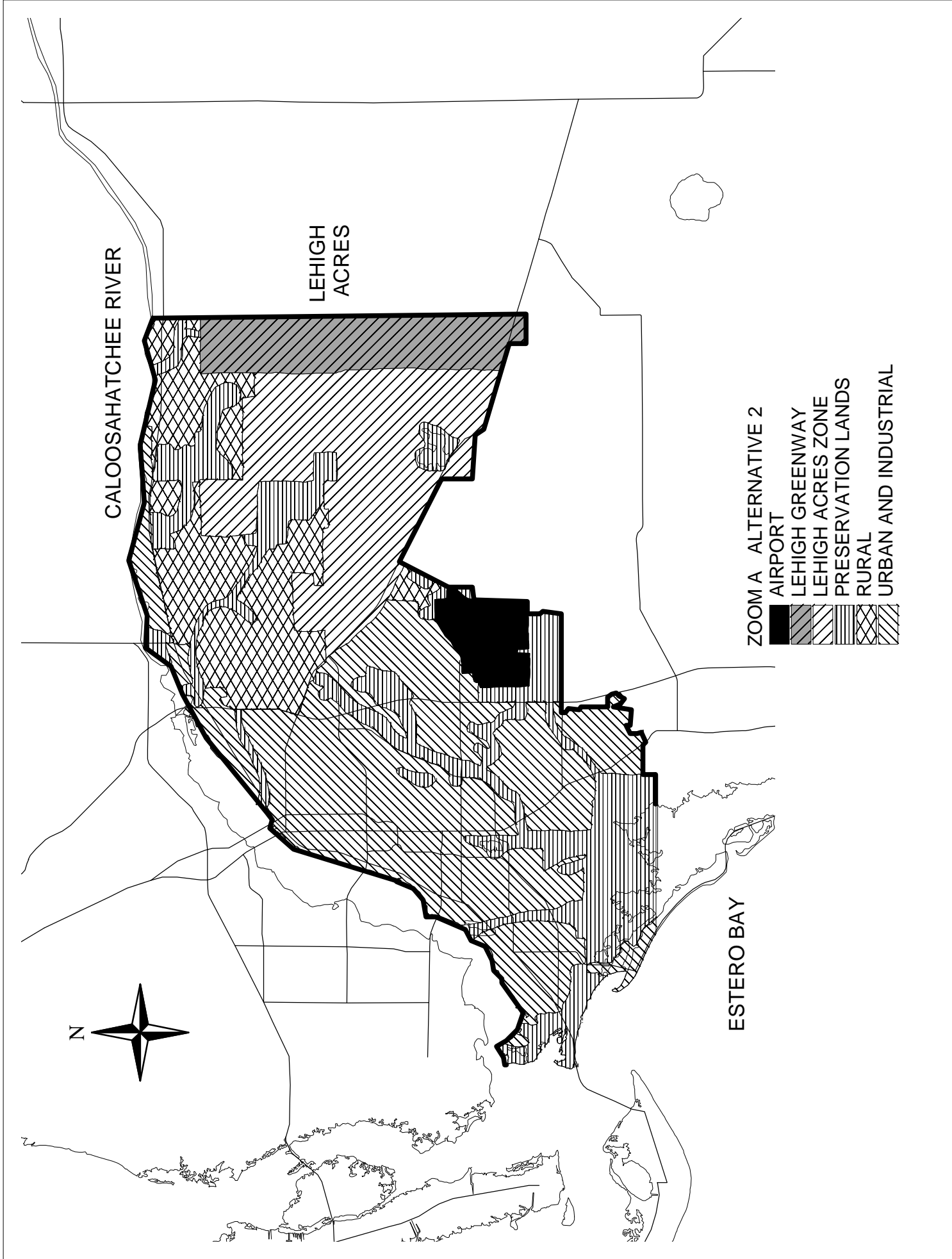
CALOOSAHATCHEE RIVER

LEHIGH ACRES

ESTERO BAY

ZOOM A ALTERNATIVE 2

- AIRPORT
- LEHIGH GREENWAY
- LEHIGH ACRES ZONE
- PRESERVATION LANDS
- RURAL
- URBAN AND INDUSTRIAL



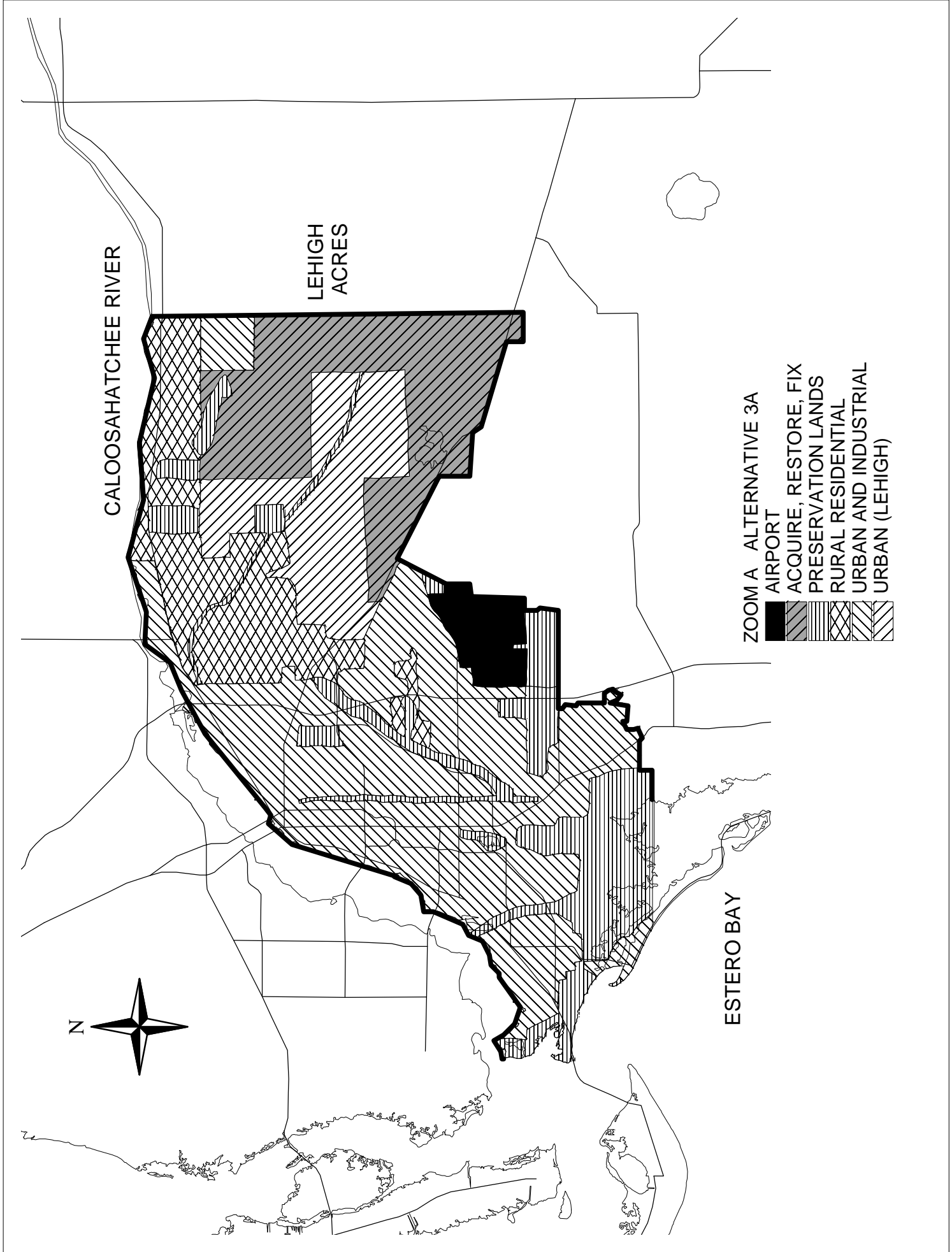


CALOOSAHATCHEE RIVER

LEHIGH ACRES

ESTERO BAY

- ZOOM A ALTERNATIVE 3A
-  AIRPORT
 -  ACQUIRE, RESTORE, FIX
 -  PRESERVATION LANDS
 -  RURAL RESIDENTIAL
 -  URBAN AND INDUSTRIAL
 -  URBAN (LEHIGH)





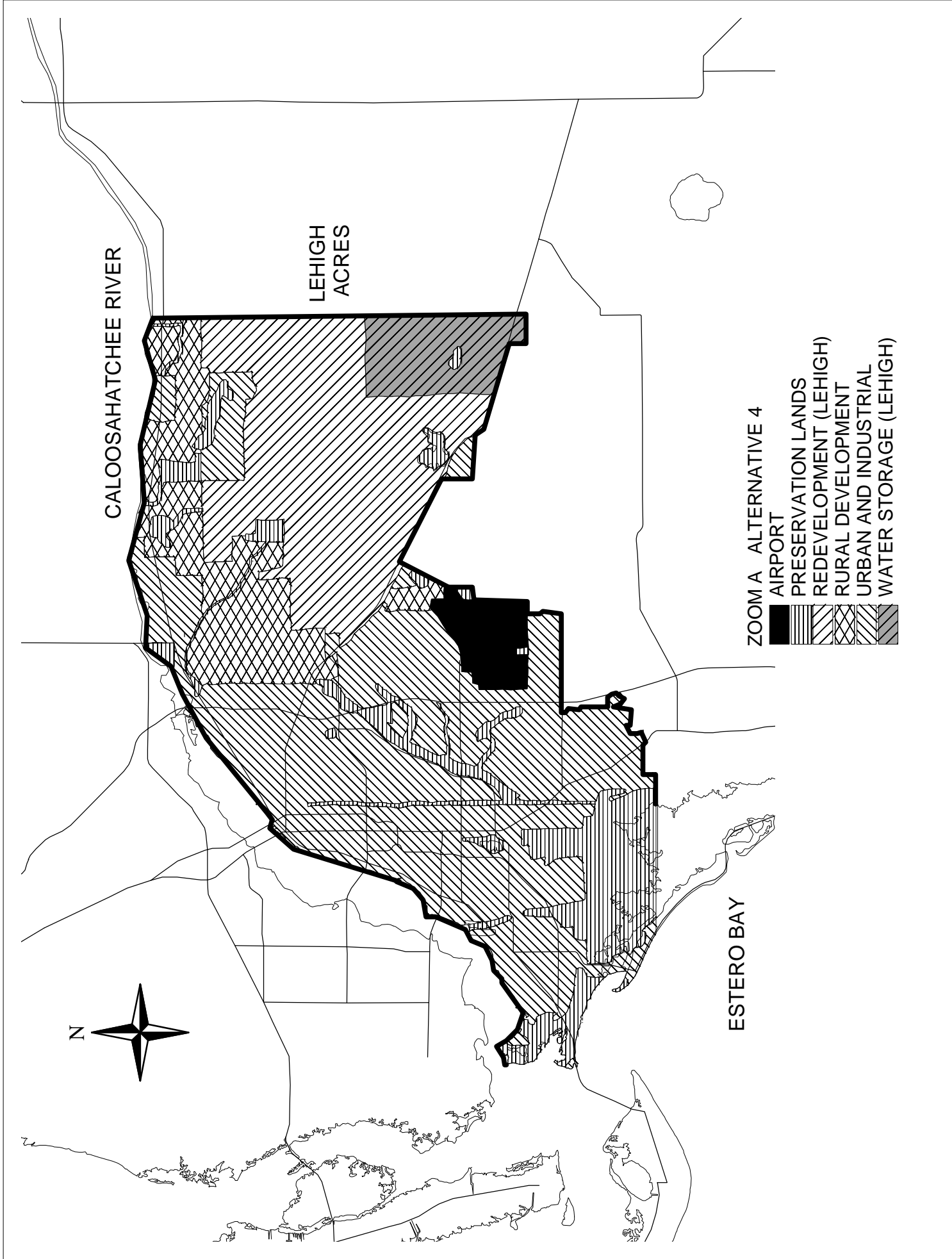
CALOOSAHATCHEE RIVER

LEHIGH ACRES

ESTERO BAY

ZOOM A ALTERNATIVE 4

-  AIRPORT
-  PRESERVATION LANDS
-  REDEVELOPMENT (LEHIGH)
-  RURAL DEVELOPMENT
-  URBAN AND INDUSTRIAL
-  WATER STORAGE (LEHIGH)





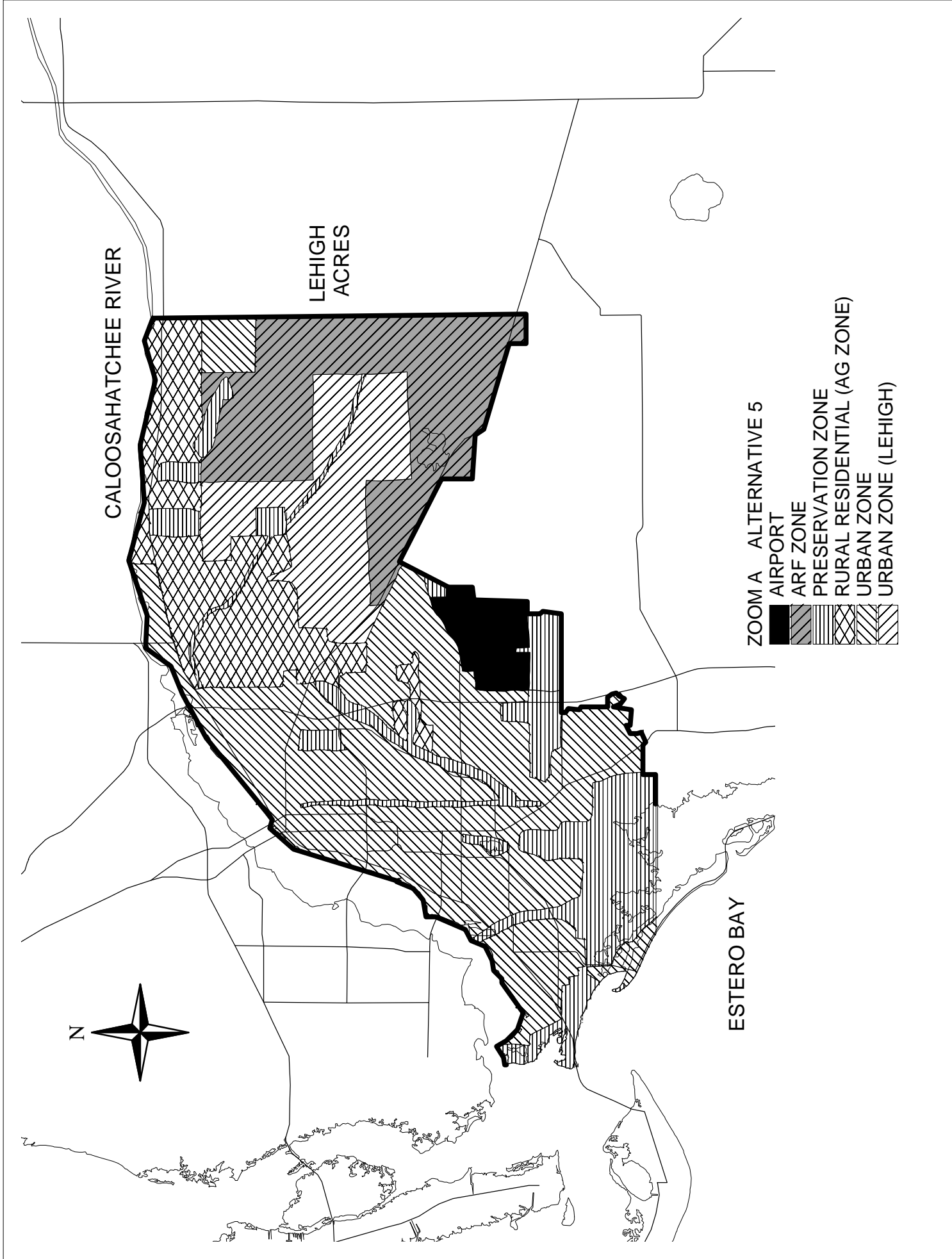
CALOOSAHATCHEE RIVER

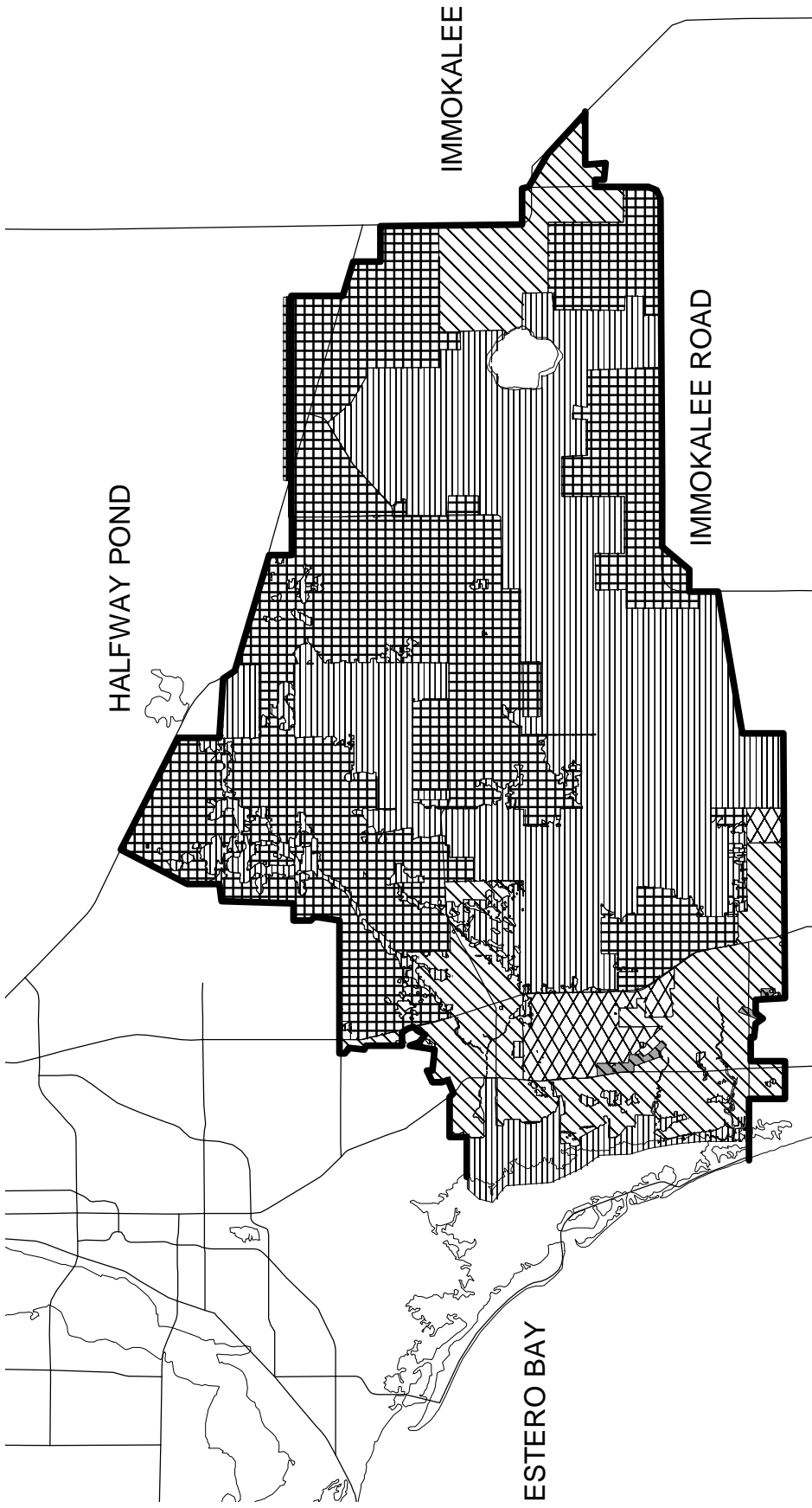
LEHIGH ACRES

ESTERO BAY

ZOOM A ALTERNATIVE 5

- AIRPORT
- ARF ZONE
- PRESERVATION ZONE
- RURAL RESIDENTIAL (AG ZONE)
- URBAN ZONE
- URBAN ZONE (LEHIGH)



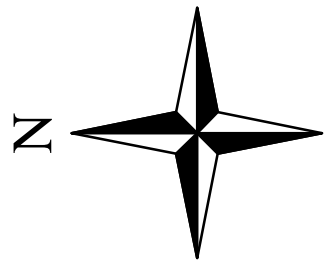


HALFWAY POND

IMMOKALEE

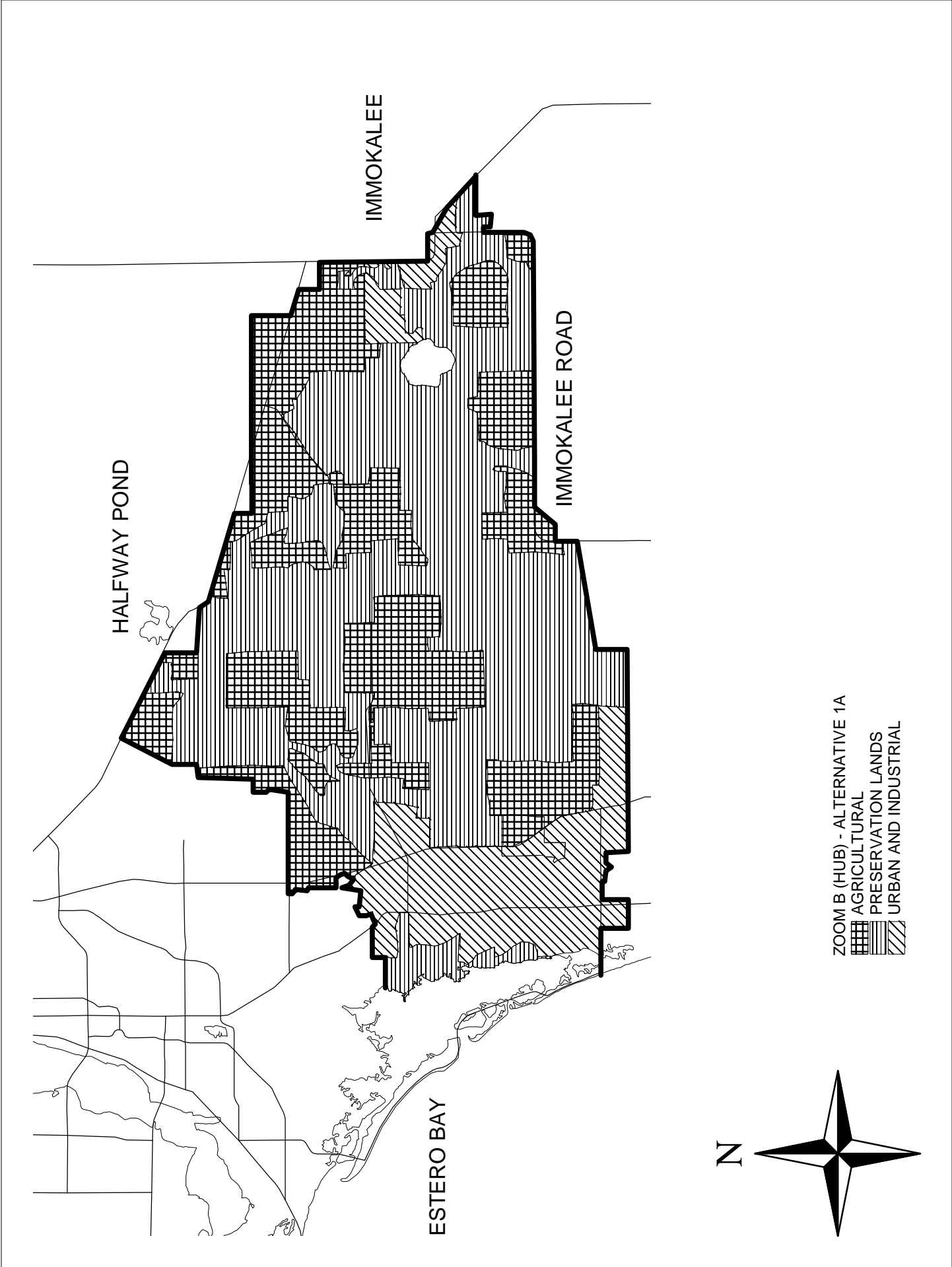
IMMOKALEE ROAD

ESTERO BAY



ZOOM B (HUB) - ALTERNATIVE CP

-  AGRICULTURAL
-  INDUSTRIAL
-  PRESERVE
-  RURAL
-  URBAN



HALFWAY POND

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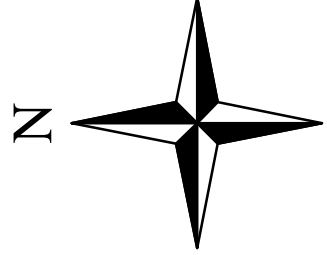
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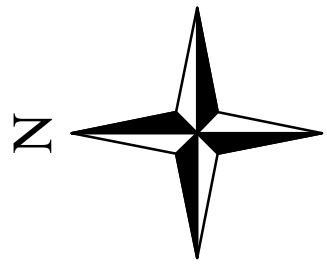
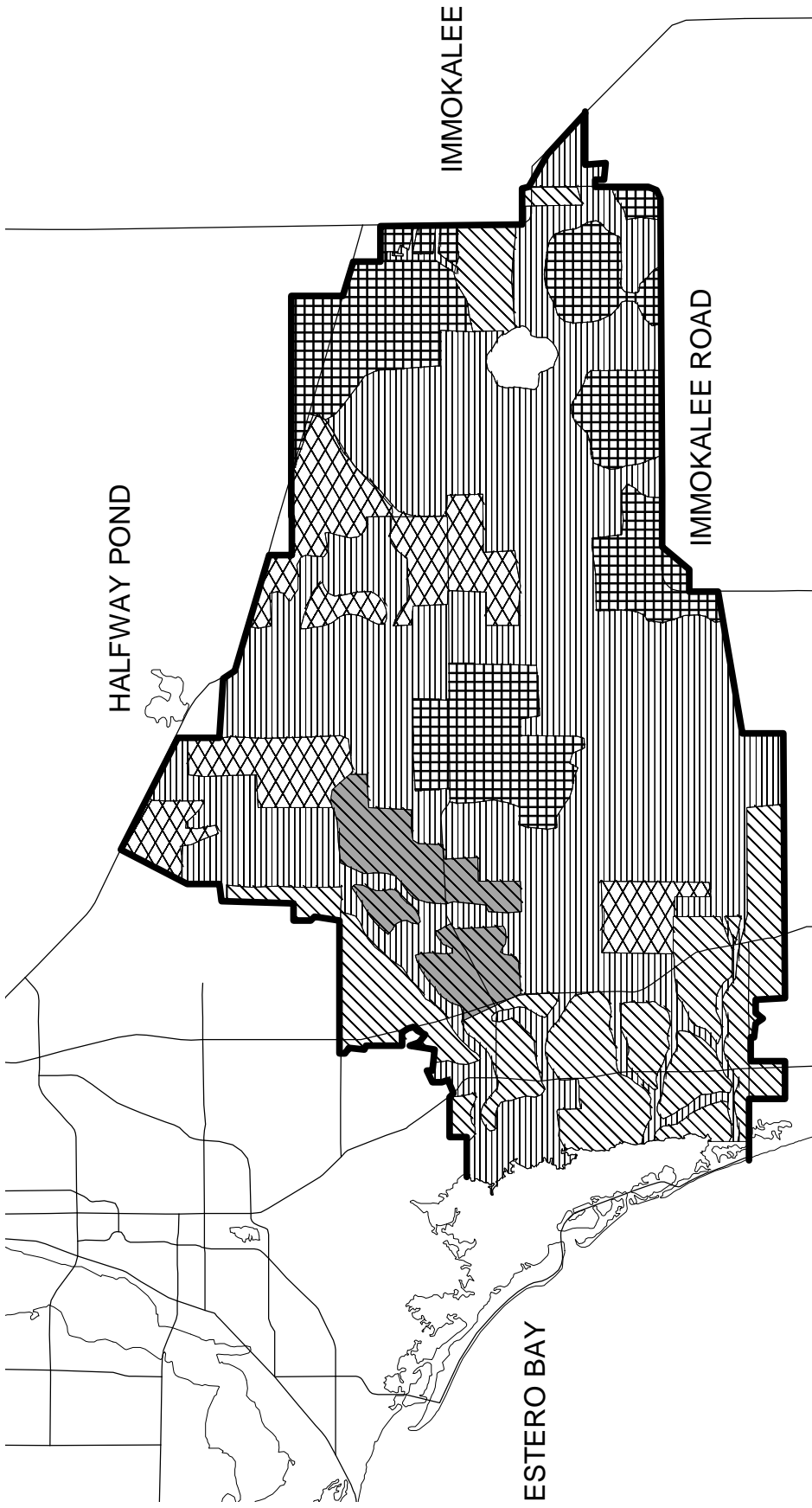
ESTERO BAY

ZOOM B (HUB) - ALTERNATIVE 1A

AGRICULTURAL PRESERVATION LANDS

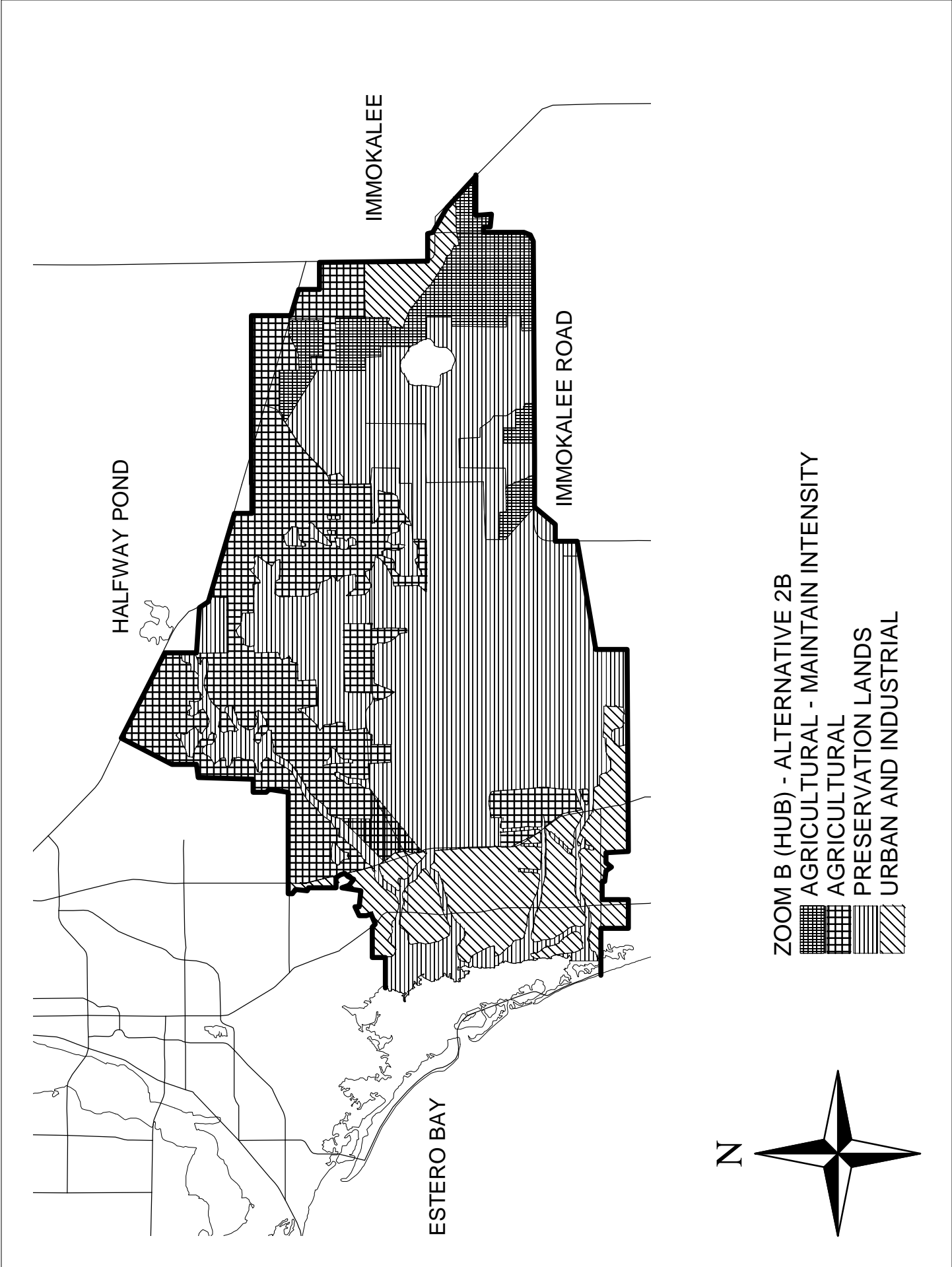
URBAN AND INDUSTRIAL





ZOOM B (HUB) - ALTERNATIVE 2A

-  AGRICULTURE (LIMITED INTENSIFICATION)
-  DEVELOPMENT (W/FLOWWAYS)
-  DEVELOP (OFF-SITE COMPENSATE WIDE RANGING SPP)
-  PRESERVE (EXISTING AND PROPOSED)
-  RURAL (LOWER DENSITY CRITERIA + FLOWWAY)



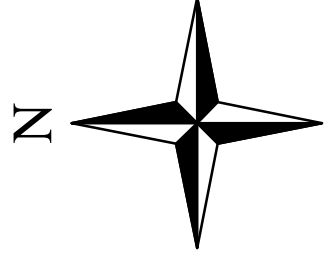
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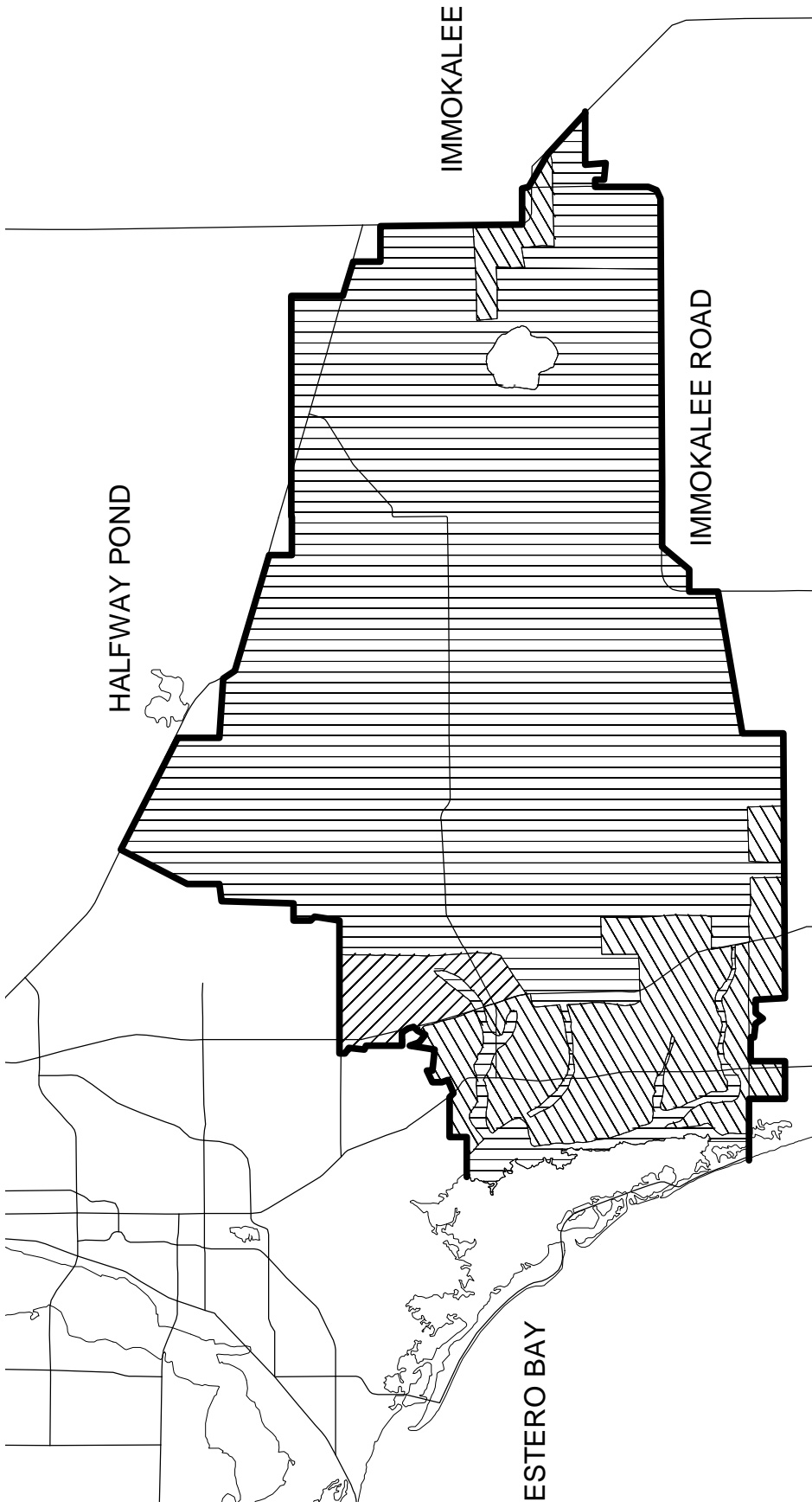
IMMOKALEE

IMMOKALEE ROAD

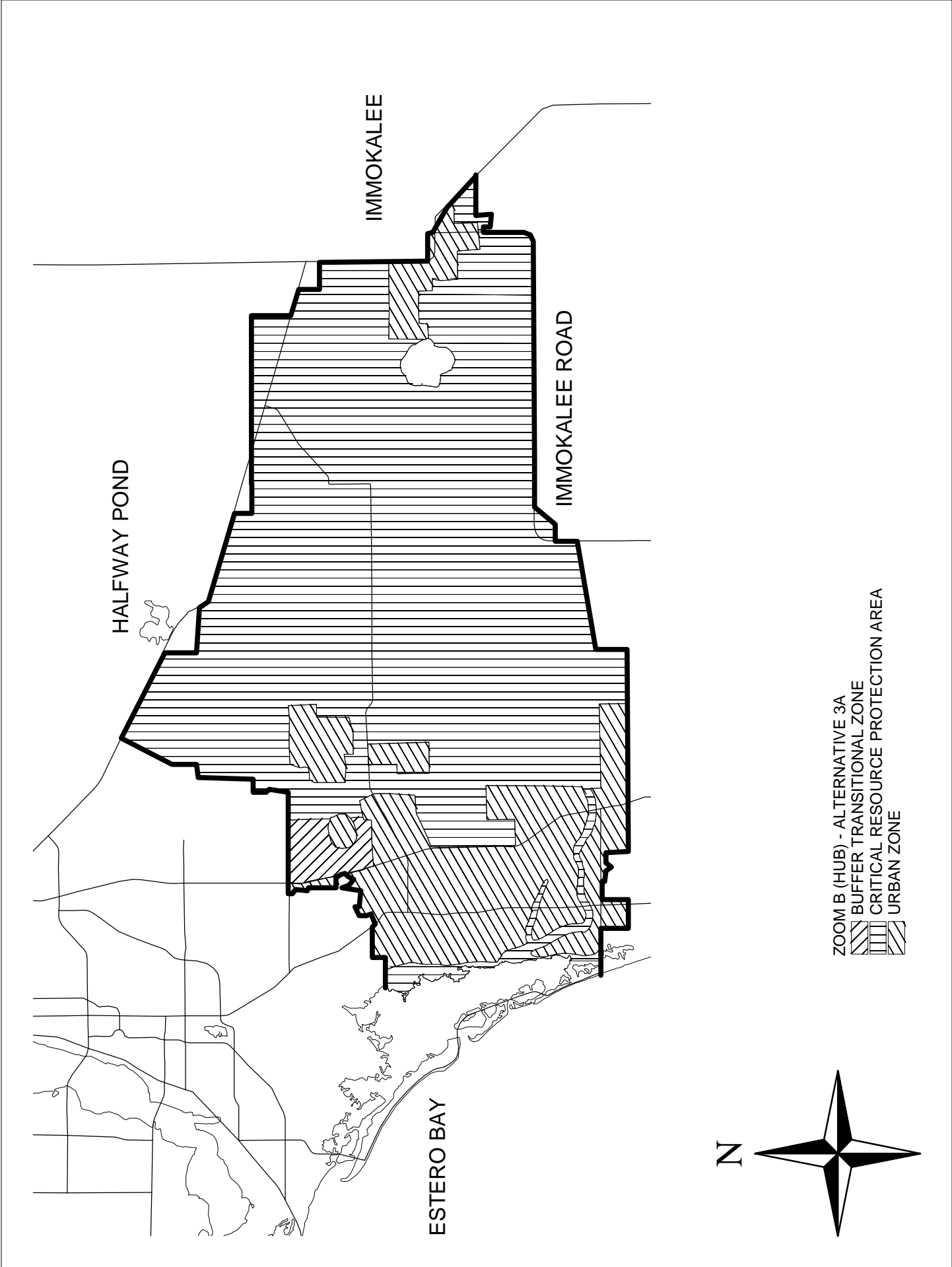
ESTERO BAY

ZOOM B (HUB) - ALTERNATIVE 2B
AGRICULTURAL - MAINTAIN INTENSITY
AGRICULTURAL
PRESERVATION LANDS
URBAN AND INDUSTRIAL





- ZOOM B (HUB) - ALTERNATIVE 2C
-  BUFFER TRANSITIONAL ZONE
-  CRITICAL RESOURCE PROTECTION AREA
-  URBAN ZONE

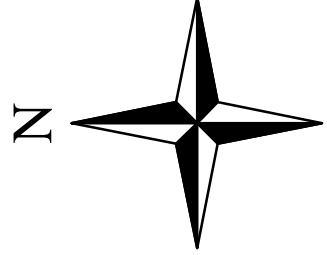


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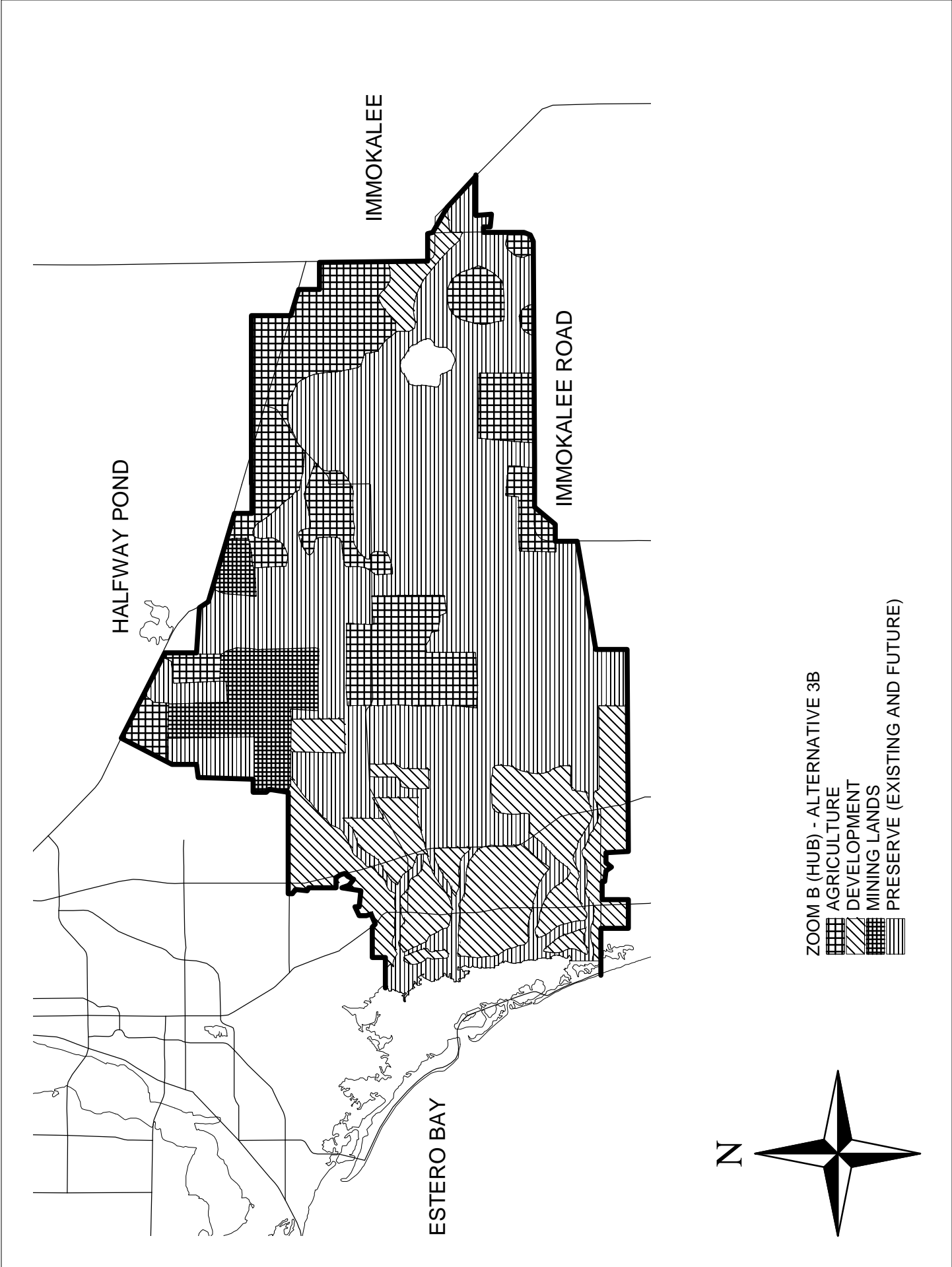
IMMOKALEE

IMMOKALEE ROAD

ESTERO BAY



ZOOM B (HUB) - ALTERNATIVE 3A
BUFFER TRANSITIONAL ZONE
CRITICAL RESOURCE PROTECTION AREA
URBAN ZONE



HALFWAY POND

IMMOKALEE

IMMOKALEE ROAD

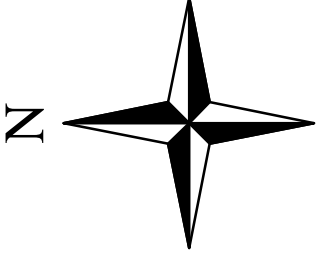
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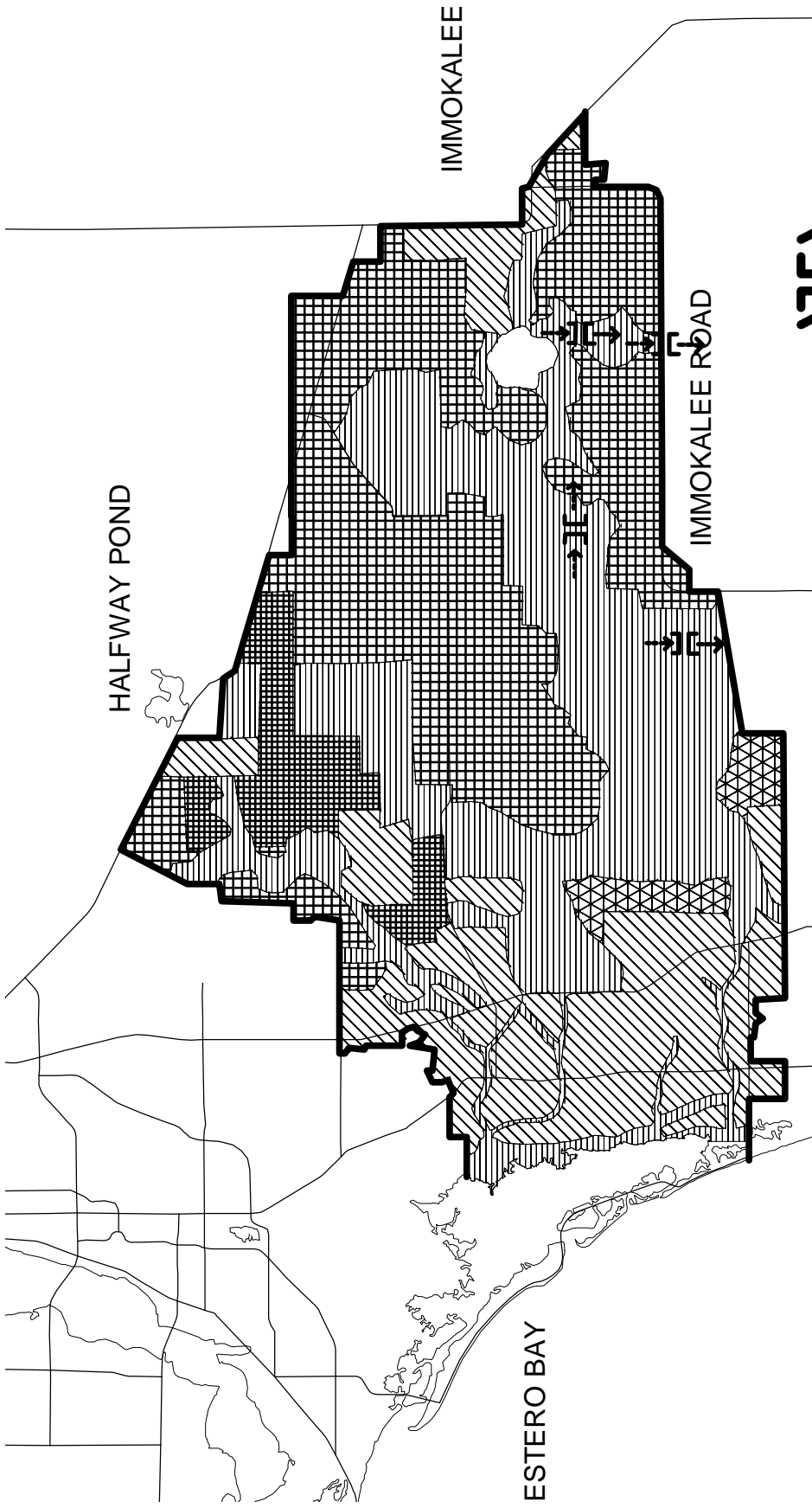
ZOOM B (HUB) - ALTERNATIVE 3B

AGRICULTURE DEVELOPMENT

MINING LANDS

PRESERVE (EXISTING AND FUTURE)





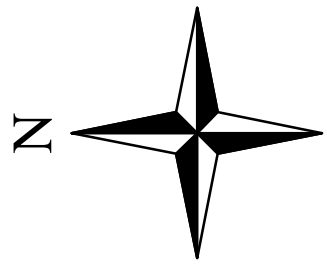
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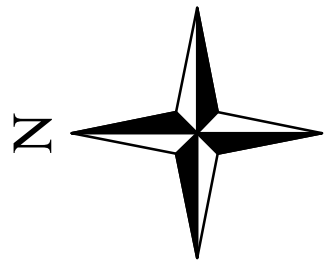
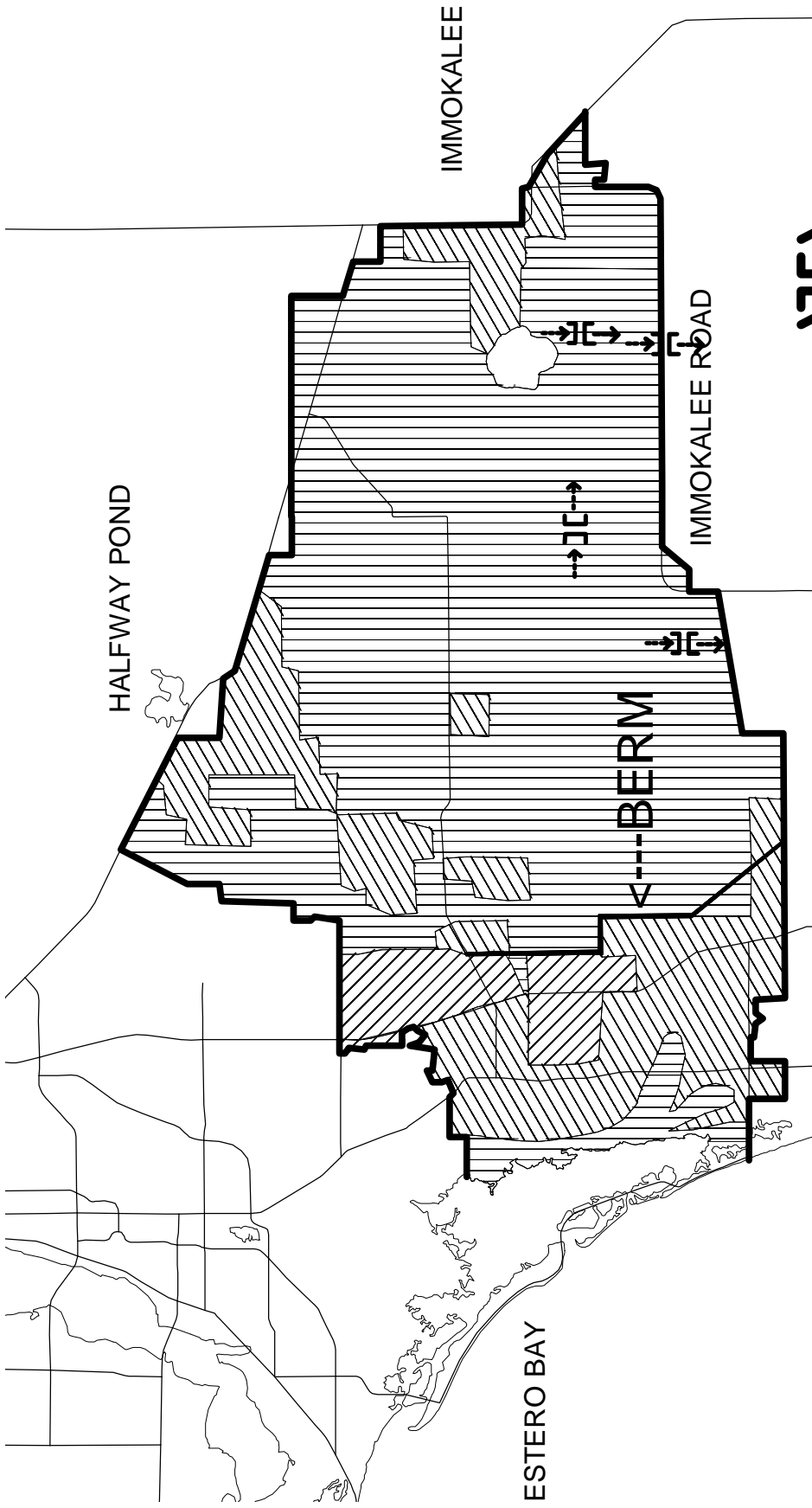
IMMOKALEE ROAD

ESTERO BAY

- ZOOM B (HUB) - ALTERNATIVE 4A
- AGRICULTURAL DEVELOPMENT
 - PENDING REVIEW (DEVELOP OR PRESERVE)
 - MINING LANDS
 - PRESERVATION LANDS



IMPROVE FLOWWAYS



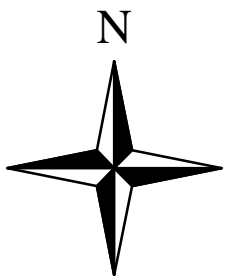
- ZOOM B (HUB) - ALTERNATIVE 4B
- BERM
 - BUFFER TRANSITIONAL ZONE
 - CRITICAL RESOURCE PROTECTION ZONE
 - URBAN ZONE

BONITA
SPRINGS

NAPLES

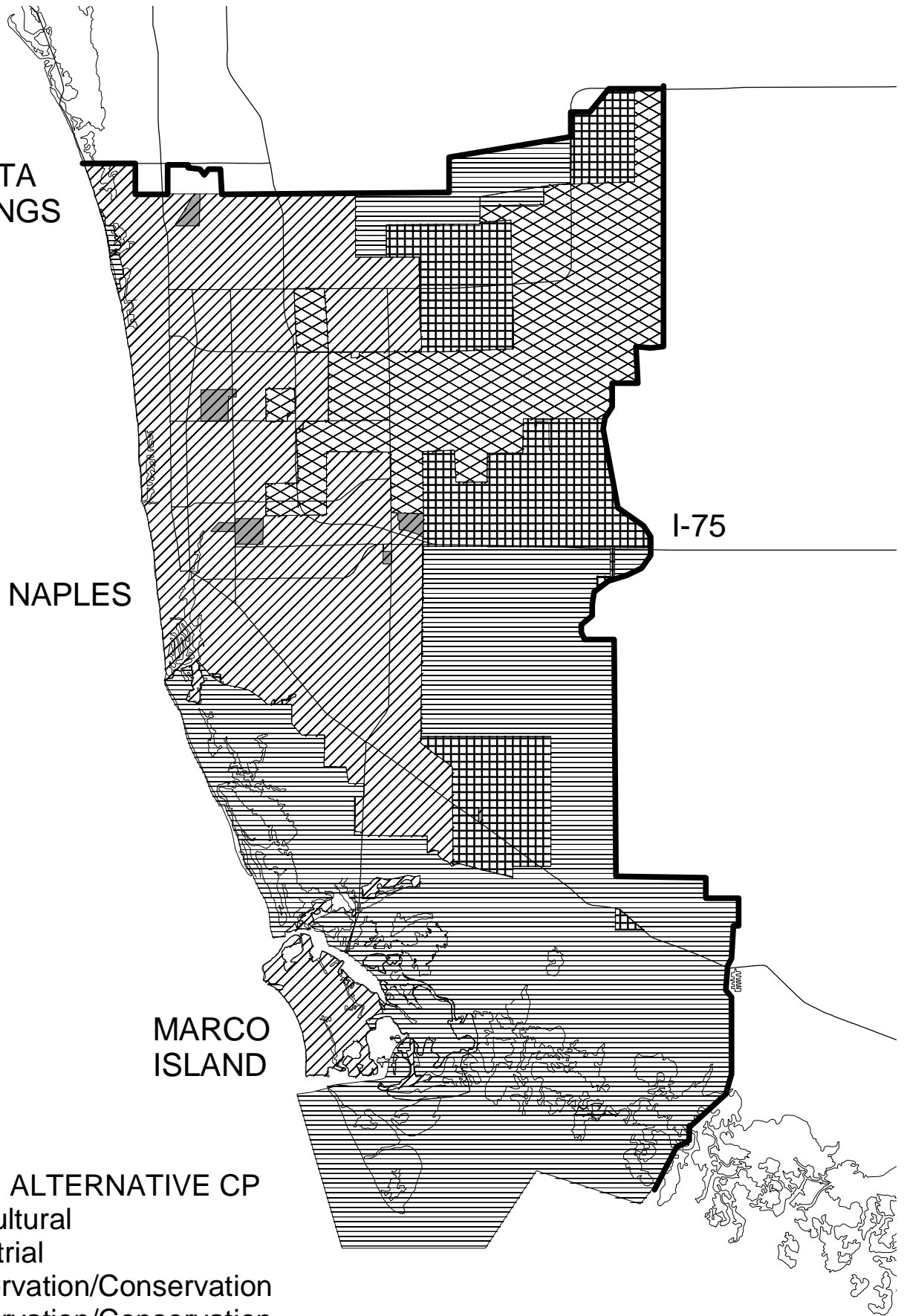
I-75

MARCO
ISLAND



ZOOM C - ALTERNATIVE CP

-  Agricultural
-  Industrial
-  Preservation/Conservation
-  Preservation/Conservation
-  Rural Residential
-  Urban Landuses



BONITA
SPRINGS

NAPLES






MARCO
ISLAND

I-75

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ZOOM C ALTERNATIVE 1A

-  AGRICULTURAL
-  GOLDEN GATE ESTATES
-  PRESERVATION LANDS
-  RURAL DEVELOPMENT CRITERIA
-  URBAN AND INDUSTRIAL

BONITA
SPRINGS

NAPLES

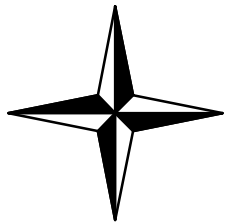
MARCO
ISLAND

I-75








IMPROVE
FLOWWAYS

N



ZOOM C ALTERNATIVE 1B

-  AGRICULTURE
-  GOLDEN GATE ESTATES
-  PRESERVATION LANDS
-  RURAL DEVELOPMENT
-  URBAN AND INDUSTRIAL

BONITA
SPRINGS

NAPLES







MARCO
ISLAND

I-75

N



ZOOM C ALTERNATIVE 2

-  AGRICULTURAL
-  GOLDEN GATE ESTATES ZONE 1
-  GOLDEN GATE ESTATES ZONE 2
-  PRESERVATION LANDS
-  RURAL
-  URBAN AND INDUSTRIAL

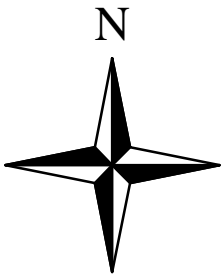
BONITA
SPRINGS

NAPLES






MARCO
ISLAND

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IMPROVE
FLOWWAYS



ZOOM C ALTERNATIVE 3A

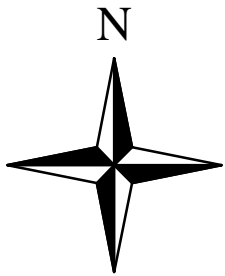
-  AGRICULTURAL
-  PENDING REVIEW (DEVELOP OR PRESERVE)
-  GOLDEN GATE ESTATES - LIMITED CLEARING, ETC.
-  PRESERVATION LANDS + FLOWWAY IMPROVEMENTS
-  URBAN AND INDUSTRIAL W/ FLOW IMPROV

BONITA
SPRINGS

NAPLES

I-75

MARCO
ISLAND



- ZOOM C ALTERNATIVE 3B
-  CONSERVATION
 -  ESTATES (RURAL RESID)
 -  RURAL CLUSTER
 -  URBAN & INDUSTRIAL
 -  URBAN & INDUSTRIAL

BONITA
SPRINGS

NAPLES

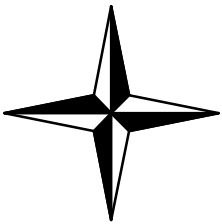
MARCO
ISLAND

I-75









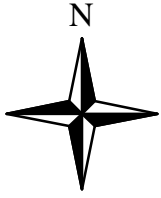
IMPROVE
FLOWWAYS

N



ZOOM C ALTERNATIVE 4

-  AGRICULTURAL
-  MINING
-  PRESERVATION / CONSERVATION
-  RURAL RESIDENTIAL
-  TRANSITION
-  URBAN

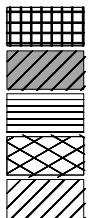


I - 75

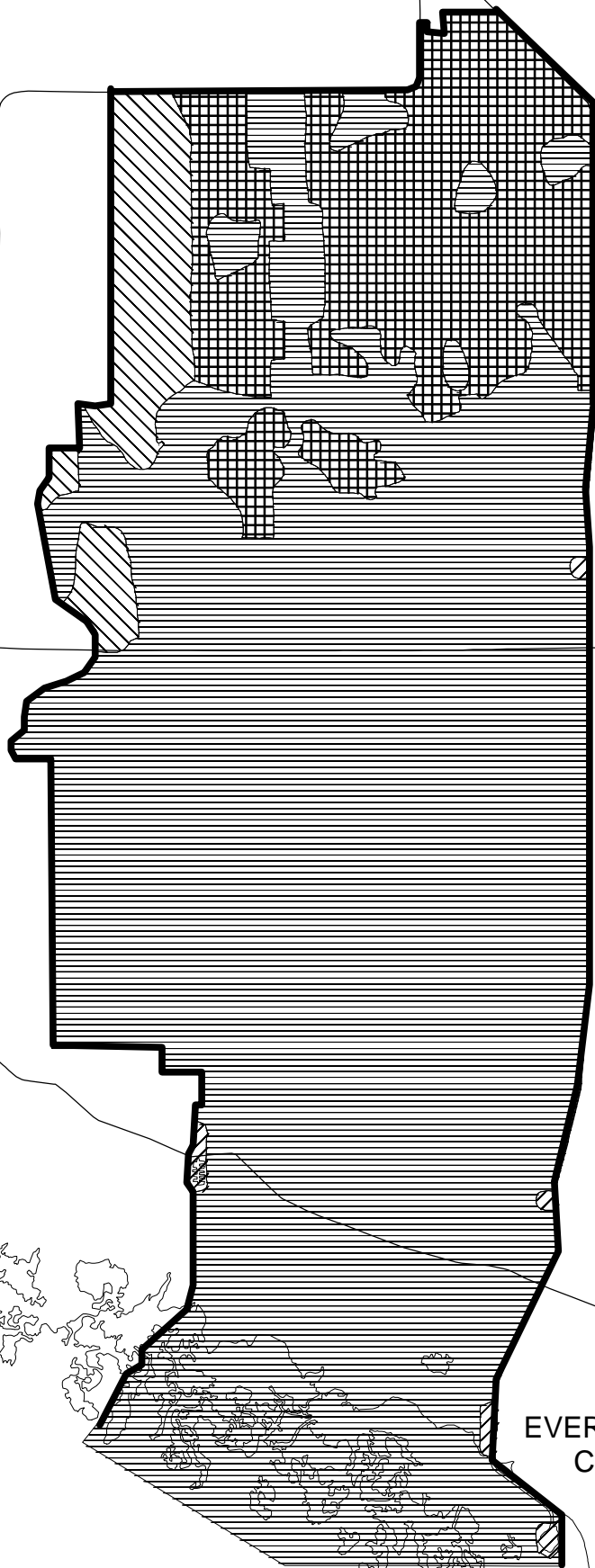
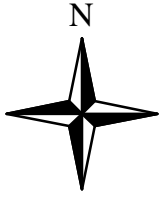
MARCO ISLAND

EVERGLADES CITY

ZOOM D - ALTERNATIVE CP







AGRICULTURAL
INDUSTRIAL
PRESERVE
RURAL
URBAN

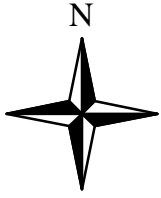


I - 75

MARCO ISLAND

EVERGLADES CITY

- ZOOM D ALTERNATIVE 1A
-  AGRICULTURAL PRESERVE (NON-INTENSIFICATION)
 -  GOLDEN GATES ESTATES CRITERIA
 -  PRESERVATION LANDS
 -  URBAN AND INDUSTRIAL








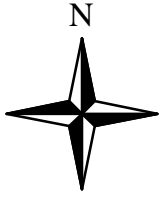
I - 75

MARCO
ISLAND

EVERGLADES
CITY

ZOOM D ALTERNATIVE 2A

-  AGRICULTURAL - LIMITED INTENSIFICATION
-  GOLDEN GATES ESTATES ZONE 2
-  PRESERVATION LAND CRITERIA
-  RURAL
-  URBAN AND INDUSTRIAL









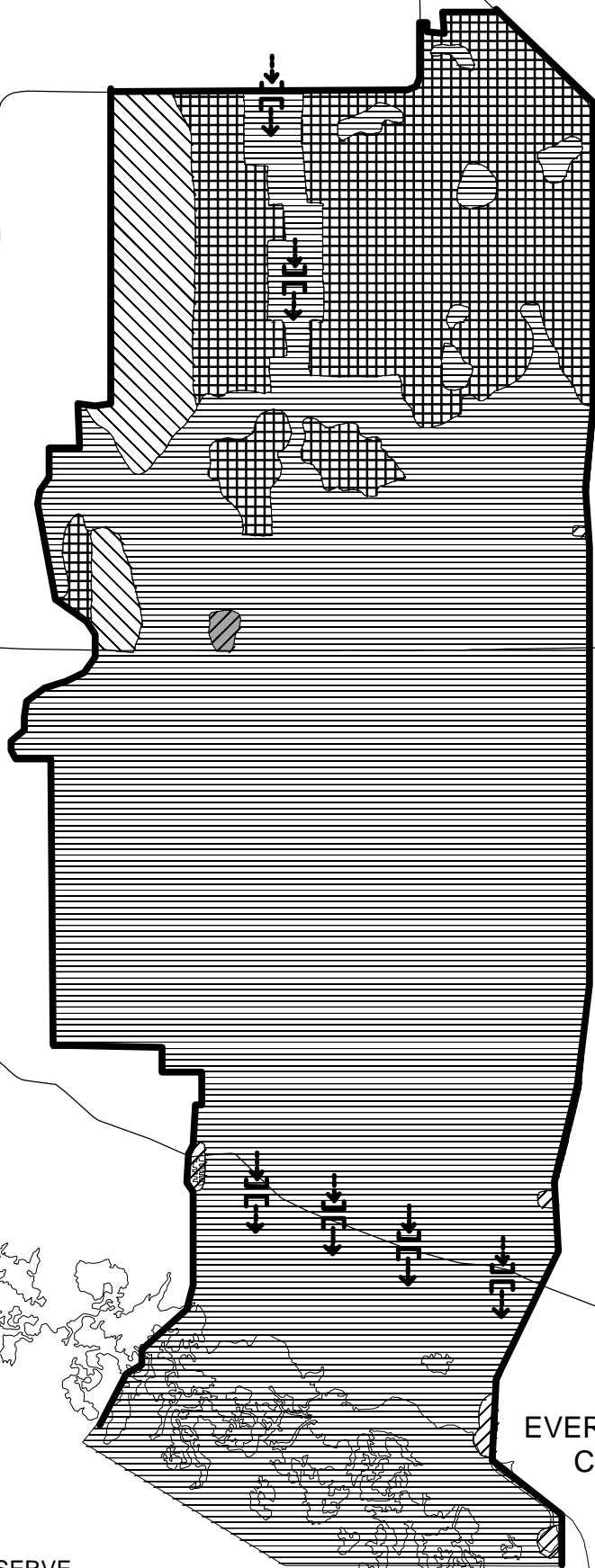
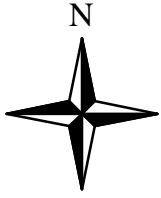
I - 75

MARCO ISLAND

EVERGLADES CITY

ZOOM D ALTERNATIVE 2B

-  AGRICULTURAL - LIMITED INTENSIFICATION
-  AGRICULTURAL - NOT EXEMPT FROM BIG CYPRESS CRITERIA
-  GOLDEN GATES ESTATES ZONE 2
-  PRESERVATION LAND CRITERIA
-  RURAL
-  URBAN AND INDUSTRIAL








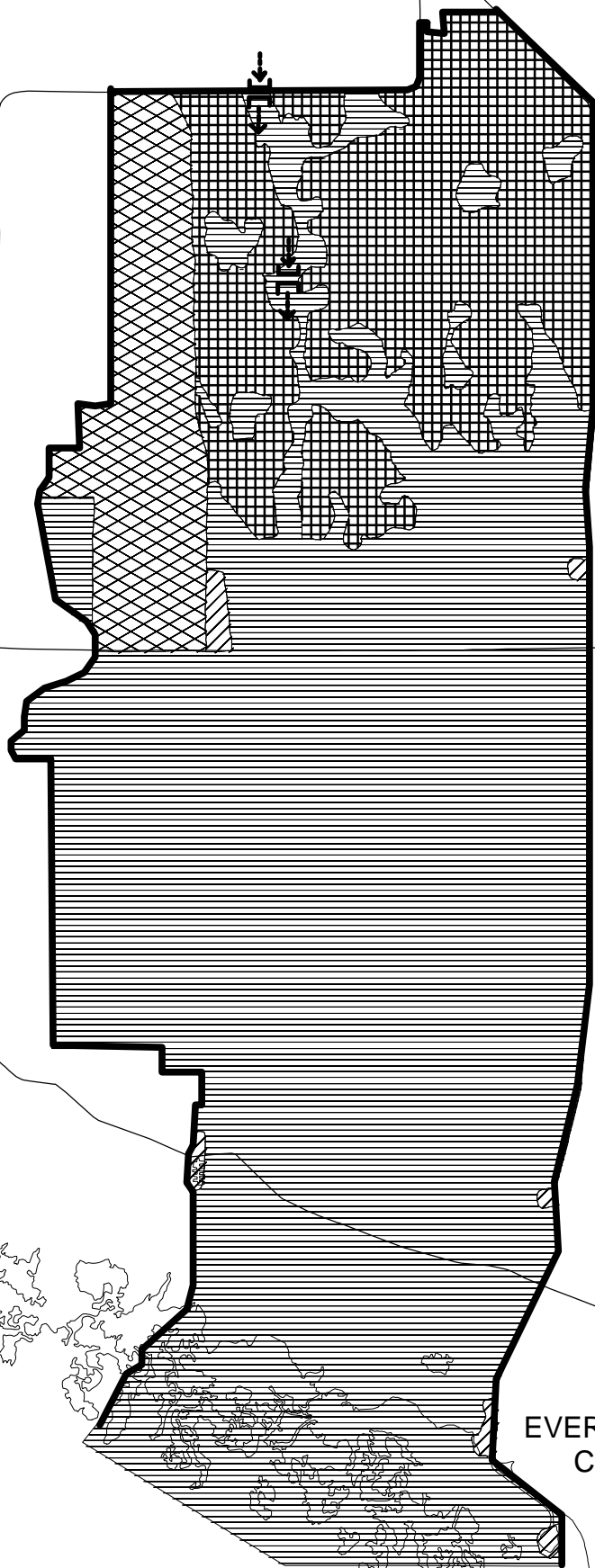
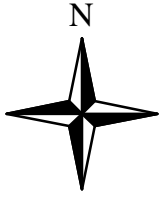
I-75


IMPROVE
FLOWWAYS

MARCO
ISLAND

EVERGLADES
CITY

- ZOOM D ALTERNATIVE 3
-  AGRICULTURE - IF END GO TO PRESERVE
 -  GOLDEN GATE ESTATES ZONE 2
 -  INDUSTRIAL
 -  PRESERVATION LANDS
 -  URBAN







I - 75



IMPROVE FLOWWAYS

MARCO ISLAND

EVERGLADES CITY

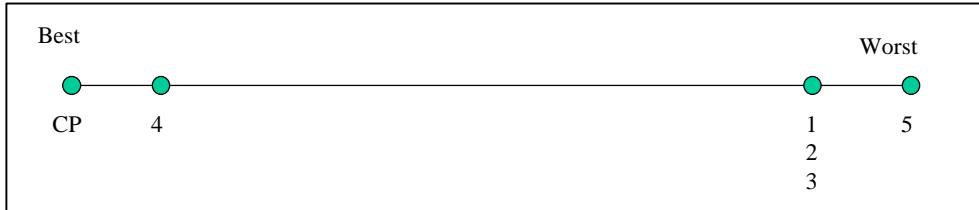
- ZOOM D ALTERNATIVE 4
-  AGRICULTURAL
 -  PRESERVATION LANDS
 -  RURAL RESIDENTIAL
 -  URBAN AND INDUSTRIAL

APPENDIX D

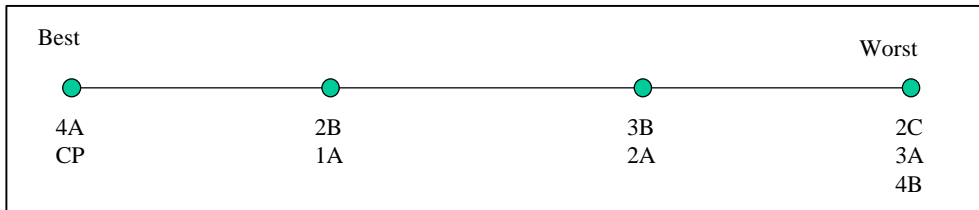
CONTINUUM OF ALTERNATIVES BY ISSUE CATEGORY

PROPERTY RIGHTS

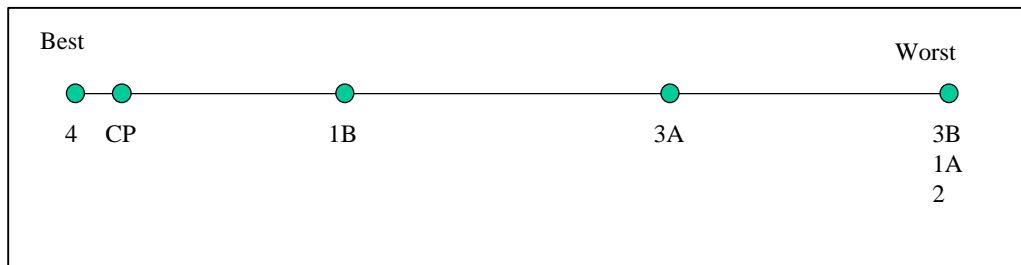
ZOOM A



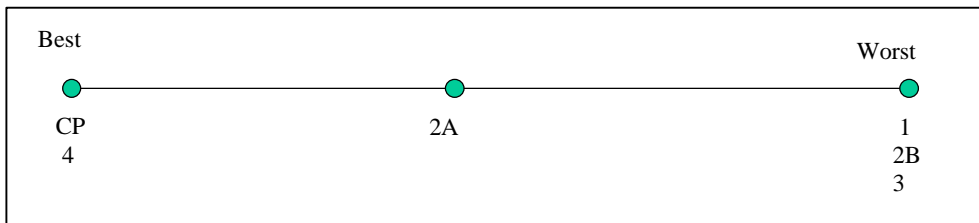
ZOOM B



ZOOM C

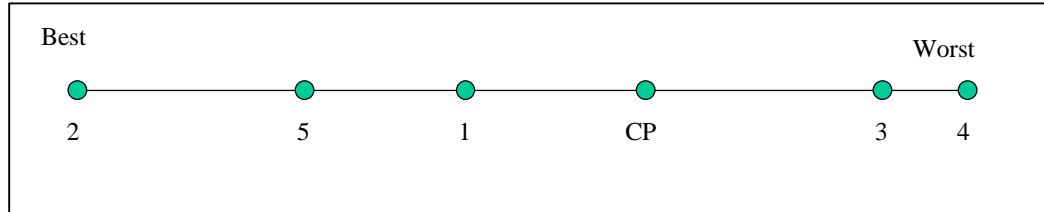


ZOOM D

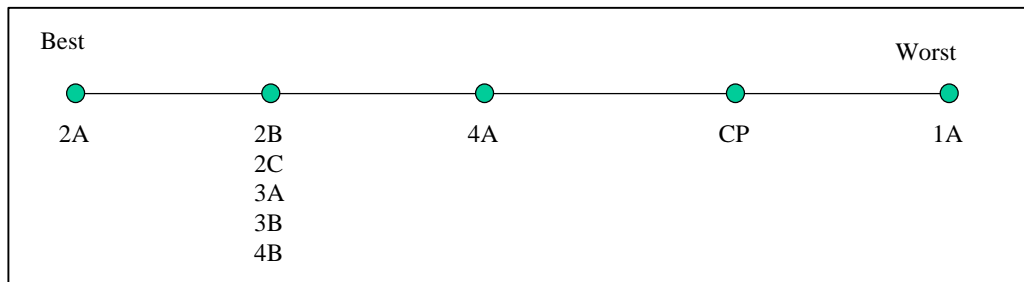


WATER MANAGEMENT

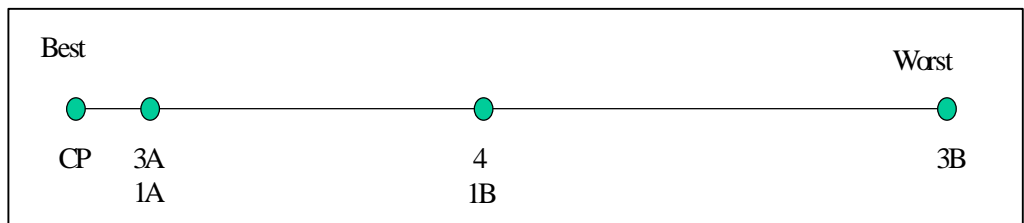
ZOOM A



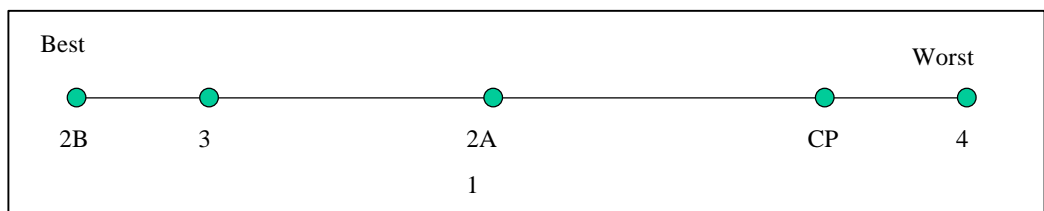
ZOOM B



ZOOM C



ZOOM D

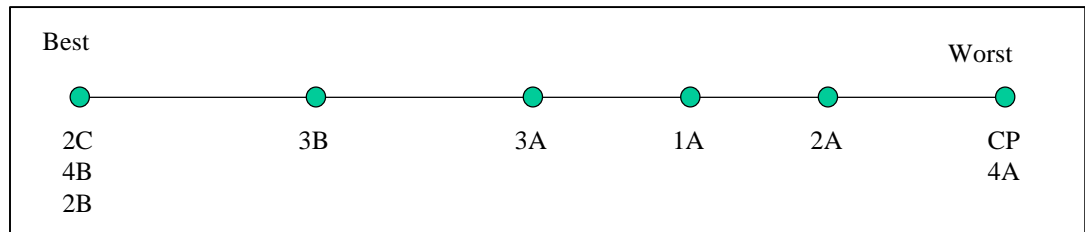


WATER QUALITY

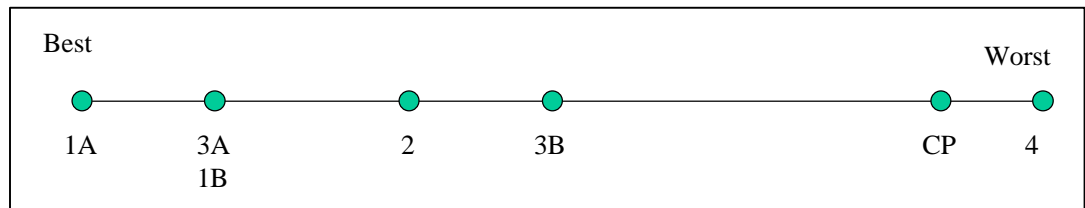
ZOOM A



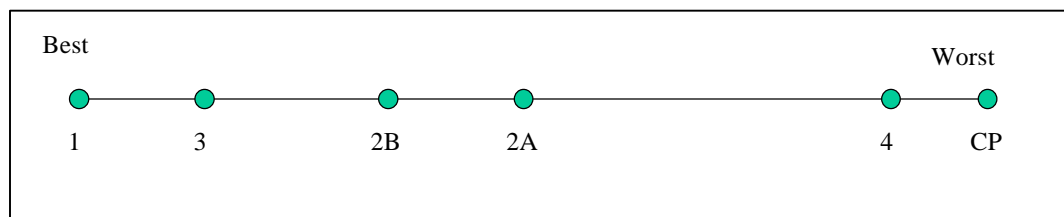
ZOOM B



ZOOM C

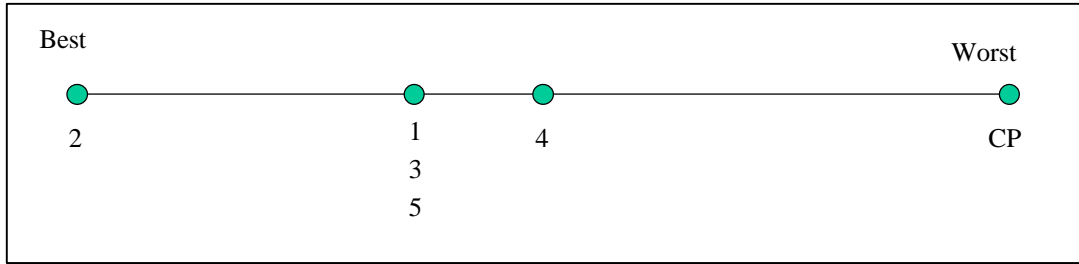


ZOOM D

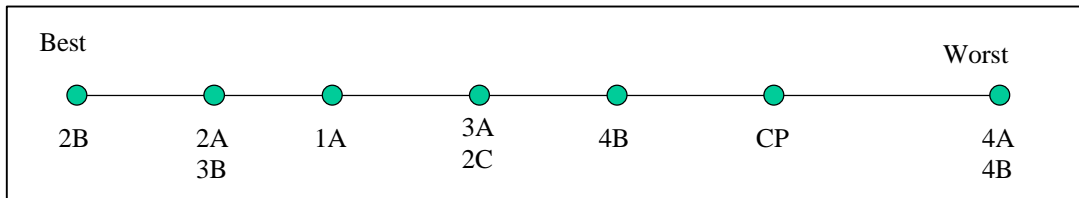


ECOSYSTEM FUNCTION, WILDLIFE HABITAT, AND LISTED SPECIES

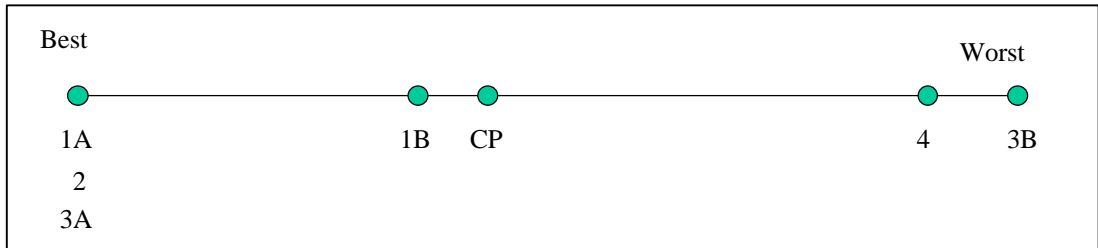
ZOOM A



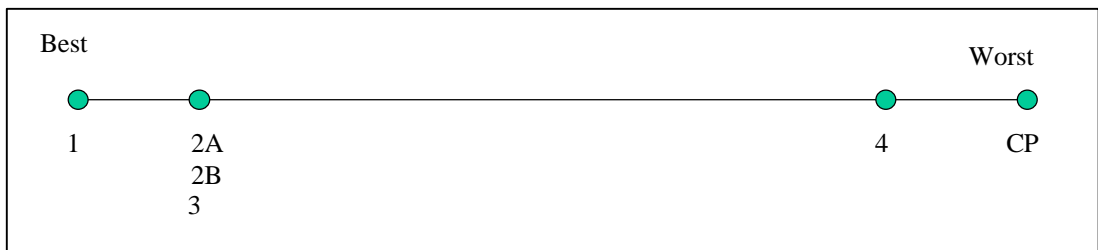
ZOOM B



ZOOM C



ZOOM D

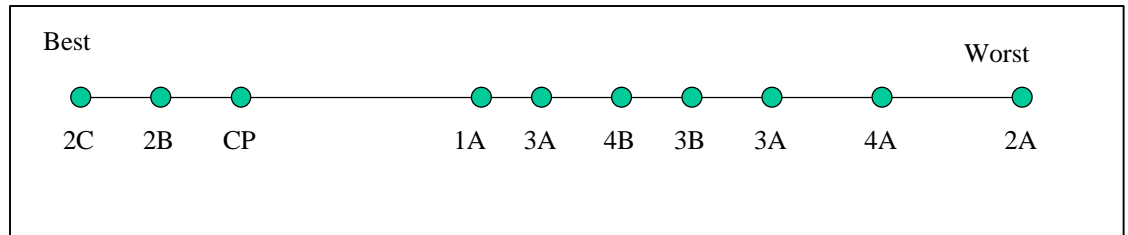


REGULATORY EFFICIENCY AND EFFECTIVENESS

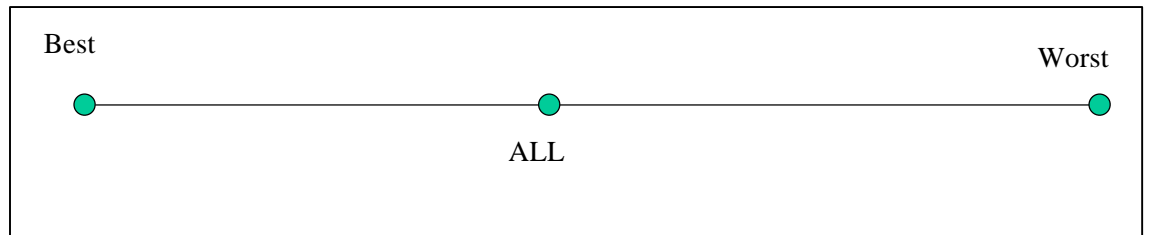
ZOOM A



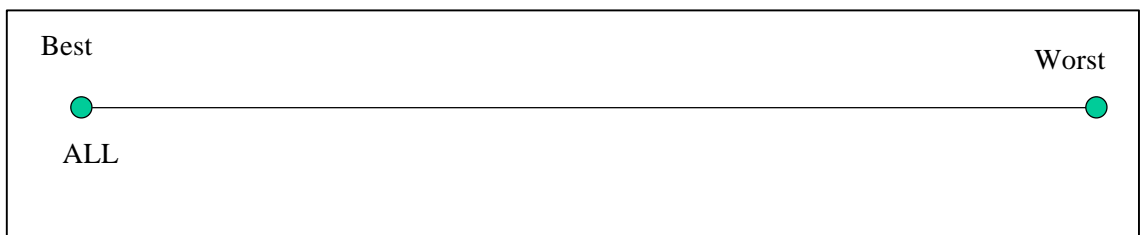
ZOOM B



ZOOM C

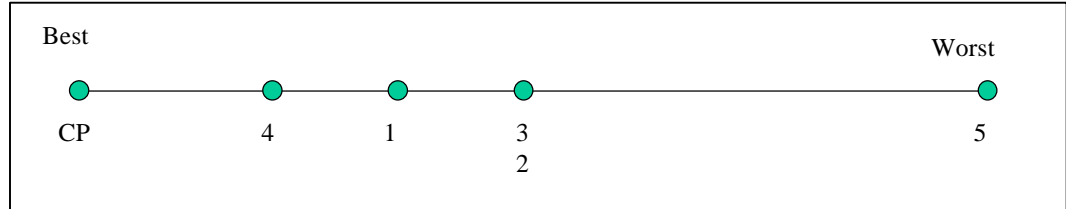


ZOOM D

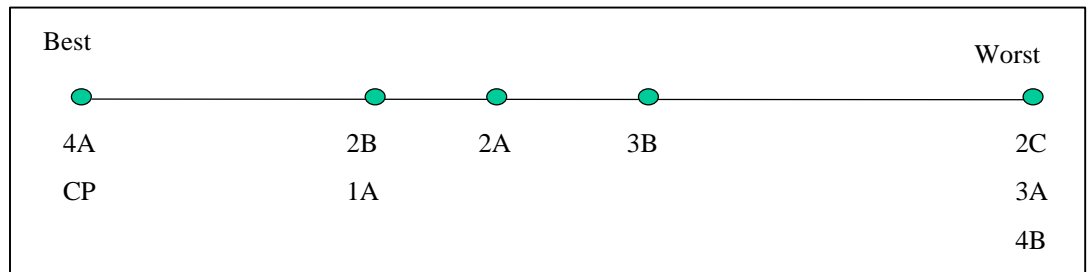


ECONOMIC SUSTAINABILITY

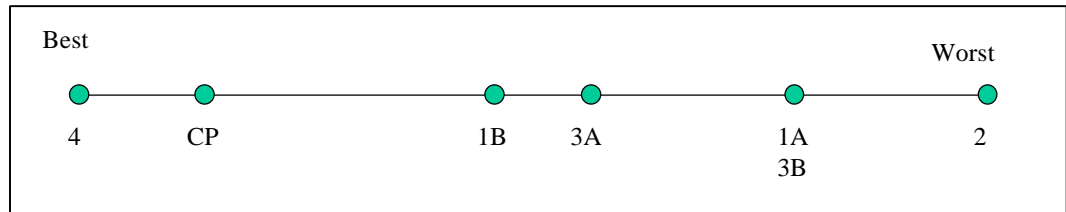
ZOOM A



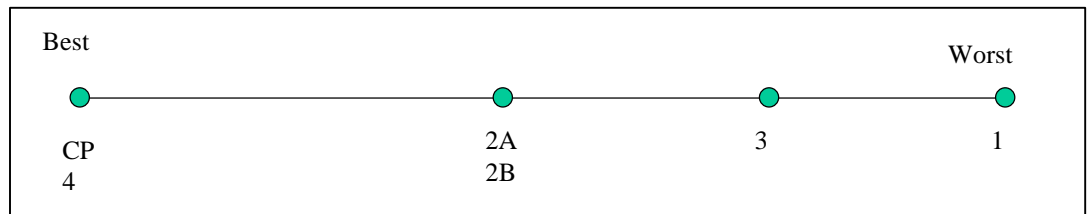
ZOOM B



ZOOM C

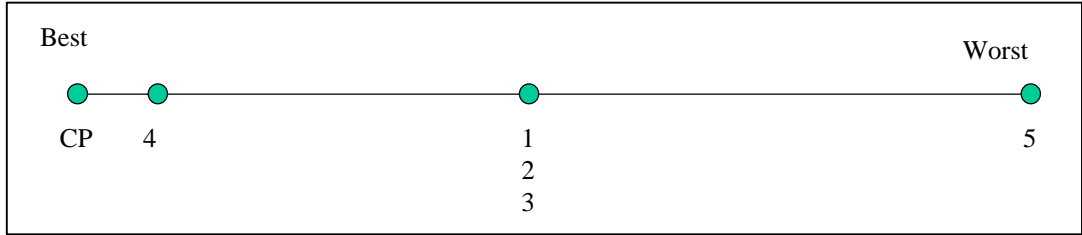


ZOOM D

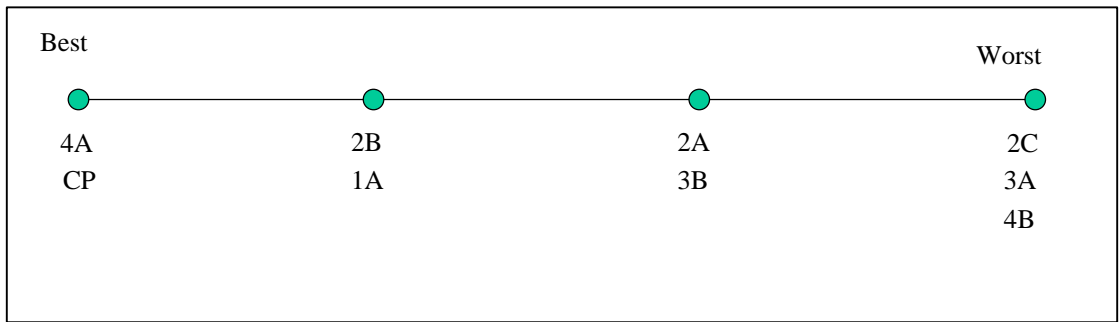


LOCAL LAND USE POLICY

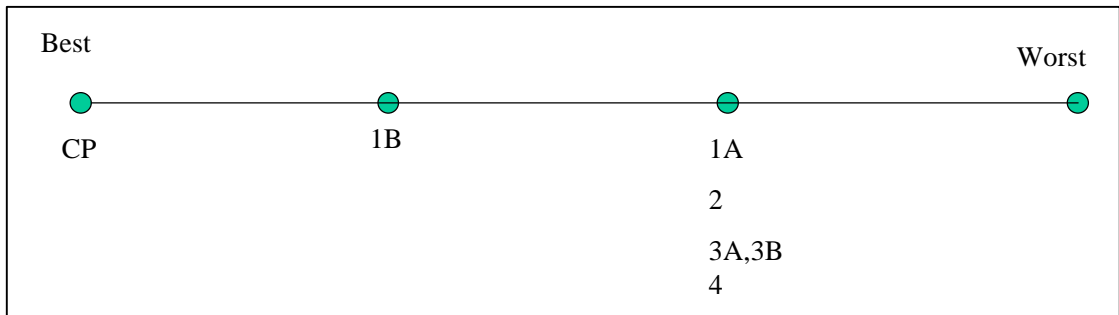
ZOOM A



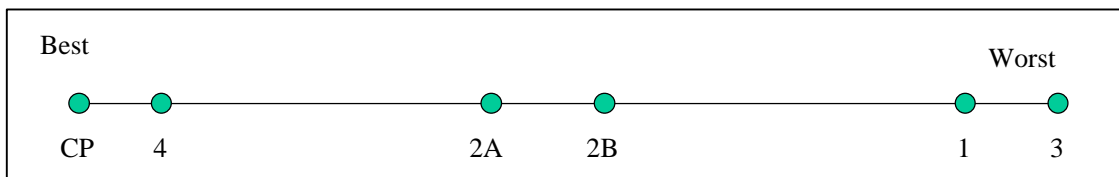
ZOOM B



ZOOM C

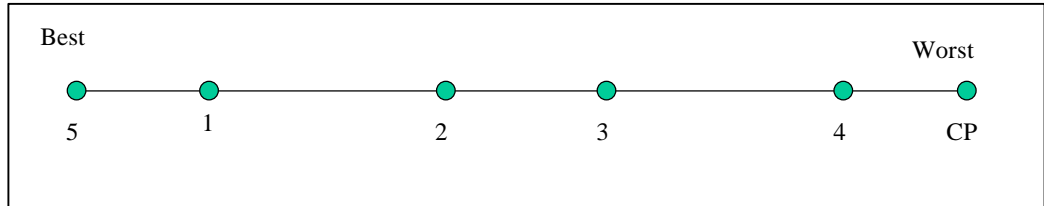


ZOOM D

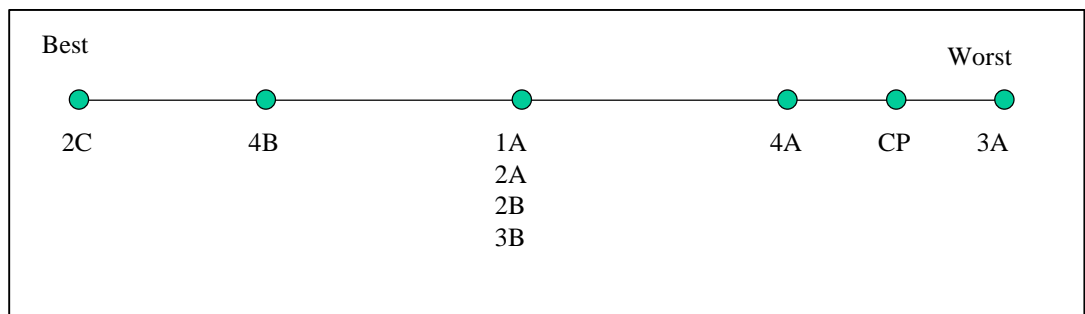


AVOIDANCE OF WETLAND IMPACTS

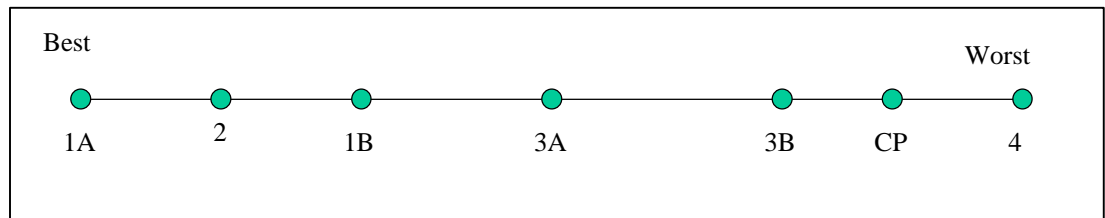
ZOOM A



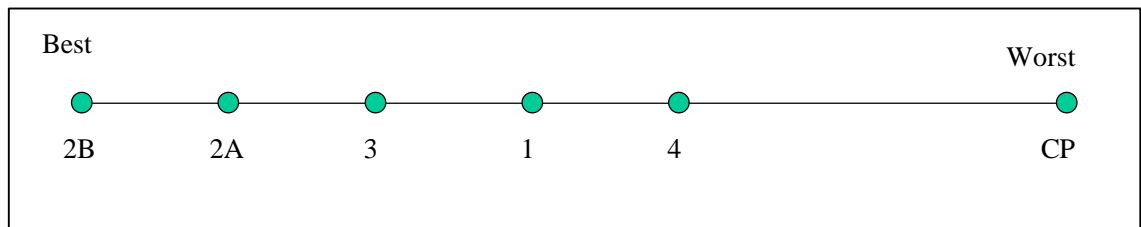
ZOOM B



ZOOM C

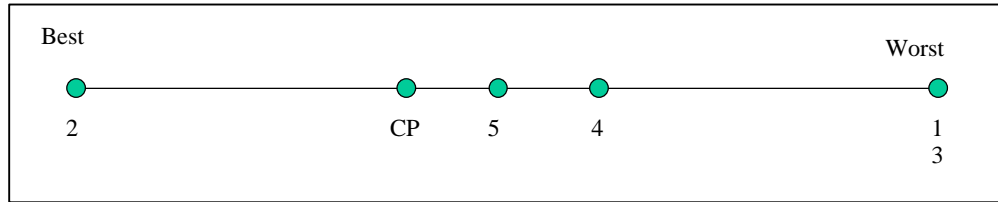


ZOOM D

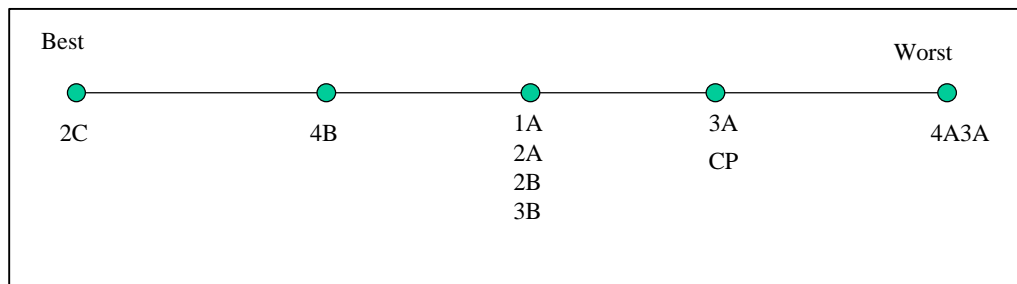


MITIGATION

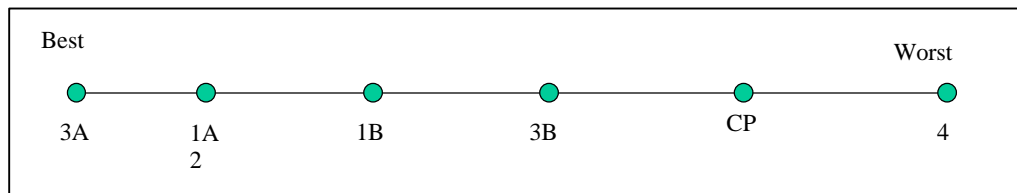
ZOOM A



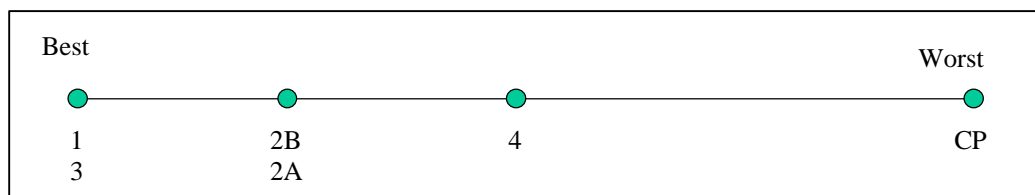
ZOOM B



ZOOM C

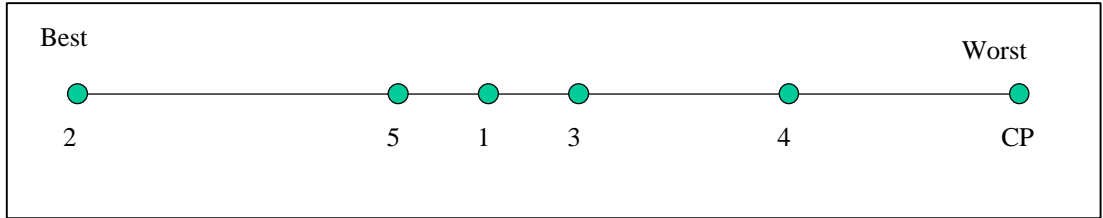


ZOOM D

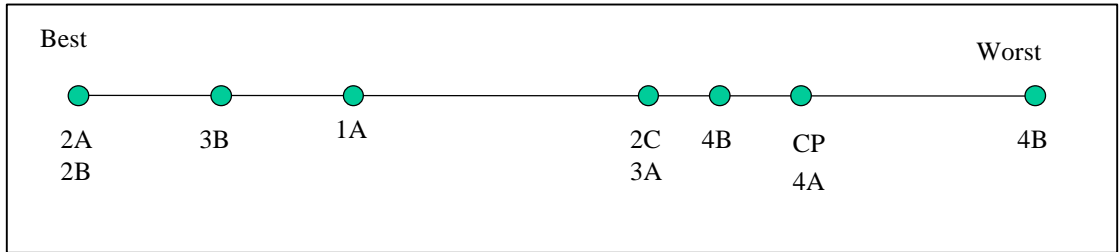


CUMULATIVE/SECONDARY IMPACTS

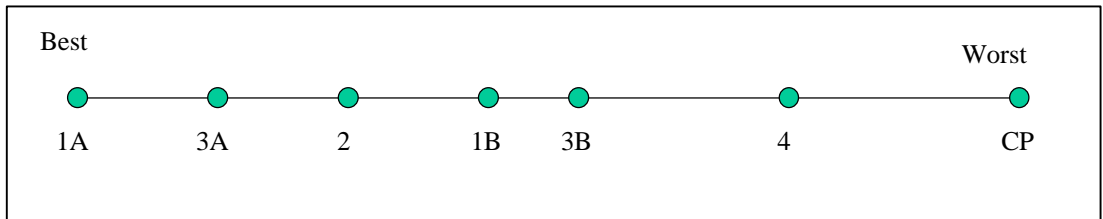
ZOOM A



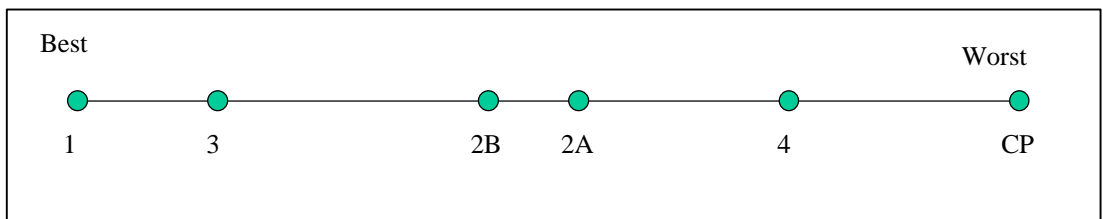
ZOOM B



ZOOM C

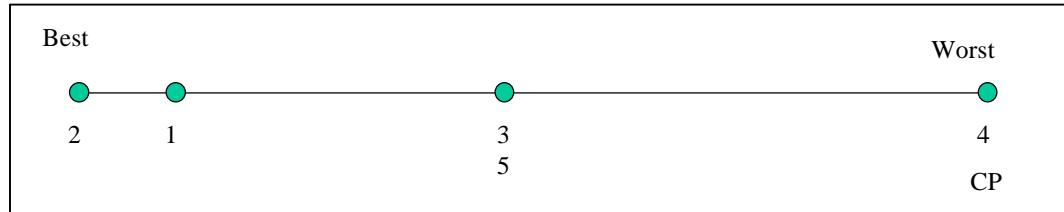


ZOOM D

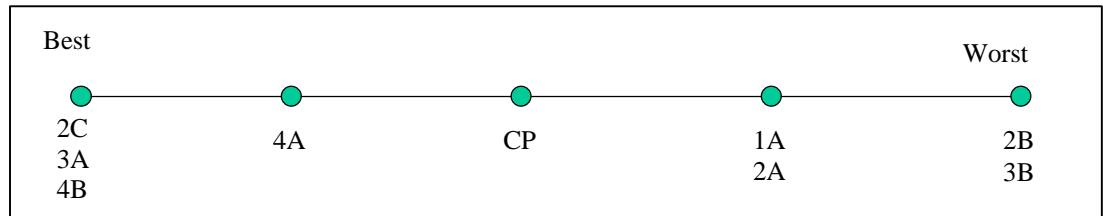


RESTORATION/RETROFIT

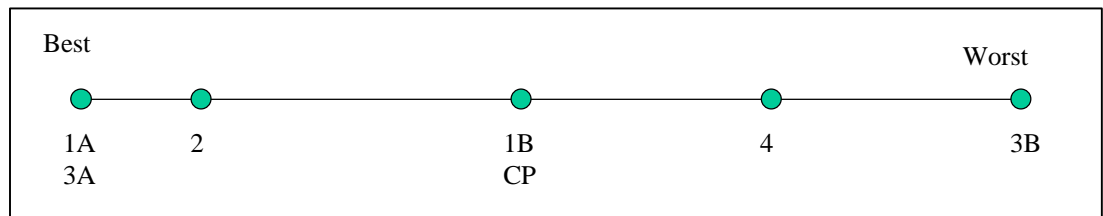
ZOOM A



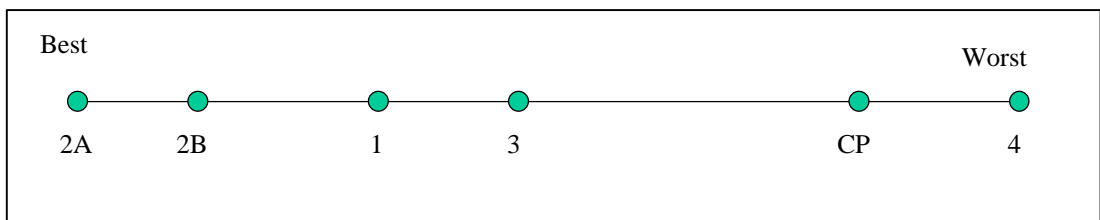
ZOOM B



ZOOM C

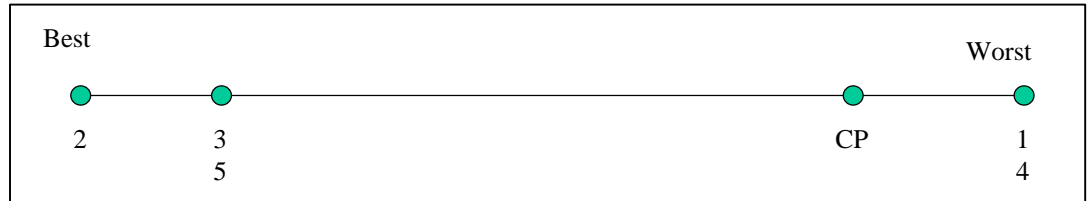


ZOOM D

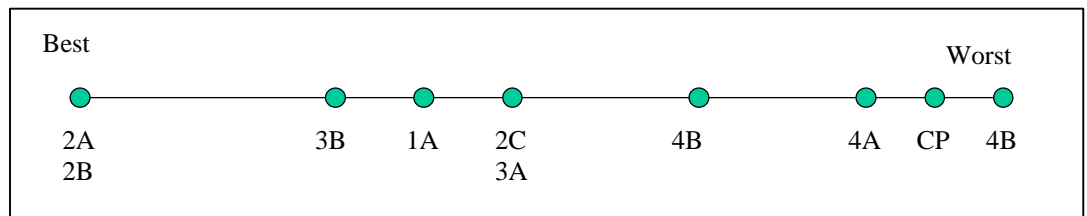


PUBLIC LANDS MANAGEMENT/USE

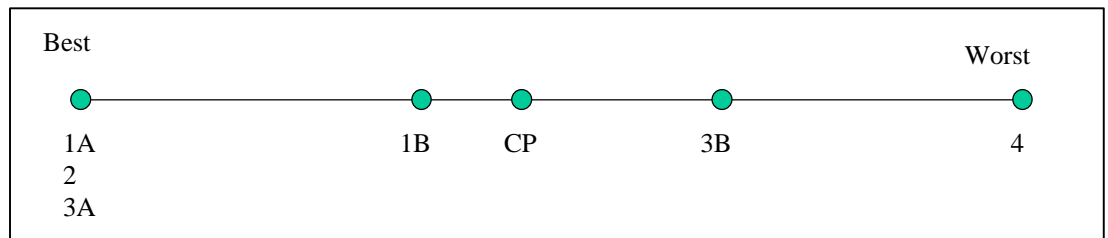
ZOOM A



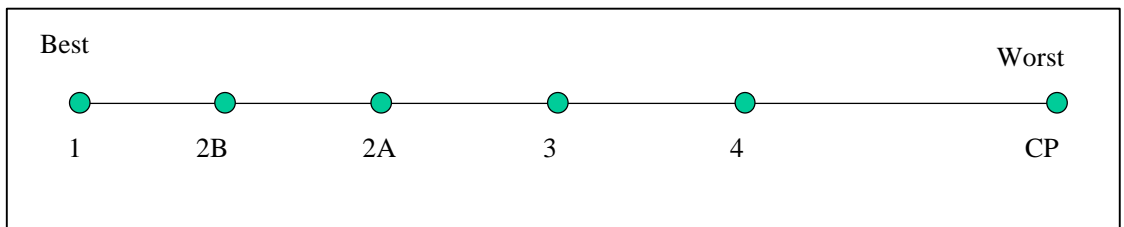
ZOOM B



ZOOM C



ZOOM D



APPENDIX E

FAMILY AND SUBFAMILY DESIGNATION

Hierarchy from Family to SubFamily to Legend

| Fam | Family Name | SUBFAM | SubFamily Name | Zoom | ALT | Legend |
|-----|-------------|--------|--|------|-----|-------------------------------|
| 100 | Development | 110 | | A | CP | Industrial |
| 100 | Development | 110 | | A | CP | Urban |
| 100 | Development | 110 | | A | 1A | Airport |
| 100 | Development | 110 | | A | 2 | Airport |
| 100 | Development | 110 | | A | 2 | Urban & Industrial |
| 100 | Development | 110 | | A | 3A | Airport |
| 100 | Development | 110 | | A | 3A | Urban & Industrial |
| 100 | Development | 110 | | A | 4 | Airport |
| 100 | Development | 110 | | A | 4 | Urban & Industrial |
| 100 | Development | 110 | | A | 5 | Airport |
| 100 | Development | 110 | | C | CP | Industrial |
| 100 | Development | 110 | | C | CP | Urban Landuses |
| 100 | Development | 110 | | C | 1A | Urban & Industrial |
| 100 | Development | 110 | | C | 4 | Transition |
| 100 | Development | 110 | | D | CP | Industrial |
| 100 | Development | 110 | | D | CP | Urban Landuses |
| 100 | Development | 110 | | D | 1A | Urban & Industrial |
| 100 | Development | 110 | | D | 2A | Urban & Industrial |
| 100 | Development | 110 | | D | 2B | Urban & Industrial |
| 100 | Development | 110 | | D | 3 | Urban |
| 100 | Development | 110 | | D | 3 | Industrial |
| 100 | Development | 110 | | D | 4 | Urban & Industrial |
| 100 | Development | 110 | | Hub | CP | Urban Landuses |
| 100 | Development | 110 | | Hub | CP | Industrial |
| 100 | Development | 110 | | Hub | CP | Rural Residential |
| 100 | Development | 110 | | Hub | 2B | Urban & Industrial |
| 100 | Development | 110 | | Hub | 3B | Development |
| 100 | Development | 110 | | Hub | 4A | Development |
| 100 | Development | 120 | Flowway Improvements | C | 3A | Urban & Industrial |
| 100 | Development | 120 | Flowway Improvements | C | 3B | Urban & Industrial |
| 100 | Development | 120 | Flowway Improvements | C | 4 | Urban |
| 100 | Development | 120 | Flowway Improvements | Hub | 1A | Urban & Industrial |
| 100 | Development | 120 | Flowway Improvements | Hub | 2A | Development (w/ Flowways &tc) |
| 100 | Development | 130 | Compensate off-site for wide ranging species | Hub | 2A | Off-site Compensation |

Hierarchy from Family to SubFamily to Legend

| Fam | Family Name | SUBFAM | SubFamily Name | Zoom | ALT | Legend |
|-----|-------------|--------|---|------|-----|------------------------------------|
| 100 | Development | 140 | Regional/Comprehensive Stormwater Mgmt | A | 1A | Urban & Industrial |
| 100 | Development | 150 | Replumb Henderson/Culverts Tamiami | C | 1B | Urban & Industrial |
| 100 | Development | 160 | S Criteria for Urban | C | 2 | Urban & Industrial |
| 200 | Lehigh | 210 | | A | CP | Urban (Lehigh) |
| 200 | Lehigh | 210 | | A | 1A | Urban (Lehigh) |
| 200 | Lehigh | 210 | | A | 3A | Urban (Lehigh) |
| 200 | Lehigh | 220 | Urban Zone Updated | A | 5 | Urban Zone (Lehigh) |
| 200 | Lehigh | 230 | Lehigh - Restore, Retrofit, Redevel (3R) | A | 1A | Restoration, Retrofit, Redevelopmt |
| 200 | Lehigh | 230 | Lehigh - Acquire, Restore, Fix (ARF) | A | 3A | Acquire, Restore, Fix |
| 200 | Lehigh | 230 | Lehigh - Redevelopment | A | 4 | Redevelopment |
| 200 | Lehigh | 240 | Lehigh - Lehigh Acres Zone | A | 2 | Lehigh Acres |
| 200 | Lehigh | 250 | Lehigh - Lehigh Greenway | A | 2 | Greenway |
| 200 | Lehigh | 260 | Lehigh - Water Storage | A | 4 | Water Storage |
| 200 | Lehigh | 270 | ARF Zone | A | 5 | Acquire, Restore, Fix |
| 300 | GoldenGate | 310 | | C | CP | Rural Residential |
| 300 | GoldenGate | 310 | | C | 1A | Golden Gates Estates |
| 300 | GoldenGate | 310 | | C | 1B | Golden Gates Estates |
| 300 | GoldenGate | 310 | | C | 4 | Rural Residential |
| 300 | GoldenGate | 310 | | D | CP | Rural Residential |
| 300 | GoldenGate | 310 | | D | 4 | Rural Residential |
| 300 | GoldenGate | 330 | S Criteria for Golden Gate Estates ZONE 1 | C | 2 | Golden Gates Estates Zone 1 |
| 300 | GoldenGate | 340 | S Criteria for Golden Gate Estates ZONE 2 | C | 2 | Golden Gates Estates Zone 2 |
| 300 | GoldenGate | 340 | S Criteria for Golden Gate Estates Zone 2 | D | 1A | Golden Gates Estates |
| 300 | GoldenGate | 340 | S Criteria for Golden Gate Estates ZONE 2 | D | 2A | Golden Gates Estates |
| 300 | GoldenGate | 340 | S Criteria for Golden Gate Estates ZONE 2 | D | 2B | Golden Gates Estates |
| 300 | GoldenGate | 340 | S Criteria for Golden Gate Estates ZONE 2 | D | 3 | Golden Gates Estates |
| 300 | GoldenGate | 350 | Estates (Rural) Standards | C | 3B | Estates (Rural Residential) |
| 300 | GoldenGate | 360 | GGE: limit clear+protect isolated wet+connect | C | 3A | Golden Gate Estates |
| 400 | Agriculture | 410 | | A | CP | Agricultural |
| 400 | Agriculture | 410 | | C | CP | Agricultural |
| 400 | Agriculture | 410 | | C | 1A | Agricultural |

Hierarchy from Family to SubFamily to Legend

| Fam | Family Name | SUBFAM | SubFamily Name | Zoom | ALT | Legend |
|-----|-------------|--------|---|------|-----|---------------------------------------|
| 400 | Agriculture | 410 | | C | 1B | Agricultural |
| 400 | Agriculture | 410 | | C | 3A | Agricultural |
| 400 | Agriculture | 410 | | C | 4 | Agricultural |
| 400 | Agriculture | 410 | | D | CP | Agricultural |
| 400 | Agriculture | 410 | | D | 4 | Agricultural |
| 400 | Agriculture | 410 | | Hub | CP | Agricultural |
| 400 | Agriculture | 410 | | Hub | 1A | Agricultural |
| 400 | Agriculture | 410 | | Hub | 2B | Agricultural |
| 400 | Agriculture | 410 | | Hub | 3B | Agriculture |
| 400 | Agriculture | 410 | | Hub | 4A | Agricultural |
| 400 | Agriculture | 420 | Mining Lands | C | 4 | Mining |
| 400 | Agriculture | 420 | Mining Lands | Hub | 3B | Mining Lands |
| 400 | Agriculture | 420 | Mining Lands | Hub | 4A | Mining Lands |
| 400 | Agriculture | 430 | Non-intensification | D | 1A | Agricultural Preserve |
| 400 | Agriculture | 430 | Maintain Intensity | Hub | 2B | Agricultural - Maintain Intensity |
| 400 | Agriculture | 440 | Limited Intensification | D | 2A | Agricultural |
| 400 | Agriculture | 440 | Limited Intensification | D | 2B | Agricultural |
| 400 | Agriculture | 440 | Limited Intensification | Hub | 2A | Agriculture (Limited Intensification) |
| 400 | Agriculture | 450 | Big Cypress ACSC: Agriculture non-exempt | D | 2B | Agriculture (BCACSC) |
| 400 | Agriculture | 460 | If Agriculture ends then goes to preserve | D | 3 | Agricultural - Go To Preserve |
| 400 | Agriculture | 470 | S Criteria for Agriculture | C | 2 | Agricultural |
| 500 | Rural | 510 | | A | CP | Rural Residential |
| 500 | Rural | 510 | | A | 3A | Rural Residential |
| 500 | Rural | 510 | | A | 4 | Rural Development |
| 500 | Rural | 520 | Rural Low Density Mix | D | 2A | Rural |
| 500 | Rural | 520 | Rural Low Density Mix | D | 2B | Rural |
| 500 | Rural | 530 | Rural Criteria (Mtg 7 Append E) | A | 1A | Rural Residential |
| 500 | Rural | 530 | Rural Criteria (Mtg 7 Append E) | A | 2 | Rural |
| 500 | Rural | 530 | Lower Density Rural uses+Hammond Flowway | Hub | 2A | Rural |
| 500 | Rural | 540 | Rural Development Criteria ("Twin Eagle") | C | 1A | Rural Development |
| 500 | Rural | 550 | Rural Development Criteria | C | 1B | Rural Development |
| 500 | Rural | 560 | Rural Clustering Standards | C | 3B | Rural Cluster (Agriculture) |
| 500 | Rural | 570 | Rural Low Density Mix | C | 2 | Rural |

Hierarchy from Family to SubFamily to Legend

| Fam | Family Name | SUBFAM | SubFamily Name | Zoom | ALT | Legend |
|-----|-------------|--------|--|------|-----|--------------------------------------|
| 600 | Preserve | 610 | | A | CP | Preservation |
| 600 | Preserve | 610 | | A | 1A | Conservation Lands |
| 600 | Preserve | 610 | | A | 2 | Preservation Lands |
| 600 | Preserve | 610 | | A | 3A | Preservation Lands |
| 600 | Preserve | 610 | | A | 4 | Preservation Lands |
| 600 | Preserve | 610 | | C | CP | Preservation/Conservation |
| 600 | Preserve | 610 | | C | 1A | Preservation Lands |
| 600 | Preserve | 610 | | C | 1B | Preservation Lands |
| 600 | Preserve | 610 | | C | 3B | Conservation |
| 600 | Preserve | 610 | | D | CP | Preservation/Conservation |
| 600 | Preserve | 610 | | D | 1A | Preservation Lands |
| 600 | Preserve | 610 | | Hub | CP | Preservation |
| 600 | Preserve | 610 | | Hub | 1A | Preservation Lands |
| 600 | Preserve | 610 | | Hub | 2B | Preservation Lands |
| 600 | Preserve | 620 | Flowway Improvements | C | 3A | Preservation Lands |
| 600 | Preserve | 620 | Culverts | D | 3 | Preservation Lands |
| 600 | Preserve | 620 | Flowway Improvements | D | 4 | Preservation Lands |
| 600 | Preserve | 620 | Flowway Improvements | Hub | 4A | Preservation Lands |
| 600 | Preserve | 630 | ABM Conservation/Preservation Strategy Map | Hub | 2A | Preserve (Exist&Prop) |
| 600 | Preserve | 630 | ABM Conservation/Preservation Strategy Map | Hub | 3B | Preserve (Exist&Future) |
| 600 | Preserve | 640 | S Criteria for Preserve | C | 2 | Preservation Lands |
| 600 | Preserve | 640 | S Criteria for Preserve | D | 2A | Preservation Lands |
| 600 | Preserve | 640 | S Criteria for Preserve | D | 2B | Preservation Lands |
| 600 | Preserve | 650 | Culverts under Tamiami and I-75 | C | 4 | Preservation/Conservation |
| 700 | PermitStds | 720 | Critical Resource Protection Area | Hub | 2C | Critical Resource Protection Area |
| 700 | PermitStds | 720 | Critical Resource Protection Area | Hub | 3A | Critical Resource Protection Area |
| 700 | PermitStds | 720 | Critical Resource Protection Area | Hub | 4B | Critical Resource Protection Area |
| 700 | PermitStds | 730 | Buffer Transitional Zone | Hub | 2C | Buffer Transitional Zone |
| 700 | PermitStds | 730 | Buffer Transitional Zone | Hub | 3A | Buffer Transitional Zone |
| 700 | PermitStds | 730 | Buffer Transitional Zone | Hub | 4B | Buffer Transitional Zone |
| 700 | PermitStds | 740 | Urban Zone | Hub | 2C | Urban Zone |
| 700 | PermitStds | 740 | Urban Zone | Hub | 3A | Urban Zone |
| 700 | PermitStds | 740 | Urban Zone | Hub | 4B | Urban Zone |

Hierarchy from Family to SubFamily to Legend

| Fam | Family Name | SUBFAM | SubFamily Name | Zoom | ALT | Legend |
|------------|--------------------|---------------|--|-------------|------------|-------------------|
| 700 | PermitStds | 750 | Preservation Zone (Updated from CRPA) | A | 5 | Preservation Zone |
| 700 | PermitStds | 760 | Agricultural Zone (Updated from CRPA) | A | 5 | Rural Residential |
| 700 | PermitStds | 770 | Urban Zone Updated | A | 5 | Urban Zone |
| 800 | NonAgree | 820 | Berm | Hub | 4B | Berm |
| 800 | NonAgree | 830 | Pending Review (Develop or Preserve) | C | 3A | Pending Review |
| 800 | NonAgree | 830 | Pending Review (Develop or Preserve) | Hub | 4A | Pending Review |

